

CUSTOMER-BASED BRAND EQUITY OF THE MAJOR CELLPHONE NETWORK
SERVICE PROVIDERS AMONGST PRINCIPAL ESTATE AGENTS IN THE GAUTENG
PROVINCE OF SOUTH AFRICA

by

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ABSTRACT

This study investigates the customer-based brand equity of the major cellphone network service providers (Vodacom, MTN and Cell C) amongst principal estate agents registered with the Estate Agency Affairs Board in Gauteng. Secondary research covered the marketing environment of the major service providers. An extensive study of literature on branding, brand management and brand equity measurement was undertaken.

An empirical study was conducted. Telephone interviews were used for initial contact and screening. An invitation to participate in the survey, with a link to a questionnaire, was e-mailed to qualified respondents. Cell C users were excluded from the quantitative analysis. There were several significant findings: Vodacom and MTN users are alike in terms of personal and estate agency-related demographics. With the exception of age and gender, the sample fits the stated descriptors of individuals in the LSM seven to LSM ten groups. Cronbach's alpha coefficient confirmed a high level of reliability (0.870) for the summated measurement scale developed as an indicator variable of customer-based brand equity and Vodacom and MTN's rating on the summated scale did not differ at a statistically significant level. The service provider used proved to be an important driver of loyalty, but overall satisfaction with the cellphone service does not differ statistically significantly between Vodacom and MTN users. Vodacom has established a much more favourable positioning on the brand association statements evaluated. Factor analysis identified five brand association dimensions that should be considered for measurement of brand associations. Multiple regression analysis identified *the brand as a product* dimension as the best predictor of customer-based brand equity. Vodacom received more favourable brand performance ratings than MTN. Factor analysis identified six brand performance dimensions that should be considered for inclusion when measuring brand performance. Multiple regression analysis identified *the easy to use* and *one-stop-service* dimensions as the best predictors of customer-based brand equity. The customer-based brand equity of the user group is moderate (16 out of 25, or 64%).

Key terms:

Customer-based brand equity; brand relationship; principal estate agents; Gauteng; branding; brand management; brand equity measurement; cellphone network service providers; customer relationship management; customer satisfaction; loyalty

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CHAPTER 1

INTRODUCTION TO THE STUDY

1.1. INTRODUCTION

Since the launch of cellular services around April 1994 this segment of the South African telecommunications market has rapidly soared past its fixed-line counterpart (Budde Communication, 2006:109). In the 2009 financial year the number of cellphone subscribers in South Africa passed the 50 million mark. This can be compared to approximately 4.319 million fixed telephone lines in South Africa at the time. Currently cellular penetration is above the 100% mark and it is generating large revenue streams. As indicated in table 1.1, South Africa's three major cellphone network operators derived revenues to the value of approximately R90.5 billion from their South African operations during the 2009 financial year:

TABLE 1.1 SOUTH AFRICAN CELLULAR REVENUES FOR THE 2009 FINANCIAL YEAR

Network operator	Revenue (Rand in millions)	EBITDA (%)
Vodacom	47 483	34.2
MTN	33 149	31.4
Cell C	9 900	14.1
Total	90 532	-

Note: Earnings before interest, taxes, depreciation and amortisation (EBITDA)

Sources: Vodacom Group Limited, 2009a:6-9; MTN Group Limited, 2009b, 14-16, Cell C, 2010a:2

The two largest network operators reported healthy EBITDA (Earnings before Interest, Taxes, Depreciation and Amortisation) margins of 34.2% and 31.4% respectively. Cell C, the smallest operator, reported a significantly lower EBITDA margin of 14.1%.

The network operators are in fierce competition to grow and maintain market share. In order to achieve this objective they are constantly investing in the development of their brands. The significant investment in brand development is reflected by the fact that Vodacom, MTN and Cell C rank amongst the top eleven South African brands in terms of advertising spend. For the period July 2008 to June 2009 Vodacom was ranked fifth,

MTN sixth, and Cell C eleventh (Affinity Advertising and Publishing, 2009:82). MTN and Vodacom were valued as the second and third most valuable brands in South Africa by Interbrand Sampson in 2005. MTN was valued at R8 895 million and Vodacom at R6 501 million (Affinity Advertising and Publishing, 2005:127). In order to develop a sustainable competitive advantage the network operators are constantly striving to differentiate their brands from those of their competitors.

Vodacom is using the phrase “South Africa’s Leading Cellular Network” to link this association to their brand (Affinity Advertising and Publishing, 2009:114). Vodacom’s iconic Yebo Gogo advertising campaign was rated as one of the most popular and successful campaigns ever produced in South Africa. The television commercial “Mo the Meerkat” used for Vodacom’s Yebo Feva summer promotion was voted as South Africa’s best liked television commercial for 2005 (Vodacom Annual Report, 2006:34). In 2009 Vodacom continued to create South Africa’s own homemade brand icons with the successful “Player 23” campaign (Affinity Advertising and Publishing, 2009:114)

MTN has made significant strides towards its global vision to be the leading provider of telecommunications services in emerging markets (Affinity Advertising and Publishing, 2009:230). MTN is using the phrase “everywhere you go” to link this association to its brand. The core brand values have been identified as integrity, leadership, relationships, innovation and “can- do”. The company strives to ensure that every interaction between the brand and its consumers is a positive experience. From a relationship perspective MTN aims to create one big “y’ello” family where there is a strong sense of belonging and family pride. Much of this is achieved through the company’s “can do” value statement. Commitment to integrity cannot be compromised (Affinity Advertising and Publishing, 2006:188).

Prior to launching its new brand identity in August 2010 (Cell C, 2010b:1) Cell C was using the unrivalled “C”, consisting of seven dots, as well as red corporate colours to enable consumers to identify the brand (Affinity Advertising and Publishing, 2009:182). The phrase “C for yourself” was constantly used to link this association to the brand. It

has been presented as an invitation to consumers to experience (try out) the brand (Affinity Advertising and Publishing, 2006:270). In its efforts to target the low end of the market Cell C has joined forces with musician Zola, an initiative promoted through Cell C's Hola 7 Club. In order to strengthen its position as consumer champion at the low end of the market, Cell C launched the five rand or "Half Tiger" recharge voucher, the lowest in South Africa at the time of the launch (James, 2006:2).

Clearly, branding is at the heart of marketing strategy in the South African cellular market. This study will focus on the customer-based brand equity of the major cellphone network service providers amongst principal estate agents in the Gauteng province of South Africa. In the following section of this chapter the background to the study will be discussed:

1.2. BACKGROUND TO THE STUDY

As part of the background to this study the concepts of brand, brand equity and customer-based brand equity will be defined. Then a short overview of the three major South African cellphone network service providers will be given. This will be followed by a discussion of the role of branding in the South African cellphone market and a review of the Living Standards Measure and cellphone usage. Finally an overview of principal estate agents in the Gauteng province will be given.

1.2.1 Brand, brand equity and customer-based brand equity

1.2.1.1 Brand

A brand is a name, term, sign, symbol, or design or a combination of these, intended to identify the goods and services of one seller or group of sellers and to differentiate them from those of the competition (Kotler & Armstrong, 2006:243).

The different components of a brand, which identifies a product and distinguishes it from other products, are referred to as brand elements. Brand elements, sometimes referred

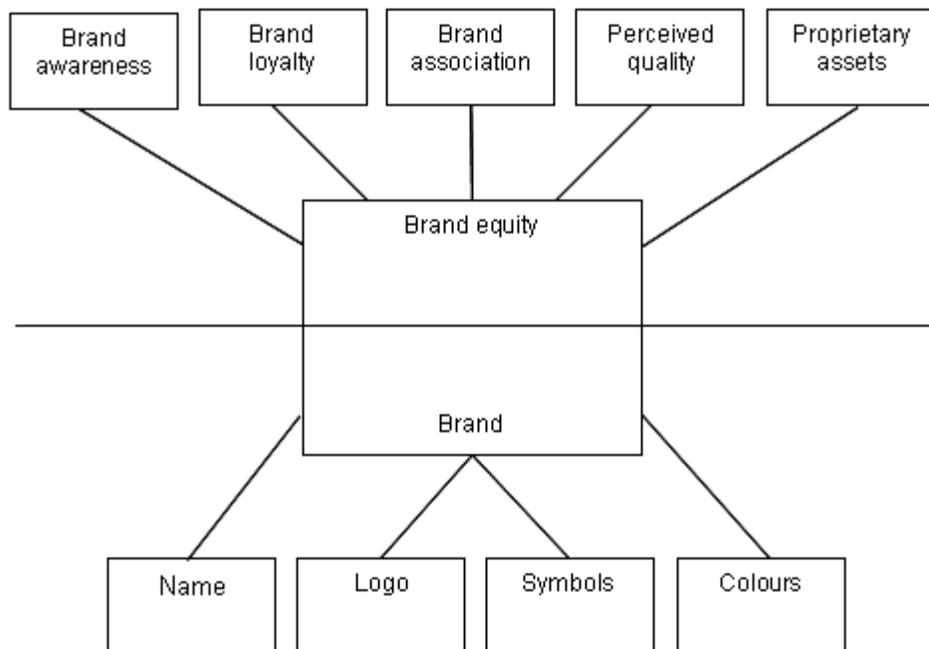
to as brand identities, are those “trademarkable” aspects that serve to identify and differentiate the brand. The main brand elements are brand names, URLs, logos, symbols, characters, spokespeople, slogans, jingles packages and signage (Keller, 2003:175).

1.2.1.2 Brand equity

David Aaker (2002:7) defines brand equity as a set of assets (and liabilities), linked to a brand’s name and symbols, that adds to (or subtracts from) the value provided by a product or service. The major categories of brand assets or liabilities according to Aaker (2002:8-9) are brand name awareness, brand loyalty, perceived quality, brand associations and proprietary assets.

The following figure presents the concepts of brand and brand equity:

FIGURE 1.1 BRAND AND BRAND EQUITY



Source: Adapted from Gerber-Nel (2006:2)

1.2.1.3 Customer-based brand equity

Customer-based brand equity can be defined as the differential effect that brand knowledge has on the customer’s response to the marketing of a brand (Tybout &

Calkins, 2005:248). A brand has positive customer-based brand equity when consumers react more favourably to the marketing activity for a product when the brand is identified than when it is not (Keller, 2003:60).

Customer-based brand equity can be measured by assessing the sources of brand equity as it prevails in the customer’s mindset. These sources include the customer’s awareness of the brand, associations attached to the brand, perceptions, and attitudes towards the brand. In order to create customer-based brand equity, it is essential to develop a brand relationship with the customer. A strong, positive brand relationship will result in a positive differential effect on the customer’s response to the marketing of a brand or customer-based brand equity (Keller, 2003:390-399).

1.2.2 The major cellphone network service providers

Prior to the launch of Telkom’s mobile service in October 2010 there were three licensed cellphone network operators in South Africa, i.e. Vodacom, MTN and Cell C (Telkom SA Limited, 2010:1). Each of these operators owns a network service provider company that is used as their primary channel to the market (Vodacom, 2006:9, MTN, 2006:7, James, 2006:2). In most instances the customers that use the network service provider companies perceive them to be the same entities as the network operators.

Table 1.2 presents the total number of fixed telephone lines and the total number of cellphone subscribers in South Africa for the period 2004 to 2009:

TABLE 1.2 FIXED TELEPHONE LINES AND CELLULAR SUBSCRIBERS: 2004 TO 2009

Subscribers (in thousands)	(In Thousands)					
	2004	2005	2006	2007	2008	2009
Fixed access lines	4 680	4 726	4 708	4 490	4 395	4 319
Total number of cellular subscribers	18 134	25 536	34 273	42 364	48 275	50 474

Notes: Refer to tables 2.4, 2.7 and 2.9 in Chapter 2.

Sources: Telkom SA Limited, 2008:108; Telkom SA Limited, 2009:112

As indicated in table 1.2 the number of fixed telephone lines in South Africa declined from 4.680 million in 2004 to 4.319 million in 2009. In contrast the number of cellphone subscribers increased from 18.134 million in 2004 to 50.474 million in 2009. Table 1.3 presents a market-share breakdown of the total cellphone subscriber base for Vodacom, MTN and Cell C, as well as of contract subscribers as a percentage of the total number of subscribers reported by each of the major cellphone network service providers.

TABLE 1.3 KEY STATISTICS OF CELLULAR SUBSCRIBER BASE: 2004 TO 2009

Description	2004	2005	2006	2007	2008	2009
Total market share (%):						
Vodacom	53.50	50.18	55.82	54.07	51.20	54.50
MTN	34.58	40.08	36.42	34.93	35.57	31.83
Cell C	11.92	9.74	7.76	11.00	13.23	13.67
Contract subscribers (%):						
Vodacom	14.64	14.61	12.35	13.15	14.33	14.35
MTN	19.00	16.16	17.08	16.85	16.04	18.81
Cell C	21.28	22.35	28.33	21.88	n.a	n.a

Notes: Refer to tables 2.4, 2.7 and 2.9 in Chapter 2.

Sources: Telkom SA Limited, 2008:108

Telkom SA Limited, 2009:112

As indicated in table 1.3, Vodacom's share of the total subscriber base varied from a low of 50.18% to a high of 54.5% during the period. MTN's market share varied from a low of 31.8% to a high of 40.08% and that of Cell C from a low of 7.76% to a high of 13.67%. In 2009 contract subscribers accounted for 14.35% of the total Vodacom subscriber base and 18.81% of the MTN subscriber base. Cell C did not report a breakdown by contract and prepaid subscribers in the last two financial years. The average revenue per user, as reported by Vodacom for the 2009 financial year, was R133 per user (contract and prepaid), R474 per contract user and R68 per prepaid user (refer to Chapter 2, table 2.4). The average revenue per user, as reported by MTN for the 2009 financial year,

was R145 per user (contract and prepaid), R365 per contract user and R100 per prepaid user (refer to Chapter 2, table 2.7).

Most of the urban areas and national roads in South Africa have GSM (Global System for Mobile Communications) coverage. The three networks now cover more than 90% of the South African population. The company background of each network operator will be briefly discussed:

1.2.2.1 Vodacom

Licensed in September 1993, Vodacom was the first cellphone network operator in South Africa. It is the market-share leader in the South African cellular market. Vodafone, the world's largest cellular telecommunications company, has a 65% shareholding in the Vodacom Group (Vodacom Group Limited, 2009a:24-25). The Vodacom Group is a Pan-African cellular communications company providing a world-class GSM service to users in South Africa, Mozambique, the Democratic Republic of Congo, Lesotho and Tanzania (Budde Communications, 2006:106-107). The Vodacom Group has a 93.75% shareholding in Vodacom South Africa. In the 2009 financial year Vodacom South Africa's revenue accounted for 86.04% of the Vodacom Group's total revenue (Vodacom Group Limited, 2009b:4-5).

Vodacom South Africa operates the largest GSM network in South Africa. On 31 March 2010 the South African access network included 7 817 base stations. All of Vodacom's operations support GSM 2G technology as a minimum. Vodacom is currently the leading operator in South Africa in terms of 3G roll-out. Vodacom and Vodafone co-operate in a number of areas where Vodacom can leverage Vodafone's expertise, product innovation, marketing, resources and global footprint (Vodacom, 2009a:25).

1.2.2.2 MTN

The MTN Group is a multinational telecommunications group offering cellular network access and business solutions. MTN has operations in 21 countries in Africa and the Middle East. Operations cover the following regions: South and East Africa, West and

Central Africa, Middle East and North Africa (MTN, 2009a:2).

MTN South Africa controls the South African operations. In the financial year that ended on 31 December 2009 revenues derived from South Africa accounted for 29.67% of total group revenue, excluding the company revenues from the head office (MTN, Group Limited 2009b:5). MTN's GSM network covers an estimated 97% of the South African population. In 2009 the network included roughly 7 700 base station sites (BMI-TechKnowledge, 2009a:363). MTN is trailing slightly behind Vodacom with its 3G roll-out.

1.2.2.3 Cell C

Cell C launched its first services around December 2001. As the third licensed cellular network operator it is the smallest in South Africa (Budde Communications, 2006:108-109). Cell C is ultimately controlled by Saudi Oger Limited, the majority shareholder (90%) of Oger Telecom South Africa Holding Limited, a holding company registered in Bermuda (Business Monitor International, 2009:60).

Cell C was awarded a GSM licence in February 2001. It concluded a 15-year roaming deal on Vodacom's network to complement its area coverage while rolling out its own network infrastructure (BMI-TechKnowledge, 2006:403-404). On 30 June 2006 the Cell C network covered 70% of the South African population and 28.5% of the country (James, 2006:3). In the 2009 financial year Cell C embarked on a network transformation programme to improve its data-service capabilities with the roll-out of an all-IP HSPA+ (all-Internet Protocol Evolved High Speed Packet Access) network (Cell C, 2010b:4).

1.2.3 The role of branding in the South African cellphone market

Brand development is a strategic priority within the South African cellular market, as reflected by the significant investment in advertising by Vodacom, MTN and Cell C (Affinity Advertising and Publishing, 2009:82) As a result the MTN and Vodacom brands were valued as the second and third most valuable brands in South Africa by Interbrand

Sampson (Affinity Advertising and Publishing, 2005:127).

The Sunday Times/TNS Top Brands Survey (Affinity Advertising and Publishing, 2009:62) confirms the important role of branding in the South African cellular market. In the 2009 survey Vodacom was rated among South Africa's top ten consumer brands on two dimensions and MTN on one dimension, as indicated in table 1.4:

TABLE 1.4 TOP BRANDS SURVEY 2009

Branding dimension rated	Service provider/s	Ranking
South Africa's overall favourite brand (consumer)	Vodacom	2
Community upliftment (consumer)	Vodacom	3
	MTN	10

Source: Affinity Advertising and Publishing, 2009:62

Vodacom was rated among the top ten consumer brands on the dimension *South Africa's overall favourite brand* in 2006 to 2009. MTN was rated among the top ten consumer brands on the dimension *South Africa's overall favourite brand* in 2008 (Affinity Advertising and Publishing, 2009:62).

The development of a successful brand requires a branding strategy. Central to the branding strategy of any company is the decision to use individual brands, family brands, company or corporate brands (Strydom *et al.*, 2000:210-211; Lamb *et al.*, 2008:217). An individual brand can be defined as a brand that is restricted to essentially one product category. A family brand can be defined as a brand that is used in more than one product category but this brand does not necessarily use the name of the company or corporation itself. Similar to the family brand the corporate or company brand can be used in more than one product category, with the difference that the name of the company or corporation is used with the brand (Keller, 2003:536-537; Strydom *et al.*, 2000:211).

Branding at the corporate or company level is a clear feature of the branding strategy used by Vodacom, MTN and Cell C. The corporate name is used by all the mentioned network service providers in the marketing of their products and services to the South African market (Affinity Advertising and Publishing, 2009: 182 and 231). Care is taken to ensure the development and maintenance of a positive corporate image and to transfer this to the brand. Corporate social responsibility programmes and sponsorships are specifically used in this regard (Vodacom Group Limited, 2006:5 and 34).

A sub-brand can be defined as a brand that is differentiated from the parent or master brand on certain key dimensions to meet the specific requirements of a market segment (Aaker, 2002:248-249). In the South African cellular market the brand, as defined at the corporate or company level, can be viewed as the master brand. The major South African cellphone network service providers use a multi-segment targeting strategy (Lamb, *et al.*, 2008:168). As a result their branding strategy has to meet the specific requirements of each market segment. Sub-branding is used to distinguish product offerings targeted at low-end prepaid users, low-end hybrid users (for example users of family top-up packages) and high-end contract users (Vodacom Group Limited, 2006:34; James, 2006:2). The Living Standard Measure (LSM) is used as a tool by the cellphone network service providers to assist in the development of product offerings targeted at the different consumer segments. The Living Standard Measure and cellphone usage require further discussion:

1.2.4 Living Standards Measure and cellphone usage

To enable marketers to segment the South African population the South African Research Foundation (SAARF) has developed an index referred to as the Living Standards Measure (SAARF, 2007:1).

The Living Standards Measure is composed of 29 variables that are associated with socio-economic status and advancement. It groups people according to their living standards by using criteria such as degree of urbanisation and ownership of cars and

major appliances (SAARF, 2007:1) By using these 29 variables a scale that divides the South African population into ten segments (groups), ranging from LSM one to ten, was developed. LSM one is at the lowest end of the scale and LSM ten at the highest. The LSM seven to ten groups are further divided into low and high subsections, referred to as “LSM seven low” and “LSM seven high”, “LSM eight low” and “LSM eight high”, “LSM nine low” and “LSM nine high”, and “LSM ten low” and “LSM ten high” (SAARF, 2010a:31). In this study the low and high subsections will not be used and the groups will therefore be referred to as LSM seven, LSM eight, LSM nine and LSM ten. The combined low-high subsections for the LSM seven to LSM ten groups provided sufficient differentiation for the purpose of this study.

The LSM scale was developed to maximise variation between groups and to minimise variation within groups. However, individuals in one group do not differ in all respects from those in other groups and all the individuals in one group are not exactly the same. Because not all of a person’s behaviour and characteristics are driven by socio-economic factors, the SAARF’s LSM scale is better at differentiating between some things than others (SAARF, 2007:1). The LSM scale differentiates very well between the different LSM groups with regard to the use of telecommunication services. Table 1.5 presents the use of telecommunication services, as well as average household income, for the LSM one to LSM ten groups:

TABLE 1.5 THE USE OF TELECOMMUNICATION SERVICES ACCORDING TO LSM GROUP

LSM	Individuals (1)	Percentage (%) of total	Fixed line at home (%)	Use of a cell-phone (%)	Calls on contract (%)	Accessed Internet in previous seven days (%)	Laptop in home (%)	Average household income per month
1	973 361	3.10	0.00	26.90	0.00	0.00	0.00	R1 386
2	2 304 001	7.30	0.60	48.70	0.80	0.10	0.00	R1 564
3	2 510 530	8.00	1.10	58.40	0.30	0.30	0.00	R2 116
4	4 501 434	14.30	2.80	63.00	1.00	0.40	0.10	R2 580
5	5 004 233	15.90	3.50	69.40	1.00	1.60	0.30	R3 627
6	5 941 572	18.80	11.00	76.30	3.30	5.20	1.80	R5 990
7	3 111 191	9.90	24.40	83.00	8.40	11.20	5.60	R9 694
8	2 390 923	7.60	34.30	85.00	16.20	16.70	11.20	R13 188
9	2 828 809	9.00	44.10	91.20	27.20	30.20	22.90	R17 809
10	1 958 496	6.20	60.20	95.40	53.50	55.30	45.70	R26 602

Note: 1) Individuals 16 years and older

Source: SAARF, 2010b

As reflected in table 1.5 the penetration of telecommunication services increases significantly from LSM one to LSM ten. The percentage of individuals with a fixed-line telephone service at home increases from 0% in LSM one to 60.2% in LSM ten; the use of a cellphone increases from 26.9% to 95.4%; contract cellphone usage increases from 0% to 53.5% and Internet access within the previous seven days increases from 0% to 55.3%; the incidence of a laptop in the household increases from 0% to 45.7% and the average monthly household income increases from R1 386 in LSM one to R26 602 in LSM ten. Contract users tend to be heavier users of cellphone services in comparison with non-contract users (Vodacom Group Limited, 2006:35). It is clear from table 1.5 that cellphone penetration and sophistication of cellphone services used increase as individuals fall into higher LSM groups. In addition level of education, ownership of durable goods and urbanisation increase as individuals fall into higher LSM groups (SAARF, 2007:1).

The degree of urbanisation is used as one of the living standards criteria in the LSM scale to categorise individuals into different LSM groups (SAARF, 2009:36). The term “community size” is used by the SAARF to refer to the population density of a community. Table 1.6 presents a breakdown of cellphone usage and calls made on contract according to community size, as reported in the All Media and Products Survey (SAARF, 2010).

TABLE 1.6 CELLPHONE USAGE AND CALLS ON CONTRACT ACCORDING TO COMMUNITY SIZE

Community size	Individuals: 16 years and older	Use of a cellphone	Percentage (%)	Calls on contract	Percentage (%)
Metropolitan	10 881 216	8 721 796	80.20	1 686 560	15.50
Cities and large towns	4 158 598	3 232 141	77.70	510 475	12.30
Small towns and large/ small villages	3 989 650	2 801 364	70.20	320 139	8.00
Settlements & rural areas (less than 500 people)	12 495 086	8 001 563	64.00	268 693	2.20
Total	31 524 550	22 756 864	72.20	2 785 686	8.80

Source: SAARF, 2010b

Settlements and rural areas include communities with less than 500 people, small towns and large and small villages include communities with 500 to 39 999 people, cities and large towns include communities with 40 000 to 249 999 people and metropolitan areas include communities with more than 250 000 people (SAARF, 2008:11).

As indicated in table 1.6, cellphone use (penetration) increases from 64% in settlements and rural areas to 80.2% in metropolitan areas. The use of a contract service increases from 2.2% in settlements and rural areas to 15.5% in metropolitan areas. These figures

make it clear that cellphone penetration and sophistication of use increase as the size of the community in which individuals live increases.

The higher levels of penetration and heavier and more sophisticated use of cellphone services amongst the upper end of the LSM groups (i.e. the LSM seven to LSM ten groups) have an impact on customer-based brand equity. The more sophisticated users that make heavier use of cellphone services have different requirements in terms of service delivery and they also tend to use different interfaces (touch points) to interact with network service providers (Vodacom Group Limited, 2006:35). The upper-end LSM groups are also characterised by a higher degree of urbanisation which also impacts positively on cellphone use.

Due to economies of scale and other marketing-related factors, network roll-out by the cellphone operators has always been focused to provide services in densely populated metropolitan areas before less densely populated areas. This is also the case with the network upgrades currently in progress (refer to Chapter 2, paragraph 2.3.1.5). As a result technology diffusion rates are much higher in densely populated (metropolitan) areas, than in less densely populated areas. Individuals living in metropolitan areas therefore tend to be more sophisticated users of cellphone services, compared to those living in less densely populated areas.

The target population of an empirical study can be defined as the total group of persons or a universal collection of items to which the study relates (Aaker *et al.*, 2004:375; Steyn *et al.*, 1999:16). As principal estate agents located in the Gauteng province of South Africa will be the target population for this study, this population will be discussed in more detail:

1.2.5 Principal estate agents in the Gauteng province

1.2.5.1 The role of principal estate agents

Acting on behalf of clients, estate agents are responsible for the buying, selling or renting of property. By law all estate agents in South Africa must be registered with the Estate Agency Affairs Board (EAAB). The Estate Agency Affairs Board regulates the estate agency industry by licensing practitioners. It ensures that practitioners meet certain standards in order to become licensed and prohibits unethical conduct by estate agents that are registered (www, 2007a:1).

In order to register as a principal estate agent, the person must be qualified to act as a full-status estate agent, as determined by the Board. Principal estate agents can usually be found in one of the following positions: director of a company, member of a closed corporation, partner in a partnership or sole trader (www, 2007a:1).

1.2.5.2 Profile of the South African estate agent

Statistics South Africa conducts a number of surveys that covers the South African real estate industry (Statistics SA, 2000; Statistics SA, 2005). The purpose of these surveys is to compile information for national economic accounts and therefore no profiling information on estate agents is reported. Secondary research identified only one survey that provides some profiling information on South African estate agents. The Real-estate Survey was conducted in 2004 by three participating members, i.e. Property 24, The Estate Agency Affairs Board and The Institute of Estate Agents of South Africa (Property 24.com, 2004). Responses were obtained from 1 129 estate agents. The survey results describe the typical agent as older than 47, married (70%) with two or more children (69%) and well educated. The following information was also given:

- 94% matriculated and 52 % was in possession of a tertiary qualification.
- 89% owned a desktop or laptop computer.
- 84% had their own Internet connection.
- 99% used a cellphone.

- The average age was 47 and only 8% was under the age of 30 and 51% over the age of 50.
- 80% earned an income of more than R4 999 per month.
- 15% had less than one year experience and 16 % less than two years, but more than one year, while 69% had more than two years experience.

The characteristics reported in the survey fit the profile of individuals in the LSM seven and higher groups. Considering the requirements for the status of a principal estate agent, it is very likely that the majority of principal estate agents falls into the LSM seven to LSM ten groups. Only 28% of the estate agents that participated in the survey reported their status as that of a principal estate agent. Principal estate agents are likely to have more industry experience than estate agents and therefore it may be argued that the profile of principal estate agents would fit that of the individuals in the LSM seven to LSM ten groups.

1.2.5.3 Estate agency firms and individuals registered by province

Table 1.7 presents an overview of estate agency firms and individual estate agents registered with the Estate Agency Affairs Board at the end of October 2006. Despite numerous requests the Estate Agency Affairs Board was unwilling to provide more recent data.

TABLE 1.7 REGISTERED ESTATE AGENCY FIRMS AND INDIVIDUALS

Province	Number of estate agency firms	Percentage (%)	Number of individuals	Percentage (%)
Eastern Cape	1149	7.1	4 541	6.3
Mpumalanga	469	2.9	2 345	3.3
Free State	590	3.6	2 506	3.5
Gauteng	7063	43.6	32 795	45.5
KwaZulu Natal	1824	11.3	9 241	12.8
Northern Cape	142	0.9	557	0.8
Northern Province	333	2.1	1 382	1.9
North-West Province	528	3.3	2 485	3.4
Western Cape	4110	25.4	16 224	22.5
Total	16 208	100	72 076	100

Source: Estate Agency Affairs Board (EAAB, 2006)

In line with its role in the South African economy, the Gauteng province accounts for approximately 44% of estate agency firms and 46% of individual estate agents registered with the Estate Agency Affairs Board.

1.2.5.4 Prominence of the Gauteng province

Gauteng is the smallest province in South Africa in terms of physical area (about 1% of total land mass) but has the second-largest population in the country. (KwaZulu Natal has a larger population.) In terms of economic output Gauteng is the mainstay of the South African economy with the largest contribution to gross domestic product (GDP) of all the provinces. Approximately 96% of the population in Gauteng lives in urban areas. A breakdown of the population in Gauteng by municipal area is as follows: City of Johannesburg 35%, Ekurhuleni Municipality 26%, City of Tshwane 21%, Sedibeng 9%, West Rand 8% and Metsweding 1%. Gauteng is the largest metropolitan area in South Africa. Combining Johannesburg and the East Rand into one urban agglomeration, the population totals almost six million people, putting the combined entity in the 35th position globally (Statistics South Africa, 2004:17-18).

As mentioned, approximately 96% of the population in Gauteng lives in urban areas and thus most of the principal estate agents within this province operate in metropolitan areas.

1.3. FORMULATION OF THE PROBLEM

Brand development is a strategic priority within the South African cellular market, as reflected by the investment in advertising and related brand-building programmes by Vodacom, MTN and Cell C. As a result the Vodacom and MTN brands are rated amongst the top ten most valuable brands in South Africa. The major South African cellphone network service providers use a multi-segment targeting strategy. A key point of differentiation in this strategy is the development of sub-brands targeted at two broad consumer segments, i.e. individuals in the LSM three-to-six group and the LSM seven-to-ten group (refer to Chapter 2, paragraph 2.3.3.7). Thus far no empirical research with the focus on the measurement of customer-based brand equity amongst cellular users in the LSM seven to LSM ten groups has been done. An important factor that contributes to this problem is the high cost involved in the identification and recruitment of users that fall within the LSM seven to LSM ten groups.

Principal estate agents located in Gauteng were identified as the target population for this study because of the following reasons: the use of cellular services is of critical importance to this user group; most are likely to fall within the LSM seven to LSM ten groups; a sample frame for the user group does exist (refer to Chapter 5, paragraph 5.3.6.1); and access to these users can be gained through the use of sampling techniques that do not rely on the personal judgement of the researcher to select sample elements (Malhotra, 2007:340).

The study focused on principal estate agents as a LSM seven to ten cellphone service user group in a consumer market context. The research validated this assumption as most of these users (96.69%) personally decide about the cellphone service that they use and most (98.34%) use it for both personal and business purposes. Thus, the

business-to-business context was excluded from the research. Profiling of estate agency related demographics were used to verify that estate agency related demographics did not influence the results interpreted from a consumer market perspective.

1.4. CONTRIBUTION OF THE STUDY

This study will contribute to the field of customer-based equity measurement in South Africa, with specific reference to principal estate agents located in Gauteng.

However, the findings of the study also has a wider application in the South African cellular market as it can be used in the consumer market for LSM seven to ten users with a similar demographic profile as that reported for the sample. The sample confirmed the profile of a LSM seven to ten group with an older age profile. The importance of loyalty segmentation in the measurement and tracking of customer-based brand equity was confirmed by the study. The study identified key dimensions that should be considered for inclusion in the development of a model to measure and track customer-based brand equity within the defined target market. The summated customer-based brand equity scale that has been developed can be used as a criterion variable in the measurement of customer-based brand equity in the South African cellular market. It can also be used as a criterion variable in development of customer-based brand equity measurement instruments in other consumer markets.

1.5. OBJECTIVES OF THE STUDY

The primary objective of this study will be to determine the customer-based brand equity of the major South African cellphone network service providers within the defined target population. In order to meet the primary objective, the secondary objectives entailed the following:

- to determine a profile of the user group and to compare the profile with stated descriptors for individuals in the LSM seven to LSM ten groups;
- to determine the user group's brand relationship (customer-based brand equity);
- to determine the user group's brand usage, barriers to brand usage and brand contact;
- to determine the user group's brand awareness;
- to determine the user group's preferences regarding service providers;
- to determine the user group's satisfaction with the cellphone service used;
- to determine the user group's associations attached to the brands;
- to determine the user group's assessment of brand performance;
- to determine any other relevant issues that may influence customer-based brand equity;
- to identify the key drivers of customer-based brand equity;
- to contribute to the body of knowledge regarding the measurement of customer-based brand equity in South Africa;
- to identify areas for future research in this field.

1.6. RESEARCH METHODOLOGY

At first secondary research was conducted. This was followed by primary research.

1.6.1 Secondary research

Secondary data entails the use of existing data which can be applied to solve the research problem. One of the major advantages of secondary research is that it provides background information on the research problem (Malhotra, 2007:143).

Secondary research was used to create a frame of reference for the study. The secondary research included an environmental assessment and a review of literature. The environmental assessment included an analysis of the marketing environment of the major South African cellphone network service providers. The literature review included a review of relevant literature on branding, brand management and brand equity measurement.

1.6.2 Primary research

Primary information is collected specifically to address the research problem under investigation (Aaker *et al.*, 2004:88; McDaniel & Gates, 2001:25). In this study primary data was collected by using a structured questionnaire. The questionnaire was administered by using telephone interviews and making it possible for participants to respond electronically by means of an on-line questionnaire.

1.6.2.1 Target population of the study

The target population of an empirical study can be defined as the total group of persons or a universal collection of items to which the study relates (Aaker *et al.*, 2004:375; Steyn *et al.*, 1999:16). The target population for this study was principal estate agents located in Gauteng that were registered with the Estate Agency Affairs Board as on 23 February 2009.

1.6.2.2 Sampling method and sample size

Since the target population of this study was large, only a sample of the target population was included in the survey (Aaker *et al.*, 2004:373). In a probability sample every sampled element has a known non-zero probability of being selected. A multi-stage sampling method was used (Malhotra, 2007:346; Aaker *et al.*, 2004: 414; Martins *et al.*, 1999:257-260). During the first stage estate agencies (the sample units) were selected randomly. During the second stage quota controls, based on the primary cellphone network service provider used by the principal estate agents, were used.

The total sample size required is usually determined by the sample size required for the smallest subgroup - which should consist of 50 to 100 respondents. The more homogeneous the population, the smaller the sample size needs to be (Stoker, 1989:130). A total of 255 interviews were conducted in this study. The sample size had been determined to meet the following requirements:

- user groups of more than 30 for each of the major cellphone network service providers;
- a sufficient number of respondents to analyse the data using factor analysis and multiple regression analysis (Hair *et al.*, 2010:174; Malhotra, 2007:613).

1.7. ORIENTATION OF THE STUDY

The following is an outline of the chapters in this study:

Chapter 1: Introduction to the study

This chapter presents the introduction to the study, the background to the study and the research objectives.

Chapter 2: The marketing environment of the major South African cellphone network service providers

This chapter presents an overview of the marketing environment of the major South African cellphone network service providers.

Chapter 3: Branding and brand management

This chapter presents an overview of literature on branding and brand management. It provides the context within which brand equity measurement should be assessed.

Chapter 4: The measurement of brand equity

This chapter presents an overview of literature on the measurement of brand equity. Current approaches to brand valuation and the measurement of brand equity are discussed. The empirical research findings that were obtained by applying different brand equity measurement methodologies are also presented.

Chapter 5: Research methodology

This chapter presents the research methodology, the development of the sample frame, and the statistical techniques used in the analysis of the data.

Chapter 6: Analysis of the research results

The analysis of the research results and research findings are presented in this chapter.

Chapter 7: Conclusion and recommendations

The interpretation of the research findings and the conclusion are presented in this chapter. The chapter also contains recommendations on how to measure customer-based brand equity in the defined target market. It further contains recommendations on the actions to be taken to improve the management of customer-based brand equity.

CHAPTER 2

THE MARKETING ENVIRONMENT OF THE MAJOR SOUTH AFRICAN CELLPHONE NETWORK SERVICE PROVIDERS

2.1. INTRODUCTION

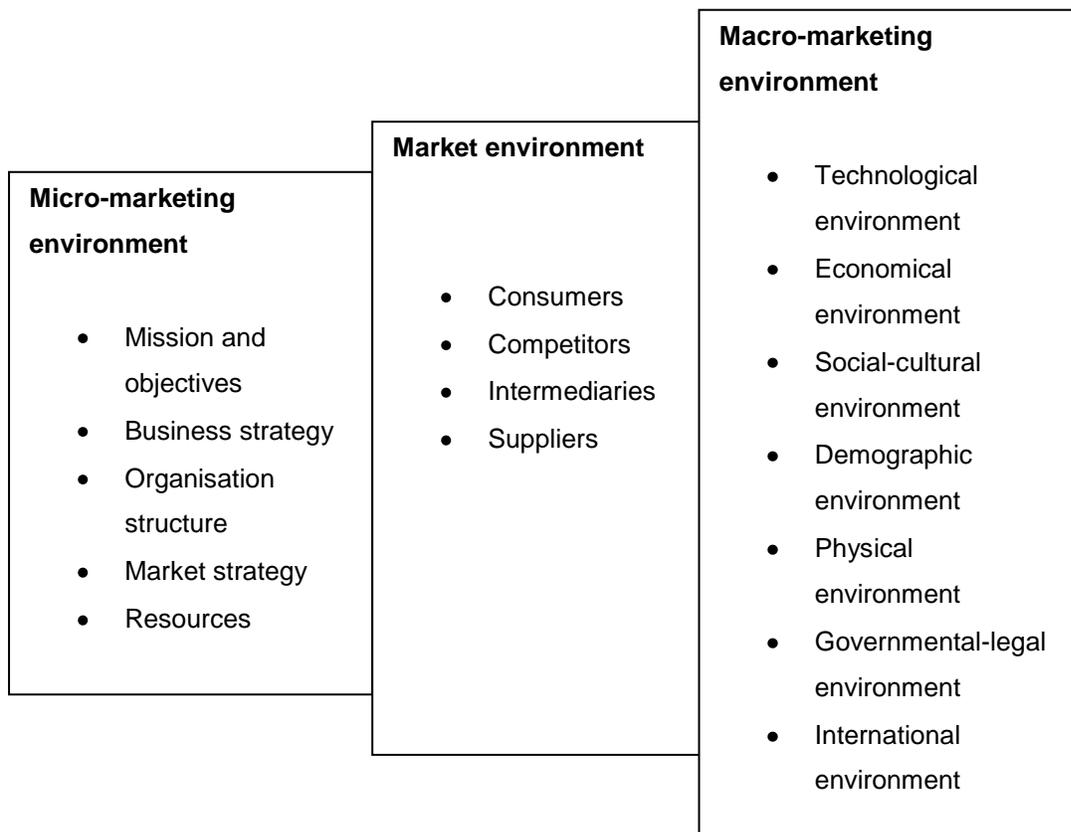
Most of the cellphone network infrastructure in South Africa is owned and managed by three licensed cellphone network operators, i.e. Vodacom, MTN and Cell C. Each of the mentioned network operators owns a network service provider company that serves as a primary channel to the market. These service provider companies are the major cellphone service providers to the South African cellular market. They control more than 70% of the total subscriber base and they are the driving force ultimately responsible for branding in this market.

The purpose of this chapter is to provide an overview of the marketing environment of the major cellphone network service providers in South Africa. First a short theoretical overview of the marketing environment as a concept will be presented. Then the three major cellphone network service providers will be discussed. This discussion will be followed by an overview of the regulated environment. In conclusion the strategies of the major network service providers will be summarised. The secondary information given in this chapter reflects the marketing environment as on 31 December 2009.

2.2. DEFINING THE MARKETING ENVIRONMENT

The marketing environment includes all the variables and forces that influence marketing decisions (Kotler & Armstrong, 2006:55). The composition of the marketing environment is presented in figure 2.1:

FIGURE 2.1 COMPOSITION OF THE MARKETING ENVIRONMENT



Sources: Adapted from Kotler & Armstrong (2006:62-94) and Strydom et al. (2000:39-67)

As indicated in figure 2.1, the marketing environment consists of three principal components: the micro-marketing environment, the market environment and the macro-marketing environment.

The micro-marketing environment refers to the internal environment of the business itself. The variables in this sub-environment are largely under the control of management and include aspects such as the organisation's mission and objectives, organisational structure, market strategy and resources (Lamb et al., 2008:36-38).

The market environment falls just outside the business. The key variables in this environment include consumers, competitors, intermediaries and suppliers. Although

management can influence some of these variables by adjusting its strategy, it has no control over these variables (Strydom *et al.*, 2000:44-51).

In addition to the market environment that has a direct effect on the business, the business is also influenced by the macro-environment. The macro-environment includes all the variables that either directly or indirectly influence the business and its market environment. These variables are the uncontrollable forces in the environment and can be categorised into six “sub-environments”, i.e. the technological, governmental-legal, economic, social-cultural, demographic and international environment (Kotler & Armstrong, 2006:55; Du Plessis *et al.*, 2001:23; Strydom *et al.*, 2000:51-67).

Following this theoretical overview of the marketing environment, the three major cellphone network service providers to the South African cellular market will be discussed:

2.3. THE SOUTH AFRICAN CELLPHONE NETWORK OPERATORS

As previously mentioned, the network service provider companies owned by the network operators Vodacom, MTN and Cell C are the major cellphone network service providers to the South African cellular market. Information regarding financials, operations and marketing is reported by the network operators on a regular basis in order to keep the investment community, users and other stakeholders informed. This information was analysed to identify those areas and forces in the marketing environment that are the most likely to influence the marketing decisions of the major cellphone network service providers. The following areas were identified: group structure, service provider and distribution channels, key financial information, subscriber base, network infrastructure and technology, products and services, and the focus on strategic growth.

2.3.1 Vodacom

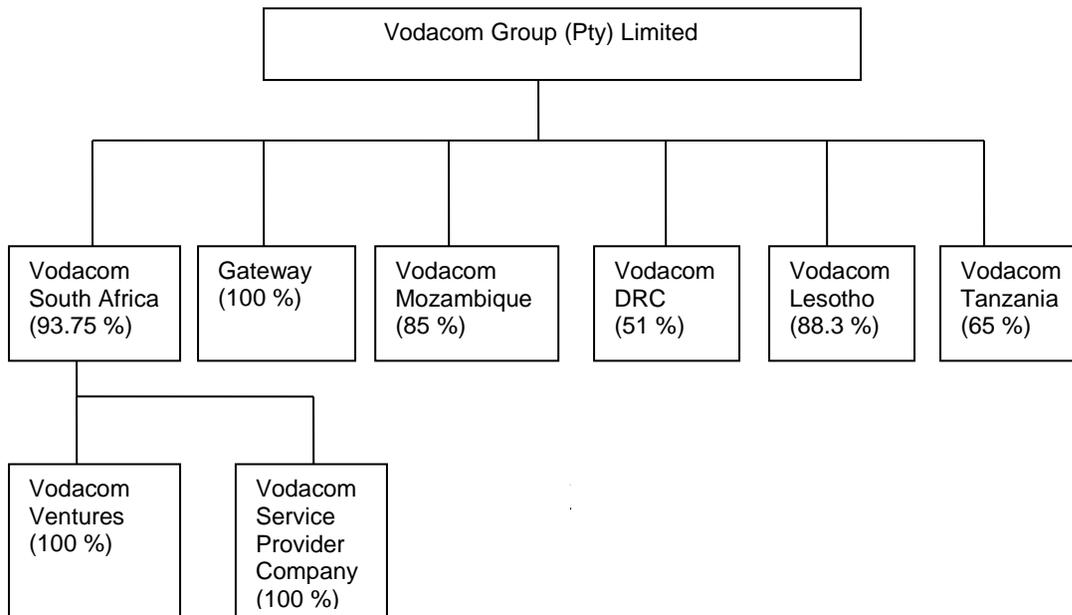
Licensed in September 1993, Vodacom was the first cellphone network operator in South Africa. By using its first-mover advantage to roll out its network and to gain a share in the market, Vodacom is the leader with regard to market shares in the South African cellular market. On 31 December 2009 Vodacom's market share in South Africa was estimated at 53% (Vodacom Group Limited, 2010a: 61).

2.3.1.1 Group structure

In 1993 the Vodacom Group and Vodacom South Africa were incorporated in South Africa as a joint venture of Telkom, Vodafone Plc and VenFin Limited. Prior to 20 April 2006 all the issued share capital of the Vodacom Group was held by VenFin (15%), Vodacom South Africa (35%) and Telkom (50%). On 20 April 2006 Vodafone acquired the entire share capital of VenFin, resulting in a change in the shareholding of the Vodacom Group. Vodafone, through its wholly owned subsidiaries, Vodafone Telecommunications Investments SA and Vodafone Holdings SA, owned 50% and Telkom the other 50%. In November 2008 Vodafone acquired an additional 15% stake in Vodacom from Telkom SA for R22.5 billion. Vodafone's shareholding in the Vodacom Group increased to 65%. The remaining 35% shareholding was demerged by Telkom SA to its shareholders. The Vodacom Group listed on the Johannesburg Stock Exchange in early 2009 (BMI-TechKnowledge, 2009a:362; Vodacom Group Limited, 2009a:21-26).

The operational structure of the Vodacom Group and its principal subsidiaries is presented in figure 2.2:

FIGURE 2.2 VODACOM GROUP STRUCTURE



Source: Vodacom Group Limited, 2009a:26

As indicated in figure 2.2, the Vodacom group owns 93.75% of Vodacom South Africa. Vodacom’s BEE (Black Economic Empowerment) partners own 6.25% of Vodacom SA. These partners (with percentage of ownership indicated in brackets) are YeboYethu (3.44%), Royal Bafokeng Holdings (Pty) Ltd (1.97%) and Thebe Investment Corporation (Pty) Ltd (0.84%). The Vodacom Group owns 100% of Gateway, 85% of Vodacom Mozambique, 51% of Vodacom DRC, 88.3% of Vodacom Lesotho and 65% of Vodacom Tanzania. The remaining shares of the operations outside South Africa are owned by local partners in the respective countries. As previously mentioned, Vodafone owns 65% of the Vodacom Group.

Vodafone Group Plc

The Vodafone Group Plc provides an extensive range of mobile telecommunication services, including voice and data communications. It is the world’s largest cellular telecommunications company, with a significant presence in Continental Europe, the United Kingdom, the United States and the Far East through the Group’s subsidiaries,

associated undertakings and investments. The Group's mobile subsidiaries operate under the name Vodafone. In the United States of America the Group's associated undertakings operate as Verizon Wireless. The Group has also entered into arrangements with network operators in companies where the Group does not hold any equity stake. Under the terms of these partner network agreements, the Group and its partner networks co-operate in the development and marketing of global services under dual brand logos (www, 2007b:1).

Vodacom and Vodafone co-operate in a number of areas where Vodacom can leverage Vodafone's expertise, product innovation, marketing, resources and global footprint. These areas include roaming products and access to roaming agreements between members of the Vodafone Group (including its partner market networks); innovative mobile connectivity products such as BlackBerry from Vodafone, Vodafone live! and Vodafone Mobile Connect Card; involvement in global handset procurement arrangements; the purchase and deployment of network equipment and new technologies; co-operation in the acquisition and service of international corporate customers; and sharing of best practice in technical and commercial programmes. The relationship between Vodafone and Vodacom is governed by a branding agreement and co-operation agreement. In terms of these agreements Vodacom pays Vodafone fees for services rendered, as well as licensing fees for certain Vodafone-branded products, based on revenue sharing arrangements. Vodacom paid Vodafone total fees of R304 million in the financial year that ended on 31 March 2008 (Vodacom Group Limited, 2009a:25).

Vodacom South Africa

The Vodacom Service Provider Company (Pty) Ltd is wholly owned by Vodacom South Africa (refer to figure 2.2). It is the flagship of Vodacom's service provider channel in South Africa. On 31 December 2008 Vodacom SA managed 97.2% of the South African customer base. In February 2009 Vodacom SA acquired a 51% interest in Storage echnology Services (Pty) Ltd, also referred to as "StorTech" — a managed storage services company (Vodacom, 2007:26; Vodacom Group Limited, 2009a:24).

Vodacom Ventures

Vodacom Ventures is also wholly owned by Vodacom South Africa (refer to figure 2.2). It was founded in 2006 for the purpose of investing in companies that could provide innovative telecommunications products and services and that could offer Vodacom commercial benefits. Vodacom has interests in five companies providing services such as network access and social networking (Vodacom Group Limited, 2009a:24).

Gateway

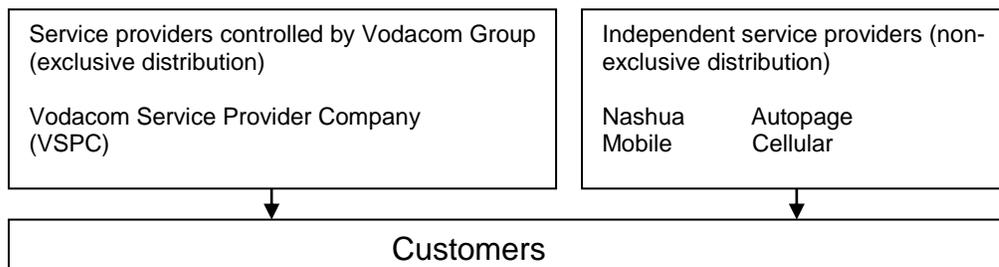
Gateway, also wholly owned by the Vodacom Group, was acquired in December 2008. It is one of Africa's largest providers of interconnection services via satellite and terrestrial network infrastructure to both African and international telecommunications companies. Gateway also provides an extensive range of high-quality end-to-end connectivity solutions to multinational corporations operating across Africa. Gateway was acquired to support Vodacom's growth strategy. The strategic benefits provided by Gateway include the following:

- It supports Vodacom's international expansion by broadening its international presence in key markets throughout Africa, especially Nigeria.
- It creates a platform for the Vodacom Group to service multinational customers and international telecommunications providers seeking African connectivity.
- It complements the Vodacom Group's business strategy in South Africa, by supporting the roll-out of products and services across the African continent. It also makes the marketing of converged fixed and mobile offerings to Gateway's blue-chip customer base possible across Africa. Gateway's Business Services Division has been integrated into Vodacom Business Africa. Gateway has a presence in 14 African countries (Vodacom Group Limited, 2009a:2; Vodacom Group Group Limited, 2010b:28).

2.3.1.2 Vodacom service providers and distribution channels

As was previously mentioned, Vodacom Service Provider Company (VSPC) is the flagship of Vodacom's service provider channel in South Africa, controlling the greater part of the total South African customer base. In addition to VSPC, Vodacom also makes use of independent mobile service providers (MSPs), i.e. Autopage and Nashua Mobile (Vodacom, 2009:24). Vodacom South Africa has contracts with the MSPs for the distribution of its services. Each of these service providers (MSPs) has its own individual brand, manages the customer interface and is responsible for the billing and credit control of its own customers on behalf of Vodacom. The service providers offer individualised value-added services such as customer care, insurance and itemised billing. Figure 2.3 presents an overview of Vodacom's service providers to consumers in the South African cellular market:

FIGURE 2.3 VODACOM SERVICE PROVIDERS



**Sources: Vodacom Group Limited, 2007:26
Vodacom Group Limited, 2009a:26**

During the initial phase of its network roll-out, Vodacom was using MSPs to drive customer growth. Upon completion of the network roll-out, Vodacom South Africa embarked on a series of transactions to obtain control of the majority of the MSPs.

The Vodacom Group owns 24.9% of WBS Holdings (Pty) Ltd (WBSH), the holding company of the entity trading as iBurst. iBurst supplies high-speed connectivity to South African consumers through broadband Internet and e-mail services. In March 2007 Vodacom South Africa entered into an infrastructure agreement with Wireless Business

Solutions (Pty) Ltd (WBS), a wholly owned subsidiary of WBSH. In terms of the agreement WBS appointed Vodacom South Africa to design and construct a WiMAX (Worldwide Interoperability for Microwave Access) network for use by WBSH. WBS and VSPC are service providers offering WiMAX services (Vodacom Group Limited, 2009a:24).

The Vodacom South Africa controlled distribution network includes the following:

- Vodaworld, a unique one-stop mobile telecommunications mall, showcasing the latest technology in communications solutions;
- Vodacom Direct, Vodacom's call-centre-based selling division;
- an online channel and a direct-fulfilment call centre;
- Vodacom Business which operates a direct sales division concentrating on the sale of contracts, data products, value-added services and the recently introduced broadband portfolio of ICT (Information Communication Technology) converged services (Vodacom Group Limited, 2009a:24; Vodacom Group Limited, 2010b:28).

The distribution network controlled by Vodacom South Africa is supported by extensive distribution channels for airtime and mobile phones, including wholesale channels, direct sales forces, independent dealers, franchises, national chains and informal distribution channels. In South Africa Vodacom has more than 80 000 points of sale (Vodacom Group Limited, 2009a:31; Vodacom Group Limited, 2010b:28).

2.3.1.3 Key financial information

The total revenue for the Vodacom Group and Vodacom South Africa for the period 2004 to 2009 is presented in table 2.1:

**TABLE 2.1 REVENUE FOR VODACOM GROUP AND VODACOM SOUTH AFRICA:
2004 TO 2009**

Vodacom Group/ Vodacom SA	End of financial year: 31 March (Rand in millions)					
	2004	2005	2006	2007	2008	2009
Vodacom Group	22 855	27 315	34 043	41 146	48 178	55 187
Vodacom South Africa (1)	21 350	25 041	31 069	37 125	42 852	47 483
Vodacom South Africa: percentage (%) of total	93.42%	91.67%	91.26%	89.94%	88.95%	86.04%

Notes: (1) Gateway revenue, reported for the first time in 2009, amounted to R808 million (included in Vodacom SA revenue).

Sources: Vodacom Group Limited, 2006:18; Vodacom Group Limited, 2007:17; Vodacom Group Limited 2009b:4-5

As indicated in table 2.1, Vodacom South Africa's revenue accounted for 86.04% of the Vodacom Group's total revenue in 2009. Revenues derived from Vodacom South Africa declined from 93.42% in 2004 to 86.04% in 2009. As the focus of this study is on the South African cellular market, key financial information for Vodacom South Africa will be discussed in more detail:

Table 2.2 presents the total revenue for Vodacom South Africa with a breakdown according to the major categories of revenue from 2004 to 2009:

TABLE 2.2 VODACOM SOUTH AFRICA BREAKDOWN OF REVENUE: 2004 TO 2009

Total revenue and revenue categories	End of financial year: 31 March (Rand in millions)						Percent age (%) of total 2009
	2004	2005	2006	2007	2008	2009	
Total revenue 1)	22 855	27 315	31 081	37 039	42 825	47 436	100.0
Airtime, connection and access	12 738	16 191	18 169	21 045	23 596	25 771	54.3
Data revenue	1 039	1 340	1 885	3 113	4 670	5 973	12.6
Interconnection	5 785	5 924	6 142	7 058	7 938	8 625	18.2
Equipment sales	2 275	2 687	3 902	4 605	4 931	5 172	10.9
International airtime	659	887	721	962	1 387	1 475	3.1
Other sales and services	359	286	263	256	303	420	0.9

Notes: (1) Total revenue for 2004 and 2005 reflects that of the Vodacom Group. In 2004 R1 962 million was generated outside South Africa and in 2005 R2 274 million.

Sources: Vodacom Group Limited, 2006:18; Vodacom Group Limited, 2007:17; Vodacom Group Limited, 2009b:105-107

As indicated in table 2.2, airtime, connection and access accounted for 54.3% of the total revenue in 2009, data revenue for 12.6%, interconnection revenue for 18.2%, equipment sales for 10.9%, international airtime for 3.1% and other sales and services for 0.9%. From 2004 to 2009 total revenue increased from R22 855 million to R47 436 million - an increase of 107.6%. Airtime, connection and access revenue, the largest revenue category, increased from R12 738 million in 2004 to R25 771 in 2009 - an increase of 102.3%. Data revenue increased from R1 039 million to R5 973 million - an increase of 474.9%. As will be discussed later in this study, data revenue has become a major focus area to grow future revenues.

Table 2.3 presents the EBITDA (Earnings Before Interest, Taxes, Depreciation and Amortisation), EBITDA margin and capital expenditure for Vodacom South Africa for the period 2004 to 2009:

**TABLE 2.3 VODACOM SOUTH AFRICA EBITDA AND CAPITAL EXPENDITURE:
2004 TO 2009**

EBITDA/capital expenditure	End of financial year: 31 March (Rand in millions; percentage (%))					
	2004	2005	2006	2007	2008	2009
EBITDA Rand in millions (1)	7 526	8 995	11 053	12 963	14 790	16 222
EBITDA margin (%)	33.9	35.1	34.7	34.6	34.2	34.2
Capital expenditure: Rand in millions	1 654	2 777	4 384	4 993	4 252	4 627

Notes: (1) Earnings before interest, taxes, depreciation and amortisation (EBITDA)

Sources: Vodacom Group Limited, 2006:17 and 25; Vodacom Group Limited, 2007:15-19 and 21; Vodacom Group Limited, 2009b:6-9

EBITDA increased from R7 526 in 2004 to R16 222 in 2009 - an increase of 115.6%. The EBITDA margin varied from a low of 33.9% to a high of 35.1%. Capital expenditure increased from R1 654 million in 2004 to R4 627 in 2009 - an increase of 179.7%.

2.3.1.4 Vodacom South Africa subscriber base and related information

The subscriber base of Vodacom South Africa and related information for the period 2004 to 2009 are presented in table 2.4:

TABLE 2.4 VODACOM SOUTH AFRICA: SUBSCRIBER BASE AND RELATED INFORMATION

Description	Year					
	2004	2005	2006	2007	2008	2009
Customers (1) :						
Total (in thousands)	9 702	12 813	19 132	22 909	24 718	27 507
Contract (in thousands)	1 420	1 872	2 362	3 013	3 541	3 946
Prepaid (in thousands)	8 282	10 941	16 770	19 896	21 177	23 561
Churn rate (2)						
Total (%)	36.6	27.1	17.7	33.8	42.3	40.1
Contract (%)	10.1	9.1	10.0	9.7	8.3	9.9
Prepaid (%)	41.3	30.3	18.8	37.5	47.9	45.4
Average revenue per user (ARPU) - Rand per month (3)						
Total	177	163	139	125	128	133
Contract	643	624	572	517	486	474
Prepaid	90	78	69	63	62	68
Mobile penetration (%) (4)	-	49	71	84	94	108
Market share (%) (4)	54	56	58	58	55	53

- Notes:** (1) *Number of customers registered on the network including inactive Customers*
- (2) *The average monthly number of disconnections during the period divided by the average monthly customer base for the period*
- (3) *The average monthly revenue during the period divided by the average monthly customer base for the period (ARPU excludes revenues from equipment sales and other sales and services, as well as revenues from national and international users roaming on Vodacom's network.)*
- (4) *Mobile penetration and market share were calculated based on Vodacom's total reported customers and the estimated total reported customers of MTN and Cell C.*

Sources: Vodacom Group Limited, 2006:43; Vodacom Group Limited, 2007:38; Vodacom Group Limited 2009a:32; Vodacom Group Limited 2010a:61

The total customer base of Vodacom South Africa grew from 9.725 million in 2004 to 27.625 million in 2009 - an increase of 184.1%. The contract customer base grew from 1.420 million in 2004 to 3.946 million in 2009 - an increase of 177.9%. The prepaid

customer base grew from 8.282 million in 2004 to 23.561 million in 2009 - an increase of 184.5%. The churn rate varied from a high of 42.3% to a low of 17.7% during the period. The churn rate for contract customers varied from a high of 10.1% to a low of 8.3% and for prepaid customers from a high of 47.9% to a low of 18.8%.

The total average revenue per user varied from a high of R177 per month to a low of R125 per month during the period from 2004 to 2009. The average revenue per user on a contract varied from a high of R643 to a low of R474 and the average revenue per prepaid user from a high of R90 to a low of R62. Mobile penetration increased from an estimated 49% in 2005 to 108% in 2009. Vodacom South Africa's estimated market share varied from a high of 58% to a low of 53% during the period.

2.3.1.5 Network infrastructure and technology

Vodacom South Africa operates the largest GSM (Global System for Mobile Communications) network in South Africa. On 31 March 2010 the South African access network included 7 817 base stations. All of Vodacom's operations support GSM 2G technology as a minimum. This technology provides customers with voice, text messaging and basic data capabilities. All the Vodacom sites also support GPRS (General Package Radio Service) data functionality and many sites support more advanced EDGE (Enhanced Data for GSM Evolution) functionality. GPRS and EDGE enable mobile devices to send and receive data over a packet-based network, making services such as Internet and e-mail access possible (Vodacom Group Limited, 2010b:20).

More than half of Vodacom's South African customers have 3G coverage in addition to the GSM 2G capabilities. The 3G technology provides a significant increase in data-transfer speed, compared to GPRS and EDGE (Vodacom Group Limited, 2010b:20).

Data speed improves as follows from the basic GSM service to 3G HSDPA (High-speed Downlink Packet Access) functionality: GSM 9.6 kilobits per second; GPRS up to 80

kilobits per second; EDGE up to 170 kilobits per second; 3G up to 384 kilobits per second; and 3G HSDPA up to 1.8 megabits per second (www.2007b:1).

By the end of the 2010 financial year all of Vodacom's 3G sites had been upgraded to 14.4 megabits per second. During the 2010 financial year Vodacom was upgrading approximately 2 000 base stations to the next generation LTE (Long-term Evolution) technology as part of the ongoing access-network renewal programme. The LTE technology provides increased data speed, as well as the benefits of reduced energy utilisation and a smaller equipment footprint (Vodacom Group Limited, 2010b:20).

Network quality is one of Vodacom's key focus areas. This includes improving call clarity, reducing call-drop rates, improving data handling capacity, increasing data speed and reducing latency (response times). In addition to the access-network evolution, Vodacom has decided on the self-provisioning of key parts of the transmission network. This entails the building of Vodacom's own transmission network in preference to relying on third-party infrastructure. The transmission network carries voice and data traffic from Vodacom's base stations to other parts of the network. As part of the programme of self-provisioning Vodacom has installed eleven fibre rings, covering all of South Africa's major metropolitan areas. Vodacom is also developing a national fibre network in conjunction with MTN and Neotel (Vodacom Group Limited, 2010b:21).

Vodacom has also invested in the Eastern Africa Submarine Cable System (EASSY) and West Africa Cable System (WACS). These cables, along with the SEACOM cable (a fiber-optic submarine cable providing high capacity bandwidth to Southern Africa, East Africa, Europe, and South Asia), will provide a major increase in capacity, connecting Africa with the rest of the world. It will ultimately reduce the cost of carrying international data traffic. The SEACOM cable went live in 2009. The EASSY cable was due for completion in middle 2010 and the WACS cable is due for completion in middle 2011 (Vodacom Group Limited, 2010b:21).

As part of Vodacom's continued network modernisation Vodacom is preparing itself for the shift to the next-generation LTE technology and for the move to an all-IP (Internet Protocol) structure where voice and data are carried in the same fashion (Vodacom Group Limited, 2010b:21).

2.3.1.6 Products and services

Vodacom's product range includes prepaid, contract and top-up voice and data services, handset sales, national and international roaming services, DStv pay-television packages and business solutions (Vodacom, 2007:28-30). Branding is used to distinguish products from those of competitors and to communicate specific value propositions to the different market segments served by Vodacom (Kotler & Keller, 2006:250). Vodacom's use of branding to market its services will be discussed in Chapter 3.

2.3.1.7 Strategic growth focus

Vodacom has formulated a four-pillar strategy to guide future growth. The four pillars are: growing the core mobile business, leadership in broadband, development of ICT converged solutions and selective expansion in sub-Saharan Africa (Vodacom Group Limited, 2010b:12).

In order to grow the core mobile business Vodacom will strive to maintain its brand leadership position, to increase the focus on customer value, and to provide service excellence (Vodacom Group Limited, 2010b:13).

In terms of leadership in the field of broadband, Vodacom will maintain its network coverage advantage, provide compelling device propositions (for example a laptop as part of data contracts) and strive to provide an exciting customer experience. Less than 5% of the customer base regularly uses a high-speed broadband service and this provides a significant growth opportunity (Vodacom Group Limited, 2010b:13). During the period from 2007 to 2009 a reduction in prices was one of the major drivers of broadband connections (BMI-TechKnowledge, 2009a:52).

Vodacom's development of ICT converged solutions will leverage its position in the corporate market by using the resources obtained by the acquisition of Gateway and the link-up with Vodafone Global Enterprise. A key focus area is the penetration of multinational accounts (Vodacom Group Limited, 2010b:13).

Selective expansion in sub-Saharan Africa will entail consolidating the Gateway business and Vodacom Business Africa and focusing on the current business services in Tanzania and Nigeria (Vodacom Group Limited, 2010b:13).

2.3.2 MTN

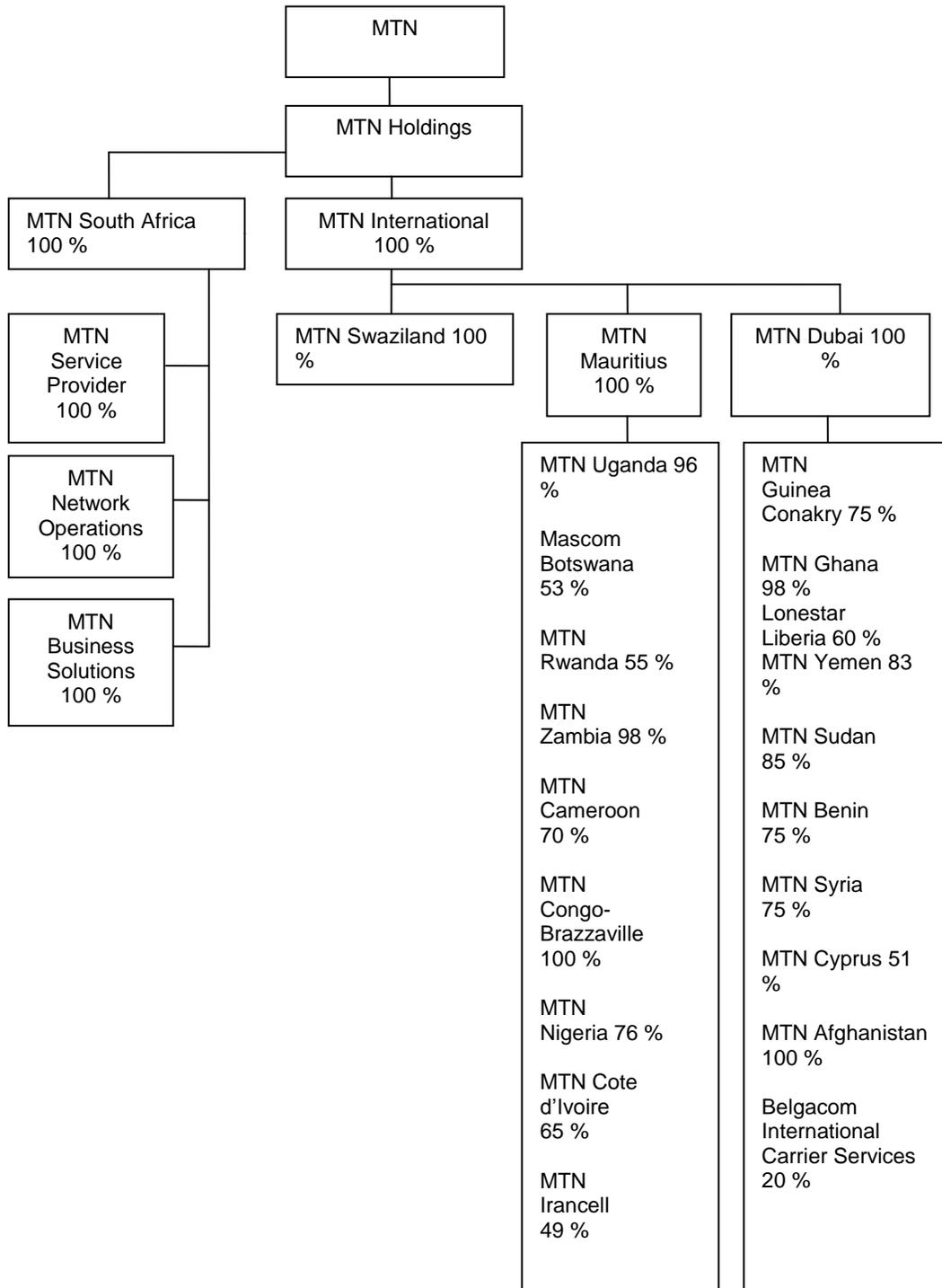
Launched in 1994, MTN was the second cellphone network operator to be active in South Africa. It has the second-largest market share in the South African cellular market. Prior to 2007 Vodacom's expansion into international markets was restricted by a shareholders' agreement between Vodacom and Vodafone. This agreement did not allow Vodacom to enter markets located north of the equator in Africa (Business Monitor International, 2007:45). MTN used this as a competitive advantage and followed a pre-emptive-move strategy (Du Plessis *et al.*, 2001:205) to enter new emerging markets in Africa and the Middle East.

2.3.2.1 Group structure

The MTN Group is a multinational telecommunications group offering cellular network access and business solutions. MTN has operations in 21 countries in Africa and the Middle East. Operations cover the following regions: South and East Africa, West and Central Africa, the Middle East and North Africa (MTN Group Limited, 2009a:2).

The MTN Group structure as on 31 December 2009 is presented in figure 2.4:

FIGURE 2.4 MTN GROUP STRUCTURE



Source: MTN Group Limited, 2009a: 4-5

The MTN group is listed on the JSE (Johannesburg Stock Exchange Limited) under the share code “MTN” (MTN Group Limited, 2009:4; BMI-TechKnowledge 2009a:362).

MTN Holdings

Mobile Telephone Networks Holdings (Pty) Ltd (MTN Holdings) is an investment holding company incorporated in South Africa. As indicated in figure 2.4, MTN Holdings owns 100% of MTN South Africa and 100% of MTN International.

MTN South Africa

MTN South Africa controls the South African operations. It owns 100% of the MTN Service Provider Company, 100% of MTN Network Operations and 100% of MTN Business Solutions. During the 2009 financial year Verizon and MTN Network Solutions were merged into MTN Business (MTN Group Limited, 2009b:4).

MTN International

MTN International owns 30% of MTN Swaziland and 100% of MTN Mauritius. In addition to its 100% ownership of MTN Dubai, MTN International’s other shareholdings include MTN Cameroon (70%), MTN Congo-Brazzaville (100%), MTN Nigeria (76%), MTN Cote d’Ivoire (65%), MTN Irancell (49%), Mascom Botswana (53%), MTN Rwanda (55%) and MTN Zambia (98%). MTN Dubai’s shareholdings include MTN Conakry (75%), MTN Ghana (98%), Lonestar Liberia (60%), MTN Yemen (83%), MTN Sudan (85%), MTN Benin (75%), MTN Guinea-Bissau (100%), MTN Syria (75%), MTN Cyprus (51%) and MTN Afghanistan (100%).

MTN Group operating regions

As previously mentioned, MTN’s operations cover the following regions: the Middle East and North Africa, West and Central Africa and South and East Africa. MTN’s group revenue for the 2008 and 2009 financial years is presented below (by region and in total):

Region	Rand in millions	
	2009	2008
Middle East and North Africa	21 525	17 215
West and Central Africa	50 543	47 682
South and East Africa	39 669	37 483
Total ¹⁾	111 737	102 380

Note: 1) Total revenue excludes company revenues from the head office which amounted to R210 million in 2009 and R146 million in 2008.

Source: MTN Group Limited, 2009b:5

In the financial year that ended on 31 December 2009 revenue derived from South Africa accounted for 83.56% of revenues derived from the South and East African region, and it accounted for 29.67% of total group revenue. The latter excludes the company revenues from the head office (MTN Group Limited, 2009b:5).

As the focus of this study is on the South African cellular market, MTN South Africa will be discussed in more detail:

2.3.2.2 MTN service providers and distribution channels in South Africa

The MTN Service Provider Company is the flagship of MTN's service provider channel to the consumer market in South Africa. The premier service delivery vehicle consists of company-owned and company-operated service centres across the nine provinces of South Africa. They provide subscribers with the full range of MTN products and services, resolving most customer queries on site and immediately (MTN Group Limited, 2005:41; MTN Group Limited, 2009c:39).

During the 2009 financial year MTN has increased its shareholding of iTalk Cellular (Pty) Ltd to 100% and has also integrated the retailer Cell Place into the organisation. The MTN Service Provider Company manages distribution agreements with wholesalers and retailers. The MTN distribution network includes a call-centre service; an online channel; a direct (corporate) sales force now falling under the auspices of MTN Business; retail

outlets such as Pick 'n Pay and Score; specialist outlets, made up primarily of franchise stores and independent dealers (an important channel of distribution for contract users); wholesalers (whose main focus is the distribution of prepaid airtime); and ATM machines available countrywide (MTN Group Limited, 2006:62-63; BMI-TechKnowledge, 2007b:132; MTN Group Limited, 2009c:39).

2.3.2.3 Key financial information

Table 2.5 presents the total revenue for MTN South Africa with a breakdown according to the major categories of revenue from 2004 to 2009:

TABLE 2.5 BREAKDOWN OF MTN SOUTH AFRICA'S REVENUE: 2004 TO 2009

Description	End of financial year: 31 December (Rand in millions)						(% of total 2009)
	2004 1)	2005	2006	2007	2008	2009	
Total revenue and revenue categories							
Total revenue	13 090	20 101	24 578	28 220	32 148	33 149	100.0
Airtime and subscription fees	7 956	11 771	14 849	15 674	17 881	17 885	53.9
Interconnect revenue	3 259	4 949	5 600	6 346	6 951	7 271	21.9
Data and SMS 2)	-	-	-	2 756	3 596	4 496	13.6
Cellular telephones and accessories	1 556	2 751	3 289	2 989	3 122	2 870	8.7
Connection fees	57	19	52	29	35	69	0.2
Other	262	611	788	426	561	558	1.7

Note: 1) Only nine months to the end of December were reported, due to a change to the end of the financial year.

2) Not provided for 2004, 2005 and 2006

Sources: MTN Group Limited, 2006:40 and 60; MTN Group Limited, 2005:27; MTN Group Limited, 2006:40; MTN Group Limited, 2007:34; MTN Group Limited, 2009b:36-38

As indicated in table 2.5, airtime and subscription fees accounted for 53.9% of the total revenue for 2009, interconnect revenues for 21.9%, data and SMS for 13.6%, cellular telephones and accessories for 8.7%, connection fees for 0.2% and other for 1.7%.

Revenue growth was analysed over the period 2005 to 2009 due to the change to the end of the financial year, as mentioned above. From 2005 to 2009 total revenue increased from R20 101 million to R33 149 million - an increase of 64.9%. Airtime and subscription fees, the largest revenue category, increased from R11 771 million to R17 885 million - an increase of 51.9%. Interconnect revenues increased from R4 949 million to R7 271 million - an increase of 46.9%. Data and SMS revenue increased from R2 756 in 2007 to R4 496 in 2009 - an increase of 63.1%. Cellular telephones and accessories increased from R2 751 million in 2005 to R2 870 million in 2009 - an increase of 4.3%. Data revenue (only reported for the first time in 2007) has grown the fastest of all the revenue categories. Data revenue has become a major focus area of future revenue growth.

Table 2.6 presents the EBITDA, EBITDA margin and capital expenditure for MTN South Africa for the period from 2004 to 2009:

TABLE 2.6 MTN SOUTH AFRICA'S EBITDA AND CAPITAL EXPENDITURE: 2004 TO 2009

Description	End of financial year: 31 December (Rand in millions; percentage (%))					
	2004 1)	2005	2006	2007	2008	2009
EBITDA	4 154	6 895	8 340	9 814	10 585	10 410
EBITDA margin (%)	31.7	34.3	33.9	34.8	32.9	31.4
Capital expenditure 2)	-	2 585	2 391	2 843	4 868	6 034

Note: 1) Only nine months to the end of December were reported, due to a change to the end of the financial year.

2) Not provided for 2004

Sources: MTN Group Limited, Integrated 2006:40 and 60; MTN Group Limited, 2005:27; MTN Group Limited, 2006:40; MTN Group Limited, 2007:34; MTN Group Limited, 2009b:36-38

EBITDA and capital expenditure growth were analysed for the period 2005 to 2009, due to the change to the end of the financial year. EBITDA increased from R6 895 million in 2005 to R10 410 in 2009 - an increase of 80.4%. The EBITDA margin varied from a low of 34.2% to a high of 35.1% during the period 2005 to 2009. Capital expenditure increased from R2 585 million in 2005 to R6 034 million in 2009 - an increase of 133.4%.

2.3.2.4 MTN South Africa subscriber base and related information

MTN South Africa's subscriber base and related information for the period 2004 to 2009 are presented in table 2.7:

TABLE 2.7 MTN SOUTH AFRICA SUBSCRIBER BASE

Description	Year					
	2004	2005(1)	2006	2007	2008	2009
Customers (in thousands)						
Total	6 270	10 235	12 483	14 799	17 169	16 067
Contract	1 191	1 654	2 132	2 493	2 754	3 023
Prepaid	5 079	8 581	10 351	12 306	14 415	13 044
Average revenue per user (ARPU) in Rand						
Total	203	169	159	149	148	145
Contract	597	541	487	396	403	365
Prepaid	104	93	94	92	97	100
Other relevant statistics (%)						
Mobile penetration	36	62	74	86	97	103
Market share	38	35	36	36	36	32

Notes: 1) The end of MTN's financial year changed from 31 March to 31 December in 2005.

Sources: MTN Group Limited, 2004:38-39;
 MTN Group Limited, Decemeber2005:22;
 MTN Group imited, 2006:56 and 60;
 MTN Group Limited, 2009:16 and 36

In 2009 contract subscribers accounted for 18.8% and prepaid subscribers for 81.2% of MTN South Africa's total subscriber base. The total subscriber base increased from 6.270 million in 2004 to 16.067 million in 2009 - an increase of 156.3%. The contract subscriber base grew from 1.191 million in 2004 to 3.023 million in 2009 - an increase of 153.8%. The prepaid customer base grew from 5.079 million in 2004 to 13.044 million in 2009 - an increase of 156.8%.

The total average revenue per user declined consistently from R203 in 2004 to R145 in 2009. The average revenue per user for contract users declined from a high of R597 in 2004 to a low of R365 in 2009. The average revenue per user for prepaid users varied from a low of R92 to a high of R104. Mobile penetration, as reported by MTN, increased from 36% in 2004 to 103% in 2009. MTN's estimated market share declined from 38% in 2004 to 32% in 2009.

2.3.2.5 Network infrastructure and technology

MTN's GSM network covers an estimated 97% of the South African population. In 2009 the network included roughly 7 700 base station sites (BMI-TechKnowledge, 2009a:363). MTN is trailing slightly behind Vodacom with its 3G roll-out. 3G services were launched at the end of June 2005 in the central business districts of Johannesburg, Midrand, Pretoria, Cape Town, Durban, Port Elizabeth and Bloemfontein (Budde Communications, 2006:118). MTN South Africa is continuing to invest in the modernisation of its 3G, 2G and overall data capacity. In the 2009 financial year a total of 1 155 base transceiver stations were integrated into the network. In addition MTN also commissioned its metropolitan fibre-optic network. As a result, circuit-switch (voice) capacity was increased by 26% and packet-switch (data) capacity by 50%. The 3G population coverage increased to 48% at the end of the 2009 financial year from the 35% in 2008 – an increase of 13% (MTN Group Limited, 2009c:39).

Other strategic network initiatives include an agreement with other operators to build a joint national fibre-optic network of 5000 km long to connect the major centres across South Africa. With the SEACOM project that went live in middle 2009, MTN South Africa

secured additional undersea capacity for international broadband. This additional capacity and the economies of scale, achieved by the merger of Verizon and MTN Network Solutions into MTN Business, made a reduction in bandwidth costs possible, which meant a decrease of roughly 30% for corporate customers (MTN Group Limited, 2009c:39).

2.3.2.6 Products and services

MTN provides a comprehensive range of cellular products and services. Prepaid options cater for low-end entry-level users and contract options are tailored to meet the lifestyle requirements of upper-end users (www,2007d:1). In an effort to create value for customers by simplifying its offerings, MTN trimmed its contract options from 64 to 22 in September 2008 (BMI-TechKnowledge, 2009a:66). In the 2009 financial year MTN introduced a money transfer service using the MTN MobileMoney solution. MTN's drive into the business market was supported by the additional resources allocated to MTN Business (MTN Group Limited , 2009c:39). MTN's use of branding in the marketing of its services will be discussed in Chapter 3.

2.3.2.7 Strategic growth focus

MTN's strategic growth focus in South Africa will be to maintain its number-two position in the consumer market and to improve its positioning in the business market. The new strategic network-infrastructure initiatives will be used to improve growth in data traffic. In the 2009 financial year MTN achieved a 75% growth in data traffic. This was helped by the deployment of various smartphone devices. These devices provide enhanced web-orientated applications and messaging capabilities. Data growth will be further supported by more content on the MTN Loaded web portal (MTN Group Limited, 2009c:39).

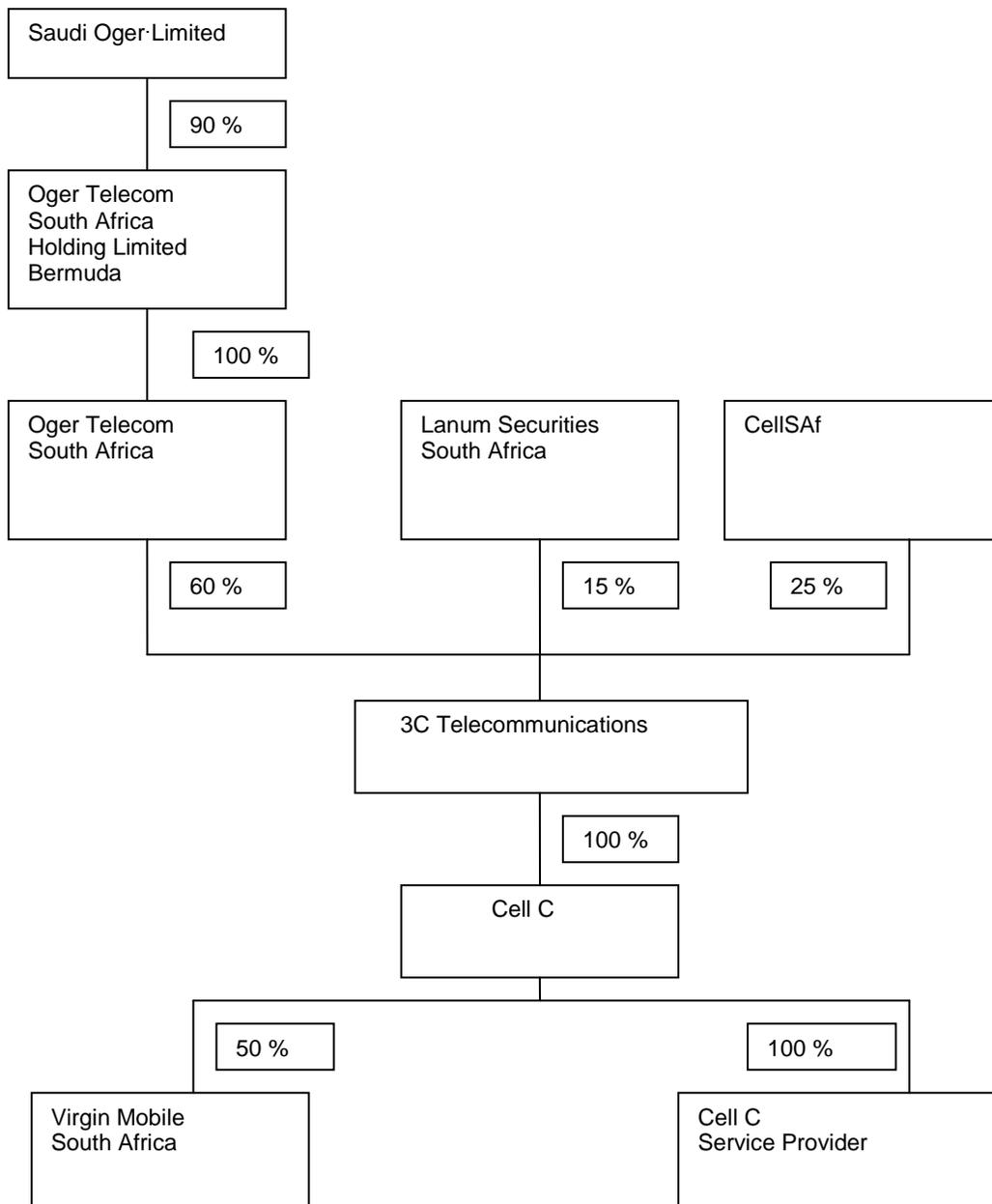
2.3.3 Cell C

Cell C (Pty) Ltd, was awarded a GSM license in February 2001. The company launched its first services around December 2001. As the third licensed cellular network operator, it is the smallest in South Africa (Budde Communications, 2006:108-109).

2.3.3.1 Group structure

The Cell C group structure as on 31 March 2009 is presented in figure 2.5:

FIGURE 2.5 CELL C GROUP STRUCTURE



Sources: Cell C, 2006b:5; Business Monitor International, 2009:60

As indicated in figure 2.5, Saudi Oger Limited is the majority shareholder (90%) of Oger Telecom South Africa Holding Limited, a holding company registered in Bermuda. Cell C is wholly owned by 3C Telecommunications which in turn is owned by Oger Telecom South Africa (60%), CellSAf (25%), and Lanum Securities SA (15%). CellSAf is owned by multiple organisations and represents the BEE business partners of the group (Business Monitor International, 2009:60).

Cell C's strategic shareholdings in South Africa include the Cell C Service Provider Company (100%) and Virgin Mobile South Africa (50%). Virgin Mobile South Africa is a 50% joint venture with the Virgin Group (Cell C, 2006b:5; BMI-TechKnowledge, 2009a:363). Cell C invested approximately R750 million to establish Virgin Mobile South Africa (www, 2007g:1). Virgin Mobile South Africa is managed and branded as a completely separate entity. Virgin Mobile South Africa provided an opportunity for Cell C to enter a niche market segment. The benefit for the Virgin Group was access to the South African cellular market without the requirement of a significant capital investment.

2.3.3.2 Cell C service providers and distribution channels in South Africa

Similar to Vodacom and MTN, the Cell C Service Provider Company is the flagship of Cell C's service provider channel in South Africa, controlling the majority of the total customer base. The Cell C distribution network includes a direct channel provided by means of a call-centre operation, an online channel, and a direct sales force targeting the corporate and government markets. The Cell C distribution network is supported by its use of distribution channel partners. The retail distribution platform includes Hi-Fi Corporation, SPAR, GloCell, Pick 'n Pay, and the ATM's of all the major banks (James, 2006:3; Cell C, 2006:44).

During the 2006 financial year Cell C launched Cell C Connect, a new channel concept. It is a one-to-one marketing and service distribution network, which makes it possible for entrepreneurs and SMMEs (Small, Medium and Micro Enterprises) to distribute Cell C services. This franchise-operated channel functions primarily in rural areas where the

distribution is not as extensive as in major city centres (James, 2006:3; Cell C, 2006b:44).

2.3.3.3 Key financial information

Cell C is not a publicly listed company and therefore does not have to comply with the same financial reporting requirements as Vodacom and MTN. Total revenue and EBITDA, as reported by Cell C for the 2008 and 2009 financial years, are presented in table 2.8:

TABLE 2.8 CELL C'S TOTAL REVENUE AND EBITDA: 2008 TO 2009

Description	End of financial year: 31 December	
	2008	2009
Revenue (in thousands) Rand	8 600 000	9 900 000
EBITDA (in thousands) Rand	800 000	1 400 000
EBITDA margin (%)	9.3	14.1

Source: Cell C, 2010a:3

As indicated in table 2.8, Cell C reported an increase of 14% in total revenue and an increase of 67% in EBITDA from the 2008 to the 2009 financial year. During the 2009 financial year shareholder loans of R6.4 billion were converted into equity. This improved the company's solvency by reducing debt and increasing equity with an equivalent amount (Cell C, 2010a:3).

In 2004 Cell C reported total revenues of approximately R4.2 billion - an increase of 135.7% for the period 2004 to 2009. Cell C reported positive earnings before interest, taxes, depreciation and amortisation (EBITDA) for the first time in the 2005 financial year. Total EBITDA for the 2005 financial year was R442 million and the EBITDA margin was 8%. The total EBITDA for the first six months of the 2006 financial year was R199 million and the EBITDA margin was 6.6%. (Cell C, 2006a:59-61; Cell C, 2006b:1).

2.3.3.4 Cell C subscriber base and related information

Table 2.9 presents the Cell C subscriber base, excluding community telephones, as reported by Cell C and other industry sources over the period 2004 to 2009:

TABLE 2.9 CELL C SUBSCRIBER BASE

Description	Active users					
	2004	2005	2006	2007	2008	2009
Total (in thousands)	2 162	2 488	2 758	4 656	6 388	6 900
Contract (in thousands)	460	556	753	1 019	n.a	n.a
Prepaid (in thousands)	1 702	1 932	1 905	3 637	n.a	n.a
Contract (%)	21.3	22.3	27.3	21.9	n.a	n.a
Prepaid (%)	78.7	77.7	69.1	78.1	n.a	n.a

Notes: *Not available (n.a)*

Sources: Cell C, 2006:1-2;

Cell C, 2006:54-57;

Business Monitor International, 2009:43;

Cell C, 2010:3

As indicated in table 2.9, the total subscriber base had grown from 2.162 million in 2004 to 6.9 million in 2009 - an increase of 219.1%. A breakdown according to contract and prepaid subscribers was only provided for the period 2004 to 2007. Contract subscribers varied from a low of 69.1% to a high of 78.7% during this period.

Cell C reported the average revenue per user (including contract subscribers, prepaid subscribers and community service telephones) as R142 in 2005 and R152 in 2006 (Cell C, 2006a:1-2).

Due to the link-up with Cell C, it is necessary to also review information on Virgin Mobile's subscriber numbers, as reported by Virgin Mobile:

Virgin Mobile was launched on 24 June 2006. In May 2007, after eleven months in operation, Virgin Mobile announced that it had 100 000 subscribers. In August 2007

Virgin announced that their subscriber base would reach 200 000 by the end of that month Cell C, 2006b:3). At the end of September 2008 Virgin Mobile's subscriber base was estimated at approximately 421 000 (Business Monitor International, 2009:43).

2.3.3.5 Network infrastructure and technology

At inception Cell C concluded a 15-year roaming deal on Vodacom's network to complement its area coverage while rolling out its own network infrastructure (Budde Communications, 2006:108-109). On 30 June 2006 the Cell C network covered 70% of the South African population and 28.5% of the country. The Cell C network covers all South African towns with a population in excess of 50 000 (Cell C, 2006a:12; James, 2006:3).

In November 2005 the Cell C EDGE network covered 90% of metropolitan areas (Cell C, 2006a:12) In 2009 Cell C embarked on a network transformation programme to improve its data-service capabilities with the roll-out of an all-IP HSPA+ (Evolved High Speed Packet Access) network. Initial roll-out started in the Johannesburg and Pretoria metropolitan areas. The network transformation will enhance voice quality and enable multi-megabit data services (Cell C, 2010a:4).

2.3.3.6 Products and services

Similar to Vodacom and MTN, the Cell C product range includes prepaid, contract and top-up voice and data services, handset sales, and national and international roaming services (www, 2008c:4). As the smallest cellular operator in South Africa, Cell C lacks the network-infrastructure capability of Vodacom and MTN. Prior to the roll-out of the HSPA+ network, initiated in 2009, Cell C had only provided GPRS/EDGE services (Cell C, 2010a:4). This has limited their ability to attract high-end contract users and business users. Cell C does not have the same level of sophistication that Vodacom and MTN have acquired and merged into their business units.

Branding plays a key role in the marketing of Cell C's products in order to differentiate these products from those of competitors. Branding is equally important in the

communication of specific value propositions to the different market segments that Cell C serves. Cell C's use of branding to market its services will be discussed in Chapter 3.

2.3.3.7 Strategic growth focus

Cell C's initial marketing efforts were heavily focused on users in the LSM three to LSM seven groups which largely account for the lower end of the South African cellular market. Cell C defined its view of the South African consumer market by categorising users into three broad groups, i.e. the under-developed market, the developing market and the saturated market (Cell C, 2006b:10).

In Cell C's view the under-developed market includes the LSM one to LSM three groups consisting of the poor and rural. Cell C used a low-cost strategy to penetrate this market segment. Cell C defined the developing market as the LSM four to LSM seven groups and used a strategy of acquiring new market entrants for this segment. Consumers in the LSM eight to LSM ten groups were defined as the saturated market. Cell C used a strategy to acquire users that have (moved away) from other networks to penetrate this segment. Taking into account population growth, shifts in income, and churn rates from other networks, Cell C estimated the number of new subscribers available per segment as follows: under-developed market 1.7 million, developing market 7.7 million and the saturated market 4.2 million (Cell C, 2006b:10). In June 2007 Cell C announced its intention to differentiate itself from Vodacom and MTN by focusing on the LSM three to LSM seven groups (Mulder, 2007:1).

2.4. REGULATED ENVIRONMENT

Before commencing with a discussion of the role players that influence the telecommunications policies and the regulated environment in South Africa, the initial licensing of the major cellphone network service providers needs to be clarified:

2.4.1 Initial licensing and licence obligations

South Africa's cellular market has been open to limited competition since its inception in 1993 when licences were issued to Vodacom and MTN. The initial licences were valid for 15 years and allowed each company to operate a GSM 900 (900 MHz spectrum) network. Under amendments to the Telecommunications Act (103/1996), passed into law as the Telecommunications Amendment Act (64/ 2001), all the cellular operators (Vodacom, MTN and Cell C) were issued with GSM 1800 licenses (Budde Communication, 2006:102).

The cellular operators had network roll-out obligations imposed on them as conditions of their licences. MTN and Vodacom were required to install 7 500 and 22 000 community cellular payphones respectively, in under-serviced areas (i.e. areas with less than 5% fixed line penetration) over a period of five years. Cell C was obliged to roll out 52 000 community telephones in seven years. MTN and Vodacom were required to provide network coverage to 60% of the population within the first two years of operation and 70% within four years. Cell C was required to reach 30% of the population within two years, 40% within four years and 50% within six years.

The programme for rolling out community telephones in under-serviced areas has proved to be highly successful. Vodacom exceeded its licence obligations and installed 24 000 community telephones within the given time frame. MTN was required to install 7 500 community telephones within five years and did so in four. Since 30 June 2006, Cell C has deployed 42 000 community telephones - just 10 000 short of fulfilling its licence obligations (Budde Communication, 2006:102; Cell C, 2006a:3).

In May 2003 the Department of Communication revealed its fees and obligations for operators to access the 1800 MHz spectrum. Initially a fee of around R700 million had been proposed as a price tag for the 1800 MHz spectrum, but the industry considered this amount to be unfair. It was decided that each operator would pay R100 000 per annum for each frequency pair used, plus an annual licence fee of R5 million for a radio-

frequency spectrum licence, as prescribed by ICASA (Independent Communications Authority of South Africa), and 5% of net operating income. In exchange for access to the 1800 MHz spectrum the operators were obliged to supply 250 000 free cellphones and numbers to public emergency services. They were also required to provide Internet access to schools, and public payphones in rural areas and multi-purpose community centres. The Department of Communications also revealed that the cellular operators would get access to the 2.4 GHz spectrum. In exchange the operators were required to supply four million free SIM cards to disadvantaged South Africans over a period of five years (Budde Communication, 2006:104).

2.4.2 Major role players

The telecommunications policies and regulated environment in South Africa are influenced by a number of role players. The Department of Communications (DOC), together with the Ministry of Communications, is primarily responsible for policy-making, but also plays a role in regulatory matters (BMI-TechKnowledge, 2007a:9). The Competition Commission and ICASA are the other prominent role players.

2.4.2.1 The Competition Commission

The provisions of the Competition Amendment Act (875/2009) are enforced by three separate agencies, namely the Competition Commission, the Competition Tribunal and the Competition Appeal Court. The Electronic Communications Act (36/2005) upholds the right of the Competition Amendment Act (75/2009) to regulate competition in the South African telecommunications market. The Competition Commission typically deals with competition issues that cannot be resolved by ICASA. The Electronic Communications Act (36/2005) and the Competition Amendment Act (875/2009) enable ICASA and the Competition Commission to ensure effective competition in the South African telecommunications market (BMI-TechKnowledge, 2007a:10). It is the role of the Competition Commission to investigate anti-competitive conduct, to assess the impact of mergers and acquisitions on competition, to monitor competition levels and market transparency in the economy, and to identify impediments to competition and play an

advocacy role in addressing these impediments. The Competition Tribunal and Competition Appeal Court handle appeals against the decisions of the Competition Commission (Business Monitor International, 2009:51).

2.4.2.2 The Independent Communications Authority of South Africa (ICASA)

ICASA took over the functions of two previous regulators - the Independent Broadcasting Authority (IBA) and the South African Telecommunications Regulatory Authority (SATRA). The President of South Africa assented to the ICASA Amendment Act (3/2006) on 15 June 2006 and it was gazetted on 22 June 2006. The object of the Act is to establish an independent authority to regulate broadcasting and electronic communications (and postal matters) in the public interest. Although ICASA is the primary regulatory and licensing authority in South Africa, the Ministry of Communications is charged with developing policy and has the final power to issue certain licences, for which ICASA will make recommendations (BMI-Techknowledge, 2007a:10). The functions of ICASA include the following:

- to make regulations and policies to govern broadcasting and telecommunications;
- to issue licenses to providers of telecommunication services and broadcasters (except for certain licenses which must be awarded by the Minister of Communications);
- to monitor the environment and to enforce compliance with rules, regulations and policies;
- to hear and make decisions about disputes and complaints;
- to plan, control and manage the frequency spectrum;
- to protect consumers against unfair business practices, services of poor quality and harmful or inferior products (Business Monitor International, 2009:51).

2.4.3 The Electronic Communications Act (ECA) of 2005

The Electronic Communications Act 5(36/2005) addresses licence categories, rules and guidelines for licence applications, licensee obligations, guidelines for the construction of communication networks, interconnections between licensees, leasing of facilities by licensees of communication network services, a radio frequency plan, a numbering plan to enable number portability and carrier pre-selection, technical standards for communications equipment, the Universal Service and Access Agency of South Africa (USAASA), and the Universal Service and Access Fund (USAF) (Business Monitor International, 2009:54).

The ECA (36/2005) makes provision for two generic licence categories, referred to as the Electronic Communications Network Service (ECNS) license and the Electronic Communications Service (ECS) license. An ECNS licence gives the license holder the right to operate a network. An ECS licence gives the license holder the right to provide connectivity over a network and as a result also the right to render retail services, but not the right to operate any physical infrastructure (BMI-TechKnowledge, 2007a:16). ECNS licenses were awarded to Vodacom, MTN and Cell C. The licences that the cellular network service providers hold, grant them the right to use specific portions of the radio spectrum that makes it possible for them to supply mobile communication services. The new licence fee for Vodacom, MTN and Cell C has been set at 1.5% of gross profit (Vodacom Group Limited, 2010:21).

Implementation of the ECA (36/2005) is likely to result in increased levels of competition. ICASA has been given more authority under the Act. The Act also contains a number of motivators to stimulate competition. These motivators include aspects such as significant market power, leasing of facilities, interconnection pricing and number portability (BMI-TechKnowledge, 2007a:18-33).

The ECA (36/2005) empowers ICASA to impose pro-competitive conditions on operators found to have significant market power (SMP) in a market segment. Operators who have SMP will be obliged to provide wholesale prices to other operators when

leasing facilities. Self-provisioning of infrastructure by the cellular network operators was also approved to make facility-based competition possible. Vodacom, MTN and Cell C have begun with self-provisioning of transmission infrastructure (BMI-TechKnowledge, 2009b:20). In terms of the ECA (36/2005) value-added network service providers (VANS) may carry voice over their networks and they are also entitled to access geographic numbers (BMI-TechKnowledge, 2009b:14).

Interconnection rates in the South African telecommunications market were not regarded as competitive (BMI-TechKnowledge, 2009b:20). As a result of action taken by ICASA, interconnection tariffs were reduced in 2010. The mobile termination rate was reduced from 125 cents per minute to 89 cents in March 2010. (The mobile termination rate is the rate that cellular operators charge each other to terminate calls on their networks.) The final call termination regulations for both fixed and mobile networks were published by ICASA on 29 October 2010. As from 1 March 2013 there will be no distinction between peak and off-peak rates with respect to call termination services. Currently smaller market players, such as Cell C, may charge up to 20% more for call termination on their networks. This premium will decrease to 10% by 1 March 2013 (Telkom SA Limited, 2010:1). On 1 November 2009 the off-peak mobile termination rate was 77 cents, and the interconnect fee charged by Telkom was 29 cents for peak periods and 16 cents for off-peak periods (Telkom, 2010:1).

Mobile number portability was included in the ECA (36/2005) with the purpose to spur on competition. It enables users to keep the same cellphone number when switching from one cellular network to another. Mobile number portability was launched on 11 November 2006. Vodacom reported that a total of approximately 49 800 subscribers had used mobile number portability from 11 November 2006 to 31 March 2007. Table 2.10 presents a breakdown of the recipient and donor network operators with regard to customers that had used mobile number portability during the period as discussed:

TABLE 2.10 CUSTOMERS THAT USED MOBILE NUMBER PORTABILITY

Recipient and donor network operators	Number of customers that ported numbers
Recipient network operators	
Vodacom	16 815
Cell C	20 481
MTN	12 498
Total	49 794
Donor network operators	
Vodacom	22 833
Cell C	6 424
MTN	20 537
Total	49 794

Source: Vodacom Group Limited, 2007:35

Cell C has gained the largest number of subscribers (20 481) and lost the smallest number of subscribers (6 424) that ported numbers to a new service provider. The introduction of mobile number portability had little impact on the market. A study done by ICT Africa revealed that 78% of customers were happy with their service provider at the time of the study and hence they had not ported, while 22% mentioned other reasons for not porting. Other common reasons for not porting included complicated administrative processes (8%) and the cost involved in terminating an active service contract (4%) (BMI-TechKnowledge, 2009b:19). The ECA (36/2005) makes provision for number portability to extend to the fixed-line market as well (BMI-TechKnowledge, 2009b:14).

The Universal Service and Access Agency of South Africa are responsible for the administration of the Universal Service and Access Fund. The cellular network operators are mandated to contribute 0.2% of annual revenue of licensed activities to the Fund. In order to address the needs of isolated, rural communities consisting of historically disadvantaged people, the concept of under-serviced area licensees (USALs) was developed. The USAL operators are licensed to provide telecommunication services to under-serviced rural areas with less than 5% fixed teledensity. In 2007 the

Communications Minister directed ICASA to merge all the licensed USALs in each province into one entity. This issue has not yet been resolved (BMI-TechKnowledge, 2009b:13).

The Electronic Communications Act (36/2005) gives ICASA the authority to prescribe a framework for the unbundling of Telkom's local loop. The Minister of Communications has issued a policy directive that the unbundling process should be completed by 2011. ICASA has issued an invitation to service providers to tender to assist the regulator in drawing up regulations and in planning the introduction of local loop unbundling (BMI-TechKnowledge, 2007a:22;BMI-TechKnowledge, 2009b:13).

In 2006, ICASA released ADSL (Asynchronous Digital Subscriber Link) regulations that allowed subscribers that have reached their monthly data cap to top up their monthly cap without the need to purchase a new user account. In terms of the regulations Telkom, Neotel and other Internet Service Providers (ISPs) have to guarantee minimum levels of broadband speed available to the ADSL service, which means a minimum download speed of 256 kilobits per second (BMI-TechKnowledge, 2009b:13).

ICASA's decisions on the allocation of radio spectrum were published in June 2008. Two bands where demand currently exceeds available bandwidth are the 3400 to 3600 MHz (3.5 GHz) band and the 2500 to 2690 MHz (2.6 GHz) band - the licensed spectrum that is typically associated with WiMAX deployment. WiMAX is a technology used for Internet access, also referred to as fixed wireless Internet access. Finalisation of licensing requirements for these two bands is currently in progress (BMI-TechKnowledge, 2009b:13).

Other actions taken by ICASA to spur on competition in the South African cellular market included investigations into handset subsidisation (Cell C, 2006:4) and investigations into poor service delivery by the cellular network operators (Ferreira, 2009:1).

2.4.4 Regulation of Interception of Communication and Provision of Communication-related Information Amendment Act (RICA) of 2008

RICA (48/2008) requires all persons buying or obtaining a handset or SIM card to provide the operator with their identity and address details. The service provider must provide these details to the police or security services on the directive of a judge, when it is deemed that a serious offence has occurred or that the national security interests of the country are threatened. Subscribers are also required to report missing or stolen SIM cards to the police. RICA (48/2008) came into effect on 1 July 2009. It severely affected new SIM card activations, leading to an industry-wide loss of nearly 3.8 million subscribers in the second half of 2009 (Cell C, 2010a:2).

2.4.5 Mobile television licensing

In August 2008 the Department of Communications announced that it was planning to award licenses for mobile television using DVB-H (Digital Video Broadcasting – Handheld) technology. DVB-H was the initial standard decided on, but it has recently been reviewed. Pay-television operator MultiChoice has confirmed interest in acquiring a license. Vodacom indicated that it would wait to see the full auction rules before deciding whether or not to bid (Business Monitor International, 2009:51).

2.4.6 Other governance requirements

Other important governance requirements that influence the decision-making of Vodacom, MTN and Cell C are black economic empowerment (Vodacom Group Limited, 2010b:25) and corporate social responsibility, also referred to as CSR (MTN Group Limited , 2009c:41).

2.5. CONCLUSION

In 2009 the three major South African cellphone network service providers reported a subscriber base of 50.474 million subscribers. Revenues derived from the South African subscriber base amounted to approximately R90.536 billion in 2009. Revenues derived by Vodacom (52.5%) and MTN (36.6%) accounted for 89.1% of the total revenues and revenues derived by Cell C for 10.9%. The subscribers served by Vodacom (54.5%) and MTN (31.8%) accounted for 86.3% of the total subscriber base and those served by Cell C for 13.7% of the total subscriber base.

The dominant positions of Vodacom and MTN are also reflected in the EBITDA margins as reported. Vodacom reported an EBITDA margin of 34.2% in 2009, MTN a margin of 31.4% and Cell C a margin of 16.1%. Vodacom and MTN are experiencing healthy cash-flow situations their South African operations. The healthy cash flow enables both companies to invest in network upgrades. Vodacom, the first entrant into the South African market, is the market leader in terms of market share and technology. Although MTN is not the leader in the South African market, it has a large subscriber base in other African countries and the Middle East. Vodacom is closely followed by MTN in terms of technology deployment in its South African cellular network infrastructure. Cell C, the smallest service provider, has been lagging far behind Vodacom and MTN in terms of technology deployment for its network. In 2009 Cell C has started with a major network-upgrade programme.

Cell C has positioned itself as the leader in terms of value, by focusing on targeting users in the LSM three to LSM six groups. Vodacom is using its first-mover advantages to remain the local market leader. Due to the South African market reaching saturation, the major cellphone network service providers are taking action to create new services to drive revenue growth. Vodacom and MTN have merged new acquisitions into their business units in their drive to serve corporate customers. Data services are targeted as a key application to grow revenue. Large capital investments are being made to provide enhanced data services. Vodacom is constantly striving to be "South Africa's Leading

Cellular Network". MTN is the follower in the South African market and is closely mirroring the technology deployment and other advancements made by Vodacom.

Both Vodacom and MTN have prominent global strategies in place. Vodafone is a very important partner in Vodacom's global strategy. Vodacom's alliance with Vodafone enables Vodacom to market Vodafone-branded products and services such as Vodafone Mobile Connect Cards, Vodafone live! and BlackBerry (Vodacom Group Limited, 2006:12). MTN has won the race to enter high-growth emerging markets in Africa and the Middle East. In 2009 revenue generated in South Africa accounted for approximately 29.6% of the total MTN Group revenue. In contrast revenues derived from the South African subscriber base accounted for 86% of the Vodacom Group's total revenue in 2009. Cell C's operations are limited to South Africa. Apart from the joint venture with Virgin Mobile, the company does not have a prominent global strategy.

This chapter provided an overview of the marketing environment of the major cellphone network service providers in South Africa. The variables most likely to influence the marketing decisions of the major cellphone service providers were discussed, as well as the strategies followed by these service providers. A detailed analysis of the cellphone service providers' use of branding and brand management was excluded from this chapter, as it will be dealt with extensively in the following chapter.

CHAPTER 3

BRANDING AND BRAND MANAGEMENT

3.1. INTRODUCTION

Branding and brand management are used to create customer-based brand equity. This chapter presents an overview of literature on branding and brand management and explains the use of branding and brand management by Vodacom, MTN and Cell C.

3.2. MARKETING MANAGEMENT DEFINED

Marketing management can be defined as the art and science of choosing target markets and building profitable relationships with them. Marketing management's primary objective is to find, attract, keep and grow target customers by creating, delivering and communicating superior customer value (Kotler & Armstrong, 2006:8; Kotler & Keller, 2006:6). Figure 3.1 illustrates the role of marketing management in the marketing process:

FIGURE 3.1 THE ROLE OF MARKETING MANAGEMENT IN THE MARKETING PROCESS



Sources: Adapted from Cant *et al.* (2007:21), Kotler and Armstrong (2006:5) and Du Plessis *et al.* (2001:70)

As indicated in figure 3.1, marketing management creates a market offering for consumers in the target market, with the objective of total need satisfaction. The customer in turn sacrifices something to satisfy a specific need. Customer-perceived value plays an important role in the value creation process. It can be defined as the difference between the customer's evaluation of all the benefits and all the costs of an offering, and the perceived alternatives. Total customer value is the perceived monetary value of the bundle of economic, functional and psychological benefits customers expect from a market offering. Total customer cost is the bundle of costs consumers expect to

incur in evaluating, obtaining, using and disposing of a market offering (Kotler & Keller, 2006:141).

The set of controllable tactical marketing instruments that marketing management uses to develop a market offering or value proposition for the chosen target market(s) is referred to as the “marketing mix”. It consists of four variables, i.e. the product, distribution, marketing communication and price (Kotler & Armstrong, 2006:29).

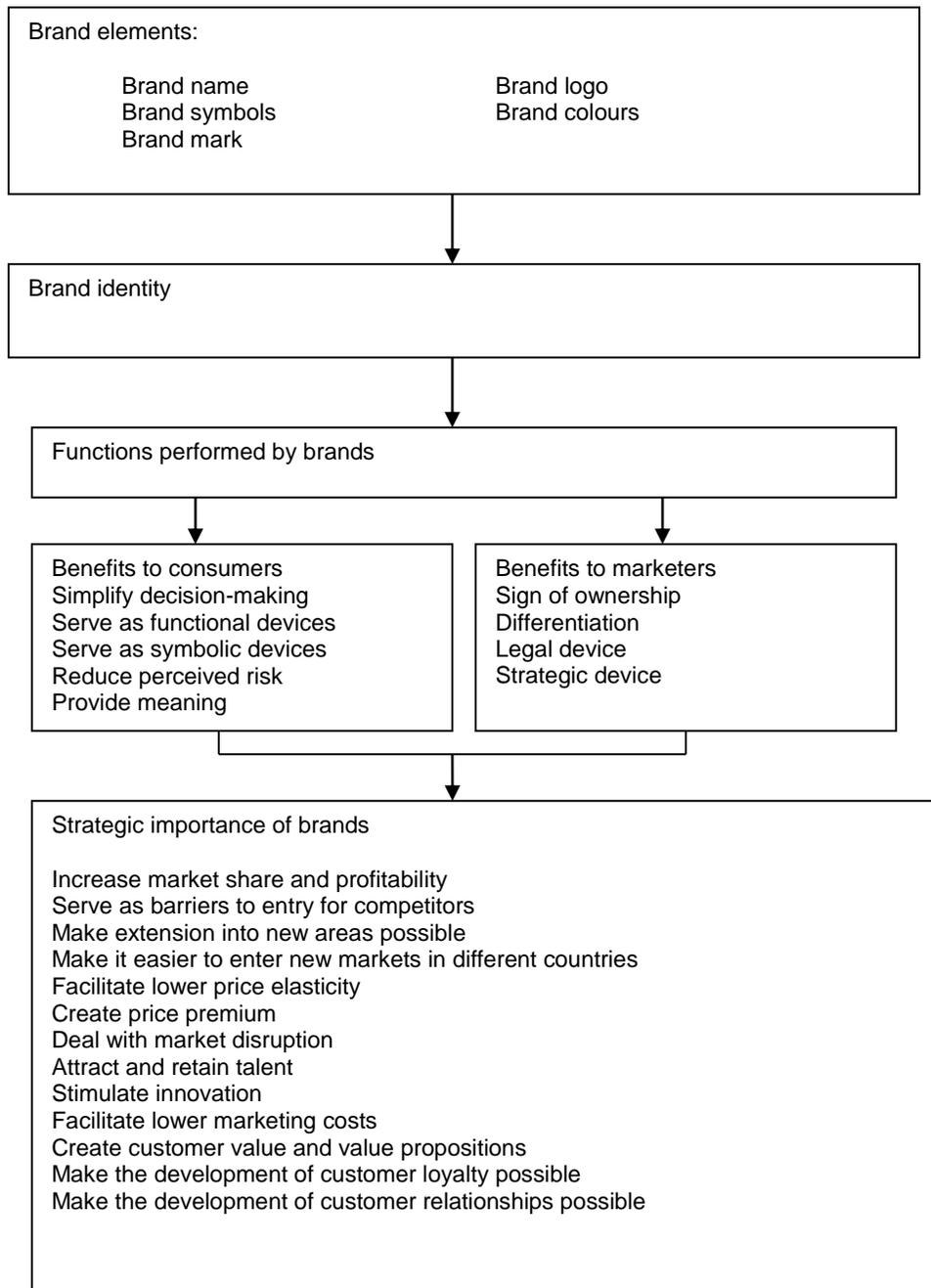
In the case of the marketing of services three additional marketing-mix variables are used to create the market offering. The three additional marketing instruments included in the extended marketing mix are people, process and physical evidence. The term “people” refers to the influence that the employees of service providers and other human factors (for example the customer) have on the service delivery process (Kasper *et al.*, 2006:373; Zeithaml *et al.*, 2006:26). “Process” refers to the important role of processes in service production and delivery (Kasper *et al.*, 2006:314; 382). “Physical evidence” refers to the fact that services cannot be seen, tasted, felt, heard or smelled. It is therefore important to make the service tangible in one or more ways and to send the right signals about its quality. This aspect is also referred to as “evidence management” (Kotler & Armstrong, 2006:257).

Branding plays a key role in the creation of customer-perceived value.

3.3. THE FUNDAMENTALS OF BRANDING

Brand as a concept was defined in Chapter 1 (refer to paragraph 1.2.1). The fundamental concepts of branding are presented in figure 3.2:

FIGURE 3.2 THE FUNDAMENTALS OF BRANDING



Sources: Keller, 2003:8-12; Kasper *et al.*, 2006:164-167; Lamb *et al.*, 2008:214-216; Miller & Muir, 2004, 18-19

3.3.1 Brand elements

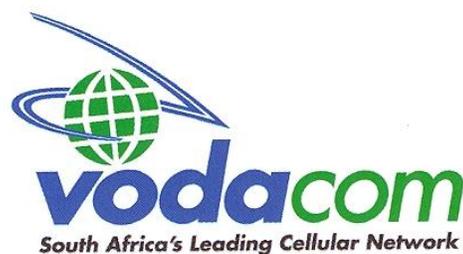
The different components of a brand are referred to as “brand elements”. These components or brand elements identify a product and distinguish it from other products. Brand elements, also known as brand identities, are those “trademarkable” aspects that serve to identify and differentiate the brand from others (Venter & Jansen van Rensburg, 2009:214-218). The main brand elements are brand names, URLs, logos, symbols, characters, spokespeople, slogans, jingles, packaging and signage (Keller, 2003:175).

While commenting on brand elements Gerber-Nel (2006:117) defines the brand name as the portion of the brand that can be expressed verbally, including letters, words or numbers. It is any word or illustration that clearly distinguishes one seller from another. The brand name usually takes the form of words.

The brand mark is that portion of a brand that cannot be expressed verbally and includes a graphic design or symbol. Thus the brand mark is that element of the visual brand identity that does not consist of words, but of a design and symbol. In contrast a logo is a unique symbol that represents a specific company, or a brand name written in a distinctive type or style (Gerber-Nel, 2006:117).

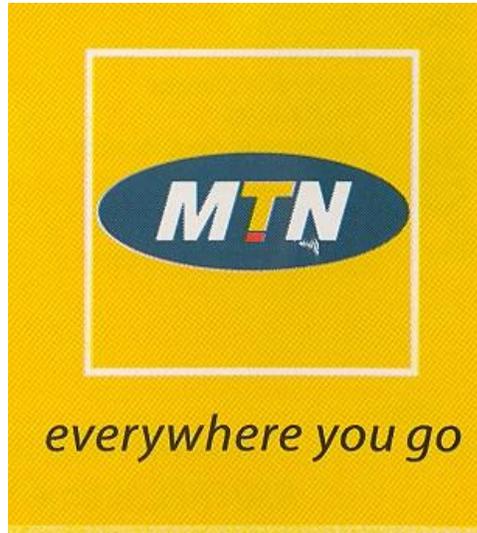
The brand names and brand marks as used by Vodacom, MTN and Cell C are presented in figures 3.3, 3.4 and 3.5:

FIGURE 3.3 VODACOM'S BRAND NAME AND LOGO



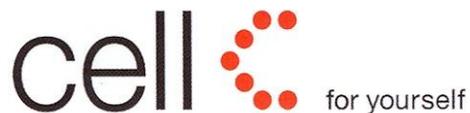
Source: Affinity Advertising and Publishing, 2009:114

FIGURE 3.4 MTN'S BRAND NAME AND LOGO



Source: [www](#), 2010a:1

FIGURE 3.5 CELL C BRAND NAME AND LOGO



Source: Affinity Advertising and Publishing, 2009:182

In creating a brand, marketers have many options from which to choose brand elements with which to identify their products. The creation of a brand requires decisions about aspects such as choosing a name, logo, symbol, packaging design and other attributes to identify a product or service and to distinguish it from competitive offerings in the market. However, it should be noted that marketers refer to a brand in a broader context by including aspects such as the creation of a certain amount of awareness, reputation and prominence in the marketplace (Gerber-Nel, 2006:116). Brands are more than just

names and symbols: they represent consumers' perceptions and feelings about a product and its performance – everything that the product or service means to consumers (Kotler & Armstrong, 2006:249).

3.3.2 Functions performed by brands

Brands perform a number of very important functions in the marketing process. These functions are to the benefit of consumers, as well as to the benefit of the companies that own and manage the brands (Kasper *et al.*, 2006:163-167; Gerber-Nel, 2006:124-126; Keller, 2003:8-12).

3.3.2.1 Benefits to consumers

Brands simplify product decisions for consumers. Consumers perceive many different types of risk in buying and consuming a product. One way in which consumers reduce the perceived risk is to buy well-known brands, especially those brands with which they had favourable past experiences (Keller, 2003:9-10). Brands play a very important role in communicating features and benefits to consumers. Consumers associate brands with certain functional attributes or capabilities. This association provides an opportunity for service brands to make the intangible service tangible by providing real, measurable services to customers. Brands also create symbolic meaning which enables users to show others the brand that they are using. The iPhone, for example, creates a lot of symbolic meaning for its users (Kasper *et al.*, 2006:165).

Consumers attach a special meaning to brands that change their experience with a product. An identical product may be evaluated differently by a consumer, depending on the brand identification or attribution given to the product. Thus brands take on a unique, personal meaning that influences the decision-making of consumers. Brand identification makes repeat purchasing easier for consumers (Lamb *et al.*, 2008:214-216).

3.3.2.2 Benefits to marketers

In terms of ownership the brand determines who undertakes the marketing activity associated with it. The brand indicates some sense of responsibility by the owner. Although Virgin Mobile, for example, does not own a network it owns the Virgin Mobile brand (Kasper *et al.*, 2006:164). Product identification is one of the major benefits that marketers derive from branding, as each brand identifies the organisation's products (Gerber-Nel, 2006:125). A brand offers a company legal protection for unique features or aspects of the product. Intellectual property rights provide legal title to the brand owner, which makes it possible for the company to protect the brand name (through the use of registered trademarks), manufacturing processes (through patents) and packaging (through use of copyright and designs). These intellectual property rights ensure that companies can safely invest in a brand and reap the benefits of a valuable asset (Keller, 2003:11). Brands also provide revenue opportunities by means of licensing (Kotler & Armstrong, 2006:253).

Through branding the marketer can differentiate a product from that of competitors and, as a result, develop a sustainable competitive advantage. Brands can signal a certain level of quality that may result in satisfied consumers repurchasing the product. The resulting brand loyalty provides predictability and security of demand, and creates barriers to entry for competitors (Miller & Muir, 2004:210). The brand is a strategic device that is central to the marketing strategy of a company (Kasper *et al.*, 2006:166).

Due to the functions performed by brands, they are of strategic importance to companies that market branded products and services - especially service brands.

3.3.3 The strategic importance of brands

Investment in brands is more than just an annual marketing expense item; it is a strategic priority. It is generally accepted that business success is ultimately measured in terms of shareholder value. Extensive research by Miller and Muir (2004:19-20) confirms a positive relationship between the value of a brand and shareholder value.

Their research indicates that strong brands contribute to business value by growing and protecting a company's cash flow and thus contribute significantly to shareholder value. Miller and Muir (2004:18-19) argue that brand strategy should ultimately be regarded as an approach to building shareholder value. The potential sources of value that strong brands provide to a business are numerous, as indicated by figure 3.2.

3.3.4 The use of brand elements by Vodacom, MTN and Cell C

The use of brand elements plays an important role in the branding of products and services in the South African cellular market. As indicated in figures 3.3, 3.4 and 3.5, the brand names and logos are consistently used to present the Vodacom, MTN and Cell C brands to the local market. Each brand name is supported by a unique symbol (logo) that represents the company. The visual brands are further enhanced by the use of unique colour schemes and pay-off lines.

The phrase "South Africa's Leading Cellular Network" is used to identify the Vodacom brand and to link it to the local market. Red is used in the colour scheme to create an association that links Vodacom to Vodafone and its leading-edge technology (Affinity Advertising and Publishing, 2009:114). MTN uses the pay-off line "everywhere you go" to supplement the presentation of the visual brand. In 2009 the visual brand has been extended to communicate MTN's sponsorship of the 2010 FIFA World Cup (Affinity Advertising and Publishing, 2009:128). Cell C uses the pay-off line "C for yourself" to supplement the presentation of the visual brand (Affinity Advertising and Publishing, 2009:182). Cell C changed its corporate identity in August 2010 by introducing a new white and black logo with the second "C" in "Cell C" placed within a solid black circle (Cell C, 2010b:1). Since secondary research and fieldwork had been completed before the launch of the new Cell C identity, the new identity was not included in this analysis.

Brand elements are used by brand management to create brand equity. The concept of brand equity therefore requires further investigation:

3.4. BRAND EQUITY

Use of the terminology “brand equity” started in the late 1980s with branding pioneer David Aaker who contributed significantly to the development of the concept (Tybout & Calkins, 2005:248). Since the initial development of the concept, brand equity has become a focal point in marketing management. Although the marketing concept has articulated a customer-centred viewpoint since the 1960s, marketing has only recently started to decrease its emphasis on short-term transactions and increase its focus on long-term customer relationships. The increased focus on long-term customer relationships is even more prevalent in the marketing of services. This customer-centred viewpoint is reflected in the concepts and metrics, such as brand equity and related concepts, which drive marketing management (Zeithaml *et al.*, 2006:557).

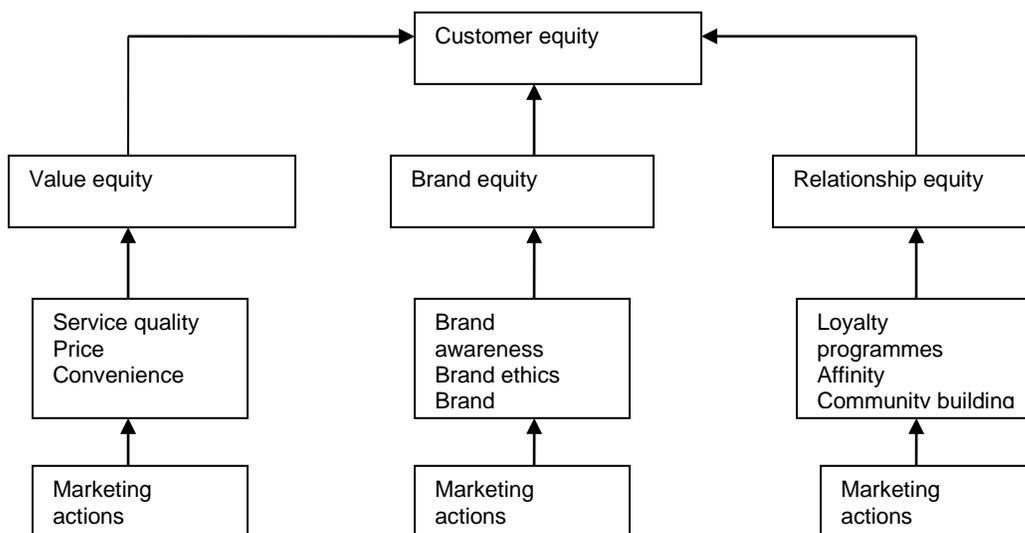
Definitions of the concept “brand equity” vary according to the different viewpoints held by scholars in the field. Three approaches are, however, clearly distinguishable: a customer-centred approach that defines brand equity as it is perceived by the customer or prospect; a market performance-orientated approach based on techniques used to establish and monitor brand performance in the marketplace; and a valuation-orientated approach that assesses the brand’s contribution to the organisation’s shareholder value or asset base (Tybout & Calkins, 2005:244; Cant *et al.*, 2007:258; Keller, 2003:482-484; Kotler & Keller, 2006:290). The definition of brand equity, as defined from a customer-centred approach will be discussed in more detail in the following section of this chapter. The other two approaches will be referred to in Chapter 4.

Rust (Zeithaml *et al.*, 2006:557) have developed a model that puts the customer and strategies that grow the value of the customer at the heart of the organisation. They define customer equity as the discounted lifetime value of a company’s customer base. According to this view customer equity is made up of three components, i.e. value equity, brand equity and relationship equity. These components are proposed to vary in terms of importance, depending on the purchase decision-making situation. Each component includes a set of key drivers:

- **Value equity:** This refers to customers' objective assessment of the utility of a brand, based on perceptions of what is given up for what is received. The three drivers of value equity are quality, price and convenience.
- **Brand equity:** This refers to customers' subjective and intangible assessment of the brand, above and beyond its objectively perceived value. The three key drivers of brand equity are customer brand awareness, customer brand attitudes, and customer perception of brand ethics.
- **Relationship equity:** This refers to customers' tendency to stick with the brand, above and beyond objective and subjective assessments of the brand. The four key drivers of relationship equity are loyalty programmes, special recognition and treatment programmes, community building programmes, and knowledge building programmes (Zeithaml *et al.*, 2006:557; Keller, 2003:65).

The customer equity model, as proposed by Rust is presented in figure 3.6:

FIGURE 3.6 THE CUSTOMER EQUITY MODEL



Sources: Adapted from Zeithaml *et al.* (2006:557) and Keller (2003:65)

As indicated in figure 3.6, the key drivers of each component are in turn driven by the marketing actions (marketing programmes) of the company. Service strategies are prominent in both value equity and relationship equity. Brand equity is driven by the consumer's knowledge structure of the brand. Customer equity is a key requirement for the long-term success of the organisation. It is important that management understands how to grow and manage customer equity, because doing this well can lead to a significant competitive advantage (Zeithaml *et al.*, 2006:557-558).

As mentioned in Chapter 1 (refer to paragraph 1.2.1.2), Aaker defines brand equity as a set of assets (and liabilities) linked to a brand's name and symbols, that adds to (or subtracts from) the value provided by a product or service. The major categories of brand assets or liabilities, as defined by Aaker, are presented in figure 3.7:

FIGURE 3.7 AAKER'S COMPONENTS OF BRAND EQUITY

Loyalty
An emotional bond between the brand and the customer which increases repeat purchases
Awareness
The consumer's familiarity with the brand
Perceived quality
The consumer's assessment of the expected quality that a brand will deliver
Associations
The images and associations that consumers link to the brand - what the brand means to the consumer
Other proprietary brand assets
Aspects such as patents, trademarks and channel relationships

Sources: Adapted from Miller and Muir (2004:210) and Keller (2003:762)

The views of other scholars in the field are highlighted by the following definitions of brand equity:

Brand equity refers to the added value to the firm, the trade, or the consumer with which a given brand endows a product (Farquhar, 1989:1-11).

Brand equity brand strength and brand value. Brand strength is the set of associations and behaviours on the part of a brand's customers, channel members and parent corporation, that permits the brand to enjoy sustainable and differentiated competitive advantages. Brand value is the financial outcome of management's ability to leverage brand strength via tactical and strategic actions to provide superior current and future profits and lowered risks (Srivastava and Schocker, 1991:91-124).

Blattberg and Deighton (Keller, 2003: 65) also use the term "customer equity". They define customer equity as the optimal balance between what is spent on customer acquisition, versus what is spent on customer retention. They are of the opinion that the goal of maximising customer equity by balancing acquisition and retention efforts should serve as the guiding star to steer a company's entire marketing programme.

Brand equity is the positive differential effect that knowing the brand name has on customer response to the product or service. A measure of a brand's equity is the extent to which customers are willing to pay more for the brand (Kotler & Armstrong, 2006:249).

Brand equity is incremental cash flow resulting from the product with the brand name, as opposed to what the cash flow would be without the brand name (Cant *et al.*, 2007:259).

Although the views held by scholars in the field of brand equity differ, brand equity as defined from a customer-centred approach, adds value to a product or service. This value is derived from awareness, associations and perceptions that reside in the customer's mindset, also referred to as the brand knowledge structure. The brand knowledge structure that resides in the customer's mindset positively or negatively influences the customer's relationship with the product or service and its provider. This relationship is of strategic importance to the company, as it is a key driver of future

revenue streams (Cant *et al.*, 2007:263). The brand knowledge structure that resides in the customer's mindset is central to customer-based brand equity as a concept.

Keller followed up on the groundbreaking work of Aaker. In a more extensive treatment of the subject of brand equity, he defined the concept of customer-based brand equity. As mentioned in Chapter 1 (refer to paragraph 1.2.1.3), Keller defines customer-based brand equity as the differential effect that brand knowledge has on the customer's response to the marketing of a brand. A brand has positive customer-based brand equity when consumers react more favourably to the marketing of a product when the brand is identified than when it is not. A brand has negative customer-based brand equity when consumers react less favourably to the marketing of a product when the brand is identified than when it is not (Kotler & Keller, 2006:277).

The consumer's knowledge about the brand (also referred to as the brand knowledge structure) drives customer-based brand equity (Cant *et al.*, 2007:265). From the perspective of customer-based brand equity, expenditure on marketing programmes should be thought of as investments in consumer brand knowledge. The quality of the investment in brand building is the critical factor, not necessarily the quantity, beyond some minimal threshold amount. The true value and future prospects of a brand reside in the mind of consumers: their knowledge about the brand and their likely response to marketing of the brand as a result of this knowledge. In order to understand the brand knowledge of the consumer, all the different associations linked to the brand in the mind of the consumer are of paramount importance, as these are the foundation of customer-based brand equity (Cant *et al.*, 2007:265; Kotler & Keller, 2006:278).

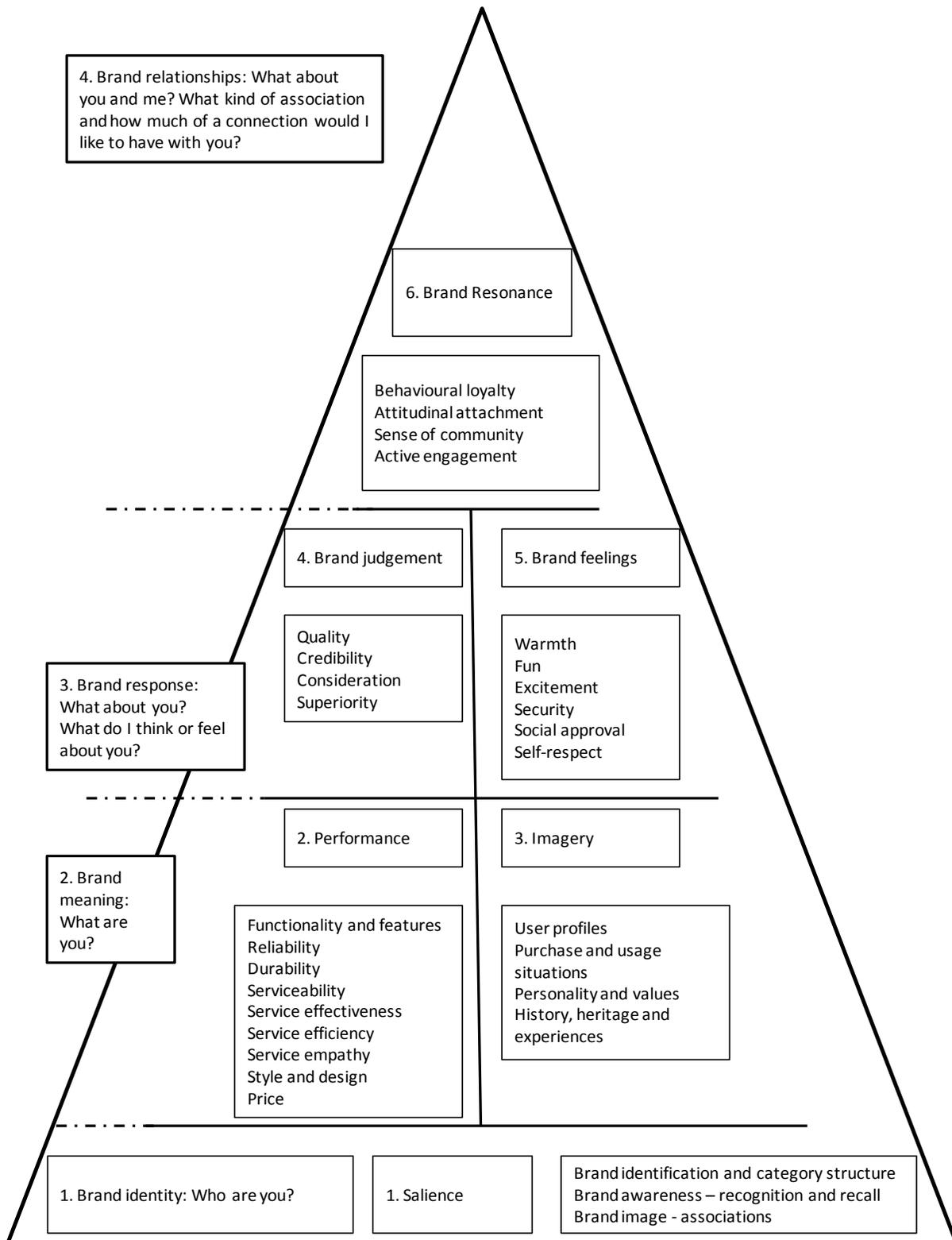
Customer-based brand equity as proposed by Keller (2003:59-103) requires further exploration:

3.5. THE CUSTOMER-BASED BRAND EQUITY MODEL

In addressing the questions of what makes a strong brand and how to build a strong brand, Keller (2003:59-103) proposes the use of a customer-based brand equity model.

The customer-based brand equity model proposes that four essential steps are required to build a strong brand. Execution of these steps requires the sequential establishment of six brand building blocks with customers (Keller, 2003:75-103). These brand building blocks provide the components for a customer-based brand equity pyramid. The customer-based brand equity pyramid is depicted in figure 3.8 and will be discussed in more detail:

FIGURE 3.8 THE CUSTOMER-BASED BRAND EQUITY PYRAMID



Sources: Adapted from Kotler and Keller (2006:281) and Keller (2003:76-99)

Four steps are required to build a strong brand. These steps should be executed by following a systematic approach. The first step in building a strong brand is to create the brand identity. The second step is to create brand meaning. The third step is to elicit proper brand responses and the final step is to create brand relationships. It is important to follow these steps in this specific order: to start with brand identity and to progress to brand relationships. The four brand building steps and the related brand building blocks require further discussion:

3.5.1 Brand identity

The creation of brand identity is the first step towards creating a strong brand. This step requires the establishment of the brand building block known as “brand salience”.

3.5.1.1 Brand salience

Brand salience relates to the aspects of brand identification, brand awareness and brand image. The brand identity links the brand to a product category, product needs, associated purchase and consumption or usage situations through the use of brand elements. The link between brand identity and the category structure is of vital importance, as it makes the positioning of the brand possible (Keller, 2003:76-80; Kotler & Keller, 2006:281). Vodacom, MTN and Cell C consistently use the same brand elements (refer to figures 3.3, 3.4 and 3.5) to create and maintain their brand identities, and to link their brand identities to the cellular service product category.

Brand awareness refers to the consumers’ ability to recall and recognise the brand under different conditions. It addresses the question as to how well the brand elements serve the function of identifying the brand. Due to the high level of cellphone market penetration in the LSM seven to LSM ten groups and the significant investment in the development of a brand identity by the major cellphone network service providers (refer to Chapter 1, paragraph 1.2.3), a high level of brand awareness of Vodacom, MTN and

Cell C within the defined target market was expected (refer to Chapter 5, paragraph 5.3.5.2 (d)).

Brand image can be defined as perceptions about a brand, as reflected by the brand associations held in memory by the consumer. The associations that a consumer calls to mind for a specific brand make up the consumer's image of that brand (Keller, 2003:64-66; Kotler & Keller, 2006:286 and 321; Cant *et al.*, 2007:198). Different consumers might think of different associations. Many associations, however, are likely to be shared by the majority of consumers and can be referred to as the brand image (Lamb *et al.*, 2008:183). It should be noted that these brand images may vary, depending on the particular groups of consumers or market segments involved (Keller, 2003:64-66). A positive brand image exists when consumers hold strong, favourable and unique associations of the brand in memory (Keller, 2003:70; Tybout & Calkins, 2005:248). The brand association and brand performance statements which were used to assess the brand knowledge structure of the defined target market (refer to Chapter 5, paragraph 5.3.5.2 (g) and (h)) also provided insight into the brand image of the major cellphone network service providers amongst their users.

3.5.2 Brand meaning

Brand salience is an important first step in building customer-based brand equity, but with the exception of low-involvement decision settings, it is usually not sufficient (Kasper *et al.*, 2006:100). The next step in the customer-based brand equity model entails firmly establishing the totality of brand meaning in the minds of customers. Brand meaning is made up of two major categories of brand associations. These categories are related to functional performance considerations and more abstract imagery-related considerations. The functional performance considerations are referred to as the brand performance building block (Keller, 2003:81-83; Kotler & Keller, 2006:281).

3.5.2.1 Brand performance

Brand performance relates to the ways in which the product or service meets the customers' functional needs. It refers to inherent product or service characteristics. Brand performance addresses aspects such as how well the product or service is based on objective assessments of quality, and the extent to which it satisfies the utilitarian, aesthetic and economic needs and wants of customers (Keller, 2003:71). Brand attributes are used to describe the features that characterise a product or service. Brand benefits are used to refer to the personal value and meaning that consumers attach to the product or service attributes (Cant *et al.*, 2007:193).

Any of the performance dimensions can serve as a means for differentiation of the brand. In most instances strong brands have performance advantages of some kind. It is exceptional for a brand to overcome severe deficiencies with regard to the different performance-related dimensions. Specific performance attributes and benefits that create functionality vary widely according to product category. However, five important attributes and benefits tend to underlie brand performance in many instances: functionality and features; reliability, durability and serviceability; service effectiveness, efficiency and empathy; and style, design and price (Keller, 2003:82; Lamb *et al.*, 2008:179-183; Kotler & Keller, 2006:376-378). The brand performance attributes which were used to assess brand performance in this study will be discussed in Chapter 5 (refer to paragraph 5.3.5.2(h)).

The customer-based brand equity pyramid emphasises the duality of brands - including both rational and emotional components. The rational route to brand building is included on the left-hand side of the pyramid, i.e. brand performance and brand judgement. The emotional route to brand building is included on the right-hand side of the pyramid, i.e. brand imagery and brand feelings (Kotler & Keller, 2006:280; Koekemoer, 2004:92). In addition to the functional performance building block, brand meaning also includes more abstract imagery-related considerations. The imagery-related considerations are referred to as the "brand imagery building block" (Keller, 2003:83; Kotler & Keller, 2006:281).

3.5.2.2 Brand imagery

Brand imagery refers to the way in which consumers think about a brand abstractly, rather than about what they think the brand actually does. It refers to the more intangible aspects of the brand and deals with the extrinsic properties of the product or service, including the ways in which the brand attempts to meet customers' psychological or social needs. Brand imagery can broadly be categorised into the following categories: user profiles; purchase and usage situations; personality and values; and history, heritage and experiences (Keller, 2003:83; Koekemoer, 2004:94).

a) User profiles

This set of imagery associations relates to the type of person that is using the brand, and may result in a profile or mental image in the minds of customers, actual users or more aspirational, idealised users (Keller, 2003:84; Kasper *et al.*, 2006:169).

b) Purchase and usage situations

The associations made with a typical purchase situation may be based on considerations such as type of channel (for example department store, speciality store or online store on the Internet), specific stores (for example stores specifically selling only the one brand), ease of purchase, and associated rewards. Associations related to typical usage situations may be based on aspects such as time of day, week, month or year when the brand is used, location where it is used, and type of activity performed while it is being used (Keller, 2003:84).

Distribution channels play an important role in the development of brand imagery (Kasper *et al.*, 2006:404; Zeithaml *et al.*, 2006:26). The major South African cellphone network service providers use intensive coverage to distribute prepaid services and selective coverage to distribute contract services (Cant *et al.*, 2007:418). The premier means of distribution for contract services are by means of company-controlled outlets (refer to Chapter 2, paragraphs 2.3.1.2, 2.3.2.2 and 2.3.3.2).

c) Personality and values

A brand may be associated with specific personality traits such as being characterised as “modern”, “old-fashioned”, “lively” or “exotic”. Five dimensions of brand personality can broadly be identified. The five dimensions and corresponding sub-dimensions are as follows: sincerity (down to earth, honest, wholesome and cheerful); excitement (daring, spirited, imaginative and up to date); competence (reliable, intelligent and successful); sophistication (upper class and charming); ruggedness (outdoors and tough) (Aaker, 2002:142-145; Keller, 2003:86).

User imagery and brand personality may not always be in agreement. In product categories in which performance-related attributes dominate consumer decisions, brand personality and user imagery may not be highly related. However, in those categories in which user and usage imageries are central to consumer decision-making, brand personality and user imagery are more likely to be related (Keller, 2003:87).

d) History, heritage and experience

The personality of a brand may take on associations from its past. These associations may be the result of certain aspects of the marketing programme for the brand, such as the colour of the product or appearance of its packaging, the company that produces the product, the country in which the product is made, events that the brand sponsors, and people who endorse the brand. Associations related to history, heritage and experiences in many instances transcend the generalisations that make up usage imagery (Keller, 2003:87; Kasper *et al.*, 2006:168-169). Country of origin is considered as an important source of brand equity and may be used by consumers as a proxy for quality, trust and reliability (Kasper *et al.*, 2006:128).

Brand performance and brand imagery provide the foundation for brand meaning. Once brand meaning has been established, the next step is to elicit proper brand responses (Keller, 2003:88; Kotler & Keller, 2006:281; Kasper *et al.*, 2006:169).

3.5.3 Brand responses

Brand responses involve what customers think or feel about the brand. Two broad categories of brand responses can be identified, namely brand judgement and brand feelings.

3.5.3.1 Brand judgement

Brand judgement focuses on the personal opinions and evaluations of the brand by customers and tends to be more rational. Customers use all the different performance and imagery associations of the brand to form different kinds of opinions. In order to create a strong brand four types of brand judgement are particularly important, namely quality, credibility, consideration and superiority (Keller, 2003:88; Kotler & Keller, 2006:280). These brand beliefs are often associated with the functional qualities of the brand (Kasper *et al.*, 2006:169).

a) Brand quality

Consumers may hold many attitudes towards a brand, however, the most important relate in various ways to the perceived quality of the brand. Other important attitudes related to quality are perceptions of value and satisfaction (Keller, 2003:88).

b) Brand credibility

Brand credibility can be summarised according to three key dimensions:

- **Perceived expertise** refers to the brand being perceived as competent, innovative, and a market leader.
- **Trustworthiness** refers to the brand being perceived as dependable and keeping customer interests in mind.
- **Likeability** refers to the brand being perceived as fun, interesting and worth spending time with.

Thus credibility is concerned with whether consumers perceive the company or organisation behind the brand as good at what they do, concerned about their customers, and likeable (Keller, 2003:89).

c) Brand consideration

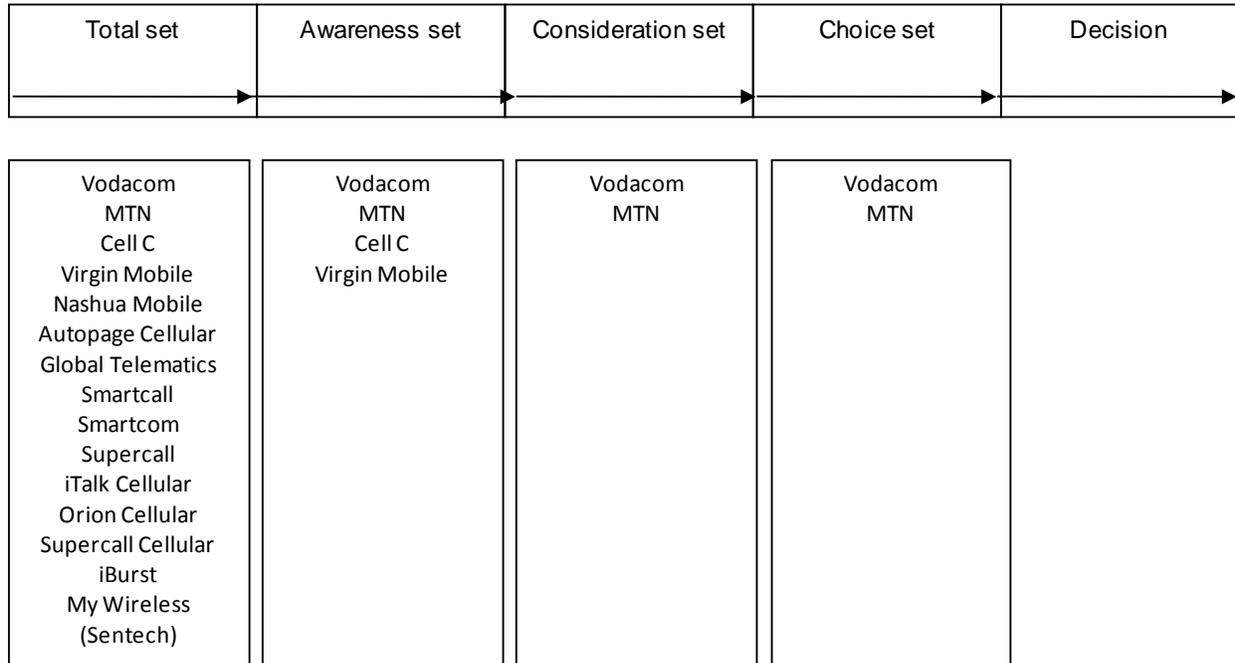
This entails more than mere awareness. It refers to the likelihood that consumers will include the brand in the set of possible options that they might purchase or use. Unless a brand receives serious consideration and is deemed relevant, the consumer will keep it at a distance and will not embrace it. In terms of brand equity brand consideration is a crucial filter. Brand consideration is largely dependent on the extent to which strong and favourable brand associations can be created as part of the brand image (Keller, 2003:89).

d) Brand superiority

The extent to which customers view the brand as unique and better than others is referred to as “brand superiority”. In essence it addresses the question as to whether consumers believe that the brand offers advantages that other brands cannot. It is of critical importance to enable the development of intense and active relationships with customers. The number and nature of unique brand associations that make up the brand image largely determine brand superiority (Keller, 2003:90).

Creating brand superiority is essential to positively influence consumer decision-making, to ensure that the brand is included in a consumer’s consideration set and ultimately to ensure that the brand becomes the consumer’s final decision, as indicated in figure 3.9:

FIGURE 3.9 THE SUCCESSIVE BRAND SETS INVOLVED IN CONSUMER DECISION-MAKING



Sources: Adapted from Kotler & Keller (2006:193) and Cant *et al.* (2007:68)

Brand feelings are the other brand building block that needs to be established during the development of brand responses.

3.5.3.2 Brand feelings

Brand feelings refer to customers' emotional responses and reactions to the brand. Six important types of brand feelings can be identified: warmth, fun, excitement, security, social approval and self-respect. The first three types of feelings are experiential and immediate and the last three more private and enduring. Consumer responses can vary across all the mentioned types of feelings. However, what matters ultimately, is how positive these responses are. It is also important that these responses come to mind when consumers think about the brand. Brand responses, i.e. judgement and feelings, can only positively influence consumer behaviour if consumers have internalised positive judgement and positive feelings in their dealings with the brand (Keller, 2003:90; Kotler & Keller, 2006:281; Kasper *et al.*, 2006:169).

The final step of the customer-based brand equity model focuses on the relationship that the consumer has with the brand. It entails the conversion of brand responses into intense active and loyal relationships between customers and the brand (Keller, 2003:92; Kotler & Keller, 2006:281; Kasper *et al.*, 2006:169).

3.5.4 Brand relationships

During this brand building step the brand building block referred to as “brand resonance” has to be established.

3.5.4.1 Brand resonance

Brand resonance refers to the nature of the relationship that the customer has with the brand. Brand resonance can be broken down into four categories: behavioural loyalty, attitudinal attachment, sense of community and active engagement (Keller, 2003:92).

a) Behavioural loyalty

This refers to the frequency with which consumers purchase the brand, and the amount or share of category volume attributed to the brand; in other words how often do consumers purchase the brand and how much do they purchase? Behavioural loyalty is not sufficient to create brand resonance. Some customers may be buying the brand because it is the only one available, due to factors such as market penetration and stock keeping levels, or because it is the only brand that they can afford (Keller, 2003:93; Zeithaml *et al.*, 2006:68; Kasper *et al.*, 2006:106).

b) Attitudinal attachment

A strong personal attachment is also required to create brand resonance. Mere satisfaction with the brand is not enough. Research shows that even amongst satisfied customers high levels of defection occur (Kasper *et al.*, 2006:106). The creation of greater loyalty requires a deeper attitudinal attachment. One way in which a deeper attitudinal attachment can be created is through the development of marketing programmes, products and services that fully satisfy consumer needs. Resonance

requires a strong personal attachment. Customers should go beyond having a positive attitude to viewing the brand as something special. Customers with a deep attitudinal attachment are likely to make comments such as “I love the brand” or to describe it as one of their favourite possessions (Keller, 2003:93; Lovelock & Wirtz, 2004:367).

c) Sense of community

A brand can take on a broader meaning to the customer as a result of identification with a brand community, whereby customers can feel an affinity or affiliation with other people associated with the brand (Keller, 2003:94; Kotler & Keller, 2006:281 Zeithaml *et al.*, 2006:196). The web portals Vodafone live!, MTN Loaded and Juice are used by the major cellphone network service providers in an effort to create a sense of community among their users.

d) Active engagement

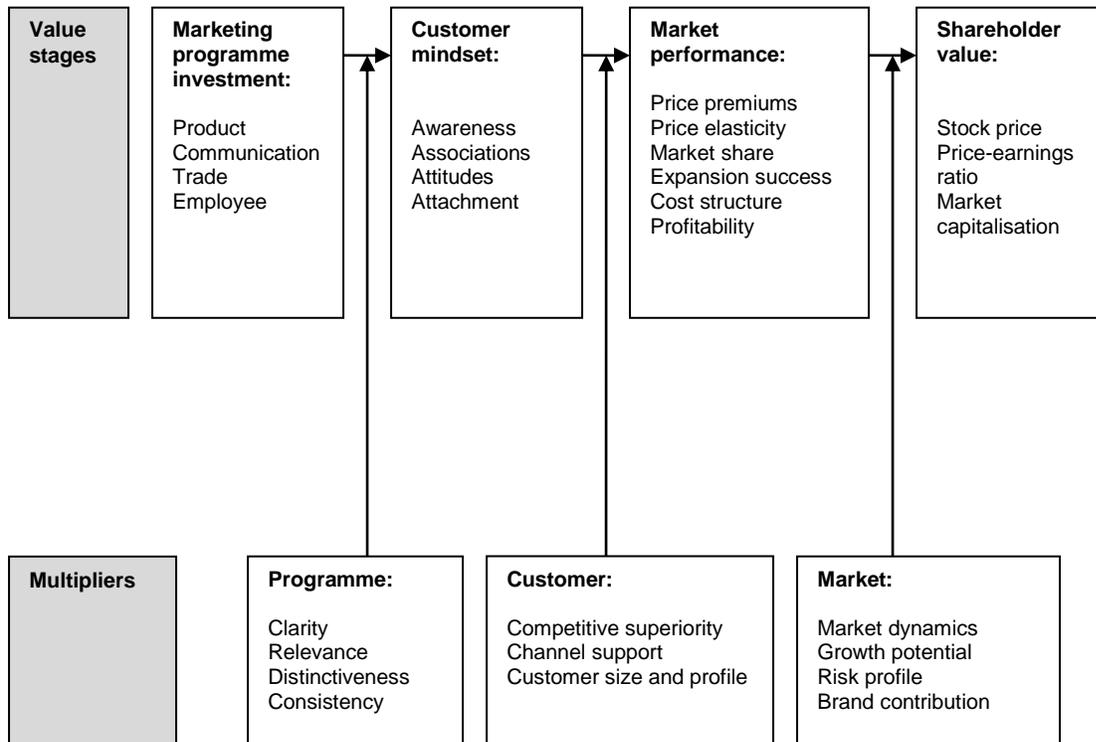
This is the strongest affirmation of brand loyalty. It occurs when customers are willing to invest time, money or other resources in the brand, beyond those expended during purchase or consumption of the brand. Customers visiting brand-related websites or chat rooms, or customers joining a club focused on a brand, are typical examples of active engagement. When customers develop this kind of relationship with the brand they become brand evangelists and ambassadors that help to communicate messages about the brand (Keller, 2003:93; Lovelock & Wirtz, 2004:367). The lifestyle portals of the cellphone service providers make active engagement with the cellular brands possible.

In order to reach the pinnacle of the customer-based brand equity pyramid a strong relationship between the brand and the customer has to be developed. The development of this relationship creates the differential effect that brand knowledge has on the customer’s response to the marketing of a brand referred to as “customer-based brand equity”.

3.6. THE BRAND VALUE CHAIN

The brand value chain, presented in figure 3.10, provides insight into the brand value creation process:

FIGURE 3.10 THE BRAND VALUE CHAIN



Source: Adapted from Keller (2003:391)

The model proposes that the value creation process moves through a number of value creation stages, namely marketing programme investment, customer mindset, market performance and shareholder value. Linking factors intervene in between the value stages. These linking factors determine the extent to which value created at one stage transfers or “multiplies” to the next stage. Three sets of multipliers moderate the transfer between the marketing programme and subsequent value stages, i.e. the programme multiplier, customer multiplier and market multiplier (Keller, 2003:390).

The value creation process starts with the marketing programme investment that can be intentional or not intentional. The investment includes expenditure relating to product research and design, marketing communication, trade or intermediary support, and preparation of employees (Keller, 2003:391; Kotler & Keller, 2006:284; Kasper *et al.*, 2006:413; Zeithaml *et al.*, 2006:26). The ability of the marketing programme investment to multiply further down the value chain is thus highly dependent on the qualitative aspects referred to as the “marketing programme multiplier”. This multiplier includes four key factors: clarity, relevance, distinctiveness and consistency (Keller, 2003:392; Kotler & Armstrong, 2006:430).

The next value stage entails the customer mindset - the source of customer-based brand equity. In order to create customer-based brand equity favourable brand knowledge structures in terms of brand awareness, brand associations, brand attitudes and brand attachment are required (Keller, 2003:392; Kotler & Keller, 2006:277; Cant *et al.*, 2007:265). The extent to which value created in the customer mindset multiplies into market performance is influenced by the customer multiplier which includes competitive superiority, channel and other intermediary support, customer size and profile (Kasper *et al.*, 2006:226 and 505; Cant *et al.*, 2007:36; Keller, 2003:392).

Consumer responses in the marketplace influence six key outcomes that determine market performance, i.e. price premiums, price elasticity, market share, expansion success, cost structure and profitability (Keller, 2003:393-394; Kotler & Keller, 2006:277; Miller & Muir, 2004:235-248). The transfer from market performance to the next stage (which is shareholder value) depends on the market multipliers: market dynamics, growth potential, risk profile and brand contribution.

Shareholder value, the final stage of the value creation process, is determined by all the current and forecasted information available about a brand. Investors use this information to formulate opinions and make assessments that influence the financial value of the brand. Indicators that are of particular importance are the stock price, the price-earnings ratio (market capitalisation divided by after-tax earnings), and overall

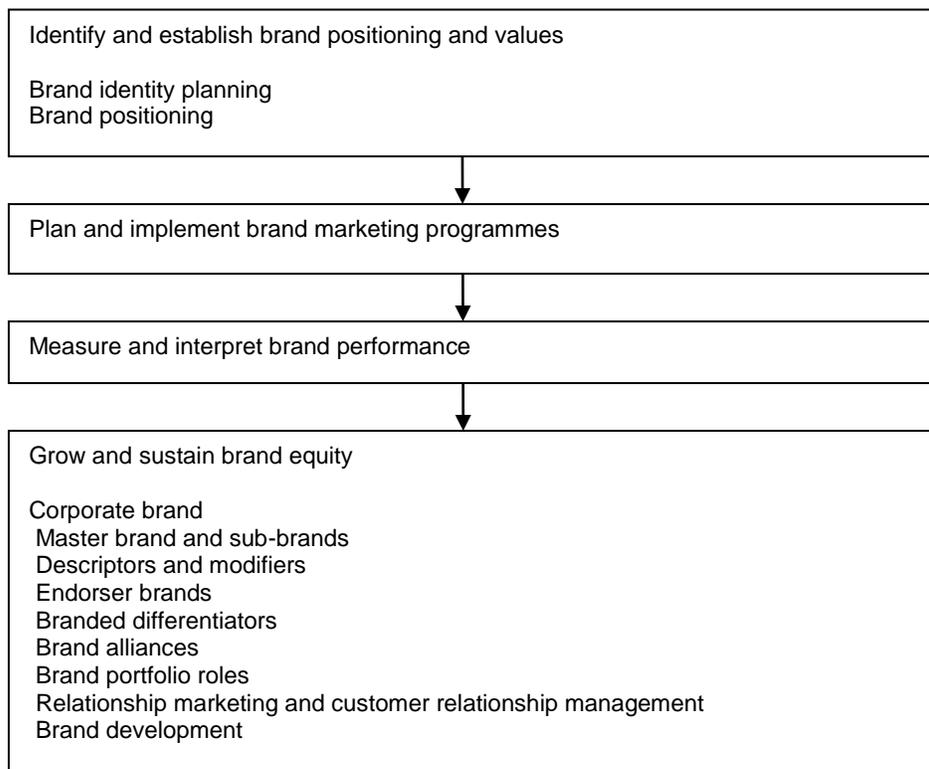
market capitalisation of the company (Keller, 2003:394; Kasper *et al.*, 2006:226; Cant *et al.*, 2007:273-278).

Strategic brand management will be discussed in more detail in section 3.7. The use of strategic brand management by Vodacom, MTN and Cell C will also be explored:

3.7. STRATEGIC BRAND MANAGEMENT

Strategic brand management involves the design and implementation of marketing programmes and activities in order to build, measure and manage brand equity. The strategic brand management process involves four main steps: identify and establish brand positioning and values; plan and implement brand marketing programmes; measure and interpret brand performance; and grow and sustain brand equity (Keller, 2003:44; Gerber-Nel, 2006:142; Kotler & Keller, 2006:G7; Kotler & Armstrong, 2006:256-257). The steps to be followed in strategic brand management are presented in figure 3.11:

FIGURE 3.11 THE STEPS TO BE FOLLOWED IN STRATEGIC BRAND MANAGEMENT



Sources: Adapted from Keller (2003:44), Aaker (2004:17), Aaker and Joachimsthaler (2002:135), Kotler and Keller (2006:296-303 and 423-426) and Gerber-Nel (2006:142)

3.7.1 Identifying and establishing brand positioning and values

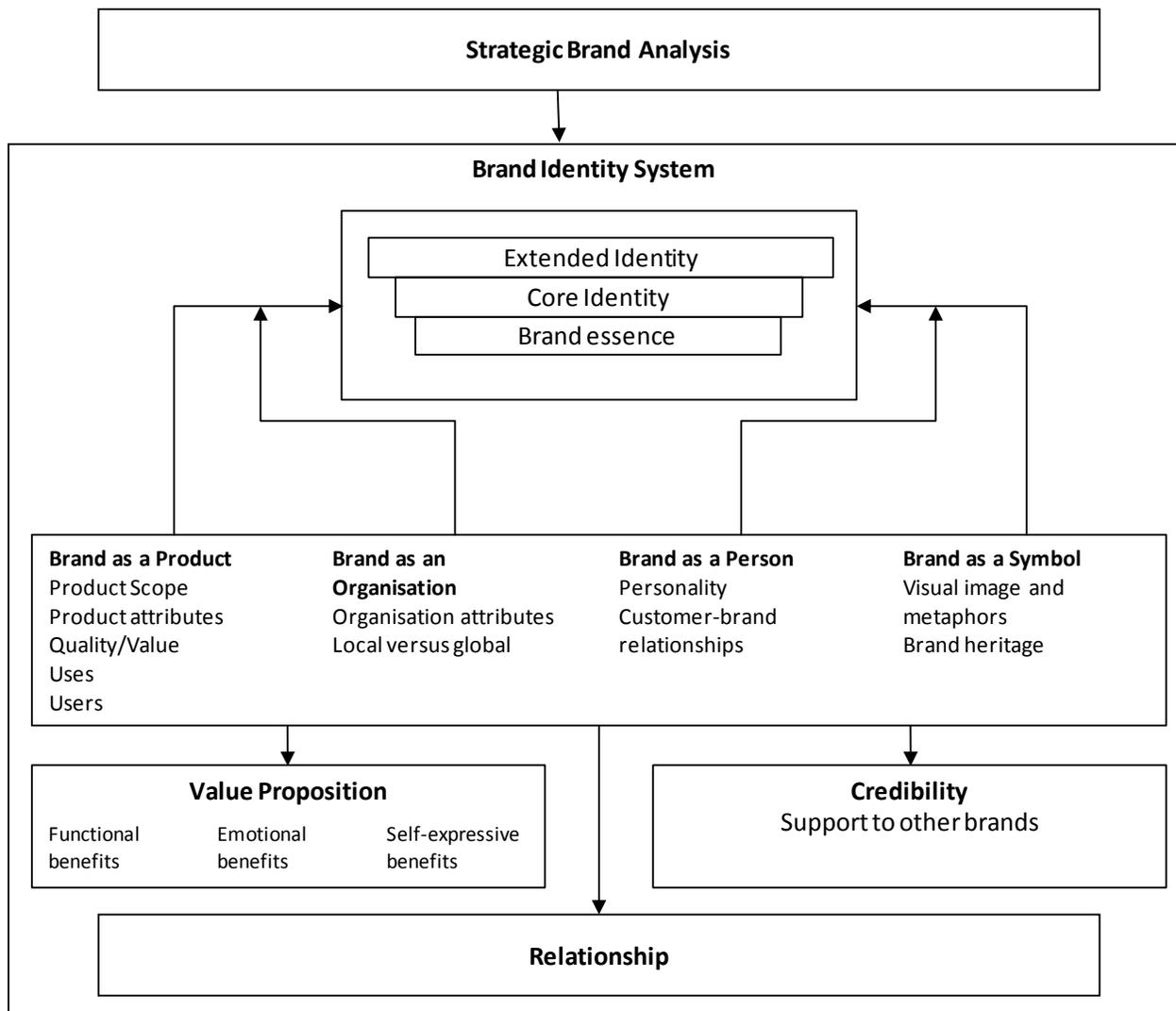
The creation of brand identity and brand meaning (refer to paragraph 3.5.1) is central to the execution of this first step (Kotler & Keller, 2006:280). According to Aaker and Joachimsthaler (2002:33) brand identity is the cornerstone of brand strategy. This view is generally accepted by scholars in the field of branding and all subsequent theory development in terms of brand management supports the idea of brand identity as the first building block to be established in the development of brand equity (Aaker, 2002:68; Aaker, 2004:6; Kotler & Keller, 2006:280; Gerber-Nel, 2006:141; Kotler & Armstrong, 2006:243).

Brand identity planning is required to create a unique brand identity.

3.7.1.1 Brand identity planning

Brand identity consists of a unique set of brand associations. These associations represent what the brand stands for and imply a promise to customers from the organisation (Aaker, 2002:68; Kotler & Armstrong, 2006:256; Kotler & Keller, 2006:278). Aaker and Joachimsthaler (2002:44) propose the use of a brand identity planning system to establish a relationship between the brand and the customer. The brand identity planning system as proposed by Aaker and Joachimsthaler (2002:44) is presented in figure 3.12:

FIGURE 3.12 BRAND IDENTITY PLANNING SYSTEM



Source: Adapted from Aaker and Joachimsthaler (2002:44) and Aaker (2002:79)

a) Strategic brand analysis

As indicated in figure 3.12 strategic brand analysis is used as an input into brand identity planning. It entails an analysis of the customer, competitors and the brand itself, including the organisation behind the brand. It enables management to develop an effective brand identity that resonates with customers, differentiates the brand from competitors, and represents what the organisation can and will deliver over time (Aaker & Joachimsthaler, 2002:40-44; Koekemoer, 2004:92; Kotler & Armstrong, 2006:250; Kotler & Keller, 2006:278).

b) Brand identity system

Brand identity drives the brand building efforts of a brand by providing direction, purpose and meaning to the brand. A key to developing a strong brand identity is to broaden the identity to include other dimensions and perspectives. As indicated in figure 3.12, Aaker (2002:78-85) recommends the use of four different brand perspectives organised around the brand identity structure. The different perspectives, namely the brand as a product, the brand as an organisation, the brand as a person and the brand as a symbol, provide insight in order to enrich and differentiate the brand identity. The brand identity structure consists of the brand essence, core identity and extended identity (Aaker, 2002: 85; Kotler & Keller, 2006:279-280).

(i) Core identity

The core identity represents the timeless essence of the brand. It is a selected subset of the extended identity. The core identity is central to both the meaning and success of the brand and contains the associations that are most likely to remain constant as the brand travels to new markets and products (Koekemoer, 2004:92; Kotler & Keller, 2006:279). It includes the elements that make the brand both unique and valuable. Core identity usually contributes to the value proposition and the brand's basis for credibility. For most brands there should be a close correspondence between the values of the organisation and the core identity (Aaker, 2002:85-86). Keller (2003:151) uses the concept "core brand values" which he defines as the set of abstract associations (attributes and benefits) that characterise the five to ten most important aspects or dimensions of a brand. MTN defines its core identity in terms of five values: "can do",

innovation, leadership, integrity and relationships (Affinity Advertising and Publishing, 2005:188; www, 2008b:4).

(ii) Brand essence

The brand essence provides a higher level of focus than the core identity. It is defined as a single thought that captures the soul of the brand. In some cases it is not feasible or worthwhile to develop brand essence, but in others it can be a powerful tool. The brand essence can be viewed as the glue that holds the core identity elements together (Aaker, 2002:85-86). Keller (2003:151) uses the terminology “brand mantra” which he defines as short, three-to-five-word phrases that capture the irrefutable essence or spirit of the brand. MTN defines its brand essence as “original” (Affinity Advertising and Publishing, 2005:189; www, 2008b:3).

(iii) Extended identity

The extended identity includes the brand identity elements that provide texture and completeness. It includes the perspectives of the brand as a product, the brand as an organisation, the brand as a person and the brand as a symbol. Scholars such as Aaker (2002:88) and Kotler and Keller (2006:279-280) are of the opinion that a larger extended identity means a stronger brand – one that is likely to be more memorable, interesting and connected to the life of consumers.

c) Credibility

Unless the role of a brand is simply to support other brands by providing credibility, the brand identity needs to provide a value proposition to the customer.

d) Value proposition

A brand’s value proposition is a statement of the functional, emotional, and self-expressive benefits delivered by the brand. This value proposition provides value to the customer. An effective value proposition should lead to a brand-customer relationship and drive purchase decisions (Aaker, 2002:95-103; Kotler & Keller, 2006:310). Kotler & Armstrong (2006:9) define an organisation’s value proposition as the set of benefits or values the organisation promises to deliver to consumers in order to satisfy their needs.

(i) Functional benefits

Functional benefits are the most visible and common basis for a value proposition. The value proposition is based on product attributes or features that provide functional utility to the customer. Functional benefits usually relate directly to the functions performed by the product, or service to the customer (refer to paragraph 3.5.2.1).

Functional benefits may fail to differentiate a product or service from competitive products or services as they can be easy to copy. One way to overcome this limitation is to expand the brand identity beyond the product attributes by considering the perspectives of the brand as organisation, person and symbol. Another way is to expand the value proposition to include emotional and self-expressive benefits, as well as functional benefits (Aaker, 2002:96; Cant *et al.*, 2007:311; Kotler & Keller, 2006:310).

(ii) Emotional benefits

Emotional benefits are experienced when the brand provides the user with a positive feeling. Emotional benefits add richness and depth to the experience of owning and using the brand. Strong brand identities tend to have both functional and emotional benefits (Aaker, 2002:97-98; Kasper *et al.*, 2006:119). The inclusion of emergency services as part of a cellular package, for example MTN's emergency service (MTN, 2010:10), is a typical example of the development of the brand to provide emotional benefits of safety and security.

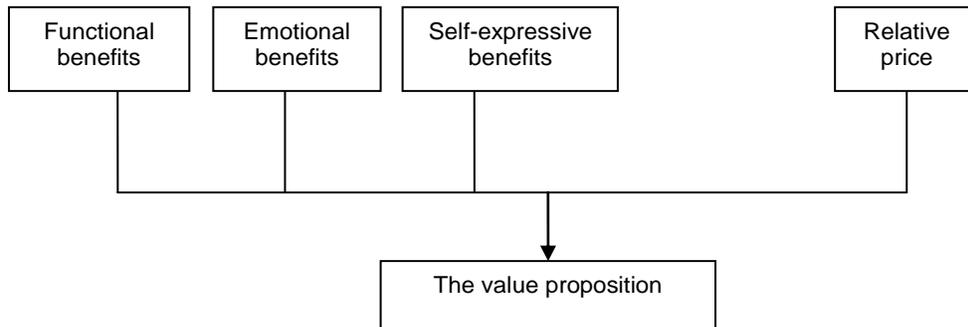
(iii) Self-expressive benefits

Self-expressive benefits can be provided by a brand when it becomes a way for a user to communicate his or her self-image (Aaker, 2002:99; Cant *et al.*, 2007:70; Kotler & Keller, 2006:183). BlackBerry packages targeted at on-the-move executives that rely heavily on mobile communication for example, provide potential self-expressive benefits.

(iv) The role of price in the value proposition

In addition to emotional and self-expressive benefits the value proposition is also influenced by price. Figure 3.13 presents the role of price in the value proposition:

FIGURE 3.13 THE ROLE OF PRICE IN THE VALUE PROPOSITION



Source: Aaker, 2002:102

As indicated in figure 3.13, a price that is too high relative to the benefits it buys for the consumer will diminish the product or service's value proposition. Brands are not evaluated independent of price. Price is a complex construct. A high price can reduce the value proposition, but it can also signal higher quality. As part of the brand identity, price can define the competitive set (i.e. products or services considered as competitive offerings) by determining whether the brand is upscale, middle-market or downscale. Within the brand's competitive set, a high relative price signals a higher quality or premium position, while a low relative price signals a lower quality or value position (Aaker, 2002:102; Zeithaml *et al.*, 2006:519; Lovelock & Wirtz, 2004:152).

e) Relationship

The ultimate purpose of a brand's identity is to establish a relationship between the brand and the customer by generating a value proposition involving functional, emotional, or self-expressive benefits. The value proposition is more than the positioning of a product or service with regard to a single attribute (Cant *et al.*, 2007:311). A brand's value proposition can be defined as the whole cluster of benefits that the organisation promises to deliver (Kotler & Keller, 2006:143).

Many brand-customer relationships emerge when an extended brand identity is used. The perspectives of the brand as an organisation, person and symbol contained in the brand identity system can provide valuable dimensions in this regard (Aaker, 2002:103;

Kotler & Keller, 2006:279). The extended brand identity includes all the components of the six brand building blocks discussed in the customer-based brand equity pyramid, i.e. brand salience, brand performance, brand imagery, brand feelings and brand resonance (refer to paragraph 3.6).

3.7.1.2 The brand identity of Vodacom, MTN and Cell C

All three cellphone network service providers strive to create an extended brand identity. Vodacom's brand essence is captured in the phrase "South Africa's Leading Cellular Network". In addition to its leadership in terms of market share Vodacom is also constantly striving to be the leader in terms of technology. Vodacom's link-up with Vodafone is used to present the organisation as a leader in terms of cellular technology (Affinity Advertising and Publishing, 2007:139).

The MTN group's vision is "to be the leading provider of telecommunications services in emerging markets" (MTN Group Limited, 2009 : 20) . MTN's brand essence is defined as "original". This drives the company to be uniquely different in the way it takes products to the market and communicates with its subscribers. MTN defines its core identity in terms of five values, i.e. "can do", "innovation", "leadership", "integrity" and "relationships" (Affinity Advertising and Publishing, 2005 : 188; www, 2008b:4).

Cell C's brand essence (prior to the launch of the re-defined brand identity in 2010) was defined by its intention to be the leader in terms of value in the South African cellular market. Cell C also prominently presents itself as the most empowered cellular telecommunications company in South Africa. By linking the brand identity to Zola, a local poet, actor and musician that grew up in Soweto, the Cell C brand is presented as having strong local roots. Zola is a leading icon that focuses his efforts on giving to others and uplifting his community (Affinity Advertising and Publishing, 2009:182).

3.7.1.3 Brand positioning

The brand position is the part of the brand identity and value proposition that is actively communicated to the target market. The brand position, which should demonstrate a competitive advantage over competitor brands, represents current communication

objectives (Lovelock & Wirtz, 2004:64; Koekemoer, 2004:94). Some elements, although important, may not be part of the brand position due to the fact that they do not differentiate the brand from other brands. Certain elements may also be excluded from the brand position as the brand may not be ready to deliver on the promise or the audience may not be ready to accept the message (Aaker & Joachimsthaler, 2002:41-42). Brand positioning requires that a brand and its competitors be positioned in the mind of consumers in such a way that the brand maximises potential benefits to the company. A good brand positioning helps to guide marketing strategy by clarifying what a brand is all about (Keller, 2003:119; Kotler & Keller, 2006:310). Brands exist in the minds of consumers and it is essential that marketers position their brands clearly in the minds of target customers (Kotler & Armstrong, 2006:250).

Sustainable competitive advantage

The brand positioning strategy should be based on sustainable competitive advantage. This requires the identification of key areas in which the brand can be differentiated from competitors by providing value to customers that competitors cannot provide. When the differentiating factor is difficult to imitate or more expensive for competitors to provide, a sustainable competitive advantage has been developed (Lamb *et al.*, 2008:176). A company needs to first find ways of differentiating its service or brand from those of competitors on a sustainable basis, and then it should base the positioning strategy on that differential or competitive advantage. The bases for differentiation are usually related to service features or attributes, accompanying service(s), personnel, distribution channels and image (Lamb *et al.*, 2008:179; Cant *et al.*, 2007:141; Kotler & Keller, 2006:320).

The positioning strategy must take into account customer preferences, the positions of competitive brands, the expected future attractiveness of the target market, the relative strengths and weaknesses of competitors and the organisation's own capabilities. The positioning method to be used will depend on the brand or product's differential or competitive advantage. Brand positioning can be based on any of the following positioning methods, or on a combination of these: attribute positioning, benefit

positioning, user or application positioning, competitor positioning, quality and price positioning, and origin positioning (Lamb *et al.*, 2008:186; Cant *et al.*, 2007:142).

Definition of the competitive frame of reference

In order to decide on positioning it is necessary to determine a competitive frame of reference. This frame of reference entails identification of the target market and an assessment of the nature of the competition. Identifying the target market is important, as different consumers may have different brand knowledge structures and thus different perceptions of and preferences with regard to the brand (Keller, 2003:120). Deciding on a target market implicitly defines the nature of the competition as consumers in the target market will be exposed to competitive brands. A host of other factors now also becomes relevant. These factors include competitive offerings, offerings perceived as substitutes, the resources, capabilities and future intentions of competitors, and distribution channels used (Kotler & Keller, 2006:311).

A starting point in defining a competitive frame of reference for brand positioning is to determine category membership – the products or set of products with which a brand competes and which functions as a close substitute for the brand (Venter & Jansen van Rensburg, 2009:219). The competitive frame of reference of the South African consumer with regard to the cellular market is defined by the products and services provided by Vodacom, MTN and Cell C (refer to Chapter 2, paragraphs 2.3.1.6, 2.3.2.6 and 2.3.3.6). The fixed-line operators, Telkom and Neotel, provide substitute products. Due to the inability of the fixed-line services to provide mobility as a benefit, their membership of the cellular category for consumers is doubtful. In order to be successful in a chosen category, brand differentiation is required. Point-of-difference associations and point-of-parity associations play important roles in this regard.

Point-of-difference associations

Point-of-difference associations are strong, favourable, and unique brand associations. They may be based on any type of attribute or benefit association. However, it is important that consumers positively evaluate these associations and believe that they

cannot be found to the same extent in competitive brands (Venter & Jansen van Rensburg, 2009:219). Consumers' actual brand choices often depend on the perceived uniqueness of brand associations, especially if the unique brand associations imply superiority over other brands (Keller, 2003:132). It is also of significant value if the unique associations provide a sustainable competitive advantage, in other words the ability to provide superior value to customers over a protracted period of time (Keller, 2003:132; Du Plessis *et al.*, 2001:167; Kotler & Keller, 2006:312).

When choosing points of difference the two most important considerations are that consumers should find the points of differentiation desirable and that the company has the capability to deliver them. The three key desirability criteria are relevance, distinctiveness and believability. Relevance requires that consumers find the points of difference to be relevant and important in their decisions on brand choice. Distinctiveness requires that consumers find the points of difference to be distinctive and superior to provide a viable basis for differentiation. Believability requires that consumers find the points of difference to be believable and credible to provide a compelling reason for choosing the brand (Keller, 2003:143; Kotler & Keller, 2006:315).

The three key deliverability criteria are feasibility, communicability and sustainability. In terms of feasibility it must be possible for the company to create the points of difference by taking affordability, resources required, time horizon and so forth into consideration. In terms of communicability it should be possible to communicate the points of difference considering existing consumer knowledge and related aspects. The final factor affecting the deliverability of a brand association is the sustainability of the actual and communicated performance over time (Keller, 2003:144, Kotler & Keller, 2006:315).

Point-of-parity associations

Points of parity refer to those associations that are not necessarily unique to the brand, but may be shared with other brands. Points of parity play an important role in brand consideration. Brand consideration depends in part on how personally relevant customers find the brand to be. In other words brand consideration depends on the

extent to which consumers view the brand as being appropriate and meaningful to themselves (Keller, 2003:89; Kasper *et al.*, 2006:168).

Points of parity can be classified into two groups: category points of parity and competitive points of parity. Category points of parity are those associations that consumers view as being necessary to be a legitimate and credible offering in a certain product or service category. Competitive points of parity are those associations designed to negate competitors' point-of-difference associations. If a brand can "break even" in those areas where its competitors are trying to find an advantage (points of difference) and can achieve advantages in some other areas, the brand is likely to be in a strong, perhaps unbeatable competitive position (Keller, 2003:133; Kotler & Keller, 2006:313).

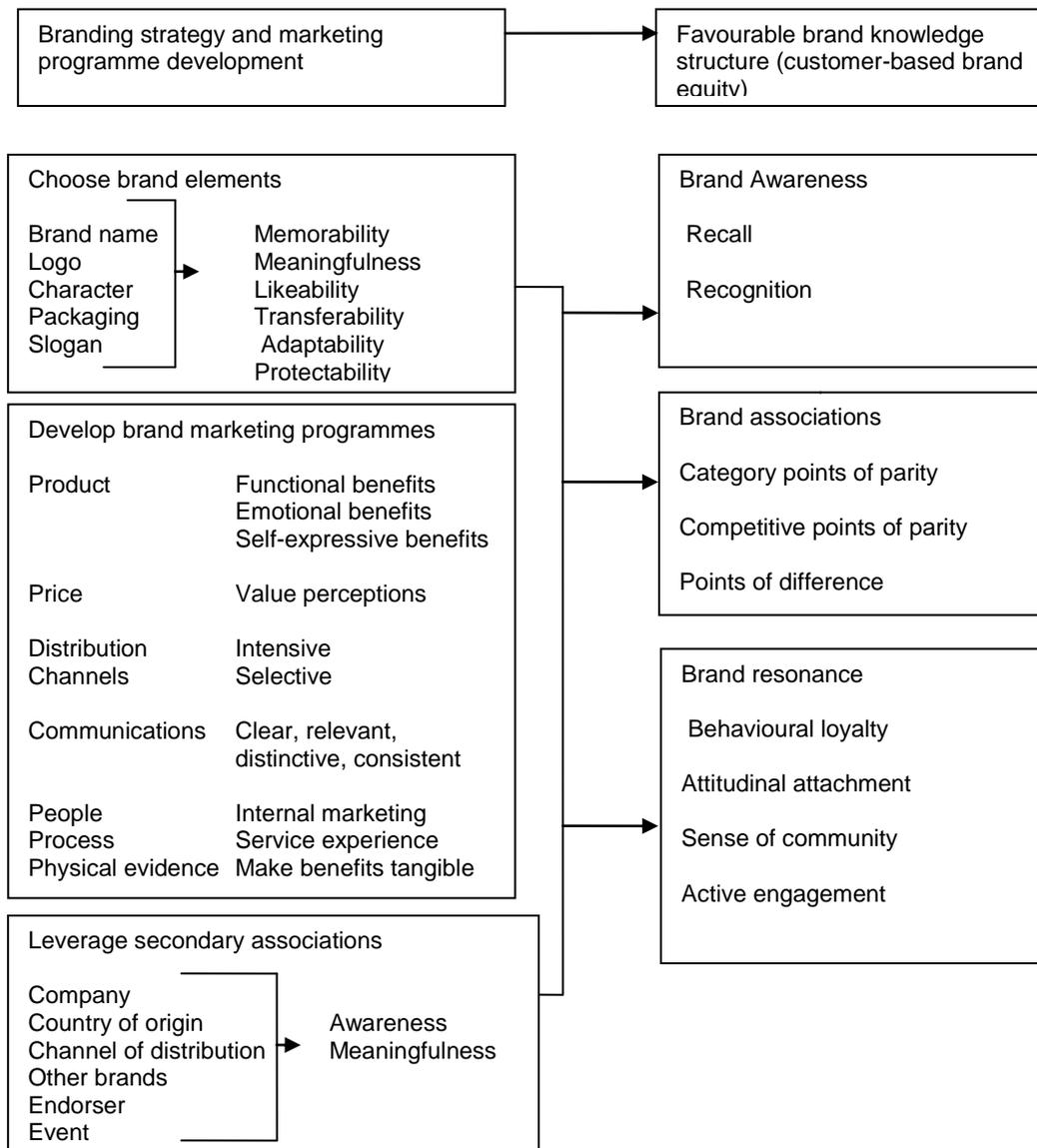
For a brand to achieve point of parity on a particular attribute or benefit, a sufficient number of consumers must believe that the brand is "good enough" with regard to that dimension. A "range of tolerance or acceptance" tends to apply to points of parity. The brand does not have to be perceived as literally equal to competitors on a particular attribute or benefit. However, consumers should feel that the brand does sufficiently well so that they do not consider the particular attribute or benefit to be negative or a problem. Should this be the case, consumers would be willing to base their evaluations and decisions on other factors potentially more favourable to the brand. Points of parity are easier to achieve than points of difference. Points of difference require the brand to demonstrate clear superiority with regard to these associations (Keller 2003:133-135; Kotler & Keller, 2006:313).

In order to develop the brand knowledge structures that create customer-based brand equity, the planning and implementation of brand marketing programmes are necessary (Aaker & Joachimsthaler, 2002:44; Keller, 2003:44; Gerber-Nel, 2006:142; Lovelock & Wirtz, 2004:210). This step of the brand management process will be explored in the following section:

3.7.2 Planning and implementing brand marketing programmes

Figure 3.14 presents an overview of the key concepts that influence the development and implementation of brand marketing programmes:

FIGURE 3.14 KEY CONCEPTS IN THE DEVELOPMENT OF BRAND MARKETING PROGRAMMES



Sources: Adapted from Keller (2003:46), Kotler and Keller (2006:310-318) and Zeithaml *et al.* (2006:26-27)

As indicated in figure 3.14, the organisation's branding strategy and marketing programmes are used to create customer-based brand equity in the minds of its customers. The branding strategy of an organisation reflects the number and nature of common and distinctive brand elements applied to the different products that the organisation sells (Kotler & Keller, 2006:296). The branding strategies of Vodacom, MTN and Cell C will be revisited in the discussion of their brand portfolios later in this chapter.

The branding strategy, brand marketing programmes and secondary brand associations form part of the organisation's integrated marketing communication. Integrated marketing communication strategically controls or influences all messages sent to customers and other stakeholders. It entails co-ordinating all marketing communication activities, namely media advertising, sales promotion, personal selling, public relations, direct marketing, and other forms of communication (such as websites) to produce a consistent, unified message that is customer-focused (Koekemoer, 2004:3; Lamb *et al.*, 2008:306). Table 3.1 presents the advertising spend on television, radio and print media by Vodacom, MTN and Cell C in 2009.

TABLE 3.1 EXPENDITURE ON ADVERTISING FOR 2009: VODACOM, MTN AND CELL C

Cellphone network service provider	Spend: Rand in millions			
	Television	Radio	Print	Total
Vodacom	154.228	59.688	70.034	283.950
MTN	126.193	88.596	72.079	286.868
Cell C	113.902	23.768	36.628	174.298
Total	394.323	172.052	178.741	745.116

Source: BMI, 2010:15, 18 and 21

As indicated in table 3.1, Vodacom, MTN and Cell C spent a total of R745.116 million on advertising in 2009. Vodacom and MTN spent almost equal amounts which account for

76.61% of the total expenditure, while Cell C spent significantly less (23.39% of the total amount). Total advertising spend on television was the highest (52.92%) with almost equal amounts spent on radio (23.09%) and print (23.99%).

Limited information to quantify other elements of the marketing communication programmes and activities of the major cellphone network service providers is available to the public. Prominent aspects of marketing activities and programmes that influence brand associations, as reported by Vodacom, MTN and Cell C, will be highlighted in the following section of this chapter:

Marketing activities and programmes reported by Vodacom

Vodacom invests in sport sponsorships, striving to create the perception that it is the greatest supporter of South African supporters. Vodacom's previous involvement with sponsorships includes high profile sporting teams such as the Springboks, Vodacom Blue Bulls, Vodacom Stormers, Vodacom Cheetahs, Bafana Bafana, Kaiser Chiefs and Orlando Pirates. Previous sponsorships of events include the Vodacom Super 14, Vodacom Challenge and Durban July (Vodacom Group Limited, 2006:34). The recent Player 23 campaign included elements of web interactivity (Affinity Advertising and Publishing, 2009:114).

Corporate social investment is also prominent. In the 2006 financial year R39.6 million was invested by the Vodacom Foundation in support of communities in which it operates. Programmes supported by these investments cover education, health and welfare, as well as safety and security (Vodacom Group Limited, 2006:5; Vodacom Group Limited, 2007:5)

In the 2007 financial year Vodacom announced a black economic empowerment (BEE) deal worth R7.5 billion, which involved participation of 25% of employees (Vodacom, 2007:4). Vodacom South Africa's independently assessed broad-based black economic empowerment (BBBEE) has shown continued improvement with the overall score

increasing from 68.4% in the 2009 financial year to 69.6% in the 2010 financial year (Vodacom Group Limited , 2010:25).

Vodacom has moved from an instinctive to a more structured and formal approach to manage sustainability. Care for the environment features prominently, as is reflected by the following initiatives: reduction in the carbon footprint; strategic roadmap to reduce power consumption; recycling of waste; implementation of global best practices in the placement of base stations (Vodacom Group Limited , 2010:48).

Marketing activities and programmes reported by MTN

Similar to Vodacom, sponsorship of sport is an important element of MTN's marketing communication. MTN is using its sponsorship of the 2010 FIFA World Cup to support its position as the leading provider of telecommunications services in emerging markets. This is in line with MTN's thrust to be a major player in football sponsorship which includes sponsorship of the MTN Africa Cup of Nations (Affinity Advertising and Publishing, 2009:230).

MTN uses corporate social investment programmes to link positive brand associations to its brand identity. The MTN Foundation is involved in projects focusing on initiatives in health, education, poverty alleviation and arts and culture. The 21 Days of Y'ello Care programme is a recent campaign that has been used by MTN to contribute to the communities in which it operates (Affinity Advertising and Publishing, 2009:230). MTN Zoners, members of informal communities across the country, form a team of MTN-branded representatives. They provide education about MTN and its products and services to the communities in which they operate (Affinity Advertising and Publishing, 2009:129).

Black economic empowerment features prominently in the MTN marketing activities and programmes used to link positive brand associations to its brand identity. In 2010 MTN concluded a broad-based BEE transaction known as "MTN Zakhele" (MTN Group Limited, 2010d:1).

Care for the environment is also prominent. The telecommunications sector is classified as having a medium impact on the environment. Environmental performance across the MTN group is in line with international industry standards (Affinity Advertising and Publishing, 2009:231).

Marketing activities and programmes reported by Cell C

In contrast to Vodacom and MTN's extensive use of sport sponsorship, Cell C focused its efforts on the South African arts, culture and music scene (Affinity Advertising and Publishing, 2006:273). The relationship with the iconic Hola 7 is a typical example. The Hola 7 Community Development Fund is used to raise funds for donation to selected social upliftment projects which are jointly administered by Cell C and Zola (Affinity Advertising and Publishing, 2009:183). Cell C is also involved in the sponsorship of community soccer tournaments. Although the focus is soccer, the reach is greater, as it attracts all members of the community and additional opportunities beyond soccer are afforded. (Local entrepreneurs, for example, are given the opportunity to run stalls at the events.) The Cell C brand has become synonymous with branding projects like Take a Girl Child to Work Day, Hola 7 and the South African Model UN Debate (Affinity Advertising and Publishing, 2009:183).

Brand equity measurement systems are required to ensure that the design and implementation of brand marketing programmes contribute towards the development of brand equity.

3.7.3 Measuring and interpreting brand performance

The creation of brand value moves through a number of stages, as indicated in the brand value chain (refer to figure 3.10). Brand value can be measured in terms of market performance and ultimately in terms of shareholder value - both outcome variables (Cant *et al.*, 2007:263-278). The performance of the outcome variables is driven by the sources of customer-based brand equity as they reside in the customer

mindset. Thus, brand equity measurement requires insight into the sources and outcomes of brand value creation. Various methodologies can be used for brand measurement purposes (Tybout & Calkins, 2005:244). Brand equity measurement will be dealt with extensively in the following chapter.

3.7.4 Growing and sustaining brand equity

The management of multiple brands requires a more diverse perspective of brand management than that outlined in the previous brand management steps. It is important to view the brand within the context of other brands managed by the company (Aaker & Joachimsthaler, 2002:134; Aaker, 2004:13-14; Keller, 2003:48; Kotler & Keller, 2006:296). The terminology “brand portfolio” is used to refer to all the brands managed by a company. Aaker (2004:13) uses the concept brand portfolio strategy as the organising structure of the brand portfolio.

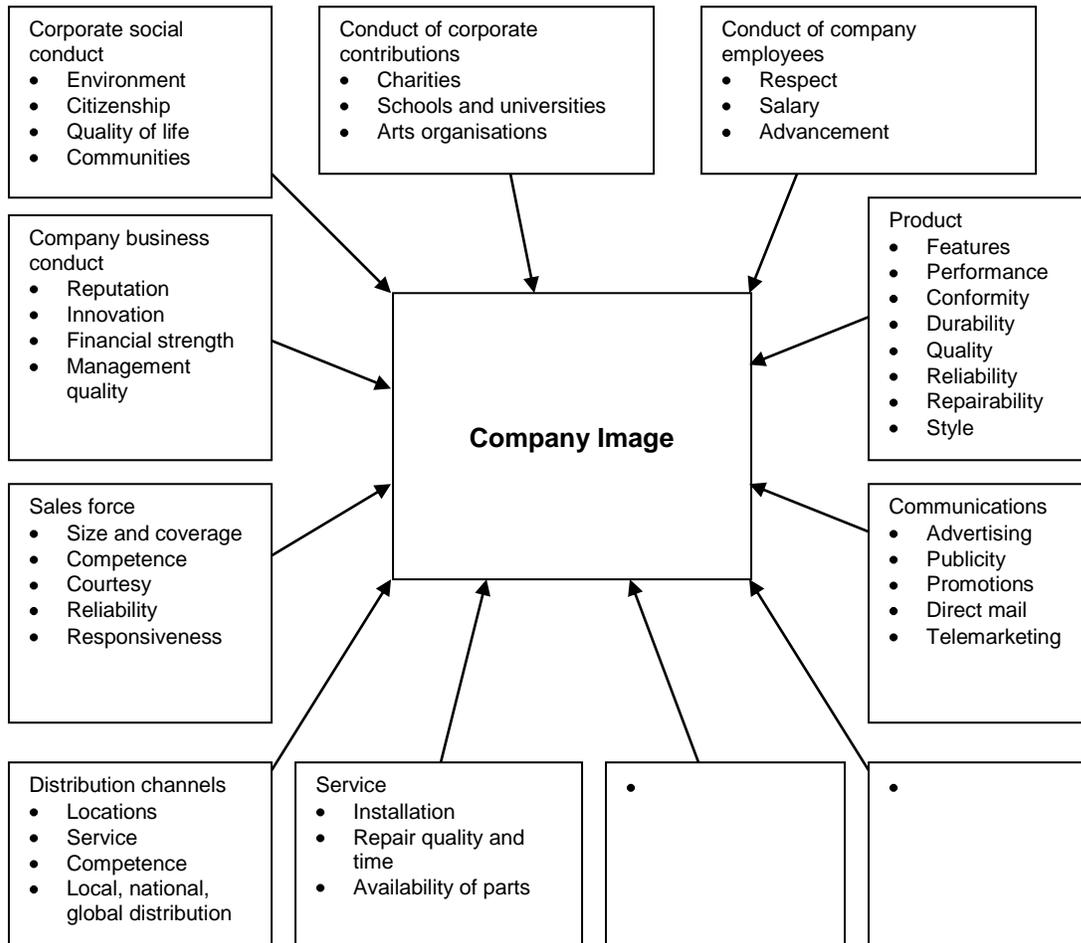
The brand portfolio strategy refers to certain key concepts. The major South African cellphone network service providers also manage their brands by applying these concepts. This study would be incomplete without exploring how these concepts are used by the network service providers in the management of their brands:

3.7.4.1 Corporate brand

The corporate or company brand is used to define the use of brand elements at the highest level in the organisation (Keller, 2003:536; Kotler & Keller, 2006:297). The corporate or company image is particularly relevant when the corporate or company brand plays a prominent role in the branding strategy, as is the case with Vodacom, MTN and Cell C (Kotler & Keller, 2006:423). A corporate brand is distinct from an individual or product brand in that it can encompass a much wider range of associations (Aaker, 2002:116; Keller, 2003:536; Cant *et al.*, 2007:219).

Corporate image can be defined as the associations that a consumer calls to mind for a specific corporate entity (Keller, 2003:66 and 538; Kotler & Keller, 2006:423). The determinants of corporate image are presented in figure 3.15:

FIGURE 3.15 DETERMINANTS OF CORPORATE IMAGE



Source: Adapted from Keller (2003:539) and Aaker (2002:131)

As indicated in figure 3.16, a vast array of potential sources can be used to develop organisational associations. The different types of associations that are likely to be linked to a corporate brand can be grouped into four broad categories: common product attributes, benefits or attitudes; people and relationships; values and programmes; and corporate credibility (Aaker, 2002:130-136; Keller, 2003:544-550; Kotler & Keller, 2006:423).

Common product attributes, benefits or attitudes: If the corporate brand is linked to products across diverse categories, then some of the strongest associations are likely to be those intangible attributes, abstract benefits, or attitudes that span each of the

different product categories. Two specific product-related corporate image associations deserve special attention, i.e. high quality and innovation. A **high quality** corporate image association involves the creation of perceptions that the company produces products of the highest quality. An **innovative** corporate image association could be based on perceptions of the company as being innovative, modern and up to date, investing in research and development, employing the most advanced manufacturing capabilities, and introducing the newest product features (Aaker, 2002:123-124; Keller, 2003:545; Venter & Jansen van Rensburg, 2009:237).

People and relationship image associations may reflect characteristics of the employees of the company, the rationale being that the traits exhibited by employees will directly or indirectly have implications for consumers concerning the products produced or the services rendered by the company. A customer-focused corporate image association (**concern for customers**) involves the creation of consumer perceptions of a company as being responsive to and caring about its customers (Aaker, 2002:125; Keller, 2003:547; Venter & Jansen van Rensburg, 2009:237).

Company values and programmes can be used to develop corporate image associations that do not directly relate to the products that the company sells. An important focus in this regard is the development of image associations that reflect **social responsibility**, by contributing to community programmes for example, and a **concern for the environment** through the effective use of scarce natural resources, for example (Aaker, 2002:119; Keller, 2003:550; Venter & Jansen van Rensburg, 2009:237). A brand often needs to make the identity choice between being a **global brand** with the accompanying prestige and credibility or a **local** brand that connects with the local market. Company programmes can be employed to develop local versus global corporate image associations (Aaker, 2002:128; Venter & Jansen van Rensburg, 2009:237).

Corporate credibility is a particularly important set of abstract associations for a corporate brand. It relates to the reputation that the company has achieved in the

marketplace and largely depends on three factors, i.e. corporate expertise, corporate trustworthiness and corporate likeability. **Corporate expertise** refers to the extent to which a company is seen as competent to make and sell its products and services. **Corporate trustworthiness** refers to the extent to which a company is seen as motivated to be honest, dependable, and sensitive to customer needs. **Corporate likeability** refers to the extent to which a company is seen as likable, attractive, prestigious and dynamic (Keller, 2002:550). Other characteristics that can also be categorised under corporate credibility are **presence and success** (also referred to as success and leadership). The visibility and presence of the organisation behind the brand can create an image of size, substance and competence (Aaker, 2003:127).

The corporate brand may provide valuable sources of brand equity that can be used as critical points of parity and points of difference. It can add value by:

- creating a value proposition that is meaningful to customers and that differentiates the brand;
- promoting customer relationship-based feelings, engendered by organisational associations;
- providing an identity umbrella for a variety of products;
- motivating employees and giving them a sense of purpose (Aaker, 2002:136; Keller, 2003:551).

Vodacom, MTN and Cell C have established strong corporate brands in the South African cellular market.

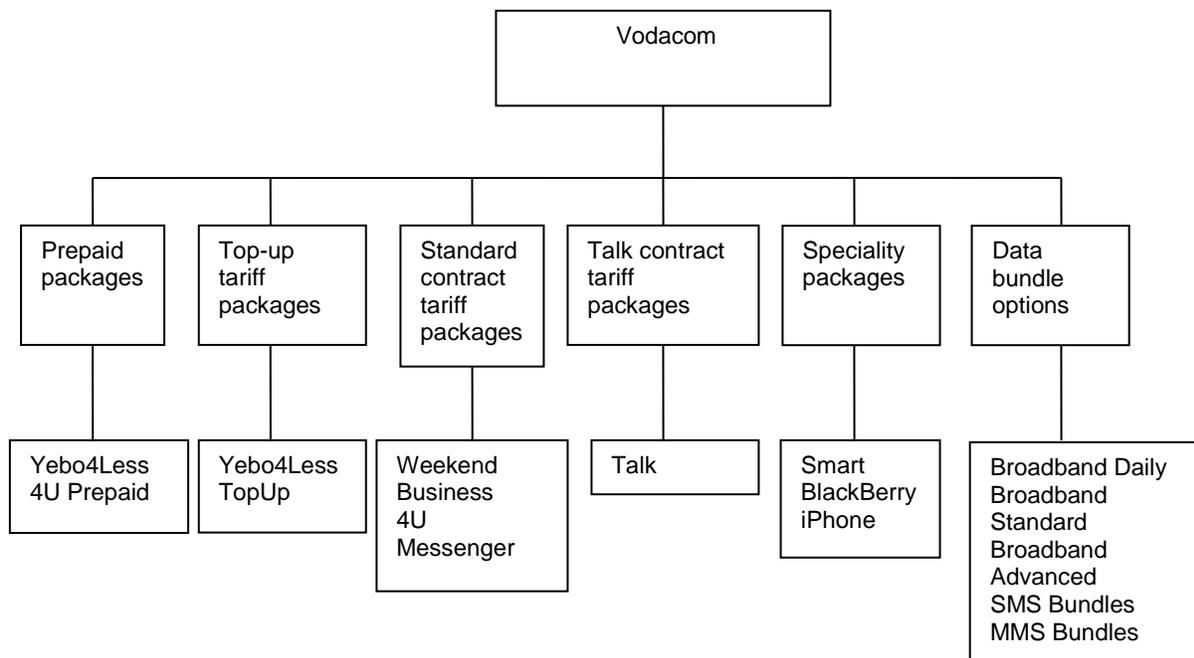
3.7.4.2 Master brand and sub-brands

The Vodacom, MTN and Cell C corporate brands are used as master brands. Sub-brands are defined as brands connected to the master (or parent, family or range) brand that augment or modify the associations of the master brand. The master brand is the primary frame of reference, but it is stretched by sub-brands that add associations, a brand personality or other dimensions (Aaker & Joachimsthaler, 2002:102). In terms of the brand relationship spectrum, as defined by Aaker and Joachimsthaler (2002:105),

the brand architecture used by Vodacom, MTN and Cell C can be defined as a master brand used in the dominant driver role (i.e. it drives the purchase decision) with sub-brands. As a result the sub-brands have limited freedom to create a distinct brand image. It is important that the associations created for the sub-brands strengthen the master brand (Aaker, 2004:57-59; Aaker & Joachimsthaler, 2002:115-116).

Vodacom’s use of its master brand and sub-brands is presented in figure 3.16:

FIGURE 3.16 VODACOM MASTER BRAND AND SUB-BRANDS



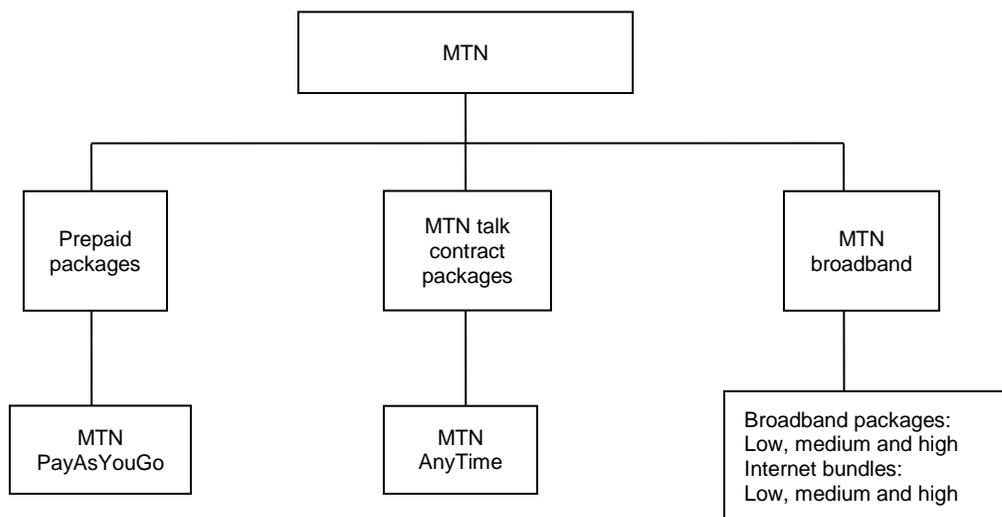
Sources: Vodacom, 2010a: 1-11; Vodacom, 2010b:1-2; www, 2008a:1-20

As indicated in figure 3.16, the Vodacom corporate brand is used as the master brand. It fulfils a major driver role, i.e. it drives the purchase decision. The sub-brands are used to describe the sub-brand package ranges, i.e. prepaid packages, top-up tariff packages, standard contract tariff packages, talk contract tariff packages, speciality packages and data bundle options. The sub-brands play a meaningful role as they describe and refine the market offerings (Aaker, 2004:60; Aaker & Joachimsthaler, 2002:118). The BlackBerry and iPhone speciality packages are an exception, as both the master brand

(Vodacom brand) and sub-brands (BlackBerry and iPhone packages) assume major driver roles. A co-driver strategy is thus used (Aaker, 2004:59-60; Aaker & Joachimsthaler, 2002:116-117).

MTN’s use of its master brand and sub-brands are presented in figure 3.17:

FIGURE 3.17 MTN MASTER BRAND AND SUB-BRANDS

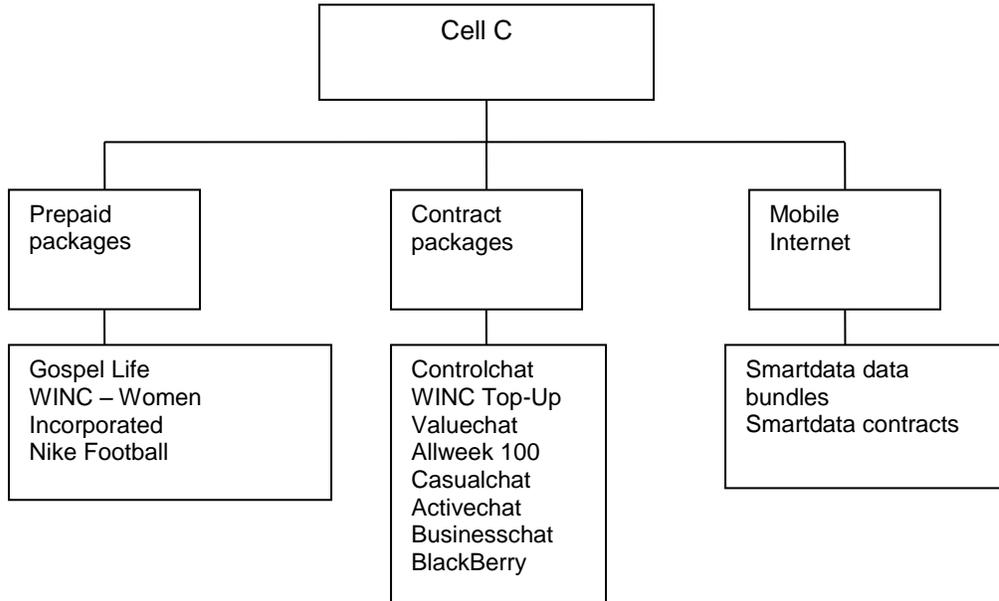


Sources: www, 2010a:1; MTN, 2010a:4-15; MTN, 2010d:1-26

As indicated in figure 3.17, the MTN corporate brand is used as the master brand, fulfilling a major driver role. Sub-brands are used to describe MTN’s prepaid offering (MTN PayAsYouGo), the MTN talk contract packages (consisting of the MTN AnyTime product range) and MTN Broadband (consisting of MTN Broadband packages and MTN Internet bundles).

Cell C’s use of its master brand and sub-brands are presented in figure 3.18:

FIGURE 3.18 THE CELL C MASTER BRAND AND SUB-BRANDS



Source: Cell C, 2010c:5-13

As in the case of Vodacom and MTN, Cell C is used as the master brand that plays a major driving role. Sub-brands are used to describe Cell C's prepaid offerings, talk contract packages and mobile Internet offerings.

3.7.4.3 Descriptors and modifiers

Descriptors are used to describe the offerings - usually in functional terms (Aaker, 2004:18; Aaker & Joachimsthaler, 2002:102). Keller (2003:536) uses the concept "modifier" in the same context. A modifier is used to designate a specific item or model type, or a particular version or configuration of the product. Modifiers are often used to signal refinements or differences in the brand, related to factors such as quality levels, attributes and functions. Brand modifiers play an important organising role in communicating how different products within a category that share the same brand name, differ with regard to one or more significant attributes or benefit dimensions (Keller, 2003:542).

a) Vodacom's use of sub-brands and descriptors

Different benefits and tariff structures are linked to the specific packages within the different sub-brands (refer to figure 3.17). As an example the 4U Prepaid package provides lower off-peak tariffs than Yebo4Less (Vodacom, 2010a:7-8). Descriptors are used to define packages for specific segments of the target market. In Vodacom's top-up tariff packages sub-brand descriptors are used to describe two packages: Yebo4Less 99 and Yebo4Less 199. The Yebo4Less 99 package has a monthly subscription fee of R99.00 and includes airtime credit worth R99,00 per month. The Yebo4Less 199 has a monthly subscription fee of R199.00 and includes airtime credit worth R199.00 per month. In addition to the Yebo4Less options, the Vodacom Top Up tariff packages sub-brand includes a range of top-up packages varying from Top Up 49 S to Top Up 590 S which are billed per second, as well as Top Up 135 and Top Up 375 which are billed per minute (Vodacom, 2010a:3-4). Once again the numeric indicator reflects the monthly subscription fee and value of airtime credit in rand.

The Vodacom standard contract tariff packages (monthly subscription fees indicated in brackets) include Weekend Everyday S (R135.00), Business Call S (R185.00), 4U (not applicable), Messenger (R35.00), Weekend Everyday (R135.00) and Business Call (R185.00). The first three packages are billed per second and the last three per minute (Vodacom, 2010a:5-6). A primary benefit of these contract options is the convenience that users never run out of airtime. They are best priced for users that mostly call during off-peak periods (weekdays from 8.00 p.m. to 7.00 a.m. and weekends).

The Vodacom talk contract tariff packages include Talk 75 S, Talk 120 S, Talk 200 S, Talk 350 S, Talk 500 S, Talk 1000 S, Talk 130 and Talk 240. The first six packages are billed per second and the last two per minute. The numeric descriptors are used to indicate the talk-time minutes included in each package. The subscription fees vary from R189.00 to R430.00 per month (Vodacom, 2010a:7-8).

The Vodacom speciality packages include the Smart120 S, Smart500 S, BlackBerry Email+ S, BlackBerry Talk 100, Blackberry Talk 500, BlackBerry 240, iPhone Weekend

S, iPhone 120 S, iPhone 500 S and iPhone 240. The numeric descriptors indicate talk-time minutes included in the packages and the descriptor “S” indicates the benefit of per-second billing (Vodacom, 2010a:9-10). The speciality packages make it possible for users to check e-mails, to access the Internet and to make and receive voice calls. Monthly subscription varies from R199.00 to R925.00. A sophisticated handset is required to use these services and the handset therefore plays an important role in the purchase decision. The branded BlackBerry packages provide integrated voice and data functionality and the integrated BlackBerry messaging service.

The Vodacom data bundle options include the Broadband Daily, Broadband Standard and Broadband Advanced package ranges, SMS (short message service) bundles and MMS (multimedia messaging) bundles. Broadband Daily enables Vodacom Prepaid and Top Up customers to purchase Broadband Daily data bundles branded as MyMeg 10 (subscription charge R5.00) and MyMeg 50 (subscription charge R20.00). In-bundle subscription charges are much cheaper than out-of-bundle rates. Broadband Standard and Broadband Advanced enable contract users to add a data bundle to their contract or to subscribe to a data contract. The data bundles are branded as MyMeg and MyGig. As in the case of Broadband Daily, numeric descriptors are used to describe the size of the data bundles. The Broadband Standard data bundles start at MyMeg 8 (subscription charge R9.25) and increases to MyGig 20 (subscription charge R3899.00). The Broadband Advanced data bundles start at MyMeg 175 (subscription charge R129.00) and increases to MyGig 20 (subscription charge R3620.00). In the Broadband Standard product range different out-of-bundle rates are charged for contract and top-up or prepaid options (Vodacom, 2010b:1-2). The Broadband Advanced product range provides the benefits of the same in-bundle and out-of-bundle rate. Subscription options for Broadband Standard and Broadband Advanced include 24-month and month-to-month contract options and once-off purchases of data bundles. A range of computers (mostly laptops) can also be included as part of a subscription to a Vodacom data service.

SMS and MMS bundles are available to top-up and contract customers at discounted rates per SMS and MMS (Vodacom, 2010a:13).

b) MTN's use of sub-brands and descriptors

As indicated in figure 3.18, MTN has three major sub-brands, i.e. MTN PayAsYouGo, MTN AnyTime, and MTN Broadband.

MTN PayAsYouGo is linked to the branded MTN OneRate PayAsYouGo price plan. It provides per-second billing with an all-day call rate of R1.75 per minute or 2.91 cents per second across all networks, an SMS rate of 50 cents all day to any number, one free daily SMS, a full voicemail service and seven free CallBack requests per day (www. 2010a:1). MTN Zone is another branded price plan linked to the MTN PayAsYouGo sub-brand. It provides discounts on calls and SMSs depending on the time of day and the user's location. MTN users on PayAsYouGo and TopUp pricing plans can join MTN Zone by dialling a specific number from their cellphone. The MTN PayAsYouGo offerings also include MTN Muziq for music lovers (www. 2010b:1).

The sub-brand MTN AnyTime includes MTN's talk contract product range. During 2009 MTN simplified its brand portfolio for the South African market. The new MTN AnyTime packages were designed to provide the ultimate in flexibility. The packages include an airtime value and SMSs, and provide the options of MTN AnyTime or MTN Off Peak pricing, as well as a top-up option. An overview of the MTN AnyTime contract packages are presented in table 3.2:

TABLE 3.2 MTN ANYTIME CONTRACT PACKAGES

Package	Monthly subscription /airtime value	Number of SMSs included	In-bundle rate (AnyTime)	Out-of-bundle rate (AnyTime)	Estimated number of minutes included 1)
MTN AnyTime 50	R50.00	25	R2.30	R2.85	21
MTN AnyTime 100	R100.00	25	R2.30	R2.85	43
MTN AnyTime 200	R200.00	25	R2.30	R2.85	86
MTN AnyTime 350	R350.00	50	R1.95	R2.35	179
MTN AnyTime 500	R500.00	50	R1.95	R2.35	265
MTN AnyTime 750	R750.00	100	R1.60	R1.75	468
MTN AnyTime 1200	R1 200.00	100	R1.60	R1.75	750
MTN AnyTime 1500	R1 500.00	200	R1.50	R1.50	1 000

Note 1) Based on the assumption that all included minutes are used for making local voice calls according to the applicable in-bundle AnyTime call rate

Source: BMI-T, 2009b:67

As indicated in table 3.2, numeric descriptors are used to indicate the monthly subscription fee and inclusive airtime value. The pricing plan options that can be linked to the contract packages include MTN AnyTime and MTN Off Peak. MTN AnyTime is ideal for users who make their calls on any day, at any time and to any network. The MTN Off Peak pricing plan is best suited for users that primarily use their cellphones after hours during the week and over weekends. TopUp options can be linked to all the MTN AnyTime packages. It provides the convenience of a contract option and the control of a PayAsYouGo option. As previously mentioned, the MTN Zone discounts are applicable to top-up usage.

MTN also provide BlackBerry-branded services. In addition to normal cellphone functionality, MTN also offers automatic delivery of e-mails to the BlackBerry device. A co-driver strategy is used for these packages with both the master brand (MTN brand)

and sub-brand (BlackBerry) assuming major driver roles in the purchase decision (MTN, 2010d: 1-25).

The MTN Broadband sub-brand includes broadband packages and Internet bundles. The MTN Broadband package range enables users to access the Internet via a computer. MTN's broadband packages are presented in table 3.3:

TABLE 3.3 MTN'S BROADBAND PACKAGES

Package	Monthly subscription
Low	
MTN Broadband 10 MB	R15.00
MTN Broadband 75 MB	R79.00
Medium	
MTN Broadband 300 MB	R179.00
MTN Broadband 500 MB	R249.00
High	
MTN Broadband 1 GB	R349.00
MTN Broadband 2 GB	R449.00
MTN Broadband 3 GB	R749.00
MTN Broadband 10 GB	R1 999.00

Source: MTN, 2010b:2

As indicated in figure 3.3, MTN's Broadband packages are categorised into low, medium and high packages, based on the amount of data included. A TopUp contract can be linked to any of the packages. MTN provides a range of branded MTN F@stLink (FastLink) modems (E156, E1750, E153 and E1820) with different levels of speed and external storage features, as well as computers (mostly laptops) that can be included as part of data contract offerings MTN 2010c:24.

MTN's Internet bundles are presented in table 3.4:

TABLE 3.4 MTN'S INTERNET BUNDLES

Internet bundles	Monthly subscription
Low	
10 MB bundle	R10.00
75 MB bundle	R49.00
Medium	
300 MB bundle	R149.00
500 MB bundle	R189.00
High	
1 GB bundle	R289.00
2 GB bundle	R389.00

Source: MTN, 2010b:2

MTN's Internet bundles enable users to access the Internet in the most cost-effective manner by using their cellphones. Internet bundles can be loaded onto MTN voice contracts or MTN PayAsYouGo pricing plans. As indicated in figure 3.4, MTN's Internet bundles are categorised into low, medium and high packages, based on the amount of data included.

c) Cell C's use of sub-brands and descriptors

As indicated in figure 3.19, the Cell C Prepaid sub-brand includes three prepaid offerings (starter packs), i.e. Gospel Life, WINC (Women Incorporated) and Nike Football. The prepaid offerings are linked to three pricing options: all day, per second and standard. The pricing options are designed to provide the best value for users, based on the time of day that calls are made and the duration of calls (Cell C, 2010c:5).

The contract package sub-brands include Controlchat, WINC Top-Up, Valuechat, All Week 100, Casualchat, Activechat, Businesschat and BlackBerry Smartphone from Cell C. Controlchat offers 16 options (Controlchat 50 to 700), each with a predefined amount

of airtime and free SMSs per month. Monthly subscription fees start at R50 for Controlchat 50. WINC Top-Up provides top-up options (Top-Up 100, 125 and 150) for WINC users. Value chat is the option for users that already have a cellphone, as users only pay for airtime on a month-to-month contract basis (Cell C, August 2010c:11). Table 3.5 presents the monthly subscription fees and talk-time minutes included in a selected range of the other Cell C contract options:

TABLE 3.5 CELL C CONTRACT OPTIONS

Package	Monthly subscription	Minutes included	Pricing plans
Casualchat			
50 (anytime)	R130.00	50 (anytime)	Vary based on network called and time of call (peak/off-peak)
100 (off-peak)	R115.00	100 (off-peak)	
Allweek100	R100.00	100 (anytime)	The same across networks and no difference between peak and off-peak
Activechat			
100	R250.00	100 (anytime)	Vary based on network called and time of call (peak/off-peak)
220	R399.00	220 (anytime)	
Businesschat			
400	R650.000	400 (anytime)	Vary based on network called and time of call (peak/off-peak)
700	R1100.00	700 (anytime)	
1000	R1500.00	1 000 (anytime)	

Source: Cell C, 2010c:13

As indicated in table 3.5, the talk-time minutes included in each package are used as a package descriptor. As a general rule the pricing plans are designed to provide more favourable rates for higher monthly subscription fees.

Cell C's mobile Internet sub-brand includes Smartdata bundles and Smartdata contracts. Smartdata bundles are available to all contract customers except Controlchat. The data bundles can be added to a contract or a customer can sign up for a separate Smartdata contract. Data bundles are available in a variety of sizes from as little as 25 MB to as much as 1 GB (Cell C, 2010c:22). Since the upgrade of its network in the second half of 2010 Cell C has also been offering data bundles for fast mobile Internet access. The phrase "whooshh" is used to brand the data speed of these offerings as a key feature. A 7.2 MBPS (megabytes per second) HSDPA modem, providing 2 GB of data per month over a twelve-month period, can be purchased once-off at a total cost of R1499.00. A 21.6 MBPS HSDPA modem, providing 5 GB of data per month over a twelve-month period, can be purchased once-off at a total cost of R2999.00 (Cell C, 2011:3)

3.7.4.4 Endorser brands

An endorser brand is used to provide credibility and substance to the endorsed brand or product (Aaker, 2004:18; Venter & Jansen van Rensburg, 2009:236). Vodafone is used as an endorser brand by Vodacom for the Vodacom brand. It specifically provides credibility in terms of Vodacom's ability to provide technologically sophisticated services (Vodacom, 2010a:11). Vodacom uses DStv (MultiChoice) as an endorser of its pay-television market offering, DStv Select (www, 2008e:1). Vodacom is used as an endorser by iBurst with the presentation of its offering as "iBurst by Vodacom".

Cell C uses Hola 7 in an endorser role to create the association of a proudly South African brand with a South African heritage (www, 2008c 1-2). MTN used its sponsorship of the FIFA 2010 World Cup event in an endorser capacity to strengthen the master brand's association with football sponsorship (MTN Group Limited, 2009a:28).

3.7.4.5 Branded differentiators

Branded differentiators are used to define a feature, ingredient or technology, or service or programme. By creating a point-of-difference association the branded differentiator makes the branded offering appear superior. Branded differentiators can also be used to add more functions and benefits to the offering. Vodacom's 3G HSDPA data service is an example of a branded technology used to enhance the Vodacom master brand. Vodacare service is a branded programme used by Vodacom to differentiate its brand. The programme is linked to Vodacom's distribution channel as it is prominently displayed at selected Vodacom outlets. The Vodaworld facility in Midrand (Vodawold) is also used to support the Vodacom corporate brand image (www, 2008a:17).

The use of branded differentiators by MTN includes the MTN Zone pricing plan; MTN's access4all programme that enables users in rural and peri-urban areas to contact family and friends in cities; and MTN Zoners, who are tasked with delivering on the promise of access4all (Affinity Advertising and Publishing, 2009:128-129).

Take A Girl Child to Work Day, Hola 7 and the South African Model UN debate are examples of branding programmes used by Cell C as branded differentiators to link the association of caring for the community to the Cell C corporate brand (Affinity Advertising and Publishing 2009:182).

3.7.4.6 Brand alliances

Brand alliances entail the use of brands from different companies that combine to engage in strategic or tactical brand building programmes or to create co-branded market offerings Sponsorships or personalities that have a long-term role in building the equity of a brand in the portfolio should become part of the portfolio that needs to be actively managed (Aaker, 2004:20-21). Vodacom and MTN's sport sponsorships, for example the Vodacom Tri-Nations (rugby) and MTN Africa Cup of Nations (soccer), are good examples in this regard. As previously discussed the BlackBerry packages marketed by Vodacom, MTN and Cell C are also typical examples of co-branding (Aaker, 2004:21).

3.7.4.7 Brand portfolio roles

The brand portfolio role, allocated to specific brands within the brand portfolio, makes the optimal allocation of brand building and brand management resources possible (Aaker, 2004:23; Kotler & Keller, 2006:302). The strategic brand justifies specific mention. A strategic brand is a brand that is of strategic importance to the organisation. It needs to succeed and therefore should receive the resources that are needed. Three types of strategic brands can be identified, i.e. the current power or mega brand, the future power brand and the linchpin brand (Aaker, 2004:24).

The cellular voice service offerings of Vodacom and MTN are their current power or mega brands, as generate significant sales and profits and are not candidates for cash cow status. The data offerings of Vodacom and MTN are their future power brands as it is projected these will generate significant sales in the future although they currently may be small and emerging (refer to Chapter 2, tables 2.2 and 2.5). The linchpin brand is likely to influence significant sales and market position in the future as opposed to generating these. Thus, linchpin brands serve as a leverage point for a major business area or for a future vision of the company.

The Vodacom Talking Points loyalty programme for prepaid users (Vodacom, 2010a:14) is used by Vodacom to play a linchpin role. MTN is using its MTN Zone pricing plan for prepaid and top-up users in a linchpin role.

Branded energisers also justify mention. A branded energiser is any branded product, promotion, sponsorship, symbol, programme or other entity that by association enhances and energises the target brand (Aaker, 2004:25). The Yebo Millionaires game show is used by Vodacom as a branded energiser (Vodacom, 2010a:2). The 21 Days of Y'ello Care programme is used by MTN as a branded energiser (Affinity Advertising and Publishing, 2009:231).

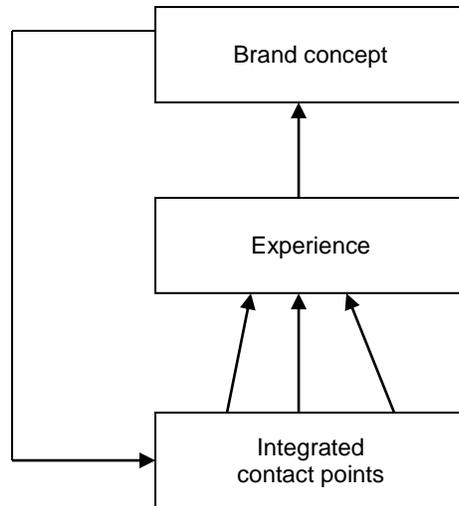
3.7.4.8 Relationship marketing and customer relationship management

Due to the importance of the development of profitable customer relationships, **customer relationship management** has become one of the most important concepts of modern marketing (Kotler & Armstrong, 2005:13). Customer relationship management encompasses every interface between the company and its consumers (Tybout & Calkins, 2005:152). In a narrow context it is defined as a customer data management activity which entails managing detailed information about individual customers and carefully managing the customer interfaces (touch points) to maximise customer loyalty (Kotler & Armstrong, 2005:13). Brand touch points are the interactions between the brand and the customer and are of critical importance in the customer relationship management process. The brand touch points include the pre-purchase experience, the purchase experience, the usage experience and the post-purchase experience. The customer touch points from beginning to end are known as the “brand touch-point wheel” (Tybout & Calkins, 2005:230). However, customer relationship management should be viewed in a broader context. Kotler and Armstrong (2006:13) define it as the overall process of building and maintaining profitable customer relationships by delivering superior customer value and satisfaction. As such it deals with all aspects of acquiring, keeping and growing customers (Lovelock & Wirtz, 2004:351-379; Kasper *et al.*, 2006, 151-163; Zeithaml *et al.*, 2006:187-207).

While building on the broader context of customer relationship management Tybout and Calkins (2005:150) refer to the concept of relationship branding. They define relationship branding as a strategic approach aimed at making consumers feel a sense of relationship or personal connection with a brand. Relationship branding is made possible by allowing sub-segments of consumers to experience the brand in a more personal way. Thus it requires the use of different contact points with each sub-segment to create different experiences. This idea should be considered from an integrated marketing perspective, as shown in figure 3.19. The brand idea must be translated into a series of contacts with the consumer that in turn creates the experience that underlies the brand. Relationship branding entails creating contact points for sub-segments of

consumers to produce a more idiosyncratic experience than would be the case if the same contact points were created for all consumers (Tybout & Calkins, 2005:152).

FIGURE 3.19 RELATIONSHIP-BRANDING: AN INTEGRATED MARKETING PERSPECTIVE

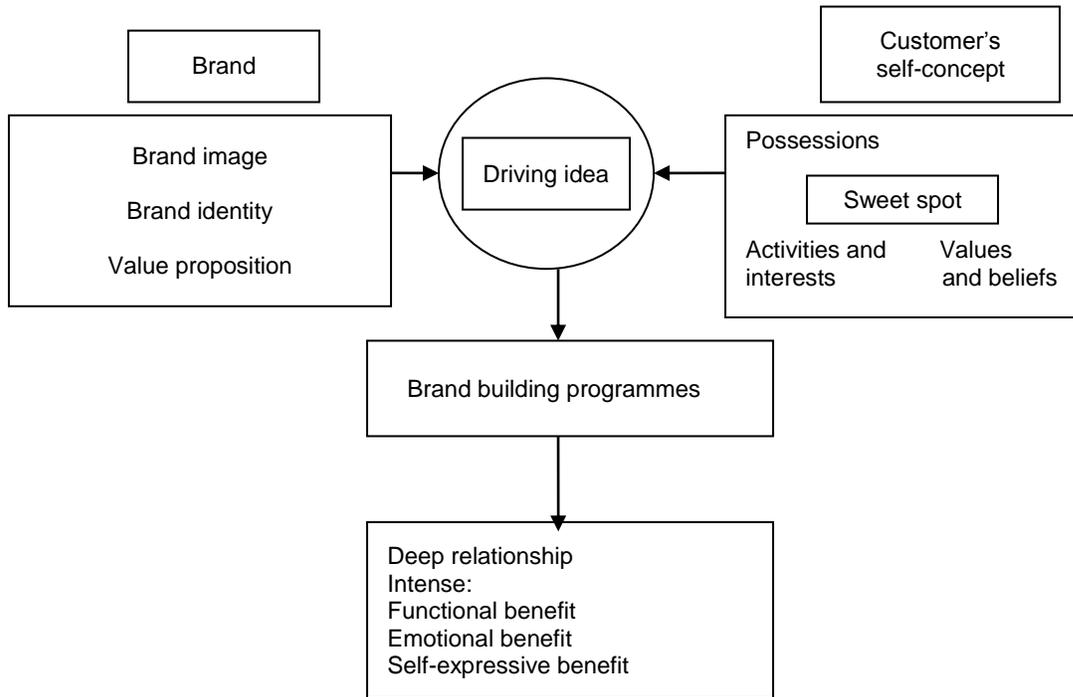


Source: Tybout & Calkins, 2005:152

Relationship branding is used as a key driver of customer-based brand equity by the major cellphone service providers. Vodacom has created the Vodacom4U sub-brand to create a youth-orientated service and service experience. The Vodacom4U sub-brand is supported by Vodacom4U stores (Vodacom, 2010c:18).

The development of a deep relationship between the brand and a customer requires a rich and insightful understanding of the customer. The need is to find the customer's "sweet spot" - that part of the customer that represents significant involvement and commitment, and that expresses who the customer is, i.e. the customer's self-concept. The essence of most consumers' self-concept is reflected in the following three dimensions: values and beliefs, activities and interests, and possessions (Lamb *et al.*, 2008:68; Cant *et al.*, 2007:73-84; Kotler & Keller, 2006:252-253). Figure 3.20 presents the model for customer relationship development, as proposed by Aaker (2002:265):

FIGURE 3.20 AAKER'S PROPOSED CUSTOMER RELATIONSHIP MODEL



Source: Aaker & Joachimsthaler, 2002:265

As shown in figure 3.20 a driving idea or central concept should be the driving force behind a set of co-ordinated brand building programmes. In most instances the driving idea is likely to be inspired by the consumers' sweet spot. The Vodacom4U branding is developed around the activities, interests, values and beliefs of the youth market targeted by this sub-brand.

The website portals of Vodacom (My Vodacom) and MTN (MyMTN) and the Cell C website are positioned as important platforms to enable customer relationship management. My Vodacom and MyMTN provide account information, free messaging services, access to content services, loyalty rewards and locations of outlets. Vodacom and MTN's distribution channels are characterised by the use of flagship outlets in major metropolitan areas, controlled by the service providers.

The growing and sustaining of brand equity require brand development and management across multiple product categories, different market segments and geographic markets.

3.7.4.9 Brand development

The brand development strategy options available to the marketer are primarily determined by the organisation’s brand name and the product category served. There are four basic brand development strategies available, i.e. the introduction of new line extensions, brand extensions, multi-brands or new brands. These are presented in figure 3.21:

FIGURE 3.21 BRAND DEVELOPMENT STRATEGIES

Brand name	Product category	
	Existing	New
Existing	Line extension	Brand extension
New	Multi-brands	New brand

Source: Kotler & Armstrong, 2006:255

Due to their established corporate brand and customer base, Vodacom, MTN and Cell C are primarily developing their brands by means of line extensions and brand extensions. The extended data service market offerings of Vodacom, MTN and Cell C have been driven by a new generation of smartphones, upgrades of local network capabilities, and an increase in the availability of international bandwidth, and lowered bandwidth pricing. Vodacom and MTN are also using brand extension as a strategy. Both developed products targeted at a new product category, i.e. the corporate market. Vodacom Business and MTN Business Solutions have been established to penetrate the corporate market currently dominated by Telkom. The convergence of information communication technology (ICT) and communication services will play an important role in the future development of services for this market.

The high levels of mobile penetration in the consumer market (refer to Chapter 2 tables 2.4 and 2.7) limit future revenue growth from this market to two sources: new emerging subscribers (refer to Chapter 2, paragraph 2.3.3.7) and revenue from new data services.

Vodacom's global brand development will be influenced by its link-up with Vodafone. MTN is strongly positioned in Africa and the Middle East. Cell C is currently positioned as a local brand only.

3.8. CONCLUSION

Since completion of the research the following changes that impact on the use of branding and brand management by Vodacom, MTN and Cell C has taken place:

- A new cellphone network service provider i.e. *8ta* a division of Telkom SA has entered the market (Telkom, 2011:16-17).
- Cell C has rebranded and changed its market focus. Cell C is now using its network transformation programme (refer to Chapter 2, paragraph 2.3.3.5) and new corporate identity (refer to Chapter 3, paragraph 3.3.4) to compete head-on with Vodacom and MTN.
- Vodacom is now using Vodafone's red corporate colour in the visual presentation of the brand. The phrase "South Africa's Leading Cellular Network" has been replaced with the phrase "Power to You" (Vodacom, 2011:4).

This chapter presented an overview of literature on branding and brand management, as well as an overview of the use of branding and brand management by Vodacom, MTN and Cell C. The purpose of the chapter is to provide the context within which brand equity measurement should be assessed. Brand equity measurement will be discussed in the following chapter.

CHAPTER 4

THE MEASUREMENT OF BRAND EQUITY

4.1. INTRODUCTION

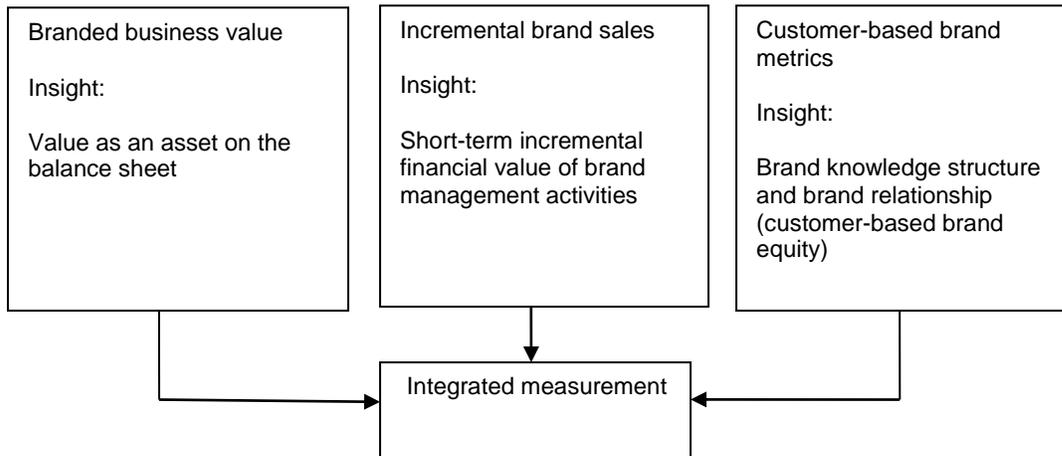
This chapter presents an overview of literature on the measurement of brand equity. First the concept “brand equity measurement system” will be defined and then the different approaches to brand measurement will be explored. This will be followed by a discussion of the customer-based brand metrics approach to the measurement of brand equity. The following topics will be covered: integrated marketing communication and brand equity; the Hierarchy of Effects Model; service quality; customer satisfaction; loyalty; loyalty and customer relationship management; and the most prominent customer-based brand metric measurement methodologies.

4.2. BRAND EQUITY MEASUREMENT DEFINED

A brand equity measurement system can be defined as a set of research procedures designed to provide timely, accurate and actionable information on brands, which enables brand management to make the best possible tactical decisions in the short run and strategic decisions in the long run. The overall objective in the development of a brand equity measurement system is to achieve a full understanding of the sources and outcomes of brand equity, and to develop the ability to grow and sustain brand equity (Keller, 2003:389; Kotler & Keller, 2006:288).

The ideal brand equity measurement system should provide brand management with complete, up-to-date and relevant information on the key brand equity dimensions (Keller, 2003:389; Tybout & Calkins, 2005:269). There are various methods that can be used for the measurement, tracking and valuation of brands (Venter & Jansen van Rensburg, 2009:234). As indicated in figure 4.1, three broad brand measurement approaches can be identified, namely branded business value, incremental brand sales and customer-based brand metrics (Tybout & Calkins 2005:244-271).

FIGURE 4.1 BRAND MEASUREMENT APPROACHES

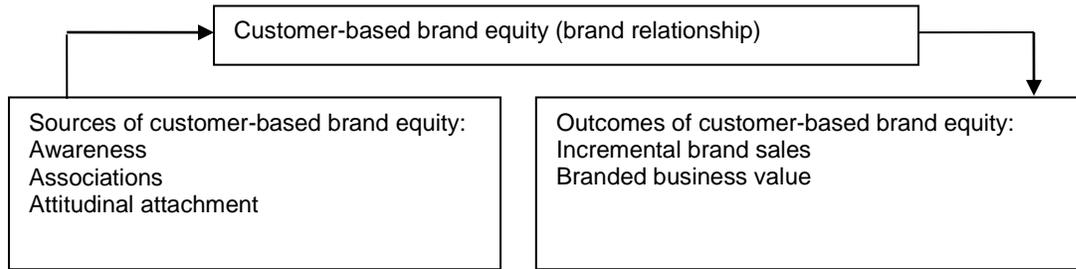


Sources: Adapted from Tybout and Calkins (2005:269), Keller (2003:482-492) and Farris *et al.*, (2006:34-44)

As indicated in figure 4.1, the three approaches are separate and distinct. Each could be considered as a pathway that provides answers to different questions. The branded business value pathway provides insight into the value of the brand as an asset on the balance sheet. The incremental brand sales pathway provides insight into the short-term, incremental financial value of brand management activities. The customer-based brand metrics pathway provides insight into the impact and effect of brand management activities on the customer's brand knowledge structure and relationship with the brand, i.e. customer-based brand equity (Tybout & Calkins, 2005:252 and 268).

The branded business value and incremental brand sales approaches measure the outcomes of brand equity, as opposed to the customer-based brand equity pathway that measures the sources of customer-based brand equity (refer to Chapter 3, figure 3.10) as these prevails in the mind of the customer (Cant *et al.*, 2006:263). The relationship between the sources and outcomes of brand equity is presented in figure 4.2:

FIGURE 4.2 THE SOURCES AND OUTCOMES OF BRAND EQUITY



Sources: Adapted from Keller (2003:391 and 478) and Cant *et al.* (2006:263)

It is difficult to combine the pathways indicated in figure 4.1 and if they are combined the results tend to favour one measure above the other. The challenge is therefore to find a way to integrate the various measurement approaches and to better understand the cause-and-effect relationships between the three pathways. The problem is that an integrated measurement system must be capable of combining attitudinal data, behavioural data and financial data. An integrated measurement system also requires the ability to measure all three sets of results historically and to estimate what the future outcomes might be (Tybout & Calkins, 2005:244-269). The development of such a system is therefore a complicated process.

Integrated measurement can be achieved through the use of a balanced scorecard to include attitudinal, market performance and brand value elements. It can provide a framework to focus organisational attention on the most important factors in the brand's long-term success. Properly developed and executed, a brand scorecard serves as a valuable management tool to adjust and allocate scarce and finite corporate resources to the best benefit of the brand and the organisation (Tybout & Calkins, 2005:260-269; Zeithaml *et al.*, 2006:558-559; Venter & Jansen van Rensburg, 2009:335).

The customer-based brand metrics approach that was used to measure customer-based brand equity in this study will subsequently be discussed in more detail:

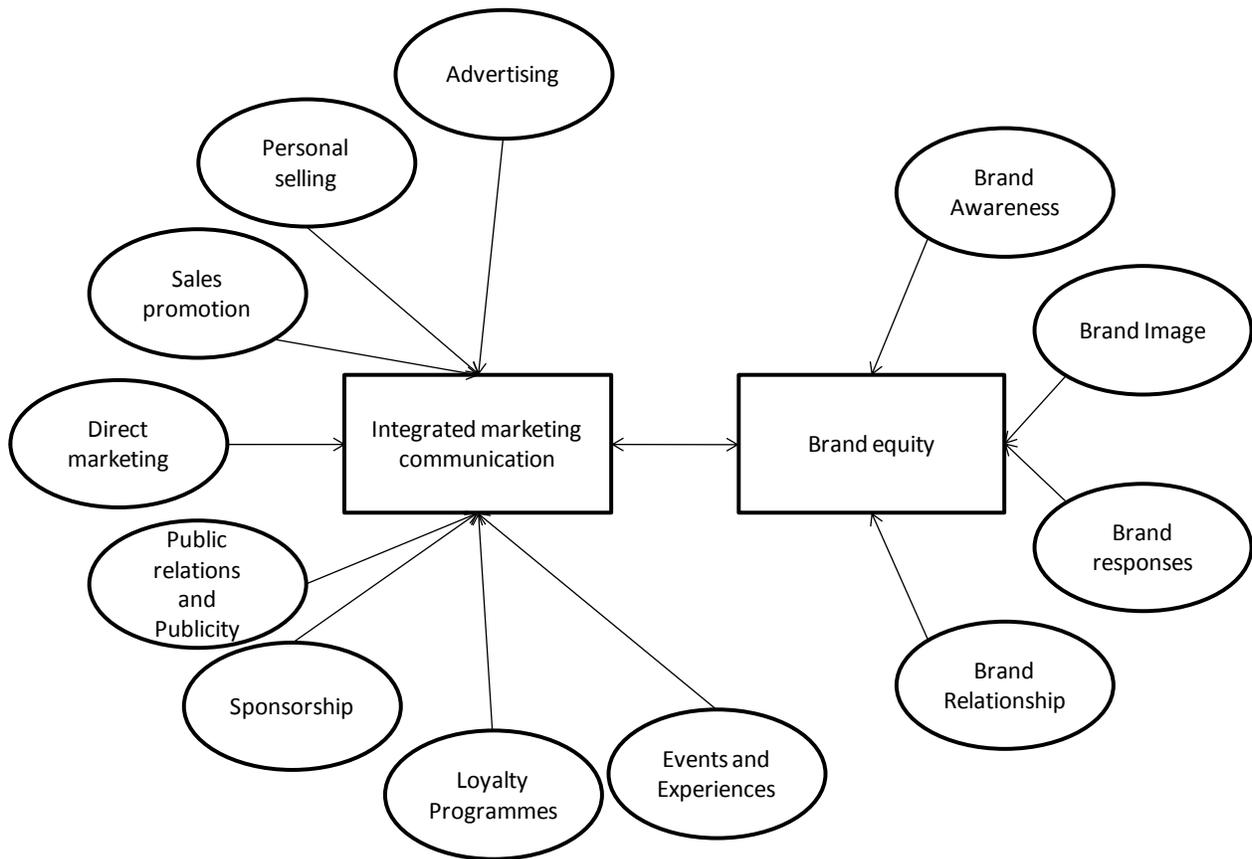
4.3. CUSTOMER-BASED BRAND METRICS

This measurement approach is based on the marketing philosophy that attitudes, opinions and beliefs drive consumer brand behaviour (Tybout & Calkins, 2005:247). Integrated marketing communication (refer to Chapter 3, figure 3.1) makes the development of brand equity possible by establishing brand awareness and by crafting a brand image that leads to brand responses and the development of a brand relationship (Kotler & Keller, 2006:536), also referred to as “customer-based brand equity” in this study.

4.3.1 Integrated marketing communication and brand equity

Figure 4.3 shows the interaction between integrated marketing communication and the development of brand equity:

FIGURE 4.3 INTEGRATED MARKETING COMMUNICATION AND THE DEVELOPMENT OF BRAND EQUITY



Sources: Adapted from Kotler and Keller (2006:537), Koekemoer (2004:6) and Kasper et al., (2006:416-417).

Marketing communication is the means by which marketing management attempts to inform, persuade and remind consumers directly and indirectly about the brand. Although advertising is often the central element of a marketing communications programme, it is usually not the only element, or even the most important element contributing to the development of brand equity. One important implication of the concept of customer-based brand equity is that the manner in which brand associations are formed is not important. The brand associations are developed through all the customer's contact and experiences with the brand. Integrated marketing communication combines all the elements of the marketing communications programme to unify the company's communication efforts to produce message consistency (Kotler & Keller, 2006:536-539 and 558-561; Cant *et al.*, 2007:137).

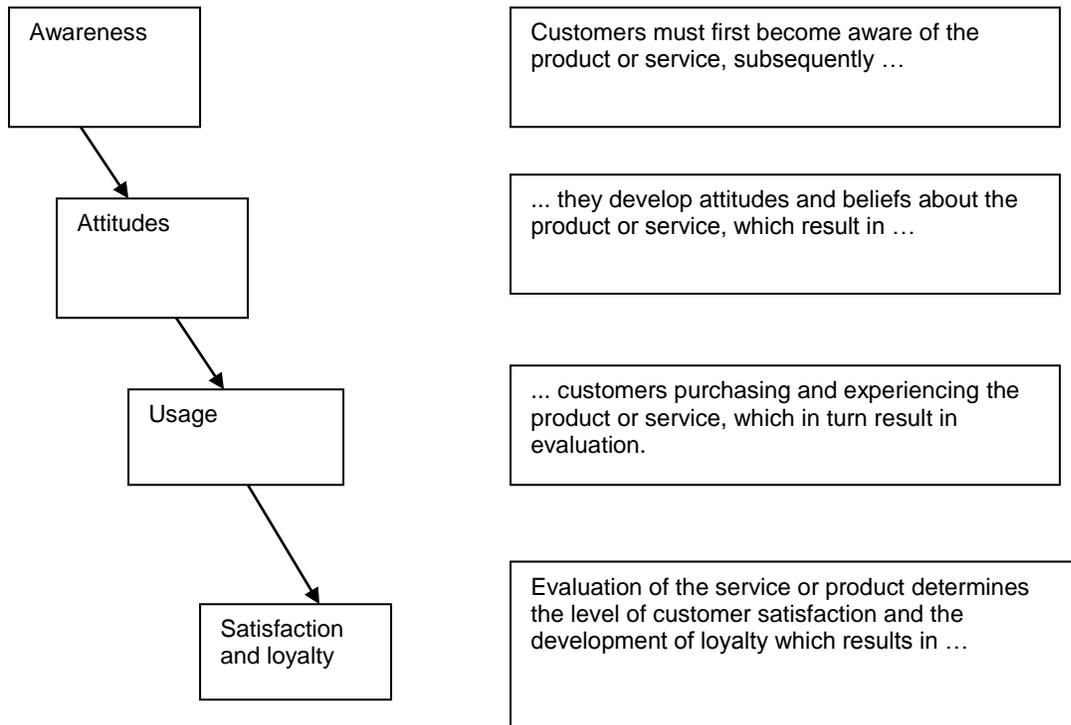
Much of the support for the customer-based brand metrics approach stems from the development of what is now called the “Hierarchy of Effects Model” developed by Lavidge, Steiner and Colley in the early 1960s (quoted by Tybout & Calkins, 2005:247-248).

4.3.2 Hierarchy of Effects Model

Lavidge, Steiner and Colley hypothesised that the consumer moves through a measurable, linear attitudinal development process on the way to making a purchasing decision. Thus by measuring the consumer’s awareness, knowledge and convictions about a brand, brand management can measure the impact of brand marketing actions on moving prospects along a continuum towards eventual purchase behaviour. The Hierarchy of Effects Model has been used to explain and illustrate the impact and marketplace effects of advertising for nearly 50 years. It has been widely adapted for the use of brand measurement in one way or another, and underlies many of the brand tracking systems used today (Tybout & Calkins, 2005:248).

Figure 4.4 presents the continuum along which customers move from awareness to loyalty (Farris *et al.*, 2006:34):

FIGURE 4.4 AWARENESS TO LOYALTY: HIERARCHY OF EFFECTS



Sources: Farris *et al.*, 2006:35; Kasper *et al.*, 2006:107; Lovelock & Wirtz, 2004:352

As indicated in figure 4.4, the assumption is that customers progress through sequential stages from lack of awareness, through initial purchase and usage, to satisfaction and the development of brand loyalty or dissatisfaction and brand rejection (Farris *et al.*, 2006:35; Lovelock & Wirtz, 2004:352). Service quality, an important driver of customer satisfaction and ultimately loyalty, will subsequently be discussed:

4.3.3 Service quality

Service quality is an important driver of customer satisfaction and ultimately loyalty. The improvement of service quality costs money and thus it is important for companies to know where to focus their resources to achieve the best return on their investment in service quality. Companies usually do not pursue service quality as an outcome in its own right. It is rather pursued indirectly, through its association with satisfaction and the

resulting customer retention and profitability (Kasper *et al.*, 2006:175-176; Cant *et al.*, 2007:310-313).

Service quality is a complex concept. A number of frameworks or models have been applied to services as a means of understanding and ultimately managing improvements to service quality. Before considering these models it is important to clarify the relationship between service quality and customer satisfaction.

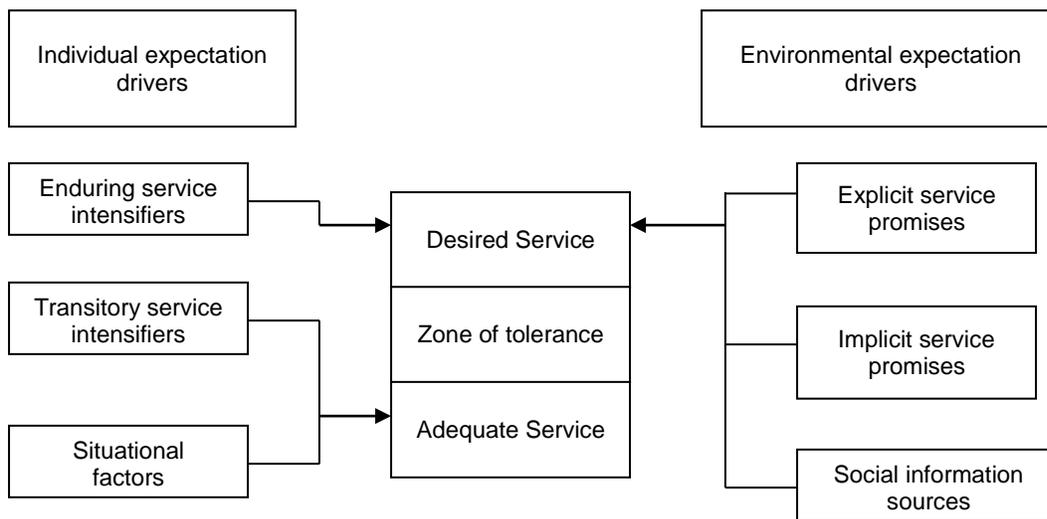
In simple terms service quality refers to some attribute of what is offered, provided or produced, whereas satisfaction or dissatisfaction refers to a customer's reaction to that offer. Service quality is something that an organisation is responsible for, as opposed to satisfaction that is an experience that falls within the customer's domain. The two concepts are related as a customer's response (satisfaction or dissatisfaction) may be used as a means to assess whether service quality has been delivered (Kasper *et al.*, 2006:181-182; Zeithaml *et al.*, 2006:106-107).

The service quality models with the greatest applicability and widest use as measurement techniques are the Disconfirmation Model, the Perceived Quality Model, and the SERVQUAL Model (Kasper *et al.*, 2006:183).

4.3.3.1 The Disconfirmation Model

The Disconfirmation Model states that consumers assess service quality relative to what they expect from the service. Customer expectations exist at two different levels: a desired level and an adequate level. The desired level reflects what service the customer hopes to receive. It is determined by what the customer believes can be and should be. The adequate level reflects what the customer finds acceptable. It is determined by the customer's assessment of what the service will be, in other words the customer's predicted service level. As indicated in figure 4.5 the difference between the desired service level and the adequate service level is referred to as the "zone of tolerance" (Kasper *et al.*, 2006:184; Hoffman & Bateson, 2006:324).

FIGURE 4.5 DETERMINANTS OF THE ZONE OF TOLERANCE



Sources: Kasper *et al.*, 2006:185; Zeithaml *et al.*, 2006:93

The desired service level is determined by enduring service intensifiers, one of the individual expectation drivers, and environmental expectation drivers. The enduring service intensifiers include stable personal factors that underpin an individual's attitude to a service in general. The environmental expectation drivers include explicit service promises, implicit service promises and social information sources. Explicit service promises are communicated through the organisation's marketing communication. Implicit service promises are communicated through the impression created by sales staff, prices charged, facilities, offices, and so forth. Social information sources include word of mouth, observation and general media portrayals of the service. Transitory service intensifiers and situational factors determine the adequate service level. These are usually short-term factors such as the urgency of the service need, specific service requirements and the perceived attractiveness of alternatives. The individual and environmental expectation drivers interact to develop customer expectations (Kasper *et al.*, 2006:185).

The second part of the Disconfirmation Model consists of the service performance. Performance from the customer's point of view depends on individual perception and is once again subject to many sources of variance, as in the case of expectations. In the comparison of expectations relative to performance, a number of different outcomes are possible (Lamb *et al.*, 2008:5):

When expectations are exceeded ($E < P$) the result is positive confirmation of which the outcome is beyond satisfaction and closer to customer delight. Perceived service quality is high.

When expectations are not met ($E > P$) perceived service quality is low and it is likely that a dissatisfied customer would be the result.

When expectations are met ($E = P$) satisfaction may be the outcome. However, it is important to note that expectations contain both desired and adequate components. Thus adequacy expectations, if confirmed through experience, do not necessarily mean satisfaction, just confirmation. Unmet desired expectations mean dissatisfaction. Thus poor service expected and poor service delivered do not necessarily mean satisfaction (Kasper *et al.*, 2006:186)

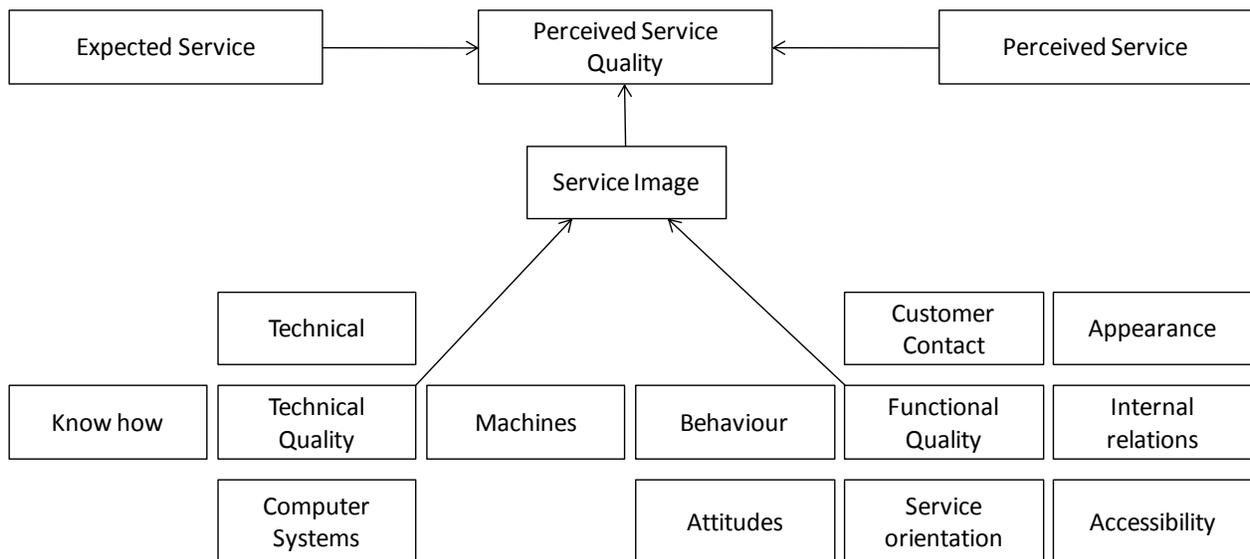
The Disconfirmation Model provides a customer-referenced method to assess service quality. It had a huge impact on service quality measurement and had been subject to a series of refinements. One of them was developed by Grönroos. Grönroos developed the Perceived Service Quality Model, also referred to as the "Nordic Service Quality Model" (Kasper *et al.*, 2006:186).

4.3.3.2 The Perceived Service Quality Model

The key contribution of this model, which is a variant of the Disconfirmation Model, was the identification of two different components or dimensions that interact to determine overall quality. These dimensions are referred to as "technical quality" and "functional

quality”. Figure 4.6 presents the Perceived Service Quality Model (Kasper *et al.*, 2006:186):

FIGURE 4.6 THE PERCEIVED SERVICE QUALITY MODEL



Sources: Kasper *et al.*, 2006:187

The technical quality dimension describes the outcomes that the customer gets as a result of his interaction with the company. A cellphone user may, for example, receive a bundle of services such as airtime, SMSs and Internet access. In many instances the customer can measure technical quality to a degree. However, this is not the only quality that contributes towards perceived service quality. Functional quality is the other dimension that also contributes. It describes the process by which technical quality is delivered to the customer. It includes aspects such as the behaviour and attitude of the service provider, other users, the appearance of service provider staff, facilities and so forth. In many services functional quality is the distinguishing factor. Vodacom and MTN are, for example, constantly competing to differentiate services that are very similar in terms of technical quality. These two companies differentiate their services by focusing on functional quality. An important observation from Grönroos states that acceptable technical quality can be thought of as a pre-requisite for successful functional quality.

However, temporary problems with technical quality may be excused if the functional quality is good enough (Kasper *et al.*, 2006:187).

There is asymmetry between service dimensions, which means that bad performance on one aspect is not always compensated for by good performance on another. This is an important consideration to keep in mind when evaluating more comprehensive service quality models. This asymmetry is important in understanding how to improve service quality in the customer's mind. Organisational resources will be wasted if this insight is not understood. The behavioural side is often much more important than the technical side. This provides motivation to separate the second dimension into a functional dimension and a relational dimension. The relational dimension then captures all the elements deemed relevant in the personal relationship and interaction between the service employee and the customer (Kasper *et al.*, 2006:188).

The SERVQUAL Model developed by Berry, Parasuraman and Zeithaml (Kasper *et al.*, 2006:188) created a profound shift in the understanding of service quality measurement. As a consequence there are now over 5500 research articles based on the model.

4.3.3.3 The SERVQUAL Model of service quality

Identification of what comprises a service in order to determine the dimensions to be used in the assessment of service quality is of paramount importance in the field of service quality. The Disconfirmation Model treats expectations holistically, but does not specify any service components in particular. The Grönroos model categorised two sets of service product attributes (technical and functional) while related research also identified a relational dimension. The SERVQUAL Model set out to develop a more comprehensive understanding of service quality dimensions. Initial research identified a set of ten dimensions as indicated in table 4.1 (Kasper *et al.*, 2006:189):

TABLE 4.1 INITIAL SERVICE DIMENSIONS

Tangibles: The appearance of physical facilities, equipment, personnel, etc.
Reliability: Ability to perform the service dependably and accurately
Responsiveness: Willingness to help customers
Competency: Possession of the required skills/knowledge to perform the service
Courtesy: Politeness, respect, consideration and friendliness
Credibility: Trustworthiness, believability and honesty
Security: Freedom from danger
Access: Approachability and ease of contact
Communication: Keeping customers informed
Understanding: Making an effort to know customers

Source: Kasper *et al.*, 2006:189

Only one of the ten dimensions (competency) relates to what Grönroos termed “technical quality” while the other nine dimensions relate to functional quality. Thus it measures *how* a service is delivered rather than the detail of *what* is delivered. In subsequent research the ten dimensions were merged into five, as indicated in table 4.2 (Kasper *et al.*, 2006:189; Hoffman & Bateson, 2006:341-346):

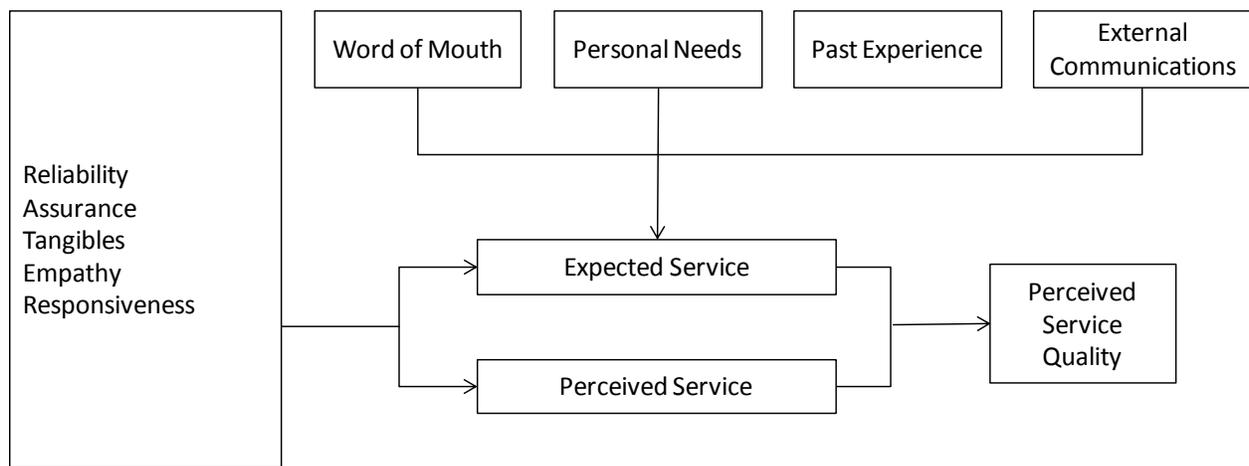
TABLE 4.2 THE SERVQUAL DIMENSIONS

Reliability: This refers to the ability to perform the service dependably and accurately. It includes consistency in keeping service promises.
Assurance: It includes competence, courtesy, credibility and security. Staff training, service processes, customer interaction, care for the environment, brand names and reputation fall within this dimension.
Tangibles: This dimension includes physical facilities, equipment and personnel, i.e. the elements of the service environment that impacts on perceived service quality.
Empathy: It includes access, communication and understanding. Integrated marketing communication and people management fall within this dimension.
Responsiveness: This refers to willingness to help customers. The ability of the service to respond to individual customer requirements (such as allowing the customer to specify delivery times or alter the delivery process), and the ability to ensure that the customers remain involved, fall within this dimension.

Source: Kasper *et al.*, 2006:189

These dimensions have been found to be stable across different service sectors with reliability consistently coming out at the top, followed by responsiveness, assurance, empathy and tangibles. It is possible for organisations to ask customers to allocate relative weightings to these different dimensions, to assist the organisation in determining the relative importance of the different dimensions. This can give the organisation direction with regard to investment decisions (Kasper *et al.*, 2006:190). The SERVQUAL Model is presented in figure 4.7:

FIGURE 4.7 THE SERVQUAL MODEL



Source: Kasper *et al.*, 2006:190

The SERVQUAL Model is based on the disconfirmation approach. Perceived service quality is determined by the disconfirmation (difference) between expected service and perceived service. This process is influenced by the four externalities, i.e. word of mouth, personal needs, past experience and external communication (Kasper *et al.*, 2006:190).

In order to measure perceived service quality, respondents are asked to answer two sets of 22 questions about the same subject. The one set of questions measures expected service (of an excellent company) and the other perceived service (of the company of which the service quality is examined). For each dimension and for the total service a quality judgement can be computed, based on the following formula:

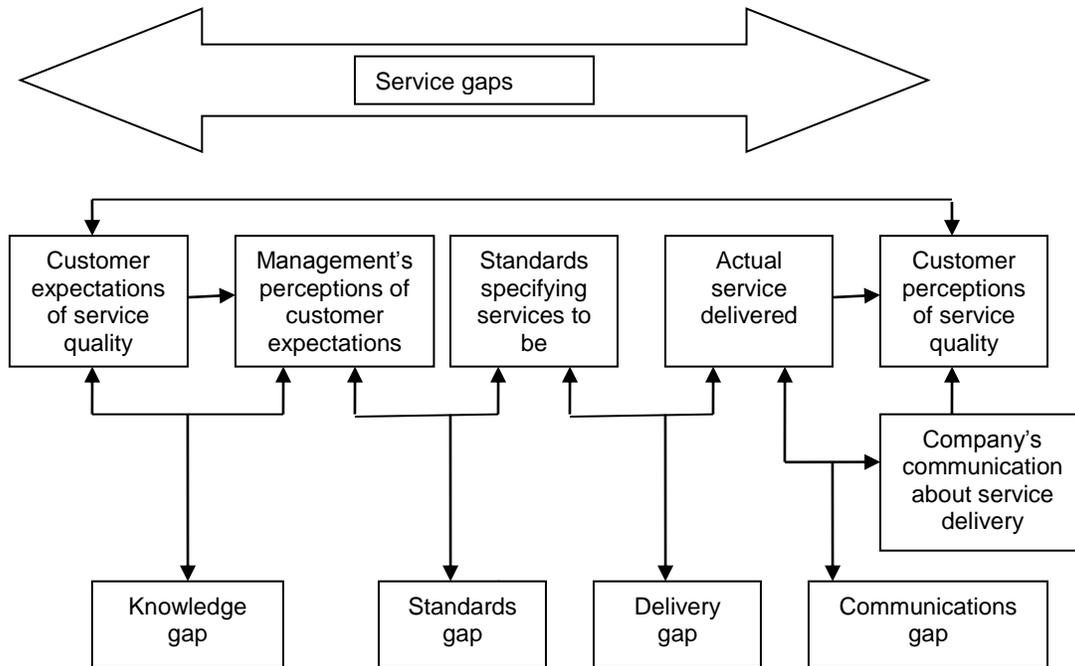
perception minus expectation equals service quality, or $P - E = Q$ (Kasper *et al.*, 2006:190).

The SERVQUAL Model has also been developed to provide insight into the reasons for the difference between expected and perceived service. The difference between expected and perceived service is referred to as the “external gap” that can be explained by the following four internal gaps (Hoffman & Bateson, 2006:335):

- Gap 1: consumer expectation – management perception: Management does not correctly perceive or interpret consumer expectations. This leads to a knowledge gap.
- Gap 2: management perception – service quality specification: Management does not correctly translate service policy into rules and guidelines for employees. This leads to a standards gap.
- Gap 3: service quality specification – service delivery: Employees do not correctly translate rules and guidelines into actions. This leads to a delivery gap.
- Gap 4: service delivery – external communication: Promises made to customers through external communication do not match actual service delivery. This leads to a communications gap (Kasper *et al.*, 2006:190; Boshoff & du Plessis, 2009:49).

Figure 4.8 shows the service gaps as identified by the SERVQUAL Model:

FIGURE 4.8 THE SERVQUAL MODEL SERVICE GAPS



Source: Boshoff & du Plessis, 2009:49

Criticism of the SERVQUAL Model can be categorised as theoretical or operational criticism. Theoretical criticism against the model includes criticism of the fact that the model is based on the disconfirmation approach and that it is thus measuring satisfaction and not quality. The SERVQUAL Model is also accused of not being a quality measure per se, but rather a model to measure customer attitude towards a service (Kasper *et al.*, 2006:197 and 203-204). Operational criticism is primarily aimed at measurement. It questions the necessity to measure expectations at all. It also criticises the way in which expectations are measured (Kasper *et al.*, 2006:197).

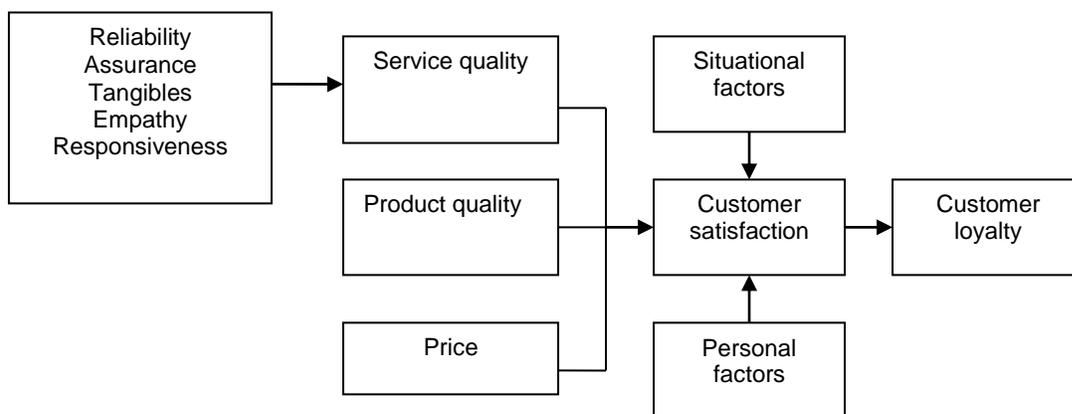
4.3.4 Customer satisfaction

A variety of different definitions of the concept of customer satisfaction exists. The most popular view defines satisfaction as the customer's evaluation of a product or service in

terms of whether the product or service has met the customer’s needs and expectations regarding a product or service feature, or regarding the product or service itself. Oliver, a leading expert in the field of customer satisfaction, defines customer satisfaction as follows (Zeithaml *et al.*, 2006:110): “Satisfaction is the consumer’s fulfilment response. It is a judgement that a product or service feature, or the product or service itself, provides a pleasurable level of consumption-related fulfilment” (quoted by Kasper *et al.*, 2006:105).

Although service quality and customer satisfaction have certain things in common, general consensus is that the two concepts are fundamentally different in terms of their underlying causes and outcomes. Satisfaction is generally viewed as a broader concept than service quality. Service quality focuses specifically on the dimensions of service. In the SERVQUAL Model these dimensions are defined as reliability, responsiveness, assurance, empathy and tangibles. Based on this view, perceived service quality is a component of customer satisfaction. Figure 4.9 depicts the relationship between the two concepts (Zeithaml *et al.*, 2006:110):

FIGURE 4.9 SERVICE QUALITY AND CUSTOMER SATISFACTION



Source: Zeithaml *et al.*, 2006:107

Service quality is a focused evaluation that reflects the customer’s perception of reliability, assurance, responsiveness, empathy and tangibles. Satisfaction is a broader concept. It is influenced by perceptions of service quality, product quality, price, personal

factors and situational factors. The service quality of a cellular service is judged on aspects such as the appearance of cellular distribution outlets, clarity and reliability of the voice and/or data services, the willingness of staff to help customers and to provide prompt service, and the knowledge, courtesy and caring attention of staff. Customer satisfaction will be influenced by these factors, as well as by the quality of the cellphone if provided as part of the service (contract), the price of the service, personal factors (such as attitude towards the service provider) and uncontrollable situational factors (Zeithaml *et al.*, 2006:108).

In defining customer satisfaction it is important to note that customers will have perceptions of transaction-specific encounters, overall perceptions of a company based on all their experiences, and perceptions of an industry as a whole. A principal estate agent will have a perception of how he or she was treated by service staff during a specific encounter at a distribution outlet of his or her network service provider. The estate agent's perception will be based on service experienced during that specific transaction. The same principal estate agent will also have perceptions of his or her network service provider, based on all personal encounters with the network service provider over a period of time. These experiences may include multiple in-person encounters at different distribution outlets, on-line interaction and the use of the service provider's network in different cities. At a more general level the same person may have perceptions of the cellular service industry, based on all his or her experiences with cellphone network service providers and everything he or she knows about cellular services. Perceptions at the transaction-specific level are useful to diagnose service issues and make immediate changes. They are also the building blocks of the cumulative experience evaluations. Cumulative experience evaluations for a specific network service provider are likely to be better predictors of overall loyalty to the network service provider. Perceptions at an industry level are likely to be more influential in determining service expectations (Zeithaml *et al.*, 2006:109).

Customers may have perceptions of service quality without actually having experienced the service. A consumer might have the perception that Vodacom provides good service

quality without having used a Vodacom service. In contrast satisfaction has to be experienced. A consumer cannot say that he is satisfied with Vodacom's service without having experienced it. It is important to note that many authors view perceived quality as an ongoing attitude. As a customer's experience with a brand moves from transaction-specific experiences to cumulative experiences over a period of time, it is likely that an ongoing attitude will develop (Kasper *et al.*, 2006:182).

Satisfaction and loyalty are interrelated and an exploration of the concept of customer satisfaction will therefore be incomplete without an investigation of the concept of loyalty:

4.3.5 Loyalty

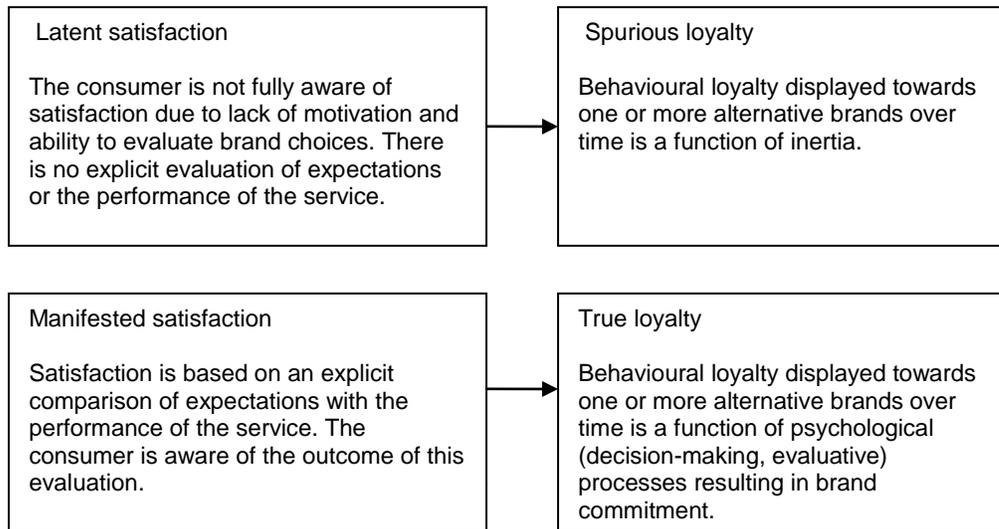
In most cases it is too simple to state that satisfaction will automatically lead to repeat purchases or to brand loyalty. However, research confirms a positive relationship between customer satisfaction and customer loyalty and retention. Not surprisingly customer loyalty and retention are considered as key drivers of company profitability (Kasper *et al.*, 2006:106; Zeithaml *et al.*, 2006:108-109 and 115; Kotler & Armstrong, 2006:19).

In simple terms loyalty refers to a predisposition by consumers to continually repurchase the same brand whenever a buying situation occurs. The buying situation is biased in the sense that all alternatives are not considered equally favourable, as there is a preference for a specific brand (Kasper *et al.*, 2006:106). The delivery of high customer value is a key requirement to generate high levels of customer loyalty. A competitively superior value proposition, backed by a superior value delivery system, is required to generate high levels of customer loyalty (Kotler & Keller, 2006:143; Kasper *et al.*, 2006:161).

Satisfaction is a necessary precondition, but it is insufficient to provide a full explanation as to why some buyers are loyal to a brand. Commitment and involvement play an

important role in explaining loyalty. Figure 4.10 depicts how different types of satisfaction influence loyalty (Kasper *et al.*, 2006:107):

FIGURE 4.10 DIFFERENT TYPES OF SATISFACTION AND LOYALTY



Sources: Kasper *et al.*, 2006:107

As indicated in figure 4.10, latent satisfaction, which is characterised by low levels of commitment and involvement, results in spurious loyalty. Manifested satisfaction, which is characterised by high levels of commitment and involvement, results in true loyalty. True loyalty is a function of evaluative processes resulting in commitment to a brand. Spurious loyalty is a function of inertia or ease of buying. Management should encourage consumers to evaluate and elaborate on their brand choices to encourage them to become truly loyal. This will enhance the conversion of service quality into true loyalty (Kasper *et al.*, 2006:107; Kotler & Keller, 2006:143). The dominance of Vodacom and MTN's distribution networks makes these brands more accessible than Cell C. The type of customer loyalty that exists within the user base is therefore an important issue to address in this study.

Dissatisfied consumers go through an evaluative process to decide whether they will express their dissatisfaction or not. Factors such as the seriousness of the problem, the anger aroused, the amount of money involved, and the personal importance of the service to the consumer co-determine whether dissatisfaction will be expressed or not (Kasper *et al.*, 2006:107).

It is clear, based on the relationship between the different types of satisfaction and loyalty (refer to figure 4.10), that a consumer may express behavioural loyalty (repeat purchases) without a positive attitudinal attachment to the brand. It is also possible that a consumer with a positive attitudinal attachment to the brand (liking or preference) may not display behavioural loyalty due to market forces such as a limited distribution network. It is difficult to distinguish a “truly loyal customer” from a “retained customer”.

The following attributes of loyal customers may help to identify a truly loyal customer (Kasper *et al.*, 2006:153): they engage in positive word of mouth; they have a preference for the brand over competitive brands; they have a resistance against switching suppliers; they identify with the service provider and display commitment towards the service provider.

As previously discussed, relationship marketing and customer relationship management play an important role to grow and sustain brand equity (refer to Chapter 3, paragraph 3.7.4.8). Loyalty plays an important role in the development of an organisation’s relationship with its customers. Customer relationship development and the interrelationship between loyalty and customer relationship management therefore require further attention:

4.3.6 Loyalty and customer relationship management

Relationships are fundamental to the implementation of a relationship marketing approach. A relationship can be defined as the process of developing mutual understanding and the mutual creation of value with customers over a lifetime of

association (Kasper *et al.*, 2006:153; Kotler & Armstrong, 2006:19-22). Five key principles underpin the development of a relationship between the organisation and its customers: understanding, trust, collaboration, commitment and adaption (Kasper *et al.*, 2006:148-151).

Understanding: This principle not only requires the organisation to understand customer needs, wants and desires, but to do so within the consumption context. A cellphone service that enables estate agents to use credits in months traditionally known for low turnover (for example the festive season) shows an understanding of consumption context (Kasper *et al.*, 2006:149, Kotler & Armstrong, 2006:28).

Trust is considered as a key to any long-term relationship and, once established, unlocks a whole series of relational benefits such as commitment and loyalty. Trust can be defined as an expectation of dependability in delivering upon promises. Good relationships exhibit high levels of trust between partners and there is evidence that high trust relationships are associated with open communication, a willingness to take risks, and information sharing (Kasper *et al.*, 2006:149; Delgado-Ballester and Munuera-Aleman, 2000:1238-1256).

Collaboration is required between the organisation and the customer to gain mutually beneficial outcomes from the exchange. In the interaction between the customer and service provider social bonds develop. These bonds create strong ties between the organisation and its customers. In consumer markets collaborative relationships are usually characterised by customer loyalty: customers are satisfied and therefore return. In an on-line environment collaboration can be achieved by involving the customer in the product specification process (Kasper *et al.*, 2006:150).

Commitment and trust are often used together and it seems as if there is little differentiation between the two terms. Commitment can be defined as the enduring desire of a customer to maintain and develop a relationship with a supplier. It implies that the relationship is so important to both parties that they will make an extra effort to

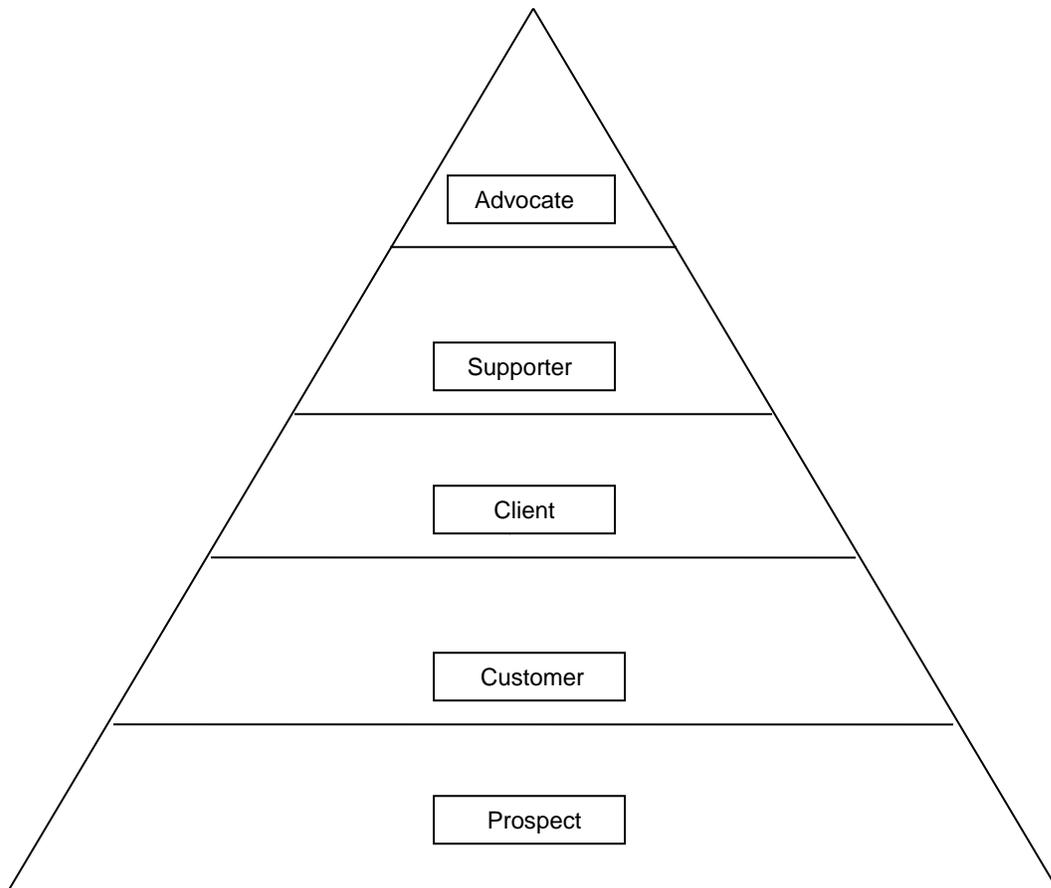
protect and nurture it. As discussed already, commitment is critical in determining true loyalty. Definitions of commitment tend to overlap with those of loyalty. Relationships between customers and suppliers that are high in commitment will be strong and will persist over an extended period of time (Kasper *et al.*, 2006:150).

Adaptation is a key characteristic of organisations using a relationship marketing approach. These organisations have market sensing systems in place to detect changes affecting customers and are able to respond to them (Kasper *et al.*, 2006:150).

Customer relationship management is based on the relationship between the customer and the organisation. Two important dimensions of this relationship are individual versus collective relationships, and obligated versus non-obligated relationships. In high-contact service environments an individual relationship, for example between a high-value business customer and an account manager of a cellphone network service provider, is possible. In commercial relationships which do not allow for individual relationships it is important to develop a collective relationship between the customer and the service provider, rather than between individuals. This applies to the relationship between cellphone users in the consumer market and cellular network service providers. The relationship between contract cellphone users and cellular network service providers entails formal obligation. In the case of prepaid users the relationship is not formally obligated. Although number portability has lowered the element of obligation, it still requires effort from the user to switch from one network operator to another. Cellular network service providers strive to develop relationships with their customers that will create a bond lowering the likelihood of switching (Kasper *et al.*, 2006:152; Zeithaml *et al.*, 2006:195).

Figure 4.11 depicts a loyalty pyramid that can be used as a continuum for customer relationship development similar to the hierarchy of effects continuum depicted in figure 4.4 (Kasper *et al.*, 2006:154; Lovelock & Wirtz, 2004:369; Kotler & Keller, 2006:157; Zeithaml *et al.*, 2006:178 -182):

FIGURE 4.11 LOYALTY AND CUSTOMER RELATIONSHIP DEVELOPMENT



Source: Kasper *et al.*, 2006:154

At the bottom of the loyalty pyramid are prospects which include the whole market for the product. Some of these prospects may become customers by transacting with the company. Over time some of the customers will develop into clients who are recurrent or repeat customers. At the next level of the loyalty pyramid clients develop into supporters and finally become advocates. Customers at the level of advocate are also referred to as ambassadors, evangelists or partners. As depicted in the figure, not all prospects become advocates. At each subsequent level loyalty gets stronger and stronger and the proportion of customers declines (Kasper *et al.*, 2006:154; Kotler & Keller, 2006:157-158; Zeithaml *et al.*, 2006:179).

There are great similarities between the loyalty pyramid and the customer-based brand equity pyramid (refer to Chapter 3, figure 3.8). The relationship between the brand and the customer at the pinnacle of the customer-based brand equity pyramid and the loyalty pyramid is characterised by a strong attitudinal attachment towards the brand. The development of a relationship that will move a prospect from the lowest level to the highest level in both the loyalty pyramid and the customer-based brand equity pyramid requires resources. As previously mentioned, customer relationship management plays a pivotal role in this regard.

Customer relationship management is used to move users from introduction to the brand to the development of a strong attitudinal attachment towards the brand. As previously, (refer to Chapter 3, paragraph 3.7.4.8) customer relationship management deals with all the aspects of acquiring, keeping and growing customers. This entails identification, selection, relationship development with and retention of customers (Kasper *et al.*, 2006:156).

Methods used to **identify** new customers as part of a customer relationship management system include aspects such as membership or discount cards, competitions (which require entry forms to be completed), and capturing customer identification from credit card details. Sophisticated customer relationship management systems compile the aforementioned data into a customer database (Kasper *et al.*, 2006:156).

The **selection** of customers is the second step in the customer relationship management process. There are numerous techniques that may be used to profile customers in the selection process. Customer lifetime value analysis and customer profitability analysis are the two most prominent approaches mentioned by scholars in the field (Kasper *et al.*, 2006:157-159; Kotler & Keller, 2006:157-158; Zeithaml *et al.*, 2006:190-193; Farris *et al.*, 2006:116-117).

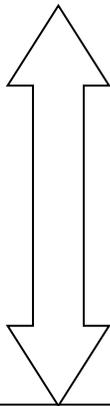
Customer lifetime value analysis is a method of calculating the present value of the future cash flow attributed to the customer relationship. The lifetime or relationship value of a customer is influenced by the length of an average customer “lifetime”, the revenues generated over the relevant period of time, sales of additional products and services, and referrals generated. By including costs associated with serving the customer, lifetime value truly means “lifetime profitability” (Zeithaml *et al.*, 2006:187; Kasper *et al.*, 2006:157).

The emphasis on estimating the relationship value of customers has increased significantly in recent times. Relationship value calculations can provide a useful proxy to assess the value of a company. A value can be determined by estimating the relationship value of a customer, forecasting the future growth of the number of customers, and using these figures to derive the value of the company’s current and future customer base (Zeithaml *et al.*, 2006:190).

Although marketers would like to treat all customers with excellent service, the reality is that customers differ in their relationship value. As a result it is often neither practical nor profitable to meet all customers’ expectations. Rather than treating all customers the same, Zeithaml *et al.* (2006:190) recommend the use of segmentation to identify customer segments that differ in their current and future profitability for the company. This approach goes beyond usage or volume segmentation as it tracks the revenue and costs of customer segments - thereby capturing their financial worth to the company. Once the different customer segments have been identified, market offerings are developed to provide services and service levels in line with the identified segments. By building a high-loyalty customer base of the right customers company profits are increased (Zeithaml *et al.*, 2006:190).

Figure 4.12 presents an example of a customer hierarchy based on customer profitability tiers:

FIGURE 4.12 CUSTOMER HIERARCHY BASED ON PROFITABILITY TIERS

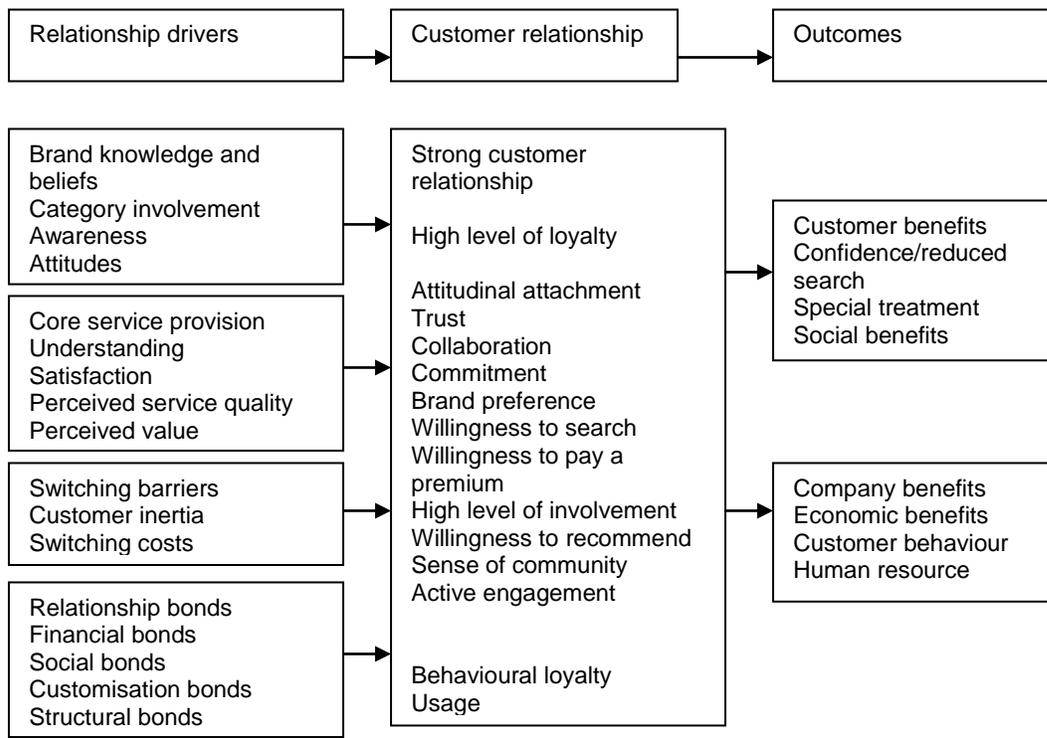
Profitability	Customer segment description	Revenue and costs
Most profitable customers	Platinum	
	Most profitable customers, typically those who are heavy users; not overly price sensitive; willing to invest and try new offerings; committed to the brand	This segment spends more time with the brand over time, costs less to maintain and spread positive word of mouth.
	Gold	
	Lower profitability as customers want price discounts that limit margins; heavy users with lower levels of loyalty	
	Iron	
	Essential customers that provide the volume needed to utilise the company's capacity; their spending levels, loyalty and profitability however not substantial enough for special treatment	
Least profitable customers	Lead tier	
	Customers that are costing the company money; demand more attention than what is justified by their spending and profitability; sometimes problem customers, complaining about the company and tying up the company's resources	This segment costs the brand time, effort and money; yet it does not provide an adequate return. This segment is difficult to do business with.

Source: Adapted from Zeithaml *et al.* (2006:191-192) and Kasper *et al.* (2006:156-162)

The customer hierarchy presented in figure 4.12 combines customer profitability with usage and loyalty to determine the different tiers. It is important to note that, although segmentation can be based on one variable, it is risky to do so. The use of a combination of variables is recommended (Kasper *et al.*, 2006:124-125).

The next steps in customer relationship management entail **the development of the customer relationship and retention of customers**. The Relationship Development Model, as presented in figure 4.13, addresses prominent issues to be considered in development of the customer relationship in order to retain customers (Zeithaml *et al.*, 2006:194):

FIGURE 4.13 RELATIONSHIP DEVELOPMENT MODEL



Sources: Zeithaml *et al.*, 2006:194-199; Farris *et al.*, 2006:11-44; Kasper *et al.*, 2006:105-108 and 149

Brand knowledge and beliefs form the starting point for customer relationship development. The category involvement of the consumer (in other words the importance attached to the product or service offered) will influence the development of awareness, knowledge and beliefs (Kasper *et al.*, 2006:106; Cant *et al.*, 2007:271). Awareness is the basis for the development of attitudes and beliefs about the brand (Farris *et al.*, 2006:35).

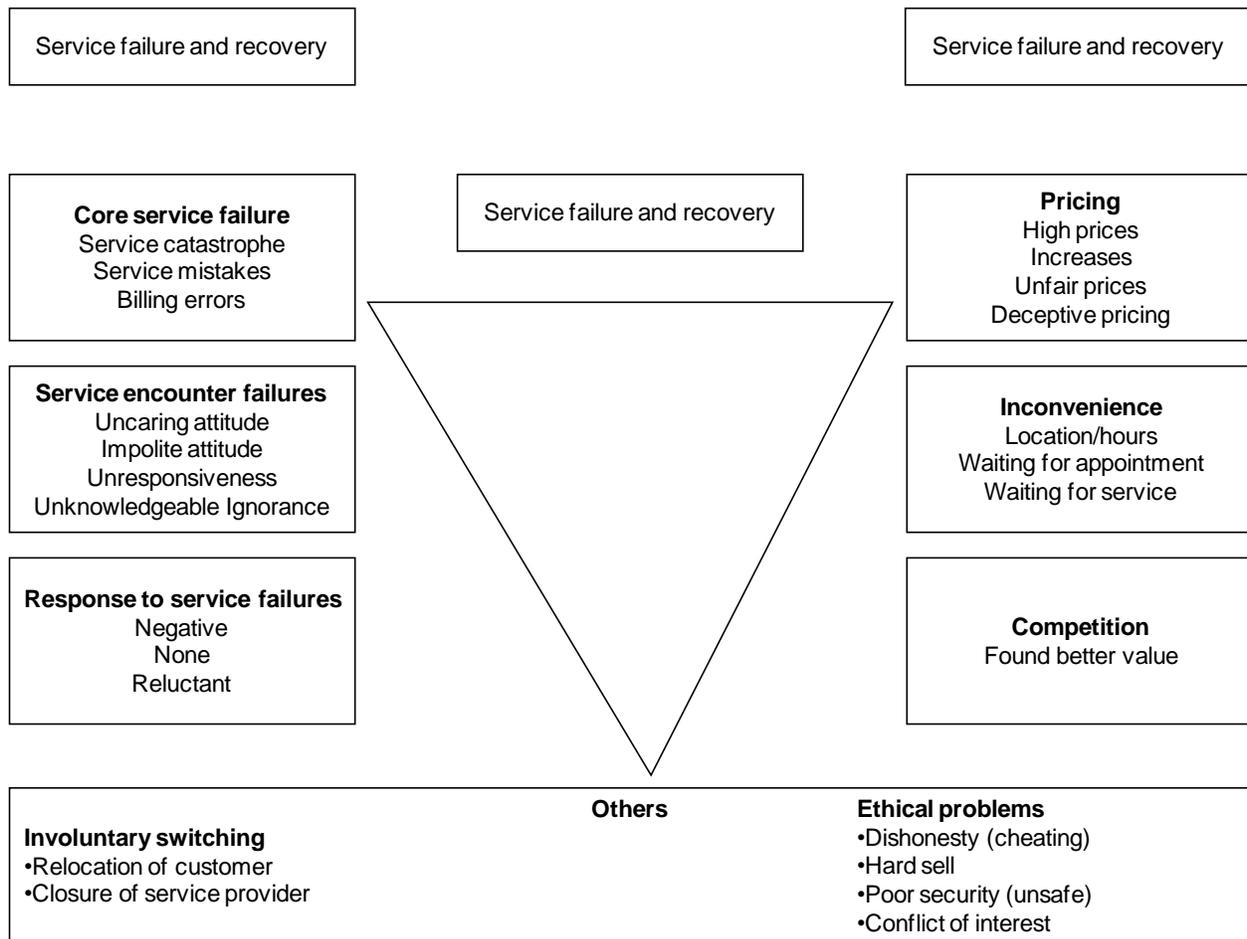
Core service provision is essential for customer relationship development. The delivery of a good core service that at least meets customer expectations is an essential requirement of relationship development (Zeithaml *et al.*, 2006:194).

Switching barriers influence consumers' decisions to exit relationships with service providers and thus contribute to higher customer retention levels. When involvement

and commitment are lacking, buying motivation will be based on **inertia or ease of buying** (Kasper *et al.*, 2006:106). Inertia can result in a consumer preferring to remain in a relationship because breaking off the relationship would require a change of behaviour in order to develop a new relationship. This may be considered as simply not worth the effort. Number portability in the cellular market is a typical example of legislation enforcing requirements that will increase competition by making it easier for users to switch. In many instances customers develop loyalty to a service provider due to costs involved in switching to another service provider. These costs may be real or perceived, monetary or non-monetary. Switching costs include investments of effort, time or money, such as set-up costs, search costs, learning costs and contractual costs. Set-up costs, learning costs and contractual costs are specifically relevant to the cellular market (Zeithaml *et al.*, 2006:195).

Cellular network service providers can create positive switching barriers through the ease of use of their network services, and through subsequent learning and knowledge transfer to customers. Set-up costs and contractual costs are more likely to be perceived as negative switching barriers. Figure 4.14 presents an overview of factors influencing customers to switch services (Lovelock & Wirtz, 2004:376):

FIGURE 4.14 FACTORS INFLUENCING CUSTOMERS TO SWITCH SERVICES



Sources: Lovelock & Wirtz, 2004:376; Hoffman & Bateson, 2006:362

Service switching can be caused by factors relating to service failure and recovery, factors relating to the value proposition, involuntary switching and ethical problems. Factors relating to service failure and recovery include core service failures, service encounter failures and response to service failures. Factors relating to the value proposition include pricing, inconvenience and competitive actions (Lovelock & Wirtz, 2004:376).

Four different retention strategies can be used to develop relationship bonds that will bind the customer to the service provider. These are financial bonds, social bonds, customisation bonds and structural bonds. Each of the mentioned retention strategies increases the bond between the customer and service provider. As a result the potential

for sustained competitive advantage is increased at each of the successive levels (Zeithaml *et al.*, 2006:196).

Financial bonds tie the customer to the company primarily through financial incentives such as lower prices for greater volume purchases, or lower prices for customers that have been with the service provider for a long time. Cellular service providers provide price discounts for volume purchases through the structuring of different tariffs for different packages and specific services, for example SMS and data volume bundles (Zeithaml *et al.*, 2006:197).

Social bonds are achieved through social and interpersonal, as well as financial bonds. Social bonds are more difficult for competitors to imitate than price incentives. The major cellular service providers use lifestyle portals and corporate social investment programmes to create social bonds with customers (Zeithaml *et al.*, 2006:197).

Customisation bonds go further than financial and social bonds. “Mass customisation” and “customer intimacy” are common terms used within the customisation bond approach. Intimate customer knowledge is a key requirement. The cellular network service providers create customisation bonds with the consumer market primarily through the use of mass customisation. The Vodacom 4U branding is a typical example (Zeithaml *et al.*, 2006:199).

Structural bonds are the most difficult for competitors to imitate, because they include structural, as well as financial, social and customisation bonds. Structural bonds are created by offering customised services (based on technology) to customers, and by making customers more productive. The development of a customised cellular service that provides vertical functionality by means of a smartphone (for example a BlackBerry) that is tailored specifically for principal estate agents would enable the development of structural bonds (Zeithaml *et al.*, 2006:199).

The relationship drivers contribute to the development of a **strong customer relationship** characterised by a high level of loyalty. Attitudinal loyalty includes the concepts of trust, collaboration commitment, brand preference, willingness to search, willingness to pay a price premium, involvement, willingness to recommend, a sense of commitment and active engagement, as previously discussed. Behavioural loyalty can be described by the concept of usage (Kasper *et al.*, 2006:153 and 158-159; Farris *et al.*, 2006:11-44).

A strong customer relationship results in outcomes that create benefits for both the customers and the company. Benefits for the customer include the development of confidence in the brand, reduced need to search, special treatment by the supplier and social benefits such as recognition from the supplier. Benefits for the company include economic benefits (for example higher levels of profitability), customer behaviour that supports service delivery, and human resource management benefits such as pleasant working conditions and productive staff (Zeithaml *et al.*, 2006:194; Kasper *et al.*, 2006:159-163).

The concepts of hierarchy of effects, service quality, customer satisfaction, loyalty and customer relationship management underlie most of the customer-based brand metric models used in brand tracking systems today.

4.3.7 Customer-based brand metric models

Young and Rubicam's Brand Asset Valuator (BAV) was one of the first models of brand equity measurement developed off the back of Aaker's ground-breaking work on the development of brand equity.

4.3.7.1 Young and Rubicam's Brand Asset Valuator

The Brand Asset Valuator measures brands on four fundamental measures of brand equity, namely differentiation, relevance, esteem and knowledge. Each of these four dimensions of brand health is derived from various measures that relate to different

aspects of consumers' brand perceptions (Miller & Muir, 2004:211; Keller, 2003:509). The model puts forth the hypothesis that brands are built sequentially along four dimensions starting with differentiation, followed by relevance, esteem and knowledge. In addition the model combines differentiation and relevance into a construct referred to as "brand strength". Esteem and knowledge are combined into a construct referred to as "brand stature" (Miller & Muir, 2004:214; Aaker, 2002: 304-309; Kotler & Keller, 2006:279).

a) Brand equity components of the Brand Asset Valuator

(i) Differentiation measures the degree to which a brand is seen as different from others. It is the driver of choice that ultimately determines the margin that a brand can obtain in the market. It is the starting point for the development of a strong brand. Differentiation has been proved to positively impact on profitability. In addition it has also been observed that a decline in differentiation often precedes a long-term decline in business performance (Farris *et al.*, 2006:116; Miller & Muir, 2004:212).

(ii) Relevance measures the extent to which consumers feel that a brand is relevant to them personally, i.e. how it fulfils their specific needs; how it "fits in" with their lifestyle; to what extent they feel that the specific brand is for people like them. Differentiation alone is not enough. A brand must be relevant as well. Ferrari and Jaguar, for example, are very high in differentiation, but extremely low in relevance. Few individuals seriously consider buying a Ferrari or Jaguar, because the cars are impractical for daily use or too expensive. The Brand Asset Valuator (BAV) model proposes that brands with high relevance have higher market penetration rates, and are more likely to survive market competition (Farris *et al.*, 2006:116; Miller & Muir, 2004:213).

(iii) Brand strength: Differentiation (the extent to which a brand has a distinctive meaning for the consumer and is able to gain consumer choice, preference and loyalty) and relevance (which correlates with brand penetration) combine to determine brand strength. The two components point to a brand's future value rather than just reflecting

its past. Thus brand strength is a leading indicator of brand health (Farris et al., 2006:116; Miller & Muir, 2004:213).

(iv) Esteem measures the extent to which a brand is held in high regard and considered as the best in its category. It is closely related to what Aaker would call “perceived quality”, and it also includes perceptions of growth or decline in popularity. Aaker’s concept of perceived quality will be discussed later in this chapter. For managers who are developing new brands, esteem becomes the focus, once differentiation and relevance have been established (Miller & Muir, 2004:213; Aaker, 2002:304; Keller, 2003:509).

(v) Knowledge measures the extent to which consumers understand and have internalised what the brand stands for. According to the Brand Asset Valuator model knowledge is the end result of all the marketing and communications efforts and experiences consumers have with a brand. Knowledge does not result from media weight alone. A brand must represent a strong, clear idea that resonates with consumers. Knowledge indicates that the consumer is not only aware of the brand, but also understands what the brand stands for. It measures how familiar and intimate consumers are with the brand. Knowledge is not simply built by exposure. It is generated by real customer intimacy with the brand. Interestingly, high knowledge scores are inversely related to a brand’s potential (Miller & Muir, 2004:213; Aaker, 2002:304; Keller, 2003:509).

(vi) Brand stature. Esteem and knowledge are the building blocks used to create brand stature. In the Brand Asset Valuator model brand stature is a lagging indicator of brand health, it is more of a “report card” on a brand’s past performance (Miller & Muir, 2004:214; Aaker, 2002:307; Keller, 2003:510; Kotler & Keller, 2006:279).

The brand equity components of the Brand Asset Valuator are measured by means of proprietary scales. The concepts behind them have developed broad appeal and can be accessed through marketer judgements about a given brand, relative to its competition.

An example of the four key measures and sample questions used by Philips Consumer Electronics are as follows (Farris *et al.*, 2006:116):

- Uniqueness (differentiation): Does this product offer something new to me?
- Relevance: Is this product relevant for me?
- Attractiveness (esteem): Do I want this product?
- Credibility (knowledge): Do I believe in this product?

(vii) The Brand Asset Valuator: brand equity patterns

Analysis of the four brand equity dimensions of the Brand Asset Valuator reveals much about a brand's current and future status. New brands, just after they are launched, tend to score low on all four the brand equity dimensions. New emerging brands tend to score higher on differentiation and relevance, while scores on esteem and knowledge are still relatively low. Leadership brands, also referred to as "strong brands", score high on all the dimensions. Declining brands tend to score high on knowledge (an indication of past performance) with lower scores on esteem and even lower scores on relevance and differentiation (Farris *et al.*, 2006:116; Keller, 2003:509).

(viii) Measurement across different brands and categories

Young and Rubicam use their model to measure brand equity for numerous brands across different categories globally. It is important to note that the model measures brand equity across different categories and not only within a narrowly defined category (Aaker, 2002:315).

The EquiTrend brand equity measurement methodology, developed by research house Harris Interactive (Muller and Muir, 2004:214) also requires further exploration:

4.3.7.2 The EquiTrend methodology

The EquiTrend brand study has been conducted since 1989, covering 133 brands in the United States of America, across 39 categories (Aaker & Joachimsthaler, 2002:20-22; Aaker, 2002:308). The survey has grown significantly and by 1995 it covered over 700 brands across 100 categories. The EquiTrend brand equity score is based on measures

of three brand equity dimensions, i.e. salience, perceived quality and user satisfaction (Miller & Muir, 2004:214; Aaker, 2002:310-313).

a) Salience measures the percentage of respondents that have an opinion about the brand. Similar to knowledge from Young and Rubicam's Brand Asset Valuator, it goes beyond the conventional concepts of awareness, recognition and recall by demanding that respondents hold an opinion of the brand (Miller & Muir, 2004:214; Aaker, 2002:310).

b) Perceived quality is the central concept of the EquiTrend brand equity measurement. Research has found perceived quality to be highly associated with liking a brand, trust, pride and willingness to recommend. It is essentially the average quality rating by those consumers who have an opinion about the brand. Quality is measured according to a rating that ranges from outstanding to unacceptable (Miller & Muir, 2004:214; Aaker, 2002:310).

c) User satisfaction refers to the average quality rating a brand receives from consumers that use the brand the most often. It reveals the strength of brands within their user base. MTV, for example, ranked 100th in perceived quality with a rating of 5.2, but was ranked second with a rating of 9.3 by its user group. In comparison Toyota ranked 62nd in perceived quality with an average rating of 6.7, but fourth in user satisfaction with a rating of 9.19. One limitation of the measurement of user satisfaction is that some brands, such as Mercedes Benz, have such a small incidence of usage that a national sample becomes inadequate to estimate user satisfaction (Aaker, 2002:310)

d) EquiTrend brand equity score: The three brand equity asset measures are combined into an EquiTrend brand equity score. Analysis of EquiTrend data has shown that perceived quality is associated with a premium price. The relationship is based on two-way causal flow: a strong brand commands a price premium and a price premium is an important quality cue. The database also showed an interesting relationship between perceived quality and usage (Aaker, 2002:311). Consumers that use the brand most

often tend to give higher ratings on perceived quality. As the rating on perceived quality declines, usage also declines. The relationship is muted for product categories with a high price tag, such as luxury passenger vehicles like Mercedes Benz (Aaker, 2002:311).

Analysis of the EquiTrend database also indicated a relationship between price elasticity and perceived quality. The sales decrease as a result of a 10% price increase was found to be more substantial for a brand perceived to have good quality, than for a brand perceived to have superior quality. In addition analysis of the database also revealed a strong positive relationship between earnings per share (stock returns) and brand equity, even after controlling both advertising expenditures and awareness (Aaker, 2002:311).

According to Miller & Muir (2004:214) the EquiTrend methodology has the following limitations: it lacks the diagnostic depth of the Brand Asset Valuator; it contains no real measure of brand loyalty (which is a very important driver of brand strength); it does not capture dynamic changes in a brand's position as well as it is captured by the Brand Asset Valuator.

The top EquiTrend brand ratings are dominated by functional brands, such as tools, speakers and foil. These brands are not good examples of strong branding, as they mostly exclude the augmented product dimensions (Kotler & Keller, 2006:372). Thus it is possible that the methodology could exclude brands competing with regard to other dimensions that are very important for comparative purposes (Miller & Muir, 2004:214).

The BrandDynamics brand equity measurement methodology, developed by Millward Brown (Miller & Muir, 2004:215) is another measurement methodology that requires exploration:

4.3.7.3 The BrandDynamics methodology

The BrandDynamics Model, developed by Millward Brown, is one of the latest additions to the brand equity diagnostic measurement tools (Tybout & Calkins, 2005:249-251; Miller & Muir, 2004:215-218). The data for the BrandDynamics study is collected annually by interviewing approximately 650 000 consumers in 31 countries. Respondents compare more than 21 000 brands across a broad range of categories (Miller & Muir, 2004:216).

The BrandDynamics model is based on a hierarchical methodology designed to measure consumer attitudes, opinions and beliefs about a brand. The methodology defines five levels of relationship between the consumer and the brand. Sequentially each level (from the lowest to the highest) depicts a stronger connection between the consumer and the brand. The BrandDynamics hierarchy, presented in table 4.3, contains the five levels of relationship, and describes consumers' rational and emotional engagement with a brand across the five levels (Tybout & Calkins, 2005:250; Miller & Muir, 2004:216):

TABLE 4.3 THE BRANDDYNAMICS HIERARCHY

Level of engagement	Description
Bonding	The consumers think the brand's advantages are unique. "It's my brand." (Nothing else beats it.)
Advantage	The consumers think the brand is better than most brands in the category. "It's better than most others." (Does it offer me something better than others?)
Performance	The consumers think the brand is of an acceptable quality. "It does what it's supposed to do." (Can it deliver?)
Relevance	The brand meets the consumers' needs. "It's for people like me." (Does it offer me something?)
Presence	The consumers are aware of the brand. "I've heard of it," (Do I know about it?)

Note: No presence indicates that users have not heard about the brand and that it could be considered as the lowest level of engagement.

Sources: Adapted from Tybout & Calkins (2005:250) and Miller and Muir (2004:216)

Research by Millward Brown (Miller & Muir, 2004:216) indicates that for a typical brand only 7% of consumers fall at the highest level of involvement, which is bonding. The research also indicates that the value of customers increases as they move up the hierarchy. The share of requirements for a typical brand is the highest (38%) for those consumers at the level of bonding and the lowest (13%) for consumers at the level defined as “presence”. Share of requirements, also known as “share of wallet”, is defined as a given brand’s share of purchases in its category, measured solely amongst customers who have already purchased that brand (Farris *et al.*, 2006:116).

By measuring consumer attitudes over time using the BrandDynamics methodology, the marketer can see changes in the relationship between the customer and the brand, and can trace those changes to various marketing and communication activities. In addition the model compares a brand with competitors to provide a comparison of consumer perceptions of all alternatives in the category. This type of brand information can be invaluable to the marketer in terms of adjusting and adapting brand management activities (Tybout & Calkins, 2005:250).

The level of bonding, as reflected by the BrandDynamics hierarchy, gives an indication of the strength of a brand. In addition the BrandDynamics Model also provides a so-called “voltage” score that is an indication of the growth potential of a brand. This score takes into account how many people are very loyal to the brand, as indicated by the BrandDynamics hierarchy (or pyramid) score, and combines this with claimed purchasing data for the category in order to produce a single brand voltage score. A brand with a positive voltage score has the potential to gain share from its own marketing actions, and to resist the actions of competitors. Although a brand with a negative voltage score can still grow, it will require more effort and will be more vulnerable to the actions of other brands over time (Miller & Muir, 2004:217).

The mapping of changes in market share against voltage scores proved a definite link between the two: brands with high voltage scores were more likely to grow market share and brands with low or negative voltage scores were more likely to lose market share.

Voltage scores have been found to predict change in market share one to two years ahead of time. Brands with a high voltage score increased their market share in over 40% of the cases (Miller & Muir, 2004:218).

The Conversion Model, a brand equity measurement methodology used by Taylor Nelson Sofres (TNS), will subsequently be discussed:

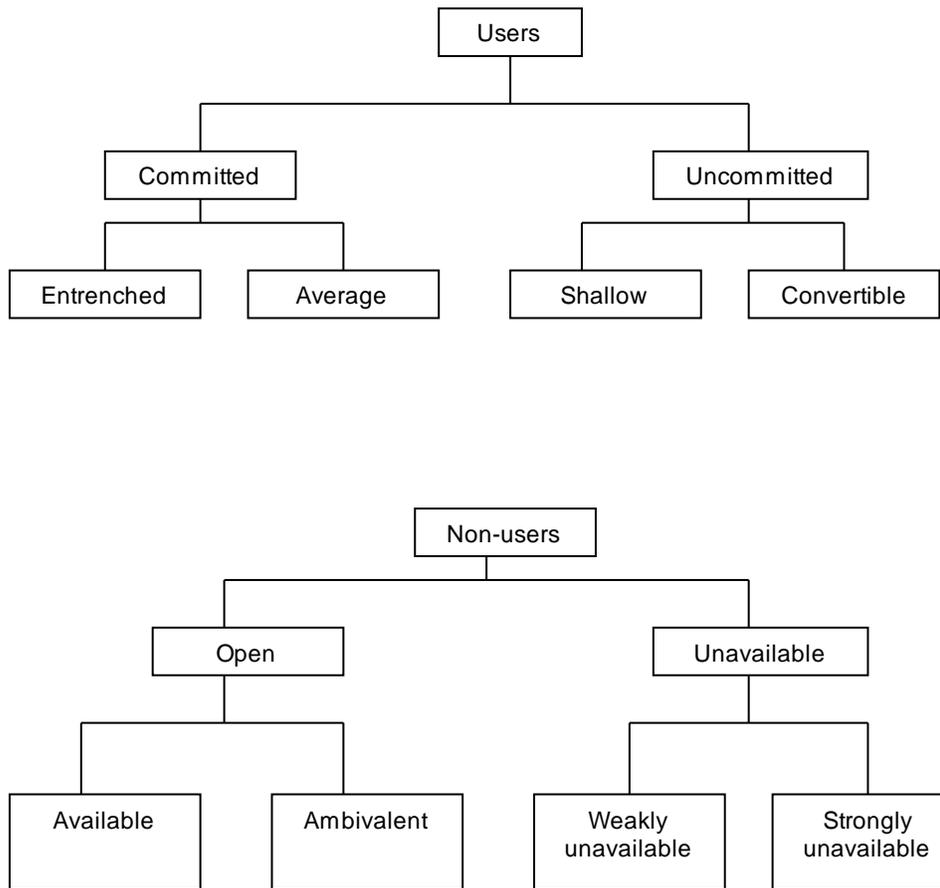
TNS is a global marketing research agency operating in South Africa as TNS Research Surveys (Tybout & Calkins, 2005:249; Hofmeyr & Rice, 2000:26, 53-83).

4.3.7.4 The Conversion Model methodology

The Conversion Model was originally developed to measure the strength of the psychological commitment between brands and consumers and their openness to change. To determine the ease with which a consumer can be converted to another choice, the model assesses commitment based on factors such as attitude toward and satisfaction with current brand choices in a category, and the importance of the decision to select a brand in the category (Tybout & Calkins, 2005:249; Hofmeyr & Rice, 2000:26 and 53-83; Kotler & Keller, 2006:257-258).

The Conversion Model classifies consumers into different segments, based on their level of commitment to a brand. Figure 4.15 presents the different segments that the Conversion Model uses for classification purposes:

FIGURE 4.15 THE CONVERSION MODEL



Sources: Hofmeyr & Rice, 2002:26; Kotler & Keller, 2006:258

As indicated in figure 4.15, consumers are segmented as users and non-users of a brand. Users of the brand are further segmented into the sub-segments referred to as “entrenched”, “average”, “shallow” and “convertible” (Hofmeyr & Rice, 2002:25; Kotler & Keller, 2006:258):

Entrenched: Users in this sub-segment are strongly committed to the brand and they are highly unlikely to switch brands in the foreseeable future.

Average: Users in this sub-segment are also committed to the brand, but not as strongly. They are unlikely to switch brands in the short term, but there is some possibility that they may switch in the medium term.

Shallow: Users in this sub-segment have a lower commitment to the brand than those in the average sub-segment. Some of these consumers are already actively considering other alternatives to the brand.

Convertible: Users in this sub-segment have the lowest level of commitment to the brand and are the most likely to defect.

Non-users of the brand are further segmented into the sub-segments referred to as “available”, “ambivalent”, “weakly unavailable” and “strongly unavailable” (Hofmeyr & Rice, 2002:26; Kotler & Keller, 2006:258):

Available: This sub-segment includes non-users of the brand who prefer the brand to their current brand, although they have not switched yet. It also includes non-users identified as psychologically ready to switch.

Ambivalent: This sub-segment includes non-users who are as attracted to the brand as they are to their current brand; hence they are open to consider switching to the brand.

Weakly available: This sub-segment includes non-users whose preference lies with the brand(s) that they currently use, although not strongly.

Strongly unavailable: This sub-segment includes non-users whose preference lies strongly with the brand(s) that they currently use. These individuals are least likely to switch to the brand in the near future (Hofmeyr & Rice, 2002: 26; Kotler & Keller, 2006:258).

The Conversion Model theory (Hofmeyr & Rice, 2002:89) emphasises the importance of commitment to a brand. In short a person is committed to a brand if that person is happy with the brand (in other words satisfied in terms of needs and values fit), involved in the brand choice, and not attracted to any other alternatives. In order to measure commitment the following questions are proposed (Hofmeyr & Rice, 2002:89):

- How do you rate your brand in terms of your needs and values?
- Is the decision about which brand to use in this market important to you?
- Are there any other brands that appeal to you?

In application of the Conversion Model, Lloyds TSB Bank found that the profitability of its clients classified as “least committed” had declined by 14% over a twelve-month period. In contrast profitability by those classified as “most committed” increased by 9% over the same period. Clients classified as “committed” were 20% more likely to increase the number of products they held over a twelve-month period. This motivated the bank to implement programmes to attract and retain high-value committed customers, resulting in increased profitability (Kotler & Keller, 2006:258).

The brand equity measurement methodology proposed by Aaker, referred to as the “Brand Equity Ten” will subsequently be examined:

4.3.7.5 David Aaker’s Brand Equity Ten

David Aaker emphasises the importance of measurement in the management of brand equity. He indicates that financial measures such as sales figures, cost analyses, margins, profit and return on assets (ROA) usually dominate brand objectives and performance measures. The problem with such an approach is that these measures tend to be short-term orientated. As a result attractive investment propositions are limited to those that will deliver immediate results. These short-term orientated management systems tend to be self-perpetuating due to the fact that resources are not allocated to brand building activities that do not pay off in the short term. These activities are often of critical importance to ensure the long-term competitiveness of the brand (Aaker, 2002:316; Miller & Muir, 2004:131; Lamb *et al.*, 2008:396).

According to Aaker the challenge is to develop a set of brand equity measures that can be used to supplement financial measures. When both types of measures guide brand objectives and programmes, it is easier to justify brand-building activities required to maintain brand health in the longer term. In addition it also assists to identify short-term financial strategies that may negatively impact on brand equity. Aaker identified a set of ten brand equity measures that should be considered for inclusion when evaluating and tracking brand equity, by using his own research, as well as the measurement efforts of

other specialists in the field. He refers to these measures as the “Brand Equity Ten”. The credibility of these measures is based on empirical evidence covering Aaker’s own work, as well as other models that set out to measure brand equity across different product classes, including amongst others, the Brand Asset Valuator, EquiTrend and Interbrand (Aaker, 2002:316; Farris *et al.*, 2006:117). The following criteria guided Aaker in shaping the Brand Equity Ten (Aaker 2002:317):

Construct measurement: The conceptualisation and structure of the brand equity construct should guide the development of the measurement set. It should cover the brand equity concept in total, including aspects such as awareness, perceived quality, loyalty and associations. The measures should reflect the brand assets and liabilities by providing insight into sustainable advantage not easily duplicated by competitors. The measures should not be indicators of tactics such as marketing-mix descriptors or advertising expenditure levels, as tactics can be copied easily and do not represent assets (Lamb *et al.*, 2008:396).

Market drivers: The measures should reflect constructs that truly drive the market. A change in the measures selected should eventually impact on price levels, sales and profits (Keller, 2003:391; Cant *et al.*, 2007:448).

Sensitivity: Although the brand equity measures should reflect constructs that truly drive the market, it should also meet requirement in terms of sensitivity. The measures should be sensitive to detect changes in key brand equity dimensions as a result of poor management and resource allocation decisions, as well as competitive actions. Similarly, if a brand equity element is stable, the measure should reflect that stability. The true brand equity value should not be masked by noise (Kotler & Keller, 2006:290).

Application across brands, categories and markets: Measures should be developed that can be applied across brands, product categories and markets. Such measures will be more general than those used to manage an individual brand, for which the specific

measures of functional benefits and brand personality are more likely to be unique. However, a set of proven and tested general measures can provide structure and guidance for the development of a set of measures to be used for an individual brand. In fact, the measures selected for use across brands, categories and markets should at least potentially be able to track individual brands, perhaps with supplemental brand specific measures (Keller, 2003:505; Cant *et al.*, 2007:273).

Aaker's Brand Equity Ten is presented in table 4.4:

TABLE 4.4 DAVID AAKER'S BRAND EQUITY TEN

Loyalty measures
1. Price premium
2. Satisfaction/loyalty
Perceived quality/leadership measures
3. Perceived quality
4. Leadership/popularity
Association/differentiation measures
5. Perceived value
6. Brand personality
7. Organisational associations
Awareness measures
8. Brand awareness
Market behaviour measures
9. Market share
10. Market price and distribution coverage

Sources: Gerber-Nel, 2006:191; Aaker 2002:319,

Aaker's measures are grouped into five categories. The first four measures represent consumers' brand perceptions according to Aaker's four dimensions of brand equity (loyalty, perceived quality, associations and awareness). The fifth category includes two

measures obtained from market-based information, rather than directly from customers (Aaker, 2002:319; Gerber-Nel, 2006:190-194).

According to Aaker (2002:317) the Brand Equity Ten will not necessarily represent an optimum set of measures in all circumstances. The measures will require modification to fit the context and task at hand in different settings, depending on factors such as industry sector and company specific requirements.

The logical way to proceed would be to start with a comprehensive set of measures such as the Brand Equity Ten, perhaps even supplemented by additional measures. Quantitative research or a case study methodology could then be used to guide selection of a final set. The application of quantitative research would typically entail the use of statistical models to determine which measures drive objective variables of interest. The strength of these relationships could then be used to prioritise the list of candidate measures. The case study approach would entail the development of extensive case studies that describe large positive and negative changes in the price premium measure. Each case study would attempt to determine the causes of the change in the value of the brand. Convincing case studies can suggest variables that influence brand equity (Aaker, 2002:318).

The Brand Equity Ten measures will be subsequently reviewed to provide insight into Aaker's reasoning for the inclusion of these measures, as well as insight into potential problems with the use of these measures:

a) Loyalty measures

Loyalty is a core dimension of brand equity. According to Aaker (2002:319) loyalty is of sufficient relevance in the measurement of brand equity to be used as a criterion variable, in other words it can be used to evaluate other potential measures as indicator or predictor variables. Aaker recommends the use of price premium and satisfaction/loyalty as measures of loyalty (Aaker, 2002:319-322).

(i) Price premium as a measure of loyalty

A basic indicator of loyalty is the amount a customer is willing to pay for the brand, compared to the amount he or she is willing to pay for another brand offering similar benefits (Farris *et al.*, 2006:116). This is called the “price premium” that is associated with the brand’s loyalty. It may be high or low, and positive or negative, depending on the brands involved in the comparison. If a brand is compared to a high-priced brand, the price premium attached to the brand could be negative. Cellphone users could, for example expect a 20% price discount on the Cell C brand, the Vodacom brand. This negative price premium could reflect substantial brand equity for Cell C if its prices were actually 25% lower.

Aaker is also of the opinion that when measuring price premium, or any brand equity measure, it is useful to segment the market by loyalty. As an example the market may be divided into loyal buyers of the reference brand, customers who are brand switchers, and non-customers. Each group is likely to have a different perspective on the equity of the reference brand. Aggregating different loyalty groups will provide a less sensitive measure and will cloud the strategic interpretation of the brand equity profile. This view is well supported in literature (refer to paragraph 4.3.6).

The price premium measure should be defined with respect to a competitor or a set of competitors. This competitor or set of competitors must be clearly specified. A set of competitors is usually preferred for measurement, because the brand equity of a single competitor can decline while the equity of other competitors remains stable. In such an instance using only the declining competitor as a point of comparison would give an erroneous perspective on the brand’s health (Aaker, 2002:320).

The price premium can be determined by simply asking customers how much they would be willing to pay for the brand. This is referred to as a “dollar metric”. As an example principal estate agents may be asked how much more they would be willing to pay for a monthly subscription fee for a Cell C contract service instead of a Vodacom contract with the same benefits. More sophisticated methods such as conjoint or trade-

off analysis could also be used. In the application of such an approach consumers are presented with a series of simple choices, which are then analysed together in order to determine the importance of different dimensions to consumers.

Aaker is of the opinion that price premium may be the best single measure of brand equity available. It directly captures the loyalty of customers in a very relevant way. If they are loyal, they will be willing to pay a price premium, if not, the loyalty level is most likely shallow (Aaker, 2002:321).

Price premium can be used as a crude estimate of brand value, i.e. price premium multiplied by unit of sales. However, distribution channel realities may prevent the brand from realising its price premium in the market place, if the marketer does not have control over the distribution network (Aaker, 2002:321). Vodacom and MTN have invested significantly to develop flagship distribution outlets in the major metropolitan areas. Cell C has a significant disadvantage in terms of distribution network.

Aaker identifies a number of potential problems and cautions that should be considered in the use of price premium as a loyalty measure. Price premium is defined only with respect to a competitor or set of competitors. Thus in a market with many brands several sets of price premiums may be needed. When a brand has different competitors in different markets, a composite measure may be required to reflect the differences in the different markets. In markets where price differences are not very relevant (for example due to legal restrictions) the price premium concept becomes less meaningful. In these markets the ability to gain customers at the prevailing price is of paramount importance and thus a measure of buying intentions become more relevant (Aaker, 2002:321). This concern is very relevant to the South African cellular market. The South African telecommunications market is in the early phases of market liberalisation. The highly regulated environment has resulted in limited price competition in the past. The market dominance of the duopoly (Vodacom and MTN) has also contributed to a low level of price competition in the past.

Aaker also recommends satisfaction and direct questions about loyalty as measures of of loyalty.

(ii) Satisfaction as a measure of loyalty

Satisfaction (or liking) is a direct measure of how willing customers are to stick to a brand. A measure of satisfaction can be applied to existing customers, for example those who used the product or service in the last year. The reference could be the last use experience, or simply the use experience from the customer's point of view. Typical questions that can be used to measure the use experience include the following: Are you satisfied? Are you delighted with your experience of this brand? Does the product or service meet your expectations? Would you buy the brand at the next opportunity? Would you recommend the product or service to others? Were there problems and/or inconveniences associated with the use of the product and service? (Aaker, 2002:323).

In service businesses such as the cellular market, car rental firms, hotels and banks, satisfaction is a very powerful measure as loyalty is often the cumulative result of use experiences. In addition to measuring the use experience, satisfaction can also be measured by asking direct questions about loyalty. Are you loyal to this brand? Do you buy mostly on price? Questions like these can be used to segment the market into loyal users, price chasers and those in between. Another type of question that should be considered for inclusion is the customer's level of loyalty in terms of a number of brands. Customers could be asked whether they feel loyal to one, two, three or more brands, or whether they see all brands as very similar. The percentage of customers that are loyal to a given brand or who include the brand in a set of two or three brands can be a useful statistic (Aaker, 2002:323).

Aaker identifies a number of potential problems and cautions that should be considered in the use of satisfaction as a loyalty measure. Satisfaction measures do not really apply to non-customers. Thus this measure of brand equity does not extend beyond the customer base. Another complication is that aggregation of satisfaction scores across loyal and switcher groups become somewhat insensitive and difficult to interpret. It is

therefore often necessary to develop a set of loyalty measures per loyalty segment (Aaker, 2002:323).

Reichheld (2006:19-21) recommends the use of one loyalty-related metric as an indicator of company growth and profits. The metric is referred to as the “Net Promoter Score” (NPS). It is based on the perspective that every company’s customers can be divided into three categories i.e. promoters, passives and detractors. Promoters are loyal enthusiasts who buy from the company and urge friends to do the same. Passives are satisfied but unenthusiastic customers who can easily be wooed by competitors. Detractors are unhappy customers trapped in a bad relationship. The best way to determine the net promoter score “growth engine” is to subtract the percentage of detractors from promoters: $P - D = NPS$. Research over a ten-year period confirms that, in most industries, companies with the highest ratio of promoters to detractors in their sector typically enjoy strong profits and healthy growth.

Responses to the ultimate question “How likely is it that you would recommend company X to a friend or colleague?” on an eleven-point scale (with zero indicating “not at all likely” and ten “extremely likely”) is analysed as follows: zero to six are classified as detractors, seven to eight as passives and nine to ten as promoters (Reichheld, 2006:29-32).

b) Perceived quality and leadership measures

The use of perceived quality and leadership as measures of brand equity requires further discussion:

(i) Perceived quality

Perceived quality as a key dimension of brand equity can be defined as the consumer’s assessment of the expected quality that a brand will deliver. Research indicates a positive relationship between perceived quality and return on investment, as well as between perceived quality and revenue generated per share. In addition Aaker also indicates that perceived quality is highly associated with other key brand identity measures, including specific functional benefits. Another important attribute of perceived

quality is its applicability across product classes. Although high quality banks may mean something different than high quality beer, tracking the relative difference in scores does have meaning. Aaker proposes that perceived quality can be measured by using scales such as high quality versus shoddy quality; best in category versus worst in category; consistent quality versus inconsistent quality; and finest quality versus average quality and inferior quality (Miller & Muir, 2004:210; Aaker, 2002:324).

Aaker identifies a number of potential problems and cautions that should be considered in the measurement of perceived quality. It should be kept in mind that perceived quality has a product frame of reference and therefore it makes a difference if the customer is comparing all cellphone products as opposed to products in a specific category, such as those related to Internet access via a cellphone. It may be necessary to provide the respondent with a clue as to the appropriate frame of reference. This will, however, complicate the interpretation of the results (Aaker, 2004:324).

Loyalty segments are likely to impact on the interpretation of perceived quality. Loyal users of the brand, switchers, and users loyal to another brand are likely to interpret perceived quality differently. Perceived quality for switchers might only reflect whether the brand is acceptable or not. Perceived quality for loyal users will be more demanding (Aaker, 2004:324).

Perceived quality may not be a key driver in all contexts. It may, for example, lack sensitivity to the innovations of competitors. As an example in the telecommunications market, fixed-line operators enjoyed a very strong position in terms of perceived quality, specifically when rated on clarity of voice. However, when mobile operators introduced mobile voice services they won market share from the fixed-line operators although voice quality is not as good. Although the perceived quality of fixed-line operators on voice quality may not have changed, its brand equity deteriorated. In order to address this concern Aaker proposes the use of a supplement construct that taps into the dynamics of the brand. He refers to this construct as leadership and popularity (Aaker, 2002:324):

(ii) Leadership and popularity

Aaker defines his leadership and popularity construct in terms of three dimensions. The first dimension reflects the “number one” syndrome. It is based on the logic that if enough customers are buying into the brand to make it the sales leader, it must have merit. The second dimension taps into the dynamics of customer acceptance. It reflects the fact that consumers are uneasy about going against the flow, but would rather be on the bandwagon. This dimension reflects on the following aspects: Is the brand growing in popularity? Is it considered an “in” product to use? Are the users of the brand up to date and is the brand part of popular trends? The third dimension taps into innovation within a product class, specifically whether the brand is moving ahead technologically. The leadership and popularity construct can be measured by scales that ask whether a brand is a category leader, growing more popular and respected for innovation (Aaker, 2002:325).

Young and Rubicam’s Brand Asset Valuator combines perceived quality and leadership to develop its esteem construct. Leadership is one of the eight dimensions of brand strength in the Interbrand system, measured in terms of the relative size of the sales base. In the Interbrand weighting scheme, leadership receives the highest weight, i.e. 25 points out of 100 (Miller & Muir, 2004:213 and 224).

Aaker mentions a number of limitations that should be considered in the use of leadership and popularity as brand equity measures. Due to the fact that the leadership and popularity construct has the dimension of market share, the popularity and innovation construct is not a simple construct. It has not been as well documented and researched as other constructs such as loyalty, perceived quality and awareness. As a result there is limited empirical research that indicates that the construct is important enough to merit attention (Aaker, 2002:325).

Aaker also suggests that similar to the Young and Rubicam model, it is possible to combine perceived quality and leadership into one dimension. The inclusion of

leadership creates a construct (esteem) that means more than just quality (Aaker, 2002:326).

c) Associations and differentiation measures

Aaker identifies the measurement of key associations and differentiation as a component of brand equity as a problem, due to the fact that many of the involved image dimensions are usually unique to a product class and to a brand. Thus the challenge is to generate measures that can be used across product classes. In line with this thinking Aaker recommends that measurement should be structured by using the three brand identity perspectives, namely the brand as a product (value), the brand as a person (brand personality) and the brand as an organisation (organisational associations) (Kotler & Keller, 2006:279; Aaker, 2002:326).

(i) Perceived value

One role of brand identity is to create a value proposition. The value proposition usually involves functional benefits. This is an important competitive dimension and is basic to brands in most product classes. If a brand does not generate value it will most likely be vulnerable to competitors. The question is how to measure the functional benefits. Aaker suggests the use of a value measure that provides a summary indication of the brand's success at creating the value proposition. The focus on value rather than on functional benefits provides a measure that can apply across product classes. Aaker suggests that brand value should be measured by questions such as the following: Does the brand provide good value for money? Is there a reason to buy this brand rather than others? (Kotler & Keller, 2006:141; Aaker, 2002:326).

According to Aaker the value measure will be sensitive to the set that is used as the frame of reference and this could be a potential problem area. The relevant set can be cued by using phrases such as "among comparable brands" or "among brands with which it competes" (Kotler & Keller, 2006:311; Aaker, 2002:326).

An important issue regarding the value dimension is whether it really represents a different construct from perceived quality, as value can be considered at least in some

contexts as perceived quality divided by price. However, research indicates that perceived value is more important than perceived quality for some brands. Typical examples include brands that are positioned based on low price and those that have a very functional appeal. Aaker mentions a number of research studies that indicate that perceived value is more important than perceived quality. These include Southwest and Continental Air which are positioned on delivering low price, and the Discover Card which was introduced for the value-smart shopper (Aaker, 2002:327). The secondary research indicated that Cell C was positioned as a value brand in the South African cellular market (refer to Chapter 2, paragraph 2.3.3.7) prior to the launch of its new brand identity.

Based on research conducted by Young and Rubicam, Aaker is of the opinion that perceived quality represents a very different dimension to the consumer. Perceived quality, and more generally esteem, relate to the prestige and respect of a brand. Value, in contrast, relates more to the functional benefits and practical utility derived from using the brand. Based on this logic the inclusion of value as a separate dimension is justified, although there are cases in which it could be combined with perceived quality (Kotler & Keller, 2006:141; Aaker, 2002:327).

(ii) Brand personality

For some brands, brand personality provides a link to the brand's emotional and self-expressive benefits, as well as a basis for customer relationships and differentiation. Brand personality is specifically relevant to brands that have only minor physical differences and are consumed in a social setting where the brand can make a visible statement about the consumer. Vodacom and MTN, the dominant brands in the South African cellular market, are very competitive in terms of functional benefits and price. The marketers of these brands are making significant investments in order to develop a set of specific personality dimensions unique to the brand.

In measuring brand personality across products, one option would be to measure a spectrum of characteristics by using a brand personality scale (for example the Big Five as described in Aaker (2002:144). Aaker (2002:328) recommends the use of measures

that will reflect the existence of a strong personality but that are not product specific. Potential questions may include the following: Does this brand have a personality? Is this brand interesting? Does this brand have a rich history? (Kotler & Keller, 2006:279; Aaker, 2002:328).

Aaker mentions a number of potential problem areas when using the brand as a personality for measurement. Personality is not relevant to all brands, specifically those that position themselves primarily with respect to functional advantages and value. The use of personality as a general indicator of brand strength will create a distortion for these brands. There is also a question: Will brand personality and its measures be sensitive to changes in brand equity? A brand personality may be excessively stable and thus may not reflect the dynamics of the market (Aaker, 2002:329).

The perspective of the brand as a person plays an important role in the branding strategies of the major South African cellphone network service providers.

(iii) Organisational associations

The brand as an organisation is another dimension of brand identity that may be a driver of differentiation. It will most likely be a source of differentiation when brands are similar in terms of attributes, when the organisation is visible (in for example a service business or a company that manufactures durable goods) or when a corporate brand is involved (Kotler & Keller, 2006:279). (The corporate or company brand was discussed in Chapter 3, paragraph 3.7.4.1 of this study).

Aaker suggests the following as potential statements that could be considered to measure the dimension of the brand as an organisation: This brand is made by an organisation that I would trust; I admire the brand/organisation; I would be proud (or pleased) to do business with the brand/organisation (Aaker, 2002:329).

Similar to the element of the brand as a person, the element of the brand as an organisation is not relevant to all brands. There is also a question as to whether the

measurement of organisational associations will be sensitive to changes in brand equity, specifically taking into account that changing the organisational image is difficult (Aaker, 2002:329).

(iv) Differentiation

The three sets of brand association measurements, i.e. perceived value, brand personality and organisational associations, tap into various dimensions of how a brand can be differentiated from its competitors. Differentiation is a bottom-line characteristic of a brand. If the brand is not perceived as being different, it will experience difficulties in supporting a price premium or maintaining price levels that will make attractive margins possible. Consideration could be given to the option to replace or supplement the three association measures with a single set of indicators of the brand's ability to achieve differentiation. The following statements could be considered: This brand is different from other brands. This brand is basically the same as the other brands (Kotler & Keller, 318-322 and 422; Aaker, 2002:329).

d) Awareness measures

Awareness measures can be used to give an indication of both the knowledge and the salience of a brand in the mind of customers. Depending on the category, it can be an important driver of purchase behaviour and thus usually has a key role to play in brand equity. The scope of the brand's reach in terms of segments can partly be reflected by awareness measures. Awareness also influences the perceptions and attitudes of consumers. The different levels that should be considered for the development of awareness measures as proposed by Aaker is presented in table 4.5.

TABLE 4.5 LEVELS OF AWARENESS MEASURES

Recognition (Have you heard about this brand?)
Recall (Which cellphone network service providers can you recall?)
Graveyard statistic (The recall level of those who recognise the brand)
Top of mind (The first-named brand in a recall task)
Brand dominance (The only brand recalled)
Brand familiarity (Level of brand familiarity)
Brand knowledge or salience (Does the consumer have an opinion about the brand?)

Sources: Aaker 2002:330,

A brand is said to have recall if the consumer can recall it when the product class or category, for example cellphone network service providers, is mentioned. The graveyard statistic is based on recall. It provides a measurement of the level of recall amongst those consumers who recognise the brand. It is designed to distinguish between the strong niche brand and a tired brand. The strong niche brand has a high level of recognition and recall, but only within the niche segment. The tired brand has slipped into oblivion. It still has a high level of recognition, but it has a low level of recall. The dynamics of the graveyard statistic can be predictive of future market trends (Aaker, 2002:11-17 and 330-331; Gerber-Nel, 2006:193; Cant *et al.*, 2007:264).

The use of awareness measures should take into account the applicable level of awareness. The appropriate measure to use will differ across brands and product classes, making comparison difficult. For some brands (for example in the software industry) recognition will be important, whereas in other categories (for example the cellular market) recognition measures will be high for all but the newest brands. Some brands will be so pre-eminent in their category that the use of dominance measures to generate any sensitivity will be required. The major South African cellular network service providers, Vodacom, MTN and Cell C, are dominant in comparison to other competitors such as Virgin Mobile, Nashua Mobile and Autopage Cellular.

The measurement of recall is often inconvenient. It tends to complicate and add costs to a structured survey that would otherwise employ scales only. In addition the assessment of awareness may also include other measures, depending on the context. Brand knowledge and salience variables can be used to gain more sensitivity without applying recall. This approach is used in the Young and Rubicam (BAV) and Total Research (EquiTrend) research (Aaker, 2002:331; Keller, 2003:76).

The brand's symbols and visual imagery play an important role in awareness. For many brands awareness of the name cannot be separated from familiarity with the brand's symbols and visual imagery. Awareness levels can be affected dramatically by including prompts relating to symbols and visual imagery. In general, the task of creating awareness will usually intimately involve the use of symbols and visual imagery. Thus it may be necessary to move beyond measuring brand name awareness to measuring awareness of symbols and visual imagery. This measure could be based on an open-ended question such as "What, if anything, comes to mind when the brand is mentioned?" Another option would be to expose respondents to a set of visual images and ask them which ones they recognise. Both the open-ended question and stimulus exposure are somewhat difficult to administer in an otherwise straightforward, structured questionnaire that employs scales (Aaker, 2002:331; Keller, 2003:76; Cant *et al.*, 2007:264).

An important aspect to note about brand awareness is the concept referred to as "double jeopardy". The relationship between brand size (market share) and other brand performance measures is influenced by "double jeopardy". The more users a brand has, the better it tends to perform in terms of brand performance measures. This fact allows marketers to make strong predictions about a brand's penetration, repurchase rate, price elasticity, and share of category requirements, merely from knowing its market share. It even allows marketers to predict how well the brand will perform on a variety of attitudinal measures. (Farris *et al.*, 2006:116; Hofmeyr & Rice, 2000:104).

Ehrenberg (quoted by Cant *et al.*, 2007:264) proposes that there are no strong or weak brands, but only big and small brands. The sheer weight of presence is the mark of success for big brands. On the contrary other scholars argue that this view can be detrimental to the brand. They argue that by focusing on market penetration only, marketing management will be motivated to use marketing strategies that will be detrimental to the image of the brand. Although the effect of market share cannot be ignored, the long-term growth and survival of the brand require the consideration of other dimensions such as image as well (Cant *et al.*, 2007:264; Farris *et al.*, 2006:31).

e) Market behaviour measures

The first four dimensions of the Brand Equity Ten measurements require customer survey data. The market behaviour dimensions use other sources of data.

(i) Market share

Market share and sales often provide a valid and sensitive reflection of the brand's standing with customers. Theoretically market share should increase, or at least not decrease, when the brand has a relative advantage in the minds of customers. In contrast, if competitors improve their brand equity market share should decline. Thus market share is a good summary measure of brand equity (Aaker, 2002:332). Most companies usually keep a close tab on market share and sales data. Thus the information tends to be available without the use of a customer survey. Financial reporting by the major cellphone network service providers in South Africa provides market share data on the cellphone user subscriber base.

There are potential problems with the use of market share as a measure of brand equity. Market share indicators are responsive to short-term strategies that can undermine brand equity in the long term. Promotions and price deals can grow market share amongst price switchers, compromising brand equity value over the long term. Other savings, such as cuts in brand building activities, can also be used to gain market share with negative effects for brand equity in the long term. These problems are minimised when market share is only one of a set of brand equity measures that also includes

measures such as market price levels and distribution coverage (Aaker, 2002:332; Cant *et al.*, 2007:267).

(ii) Market price and distribution coverage

The use of market share or sales data as a brand equity measure can be particularly deceptive when market share or sales increase as a result of reduced prices or price promotions. Thus it is important to measure the relative market price at which the brand is being sold. Prices for various varieties of the brand, weighted by their relative sales volumes, need to be obtained. The relative market price could be defined as the average price at which the brand was sold during the month, divided by the average price at which all brands were sold (Aaker, 2002:333; Gerber-Nel, 2006:193).

4.3.7.6 Brand Knowledge Structure methodology (BKS)

The BKS methodology primarily uses a quantitative approach to measure the brand knowledge structures of consumers. The steps followed in the execution of this methodology are as follows:

- A list of criteria used by consumers to judge the brands in the category is generated. This information is gathered by means of qualitative research.
- A quantitative survey is planned, using random sampling to provide reliable and consistent findings over time.
- Questions are included during the design of the questionnaire to cover the following: relative importance of the criteria identified, brands recalled and recognised, and rating of the main brands on the criteria as identified.
- Data analysis is done to determine brand knowledge structures (Cant, *et al.*, 2007:270-272).

4.4. CONCLUSION

Broadly three brand measurement approaches can be identified i.e. the branded business value approach, the incremental brand sales approach and the customer-

based brand metrics approach. The branded business value approach provides insight into the value of the brand as an asset on the balance sheet. The incremental brand sales approach provides insight into the short-term, incremental financial value of brand management activities. The customer-based brand metrics approach provides insight into the impact and effect of brand management activities on the brand knowledge structure as it resides in the mind of the customer. This measurement approach is based on the marketing philosophy that attitudes, opinions and beliefs drive consumer brand behaviour. To measure customer-based brand equity this measurement approach has to be used. The sources of brand equity as it resides in the mind of the customer ultimately drive the outcomes of customer-based brand equity as measured by the incremental brand sales and branded business value approaches. In the next chapter the research methodology used in the execution of this study will be discussed.

CHAPTER 5

RESEARCH METHODOLOGY

5.1. INTRODUCTION

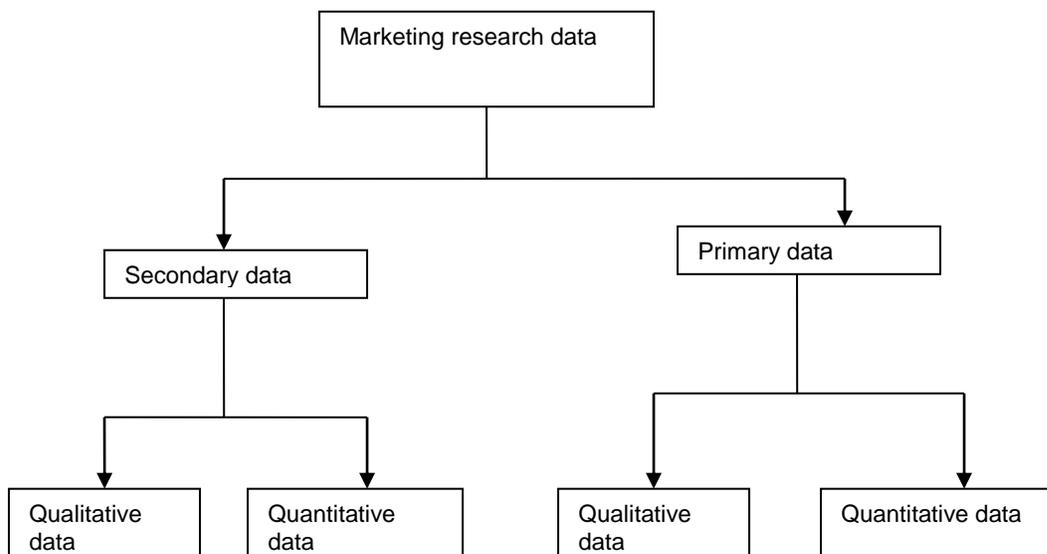
The previous chapters dealt with the South African cellular market, branding and brand management, and brand equity measurement. This chapter will focus on the research methodology that was followed to attain the primary and secondary objectives of the study. Marketing research will be defined and then followed by an examination of the marketing research process and the way in which each of the steps in the process applies to this study.

5.2. MARKETING RESEARCH

Marketing research can be defined as the “systematic and objective identification, collection, analysis, dissemination, and use of information for the purpose of improving decision making related to the identification and solution of problems and opportunities in marketing” (Malhotra, 2007:7).

The classification of marketing research data is presented in figure 5.1:

FIGURE 5.1 CLASSIFICATION OF MARKETING RESEARCH DATA



Source: Aaker et al., 2004:188

Figure 5.1 shows that marketing research data can be classified as either secondary data or primary data. Secondary data includes information that had been previously collected, assembled and interpreted at least once, for any purpose other than the current problem (Lamb *et al.*, 2008:133). The secondary data collected for this study were discussed in chapters 2, 3 and 4.

Primary data consists of firsthand information, facts or estimates, derived by means of a formalised research process to address a specific problem or an opportunity that was identified (Cant *et al.*, 2007:165). Two types of both secondary and primary data can be distinguished: qualitative and quantitative data. Qualitative data is used to gain insight and understanding of the problem or opportunity being studied, and is usually not suitable for quantification or quantitative analysis. Quantitative data makes quantification and statistical analysis possible. Quantitative data can be used for descriptive purposes and to analyse cause and effect (Malhotra, 2007:143-144). In this study quantitative data will be used for both these purposes.

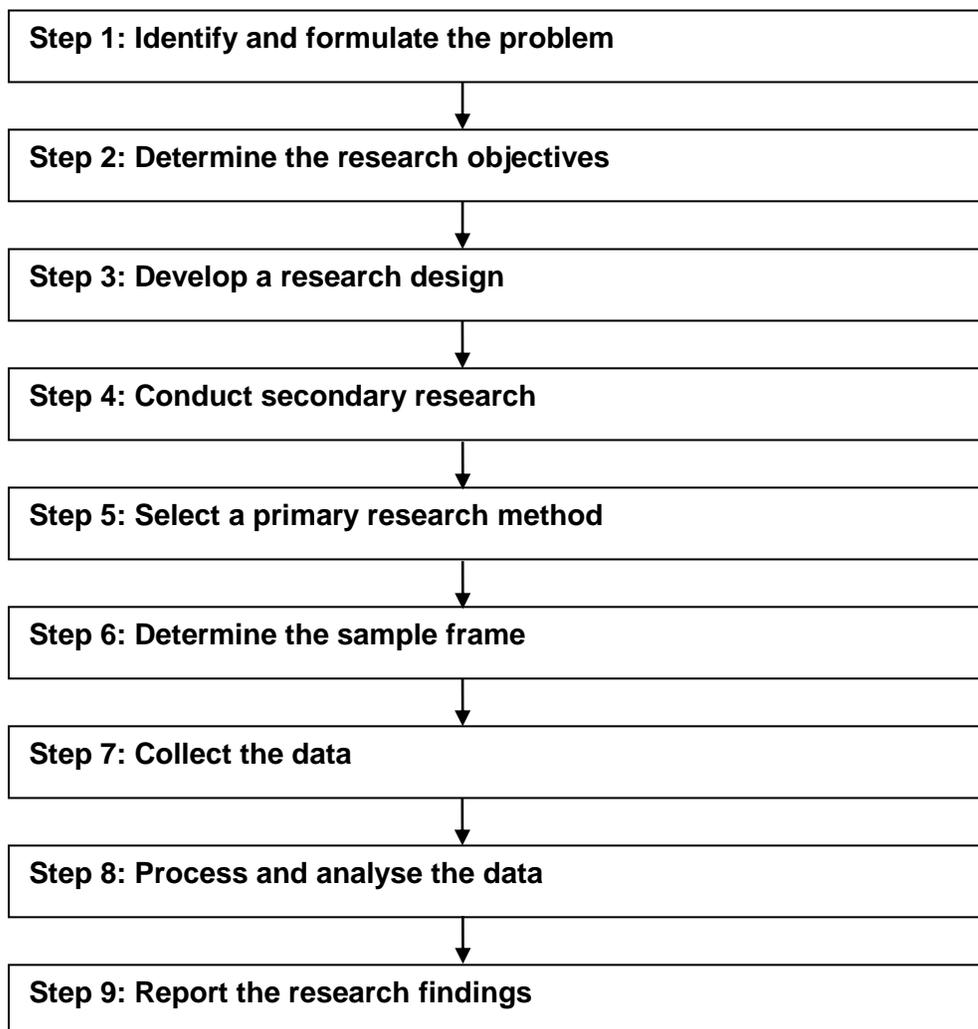
Information gathered by means of marketing research is used to make marketing decisions and has three primary roles or functions, i.e. descriptive, diagnostic and predictive (Lamb *et al.*, 2008:129). The descriptive function entails the gathering and presentation of facts. In this study the descriptive function will be used to profile the target market. The diagnostic function, which involves the explanation of the data and the results, will be used to compare the results for the major cellphone network service providers. This function will also be used to determine the drivers of customer-based brand equity. The predictive function uses the descriptive and diagnostic functions to predict the outcome of planned marketing actions (Lamb *et al.*, 2008:129). The latter will not form part of the focus of this study.

Marketing research is conducted by executing a sequence of carefully planned steps, referred to as the “marketing research process” (Cant *et al.*, 2007:158). The marketing research process will be discussed in the following section of this chapter.

5.3. THE MARKETING RESEARCH PROCESS

Although most problems related to marketing research are unique in some way or another, there is general agreement among the majority of researchers about the steps to be followed in the execution of the marketing research process (Cant, *et al.*, 2007:158; Lamb *et al.*, 2008:132; Aaker *et al.*, 2004:44). The steps to be followed in execution of the marketing research process are presented in figure 5.2:

FIGURE 5.2 THE MARKETING RESEARCH PROCESS



Sources: Adapted from Gerber-Nel (2006:166), Lamb et al. (2008:132) and Cant et al. (2007:158)

The marketing research steps listed in figure 5.2 require further exploration:

5.3.1 Step 1: Identifying and formulating the problem or opportunity

The marketing research process is initiated when a marketing problem or an opportunity is identified. The identification and formulation of the problem or the opportunity should provide direction to the steps that follow. A problem or an opportunity that was not defined properly may result in the gathering of data that does not answer the research question or questions (Malhotra, 2007:10 and 37).

Chapter 1 presented the exploratory research that identified the research problem to be addressed by this study: no empirical research with the focus on the measurement of customer-based brand equity amongst cellular users in the LSM seven to LSM ten groups have been done to date.

5.3.2 Step 2: Formulating the research objectives

“A marketing research objective refers to the specific information that is needed to solve a marketing research problem” (Cant *et al.*, 2007:161). The research objective should specify the exact information that is required. All the research objectives should be stated in terms of the precise information needed (Cant *et al.*, 2007:161). The primary research objective of this study is to determine the customer-based brand equity of the major South African cellphone network service providers amongst principal estate agents in the Gauteng province. In order to meet the primary objective, the secondary objectives will be as follows:

- to determine a profile of the user group and to compare the profile with stated descriptors for individuals in the LSM seven to LSM ten groups;
- to determine the user group’s brand relationship (customer-based brand equity);
- to determine the user group’s brand usage, barriers to brand usage and brand contact;
- to determine the user group’s brand awareness;

- to determine the user group's preferences regarding service providers;
- to determine the user group's satisfaction with the cellphone service used;
- to determine the user group's associations attached to the various brands;
- to determine the user group's assessment of brand performance;
- to determine any other relevant issues that may influence customer-based brand equity;
- to identify the key drivers of customer-based brand equity.

Achievement of these research objectives will contribute to the body of knowledge regarding the measurement of customer-based brand equity in South Africa. It will also help to identify areas for future research in this dynamic field of study.

5.3.3 Step 3: Developing a research design

The research design is a preliminary plan as to how the research will be conducted (Malhotra, 2007:78). A plan for the way in which the research will be done, should be developed during the design phase of the marketing research process. The nature of the intended research determines the format of the plan. The first two steps, identification and formulation of the problem and development of research objectives, determine the research design to a large extent. During the research design phase the research objectives are translated into specific data requirements and the possible sources of the data are established (Cant *et al*, 2007:162-166).

Two options should be considered for data collection purposes: secondary data and primary data. As already mentioned, secondary data includes information that had been collected previously. Primary data is collected to address the specific problem at hand. Secondary data should be exploited before primary data is collected (Tustin *et al*, 2005:139).

5.3.4 Step 4: Conducting secondary research

The sources of secondary data can be classified as internal and external data. According to Malhotra (2007:106-124) internal data refers to data generated within the organisation. It typically includes data such as sales and purchase data, and may be available in ready-to-use format or it may require further processing. The sources of external secondary data include published reports (for example annual reports), computerised databases (for example a directory of registered estate agency firms) and syndicated services (for example The All Media and Products Survey conducted by the South African Advertising Research Foundation).

Extensive secondary research was conducted in the execution of this study. Chapter 2 presented the secondary research on the marketing environment. An overview of literature on branding and brand management was given in Chapter 3 and an overview of literature on brand equity measurement was presented in Chapter 4. The secondary sources are listed in the Bibliography.

The use of primary research is considered if the information provided by the secondary research is insufficient to meet the research objectives. The advantage of primary research is that it provides answers to specific research questions that secondary research cannot answer. Primary research is expensive and should only be conducted if the benefits derived from primary research exceed the costs (Lamb *et al.*, 2008:135).

Although extensive secondary research was conducted in this study, the secondary information was insufficient to meet the research objectives. Primary research therefore had to be conducted.

5.3.5 Step 5: Selecting a primary research method

Primary research methods can be classified into three broad categories: observational, experimental and survey research. The use of a specific method depends on the research objectives to be achieved (Lamb *et al.*, 2008:136).

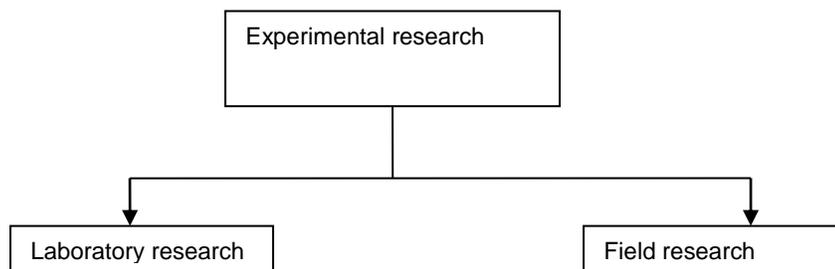
5.3.5.1 Observational research

Observational research does not require direct interaction with people. Observational research can be defined as “the recording of behaviour patterns of people, objects and events in a systematic manner to obtain information about the phenomenon of interest” (Malhotra, 2007:202). A disadvantage of observational research is the requirement to observe the respondent’s behaviour and other characteristics of interest (Tustin *et al.*, 2005:266-267). Due to this requirement observational research was not suitable for the purpose of this study.

5.3.5.2 Experimental research

Experimental research answers questions about causality. In experimental research conditions are controlled. The independent or experimental variables are manipulated and the effect of this manipulation on the dependent variable(s) is measured (Aaker *et al.*, 2004:340–341). As indicated in figure 5.3, experimental research can be conducted in a laboratory or by means of field research:

FIGURE 5.3 CLASSIFICATION OF EXPERIMENTAL RESEARCH



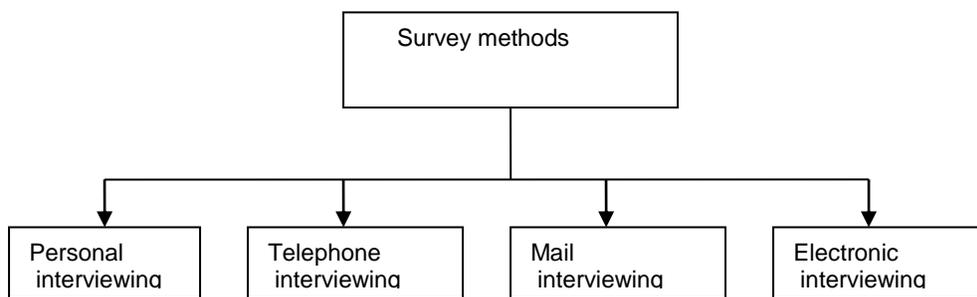
Source: Adapted from Gerber-Nel (2006:172)

A typical example of experimental research would be to determine whether an increase in advertising expenditure would result in an increase in sales. As this study will not focus on the manipulation of variables, experimental research will not be used (Aaker *et al.*, 2004:342).

5.3.5.3 Survey research

In survey research the researcher interacts with respondents to obtain facts and to ask about opinions, attitudes and perceptions (Lamb *et al.*, 2008:136). As indicated in figure 5.4 the survey methods that can be used include personal interviewing, telephone interviewing, mail interviewing and electronic interviewing (Aaker *et al.*, 2004:260–261):

FIGURE 5.4 CLASSIFICATIONS OF SURVEY METHODS



Sources: Lamb *et al.*, 2008:136-138; Malhotra, 2004:170

Survey research was identified as the most suitable primary research methodology for this study. The target market for this study consists of principal estate agents, located in the Gauteng province of South Africa. Taking time and cost considerations into account, interviews by telephone and electronic interviews were identified as the most suitable survey and research methods to use for the collection of primary data. These research methods combine many of the advantages of personal interviews and mail surveys and, at the same time, overcome many of the disadvantages of the same two approaches. These methods also reduce costs by eliminating the travel costs of the interviewer (Malhotra, 2007:184-196).

The structured questionnaire that was used to gather primary data is attached as Annexure A. A summary of the research objectives and questions that were used to gather data to meet the research objectives is presented in table 5.1. In order to meet the research objectives the measurement of perceptions, attitudes, preferences, usage behaviour and other relevant characteristics of the principal estate agents in the defined target market (refer to paragraph 5.3.5.3 (a) to (h)) was necessary. The following measurement scales were used in the questionnaire:

- **Nominal scales:** A nominal scale uses numbers to identify and classify objects, for example male or female (Aaker et al., 2004:284).
- **Ordinal or rank order scales:** In an ordinal or rank order scale the numbers assigned, indicate the relative positions of the objects, but not the magnitude of differences between them, for example preference rankings (Aaker et al., 2004:284).
- **Interval scale:** In an interval scale the intervals between ranked objects are equal. Differences between ranked objects can be compared and the zero point is arbitrary, for example attitudes (Aaker et al., 2004:285).
- **Ratio scales:** In a ratio scale the ratio of scale values can be computed and the zero point is fixed (Aaker et al., 2004:285).

In the development of the questionnaire care was taken to ensure that the wording was clear, simple and easy for respondents to understand. This enabled respondents to complete the questionnaire themselves. The research objectives and a summary of the questions that were used for primary data collection are presented in table 5.1 and will be discussed.

TABLE 5.1 SUMMARY OF THE QUESTIONNAIRE

Research objectives	Points to be analysed
To profile the user group and to compare the profile to stated descriptors of users in the LSM seven to LSM ten groups	Profiling of personal demographics (questions 7.1 to 7.7, and 8.5 to 8.8) Profiling of estate agency-related demographics (questions 8.1 to 8.4) Decision-making regarding the cellular service used (questions 1.2 to 1.4) Marketing communication preferences (question 6.9) Preferences regarding cellular handsets (questions 4.1 to 4.4) Cellular Internet access (questions 1.6 to 1.8)
To determine the user group's brand relationship (customer-based brand equity)	Relationship with cellphone network service provider (questions 6.1 to 6.8)
To determine the user group's brand usage, barriers to brand usage and brand contact	Brand usage: Cellular brand used (questions 2.2 and 2.3) Services used (question 2.4) Average monthly expenses (question 2.5) Subscription period (question 2.6) Barriers to brand usage: Barriers to brand usage (questions 2.12 and 2.13) Brand contact: Brand contact (questions 5.1 to 5.3)
To determine brand awareness	Brand awareness at corporate level (question 2.1) Brand awareness at product level (question 2.7 to 2.10) Awareness of brand-related loyalty programmes (question 5.4 to 5.5)
To determine user preferences regarding service providers	Likelihood to use cellular service providers (question 2.11) Most preferred service providers (question 2.14)
To determine satisfaction with the cellphone service used	Overall satisfaction with the cellphone service used (question 1.5)
To determine any other relevant issues that may influence customer-based brand equity	Analysis of access to telecommunication services according to customer-based brand equity group (questions 7.1, 7.2, 7.3 and 7.6)
To determine brand associations	Brand associations (questions 3.1.1 to 3.1.25)
To determine brand performance	Brand performance (questions 3.2.1 to 3.2.26)

The research questions were developed, based on the research objectives, as formulated in Chapter 1 (refer to paragraph 1.5), and the secondary research as described in chapters 2, 3 and 4. The research questions that were used for quantitative measurement in order to meet the research objectives of this study require further discussion:

a) Profiling of the user group

The profiling of the user group addressed the following aspects: profiling of personal demographics, profiling of estate agency-related demographics, decision-making about the cellular service used, preferences regarding marketing communication, preferences with regard to cellular handsets and the use of cellular Internet access.

(i) Profiling of personal demographics

Profiling of the user group's personal demographics covered the following topics (relevant question numbers from the original questionnaire given in brackets):

- personal total monthly income (question 8.8)
- access to other telecommunication-related services, such as a fixed-line telephone at home, fixed-line Internet access at home, a subscription to pay television and access to a laptop for personal use (questions 7.1 to 7.4 and 7.6 to 7.7)
- expenditure with regard to fixed-line telephone service (question 7.5)
- number of people living in the household (question 8.5)
- age category breakdown (question 8.6)
- gender breakdown (question 8.7)

In addition to profiling the user group, the above-mentioned demographics were used to compare the profile of the sample with stated descriptors of individuals in the LSM seven to LSM ten groups (refer to Chapter 1, paragraph 1.5).

(ii) Profiling of estate agency-related demographics

Profiling of estate agency-related demographics covered the following:

- number of estate agents employed (question 8.1)
- legal form of business of the estate agency (question 8.2)
- number of years worked as an estate agent (question 8.3)
- number of years worked as a principal estate agent (question 8.4)

The above-mentioned demographics provided important information that could be used to assess the influence of these variables on the network service providers used by the principal estate agents.

(iii) Decision-making about the cellular service used

The questions from the questionnaire regarding decision-making about the cellular service used were designed to find answers to the following questions:

Does the principal estate agent personally decide about the cellphone service that he or she is using? (Question 1.2)

Who is responsible for the payment for this service? (Question 1.3)

Is the cellular service used for personal purposes only, or for both personal and business purposes? (Question 1.4)

The answers to these questions provided important information on the role of the principal estate agent in the decision-making process. It was important to make sure that the decision was not influenced by the policies of estate agencies, for example agencies that specified the use of a specific cellphone network service provider.

(iv) Preferences regarding marketing communication

Preferences with regard to marketing communication were also treated as part of the user-group profile. In a prompted question (question 6.9) respondents were asked to indicate their most preferred means by which to receive marketing communication from their network service provider.

(v) Preferences regarding cellular handsets

Assessment of preferences with regard to cellular handsets attempted to answer the following questions:

Does the principal estate agent prefer a specific make or brand of cellphone, for example Nokia or Samsung? (Question 4.1)

Which brands are preferred? (Question 4.2)

The answers to the above-mentioned questions provided important information on the principal estate agent's preference to use a specific brand of cellphone handset, as well as information on the brands which were the most popular.

(vi) Cellular Internet access

Specific questions were included in the questionnaire to find answers to questions such as these:

- Does the principal estate agent access the Internet through the cellphone service that he or she is using? (question 1.6)
- Which devices are used to access the Internet through the cellphone service? (question 1.7)
- What technology is used to access the Internet through the cellphone service? (question 1.8)

The answers to these questions provided important profiling information that could be used to get insight into the principal estate agent's use of cellular Internet access, access devices and access technologies.

The questionnaire was designed to also include questions that could be used to measure the user group's relationships with certain brands:

- b) Determining the user group's brand relationship (customer-based brand equity)

Customer-based brand equity is created by the differential effect that brand knowledge has on the customer's response to the marketing of a brand. In order to reach the pinnacle of the customer-based brand equity pyramid, a strong relationship between the brand and the customer is required (refer to Chapter 3, paragraphs 3.5).

In order to create customer-based brand equity, it is essential to develop a brand relationship with the customer. A strong, positive brand relationship will result in a positive differential effect on the customer's response to the marketing of a brand (customer-based brand equity). Customer-based brand equity is a multi-faceted concept. Hair *et al.* (2010: 8 and 126) propose the use of a summated scale to portray multi-faceted concepts in a single measure. A summated measure was used as an indicator variable to measure customer-based brand equity in this study. The following statements were included in the questionnaire to develop the summated measurement scale:

- *I am considering switching from this brand to another brand* (question 6.1).
- *I use this brand because it is the most easily available* (question 6.2).
- *I use this brand to avoid the effort involved in switching to another brand* (question 6.3).
- *I use this brand because it is the most affordable* (question 6.4).
- *I use this brand because it best suits my needs* (question 6.5).
- *I am willing to put in an extra effort to use this brand (e.g. I would be willing to search for an outlet where it is available, if necessary)* (question 6.6).
- *I have a personal relationship with this brand* (question 6.7).
- *I will recommend this brand to my friends and colleagues* (question 6.8).

Statements 6.1 to 6.4 were included as indicator variables of the concept of behavioural loyalty (refer to figure 4.10), while statements 6.5 to 6.8 were included as indicator variables of the concept of customer-based brand equity (refer to figure 3.8 and 4.13).

c) Determining the user group's brand usage

The user group's brand usage was addressed by covering three aspects: brand usage, barriers to brand usage and brand contact.

(i) Brand usage

The following aspects were addressed to determine brand usage, which includes cellular brands used, cellular services used, average monthly cellular expenses and period of subscription to a service of the primary (most used) cellphone network service providers:

- **Cellular brands used**

In order to determine use of the major cellular brands, respondents had to indicate whether they were using Vodacom, MTN or Cell C (question 2.2). Those that were using more than one cellphone network service provider, were asked to indicate which cellphone network service provider they were using the most frequently (question 2.3). The cellphone network service provider that was used the most frequently was identified as the primary network service provider and respondents completed the questionnaire by rating their primary service provider only. This way the rating was done by customers with usage experience of the service provider that they were rating. The information pertaining to the primary network service provider was also used for the purpose of quota control (refer to paragraph 5.3.6.3).

- **Services used**

In order to determine usage of cellphone services, respondents had to indicate whether they were using voice, data or other cellular services as part of a contract or prepaid subscription (question 2.4).

- **Average monthly expenses**

The principal estate agents had to indicate their average monthly expenses with regard to the use of contract and prepaid services (questions 2.5.1 and 2.5.2).

- **Subscription period**

Respondents were asked to indicate the period for which they had been subscribed to their primary network service provider (question 2.6).

- (ii) Barriers to brand usage

Respondents were required to indicate whether they were aware of anything that prevented them from using their most preferred cellphone network service provider (question 2.12). They were prompted by means of a follow-up question to identify barriers that prevented them from using their most preferred network service provider (question 2.13).

- (iii) Brand contact

Respondents were asked to indicate whether they had contact with their cellphone network service provider within the four weeks before completing the questionnaire (question 5.1). In a follow-up question they were asked to indicate the nature of the contact (question 5.2). Those respondents that indicated a website visit as a means of contact were prompted to mention the website(s) and or web pages visited.

- d) Brand awareness

Brand awareness was measured at a corporate level (overall brand level) and at a product level. Due to the high level of market penetration, as previously discussed, brand awareness at corporate level was measured by means of aided recall. This was done by using a list of cellphone network service providers. The following service providers were included in the list: Vodacom, MTN, Cell C, Virgin Mobile, Nashua Mobile, Autopage Cellular, Smart Phone, Supercall Cellular and iBurst (question 2.1).

In order to measure brand awareness at product level the principal estate agents had to indicate whether they knew the name of the contract or prepaid service that they were using (questions 2.7 and 2.9). In a follow-up question those that indicated that they knew the name, were asked to mention the name of the service (questions 2.8 and 2.10). Respondents also were asked to indicate whether they were aware of any loyalty programmes offered by their network service provider (question 5.4). Those that were

aware of loyalty programmes were prompted to mark the programmes of which they were aware (question 5.5).

e) Preferences regarding service providers

Preferences with regard to service providers were assessed by using two questions. In the first question principal estate agents were asked to rate their likelihood to make use of Vodacom, MTN, Cell C and Virgin Mobile, assuming that they had a choice (question 2.11). In the second question respondents were requested to select their most preferred network service provider (question 2.14).

f) Satisfaction with the cellphone service used

In order to measure satisfaction with the cellphone service that principal estate agents were using, they were asked to rate their overall satisfaction with the cellphone service that they were using the most (question 1.5).

g) Questions related to brand associations

The brand association dimensions, and the questions that were used to measure these dimensions, are presented in table 5.2. These dimensions and questions were developed, based on the secondary research described in chapters 2, 3 and 4 of this study.

TABLE 5.2 PROPOSED BRAND ASSOCIATION DIMENSIONS

1.	Leadership measures/perceived quality Market leader (question 3.1.3) Popular/most used brand (question 3.1.7)
2.	Brand associations that can be used to differentiate the brand
	2.1 Brand as a product/perceived value Affordable (question 3.1.14) Understands customer needs (question 3.1.9) Overall performance (question 3.2.26) Value for money (question 3.2.20) Customer service (question 3.2.25)
	2.2 Brand as a personality (question 3.1.19)
	2.3 Organisational associations
	2.3.1 Brand Likeability Likeable (question 3.1.20) Fun to use (question 1.1.24) Trendy and exciting (question 3.1.23) Adds value to my lifestyle (question 3.1.25) Sincere/down to earth (question 3.1.20)
	2.3.2 Trust/care Trusted brand (question 3.1.8) Keeps its promises (question 3.1.18) Friendly and helpful (question 3.1.13) Warm and caring (question 3.1.12)
	2.3.3 Social responsibility Cares for the environment (question 3.1.11) Socially responsible (question 3.1.16)
	2.3.4 Market access Easily accessible (question 3.1.22) Distribution - access to outlets (question 3.2.21)
	2.3.5 Local versus global Local brand (question 3.1.2) South African brand (question 3.1.6) African brand (question 3.1.4) Global brand (question 3.1.5) Prestigious/upmarket (question 3.1.1)
	2.3.6 Technologically sophisticated (question 3.1.10)
	2.3.7 Innovative (question 3.1.15)
	2.3.8 Unique (question 3.1.17)

(i) Leadership measures and perceived quality

These dimensions were evaluated by using the following brand association statements: *market leader* (question 3.1.3) and *popular/most used brand* (question 3.1.7) (refer to Chapter 4 paragraph 4.3.7.5 (b)).

(ii) Brand associations that can be used to create differentiation

Assessment of the brand associations that can be used to create brand differentiation covered the following areas: the *brand as a product/perceived value*, the *brand as a personality* and *organisational associations* (refer to Chapter 4 paragraph 4.3.7.5 (c)).

- **Brand as a product/perceived value**

This dimension was evaluated by using the following brand association statements: *affordable* (question 3.1.14), *brand that understands customer needs* (question 3.1.9), *overall performance* (question 3.2.26), *value for money* (question 3.2.20) and *customer service* (question 3.2.24). The last three statements were included in the questionnaire as part of the detailed functional performance assessment. The detailed functional performance assessment included the total spectrum of functional performance, as will be discussed later in this chapter. The use of a value measure that provides a summary indication of the brand's success in creating the value proposition is recommended to measure brand equity (refer Chapter 4 paragraph 4.3.7.5 (c) (i)).

The statement *value for money* (question 3.2.20) was included in the questionnaire to replace price premium as a loyalty measure. This was necessary, due to the regulated market environment and the use of multiple sub-brands within the target market (refer to Chapter 2, paragraph 2.4 and Chapter 4, paragraph 4.3.7.5 (c) (i)). The statements *overall performance* (question 3.2.26) and *customer service* (question 3.2.24) were also included as variables indicating loyalty (refer to Chapter 4 paragraph 4.3.7.5 (a) (ii)).

- **Brand as a personality**

The dimension *brand as a personality* was assessed by using the following brand association statement: *this brand has a personality* (question 3.1.9).

The statements, included as organisational associations, provided additional insight into the dimension of the brand as a personality:

- **Organisational associations**

The organisational associations included the following dimensions: *brand likeability*, *trust/care*, *social responsibility*, *market access to the brand*, *local versus global*, *technological sophistication*, *innovative and unique*.

- **Brand likeability**

This dimension was assessed by using the following brand association statements: *likeable* (question 3.1.21), *fun to use* (question 3.1.24), *trendy and exciting* (question 3.1.24), *adds value to my lifestyle* (question 3.1.25) and *sincere/down to earth* (question 3.1.20).

- **Trust/care**

This dimension was assessed by using the following brand association statements: *trusted brand* (question 3.1.8), *keeps its promises* (question 3.1.18), *friendly and helpful* (question 3.1.13) and *warm and caring* (question 3.1.12).

- **Social responsibility**

Social responsibility as dimension was assessed by asking respondents to rate the following brand association statements: *cares for the environment* (question 3.1.11) and *socially responsible* (question 3.1.16).

- **Market access**

The following statements were used to assess market access as dimension: *easily accessible* (question 3.1.23) and *distribution - access to outlets* (question

3.2.21). The latter was also included in the questionnaire as part of the detailed functional performance assessment.

- **Local versus global**

This dimension was assessed by using the following statements: *local brand* (question 3.1.2), *South African brand* (question 3.1.6), *African brand* (question 3.1.4), *global brand* (question 3.1.5) and *prestigious/upmarket brand* (question 3.1.1) (refer to Chapter 3, paragraph 3.8.4.5).

- **Technologically sophisticated**

This dimension was assessed by using the statement *technologically sophisticated* (question 3.1.10).

- **Innovative**

This dimension was assessed by using the statement *innovative* (question 3.1.15).

- **Unique**

This dimension was assessed by using the statement *unique* (question 3.1.17).

h) Questions related to brand performance

A value measure that provides a summary indication of the brand's success in creating the value proposition is more appropriate than numerous individual brand performance measures. The brand performance statement *overall performance* (question 3.2.26), included in the proposed brand association dimension the *brand as a product/perceived value*, was included for this purpose. Research by Hofmeyr (2007:189) confirms the usefulness of overall brand performance as an indicator variable of attitudinal brand equity.

The brand performance statements/attributes (refer to Annexure A, section 3.2 and questions 3.2.1 to 3.2.26) were included to provide in-depth insight into brand

performance. These would also provide additional insight into brand usage (refer to Chapter 4 paragraph 4.3.7.5 (c)).

Pilot testing of the draft questionnaire is essential as this could identify problems with the administration of the questionnaire. It could also identify problems that respondents may have with the understanding and interpretation of questions. Pilot testing therefore will assist in resolving problems before the research commences on full scale (Tustin *et al.*, 2005:413).

Pilot testing of the questionnaire was done by requesting five respondents to complete a hardcopy (paper copy) and another six respondents to complete an electronic copy. After the questionnaire had been published on the website, the responses from participants were evaluated continually. This was done to ensure that respondents understood the questions correctly and that they completed the questionnaire correctly as well.

5.3.6 Step 6: Determining the sample frame

The population or universe for this study was defined as principal estate agents, located in the Gauteng province, who were registered with the Estate Agency Affairs Board at the time that they were approached to participate in the survey. Research can be conducted by either using a census or a sample. In a census data is obtained from every member of the universe. In a sample information is gathered from a subset of members in the defined universe, referred to as a sample. Due to cost considerations a sample is usually drawn from the population of interest (Tustin *et al.*, 2005:96).

It is important to select respondents that are representative of the universe under investigation. A sample frame has to be defined in order to facilitate the selection of a representative sample. A sample frame contains all the elements (the total group of people) from whom information is needed (Cant *et al.*, 2007:171).

5.3.6.1 Sample frame

The Directory of Gauteng-based Estate Agency Firms Registered with the Estate Agency Affairs Board as at 23 February 2009 was used as a sample frame for the population for this study. This sample frame was the most recent sample frame for estate agents available before commencement of the fieldwork. Due to the global economic downturn, the number of registered estate agents had declined from approximately 82 000 at the end of 2007 to an estimated 56 000 in April 2008. The number of registered estate agents was forecasted to decline to a further estimated 36 000 in 2009. These estimates were based on the views of industry experts (Kloppers, 2008:1). Despite numerous requests the Estate Agency Affairs Board was unwilling to provide more recent figures (refer to Chapter 1, table1.7).

The Directory of Gauteng-based Estate Agency Firms Registered with the Estate Agency Affairs Board, dated 23 February 2009, listed a total of 12 628 registered estate agency firms in Gauteng.

5.3.6.2 Sample size

Sample size refers to the number of respondents included in a survey. It is an important consideration as it affects the quality and generalisation of the data. Data obtained from a sample that is too small may not be representative of the population. Sample size, however, is also affected by cost considerations such as the costs involved in contacting respondents, and the time spent by respondents and interviewers to complete questionnaires (Aaker *et al.*, 2004:402-404). The response rate, as well as the value of the information provided by different sample sizes, should be considered when determining sample size (Keller, 2009:167 and Malhotra, 2004:341-362).

The required size of a sample can be determined through the use of a statistical formula. This procedure requires specification of the desired sampling error and confidence level, as well as the expected variance. The formula assumes that the population standard deviation is known. In most cases it is not known and must be estimated. An estimate could be obtained from a previous survey. If an estimate from a

previous survey is not available, a worst-case scenario, assuming the largest population variance possible, can be substituted in the formula (Aaker *et al.*, 2004:4002-409). A Bayesian approach is an alternative method that can be used to assess the sample size. In this approach elements are added to the sample, the collected data, computed sample statistics, and determined sampling costs. The approach incorporates prior information about population parameters, as well as the costs and probabilities of making wrong decisions (Malhotra, 2007:338).

As previously mentioned, determination of sample size is also influenced by other factors. According to Aaker *et al.*, (2004:404) sample size depends on four factors:

- the number of groups and subgroups within the sample to be analysed;
- the value of the information obtained from the study and the accuracy required from the results;
- the cost of the sample (A cost benefit analysis should be conducted.);
- the variability of the population (As the variability within the population increases, the sample size will need to be larger.).

A sample of 250 respondents in total was considered as sufficient for the purposes of this study. As a rule of thumb, Aaker *et al.* (2004:402) recommend that subgroups consist of sample sizes of 100 or more. Tustin *et al.* (2005:360 and 559) recommend sample sizes of 30 as sufficient for the use of parametric statistical procedures. Gerber-Nel (2006:179) considers sample sizes of 30 as sufficient for inferential analysis to estimate population parameters.

Table 5.3 presents a breakdown of the use of cellphone networks among cellphone users in Gauteng, i.e. cellphone users that fall within the LSM seven to LSM ten groups:

TABLE 5.3 CELLPHONE NETWORK MARKET SHARE

Cellphone network	Individuals	Percentage (%) of market share
Vodacom	2 712 403	49.02
MTN	2 184 924	39.49
Cell C	603 199	10.90
Virgin Mobile	32 947	0.59
Total	5 553 473	100

Source: SAARF, 2010b

Assuming that principal estate agents fall within the LSM seven to LSM ten groups, the market share of the service providers indicated in table 5.2 can be used as a guideline to estimate the sample breakdown of principal estate agents using Vodacom, MTN or Cell C as their primary (most frequently used) service provider. Excluding Virgin Mobile, the estimated breakdown varies as follows: Vodacom users 124, MTN users 99, and Cell users C 27. The ideal would have been to increase the number of Cell C respondents to 30. However, due to the limited number of Cell C users in the target market, it was unlikely that a total of 30 interviews with Cell C users would have been achieved. Sample size requirements for the use of multiple regression analysis, a multivariate statistical technique, will be discussed later in this chapter. The final sample size will be discussed in the following chapter.

5.3.6.3 Selecting the sample method

There are two options in the selection of a sampling method: probability sampling and non-probability sampling. In probability sampling all the elements in the population have a known non-zero chance of being selected. In non-probability sampling the probability of including elements from the population in the sample is unknown (Tustin *et al.*, 2005:344). Probability sampling methods include simple random sampling, stratified sampling, multi-stage sampling, cluster sampling and systematic sampling. Non-probability sampling methods include convenience sampling, judgemental sampling,

purposive sampling, quota sampling, multiplicity or snowball sampling, and Internet sampling (Cant *et al.*, 2007:172-174).

Multi-stage sampling was used in this study. During the first stage the sample units, estate agencies at local branch level, were selected randomly. During the following stage quota controls were used to ensure that a sufficient number of principal estate agents that were using the three major cellphone network service providers, were included in the sample.

The key difference between probability sampling and non-probability sampling is not that probability sampling will produce a more representative sample. Rather, with probability sampling, a statistical evaluation of sampling error can be undertaken, enabling the researcher to assess how likely the sample is to be unrepresentative and by how much. However, non-sampling errors also affect research results and therefore there is no guarantee that overall a probability sample will produce more accurate results than a non-probability sample.

(Tustin *et al.*, 2005:344.)

As mentioned above probability sampling do not guarantee more accurate results compared to non-probability sampling. Quota sampling can be used to ensure that the sample represents the population on key characteristics of interest.

“In a quota sample a researcher takes explicit steps to obtain a sample similar to the population in some pre-specified characteristics.” (Tustin *et al.*, 2005:347.) According to Tustin *et al.*, (2005:349) the controls that are used in a quota sample should meet the following requirements:

- It should be available and recent.
- It should be easy for the researcher to use for classification purposes.
- It should be closely related to the variables being measured in the study.
- It should be kept to a reasonable number.

Once they have been completed, quota samples can be validated, by comparing the sample and the population according to characteristics that are not used as control variables. If the sample and population, however, are similar with regard to these characteristics, it is still possible for the sample to be vastly different from the population with regard to characteristics that have not been explicitly compared (Tustin et al., 2005:349).

The number of principal estate agents that were using Vodacom, MTN or Cell C as their primary (most frequently used) network service provider, was used for quota control purposes in this study. Based on the market share of the network service providers (refer to table 5.2), quotas were defined as follows: Vodacom 125 users, MTN 95 users and Cell C 30 users. As previously mentioned, the quota of 30 Cell C users would have been difficult to achieve.

5.3.7 Step 7: Gathering the data

During this phase of the research process fieldwork is executed and the survey methodology is put into practice by means of data collection (Malhotra, 2007:412).

Telephone interviewing was used for initial contact and screening in this study, conducted at franchise or local branch level. The screening procedure was used to confirm that the estate agency was in fact operational. After this had been confirmed, the principal estate agent's e-mail address was obtained, as well as permission to e-mail an invitation to participate in the survey to him or her. The invitation to participate in the survey was sent to respondents that had been qualified in terms of the screening procedure. The invitation contained a link to the structured web-based questionnaire as presented in Annexure A. The invitation also contained a link to an official letter from UNISA. This letter was attached as Annexure B. By clicking on the link in the e-mailed invitation, respondents obtained access to the questionnaire and the letter that were hosted on a website.

The fieldwork was controlled to minimise non-sampling errors. Non-sampling errors can be categorised as response and non-response errors. Response errors can be categorised as researcher errors (for example sampling frame errors), interviewer errors (such as the selection of incorrect sampling elements) and respondent errors. Non-response errors occur when some of the respondents included in a sample do not respond. Refusal to participate in the survey is an important contributing factor to non-response error (Malhotra, 2007:94 and 376-377; Tustin *et al.*, 2005:375). Pilot testing of the questionnaire and verification of all the questionnaires that had been completed were used to minimise response error. Follow-up telephone calls to qualified respondents were used to minimise non-response error.

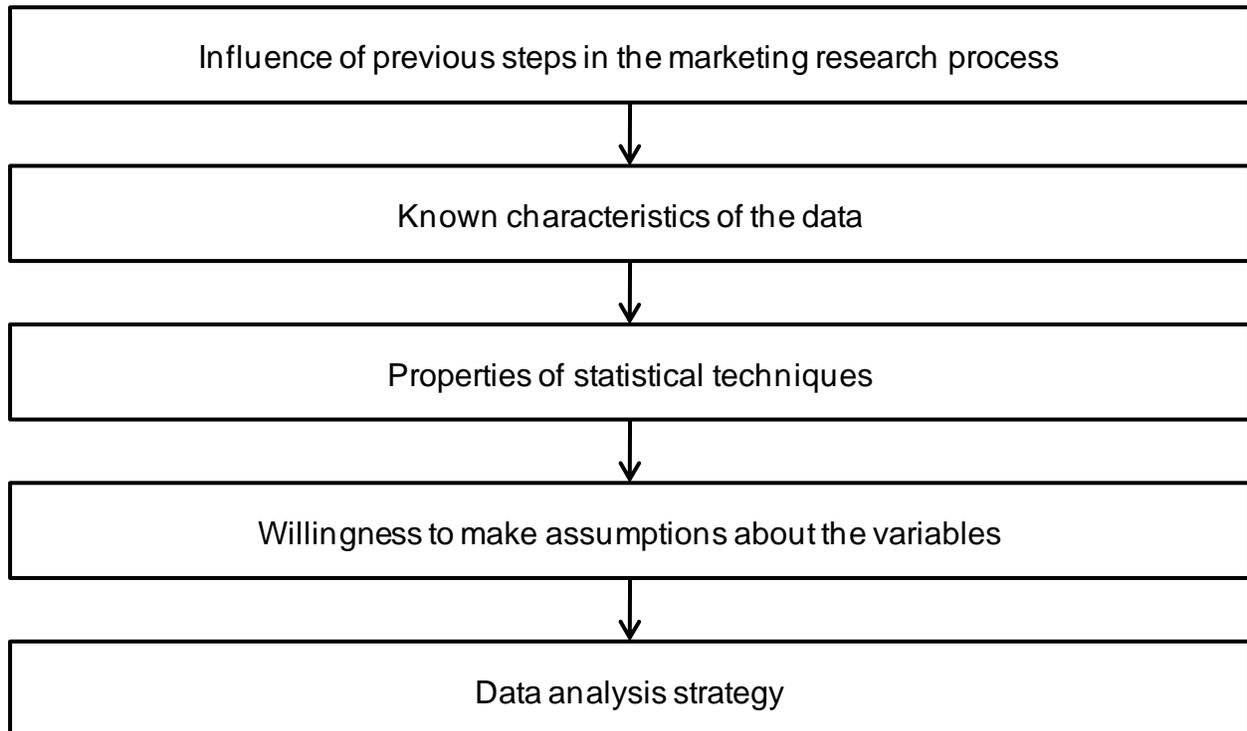
5.3.8 Step 8: Data processing and analysis

During this phase of the research process, data is converted into information that can be used to meet the research objectives. The data collected during the primary research phase is now converted into a format that will answer marketing management's questions (Cant *et al.*, 2007:158; Malhotra, 2007:11). The data processing and analysis can be divided into two major steps: data preparation and data analysis.

During data preparation data contained in questionnaires are extracted from the questionnaires to make it machine-readable and to prepare it for manipulation by computer software. Data preparation includes data validation, data editing, data coding, the entering of data into a computer programme and the cleaning of the captured data. Basically, numerical codes are assigned to represent all the responses to the questions in the questionnaire. The creation of new variables and the weighting of data, if necessary, are the final steps in the data preparation process. By completion of the data preparation process, the data is in a format suitable for analysis (Aaker *et al.*, 2004:432-437). The SPSS 16.0 computer application was used to analyse the data in this study. After validation and editing, the data was entered into SPSS.

Data preparation is followed by data analysis. A data analysis strategy is required to ensure sound data analysis. Figure 5.5 presents the basic components of a data analysis strategy:

FIGURE 5.5 THE COMPONENTS OF A DATA ANALYSIS STRATEGY



Source: Adapted from Malhotra (2007:441)

It is important for the researcher to consider the previous steps of the marketing research process in the development of the data analysis strategy. Definition of the problem, development of the research design, selection of a primary research method and the development of the sample frame should be considered interactively in the execution of the marketing research process (Malhotra, 2007:441).

The measurement scales used in the questionnaire determine the characteristics of the data. Nominal, ordinal, interval and ratio scales were used in the questionnaire. The following table shows the applicable statistical tests for each of the measurement scales:

TABLE 5.4 RELEVANT STATISTICAL TESTS

Measurement scale	Characteristics	Permissible statistics	
		Descriptive (examples)	Inferential (examples)
Nominal scales	Classify objects	Frequencies, mode	Chi-square
Ordinal scales	Indicate relative position	Percentile, median	Rank-order correlation, Kruskal-Wallis
Interval scales	Intervals between ranked objects are equal	Range, mean, standard deviation	T test ANOVA, regression, factor analysis
Ratio scales	Zero point is fixed and scale values can be computed	Geometric mean, harmonic mean	Coefficient of variation

Sources: Adapted from Gerber-Nel (2006:185) and Malhotra (2007:253)

The data analysis strategy is influenced by the properties of the different statistical techniques that the researcher can use. It is important for the researcher to use the relevant statistical techniques. Important considerations are the type of data that will be analysed, the research design and the underlying assumptions of the test statistic (Malhotra, 2007:253 and 441).

5.3.8.1 Descriptive statistics

Data analysis should start with an analysis of each question or measure by itself. Tabulation, which entails counting the number of cases that fall into various categories, is used for this purpose. The primary purposes of tabulation are as follows:

- cleaning of the data set by identifying the degree of omissions and errors in responses;

- determination of the empirical distribution (frequency distribution) of the variable in question;
- provision of preliminary insights into the data gathered (This typically involves the calculation of descriptive, or summary statistics, such as the measures of central tendency (for example mean, mode, and median), measures of dispersion (range, standard deviation and coefficient of variation) and measures of shape (skewness and kurtosis). (Aaker et al., 2004:437-439)

All the questions included in the questionnaire were analysed by means of tabulation. Appropriate descriptive statistics were calculated. The results will be presented in the following chapter.

Descriptive statistics are based on the sample that was drawn. If the researcher wants to go beyond describing the sample data, to report on the population from which the sample was drawn, inferential statistics should be used (Tustin *et al.*, 2005:559).

5.3.8.2 Inferential statistics

Inferential statistics enable the researcher “to make inferences about the population on the grounds of what has been observed in the sample” (Tustin *et al.*, 2005:560). Sample statistics and the corresponding population parameter are presented in table 5.5:

TABLE 5.5 SAMPLE STATISTICS AND POPULATION PARAMETERS

Sample statistic	Population parameter
Sample mean	Population mean
Standard deviation	Standard deviation of the population
Proportion	Population proportion

Source: Tustin *et al.*, 2005:560

Sample statistics can be used to estimate population parameters. "Estimation can be defined as the process of utilising a particular sample statistic such as the mean, standard deviation and proportion to estimate the corresponding population parameter." (Tustin *et al.*, 2005:560.) Point estimates, intervals, proportions and means are the population parameters most often estimated in practice (Tustin *et al.*, 2005:579).

Broadly, statistical techniques can be classified as univariate and multivariate techniques (Aaker *et al.*, 2004:446). "Univariate techniques are appropriate when there is a single measurement of each element of the sample, or there are several measurements of each element but each variable is analyzed in isolation." (Malhotra, 2007:441) There are various univariate statistical techniques. The selection of an appropriate univariate statistical technique depends on various factors, such as the characteristics of the data and the number and nature of the samples.

The characteristics of the data are a factor that determine whether parametric or non-parametric tests are used. In the case of metric data (interval and ratio data) parametric statistical tests are used and assumptions are made about the distribution of the data. In the case of non-metric data (nominal and ordinal data) non-parametric statistical tests are used. These tests do not require any assumptions about the distribution of the data.

The number and nature of the samples, i.e. dependent or independent samples, also determine which statistical tests should be used. Samples are independent if they are drawn randomly from different populations. Data pertaining to different groups of respondents, for example high or low income groups, are generally treated as independent samples for the purpose of analysis. When the data for two samples relate to the same groups of respondents, the data are paired (Malhotra, 2007:442-443; Aaker *et al.*, 2004:445-446).

In this study one independent sample was drawn from the population. A multi-stage sampling method was used. During the first stage estate agencies (the sample units)

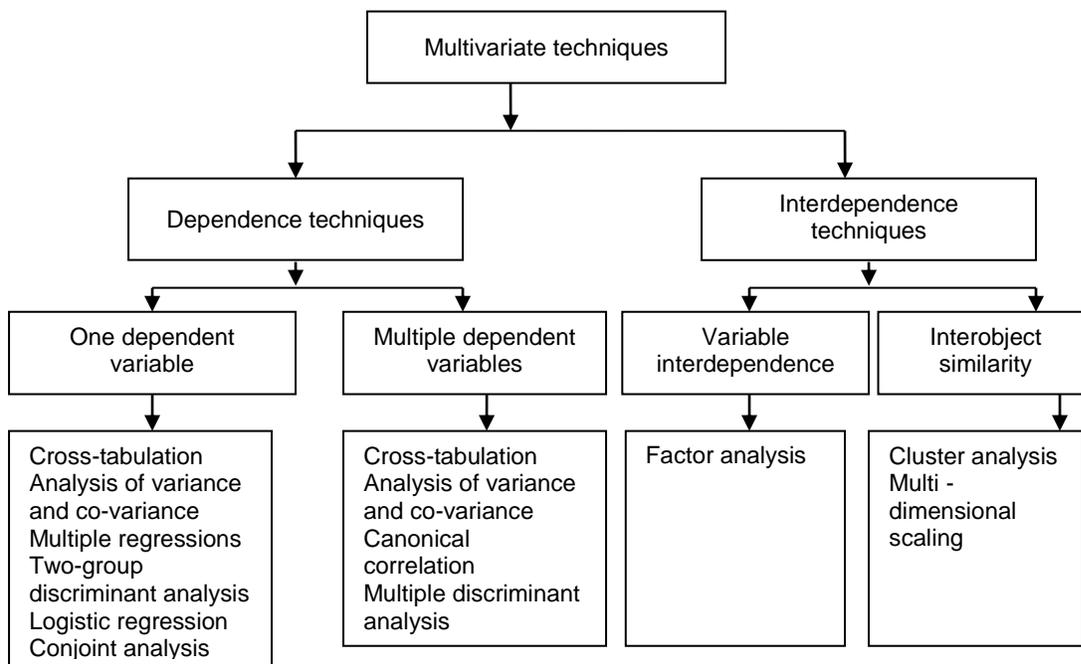
were selected randomly. During the second stage quota controls were used, based on the primary network service provider that the principal estate agent was using.

Multivariate statistical techniques are used to analyze data when there are two or more measurements on each element and the variables are analyzed simultaneously. If only two sets of measurements are involved the data typically are referred to as bivariate. Multivariate techniques are concerned with the simultaneous relationship among two or more phenomena.

(Malhotra, 2007:441)

A classification of multivariate statistical techniques is presented in figure 5.6:

FIGURE 5.6 CLASSIFICATION OF MULTIVARIATE STATISTICS



Sources: Adapted from Malhotra (2007:443), Aaker et al. (2004:447) and Tustin et al. (2005:648)

Dependence techniques are appropriate when one or more variables can be identified as the dependent variables, and the remaining as independent variables. In the case of only one dependent variable, cross-tabulation, analysis of variance, multiple regression, two-group discriminant analysis, and conjoint analysis can be used. In the case of more

than one dependent variable, multivariate analysis of variance, canonical correlation, and multiple discriminant analysis can be considered (Malhotra, 2007:442-443).

Interdependence techniques do not classify variables as dependent or independent. The whole set of interdependent relationships should be examined. Factor analysis is appropriate to analyse variable interdependence. Cluster analysis and multi-dimensional scaling can be used to analyse interobject similarity (Malhotra, 2007:443).

The multivariate techniques that were used in this study include cross-tabulation, factor analysis and multiple regression analysis.

5.3.8.3 Statistical significance and hypothesis testing

Sample statistics can be used to estimate population parameters (refer to table 5.5).

Hypothesis testing can also be used to make inferences about the population. Formulation of a null hypothesis and alternative hypothesis should be the first step in hypothesis testing. The null hypothesis is always the hypothesis that is tested. The null hypothesis is a statement in which no difference or effect is expected. Rejection of the null hypothesis results in acceptance of the alternative hypothesis (Malhotra, 2007:464).

Based on the evidence of a statistical test, the null hypothesis is either rejected or it is not rejected. Two types of errors can be made in hypothesis testing. The null hypothesis can be rejected when it is in fact true (type one error) or it may not be rejected when it is in fact false (type two error). The probability of making a type one error is also referred to as the level of statistical significance. The researcher decides about the level of significance. The level of significance is used to establish the tolerable level of risk of rejecting a true null hypothesis. The level of statistical significance in this study was defined as 5% (0.05). Thus, statistical test results were reported as statistically significant when the probability of rejecting a true null hypothesis was less than 5% (0.05). It implies that results indicating a 1% (0.01) probability of rejecting a true null hypothesis, were also reported as statistically significant (Malhotra, 2007:467).

Hypothesis testing is most commonly used to examine associations or differences. In tests of association the fact that there is no association between the variables, is the null hypothesis (H_0). Tests of association are commonly used in cross-tabulations. In tests of difference, the null hypothesis is that there is no difference between the variables. Tests of difference are typically used to assess differences in distributions, means, proportions, medians or rankings (Malhotra, 2007:468). The questions that were evaluated by tests of association in this study require further discussion:

Hypothesis testing using tests of association

The questions evaluated by using tests of association are presented in table 5.6. The chi-square test of independence, discussed later in this chapter, was used as the test statistic.

The tested null hypothesis (H_0) stated that there was no association between the variable *cellphone network service provider used* and the variables mentioned in table 5.6. The alternative hypothesis (H_1) stated that there was an association.

TABLE 5.6 TESTS OF ASSOCIATION

1 Profiling of the user group
1.1 Profiling of personal demographics
Personal total monthly income (question 8.8)
Access to a fixed-line telephone service at home (question 7.2)
Access to a fixed-line Internet service at home (question 7.3)
Subscription to pay television (question 7.6)
Access to a laptop for personal use (question 7.1)
Monthly household expenditure for the use of a fixed-line telephone service at home (question 7.5)
Number of people living in the household (question 8.5)

Age breakdown (question 8.6)
Gender breakdown (question 8.7)
1.2 Profiling of estate agency-related demographics
Number of estate agents employed (question 8.1)
Legal form of business of the agency (question 8.2)
Number of years working as an estate agent (question 8.3)
Number of years working as a principal estate agent (question 8.4)
1.3 Decision-making about the cellular service used
Personal decision about which service to use (question 1.2)
Responsibility to pay for the service (question 1.3)
Use of the service for personal purposes only, or for business and personal purposes (question 1.4)
1.4 Determination of preferences regarding cellular handsets
Preferences regarding the use of a specific brand of cellular handset (question 4.1)
Preferred brand of cellular handset (question 4.2)
1.5 Cellular Internet access
Incidence of cellular Internet access (question 1.6)
2 Determination of the user group's brand usage
Contract services used (question 2.4)
Subscription period (question 2.6)
Awareness of barriers preventing use of the most preferred cellphone network service provider (question 2.12)
Incidence of brand contact (question 5.1)
3 Determination of the user group's brand awareness
Contract brand awareness at product level (question 2.9)
Awareness of loyalty programmes (question 5.4)
4 Determination of the user group's preferences regarding service providers
Most preferred cellphone network service providers (question 2.14)

The Cramer's V test, also discussed later in this chapter, was used to evaluate the strength of the association.

Respondents were allocated to either a low or high customer-based brand equity group (refer to paragraph 5.3.8.11 and Chapter 6, paragraph 6.3.3.3). The association between the variable *customer-based brand equity group* and the variables mentioned in table 5.6 was also evaluated by means of hypothesis testing.

The tested null hypothesis (H_0) stated that there was no association between the variable *cellphone network service provider used* and the variables mentioned in table 5.6. The alternative hypothesis (H_1) stated that there was an association.

Hypothesis testing using a test of difference

The questions evaluated by using a test of difference are presented in table 5.7. The Mann-Whitney U test, discussed later in this chapter, was used as the test statistic.

The tested null hypothesis (H_0) stated that there was no difference between the different user groups (Vodacom and MTN users) with regard to the variables mentioned in table 5.7. According to the alternative hypothesis (H_1) there was a difference.

The differences between the low and high customer-based brand equity groups (refer to paragraph 5.3.8.11 and Chapter 6, paragraph 6.3.3.3) were also evaluated by means of hypothesis testing of the variables mentioned in table 5.6. The null hypothesis (H_0) stated that there was no difference between the low and high customer-based brand equity groups with regard to the variables mentioned in table 5.7. The alternative hypothesis (H_1) stated that there was a difference.

TABLE 5.7 TESTS OF DIFFERENCE

1 Determination of the user group's brand relationship
Brand relationship statements (questions 6.1 to 6.8)
Summated score for customer-based brand equity (questions 6.5 to 6.8)
2 Determination of the user group's brand usage
Average monthly contract expenses (question 2.5.1)
3 Determination of the user group's preferences regarding service providers
Likelihood to use the same service provider assuming that they had a choice (question 2.11)
4 Determination of the user group's satisfaction with cellphone service used
Overall satisfaction with the cellphone service used (question 1.5)
5 Determination of the user group's brand associations attached to the brands
Brand association statements (questions 3.1.1 to 3.1.25)
Summary of brand performance (questions 3.2.20, 3.2.21, 3.2.23, 3.2.24 and 3.2.26)
6. Determination of the user group's assessment of brand performance
Brand performance statements (questions 3.2.1 to 3.2.26)

Cell C was excluded from the statistical analysis (refer to Chapter 6, paragraph 6.3.1).

According to the null hypothesis (H_0) there was no difference between the different user groups (Vodacom and MTN users) with regard to the variables mentioned in table 5.7. According to the alternative hypothesis (H_1) there was a difference. The Mann-Whitney U test, discussed later in this chapter, was used as the test statistic. Cell C was excluded from the statistical analysis (refer to Chapter 6, paragraph 6.3.1).

The differences between the low and high customer-based brand equity groups (refer to paragraph 5.3.8.11 and Chapter 6, paragraph 6.3.3.3) were also evaluated by means of hypothesis testing of the variables mentioned in table 5.6. The null hypothesis (H_0) stated that there was no difference between the low and high customer-based brand equity groups with regard to the variables mentioned in table 5.7. The alternative hypothesis (H_1) stated that there was a difference.

In order to determine the drivers of customer-based brand equity, factor analysis, reliability analysis and multiple regression analysis were used. The use of multiple regression analysis for the purposes of hypothesis testing will be discussed in more detail later in this chapter. First the determination of customer-based brand equity should be explored:

5.3.8.4 Determination of customer-based brand equity

Four brand relationship statements (refer to paragraph 5.3.5.3 (b)) were included with the view to develop a summated measure that could be used as an indicator variable to measure the concept of customer-based brand equity, as defined for the purposes of this study. Factor analysis was used to confirm the validity of the variables included in the summated measurement (Hair *et al.*, 2010:142). Reliability analysis was used to assess the reliability of the summated measurement scale (Hair *et al.*, 2010:125).

5.3.8.5 Key drivers of customer-based brand equity

In order to identify the key drivers of customer-based brand equity, the ratings of the brand association and brand performance statements were analysed by means of factor analysis (refer to Chapter 6, paragraph 6.3.11.2 and 6.3.12.2). The brand association and brand performance dimensions, identified by means of factor analysis, were assessed as independent variables to determine their relationship with the dependent variable *customer-based brand equity* (refer to Chapter 6, paragraph 6.3.11.5 and 6.3.12.5).

5.3.8.6 Statistical tests of association

The **chi-square test statistic** is used to determine “the statistical significance of the observed association in a cross-tabulation. It assists in determining whether a systematic association exists between two variables.” (Malhotra, 2007:474) In this study the chi-square test was used to determine whether a systematic association existed between the variable *cellphone network service provider used* and the questions (variables) mentioned in table 5.5. Variables that had a systematic association with the

variable *cellphone network service provider used* were identified to determine whether any of the variables could be used to indicate use of a specific network service provider. A variable with a strong association would have been very useful as an indicator variable and would have provided insight as to which variables were associated with the use of a specific cellphone network service provider. A variable strongly associated with the variable *customer-based brand equity group* would have been very useful as an indicator variable and would have provided insight as to which variables were associated with the low or high customer-based brand equity groups.

The **Cramer's V test** is a measure of the strength of association. It is used in tables larger than two by two to assess the strength of the association between the variables analysed in the cross-tabulation. Cramer's V is a modified version of the phi correlation coefficient. It is obtained by adjusting the phi for either the number of rows or the number of columns in a table, based on which of the two is smaller. The Cramer's V value varies between zero and one. A large value indicates a high degree of association (Malhotra, 2007:476). However, significance can be obtained with a relatively low Cramer's V value in large sample sizes. It is important to consider sample size in the assessment of the Cramer's V value as small sample sizes may in result in statistically significant values not being reported as statistically significant. The Cramer's V test was used in this study to assess the strength of the association between variables identified as statistically significant by the chi-square test. Guidelines to assess the strength of association using the Cramer's V value are presented below (Warmbrod, 2001:10):

Cramer's V value	Strength of association
0.00 and under .10	Negligible association
.10 and under .20	Weak association
.20 and under .40	Moderate association
.40 and under .60	Relatively strong association
.60 and under .80	Strong association
.80 to 1.00	Very strong association

5.3.8.7 Statistical test of difference

The **Mann-Whitney U test** is a test that is used to compare the difference in the location of two populations, based on observations from two independent samples when the variable is measured on an ordinal scale. The two samples are combined and the cases are ranked in order of increasing size. The U test statistic is computed, based on the number of times a score from sample one precedes a score from sample two. If the samples are from the same population, the distribution of scores from the two groups in the rank list should be the same. An extreme value of U indicates a non-random pattern. For samples larger than 30, the U statistic is transformed into a normally distributed z statistic (Malhotra, 2007:486). The Mann-Whitney U test was used in this study to compare the location of the differences in the questions (variables) mentioned in table 5.7. The identification of variables that differed between Vodacom and MTN users would have been very useful to differentiate between the two user groups. The identification of variables mentioned in table 5.7 that differed between the low and high customer-based brand equity groups would have been very useful to differentiate between the customer-based brand equity groups. The brand relationship statements were excluded from this analysis as it was used to allocate respondents into the low or high customer-based brand equity groups.

5.3.8.8 Multiple regression analysis

Multiple regression analysis is a multivariate dependence technique that can be used to analyse the relationship between a single dependent (criterion) variable, and several independent (predictor) variables. The applications of multiple regression fall into two broad classes of research problems: prediction and explanation. These research problems are not mutually exclusive, and the application of multiple regression analysis can address either or both types of research problem. When used for prediction the objective is to use the values of the independent variables to predict the value of a dependent variable selected by the researcher. When used for explanation it provides a means of objectively assessing the relationship between the dependent and independent variables. The independent variables are assessed for their collective prediction of the dependent variable, as well as for their individual contribution to the

variate and its predictions. Interpretation of the variate may rely on any of three perspectives: the importance of the independent variables, the types of relationships found, or the interrelationships among the independent variables (Hair *et al.*, 2010:173-159-161).

Multiple regression equation

The general equation for multiple regression is as follows:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + \dots + b_nX_n$$

Where

Y = dependent or criterion variable

a = the estimated constant

b_{1-n} = coefficients associated with the independent or predictor variables so that a change of one unit in X will cause a change of b_1 units in Y;

(The values for the coefficients are estimated from the regression analysis.)

X_{1-n} = independent (predictor) variables that influence the dependent variable (Malhotra, 2007:553).

Significance testing

Significance testing in multiple regression analysis involves testing of the overall regression equation and testing of specific partial regression coefficients. The null hypothesis for the overall equation states that the coefficient of multiple determination in the population is zero. If the overall null hypothesis is rejected, one or more population-partial regression coefficients have a value different from zero. Additional significance testing is then used to determine which specific coefficients are non-zero (Malhotra, 2007:556-557).

Selection of dependent and independent variables

The success of any multivariate technique, including multiple regression analysis, starts with the selection of variables to be used in the analysis. The use of multiple regression analysis requires the researcher to specify which variable is the dependent variable and

which variables are the independent variables. The selection of both types of variables should be based mainly on conceptual or theoretical grounds. The researcher must make the fundamental decisions regarding variable selection. If the researcher does not exert judgement during variable selection, but instead select variables indiscriminately, or allows for the selection of an independent variable to be based solely on empirical bases, several of the basic tenets of model development will be violated (Hair *et al.*, 1998:162).

The selection of a dependent variable is usually dictated by the research problem. The researcher must be aware of measurement error, especially in the dependent variable. Measurement error refers to the degree to which the variable is an accurate and consistent measure of the concept being studied. If the variable used as the dependent variable has substantial measurement error, even the best independent variables may be unable to achieve acceptable levels of predictive accuracy. The researcher must always be concerned with obtaining the best dependent and independent variables, based on both conceptual and empirical factors (Aaker *et al.*, 2004:534-535).

The most problematic issue in independent variable selection is specification error, which concerns the inclusion of irrelevant variables, or the omission of relevant variables from the set of independent variables. The inclusion of irrelevant variables does not bias the results, but reduces model parsimony which is critical in the interpretation of the results. The inclusion of additional irrelevant variables may also mask or replace the effects of more useful variables, make the testing of statistical significance of the independent variables less precise, and reduce the statistical and practical significance of the analysis (Aaker *et al.*, 2004:537).

The exclusion of relevant variables can seriously bias the results and negatively affect any interpretation of them. If the omitted relevant variables are uncorrelated with the included variables, the only effect is to reduce the overall predictive accuracy of the analysis. When correlation exists between the included and omitted variables, the effects of the included variables will become biased to the extent that they will be

correlated with the omitted variables. The estimated effects of the included variables would then represent not only their actual effects, but also the effects that the included variables share with the omitted variables. This can lead to serious problems in model interpretation and the assessment of statistical and managerial significance (Aaker *et al.*, 2004:527-528).

The researcher must be careful in the selection of the variables to avoid both types of specification errors. The omission of relevant variables is perhaps the most troublesome, because the effect of these variables cannot be assessed without their inclusion. Strong theoretical and practical support therefore is required to motivate all variables included in or excluded from a multiple regression analysis (Aaker *et al.*, 2004:534-535).

Multi-collinearity

The ideal situation would be to have a number of independent variables highly correlated with the dependent variable, but with limited correlation among them. However, in most consumer-response data there will be some degree of multi-collinearity. When interpreting the results, it is important to assess the degree of multi-collinearity and to determine the impact thereof on the results. If necessary, remedies for multi-collinearity should be applied (Aaker *et al.*, 2004:530).

Sample size

The effects of sample size should be considered in the research design of multiple regression analysis. Small samples (usually with less than 30 observations) can only be analysed by means of simple regression with one independent variable. Small sample sizes have the effect that only strong relationships can be detected with any degree of certainty. Very large samples of 1 000 observations or more, make the statistical significance test overly sensitive, often indicating that almost any relationship is statistically significant. With very large samples it is important to ensure that the criterion

of practical significance is met, along with statistical significance (Hair *et al.*, 2010:173-176).

In multiple regressions power refers to the probability of detecting as statistically significant a specific level of the regression coefficient at a specified level of significance for a specific sample size (Hair *et al.*, 2010:174). Table 5.8 illustrates the interplay among the sample size, the chosen level of significance, and the number of independent variables in detecting a significant coefficient of determination (R^2):

TABLE 5.8 POWER AND SAMPLE SIZE

Sample Size	Significance level = .01				Significance level = .05			
	Number of independent variables				Number of independent variables			
	2	5	10	20	2	5	10	20
	Values of R^2							
20	45	56	71	NA	39	48	64	NA
50	23	29	36	49	19	23	29	42
100	13	16	20	26	10	12	15	21
250	5	7	8	11	4	5	6	8
500	3	3	4	6	3	4	5	9
1 000	1	2	2	3	1	1	2	2

Note: (1) *The table presents the minimum coefficient of determination (R^2) that can be found statistically significant with a power of .80 for varying numbers of independent variables and sample sizes.*

(2) *NA = not applicable*

Source: Hair *et al.*, 2010:174

A sample size of 100 will detect fairly small coefficient of determination (R^2) values (10% to 15%) with up to ten independent variables at a significance level of .05. If the sample size falls to 50 observations, the minimum coefficient of determination (R^2) that can be detected increases significantly (19% to 29%).

Generalisability and sample size

Sample size also affects the generalisability of the results. This is determined by the ratio of observations to independent variables. As a general rule the ratio should never fall below five to one, i.e. five observations for each independent variable in the variate.

If the ratio falls below five to one, there is a risk of “overfitting” the variate to the sample, making the results too specific to the sample and thus lacking in generalisability. Although the minimum ratio is five to one, the desired level is between 15 and 20 observations for each independent variable. If this level is reached, the results should be generalisable, if the sample is representative. As a rule of thumb, the minimum required sample size is 50 observations (Hair *et al.*, 2010:175).

Assumptions underlying multiple regression

Once the variate has been derived, it acts collectively in predicting the dependent variable. This necessitates assessment of the assumptions for the variate. These assessments or analyses must be performed after the regression model had been estimated. The assumptions that must be assessed are linearity of the phenomenon measured, constant variance of the error terms, independence of the error terms, and normality of the error term definition (Hair *et al.*, 2010:182).

5.3.8.9 Factor analysis

By means of factor analysis, sets of variables that are highly interrelated, known as factors or dimensions can be identified (Hair *et al.*, 2010:94). Factor analysis was used to analyse the structure of the interrelationships (correlations) among the brand relationship statements, brand association statements and brand performance statements. Factors or dimensions were defined for the brand relationship statements, brand association statements and brand performance statements. The analysis provided insight into the relationship between the variables included in the dimensions (factors) as the dimensions (factors) provided meaning in terms of what they collectively represented.

In addition to factor interpretation, the factor analysis was also used for data reduction purposes. Summated scales were developed to replace original variables with a new set of smaller variables. This new set of smaller variables represented a particular factor or dimension. In cases where a single variable was used for measurement purposes, the

variable with the highest factor loading was used as a surrogate or indicator variable to represent a particular factor or dimension (Hair *et al.*, 2010:123).

In general a sample size of 50 observations is required for factor analysis. Similar to multiple regression analysis, the sample size is determined by the ratio of observations to independent variables. As a general rule the ratio should not fall below five to one. This implies that there should be five times as many observations as variables to be analysed. A low case-per-variable ratio could result in overfitting of the data (deriving factors that are sample-specific with little generalisability). In order to achieve an adequate sample size, the researcher may decide to employ only the most parsimonious set of variables, based on conceptual and practical considerations. When dealing with small sample sizes the research findings should be interpreted cautiously (Hair *et al.*, 2010:102).

5.3.8.10 Reliability and validity

A good measurement instrument is characterised by reliability and validity (Malhotra, 2007:284 and 286).

Reliability

“Reliability refers to the extent to which a scale produces consistent results if repeated measurements are made.” (Malhotra, 2007:284.) Various methods can be used to ensure reliability. These include the following:

- Test-retest reliability: According to this method the same instrument is used twice under similar conditions. Correlation scores between the answers for the first and second tests are examined (Malhotra, 2007:284).
- Equivalent form reliability: In this method two similar instruments are used to measure the same object during the same period of time (Malhotra, 2007:285).
- Internal consistency reliability: This method compares different samples of items used to measure a construct during the same period of time. A split-half reliability test or coefficient alpha, also referred to as “Cronbach’s alpha”, can be used (Malhotra, 2007:285).

Internal consistency reliability analysis was used to assess the reliability of the measurement instruments used in this study. Cronbach's alpha coefficient can vary from values of 0 to 1. Values of 0.60 or less generally indicate unsatisfactory internal consistency reliability (Malhotra, 2007:285).

Sample size is an important consideration in reliability analysis. The necessary minimum sample size for coefficient alpha in literature is commonly suggested as 200, 300 or 500. However, research by Yurdugul (2008:7) indicates that the minimum sample size for estimating coefficient alpha is dependent on the level of the first (largest) eigenvalue obtained from principal component analysis (PCA). If the value of the first eigenvalue of the sample data set is higher than 6.00, the sample coefficient alpha, even when the sample size is 30, is a very robust estimator of the population coefficient alpha. Similarly, if the first eigenvalue is between 3.00 and 6.00, a sample size of 100 will be adequate for an unbiased estimate of the coefficient alpha.

Validity

"Validity can be defined as the extent to which differences in observed scale scores reflect true differences among objects on the characteristic being measured, rather than systematic or random error" (Malhotra, 2004:269). Validity finds an answer to the question whether what was attempted to be measured, was actually measured. Validity can be accessed from three perspectives: content validity, criterion validity, and construct validity (Malhotra, 2007:286-287).

Content validity, also known as "face validity", refers to the extent to which a measurement scale appears to measure the characteristic that it is supposed to measure. Content validity can be assessed by agreement between expert judges and non-expert judges regarding the suitability of the measure (Malhotra, 2007:286).

Criterion validity is a type of validity that assesses whether the measurement scale performs as expected, in relation to other variables that can be considered to be

meaningful criteria. Assessment of the relationship between the measure and a criterion is often used to establish criterion validity (Malhotra, 2007:286).

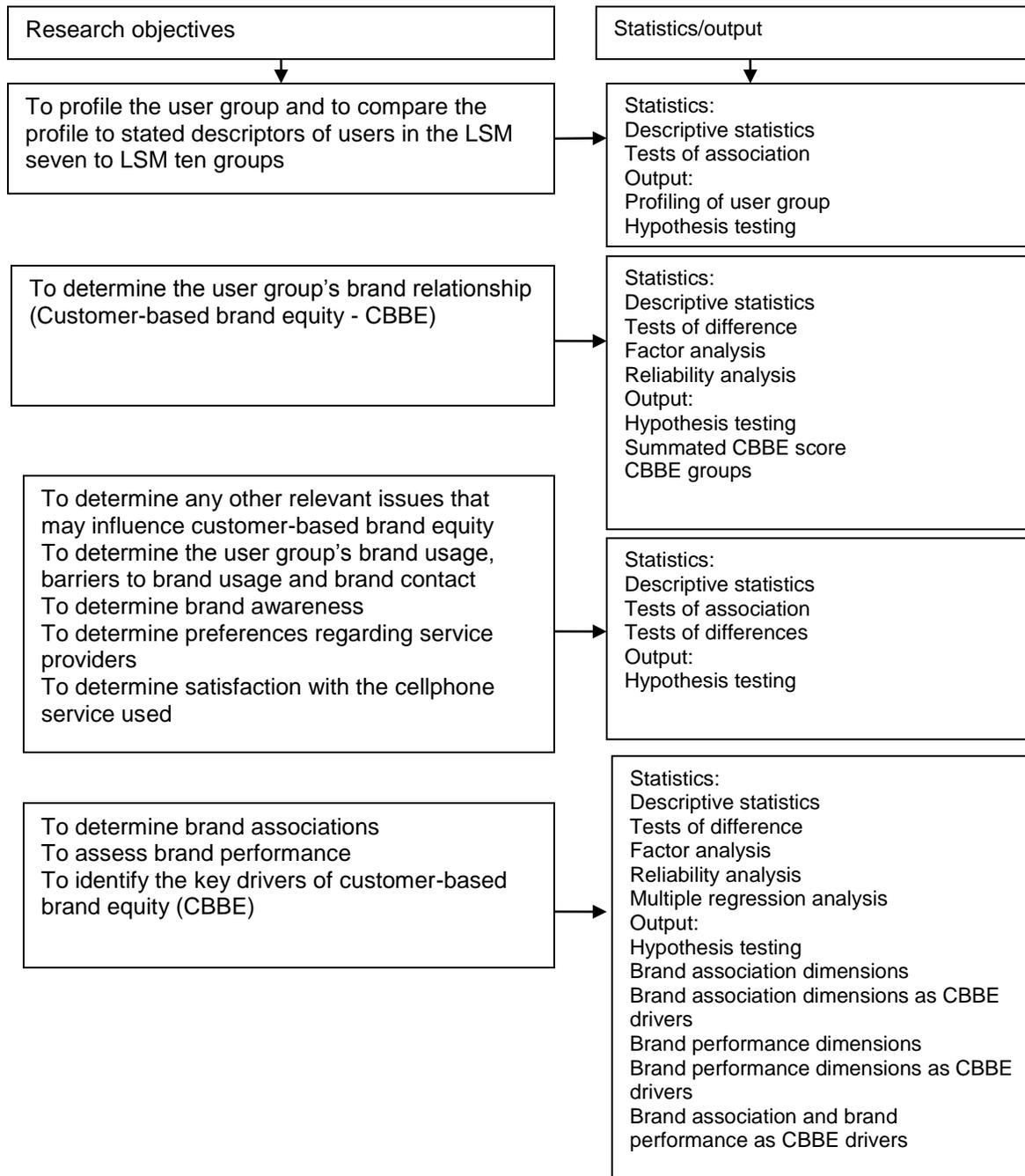
Construct validity “attempts to answer theoretical questions of why a scale works and what deductions can be made concerning the theory underlying the scale.” (Malhotra, 2007:287).

In this study validity of the research questionnaire was established by means of content validity. Agreement was reached among marketing scholars about the validity of the questions included in the questionnaire.

5.3.8.11 Data analysis strategy

An overview of the data analysis strategy is presented in figure 5.7:

FIGURE 5.7 DATA ANALYSIS STRATEGY



As indicated in figure 5.7, the user group was first profiled, based on the profiling questions (refer to table 5.1 and Annexure A). Descriptive statistics were used to describe the profile of the user group. The chi-square test was used to test the null hypothesis of no association between the variable *cellphone network service provider*

used and the variables (questions) mentioned in table 5.6 (refer to paragraphs 5.3.8.3 and 5.3.8.6).

Secondly the user group's brand relationship was determined by using the brand relationship statements (refer to table 5.1 and Annexure A). Descriptive statistics were used to describe the user group's brand relationship. The Mann-Whitney U test was used to test the null hypothesis of no difference between Vodacom and MTN users with regard to the brand relationship statements. Factor analysis and reliability analysis were used to develop a summated measure that was used as an indicator variable to measure the concept of customer-based brand equity. Based on the summated measure, respondents were allocated to a low or a high customer-based brand equity group.

The variables used to profile the user group (refer to table 5.1) were revisited to determine their influence on the summated measure (indicator variable of customer-based brand equity). This was done by testing the null hypothesis of no association between the variable *customer-based brand equity group* and the variables (questions) mentioned in table 5.6 regarding profiling of the user group. All the subsequent data analyses were also done, based on segmentation according to customer-based brand equity group.

Brand usage, barriers to brand usage, brand contact, brand awareness, preferences regarding service providers, and satisfaction with the cellphone service used, were described by using descriptive statistics (refer to table 5.1 and Annexure A). Tests of association or tests of difference were used for hypothesis testing (refer to tables 5.1, 5.6 and 5.7).

The user group's brand associations were determined by using the brand association statements (refer to table 5.1 and Annexure A). Descriptive statistics were used to describe the user group's brand associations. The Mann-Whitney U test was used to test the null hypothesis of no difference between Vodacom and MTN users and the low

and high customer-based brand equity groups with regard to the brand association statements. Factor analysis and reliability analysis were used to develop summated measures for the brand association dimensions which were identified by means of factor analysis. Multiple regression analysis was used to objectively evaluate the summated brand association dimensions as drivers of customer-based brand equity.

The user group's assessment of brand performance was determined by using the brand performance statements (refer to table 5.1 and Annexure A). Descriptive statistics were used to describe the user group's assessment of brand performance. The Mann-Whitney U test was used to test the null hypothesis of no difference between Vodacom and MTN users and the low and high customer-based brand equity groups with regard to the brand performance statements. Factor analysis and reliability analysis were used to develop summated or surrogate or indicator measures for the brand performance dimensions that were identified by means of factor analysis. Multiple regression analysis was used to objectively evaluate the summated and surrogate brand performance dimensions as drivers of customer-based brand equity.

Multiple regression analysis was also used to objectively evaluate the combined influence of the summated brand association dimensions and summated and surrogate brand performance dimensions as drivers of customer-based brand equity.

5.3.9 Step 9: Reporting the research

During this phase of the marketing research process, information is interpreted and conclusions are drawn. A report is then prepared to formally communicate the conclusion and recommendations to those who make the marketing decisions (Cant *et al.*, 2007:179). This part of the research process will be addressed in the following chapter.

5.4. CONCLUSION

The marketing research methodology was discussed in this chapter. At the outset marketing research was defined and then the classification of research data was explored. Subsequently the marketing research process was discussed. A key focus of this chapter was on the manner in which each step in the marketing research process is relevant to this study. The research findings of this study will be discussed in the following chapter.

CHAPTER 6

ANALYSIS OF THE RESEARCH RESULTS

6.1 INTRODUCTION

The marketing research methodology followed in the execution of this study was discussed in the previous chapter. This chapter will focus on the execution of the primary research. Then the research results will be discussed.

6.2 EXECUTION OF THE PRIMARY RESEARCH

The marketing research steps that were followed in the execution of the primary research require further discussion:

6.2.1 Initial contact and screening

Telephone interviewing and electronic interviewing were used to collect data. Interviewing by telephone was used for initial contact and screening. The screening procedure was used to confirm that the estate agency was in fact operational, and to identify the principal estate agent. After respondents had been qualified in terms of the screening procedure, they were able to respond electronically by means of a structured web-based questionnaire. An invitation to participate in the survey was e-mailed to respondents. This e-mail contained a link to the questionnaire, as well as to an official letter from UNISA. By clicking on the link the respondent could access the questionnaire and letter as hosted on a website.

6.2.2 Pilot testing of the questionnaire

The questionnaire was pilot-tested in paper format among five respondents and electronically among six respondents. After the questionnaire had been published on the website, the responses from participants were continually evaluated. This was done to ensure that respondents understood the questions correctly and that they completed the questionnaire properly.

6.2.3 Selection of the respondents and data gathering

A multi-stage sampling method was used. During the first stage estate agencies (the sample units) were selected randomly. During the second stage quota controls were used, based on the primary network service provider that was used by the principal estate agent.

The research frame contained a total of 12 629 estate agency firms. A large number of the estate agency firms were inactive. This could be attributed to the global economic downturn (refer to Chapter 5, paragraph 5.3.6.1). In order to ensure the selection of a representative sample, a printed copy of the sample frame was used. The printed sample frame consisted of 253 pages with 50 estate agency firms listed on each page, with the exception of the last page. The last page listed only 29 estate agency firms. The selection of respondents was initiated by randomly selecting an estate agency firm on each page of the sample frame. A procedure was used to ensure coverage of the total sample frame as discussed in more detail later in this section. A phone call was made to the selected estate agency. The initial phone call was used to determine whether the estate agency was in fact operational. After this had been confirmed, the principal estate agent's e-mail address was obtained, as well as permission to e-mail the invitation to participate in the survey to the principal estate agent. In total 2 867 estate agencies were contacted by telephone. Of these agencies 1 632 had to be excluded from the survey, due to the following reasons:

- The telephone was not answered.
- The number dialled was a fax line.
- The company that responded was not an estate agency firm.
- The principal estate agent or his/her representative declined the invitation to participate in the study.

After an estate agency firm had been contacted successfully, the fieldworker asked to speak to the principal estate agent. The fieldworker informed the principal estate agent about the study and requested permission to e-mail an invitation to participate in the

study. As the survey was conducted at local branch level, there were very few incidences of more than one principal estate agent in a specific office or branch being contacted. When there was more than one at the same branch, the link to the questionnaire and letter from UNISA was e-mailed to the principal estate agent/s who agreed to participate in the survey. In some instances the office manager or secretary that answered the telephone, or the principal estate agent, indicated that he/she would only be able to decide about the principal estate agent's willingness to participate in the survey once he/she had the opportunity to review the questionnaire and the letter from UNISA. In these instances the link to the questionnaire and letter was e-mailed and then followed up by a telephone call. The link to the invitation and letter was e-mailed to 1 235 principal estate agents in total.

In order to ensure coverage of the total sample frame, the number of telephone calls per page was limited to ten. After ten telephone calls had been made, the fieldworker continued to the next page. This process was repeated until the sample size had been reached. The principal estate agents supplied their e-mail addresses for the purpose of sample control, after they had completed the questionnaire. The completed questionnaires were constantly monitored, based on the quota control targets. No instances of more than one response from the same local branch were received. After a completed questionnaire had been received, the estate agency firm was removed from the sample frame. Sampling without replacement (Malhotra, 2007:338) therefore was used.

Fieldwork took place from 18 May 2009 to 21 August 2009. The link was re-sent, after a follow-up telephone call, to 383 of the 1 235 principal estate agents to whom the link had been sent originally. The follow-up telephone call and resending of the link were done to minimise non-response error. Fieldwork was closed after a total of 255 completed questionnaires had been returned by principal estate agents who had agreed to participate in the survey. This implies a response rate of 29.93%. All possible efforts were made to minimise non-response error (refer to Chapter 5, paragraph 5.3.7). The quota control targets that were reached will be discussed later in this chapter.

6.2.4 Data preparation

As the questionnaire was hosted on a website, the data was entered directly into a database. The database was exported into the SPSS 16.0 application. The data from each completed questionnaire was verified, cleaned and edited.

6.2.5 Data analysis

All the questions included in the questionnaire were analysed by means of tabulation. Appropriate descriptive and multivariate statistics were calculated. These will be discussed later in this chapter. At first the research results require exploration:

6.3 RESEARCH RESULTS

Discussion of the research results will start with the sample size. Subsequently the research findings will be discussed in the same sequence as presented in table 6.1. Please refer to Chapter 5, figure 5.7 for the statistical techniques that were used in the data analysis, as these were presented as part of the data analysis strategy.

TABLE 6.1 ORDER OF DISCUSSION OF RESEARCH RESULTS

Research objectives and topics addressed
To profile the user group <ul style="list-style-type: none">• Profiling of personal demographics• Profiling of estate agency-related demographics• Decision-making about the cellular service used• Preferences regarding marketing communication• Preferences regarding cellular handsets• Cellular Internet access
To determine the user group's brand relationship (customer-based brand equity) <ul style="list-style-type: none">• Rating of brand relationship statements• Development of a measurement scale for customer-based brand equity• Classification of low and high customer-based brand equity groups
To determine any other relevant issues that may influence customer-based brand equity

<ul style="list-style-type: none"> • Analysis of the profiling variables according to customer-based brand equity group
<p>To determine the user group's brand usage, barriers to brand usage and brand contact</p> <ul style="list-style-type: none"> • Services used • Average monthly expenses • Subscription period • Barriers to brand usage • Brand contact
<p>To determine brand awareness</p> <ul style="list-style-type: none"> • Brand awareness at corporate level • Brand awareness at product level • Awareness of brand loyalty programmes
<p>To determine preferences regarding service providers</p> <ul style="list-style-type: none"> • Likelihood to use cellular service providers • Most preferred service providers
<p>To determine satisfaction with the cellphone service used</p>
<p>To determine brand associations</p> <ul style="list-style-type: none"> • Brand association ratings • Factor analysis of brand association ratings • Reliability analysis of the brand association dimensions, identified by means of factor analysis • Rating of brand association dimensions • The brand association dimensions as drivers of customer-based brand equity
<p>To determine brand performance</p> <ul style="list-style-type: none"> • Brand performance ratings • Factor analysis of brand performance ratings • Reliability analysis of the brand performance dimensions, identified by means of factor analysis • Rating of brand performance dimensions • The brand performance dimensions as drivers of customer-based brand equity
<p>To identify the key drivers of brand relationship (customer-based brand equity)</p> <ul style="list-style-type: none"> • Covered by the last sections of the previous two headings

The motivation for including each of the questions in the questionnaire was discussed in Chapter 5 (refer to paragraph 5.3.5.3 a) to h)).

6.3.1 Sample size realised

Table 6.2 presents a breakdown of the sample according to primary (most used) cellphone network service provider. Henceforth the terminology *cellphone network*

service provider or *network service provider* will refer to the primary (most used) cellphone network service provider (refer to question 2.3 in the questionnaire).

TABLE 6.2 SAMPLE BREAKDOWN

Cellphone network service provider	Respondents	
	(n)	Percentage (%)
Vodacom	135	52.94
MTN	95	37.25
Cell C	25	9.80
Total	255	100.00

Vodacom users accounted for 52.94%, MTN users for 37.25% and Cell C users for 9.8% of the total sample.

It was decided not to include Cell C in the quantitative analysis. This decision was made because of Cell C's limited market share, and as a result of the limited number of responses from Cell C users (refer to Chapter 5, paragraph 5.3.6.2). The remainder of the primary research results therefore will report only on those results obtained from principal estate agents that were using Vodacom or MTN as their network service provider.

6.3.2 Profiling of the user group

Determination of the profile of the user group was one of the objectives of this study. As part of this specific objective the profile had to be compared to descriptors stated for individuals in the LSM seven to LSM ten groups (refer to Chapter 1, paragraph 1.5). In order to reach this objective personal demographics were included in the questionnaire:

6.3.2.1 Profiling of personal demographics

- a) Personal total monthly income

The personal total monthly income for Vodacom and MTN users is presented in table 6.3. A total of 208 responses to the question regarding personal total monthly income were obtained. The majority of the respondents (87.5%) reported a personal total monthly income exceeding R7 999 per month. Table 6.3 presents the results:

TABLE 6.3 PERSONAL TOTAL MONTHLY INCOME

Income category (Rand per month)	Frequency			Percentage (%)		
	Total	Vodacom	MTN	Total	Vodacom	MTN
1 – 2 499	6	5	1	2.88	4.07	1.18
2 500 – 4 999	7	2	5	3.37	1.63	5.88
5 000 – 7 999	13	7	6	6.25	5.69	7.06
8 000 – 10 999	28	15	13	13.46	12.20	15.29
11 000 – 15 999	26	19	7	12.50	15.45	8.24
16 000 29 999	55	34	21	26.44	27.64	24.71
30 000 – 39 999	26	14	12	12.50	11.38	14.12
>40 000	47	27	20	22.60	21.95	23.53
Total	208	123	85	100.00	100.00	100.00
> R7 999 per month	182	109	73	87.50	88.62	85.89

In total 12.5% of the principal estate agents (26 respondents) reported a personal total monthly income of less than R8 000. These principal estate agents were excluded from further analysis to ensure that the sample only included respondents in the LSM seven to LSM ten groups. In total 182 respondents were included for further analysis (109 Vodacom users and 73 MTN users).

Comparison of the sample profile with stated descriptors for individuals in the LSM seven to LSM ten groups

Compared to the sample profile, the personal total monthly income of individuals in the LSM seven to LSM ten groups, as reported in the All Media and Products Survey (SAARF, 2010b), indicates a higher percentage of individuals in the lower income brackets and a lower percentage in the higher income brackets (refer to Annexure C, table C 1). The profile of the sample therefore supports the assumption that the sample very likely falls within the LSM seven to LSM ten groups in terms of personal total monthly income.

The null hypothesis that stated there was no association between the variable *cellphone network service provider used* and *personal total monthly income* was not rejected (refer to Chapter 5, paragraph 5.3.8.3 and table 5.6). The results of the chi-square test are presented in Annexure C, table 2. The variable personal total monthly income does not impact on use of a specific cellphone network service provider and vice versa.

b) Access to telecommunication-related services

The profile of the sample, in terms of access to telecommunication-related services, is presented in table 6.4:

TABLE 6.4 ACCESS TO TELECOMMUNICATION-RELATED SERVICES: SAMPLE PROFILE

Service/respondents	Respondents with service, access to laptop					
	Frequency count			Breakdown as a percentage (%)		
	Total	Vodacom	MTN	Total	Vodacom	MTN
Fixed-line telephone at home	142	85	57	79.33	79.44	79.17
Respondents	179	107	72	179	107	72
Fixed-line Internet at home	115	68	47	64.25	63.55	65.28
Respondents	179	107	72	179	107	72
Subscription to pay television	151	88	63	85.31	84.62	83.30
Respondents	177	104	73	177	104	73
Access to a laptop for personal use	150	83	67	84.27	78.30	93.06
Respondents	178	106	72	178	106	72

Comparison of the sample profile with stated descriptors for individuals in the LSM seven to LSM ten groups

Access to telecommunication services reported by the sample is higher than that reported by individuals in the LSM seven to LSM ten groups (refer to Annexure C, table C 4): access to a fixed-line telephone service at home 79.33% (versus a low of 24.5% in LSM seven and a high of 60.2% in LSM ten); access to a fixed-line Internet service at home 64.25% (versus a low of 4.2% in LSM seven and a high of 41.5% in LSM ten); subscription to pay television 85.31% (versus a low of 24.7% in LSM seven and a high of 79.3% in LSM ten); and access to a laptop for personal use 84.27% (versus a low of 5.6% in LSM seven and a high of 45.7% in LSM ten). The profile of the sample therefore supports the assumption that the sample very likely would fall within the LSM seven to LSM ten groups with regard to access to the telecommunication services as mentioned in table 6.4.

The null hypothesis of no association between the variable *cellphone network service provider used* and the variables mentioned in table 6.4 was rejected for

one variable, *access to a laptop for personal use* (refer to Chapter 5, paragraph 5.3.8.3 and table 5.6). Although the strength of the association between the variables *cellphone network service provider used* and *access to a laptop* was statistically significant at the 5% (0.05) level, the strength of the association was weak, as was indicated by a Cramer’s V value of 0.199 (refer to Chapter 5, paragraph 5.3.8.6 and Annexure C, table 3). This may be as a result of the sample size (refer Chapter 5, paragraph 5.3.8.6). Thus, with the exception of the variable *access to a laptop for personal use* none of the other variables related to access to telecommunication services impact on use of a specific cellphone network service provider and vice versa. Due to the low Cramer’s V value it is unlikely that the variable *access to a laptop for personal use* would be of any practical use to indicate use of a specific cellphone network service provider and vice versa.

c) Monthly household expenditure on a fixed-line telephone service

The monthly expenditure on the use of a fixed-line telephone service by the households of the principal estate agents is presented in table 6.5. A total of 167 responses to the relevant question was obtained.

TABLE 6.5 EXPENDITURE ON FIXED-LINE TELEPHONE SERVICE

Expenditure category (Rand per month)	Frequency			Percentage (%)		
	Total	Vodacom	MTN	Total	Vodacom	MTN
<250	23	13	10	13.77	13.27	14.49
251 – 500	57	34	23	34.13	34.69	33.33
501 – 1000	54	33	21	32.34	33.67	30.43
> 1000	33	18	15	19.76	18.37	21.74
Total	167	98	69	100.00	100.00	100.00

In total 13.77% of the households spent less than R250 per month, 34.13% spent more than R250 but less than R500, 32.34% spent more than R500 but less than R1 000, and 19.76% spent more than R1 000 per month. **The All Media and Products Survey (SAARF, 2010b) did not include a question pertaining to monthly expenditure on a fixed-line telephone service.**

The null hypothesis of no association between the variable *cellphone network service provider used* and *monthly household expenditure on the use of a fixed-line telephone service* (refer to Chapter 5, paragraph 5.3.8.3 and table 5.6) was not rejected. The results of the chi-square test are presented in Annexure C, table 2. The variable *monthly household expenditure on the use of a fixed-line telephone service* does not impact on use of a specific cellphone network service provider and vice versa.

d) Number of people living in the household

Table 6.6 presents a breakdown of the number of people living in the households of the principal estate agents that participated in the survey:

TABLE 6.6 NUMBER OF PEOPLE LIVING IN THE HOUSEHOLD

Number of people	Frequency			Percentage (%)		
	Total	Vodacom	MTN	Total	Vodacom	MTN
1 to 3	99	62	37	57.23	59.62	53.62
4 to 5	65	39	26	37.57	37.50	37.68
> 5	9	3	6	5.20	2.88	8.70
Total	173	104	69	100.00	100.00	100.00

As indicated in table 6.6, a total of 173 responses to the question were obtained. In total 5.2% of the households had more than five people living in them. The average per household was three.

Comparison of the sample profile with stated descriptors for individuals in the LSM seven to LSM ten groups

In comparison, the percentage of individuals living in households with more than five people, as reported in the All Media and Products Survey (SAARF, 2010b), varies as follows: LSM seven to LSM ten 20.58%, LSM seven 45%, LSM eight 28.8%, LSM nine 22.8% and LSM ten 14.4%. The results therefore support the assumption that the respondents very likely would fall within the LSM seven to LSM ten groups.

The null hypothesis of no association between the variable *cellphone network service provider used* and the variable *number of people living in the household of the principle estate agent* (refer to Chapter 5, paragraph 5.3.8.3 and table 5.6) was not rejected. The results of the chi-square test are presented in Annexure C, table 2. The variable *number of people living in the household of the principle estate agent* does not impact on use of a specific cellphone network service provider and vice versa.

e) Age breakdown

The age categories that were used for the respondents in total and according to cellphone network service provider used, are presented in table 6.7. A total of 180 responses to the relevant question was obtained.

TABLE 6.7 AGE BREAKDOWN

Age category	Frequency			Percentage (%)		
	Total	Vodacom	MTN	Total	Vodacom	MTN
20 to 24	2	1	1	1.11	0.93	1.39
25 to 49	93	53	40	51.67	49.07	55.56
50 and older	85	54	31	47.22	50.00	43.06
Total	180	108	72	100.00	100.00	100.00

In total 47.22% of the respondents was 50 years or older. By using midpoints and a high of 65 (the assumed retirement age), the overall estimated average age of the principal estate agents that participated in the survey was determined to be 48. The estimated average of those that were using Vodacom was 48 and the estimated average of those that were using MTN was 47.

Comparison of the sample profile with stated descriptors for individuals in the LSM seven to LSM ten groups

The percentage of individuals 50 years or older, as reported in the All Media and Products Survey (SAARF, 2010b), varies as follows: LSM seven to ten 24.9%, LSM seven 24%, LSM eight 23.9%, LSM nine 23.9% and LSM ten 29.1%. The sample in this study, therefore, has an older age profile than individuals in the LSM seven to LSM ten groups. The occupational position of the respondents is an important factor contributing to the older age profile.

The null hypothesis of no association between the variable *cellphone network service provider used* and the variable *age category of the principal estate agent* (refer to Chapter 5, paragraph 5.3.8.3 and table 5.6) was not rejected. The results of the chi-square test are presented in Annexure C, table 2. The variable *age category of the principal estate agent* does not impact on use of a specific cellphone network service provider and vice versa.

f) Gender breakdown

The gender of the respondents in total and according to cellphone network service provider used is presented in table 6.8. A total of 179 responses to the question was obtained.

TABLE 6.8 GENDER BREAKDOWN

Gender	Frequency			Percentage (%)		
	Total	Vodacom	MTN	Total	Vodacom	MTN
Male	100	60	40	55.87	56.60	54.79
Female	79	46	33	44.13	43.40	45.21
Total	179	106	73	100.00	100.00	100.00

In total 55.87% of the respondents was male. The percentage of males, as reported in the All Media and Products Survey (SAARF, 2010b), varies as follows: LSM seven to ten 52.07%, LSM seven 51.85%, LSM eight 49.78%, LSM nine 53.41% and LSM ten 53.44%. The sample has a very similar gender profile as individuals in the LSM seven to LSM ten groups.

The null hypothesis of no association between the variable *cellphone network service provider used* and the variable *gender* (refer to Chapter 5, paragraph 5.3.8.3 and table 5.6) was not rejected. The results of the chi-square test are presented in Annexure C, table 2. The variable *gender of the principal estate agent* does not impact on use of a specific cellphone network service provider and vice versa.

Summary of the personal demographic profile

Comparison of the sample profile with stated descriptors for individuals in the LSM seven to LSM ten groups

The profile of the sample regarding personal total monthly income, number of people living in the household, gender, as well as access to telecommunication services, supports the assumption that those in the sample very likely would fall within the LSM seven to LSM ten groups (refer to Chapter 1, paragraph 1.3). **The sample is skewed towards LSM ten. However, it should be kept in mind that the LSM measure uses a set of 29 variables that are weighted to determine an individual's LSM score (refer to Chapter 1 paragraph 1.2.4). Thus, although the sample fall within the LSM ten group regarding personal total monthly income, number of people living in the household, gender, as well as access to telecommunication services it cannot be concluded with absolute certainty that they would fall within the LSM ten group based on the 29 variables used to determine an individual's LSM score. However, it would be safe to assume that they would very likely fall within the LSM seven to ten groups.** The sample in this study has an older age profile than individuals in the LSM seven to LSM ten groups. This is most likely due to the occupational position of the respondents.

The null hypothesis of no association between the variable *cellphone network service provider used* and *the personal demographic profiling variables* (refer to Chapter 5, paragraph 5.3.8.3 and table 5.6) was rejected for only one variable, *access to a laptop for personal use*. Thus, with the exception of the variable *access to a laptop for personal use* none of the other *personal demographic profiling variables* impact on use of a specific cellphone network service provider and vice versa. Although the strength of the association between the variable *cellphone network service provider used* and *access to a laptop for personal use* is statistically significant it is weak as indicated by a Cramer's V value of 0.199. Thus, it is unlikely that the variable would be of any practical use to indicate use of a specific cellphone network service provider and vice versa.

6.3.2.2 Profiling of estate agency-related demographics

The following variables were included as estate agency-related demographics: number of estate agents employed by the agency, legal business form of the agency, the number of years that the agent had been working as an estate agent, and the number years that the estate agent had been working as a principal estate agent.

Table 6.9 presents the estate agency-related demographics, cross-tabulated according to cellphone network service provider used:

TABLE 6.9 ESTATE AGENCY-RELATED DEMOGRAHPICS

Demographics	Frequency			Percentage (%)		
	Total	Vodacom	MTN	Total	Vodacom	MTN
Number of estate agents employed						
1	63	40	23	35.00	37.38	31.51
2-10	98	52	46	54.44	48.60	63.01
>10	19	15	4	10.56	14.02	5.48
Total	180	107	73	100.00	100.00	100.00
Legal business form						
Closed corporation	101	61	40	56.11	56.48	55.56
Sole proprietor	41	27	14	22.78	25.00	19.44
Private company	27	13	14	15.00	12.04	19.44

Other	11	7	4	6.11	6.48	5.56
Total	180	108	72	100.00	100.00	100.00
Number of years working as an estate agent						
<1	3	1	2	1.69	0.93	2.86
2-3	14	18	32	17.98	16.67	20.00
4 – 6	46	22	24	25.84	20.37	34.29
7 – 10	26	18	8	14.61	16.67	11.43
>10	71	49	22	39.89	45.37	31.43
Total	178	108	70	100.00	100.00	100.00
Number of years working as a principal estate agent						
<1	7	5	2	3.95	4.67	2.86
2-3	60	33	27	33.90	30.84	38.57
4 – 6	52	29	23	29.38	27.10	32.86
7 – 10	17	10	7	9.60	9.35	10.00
>10	41	30	11	23.16	28.04	15.71
Total	177	107	70	100.00	100.00	100.00

Number of estate agents employed

As indicated in table 6.9, 35% of the principal estate agents were employed by an estate agency that had only one estate agent (i.e. an owner-managed business), 54.44% by an agency that had between two and ten estate agents, and 10.56% by an agency with more than ten estate agents. The biggest differences between Vodacom and MTN users occur in the category for estate agencies that employed two to ten estate agents.

Legal business form

The legal forms of business of the estate agency firms included closed corporations (56.11%), sole proprietors (22.78%), private companies (15.00%) and others (6.11%).

Number of years worked as an estate agent

In total 1.69% of the principal estate agents had been working as an estate agent for less than one year, 17.98% for two to three years, 25.84% for four to six years, 14.61% for seven to ten years and 39.89% for more than ten years.

Number of years worked as a principal estate agent

In total 3.95% of the principal estate agents had been working as a principal estate agent for less than one year, 33.9% for two to three years, 29.38% for four to six years, 9.6% for seven to ten years and 23.16% for more than ten years.

Hypothesis testing of the estate agency-related demographic variables

The null hypothesis of no association between the variable *cellphone network service provider used* and *the estate agency-related demographic variables* (refer to Chapter 5, paragraph 5.3.8.3 and table 5.6) was rejected for only one variable, *the number of estate agents employed by the agency* (refer to Annexure C, table 5). Thus, with the exception of the variable, *number of estate agents employed by the agency* none of the other *estate agency-related demographic variables* impact on the use of a specific cellphone network service provider and vice versa. The strength of the association between the variable *cellphone network service provider used* and *the number of estate* is not statistically significant (refer to Annexure C, table 5). Thus, it is unlikely that the variable would be of any practical use to indicate use of a specific cellphone network service provider and vice versa.

6.3.2.3 Decision-making about the cellular service used

Principal estate agents were asked whether they personally decided about the cellular service that they were using, in order to assess their decision-making. They also had to indicate who was responsible for payment for the service. Finally they had to indicate whether they were making use of the service for personal purposes only, or for both personal and business purposes. Table 6.10 presents the results:

TABLE 6.10 DECISION-MAKING ABOUT THE CELLULAR SERVICE USED

Decision-making	Frequency			Percentage (%)		
	Total	Vodacom	MTN	Total	Vodacom	MTN
Personally decides about the use of the service						
Yes	175	107	68	96.69	99.07	93.15
No	6	1	5	3.31	0.93	6.85
Total	181	108	73	100.00	100.00	100.00
Responsibility for payment for the service						
Agent pays in full	152	93	59	83.98	86.11	80.82
Employer pays in full	16	9	7	8.84	8.33	9.59
Jointly paid	12	6	6	6.63	5.56	8.22
Another party pays	1	0	1	0.55	0.00	1.37
Total	181	108	73	100.00	100.00	100.00
Use of the service						
Personal and business	178	106	72	98.34	98.15	98.63
Personal only	3	2	1	1.66	1.85	1.37
Total	181	108	73	100	100	100

The decision-making profile of the sample can be described as follows:

- **Most (96.69%) of the principle estate agents personally decided about the cellphone service that they were using.** A higher percentage of Vodacom users (96.69%) than MTN users (93.15%) personally decided about the cellphone service that they were using.
- **Most (83.98%) of the agents were personally responsible for payment of their cellphone service in full.**
- **Most (98.34%) of the principal estate agents were using their cellphone service for both personal and business purposes.**

The null hypothesis of no association between the variable *cellphone network service provider used* and *the decision making variables* indicated in table 6.11 was not evaluated (refer to Chapter 5, paragraph 5.3.8.3 and table 5.6). Due to expected frequency counts of less than five for more than 20% of the cells in the contingency tables, the results of the chi-square tests could not be used and no conclusions could be based on the results (refer to Annexure C, table 7).

6.3.2.4 Marketing communication preferences

In a prompted question respondents indicated their three most preferred means by which to receive marketing communication from their cellphone network service providers. Table 6.11 presents the results:

TABLE 6.11 MARKETING COMMUNICATION PREFERENCES

Demographics	Frequency			Percentage (%)		
	Total	Vodacom	MTN	Total	Vodacom	MTN
SMS	122	73	49	26.24	27.34	24.75
Television	99	59	40	21.29	22.10	20.20
Website of service provider	59	35	24	12.69	13.11	12.12
Insert in account	58	35	23	12.47	13.11	11.62
Radio	50	26	24	10.75	9.74	12.12
Daily newspaper	28	16	12	6.02	5.99	6.06
Magazine	27	13	14	5.81	4.87	7.07
Sunday newspaper	22	10	12	4.73	3.75	6.06
Total	465	267	198	100.00	100.00	100.00

A total of 465 preferences were indicated. SMS accounted for 26.24%, television for 21.29%, website of the service provider for 12.69%, insert in the cellphone account for 12.47% and radio for 10.75% of the total of 83.44% of preferences that were mentioned. The preferences regarding marketing communication are very similar for Vodacom and MTN users.

6.3.2.5 Preferences regarding cellular handsets

Respondents had to indicate whether they preferred a specific brand of cellphone handset. In total 82.95% of the 176 principal estate agents that responded to the question indicated a preference for a specific brand of handset. Vodacom users (84.62%) and MTN users (80.56%) gave a very similar response.

The null hypothesis of no association between the variable *cellphone network service provider used* and the variable *preference to use a specific brand of cellphone handset* (refer to Chapter 5, paragraph 5.3.8.3 and table 5.6) was not rejected (refer to Annexure C, table 8). The variable *preference to use a specific brand of cellphone handset* does not impact on use of a specific cellphone network service provider and vice versa.

Those respondents who indicated that they preferred to use a specific brand of cellphone handset were asked to indicate the brand that they preferred. The preferred brands of cellular handsets are listed with a breakdown according to network service provider in table 6.12.:

TABLE 6.12 PREFERRED BRANDS OF CELLULAR HANDSETS

Handset brand	Frequency			Percentage (%)		
	Total	Vodacom	MTN	Total	Vodacom	MTN
Nokia	108	62	46	74.48	72.09	77.97
HTC	10	8	2	6.90	9.30	3.39
Samsung	9	4	5	6.21	4.65	8.47
Sony Ericsson	8	5	3	5.52	5.81	5.08
BlackBerry	4	2	2	2.76	2.33	3.39
Apple	2	2	0	1.38	2.33	0.00
Motorola	1	1	0	.69	1.16	0.00
Other	3	2	1	2.07	2.33	1.69
Respondents	171	87	84	100	100	100

Note: "Other" includes iPhone and Omnia.

Nokia (74.48%) was by far the most preferred brand, followed by HTC (6.9%), Samsung (6.21%) and Sony Ericsson (5.52%). **The brands mentioned by Vodacom and MTN users were very similar.** AMPS data for the LSM seven to LSM ten groups reported Nokia (36.7%), followed by Samsung (16.2%) and Motorola (8.29%) as used the most

often for personal use (SAARF, 2010b). No question regarding the most preferred brands was included in the AMPS survey.

The null hypothesis of no association between the variable *cellphone network service provider used* and the variable *preferred cellphone handset brand* (refer to Chapter 5, paragraph 5.3.8.3 and table 5.6) was not rejected (refer to Annexure C, table 9). The variable *preferred cellphone handset brand* does not impact on use of a specific cellphone network service provider and vice versa.

6.3.2.6 Cellular Internet access

Principal estate agents were asked to indicate whether they accessed the Internet through the cellphone service that they were using. Table 6.13 shows the responses to this question:

TABLE 6.13 CELLULAR INTERNET ACCESS ACCORDING TO CELLPHONE NETWORK SERVICE PROVIDER USED

Access to the Internet through cellphone service	Frequency			Percentage (%)		
	Total	Vodacom	MTN	Total	Vodacom	MTN
Yes	63	35	28	35.39	33.02	38.89
No	115	71	44	64.61	66.98	61.11
Respondents	178	106	72	100	100	100

35.39% of the respondents indicated that they were accessing the Internet through their cellphone service. Vodacom users (33.02%) and MTN users (38.89%) gave a very similar response. **The null hypothesis of no association between the variable *cellphone network service provider used* and the variable *cellular internet access* (refer to Chapter 5, paragraph 5.3.8.3 and table 5.6) was not rejected (refer to Annexure C, table 10). The variable *cellular internet access* does not impact on use of a specific cellphone network service provider and vice versa.**

Devices used for cellular Internet access

Those respondents who accessed the Internet through their cellphone service (63 respondents) were asked to indicate the device that they were using to access the Internet. The devices mentioned varied as follows: 62.92% used a laptop; 51.48% used a cellphone; 28.60% used a desktop PC and 17.73% used a personal digital assistant (PDA) or smartphone. The totals add up to more than 100% as respondents were allowed to select more than one option.

Cellular Internet access and incidence of fixed-line Internet at home

The principal estate agents’ access to fixed-line Internet at home (refer to table 6.4) was cross-tabulated with their use of cellular Internet access. Table 6.14 presents the results:

TABLE 6.14 CELLULAR INTERNET ACCESS CROSS-TABULATED WITH FIXED-LINE INTERNET ACCESS AT HOME

Fixed-line Internet access at home	Use of cellular Internet access					
	Frequency count			Percentage (%)		
	Total	No	Yes	Total	No	Yes
No	62	36	26	35.23	31.30	42.62
Yes	114	79	35	64.77	68.70	57.38
Respondents	176	115	61	100.00	100.00	100.00

176 respondents were included in the analysis. In total 42.62% of the respondents that were using cellular Internet did not have fixed-line Internet access at home. Another 57.38% did have fixed-line Internet access at home **The null hypothesis of no association between the variables *cellular internet access* and *fixed line internet access at home* was also tested. The alternative hypothesis stated that there was an association. The null hypothesis was not rejected (refer to Annexure C, table 11). Thus, the variable *cellular internet access* does not impact on the variable incidence of *fixed line internet access at home* and vice versa.**

The profiles of Vodacom and MTN users are very similar in terms of marketing communication preferences, preference to use a specific brand of cellphone handset, preferred brands of cellular handsets, the use of cellular Internet access, and devices used for cellular Internet access.

6.3.3 Brand relationship

The principal estate agent's relationship with his or her network service provider was measured by using the statements presented in table 6.15 (refer to Chapter 5, paragraph 5.3.5.3 b)). Respondents rated their level of agreement with each statement, by means of a five-point scale that varied from *strongly disagree* to *strongly agree*. The scale values were defined as follows: *strongly disagree* = 1, *disagree* = 2, *neither agree nor disagree* = 3, *agree* = 4 and *strongly agree* = 5. *Do not know* or *not applicable* were not included as options. Respondents only rated their primary cellphone network service provider (refer to paragraph 6.3.1).

6.3.3.1 Rating of the brand relationship statements

Table 6.15 presents the ratings for each statement in total and a breakdown according to network service provider used. The ratings *strongly agree* and *agree* were combined into one category (referred to as a "top-two box score") and the ratings *disagree* and *strongly disagree* were combined into one category (referred to as a "bottom-two box score"). The ratings in table 6.15 are presented in declining order, based on the top-two box scores as percentages:

TABLE 6.15 BRAND RELATIONSHIP RATINGS

Variable/level of agreement	Frequency			Percentage (%)		
	Total	Vodacom	MTN	Total	Vodacom	MTN
I use this brand to avoid the effort involved in switching to another brand (question 6.3)						
Strongly agree/agree	105	59	46	58.99	55.14	64.79
Neither agree nor disagree	26	18	8	14.61	16.82	11.27
Disagree/strongly disagree	47	30	17	26.40	28.04	23.94
Total	178	107	71	100.00	100.00	100.00
I use this brand because it best suits my needs (question 6.5)						
Strongly agree/agree	96	62	34	53.93	57.94	47.89
Neither agree nor disagree	55	35	20	30.90	32.71	28.17
Disagree/strongly disagree	27	10	17	15.17	9.35	23.94
Total	178	107	71	100.00	100.00	100.00
I use this brand because it is the most easily available (question 6.2)						
Strongly agree/agree	78	50	28	50.00	54.35	43.75
Neither agree nor disagree	47	26	21	30.13	28.26	32.81
Disagree/strongly disagree	31	16	15	19.87	17.39	23.44
Total	156	92	64	100.00	100.00	100.00
I will recommend this brand to my friends and colleagues (question 6.8)						
Strongly agree/agree	84	55	29	47.46	51.40	41.43
Neither agree nor disagree	53	32	21	29.94	29.91	30.00
Disagree/strongly disagree	40	20	20	22.60	18.69	28.57
Total	177	107	70	100.00	100.00	100.00
I am willing to put in an extra effort to use this brand (question 6.6)						
Strongly agree/agree	67	40	27	37.85	37.38	38.57
Neither agree nor disagree	50	35	15	28.25	32.71	21.43
Disagree/strongly disagree	60	32	28	33.90	29.91	40.00
Total	177	107	70	100.00	100.00	100.00

Rating scale: 1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree.

TABLE 6.15 BRAND RELATIONSHIP RATINGS (CONTINUED)

Variable/level of agreement	Frequency			Percentage (%)		
	Total	Vodacom	MTN	Total	Vodacom	MTN
I have a personal relationship with this brand (question 6.7)						
Strongly agree/agree	50	26	24	28.41	24.76	33.80
Neither agree nor disagree	51	36	15	28.98	34.29	21.13
Disagree/strongly disagree	75	43	32	42.61	40.95	45.07
Total	176	105	71	100.00	100.00	100.00
I use this brand because it is the most affordable (question 6.4)						
Strongly agree/agree	35	19	16	19.77	17.92	22.54
Neither agree nor disagree	87	55	32	49.15	51.89	45.07
Disagree/strongly disagree	55	32	23	31.07	30.19	32.39
Total	177	106	71	100.00	100.00	100.00
I am considering switching from this brand to another brand (question 6.1)						
Strongly agree/agree	30	12	18	16.85	11.21	25.35
Neither agree nor disagree	21	14	7	11.80	13.08	9.86
Disagree/strongly disagree	127	81	46	71.35	75.70	64.79
Total	178	107	71	100.00	100.00	100.00

Rating scale: 1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree.

As previously discussed, statements 6.1 to 6.4 were included as indicator variables of the concept of behavioural loyalty and statements 6.5 to 6.8 as indicator variables of the concept of customer-based brand equity (refer to Chapter 5, paragraph 5.3.5.3 b). The ratings for each statement require further discussion:

I use this brand to avoid the effort involved in switching to another brand (question 6.3)

In total 58.99% of the respondents strongly agreed or agreed with the statement. A higher percentage of MTN customers (64.79%) and a lower percentage of Vodacom customers (55.14%) strongly agreed or agreed with this statement. Vodacom also received a more favourable bottom-two box score with a lower percentage of customers

that disagreed or strongly disagreed (9.35% versus 23.94%) with the statement. Vodacom therefore received a more favourable rating with a lower percentage of customers that indicated that they were using Vodacom to avoid the effort involved in switching to another brand.

I use this brand because it best suits my needs (question 6.5)

In total 53.93% of the respondents strongly agreed or agreed with this statement. A lower percentage of MTN customers (47.89%) and a higher percentage of Vodacom customers (57.94%) strongly agreed or agreed with this statement. Based on the top-two box score, Vodacom received a more favourable rating as a higher percentage of Vodacom customers strongly agreed or agreed with the statement. Vodacom also received a more favourable bottom-two box score, with a lower percentage of customers that disagreed or strongly disagreed (9.35% versus 23.94%) with the statement.

I use this brand because it is the most easily available (question 6.2)

In total 50% of the respondents strongly agreed or agreed with this statement. A lower percentage of MTN customers (43.75%) and a higher percentage of Vodacom customers (54.35%) strongly agreed or agreed with the statement. Based on the top-two box score, MTN received a more favourable rating as a lower percentage of MTN customers indicated that they were using the brand because it was the most easily available. MTN also received a more favourable bottom-two box score with a higher percentage of customers that disagreed or strongly disagreed (23.44% versus 17.39%) with the statement.

I will recommend this brand to my friends and colleagues (question 6.8)

In total 47.46% of the respondents strongly agreed or agreed with this statement. A lower percentage of MTN users (41.43%) and a higher percentage of Vodacom users (51.40%) agreed or strongly agreed with the statement. Based on the top-two box score, Vodacom received a more favourable rating with a higher percentage of Vodacom customers that strongly agreed or agreed with the statement. Vodacom also received a

more favourable bottom-two box score with a lower percentage of customers that disagreed or strongly disagreed (17.39% versus 23.44%) with the statement.

I am willing to put in an extra effort to use this brand (question 6.6)

In total 37.85% of the respondents strongly agreed or agreed with this statement. An almost equal percentage of MTN users (38.57%) and Vodacom users (37.38%) strongly agreed or agreed with this statement. A higher percentage of MTN users (40%) and a lower percentage of Vodacom users (29.91%) disagreed or strongly disagreed with the statement. Although the top-two box scores of Vodacom and MTN users were almost equal, Vodacom received a more favourable bottom-two box rating with a lower percentage of customers that disagreed or strongly disagreed with the statement.

I have a personal relationship with this brand (question 6.7)

In total 28.41% of the respondents strongly agreed or agreed with this statement. A higher percentage of MTN customers (33.8%) and a lower percentage of Vodacom customers (24.76%) agreed or strongly agreed with the statement. Although the top-two box score for MTN was more favourable, Vodacom received a more favourable bottom-two box score. A lower percentage of Vodacom customers (40.95% versus 45.07% from MTN) disagreed or strongly disagreed with the statement.

I use this brand because it is the most affordable (question 6.4)

In total 19.77% of the respondents strongly agreed or agreed with this statement. A higher percentage of MTN customers (22.54%) and a lower percentage of Vodacom customers (17.92%) agreed or strongly agreed with the statement. The top-two box score for Vodacom was more favourable as a slightly lower percentage of Vodacom customers agreed or agreed or strongly agreed with the statement. MTN received a more favourable bottom-two box score as a slightly higher percentage of MTN customers (32.39% versus 30.19% of Vodacom customers) disagreed or strongly disagreed with the statement.

I am considering switching from this brand to another brand (question 6.1)

16.85% of the respondents strongly agreed or agreed with this statement. A higher percentage of MTN customers (25.35%) and a lower percentage of Vodacom customers (11.21%) strongly agreed or agreed with this statement. Based on the top-two box score Vodacom received a more favourable rating with a lower percentage of users that indicated that they were considering switching to another brand. Vodacom also received a more favourable bottom-two box rating. A higher percentage of Vodacom customers (75.70%) and a lower percentage of MTN customers (64.79%) disagreed or strongly disagreed with the statement.

Hypothesis testing of the brand relationship statements

The Mann-Whitney U test was used to evaluate the null hypothesis that stated there was no difference between the rating of the brand relationship statements by Vodacom and MTN users (refer to Chapter 5, paragraph 5.3.8.3 and table 5.7). The null hypothesis was not rejected (refer to Annexure C, table 12). The profiles of Vodacom and MTN users therefore do not differ statistically significantly with regard to any of the brand relationship statements.

Summary of the brand relationship ratings

MTN received a more favourable rating for the statement *I have a personal relationship with this brand* (question 6.7) and the statement *I use this brand because it is most easily available* (question 6.2). The more favourable rating that MTN received with regard to the latter statement may be due to Vodacom's competitive strength in terms of market share (refer to Chapter 1, table 1.3). Vodacom received more favourable ratings for all the other statements.

Assessment of the total ratings suggests a relatively low level of category involvement as confirmed by the following:

- 58.99% of all the respondents strongly agreed or agreed with the statement *I use this brand to avoid the effort involved in switching to another brand.*

- 54.35% of all the respondents strongly agreed or agreed with the statement *I use this brand because it is most easily available.*
- Only 37.85% of all the respondents strongly agreed or agreed with the statement *I am willing to put in an extra effort to use this brand.*
- Only 28.41% of all the respondents strongly agreed or agreed with the statement *I have a personal relationship with this brand.*

The profiles of Vodacom and MTN users do not differ statistically significantly with regard to any of the brand relationship statements.

Analysis of the brand relationship statements in order to develop a customer-based brand equity measure requires further discussion (refer to Chapter 5 paragraph 5.3.5.3b):

6.3.3.2 Development of a measurement scale for customer-based brand equity (CBBE)

Factor analysis was used as the first step in the development of the summated measurement scale (refer to Chapter 5, paragraph 5.3.8.11).

a) Factor analysis of the brand relationship ratings

All the brand relationship statements were included in the analysis. Excluding cases with missing values provided the best results. A total of 153 respondents rated all the statements. The factor analysis identified two factors (also referred to as “dimensions”) that cumulatively account for 66.68% of the total variance. All the requirements for the use of factor analysis were met. A value of 0.801 was obtained for the Kaiser-Meyer-Olkin measure of sampling adequacy. Values between 0.5 and 1.0 on the Kaiser-Meyer-Olkin measure indicate that factor analysis is appropriate. The Bartlett’s test of sphericity was statistically significant at the 0.01 level. Table 13 in Annexure C presents the eigenvalues for the identified factors and variance explained. The rotated factor matrix is presented in table 6.16:

TABLE 6.16 ROTATED FACTOR MATRIX

Statements	Factor	
	1	2
I will recommend this brand to my friends and colleagues (question 6.8)	.893	-.108
I use this brand because it best suits my needs (question 6.5)	.839	-.291
I have a personal relationship with this brand (question 6.7)	.803	.030
I am willing to put in an extra effort to use this brand (question 6.6)	.772	-.123
I am considering switching from this brand to another brand (question 6.1)	.693	-.005
I use this brand because it is the most easily available (question 6.2)	-.277	.811
I use this brand to avoid the effort involved in switching to another brand (question 6.3)	.290	.804
I use this brand because it is the most affordable (question 6.4)	-.458	.568

Extraction method: principal component analysis

Rotation method: Varimax with Kaiser normalisation

Rotation converged in three iterations

The scale values of the statements in question 6.1, 6.2, 6.3 and 6.4 were reversed.

The statements in questions 6.1 and 6.5 to 6.8 had their highest loadings on factor one. The results, therefore confirmed the assumption that the construct measured by factor one, was well suited to represent the concept of customer-based brand equity (refer to Chapter 5, paragraph 5.3.5.3 b)). Take note that the scale values for the statement in question 6.1 were reversed. The initial and extraction communalities of the brand relationship statements are presented in Annexure C, table 13. Factor one accounted for 44.92% of the total variance.

The statements in questions 6.2, 6.3 and 6.4 had their highest loadings on factor two. Take note that the scale values for statements 6.2, 6.3 and 6.4 were reversed. Thus, the result confirmed the assumption that the construct measured by factor two would be well-suited to represent the concept of behavioural loyalty without a strong attitudinal attachment to the brand (refer to Chapter 5, paragraph 5.3.5.3 (b)). Factor two

accounted for 21.76% of the total variance (refer to Annexure C, table 13). The statements included in factor two did not meet all the requirements for inclusion in a summated scale discussed in the next section of this chapter.

b) Reliability analysis of the summated scale for customer-based brand equity.

A summated scale should meet the following requirements:

- A conceptual definition, based on a sound theoretical base, should define the concept represented by the measurement. The definition should meet the requirements of content validity, also referred to as “face validity” (refer to Chapter 5, paragraph 5.3.8.10).
- Cronbach’s alpha for the scale should exceed 0.70. It may decrease to 0.60 in the case of exploratory research.
- The item-to-total correlations should exceed 0.50.
- The inter-item correlations should exceed 0.30.
- The items should be uni-dimensional, which means that they should strongly associate with each other and represent a single concept. The summated scale should consist of items loading highly on one factor only (Hair et al., 2010:124-125).

The statements included in factor two met the requirements in terms of conceptual definition for use in a summated scale. However, it did not meet the following requirements for inclusion in a summated scale: Cronbach’s alpha; item-to-total correlations; and inter-item correlations. As a result the construct described by factor two was not used in any further statistical analysis.

A summated scale provides the following benefits: it reduces measurement error; it represents multiple facets of a concept; and it is easily replicated across studies (Hair *et al*, 2010:123-128). The factor analysis identified the brand relationship statements that were best suited to represent the concept of customer-based brand equity. In the development of a measurement scale reliability is an important consideration. Internal consistency reliability analysis was used to assess the reliability of the summated

measurement scale. Annexure C, table 14 presents the reliability statistics for the summated measurement scale for customer-based brand equity (refer to Chapter 5, paragraph 5.3.8.10).

The internal consistency reliability analysis was based on 175 valid cases. The minimum sample size for estimating coefficient alpha is dependent on the level of the first (largest) eigenvalue obtained from principal component analysis (PCA). The first eigenvalue of the sample data set was 3.809. This indicated that a sample size of 100 would be adequate for an unbiased estimate of the coefficient alpha (refer to Chapter 5, paragraph 5.3.8.10).

Internal consistency reliability analysis confirmed a high level of reliability (Cronbach's alpha coefficient of 0.870) in the use of the brand relationship statements (in questions 6.1 and 6.5 to 6.8) to measure the construct defined by factor one. These statements were included in the summated measurement scale that was used as an indicator variable for the concept of customer-based brand equity. The statements included in the summated scale met all the requirements in terms of conceptual definition, item-to-total correlation, inter-item correlation, and uni-dimensionality.

c) Calculation of a summated customer-based brand equity score

The ratings of the principal estate agents for the brand relationship statements in questions 6.1 and 6.5 to 6.8 were summed to create a summated score. The summated scores of respondents could vary from a minimum of zero to a maximum of 25.

Descriptive statistics of the summated customer-based brand equity scores for the group in total and according to cellphone network service provider used are presented in table 6.17:

TABLE 6.17 DESCRIPTIVE STATISTICS OF THE SUMMATED CUSTOMER-BASED BRAND EQUITY SCORES

Total/ service provider	Respondents	Mean	95% confidence interval		Median
			Lower	Upper	
Total	175	16.10	15.44	16.77	16.00
Vodacom	105	16.38	15.62	17.14	17.00
MTN	70	15.69	14.46	16.91	16.00

Note: The scale values for statement 6.1 were reversed.

As indicated in table 6.17, a total of 175 respondents was included in the analysis. This number included 105 Vodacom users and 70 MTN users. The overall group mean was 16.1. The mean for Vodacom users was 16.38, while the mean for MTN users was 15.69. The median for the group in total was 16.00. The median for Vodacom users was 17.00 and the median for MTN users was 16.00.

A frequency breakdown of the summated customer-based brand equity score for the total group and according to cellphone network service provider used, is presented in table 6.18:

TABLE 6.18 FREQUENCY BREAKDOWN OF THE SUMMATED CUSTOMER-BASED BRAND EQUITY SCORES

Scale score	Frequency			Scale score percentage (%)	Percentage (%)		
	Total	Vodacom	MTN		Total	Vodacom	MTN
5 to 8	11	4	7	20 to 32	6.29	3.81	10.00
9 to 12	23	11	12	36 to 48	13.14	10.48	17.14
13 to 16	54	32	22	52 to 64	30.86	30.48	31.43
17 to 20	64	48	16	68 to 80	36.57	45.71	22.86
21 to 25	23	10	13	84 to 100	13.14	9.52	18.53
-	175	105	70	-	100.00	100.00	100.00

As indicated in table 6.18, the minimum score that was obtained on the summated scale was five. The ratings by most of the respondents (118 respondents or 67.43%) varied

from twelve¹² to 20 out of 25. A higher percentage of Vodacom users (55.24%) than MTN users (41.43%) gave a rating above the overall group median of 16.00.

Hypothesis testing

The Mann-Whitney U test was used to examine the null hypothesis. **The null hypothesis stated that there was no difference between the Vodacom and MTN users with regard to the summated customer-based brand equity score (refer to Chapter 5, paragraph 5.3.8.3 and table 5.7). The null hypothesis was not rejected (refer to Annexure C, table 15). The profiles of Vodacom and MTN users do not differ statistically significantly with regard to the summated customer-based brand equity score.**

6.3.3.3 Low and high customer-based brand equity groups

The respondents were divided into two groups, based on the median value of the summated customer-based brand equity score for the group as a whole. Respondents with a summated customer-based brand equity score below or equal to the median value were allocated to a group referred to as the *low customer-based brand equity group*. Those with a score above the median value were allocated to another group referred to as the *high customer-based brand equity group*.

In addition to the cellphone network service provider used, the research results were also analysed according to the customer-based brand equity group (refer to Chapter 5, paragraph 5.3.8.11). The profiling variables (refer to Chapter 5, table 5.1) analysed according to customer-based brand equity group requires further discussion:

6.3.4 Profiling variables analysed according to customer-based brand equity group

The null hypothesis that stated there was no association between the variable *customer-based brand equity group* and the variables selected to profile the user group (refer to Chapter 5, table 5.1, paragraph 5.3.8.3 and table 5.6), was analysed

by using the chi-square test. The null hypotheses for three variables, *fixed-line Internet at home*, *subscription to pay television* and *number of estate agents employed* (refer to Annexure C, table 16), were rejected. Thus, the variables *fixed-line Internet at home*, *subscription to pay television* and *number of estate agents employed* impact on the variable *customer-based brand equity group* and vice versa.

The Cramer's V test was used to assess the strength of the association. The Cramer's V test was statistically significant for one variable only, *subscription to pay television* (refer to Annexure C, table 17). The strength of the association, however, was weak, as was indicated by a Cramer's V value of 0.174. Thus, it can be concluded that the strength of the association between the variables *fixed-line Internet at home*, *subscription to pay television* and *number of estate agents employed* and the variable *customer-based brand equity group* is not very strong.

6.3.5 Brand usage

Brand usage was assessed by using the questions pertaining to services used, average monthly expenses and subscription period.

6.3.5.1 Services used

Table 6.19 presents the use of contract and prepaid services with a breakdown according to cellphone network service provider used:

TABLE 6.19 USE OF CONTRACT AND PREPAID SERVICES (VODACOM AND MTN USERS)

Service	Frequency			Percentage (%)		
	Total	Vodacom	MTN	Total	Vodacom	MTN
Contract services						
Voice 1)	166	96	70	91.21	88.07	95.89
Data 2)	24	15	9	13.19	13.76	12.33
Other 3)	67	39	28	36.81	35.78	38.36
Respondents	182	109	73	-	-	-
Prepaid services						
Voice 1)	16	12	4	8.79	11.01	5.48
Data 2)	39	26	13	21.43	23.85	17.81
Other 3)	5	3	2	2.75	2.75	2.74
Respondents	182	109	73	-	-	-

Note: (1) Voice calls, voicemail, SMS and MMS

(2) Internet-related use, e-mail services, sending and receiving of files

(3) Content-related use such as downloading of ringtones or music and all other services

Contract voice was the service used the most, mentioned by 91.21% of the respondents in the prompted question. The use of contract voice was followed by the use of other services accessed via contract subscription (36.81%), prepaid data (21.43%) and contract data (13.19%). Due to an expected frequency count of less than five in 50% of the cells, the association between the variable *cellphone network service provider used* and the variable *contract voice services* could not be analysed by means of the chi-square test (refer to Annexure C, table 18). However, as indicated in table 6.19, a higher percentage of MTN customers (95.89%) than Vodacom customers (88.07%) reported the use of contract voice services. Contract voice services as a category was the only service category with more than 30 responses from both Vodacom and MTN users.

Analysis of the results according to customer-based brand equity group, revealed a very similar profile for the low and high customer-based brand equity groups (refer to Annexure C, table 19). Due to an expected frequency count of less than five in 50% of the cells, the association between the variable *customer-based brand equity group* and the variable *use of contract voice services* could not be analysed by using the chi-square test (refer to Annexure C, table 20).

6.3.5.2 Average monthly expenses

Table 6.20 presents the average monthly expenditure on cellular services with a breakdown according to cellphone network service provider used:

TABLE 6.20 AVERAGE MONTHLY CELLULAR EXPENSES (VODACOM AND MTN USERS)

Prepaid/contract/ service provider	Respondents	Mean (Rand)	Standard deviation	Standard error	95% confidence interval for mean	
					Lower bound	Upper bound
Prepaid						
Total 1)	12	267.416	147.396	42.559	173.666.	361.068
Vodacom1)	7	279.857	161.442	61.019	130.458	429.1660
MTN 1)	5	250.000	141.421	63.246	74.402	425.598
Contract						
Total	80	1368.38	939.266	105.013	1159.35	1577.40
Vodacom	42	1272.86	1034.755	159.666	950.40	1595.31
MTN	38	1473.95	821.819	133.317	1203.82	1744.07

Note: (1) *Sample size less than 30*

Twelve principal estate agents responded to prepaid expenses and 71 to contract expenses. The overall average for prepaid expenses was R267 per month, with an upper bound of R361 and a lower bound of R173, based on the 95% confidence interval for the mean. Due to the small sample size for prepaid expenses, an analysis that compared Vodacom and MTN would not have been meaningful.

The overall average for contract expenses was R1 368 per month, with an upper bound of R1 577 and a lower bound of R1 159, based on the 95% confidence interval for the mean. MTN contract users reported higher average expenses per month than Vodacom contract users (R1 474 versus R1 273).

The null hypothesis (refer to Chapter 5, paragraph 5.3.8.3 and table 5.7) that stated that there was no difference between Vodacom and MTN users regarding their average monthly cellular contract expenses was not rejected (refer to Annexure C, table 21). Thus, the average monthly cellular contract expenses of Vodacom and MTN users do not differ at a statistically significant level.

The null hypothesis (refer to Chapter 5, paragraph 5.3.8.3 and table 5.7) that stated that there was no difference between the low and high customer-based brand equity groups was not rejected (refer to Annexure C, table 22). Thus, the average monthly cellular contract expenses of the low and high customer-based brand equity groups do not differ at a statistically significant level.

The somewhat higher average expenditure of the low customer-based brand equity group contradicted theory. This could be explained by the lack of price competition due to the existing duopoly and regulated market environment (refer to Chapter 2, paragraph 2.4)

6.3.5.3 Subscription period

Table 6.21 shows the subscription period with a breakdown according to cellphone network service provider used:

TABLE 6.21 SUBSCRIPTION PERIOD WITH BREAKDOWN ACCORDING TO NETWORK SERVICE PROVIDER (MTN AND VODACOM)

Subscription period (years)	Frequency			Percentage (%)		
	Total	Vodacom	MTN	Total	Vodacom	MTN
< 1	2	2	0	1.11	1.87	0.00
>1 but < 2	4	3	1	2.22	2.80	1.37
>2 but < 5	17	9	8	9.44	8.41	10.96
>5	157	93	64	87.22	86.92	86.7
Respondents	180	107	73	100.00	100.00	100.00

In total 87.22% of the respondents had been subscribing to their cellphone network service provider for more than five years and 12.78% for less than five years. This suggested that 4.67% or less of the Vodacom customers and 1.37% or less of the MTN customers had switched from one cellphone network service provider to another within the two years before completion of the questionnaire. The profiles of Vodacom and MTN users were very similar in terms of subscription period. **The null hypothesis (refer to Chapter 5, paragraph 5.3.8.3 and table 5.6) of no association between the variable *cellphone network service provider used* and the variable *subscription period* was not rejected (refer to Annexure C, table 23). Thus, the variable *subscription period* does not impact on use of a specific cellphone network service provider and vice versa.**

The profiles of the low and high customer-based brand equity groups are very similar in terms of subscription period. The results suggested that 1.16% or less of the low and 4.55% or less of the high customer-based brand equity group had switched from one cellphone network service provider to another within the two years before completion of the questionnaire. **The null hypothesis (refer to Chapter 5, paragraph 5.3.8.3 and table 5.6) of no association between the variable *customer based-brand equity group* and the variable *subscription period* was not rejected (refer to Annexure C, table 24). Thus, the variable *subscription period* does not impact on the variable *customer-based brand equity group* and vice versa.**

6.3.6 Barriers to brand usage

Participants' awareness of barriers that were preventing them from using their most preferred cellphone network service provider is presented in table 6.22. The table contains a breakdown according to cellphone network service provider used:

TABLE 6.22 AWARENESS OF BARRIERS PREVENTING USE OF THE MOST PREFERRED CELLPHONE NETWORK SERVICE PROVIDER (VODACOM AND MTN USERS)

Awareness	Frequency			Percentage (%)		
	Total	Vodacom	MTN	Total	Vodacom	MTN
No	147	91	56	83.05	86.67	77.78
Yes	30	14	16	16.95	13.33	22.22
Respondents	177	105	72	100.00	100.00	100.00

16.95% of the total number of respondents indicated that they were aware of barriers preventing them from using their most preferred cellphone network service provider. A somewhat higher percentage of MTN users (22.22%) than Vodacom users (13.33%) indicated that they were aware of barriers preventing them from using their most preferred service provider. **The null hypothesis (refer to Chapter 5, paragraph 5.3.8.3 and table 5.6) of no association between the variable *cellphone network service provider used* and the variable *awareness of barriers preventing use of the most preferred cellphone network service provider* was not rejected (refer to Annexure C, table 25). Thus, the variable *awareness of barriers preventing use of the most preferred cellphone network service provider* does not impact on use of a specific cellphone network service provider and vice versa.**

A higher percentage of the respondents in the low customer-based brand equity group indicated that they were aware of barriers, compared to respondents in the high customer-based brand equity group (26.74% versus 8.14). **The null hypothesis (refer to Chapter 5, paragraph 5.3.8.3 and table 5.6) of no association between the variable *customer-based brand equity group* and the variable *awareness of barriers preventing use of the most preferred cellphone network service provider* was rejected (refer to Annexure C, table 26). Thus, the variable *awareness of barriers preventing use of the most preferred cellphone network service provider* does impact on *customer-based brand equity group membership* and vice versa.**

The Cramer's V test was used to assess the strength of the association. The Cramer's V test was statistically significant (refer to Annexure C, table 27). The strength of the association, however, was moderate, as was indicated by a Cramer's V value of 0.245. Thus, the strength of the association was not sufficiently strong to recommend the variable for use as an indicator variable to classify respondents into the low or the high customer-based brand equity group. This finding supports theory pertaining to customer satisfaction and loyalty (refer to Chapter 4, paragraph 4.3.5).

In a follow-up question respondents were prompted to indicate the barriers preventing them from using their most preferred service provider. The following barriers were mentioned by more than ten respondents in total:

- locked in by a contract (63.33%);
- too inconvenient to change (53.33%);
- preference to use one (specific) service provider (36.67%).

In comparison with Vodacom, a higher percentage of MTN users indicated that they were locked in by a contract. A higher percentage of MTN users indicated that it was too inconvenient to change service providers, while a lower percentage of MTN users indicated a preference to use one service provider to be a barrier. A higher percentage of users in the low customer-based brand equity group indicated that they were locked in by a contract. A higher percentage of users in the low customer-based brand equity group indicated it was too inconvenient to change service providers. A lower percentage lower percentage of users in the low customer-based brand equity group indicated a preference to use one service provider to be a barrier.

6.3.7 Brand contact

Respondents had to indicate whether they had contact with their cellphone network service provider within the four weeks before completion of the questionnaire. Table

6.23 presents the results with a breakdown according to cellphone network service provider used.

TABLE 6.23 INCIDENCE OF BRAND CONTACT (VODACOM AND MTN USERS)

Contact	Frequency			Percentage (%)		
	Total	Vodacom	MTN	Total	Vodacom	MTN
No	103	64	39	54.93	59.81	57.87
Yes	75	43	32	45.07	40.19	42.13
Respondents	177	105	72	100.00	100.00	100.00

In total 45.07% of the respondents had contact with their cellphone network service provider within the four weeks before completing the questionnaire.

The null hypothesis (refer to Chapter 5, paragraph 5.3.8.3 and table 5.6) of no association between the variable *cellphone network service provider used* and the variable *incidence of brand contact* was not rejected (refer to Annexure C, table 28). Thus, the variable *incidence of brand contact* does not impact on use of a specific cellphone network service provider and vice versa.

The profiles of the low and high customer-based brand equity groups are very similar with regard to incidence of brand contact.

The null hypothesis (refer to Chapter 5, paragraph 5.3.8.3 and table 5.6) of no association between the variable *customer-based brand equity group* and the variable *incidence of brand contact* was not rejected (refer to Annexure C, table 29). Thus, the variable *incidence of brand contact* does not impact on *customer-based brand equity group membership* and vice versa.

In a prompted follow-up question, respondents were asked to indicate the nature of the contact with their network service provider. Multiple responses were possible. Table 6.24 presents the number of respondents that responded to each prompted question and the number of respondents that indicated contact (yes responses):

TABLE 6.24 NATURE OF CONTACT (VODACOM AND MTN USERS)

Nature of contact	Frequency			Percentage (%)		
	Total	Vodacom	MTN	Total	Vodacom	MTN
Personal (yes response)	41	24 (1)	17 (1)	60.29	63.16	56.67
Respondents	68	38	30	-	-	-
Network service support (yes response)	44	28 (1)	16 (1)	62.86	68.29	55.17
Respondents	70	41	29	-	-	-
Call centre (yes response)	34	25 (1)	9 (1)	51.52	62.50	34.62
Respondents	66	40	26	-	-	-
Website (yes response)	27	18 (1)	9 (1)	39.13	45.00	31.03
Respondents	69	40	29	-	-	-

Note: (1) *Sample size less than 30*

The percentages of mentions of a personal visit to an outlet (60.29%), telephone contact by calling network service support (62.86%) and a telephone call to a call centre (51.52%) were fairly similar. It is interesting that website visits received the lowest percentage of total mentions (39.13%). Due to the small sample sizes, analysis of the results according to cellphone network service provider used and customer-based brand equity group was not advisable.

In a prompted question, respondents that visited the website of their service provider were asked to indicate the website that they had visited. Multiple responses were allowed. A total of 28 responses were obtained from Vodacom respondents. These responses varied as follows: vodacom.co.za 46.43%, vodacom4me.co.za 46.43%, and vodacomdirect.co.za 7.14%. A total of 13 responses were obtained from MTN respondents. These responses varied as follows: mtn.co.za 53.85%, mtnloaded.co.za 30.77% and MyMTN.co.za 7.14%.

6.3.8 Brand awareness

Brand awareness was assessed at corporate level, as well as at a product level.

6.3.8.1 Brand awareness at corporate level

In order to assess brand awareness at corporate level, respondents were asked to indicate their awareness of cellphone network service providers in a prompted question. Table 6.25 reflects the results:

TABLE 6.25 PROMPTED BRAND AWARENESS AT CORPORATE LEVEL (VODACOM AND MTN USERS)

Cellphone network service provider (prompted)	Frequency count			Percentage (%) Breakdown		
	Total	Vodacom	MTN	Total	Vodacom	MTN
Vodacom	171	108	63	95.00	100.00	87.50
MTN	173	101	72	96.11	93.52	100.00
Cell C	161	100	61	89.44	92.59	84.72
Virgin Mobile	144	89	55	80.00	82.41	76.39
Other1)	14	11	3	7.78	10.19	4.17
Respondents	180	108	72	-	-	-

Note: (1) *Includes Nashua Mobile, Autopage Cellular, MWeb, iTalk Cellular, Smart Phone, Supercall Cellular and iBurst*

A total of 180 principal estate agents responded to the relevant question (108 Vodacom and 72 MTN users). A high level of prompted brand awareness at corporate level was reported for Vodacom (95%), MTN (93.52%), Cell C (89.44%) and Virgin Mobile (80%). Awareness of the other network service providers as prompted was low (7.78%). As can be expected, all the Vodacom and MTN users were aware of whom their cellphone network service providers were. Vodacom users reported a higher level of awareness of MTN (93.52%) than the level of awareness of Vodacom reported by MTN users (87.5%). Vodacom users also reported a higher level of awareness than MTN users with regard to Cell C (92.59% versus 84.72%), Virgin Mobile (82.41% versus 76.39%) and the other cellphone network service providers as prompted (10.19% versus 4.17%).

A very similar profile according to customer-based brand equity group was reported.

6.3.8.2 Brand awareness at product level

Brand awareness at product level was also evaluated for both prepaid and contract users. Respondents that were using a prepaid service were requested to indicate whether they knew the name of the prepaid service that they were using. Table 6.26 presents the results with a breakdown according to cellphone network service provider used:

TABLE 6.26 PREPAID BRAND AWARENESS AT PRODUCT LEVEL (VODACOM AND MTN USERS)

Knowledge of the name of the prepaid service	Frequency			Percentage (%)		
	Total	Vodacom	MTN	Total	Vodacom	MTN
Yes	24 1)	18 1)	6 1)	64.85	72.00	50.00
No	13 1)	7 1)	6 1)	35.15	28.00	50.00
Respondents	37	25 1)	12 1)	100.00	100.00	100.00

Note: (1) *Sample size less than 30*

A total of 37 principal estate agents responded to the relevant question (25 Vodacom users and twelve MTN users). Out of the total number of respondents 64.85% indicated that they knew the name of the prepaid service that they were using. Due to the small sample size, analysis of the results according to cellphone network service provider was not advisable.

Respondents that were using a contract service were requested to indicate whether they knew the name of the contract service that they were using. Table 6.27 shows the results with a breakdown according to cellphone network service provider:

TABLE 6.27 CONTRACT BRAND AWARENESS AT PRODUCT LEVEL (VODACOM AND MTN USERS)

Knowledge of the name of the contract service	Frequency			Percentage (%)		
	Total	Vodacom	MTN	Total	Vodacom	MTN
Yes	121	80	41	75.63	82.47	65.08
No	39	17	22	24.37	17.53	34.92
Respondents	160	97	63	100.00	100.00	100.00

In total 160 principal estate agents responded to the question (97 Vodacom users and 63 MTN users). 75.63% of the respondents indicated that they knew the name of the contract service that they were using. A higher percentage of Vodacom users (82.47%) than MTN users (65.08%) indicated that they knew the name of the contract service that they were using.

The null hypothesis (refer to Chapter 5, paragraph 5.3.8.3 and table 5.6) of no association between the variable *cellphone network service provider used* and the variable *contract brand awareness at product level* was rejected (refer to Annexure C, table 30). Thus, the variable *contract brand awareness at product level* impact on use of a specific cellphone network service provider and vice versa.

The Cramer's V test was used to assess the strength of the association. The Cramer's V test was statistically significant (refer to Annexure C, table 31). The strength of the association, however, was weak, as was indicated by a Cramer's V value of 0.190. Thus, the strength of the association was not sufficiently strong to recommend the variable for use as an indicator variable of a specific cellphone network service provider used and vice versa.

A somewhat higher percentage of respondents in the high customer-based brand equity group (81.18%), compared to the low customer-based brand equity group (70.88%), indicated that they knew the name of the contract service that they were using.

The null hypothesis (refer to Chapter 5, paragraph 5.3.8.3 and table 5.6) of no association between the variable *customer-based brand equity group* and the variable *contract brand awareness at product level* was not rejected (refer to Annexure C, table 32). Thus, the variable *contract brand awareness at product level* does not impact on *customer-based brand equity group membership* and vice versa.

Respondents that indicated the use of a contract service were asked to indicate the name of the contract service that they were using. The contract services for Vodacom that were mentioned the most are presented in table 6.28:

TABLE 6.28 VODACOM CONTRACT SERVICES MENTIONED THE MOST

Contract services mentioned	Percentage (%) of mentions
Vodacom Talk packages (various Talk packages, for example 100, 120, 200, 240, 500)	66.67
Vodacom Weekender	12.50
Vodacom Business (includes Vodacom Business Talk, Business 500)	12.50
Vodacom (brand name used to describe service)	4.17
Top Up	4.17
Mentions	48

Vodacom Talk packages were the contract services mentioned the most. Vodacom Talk 500 recorded the highest frequency of mentions. The Weekender packages included Vodacom Weekender Plus and Vodacom Weekender Per Second. The Business packages included Vodacom Business Talk and Vodacom Business 500. The contract services for MTN that were mentioned the most are listed in table 6.29:

TABLE 6.29 MTN CONTRACT SERVICES MENTIONED THE MOST

Contract services mentioned	Percentage (%) of mentions
MTN Talk (various Talk packages, for example 100, 200, 300, 500)	28.13
ProCall (various ProCall packages, for example 120, 150, 200, 300, 600)	28.13
MTN (brand name used to describe service)	21.88
Anytime (various Anytime packages, for example 120, 220, 350, 750)	9.38
MTN Business 100/Business Talk 1000	6.25
Various other	6.25
Mentions	48

MTN Talk packages were the contract services that were mentioned the most. The brand name was used in 21.88% of the mentions to describe the contract service used. Awareness of loyalty programmes in addition to brand name and product awareness was also assessed.

6.3.8.3 Awareness of loyalty programmes

Respondents were asked to indicate whether they were aware of any loyalty programmes offered by the network service provider that they were using. Table 6.30 presents a breakdown of the results according to cellphone network service provider used:

TABLE 6.30 AWARENESS OF LOYALTY PROGRAMMES (VODACOM AND MTN USERS)

Awareness	Frequency			Percentage (%)		
	Total	Vodacom	MTN	Total	Vodacom	MTN
Yes	18	13	5	11.32	14.29	7.35
No	141	78	63	88.68	85.71	92.65
Respondents	159	91	68	100.00	100.00	100.00

A total of 159 responses to the question was obtained. In total 11.32% of the respondents indicated that they were aware of loyalty programmes offered by their cellphone network service provider. A higher percentage of Vodacom users (14.29%) indicated awareness, compared to a lower percentage of MTN users (7.35%).

The null hypothesis (refer to Chapter 5, paragraph 5.3.8.3 and table 5.6) of no association between the variable *cellphone network service provider used* and the variable *awareness of loyalty programmes* was not rejected (refer to Annexure C, table 33). Thus, the variable *awareness of loyalty programmes* does not impact on use of a specific cellphone network service provider and vice versa.

A lower percentage of the low customer-based brand equity group (6.41%) and a higher percentage of the high customer-based brand equity group (17.11%) indicated that they

were aware of loyalty programmes offered by their network service provider. The percentage breakdown suggests that that awareness of loyalty programmes indicate a higher level of customer-based brand equity or closeness to the brand.

The null hypothesis (refer to Chapter 5, paragraph 5.3.8.3 and table 5.6) of no association between the variable *customer-based brand equity group* and the variable *awareness of loyalty programmes* was rejected (refer to Annexure C, table 34). Thus, the variable *awareness of loyalty programmes* impact on *customer-based brand equity group membership* and vice versa.

The Cramer's V test was used to assess the strength of the association. The Cramer's V test was statistically significant (refer to Annexure C, table 35). The strength of the association, however, was weak, as was indicated by a Cramer's V value of 0.166. Thus, the strength of the association was not sufficiently strong to recommend the variable for use as an indicator variable of *customer-based brand equity group membership* and vice versa.

Respondents that indicated awareness of a loyalty programme were asked to select the name of the loyalty programme(s) of which they were aware. A total of 19 mentions were received from Vodacom users. The Vodacom mentions varied as follows, as far as the prompted loyalty programmes are concerned: Vodacom Card 21.05%, Talking Points 68.42% and Yebo Millionaires 10.53%. A total of five mentions were received from MTN users. MTN's 1-4-1 loyalty programme was the only loyalty programme prompted for MTN.

6.3.9 Preferences regarding service providers

In the first question to assess preferences regarding service providers, respondents were asked to rate their likelihood to use Vodacom, MTN, Cell C or Virgin Mobile, assuming that they had a choice. A five-point rating scale was used. The results are presented in table 6.31:

**TABLE 6.31 LIKELIHOOD TO USE CELLPHONE NETWORK SERVICE PROVIDERS
(VODACOM AND MTN USERS)**

Cellphone network service provider (prompted)	Frequency count			Percentage (%) Breakdown		
	Total	Vodacom	MTN	Total	Vodacom	MTN
Vodacom						
Very unlikely	10	3	7	6.10	3.13	10.29
Unlikely	4	1	3	2.44	1.04	4.41
Neither likely nor unlikely	16	3	13	9.76	3.13	19.12
Likely	64	34	30	39.02	35.42	44.12
Very likely	70	55	15	42.68	57.29	22.06
Respondents/total	164	96	68	100.00	100.00	100.00
MTN						
Very unlikely	28	24	4	16.97	25.53	5.63
Unlikely	16	13	3	9.70	13.83	4.23
Neither likely nor unlikely	26	19	7	15.76	20.21	9.86
Likely	52	30	22	31.52	31.91	30.99
Very likely	43	8	35	26.06	8.51	49.30
Respondents/total	165	94	71	100.00	100.00	100.00
Cell C						
Very unlikely	71	42	29	45.81	45.16	46.77
Unlikely	29	16	13	18.71	17.20	20.97
Neither likely nor unlikely	23	14	9	14.84	15.05	14.52
Likely	27	18	9	17.42	19.35	14.52
Very likely	5	3	2	3.23	3.23	3.23
Respondents	155	93	62	100.00	100.00	100.00
Virgin Mobile						
Very unlikely	55	31	24	35.48	33.70	38.10
Unlikely	29	19	10	18.71	20.65	15.87
Neither likely nor unlikely	38	16	22	24.52	17.39	34.92
Likely	22	17	5	14.19	18.48	7.94
Very likely	11	9	2	7.10	9.78	3.17
Respondents	155	92	63	100.00	100.00	100.00

Note: Rating scale 1 = very unlikely, 2 = unlikely, 3 = neither likely nor unlikely, 4 = likely, 5 = very likely

In total 81.7% of the respondents indicated that they were likely or very likely to use Vodacom if they had a choice. The *likely* or *very likely* rating for MTN was 57.58%, the rating for Cell C was 20.65% and the rating for Virgin Mobile was 21.29%. The majority of Vodacom customers (92.71%) and MTN customers (80.29%) indicated that they were *likely* or *very likely* to use the cellphone network service provider that they were using at the time, assuming that they had the choice. Vodacom and MTN customers indicated a low likelihood (*likely* or *very likely*) to use Cell C (20.65%) or Virgin Mobile (21.29%) if they had the choice.

The null hypothesis (refer to Chapter 5, paragraph 5.3.8.3 and table 5.7) that stated that there was no difference between Vodacom and MTN users regarding their likelihood to use Vodacom and MTN assuming they had a choice was rejected for their likelihood to use Vodacom and MTN (refer to Annexure C, table 36). Thus, Vodacom and MTN users differ at a statistically significant level regarding their likelihood to use Vodacom and MTN assuming they had a choice. Based on the mean rankings presented in the Mann-Whitney U test Vodacom users gave a higher ranking for their likelihood to use Vodacom and MTN users gave a higher ranking for their likelihood to use to MTN.

This finding supports the low level of category involvement, mentioned in paragraph 6.3.3.1. It indicates a strong preference to stay with the cellphone network service provider that respondents were using at the time, despite a moderate level of overall satisfaction (refer to paragraph 6.3.10). Vodacom, the market-share leader, is likely to benefit the most from this market dynamic (refer to Chapter 5, paragraph 5.3.6.2, table 5.3). The finding also supports the theory proposed by Ehrenberg that there are no strong or weak brands, but only big and small brands (Cant, *et al.*, 2007:264).

Analysis of the results according to customer-based brand equity group indicated that the high customer-based brand equity group gave higher likelihood-to-use ratings to Vodacom and MTN, than the low customer-based brand equity group.

The null hypothesis (refer to Chapter 5, paragraph 5.3.8.3 and table 5.7) that stated that there was no difference between the low and high customer-based brand equity groups regarding their likelihood to use Vodacom and MTN assuming they had a choice was rejected for their likelihood to use Vodacom (refer to Annexure C, table 37). Thus, the low and high customer-based brand equity groups differ at a statistically significant level regarding their likelihood to use Vodacom assuming they had a choice. This finding provides further support for Ehrenberg’s theory as previously discussed. It emphasises the challenge faced by Cell C to increase its market share (refer to Chapter 2, paragraph 2.3.3.7).

In the second question that was used to assess preferences regarding service providers, respondents were asked to **indicate their most preferred cellphone network service provider in a prompted question.** Table 6.32 presents the results with a breakdown according to network service provider used:

TABLE 6.32 MOST PREFERRED CELLPHONE NETWORK SERVICE PROVIDER (VODACOM AND MTN USERS)

Most preferred cellphone network service provider	Frequency count			Percentage (%) Breakdown		
	Total	Vodacom	MTN	Total	Vodacom	MTN
Vodacom	110	96	14	61.11	89.72	19.18
MTN	58	1	57	32.22	0.93	78.08
Virgin Mobile	9 1)	8	1	5.00	7.48	1.37
Cell C	1 1)	1	0	0.56	0.93	0.00
Other	2 1)	1	1	1.11	0.93	1.37
Respondents	180	107	73	100.00	100.00	100.00

Note: (1) *Sample size less than 30*
“Other” mentions Nashua Mobile.

Vodacom was mentioned as the most preferred cellphone network service provider by 61.11% of the respondents, MTN by 32.22%, Virgin Mobile by 5% and Cell C by 0.56%.

Vodacom received the most favourable rating from its customers, as 89.72% mentioned Vodacom as their most preferred network service provider. Virgin Mobile received the second-most favourable rating from Vodacom customers, while only 7.48% mentioned Virgin Mobile as their most preferred network service provider. Less than 1% of the Vodacom customers mentioned MTN, Cell C or any other cellphone network service provider as their most preferred provider. MTN was mentioned as the most preferred network service provider by 78.08% of the MTN customers, followed by Vodacom mentioned by 19.18%.

The null hypothesis (refer to Chapter 5, paragraph 5.3.8.3 and table 5.6) of no association between the variable *cellphone network service provider used* and the variable *most preferred cellphone network service provider* was rejected (refer to Annexure C, table 38). Thus, the variable *most preferred cellphone network service provider* impact on use of a specific cellphone network service provider and vice versa. Only Vodacom and MTN were included in the chi-square test as most preferred cellphone network service providers, due to the low frequency count for the other service providers.

The Cramer's V test was used to assess the strength of the association. The Cramer's V test was statistically significant (refer to Annexure C, table 39). The strength of the association was strong, as was indicated by a Cramer's V value of 0.815. The variable *most preferred cellphone network service provider* could be used as an indicator variable of use of a specific network service provider. This finding also supports Ehrenberg's theory about strong and weak brands.

The question was also analysed according to customer-based brand equity group. A very similar response was reported by the low and high customer-based brand equity groups. 59.09% of the low and 63.95% of the high customer-based brand equity group reported a preference to use Vodacom. Percentages for the other cellphone network service providers varied as follows: MTN 30.68% versus 32.56%, Virgin Mobile 6.82% versus 3.49%, Cell C 1.14% versus 0% and other 2.27% versus 0%. **The null**

hypothesis (refer to Chapter 5, paragraph 5.3.8.3 and table 5.6) of no association between the variable *customer-based brand equity group* and the variable *most preferred cellphone network service provider* was not rejected (refer to Annexure C, table 40). The absence of a systematic association between the variables supports the previous finding of a fairly similar level of customer-based brand equity among Vodacom and MTN users (refer to paragraph 6.3.3.2 c)).

6.3.10 Satisfaction with cellphone network service used

Respondents rated their overall satisfaction with their cellphone network service on a five-point rating scale. Table 6.33 presents the results with a breakdown according to cellphone network service provider used:

TABLE 6.33 OVERALL SATISFACTION (VODACOM AND MTN CUSTOMERS)

Overall satisfaction	Frequency count			Percentage (%) breakdown		
	Total	Vodacom	MTN	Total	Vodacom	MTN
Very dissatisfied	9	5	4	4.97	4.63	5.48
Dissatisfied	22	13	9	12.15	12.04	12.33
Neither satisfied nor dissatisfied	25	14	11	13.81	12.96	15.07
Satisfied	106	62	44	58.56	57.41	60.27
Very satisfied	19	14	5	10.50	12.96	6.85
Respondents/total	181	108	73	100.00	100.00	100.00

Note: Rating scale 1 = very dissatisfied, 2 = dissatisfied, 3 = neither dissatisfied nor satisfied, 4 = satisfied, 5 = very satisfied

In total 69.06% of the respondents indicated that they were satisfied or very satisfied (top-two box rating) with the cellphone service that they were using. The overall satisfaction ratings by Vodacom and MTN customers were very similar. The combined satisfied and very satisfied rating for Vodacom was 70.37% and that for MTN 67.12%. The combined very dissatisfied and dissatisfied rating for Vodacom was 16.67% and that for MTN 17.81%. **The null hypothesis (refer to Chapter 5, paragraph 5.3.8.3 and table 5.7) that stated that there was no difference between Vodacom and MTN users in terms of their overall satisfaction with the cellphone service used was not rejected (refer to Annexure C, table 41).** Thus, *overall satisfaction with the*

cellphone service used does not differ at a statistically significant level between Vodacom and MTN users. Only 10.5% of the respondents indicated that they were very satisfied and Vodacom and MTN, therefore, should strive to improve on their ratings.

The overall satisfaction rating was also analysed according to customer-based brand equity group. The combined satisfied and very satisfied rating (top-two box score) of the low customer-based brand equity group was 54.55%, compared to the 81.61% of the high customer-based brand equity group. The combined dissatisfied and very dissatisfied rating (bottom-two box score) of the low customer-based brand equity group was 27.27%, compared to the 8.05% of the high customer-based brand equity group.

The null hypothesis (refer to Chapter 5, paragraph 5.3.8.3 and table 5.7) that stated that there was no difference between the low and high customer-based brand equity groups in terms of their *overall satisfaction with the cellphone service used* was rejected (refer to Annexure C, table 42). Thus, *overall satisfaction with the cellphone service used* differs at a statistically significant level between the low and high customer-based brand equity groups. Based on the mean rank presented in the Mann-Whitney U test the high customer-based brand equity group gave a higher mean rank.

6.3.11 Brand associations

In total 29 statements were used to determine the user group's associations attached to the brands. Of these statements 25 were included in the questionnaire as brand association statements and four as brand performance statements. The brand performance statements *value for money*, *overall performance* and *customer service* were included to provide a summary measure of brand performance (refer to Chapter 5, paragraph 5.3.5.3 g) (ii) and 5.3.5.3 h)). The brand performance statement *distribution – access to outlets* was included as a measure for the proposed brand association dimension *market access* (refer to Chapter 5, paragraph 5.3.5.3 g)(ii)).

6.3.11.1 Brand association ratings

Respondents indicated their level of agreement with each brand association statement on a five-point scale, varying from *strongly disagree* to *strongly agree*. The scale values were defined as follows: *strongly disagree* = 1, *disagree* = 2, *neither agree nor disagree* = 3, *agree* = 4 and *strongly agree* = 5. *Don't know* was included as an option in the question.

The following statistics, analysed according to cellphone network service provider used, are presented in table 6.34: total number of respondents (*don't know* responses excluded), total top-two box score (*agree/strongly agree* percentage) for all the respondents, top-two box score for Vodacom users, top-two box score for MTN users, and the statistical significance of the Mann-Whitney U test. The results are presented in the same sequence as listed in Chapter 5, table 5.2.

TABLE 6.34 SUMMARY STATISTICS OF THE BRAND ASSOCIATION RATINGS

	Total respondents	Total top-two box	Vodacom top-two box(%)	MTN top-two box (%)	Statistical significant/significance level
1. Leadership measures/perceived quality					
Market leader (question 3.1.3)	164	84.1	89.4	75.0	No
Popular/most used brand (question 3.1.7)	157	72.0	87.0	45.6	1%
2. Brand associations that can be used to create differentiation					
2.1 Brand as product/perceived quality					
Affordable (question 3.1.14)	176	51.4	50.0	47.1	No
Brand that understands customer needs (question 3.1.9)	167	61.1	66.7	51.6	No
Overall performance (question 3.2.26) 1)	172	68.6	74.7	59.1	No
Value for money (question 3.2.20) 1)	166	46.4	50.0	40.6	No
Customer service (question 3.2.24) 1)	172	63.4	68.9	54.6	No
2.2 Brand as a personality					
This brand has a personality (question 3.1.19)	167	52.1	54.9	47.7	No
2.3 Organisational associations					
2.3.1 Brand likeability					
Likeable (question 3.1.21)	171	50.9	52.4	48.5	No
Fun to use (question 3.1.24)	171	44.4	46.2	41.5	No
Trendy and exciting (question 3.1.23)	167	52.1	52.9	50.8	No
Adds value to my lifestyle (question 3.1.25)	167	67.1	70.9	60.9	No
Sincere/down to earth (question 3.1.20)	166	30.7	30.4	31.2	No
2.3.2 Trust/care					
Trusted brand (question 3.1.8)	167	79.6	79.6	79.7	No
Keeps its promises (question 3.1.18)	161	40.8	42.3	38.5	No
Friendly and helpful (question 3.1.13)	176	63.1	65.5	59.4	No
Warm and caring (question 3.1.12)	160	41.2	41.4	41.0	No
2.3.3 Social responsibility (question 3.1.16)					
Cares for the environment (question 3.1.11)	139	41.0	44.8	34.6	No
Socially responsible (question 3.1.16)	150	44.7	46.2	42.2	No
2.3.4 Market access					
Easily accessible (question 3.1.22)	171	64.3	68.3	58.2	No
Distribution - access to outlets (question 3.2.21) 1)	163	71.8	76.2	64.5	No
2.3.5 Local versus global					
Local brand (question 3.1.2)	163	87.7	83.8	93.8	1%
South African brand (question 3.1.6)	158	81.6	77.1	88.7	No
African brand (question 3.1.4)	140	51.4	44.2	63.0	5%
Global brand (question 3.1.5)	137	54.0	64.8	34.7	1%
Prestigious/upmarket brand (question 3.1.1)	166	72.3	70.9	74.6	No
2.3.6 Technologically sophisticated					
Technologically sophisticated (question 3.1.10)	161	79.5	82.0	75.4	No
2.3.7 Innovative					
Innovative (question 3.1.15)	164	68.9	74.0	60.9	No
2.3.8 Unique					
Unique (question 3.1.17)	161	31.7	33.3	29.0	No

Note: (1) Included as a brand performance statement

Leadership measures

Vodacom received a more favourable rating compared to MTN for both statements included to measure this dimension. The top-two box score for Vodacom (87%) was much higher for the statement *popular/most used brand* than that of MTN (45.6%). **The null hypothesis of no difference between Vodacom and MTN users (refer to Chapter 5, paragraph 5.3.8.3 and table 5.7) for the statement *popular most used brand* (refer to table 6.34 and Annexure C, table 43) was rejected.** Vodacom has achieved a point-of-difference association with the statement (refer to Chapter 3, paragraph 3.7.1.3). Although Vodacom was also rated more favourably on the statement *market leader*, MTN's rating was sufficiently favourable to establish a point-of-parity association with the statement (refer to Chapter 3, paragraph 3.7.1.3).

Brand as a product

The top-two box scores for Vodacom were higher than those for MTN with regard to all the statements included to measure this dimension. Vodacom received low (50%) to fair (68.9%) top-two box ratings with only one statement, *overall performance* that received a top-two box rating of close to 75% (74.7%). MTN received low (40.6%) to mediocre (59.1%) top-two box ratings for all the statements. Both Vodacom and MTN received their lowest top-two box scores for the statements *value for money* (50.0% versus 40.6%) and *affordable* (50.0% versus 47.1%).

None of the null hypotheses of no difference between Vodacom and MTN users (refer to Chapter 5, paragraph 5.3.8.3 and table 5.7) for the statements included in the *brand as a product* dimension (refer to table 6.34 and Annexure C, table 43) was rejected. Based on top-two box ratings Vodacom is better positioned than MTN with regard to this dimension and is well-positioned to develop a point-of-difference association with the statement *overall performance* (refer to Chapter 3, paragraph 3.7.1.3)

Brand as a personality

Vodacom (54.9%) and MTN (47.7%) received low top-two box ratings for this statement. **The null hypothesis of no difference between Vodacom and MTN users (refer to Chapter 5, paragraph 5.3.8.3 and table 5.7) was not rejected (refer to table 6.34 and Annexure C, table 43).** Both Vodacom and MTN are poorly associated with the statement *has a personality*.

Brand likeability

From all the statements used to measure this dimension, both Vodacom (70.9%) and MTN (60.9%) received their highest top-two box ratings for the statement *adds value to my lifestyle*. Both received poor top-two box ratings for the statement *sincere/down to earth* (30.4% and 31.2%). The top-two box ratings for both Vodacom and MTN for all the other statements included to measure the dimension were low, varying between 41.5% and 52.9%.

None of the null hypotheses of no difference between Vodacom and MTN users (refer to Chapter 5, paragraph 5.3.8.3 and table 5.7) for the statements included to measure the dimension (refer to table 6.34 and Annexure C, table 43) *brand likeability* was rejected.

Vodacom has a stronger association with the statement *adds value to my lifestyle* and could use this as an area of advantage to develop a point-of-difference association (refer to Chapter 3, paragraph 3.7.1.3). Both Vodacom and MTN are poorly associated with all the other statements included to measure the dimension *brand likeability*.

Trust/care

Vodacom (79.6%) and MTN (79.7%) received their highest top-two box ratings for the statement *trusted brand*. The ratings for both network service providers are sufficiently strong to define the statement as a category point-of-parity association. Vodacom received a more favourable top-two box rating (65.5%) than MTN (59.4%) for the statement *friendly and helpful* and can use this as an area of advantage to develop a

point-of-difference association (refer to Chapter 3, paragraph 3.7.1.3). Both Vodacom and MTN received poor top-two box ratings for the statements *keeps its promises* (42.3% versus 38.5%) and *warm and caring* (41.4% and 41.0%).

None of the null hypotheses of no difference between Vodacom and MTN users (refer to Chapter 5, paragraph 5.3.8.3 and table 5.7) for the statements included to measure the *trust/care* dimension, was rejected (refer to table 6.34 and Annexure C, table 43).

Social responsibility

Vodacom received poor top-two box ratings (44.8% and 46.2%) for both the statements included to measure this dimension, i.e. *cares for the environment* and *socially responsible*. The ratings for MTN were very similar (34.6% and 42.2%).

None of the null hypotheses of no difference between Vodacom and MTN users (refer to Chapter 5, paragraph 5.3.8.3 and table 5.7) for the statements included to measure this dimension was rejected (refer to table 6.34 and Annexure C, table 43).

Market Access

Vodacom received higher top-two box ratings than MTN for both statements, *easily accessible* and *distribution – access to outlets* (68.3% and 76.2% versus 58.2% and 64.5%), included to measure this dimension.

None of the null hypotheses of no difference between Vodacom and MTN users (refer to Chapter 5, paragraph 5.3.8.3 and table 5.7) for the statements included to measure the dimension was rejected (refer to table 6.34 and Annexure C, table 43).

Vodacom is better positioned than MTN with regard to both statements included in this dimension and Vodacom can use the dimension as an area of advantage to develop point-of-difference associations (refer to Chapter 3, paragraph 3.7.1.3).

Local versus global

Both Vodacom and MTN received top-two box ratings higher than 70% for the statements *local brand* (83.8% and 93.8%), *South African brand* (77.1% and 88.7%) and *prestigious/upmarket brand* (70.9% and 74.6%). Both Vodacom and MTN received top-two box ratings below 70% for the statements *African brand* (44.2% and 63.0%) and *global brand* (64.8% and 34.7%).

The null hypotheses of no difference between Vodacom and MTN users (refer to Chapter 5, paragraph 5.3.8.3 and table 5.7) for the statements *local brand*, *African brand* and *global brand* (refer to table 6.34 and Annexure C, table 43) were rejected.

Although MTN received a higher rating for the statement *local brand*, Vodacom has established a sufficiently strong association to create a competitive point of parity with regard to this statement. Category points of parity have also been established with regard to the statements *South African brand* and *prestigious/upmarket brand*. Vodacom is better positioned with regard to the statement *global brand* and can use it as an area of advantage to develop a point-of-difference association. MTN is better positioned with regard to the statement *African brand* and can use it as an area of advantage to develop a point-of-difference association (refer to Chapter 3, paragraph 3.7.1.3).

Technologically sophisticated

Both Vodacom (82%) and MTN (75.4%) received high top-two box ratings for the statement *technologically sophisticated*. **The null hypothesis of no difference between Vodacom and MTN users regarding their rating of the statement *technologically sophisticated* (refer to Chapter 5, paragraph 5.3.8.3 and table 5.7) was not rejected (refer to table 6.34 and Annexure C, table 43).** A category point of parity has been established with regard to this statement (refer to Chapter 3, paragraph 3.7.1.3).

Innovative

Vodacom received a top-two box rating of 74% and MTN a rating of 60.9% for this statement. **The null hypothesis of no difference between Vodacom and MTN users regarding their rating of the statement *innovative* (refer to Chapter 5, paragraph 5.3.8.3 and table 5.7) was not rejected (refer to table 6.34 and Annexure C, table 43).**

Vodacom is better positioned with regard to the statement *innovative* and can use it as an area of advantage to develop a point-of-difference association (refer to Chapter 3, paragraph 3.7.1.3).

Unique

Both Vodacom (33.3%) and MTN (29%) received poor top-two box ratings for this statement. **The null hypothesis of no difference between Vodacom and MTN users regarding their rating of the statement *unique* (refer to Chapter 5, paragraph 5.3.8.3 and table 5.7) was not rejected (refer to table 6.34 and Annexure C, table 43).**

Hypothesis testing of the brand association ratings by customer-based brand equity group

The null hypothesis of no difference between the low and high customer-based brand equity groups regarding their rating of all the brand association statements (refer to Chapter 5, paragraph 5.3.8.3 and table 5.7) were rejected (refer to Annexure C, table 44). Based on the mean ranks presented in the Mann-Whitney U test the high customer-based brand equity group gave higher mean ranks on all the brand association statements.

Summary of the brand association ratings research results

Vodacom received higher top-two box ratings than MTN for all the brand relationship statements, with the exception of *local brand*, *South African brand*, *African brand*, *prestigious/upmarket brand* and *trusted brand*.

The Mann-Whitney U test indicated that the ratings for the two groups differed statistically significantly with regard to the following brand association statements:

- *popular/most used brand*
- *local brand*
- *African brand*
- *global brand*

Both Vodacom and MTN received high top-two box ratings for the following brand relationship statements:

- *market leader* (Vodacom 89.4% and MTN 75.0%)
- *trusted brand* (Vodacom 79.6% and MTN 79.7%)
- *local brand* (Vodacom 83.8% and MTN 93.8%)
- *South African brand* (Vodacom 77.1% and MTN 88.7%)
- *prestigious/upmarket brand* (Vodacom 70.9% and MTN 74.6%)
- *technologically sophisticated* (Vodacom 82.2% and MTN 79.5%)

The above-mentioned brand associations can be considered as the category points of parity. Both Vodacom and MTN received strong and favourable ratings for these brand associations. Although MTN has a stronger association with regard to *local brand* and *South African brand*, Vodacom has established a sufficiently strong association with these statements to create point-of-parity associations. The differences with regard to the other brand association statements, as mentioned above, are marginal with both Vodacom and MTN having strong associations (refer to Chapter 3, paragraph 3.7.1.3).

Vodacom has created a competitive point-of-difference association, i.e. strong, favourable and unique, with regard to the brand association *popular/most used brand*. Although Vodacom was rated significantly higher on the statement *global brand* the association is not strong enough to be considered as a competitive point-of-difference association (refer to Chapter 3, paragraph 3.7.1.3).

Vodacom received higher top-two box ratings than MTN for the following brand association statements:

- *distribution – access to outlets* (76.2% versus 64.5%)
- *overall performance* (74.7% versus 59.1%)
- *innovative* (74% versus 60.9%)
- *adds value to my lifestyle* (70.9% versus 60.9%)
- *customer service* (68.9% versus 54.6%)
- *easily accessible* (68.3% versus 58.2%)
- *brand that understands customer needs* (66.7% versus 51.6%)
- *friendly and helpful* (65.5% versus 59.4%)

Vodacom is well-positioned to use its positioning with regard to the above-mentioned statements to create competitive point-of-difference associations (refer to Chapter 3, paragraph 3.7.1.3).

MTN received a higher top-two box rating than Vodacom for the brand association statement *African brand* and can use its positioning with regard to this statement to create a competitive point-of-difference association (refer to Chapter 3, paragraph 3.7.1.3).

Both Vodacom and MTN received low top-two box ratings for the following brand relationship statements:

- *value for money* (50% and 40.6%)
- *affordable* (50% and 47.1%)
- *this brand has a personality* (54.9% and 47.7%);

- *likeable* (52.4% and 48.5%)
- *fun to use* (46.2% and 41.5%)
- *trendy and exciting* (52.9% and 50.8%)
- *keeps its promises* (42.5% and 38.5%)
- *warm and caring* (41.14% and 41%)
- *cares for the environment* (44.8% and 38.5%)
- *socially responsible* (46.2% and 42.2%)
- *unique* (33.3% and 29%)
- *sincere/down to earth* (30.4% and 31.2%)

The low top-two box ratings for *value for money* and *affordable* can be explained by considering the regulated environment and difficulty to enter the market – results of the investment in infrastructure that is required (refer to Chapter 2, paragraph 2.4). MTN received low (40.6%) to mediocre (59.1%) top-two box ratings for all the statements included to measure the *brand as a product/perceived value* dimension. The results suggest that MTN has a performance deficiency compared to Vodacom with regard to this dimension (refer to Chapter 3, paragraph 3.5.2.1).

All the brand association statements included in the *brand as a personality* dimension and the *organisational association* dimensions (*brand likeability*, *trust/care*, *social responsibility* and *unique*) received low top-two box ratings. These dimensions, and the statements used to measure them, can be classified as category weaknesses.

The low top-two box rating for the brand association *unique* is supported by the fact that only one point-of-difference association was identified. The low top-two box rating for *social responsibility* was unexpected, considering the prominence of corporate social responsibility mentioned by both Vodacom and MTN (refer to Chapter 2, paragraph 2.4.6).

The Mann-Whitney U test indicated that the ratings of all the brand association statements differed statistically significantly between the low and high customer-based

brand equity groups. Based on the mean ranks presented in the Mann-Whitney U test the high customer-based brand equity group gave higher mean ranks on all the brand association statements. Thus, the high customer-based brand equity group held more favourable brand associations than the low customer-based brand equity group.

6.3.11.2 Factor analysis of the brand association ratings

Factor analysis was used to analyse the structure of the brand association ratings. All the brand association and performance statements used to measure the proposed brand association dimensions (refer to table 6.34), were included in the analysis. Excluding cases with missing values provided the best results. Applying this procedure a total of 95 respondents that have rated all the statements were used in the analysis. The factor analysis identified five factors that cumulatively accounted for 74.16% of the total variance. Factor rotation was necessary to interpret the factors. As a result of factor rotation the total variance accounted for by factor one declined from 53.20% to 27.80%. All the requirements for the use of factor analysis were met. A value of 0.916 was obtained for the Kaiser-Meyer-Olkin measure of sampling adequacy. Values between 0.5 and 1.0 on the Kaiser-Meyer-Olkin measure indicate that the use of factor analysis is appropriate. Bartlett's test of sphericity was statistically significant at the 0.01 level. Table 45 in Annexure C presents the eigenvalues for the identified factors and the variance explained. The rotated factor matrix is presented in table 6.35:

TABLE 6.35 ROTATED FACTOR MATRIX BRAND ASSOCIATION STATEMENTS

Statements	Factor				
	1	2	3	4	5
Likeable	.815	.235	.111	.260	.139
Sincere/down to earth	.789	.076	.274	.301	.146
Fun to use	.788	.181	.232	.279	.209
Easily accessible	.768	.310	.154	-.118	.153
Keeps its promises	.747	.252	.288	.139	.101
Trendy and exciting	.740	.230	.170	.336	.213
Has a personality	.716	.059	.033	.444	.200
Unique	.710	.191	.012	.366	.245
Brand that understands customer needs	.619	.279	.301	.238	.390
Adds value to my lifestyle	.588	.338	.152	.122	.484
Friendly and helpful	.581	.494	.263	.318	.076
Innovative	.542	.360	.006	.225	.416
Technologically sophisticated	.497	.265	.264	.069	.460
Trusted brand	.468	.374	.388	.070	.345
Customer service	.387	.786	.047	.117	.025
Distribution - access to outlets	.089	.730	-.009	.116	.357
Overall performance	.417	.703	.293	.240	.186
Value for money	.336	.534	.275	.483	.122
Local brand	.117	.087	.902	-.031	.080
South African brand	.145	-.025	.788	.214	.263
African brand	.250	.189	.727	.277	.000
Prestigious	.312	.280	.498	.432	.167
Cares for the environment	.249	.140	.169	.718	.439
Socially responsible	.410	.367	.258	.629	.090
Affordable	.577	.080	.159	.591	-.011
Warm and caring	.533	.233	.224	.544	.216
Global brand	.191	-.018	-.004	.203	.786
Market leader	.288	.327	.295	.050	.689
Popular brand	.089	.468	.290	.095	.604

Factor one

The following statements had their highest loadings on factor one: (factor loadings given in brackets): *likeable*, question 3.1.21 (0.815); *sincere/down to earth*, question 3.1.20 (0.789); *fun to use*, question 3.1.24 (0.788); *easily accessible*, question 3.1.22 (0.768); *keeps its promises*, question 3.1.18 (0.747); *trendy and exciting*, question 3.1.23 (0.740); *has a personality*, question 3.1.19 (0.716); *unique*, question 3.1.17 (0.710); *brand that understands customer needs*, question 3.1.9 (0.619); *adds value to my lifestyle*, question 3.1.25 (0.588); *friendly and helpful*, question 3.1.13 (0.581); *innovative*, question 3.1.15 (0.542); *technologically sophisticated*, question 3.1.10 (0.497) and *trusted brand*, question 3.1.8 (0.468).

Brand associations with a loading higher than 0.60 on factor one, and with a loading of less than 0.450 on any other factor, were considered for inclusion in one construct to measure the dimension represented by factor one. The construct recommended to represent factor one included the following brand associations: *likeable*, question 3.1.21 (0.815); *sincere/down to earth*, question 3.1.20 (0.789); *fun to use*, question 3.1.24 (0.788); *easily accessible*, question 3.1.22 (0.768), *keeps its promises*, question 3.1.18 (0.747); *trendy and exciting*, question 3.1.23 (0.740); *has a personality*, question 3.1.19 (0.716); *unique*, question 3.1.17 (0.710) and *brand that understands customer needs*, question 3.1.9 (0.619). The statements contained in factor one can be described as the *brand likeability dimension*.

Factor two

The following statements had their highest loadings on factor two (factor loadings given in brackets): *customer service*, question 3.2.25 (0.786); *distribution - access to outlets*, question 3.2.21 (0.730); *overall performance*, question 3.2.26 (0.703) and *value for money*, question 3.2.20 (0.534).

Brand associations with a loading higher than 0.60 on factor two, and with a loading of less than 0.450 on any other factor, were considered for inclusion in one construct to measure the dimension represented by factor two. The construct recommended to

represent factor two included the following brand associations: *customer service*, question 3.2.25 (0.786); *overall performance*, question 3.2.26 (0.703) and *distribution - access to outlets*, question 3.2.21 (0.730). The statements contained in factor two can be described as the *brand as a product/perceived value* dimension.

Factor three

The following statements had their highest loadings on factor three (factor loadings given in brackets): *local brand*, question 3.1.2 (0.902); *South African brand*, question 3.1.6 (0.788); *African brand*, question 3.1.4 (0.727) and *prestigious/upmarket brand*, question 3.1.1 (0.498).

Brand associations with a loading higher than 0.60 on factor three, and with a loading of less than 0.470 on any other factor, were considered for inclusion in one construct to measure the dimension represented by factor three. The construct recommended to represent factor three included the following brand associations: *local brand*, question 3.1.2 (0.902); *South African brand*, question 3.1.6 (0.788) and *African brand*, question 3.1.4 (0.727). The statements contained in factor three can be described as the *local brand/African brand* dimension.

Factor four

The following statements had their highest loadings on factor four (the factor loadings are given in brackets): *cares for the environment*, question 3.1.11 (0.718); *socially responsible*, question 3.1.16 (0.629); *affordable*, question 3.1.4 (0.591) and *warm and caring*, question 3.1.12 (0.544).

Brand associations with a loading higher than 0.60 on factor four and with a loading of less than 0.470 on any other factor, were considered for inclusion in a construct to measure the dimension represented by factor four. The construct recommended to represent factor four included the following statements: *cares for the environment*, question 3.1.11 (0.718) and *socially responsible*, question 3.1.16 (0.629). The brand

associations contained in factor four can be described as the *social responsibility* brand dimension.

Factor five

The following statements had their highest loadings on factor five (factor loadings given in brackets): *global brand*, question 3.1.5 (0.786); *market leader*, question 3.1.3 (0.689) and *popular/most used brand*, question 3.1.7 (0.604).

Brand associations with a loading higher than 0.60 on factor five and with a loading of less than 0.470 on any other factor were considered for inclusion in a construct to measure the dimension represented by factor five. The construct recommended to represent factor five included the following statements: *global brand*, question 3.1.5 (0.786), *market leader*, question 3.1.3 (0.689) and *popular/most used brand*, question 3.1.7 (0.604). The brand associations contained in factor five can be described as the *leadership/perceived quality* brand dimension.

It is interesting that the brand association *prestigious/upmarket* (question 3.1.1) had such a low loading (0.167) on the *leadership/perceived quality* brand dimension. Scholars consider the *global brand* association as an opportunity to develop the *prestigious/upmarket* association as well, in terms of brand positioning. However, this should be done by considering the risk that brand positioning may sacrifice the benefits of a brand that is perceived as having strong local roots (as reflected by the *local brand/African brand* dimension) (refer to Chapter 3, paragraph 3.7.4.1). The research results indicated that the brand association *prestigious/upmarket brand* was essentially included in the *local brand/South African brand* (0.498) and *social responsibility brand* (0.432) dimensions.

Summary of the brand association factor analysis

The purpose of the brand association factor analysis was to make data reduction possible. Factor analysis of the statements included, identified five dimensions that cumulatively accounted for 74.16% of the total variance in the data. These dimensions

will be referred to as the *brand likeability* dimension, the *brand as a product/perceived value* dimension, the *local brand/African brand* dimension, the *social responsibility* brand dimension and the *leadership/perceived quality* brand dimension. The *brand likeability* dimension accounted for 53.20% of total variation before factor rotation and for 27.80% after factor rotation. Reliability analysis of the statements that were identified to measure the five brand association dimensions will be discussed in more detail:

6.3.11.3 Reliability analysis of the brand association dimensions

Before doing a reliability analysis of the statements that were identified to measure the brand association dimensions, the sample size required to estimate coefficient alpha should be considered:

Sample size for coefficient alpha and validity

As previously discussed, the minimum sample size for estimating coefficient alpha is dependent on the level of the first (largest) eigenvalue obtained from principal component analysis (PCA) (refer to Chapter 5, paragraph 5.3.8.10). The first eigenvalue of the sample data set was 15.428 (refer to Annexure C table 45). This indicated that a sample size of 30 would be a very robust estimator of the population coefficient alpha (refer to Chapter 5, paragraph 5.3.8.10). Validity of the dimensions identified, was based on content validity (refer to Chapter 5, paragraph 5.3.8.10).

Brand likeability dimension

Cronbach's alpha coefficient for the brand statements included to measure this dimension was 0.949. This confirmed a high level of internal consistency for the measurement scale that was used to measure the *brand likeability* dimension. The reliability statistics of the statements included in the summated measurement scale are presented in table 6.36:

TABLE 6.36 RELIABILITY STATISTICS: *BRAND LIKEABILITY* SUMMATED MEASUREMENT SCALE

Statements	Valid cases	Item-to-total correlation	Squared multiple correlation	Cronbach's alpha if item deleted
Likeable	146	.869	.776	.940
Sincere/down to earth	146	.863	.785	.940
Fun to use	146	.875	.807	.939
Easily accessible	146	.722	.563	.948
Keeps its promises	146	.795	.659	.944
Trendy and exciting	146	.785	.714	.944
Has a personality	146	.771	.614	.945
Unique	146	.786	.662	.944
Understands needs	146	.757	.597	.946

Deletion of any of the statements would have decreased Cronbach's alpha coefficient. Thus all the statements were included in the summated measurement scale. The statements included in the scale met all requirements in terms of the inter-item and item-to-total correlations (refer to Chapter 6, paragraph 6.3.3.2 b)).

Brand as a product/perceived value dimension

Cronbach's alpha coefficient for the brand statements included to measure this dimension was 0.819. This indicated a high level of internal consistency for the summated measurement scale. The reliability statistics of the statements included in the summated measurement scale are presented in table 6.37:

TABLE 6.37 RELIABILITY STATISTICS: *BRAND AS A PRODUCT* SUMMATED MEASUREMENT SCALE

Statements	Valid cases	Item-to-total correlation	Squared multiple correlation	Cronbach's alpha if item deleted
Overall performance	158	.781	.648	.646
Customer service	158	.727	.621	.702
Distribution - access to outlets	158	.542	.303	.871

Exclusion of the statement *distribution - access to outlets* would have resulted in an increase of Cronbach's alpha coefficient from 0.819 to 0.871. Exclusion of the statement would, however, also have resulted in a measure that did not represent all the multiple facets of the concept. Thus, all the statements were included in the summated measurement scale to measure the *brand as a product/perceived value* dimension. The statements included met all requirements in terms of the inter-item and item-to-total correlations (refer to Chapter 6, paragraph 6.3.3.2 b)).

Local brand/African brand dimension

Cronbach's alpha coefficient for the statements included to measure this dimension was 0.794. This indicated a high level of internal consistency for the summated measurement scale. The reliability statistics of the statements included in the summated measurement scale are presented in table 6.38:

TABLE 6.38 RELIABILITY STATISTICS: LOCAL/AFRICAN BRAND SUMMATED MEASUREMENT SCALE

Statements	Valid cases	Item-to-total correlation	Squared multiple correlation	Cronbach's alpha if item deleted
Local brand	134	.724	.550	.667
South African brand	134	.657	.500	.702
African brand	134	.594	.363	.814

Although exclusion of the statement *African brand* would have increased Cronbach's alpha coefficient from 0.794 to 0.814, it was seen as an extension of local versus other continents. Thus, all three statements were included in the summated measurement scale to measure the dimension. The statements met all the requirements in terms of the inter-item and item-to-total correlations (refer to Chapter 6, paragraph 6.3.3.2 b)).

Social responsibility brand dimension

Cronbach's alpha coefficient for the statements included to measure this dimension was 0.786. This indicated a high level of internal consistency for the summated measurement scale. The two statements included in the summated measurement scale met all the requirements in terms of the inter-item correlation and item-to-total correlations (refer to Chapter 6, paragraph 6.3.3.2 b)).

Leadership/perceived quality brand dimension

Cronbach's alpha coefficient for the statements included to measure the *leadership/perceived quality brand* dimension was 0.703. This indicated a high level of internal consistency for the summated measurement scale. The reliability statistics for the statements identified to measure this dimension are presented in table 6.40:

TABLE 6.39 RELIABILITY STATISTICS: LEADERSHIP/PERCEIVED QUALITY SUMMATED MEASUREMENT SCALE

Statements	Valid cases	Item-to-total correlation	Squared multiple correlation	Cronbach's alpha if item deleted
Market leader	132	.600	.426	.527
Global brand	132	.420	.177	.772
Popular brand	132	.575	.412	.551

Exclusion of the statement *global brand* would have increased Cronbach's alpha coefficient from 0.703 to 0.772. The statement also did not meet the required item-to-total correlation of 0.50. The statements *market leader* and *popular brand* were considered as sufficient to describe the multiple facets of the *leadership/perceived quality* brand dimension. Thus, only the above-mentioned two statements were included in the summated measurement scale. The included statements met all the requirements in terms of the inter-item and item-to-total correlations (refer to Chapter 6, paragraph 6.3.3.2 b)).

Summary of the brand association dimension reliability analysis

Cronbach's alpha coefficient for the summated scales, developed to measure the brand association dimensions, varied as follows: *brand likeability* dimension 0.949, brand as *product/perceived value* dimension 0.819, *local brand/African brand* dimension 0.794, *social responsibility* brand dimension 0.786 and *leadership/perceived quality* brand dimension 0.772.

The above-mentioned summated measurement scales were used to compile ratings for the brand association dimensions according to service provider user group (Vodacom and MTN users) and customer-based brand equity group.

6.3.11.4 Hypothesis testing of the summated brand association dimensions (Vodacom and MTN users)

The null hypotheses for the summated brand association dimensions *local brand/African brand* and *leadership/perceived quality*, that stated that there was no difference between the ratings of Vodacom and MTN users with regard to the summated brand association dimensions, were rejected. Based on the mean ranks presented in the Mann-Whitney U test MTN received a higher rating on the local brand/African brand association dimension and Vodacom a higher rating on the leadership/perceived quality brand association dimension (refer to Annexure C, table 46).

Hypothesis testing of the summated brand association dimensions according to customer-based brand equity group

The null hypotheses for all the summated brand association dimensions, that stated that there was no difference between the ratings of the low and high customer-based brand equity groups with regard to all the summated brand association dimensions, were rejected. Based on the mean ranks presented in the Mann-Whitney U test the high customer-based brand equity group gave higher mean ranks on all the summated brand association dimensions (refer to Annexure C, table 47). Thus, the high customer-based brand equity group held more favourable brand associations than the low customer-based brand equity group.

6.3.11.5 The summated brand association dimensions as drivers of customer-based brand equity

Stepwise multiple regression was used to analyse the relationship between the summated brand association dimensions and customer-based brand equity (refer to Chapter 5, paragraphs 5.3.8.5 and 5.3.8.11, and figure 5.7). Customer-based brand equity, the dependent variable, was measured by using the summated score for customer-based brand equity as an indicator variable (refer to Chapter 6, paragraph 6.3.3.2.). The summated scores for the brand association dimension were used as the independent variables (refer to Chapter 5, paragraph 5.3.8.5). Please refer to tables 48

and 49 in Annexure C for the descriptive statistics of the dependent variable and the independent variables, as well as to the ANOVA table. **As indicated in the ANOVA table, the null hypothesis that the coefficient vector differs significantly from zero was statistically significant at the 0.01 level (refer to Chapter 5, paragraph 5.3.8.8. and Annexure C, table 49).** A summary of the model fit statistics for the best fit is presented in table 6.40:

TABLE 6.40 MODEL FIT STATISTICS FOR THE SUMMATED BRAND ASSOCIATION DIMENSION (REGRESSION ANALYSIS)

Model	R	R square	Adjusted R square	Standard error of the estimate
1	.706 ^a	.498	.493	3.18254

a. Predictors: (Constant), brand as a product/perceived value (BAD 2)

Dependent variable: Customer-based brand equity (CBBE)

The model had a multiple correlation of 0.706 with an adjusted R square of 0.498. This implied a good fit as the model explained 49.8% of the total variation in the dependent variable. The collinearity statistics of the independent variable included, as well as independent variables excluded, fell within acceptable ranges of collinearity. A summary of the model coefficients and collinearity statistics is presented in table 6.41:

TABLE 6.41 COEFFICIENTS FOR THE BRAND ASSOCIATION DIMENSION (REGRESSION ANALYSIS)

Model		Unstandardised coefficients		Standardised coefficients	T	Sig.	Collinearity statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.789	1.372		2.033	.045		
	BAD 2	.953	.096	.706	9.963	.000	1.000	1.000

a. Dependent variable: customer-based brand equity (CBBE)

The null hypothesis that one or more of the partial regression coefficients have a value different from zero (refer to Chapter 5, paragraphs 5.3.8.3 and 5.3.8.8) was rejected for one coefficient, the *brand as a product/perceived value* brand association dimension (BAD2). This coefficient was statistically significant at the 0.01 level. The lack-of-fit test confirmed a linear relationship between the dependent variable and the independent variable included in the model at the 0.01 level of statistical significance (refers to Annexure C, table 50). The *brand as a product/perceived value* brand association dimension included the following brand association statements: *overall performance*, *customer service* and *distribution - access to outlets* (refer to Chapter 5, paragraph 5.3.5.3 g) (ii)). These results imply a strong linear relationship between the summated score for customer-based brand equity (indicator variable) and the functionally-orientated summated brand association dimension *brand as product/perceived value*.

The exclusion of the *brand likeability* dimension indicates that brand feelings have not been established yet (refer to Chapter 3, figure 3.8). This also supports the research finding that suggests a relatively low level of category involvement within the target market (refer to paragraph 6.3.3.1). The low top-two box score for the brand relationship statement *I have a personal relationship with this brand* (refer to table 6.15) also strongly suggests that a high level of attitudinal attachment has not been established yet. All indications are that, for most of the users in the target market, brand relationship resides at the brand performance level as defined in the customer-based brand equity pyramid (refer to Chapter 3, paragraph 3.5).

6.3.12 Brand performance

In total 26 statements were used in the detailed functional assessment of brand performance (refer to Chapter 5, paragraph 5.3.5.3 h)). The detailed brand performance assessment was subject to the limitation that respondents could only rate the performance of services that they were using. This was the motivating factor for the inclusion of the brand performance statements *overall performance*, *value for money*,

customer service and *distribution – access to outlets* in the brand association analysis. As discussed (refer to Chapter 5, paragraph 5.3.5.3 g) (ii) and paragraph 5.3.5.3 h)), a value measure that provides a summary indication of the brand's success in creating the value proposition, is more appropriate for use in the measurement of customer-based brand equity than numerous individual brand performance measures.

The detailed brand performance statements (refer to section 3.2 of the questionnaire, questions 3.2.1 to 3.2.26) were included to provide additional insight into brand performance and brand usage. The information was also analysed to identify brand performance dimensions and to assess the brand performance dimensions as drivers of customer-based brand equity. The factor analysis, reliability analysis and multiple regression analysis of the detailed brand performance statements, however, did have a limitation. This as a result of the limited number of responses that were obtained.

6.3.12.1 Brand performance ratings

The brand performance statements were rated on a five-point rating scale that varied from very poor to excellent. The scale values were defined as follows: *very poor* = 1, *poor* = 2, *neither poor nor good* = 3, *good* = 4 and *excellent* = 5. *Don't know* was included as an option in the question.

The following statistics, analysed according to network service provider used, are presented in table 6.42: total number of respondents (*don't know* responses excluded), total top-two box score (*agree/strongly agree* percentage) for all the respondents, top-two box score for Vodacom users, top-two box score for MTN users and the statistical significance of the Mann-Whitney U test.

TABLE 6.42 SUMMARY STATISTICS OF BRAND PERFORMANCE RATINGS

	Respondents	Total Top-two box score	Vodacom top-two Box percentage (%)	MTN top-two box percentage (%)	Statistical significant/significance level
Voice services (question 3.2.1)	173	76.9	79.4	72.7	No
Internet access service (question 3.2.2)	121	74.4	78.6	68.6	No
E-mail access (question 3.2.3)	113	72.6	77.3	66.0	No
Instant messaging services (question 3.2.4)	89	76.4	81.5	68.6	No
Content services (question 3.2.5)	90	64.4	70.4	55.6	No
Entertainment services(question 3.2.6)	90	63.3	74.1	43.8	5%
Emergency services(question 3.2.7)	96	63.5	72.1	48.6	No
GPS services(question 3.2.8)	99	64.7	71.2	55.0	No
Services that enable users to control costs (question 3.2.9)	119	64.7	74.7	47.7	5%
Easy to use (question 3.2.10)	148	67.6	76.1	53.6	5%
Prepaid services (question 3.2.11)	89	68.5	77.2	53.1	No
Contract services (question 3.2.12)	171	73.7	80.4	63.8	No
Cellphone handsets (question 3.2.13)	158	74.7	80.0	66.7	No
Cellphone insurance (question 3.2.14)	115	55.6	60.9	47.8	No
Cellphone maintenance and repair (question 3.2.15)	142	46.5	51.7	38.2	No
One-stop-service (question 3.2.16)	156	65.4	72.0	53.6	No
Network coverage (question 3.2.17)	173	67.6	72.6	59.7	No
Reliability of cellphone network (question 3.2.18)	175	62.9	69.2	52.9	No
Speed of data services (question 3.2.19)	127	60.6	66.2	52.0	No
Value for money (question 3.2.20) 1)	166	46.4	50.0	40.6	No
Distribution - access to outlets (question 3.2.21) 1)	163	71.8	76.2	64.5	No
Advertising (question 3.2.22)	162	84.0	88.1	77.1	No
Websites (question 3.2.23)	126	74.6	81.3	64.7	No
Customer service (question 3.2.24) 1)	172	63.4	68.9	54.6	No
Loyalty rewards (question 3.2.25)	115	38.3	40.9	34.1	No
Overall performance (question 3.2.26) 1)	172	68.6	74.5	59.1	No

Note: (1) Statements included in the brand association assessment as well (refer to table 6.1)

The null hypotheses of no difference between Vodacom and MTN users (refer to Chapter 5, paragraph 5.3.8.3 and table 5.7) in terms of their rating of the brand performance statements were rejected for the statements *entertainment services* (question 3.2.6), *services that enable users to control costs* (question 3.2.9), *services that are easy to use* (question 3.2.10) and *prepaid services*. Based on the mean ranks presented in the Mann-Whitney U test Vodacom received higher ratings than MTN for all of the above statements (refer to table 6.42 and Annexure C, table 51).

Vodacom received higher top-two box scores than MTN for all the brand performance statements. Both Vodacom and MTN received top-two box scores higher than 70% for the statements *voice services* (79.4% and 72.7%) and *advertising* (88.1% and 77.1%).

Vodacom received top-two box ratings below 70% for the following statements: *cellphone insurance* (60.9%), *cellphone maintenance and repair* (51.7%), *reliability of the cellphone network* (69.2%), *speed of data services* (66.2%), *value for money* (50%) and *customer service* (68.9%). These areas of performance can be considered as weaknesses of both Vodacom and MTN.

Vodacom received top-two box ratings above 70% for all the other brand performance statements. As previously mentioned, MTN received top-two box ratings above 70% for two statements only: *voice services* and *advertising*.

The brand performance ratings suggest that Vodacom has a performance deficiency compared to MTN.

The brand performance ratings were also analysed according to customer-based brand equity group:

Hypothesis testing of the brand association performance ratings according to customer-based brand equity group

The null hypotheses of no difference between the low and the high customer-based brand equity groups (refer to Chapter 5, paragraph 5.3.8.3 and table 5.7) in terms of their rating of the brand performance statements were rejected for all the statements (refer to Annexure C, table 52). Based on the mean ranks presented in the Mann-Whitney U test the low customer-based brand equity group gave lower and the high customer-based brand equity group higher ratings on all the brand performance statements (refer to Annexure C, table 51).

6.3.12.2 Factor analysis of brand performance

Factor analysis was used to analyse the structure of the brand performance ratings. All the brand performance statements were included in the analysis (refer to table 6.38). The brand performance statements *overall performance* (question 3.2.26), *value for money* (question 3.2.20), *customer service* (question 3.2.24), and *distribution - access to outlets* (question 3.2.21), previously included in the brand association factor analysis (refer to table 6.34), were also included in the brand performance factor analysis. This was necessary to optimise the total variance explained by the factor analysis, and to enhance interpretation of the identified factors.

The best solution in terms of total variance explained, was obtained by excluding cases with missing values. This resulted in each statement being rated by 43 respondents. In general a sample size of 50 observations is required for factor analysis. As a general rule, a ratio of five times as many observations as the number of variables analysed, is required (refer to Chapter 5, paragraph 5.3.8.9). In order to meet the sample size requirements, the only alternative would have been to exclude performance statements with low response rates (refer to paragraph 6.3.12). This, however, would have resulted in a significant loss of the information required to interpret the brand performance dimensions. According to Hair *et al.* (2010:102) a potential limitation of a small sample

size includes the risk to derive factors that are sample-specific and have little generalisability. Results would therefore have to be interpreted cautiously.

The factor analysis identified six factors that cumulatively accounted for 75.84% of the total variance. All the requirements for the use of factor analysis, with the exception of the sample size limitation, were met. A value of 0.770 was obtained for the Kaiser-Meyer-Olkin measure of sampling adequacy. Values between 0.5 and 1.0 on the Kaiser-Meyer-Olkin measure indicate that the use of factor analysis is appropriate. Bartlett's test of sphericity, was statistically significant at the 0.000 level. Annexure C, table 53 presents the eigenvalues for the identified factors and the variance explained. The rotated factor matrix is presented in table 6.43:

TABLE 6.43 ROTATED FACTOR MATRIX: BRAND PERFORMANCE STATEMENTS

Statements	Component					
	1	2	3	4	5	6
Entertainment services	.880	.165	.186	.148	.176	.012
Content services	.833	-.015	.136	.298	.291	.083
Emergency services	.736	.195	.178	.320	.006	.317
GPS services	.675	.250	.112	.013	.019	-.260
Instant messaging services	.636	.184	.454	.292	.141	.108
Cellphones/handsets	.520	.452	.385	.299	.014	.004
Prepaid services	.518	.364	.437	.118	.113	.016
Advertising	.302	.764	.168	-.004	-.008	.281
Customer service	.068	.743	.374	.126	.094	-.016
Website(s)	.485	.705	.060	.174	.068	.154
Overall performance	.108	.705	.447	.201	.237	-.083
Reliability of cellphone network	.319	.628	-.063	.553	.028	-.092
Value for money	.084	.502	.342	.302	.423	-.025
Services that are easy to use	.277	.235	.846	.030	.055	-.054
Contract services	.315	.199	.750	.156	.141	.149
Services that enable users to control costs	.503	.381	.514	.280	.107	.084

Statements	Component					
	1	2	3	4	5	6
Distribution - access to outlets	.031	.433	.440	.323	.414	-.017
Maintenance services	.099	.432	.436	.061	.354	.36
E-mail services	.198	-.047	.203	.751	.304	-.029
One-stop-services	.189	.199	-.102	.686	.347	.187
Voice services	.240	.372	.292	.656	-.197	.146
Internet access	.458	.270	.409	.636	.055	.028
Loyalty rewards	.166	.020	.059	.138	.848	.110
Speed of data services	.256	.553	.244	.142	.576	-.050
Cellphone insurance	.193	.277	.180	.332	.322	.627
Network coverage	.376	.333	.282	.134	.330	-.506

Extraction method: principal component analysis

Rotation method: Varimax with Kaiser normalisation

Rotation converged in 11 iterations

Factor one

The following statements had their highest loadings on factor one (factor loadings given in brackets): *entertainment services*, question 3.2.6 (0.880), *content services* question 3.2.5 (0.833), *emergency services*, question 3.2.7 (0.736), *geographic positioning services*, question 3.2.8 (0.675), *instant messaging services*, question 3.2.4 (0.636), *cellphones/handsets*, question 3.2.13 (0.520) and *prepaid services*, question 3.2.11 (0.518).

Brand performance statements with a loading higher than 0.60 on factor one, and with a loading of less than 0.440 on any other factor, were considered for inclusion in a construct to describe factor one. The brand performance statements that were recommended to represent factor one included the following: *entertainment services* (0.880), *content services* (0.833), *emergency services* (0.736) and *geographic positioning services* (0.675). The statements contained in the factor will be referred to as the *entertainment services* brand performance dimension.

Factor two

The following statements had their highest loadings on factor two (factor loadings given in brackets): *advertising*, question 3.2.22 (0.764), *customer service*, question 3.2.24 (0.743), *website(s)*, question 3.2.23 (0.705), *overall performance*, question 3.2.26 (0.705), *reliability of cellphone network*, question 3.2.18 (0.628) and *value for money*, question 3.2.20 (0.502).

Brand performance statements with loadings of 0.60 and higher on factor two, and with loadings of less than 0.450 on any other factor, were considered for inclusion in a construct to describe factor two. The following brand performance statements were considered for inclusion to describe factor two: *advertising*, question 3.2.22 (0.764) and *customer service*, question 3.2.24 (0.743). *Customer service* had already been included in the brand association dimension *brand as a product/perceived value*. The statement *advertising* (0.764) had a higher correlation with factor two than the statement *customer service* (0.743). In order to ensure that the influence of multi-collinearity was reduced to a minimum, the statement *advertising* was used as a surrogate variable to measure factor two (refer to Chapter 5, paragraph 5.3.8.8). Reliability analysis of factor two, as will be discussed in the following section, also confirmed the statement *advertising* as best suited to represent factor two. Factor two will be referred to as the *advertising performance* dimension.

Factor three

The following statements/attributes had their highest loadings on factor three (factor loadings given in brackets): *services that are easy to use*, question 3.2.10 (0.846), *contract services*, question 3.2.12 (0.750), *services that enable users to control costs*, question 3.2.9 (0.514), *distribution - access to outlets*, question 3.2.21 (0.440) and *cellphone maintenance and repair service*, question 3.2.15 (0.436).

Brand performance statements with loadings of 0.60 and higher on factor three and with loadings of less than 0.450 on any other factor, were considered for inclusion in a construct to describe factor three. The following brand performance statements were considered for inclusion to describe factor three: *services that are easy to use*, question

3.2.10 (0.846) and *contract services*, question 3.2.12 (0.750). The construct described by the brand performance statements contained in factor three will be referred to as the *easy to use* brand performance dimension.

Factor four

The following statements had their highest loadings on factor four (factor loadings given in brackets): *e-mails*, question 3.2.3 (0.751), *one-stop-service*, question 3.2.16 (0.686), *voice services*, question 3.2.1 (0.656) and *Internet access service*, question 3.2.2 (0.636).

Brand performance statements with loadings of 0.60 and higher on factor four and with loadings of less than 0.450 on any other factor, were considered for inclusion in a construct to describe factor four. The following brand performance statements were considered for inclusion to describe factor four: *e-mail access*, question 3.2.3 (0.751), *one-stop-service*, question 3.2.16 (0.686) and *voice services*, question 3.2.1 (0.656). The construct described by the brand performance statements contained in factor four will be referred to as the *one-stop-service* brand performance dimension.

Factor five

The brand performance statements *loyalty rewards*, question 3.2.25 (0.848) and *speed of data services*, question 3.2.19 (0.576) had their highest loadings on factor five. The statement *speed of data services*, question 3.2.19 (0.576) also loaded fairly high (0.553) on the brand performance dimension *advertising*. Thus only one brand performance statement, *loyalty rewards*, question 3.2.25 (0.848), was recommended for use as a surrogate variable to describe factor five. The construct described by factor five will be called the *loyalty rewards* brand performance dimension.

Factor six

The brand performance statements *cellphone insurance*, question 3.2.14 (0.627) and *network coverage*, question 3.2.17 (-0.506) had their highest loadings on factor six. As indicated in table 6.39, the statement *network coverage*, question 3.2.17 (-0.506) loaded

negatively on the factor. The brand performance statement *cellphone insurance* 3.2.14 (0.627) was recommended for use as a surrogate variable to describe factor six. The construct described by factor six will be called the *cellphone insurance* brand performance dimension.

Summary of the brand performance factor analysis

The purpose of the brand performance factor analysis was to enable data reduction. The factor analysis identified six dimensions for consideration to measure brand performance. These dimensions will be referred to as *entertainment services*, *advertising performance*, *easy to use*, *one-stop-service*, *loyalty rewards* and *cellphone insurance*.

6.3.12.3 Reliability analysis of the brand performance dimensions

The sample size required to estimate coefficient alpha and the validity assessment of the brand performance dimensions need to be investigated:

Sample size for coefficient alpha and validity

As previously discussed, the minimum sample size for estimating coefficient alpha is dependent on the level of the first (largest) eigenvalue obtained from principal component analysis (PCA). The first eigenvalue of the sample data set was 12.475 (refer to Annexure C, table 52) indicating that a sample size of 30 would be a very robust estimator of the population coefficient alpha (refer to Chapter 5, paragraph 5.3.8.10). Validity of the dimensions that were identified, was based on content validity (refer to Chapter 5, paragraph 5.3.8.10)

Entertainment services

The brand performance statement *geographic positioning services* was excluded from the items used to measure this dimension, due to a low inter-item correlation with the brand performance statement *content services*. Cronbach's alpha coefficient for the brand performance statements included to measure this dimension was 0.861. The

reliability statistics of the brand performance statements identified to measure the *entertainment services* brand performance dimension are presented in table 6.44:

TABLE 6.44 RELIABILITY STATISTICS: ENTERTAINMENT SERVICES SUMMATED MEASUREMENT SCALE

Statement	Valid cases	Item-to-total correlation	Squared multiple correlation	Cronbach's alpha if item deleted
Entertainment services	67	.757	.580	.796
Content services	67	.754	.578	.789
Emergency services	67	.725	.526	.833

Deletion of any of the statements would have resulted in a decrease of Cronbach's alpha coefficient. Thus, all the above-mentioned statements were included in the summated measurement scale to measure this brand performance dimension. The included statements met all the requirements in terms of the inter-item and item-to-total correlations (refer to Chapter 6, paragraph 6.3.3.2 b)).

Advertising performance dimension

Cronbach's alpha coefficient for the brand performance statements considered to measure this dimension was 0.636. This was higher than the minimum required for exploratory research (0.60), but lower than the minimum required for confirmatory research (refer to Chapter 6, paragraph 6.3.3.2 (b)). The statement *advertising* (0.764) had a higher correlation with the factor than the statement *customer service* (0.743). Thus, the statement *advertising* was used as a surrogate variable to measure the factor referred to as the *advertising performance* dimension.

Easy to use performance dimension

Cronbach's alpha coefficient for the two brand performance statements recommended to measure this dimension, *services that are easy to use* and *contract services*, was 0.818. This indicated a high level of internal consistency in the use of these statements

to measure the dimension. The above statements as included in the summated measurement scale, met all the requirements in terms of the inter-item and item-to-total correlations (refer to Chapter 6, paragraph 6.3.3.2 b)).

One-stop-service dimension

Cronbach’s alpha coefficient for the three statements recommended for inclusion to measure this dimension was 0.775. This implied a high level of internal consistency in the use of these statements to measure this dimension. The reliability statistics for the statements are presented in table 6.45:

TABLE 6.45 COEFFICIENTS FOR THE BRAND ASSOCIATION DIMENSION (REGRESSION ANALYSIS)

Statements	Valid cases	Item-to-total correlation	Squared multiple correlation	Cronbach's alpha if item deleted
One-stop-service	99	.679	.461	.630
E-mail service	99	.611	.385	.699
Voice service	99	.574	.336	.740

Exclusion of any of the statements would have resulted in a lower Cronbach’s alpha coefficient. Thus all the statements were included in the summated scale used to measure the *one-stop-service* dimension.

Loyalty rewards dimension

The brand performance statement *loyalty rewards* (0.848) was the only statement with a loading above 0.60 on this dimension (refer to table 6.43). As a result the statement was included as a surrogate variable to measure *the loyalty rewards* dimension (refer to Chapter 5, paragraph 5.3.8.9).

Cellphone insurance dimension

The statement *cellphone insurance* (loading 0.627) was the only statement with a loading above 0.60 on this dimension (refer to table 6.43). As a result the statement was included as a surrogate variable to measure the *cellphone insurance* dimension (refer to Chapter 5, paragraph 5.3.8.9).

Summary of the brand performance dimension reliability analysis

By using a combination of internal consistency reliability analysis and factor loadings, six measurement scales were developed to measure the six brand performance dimensions. Cronbach's alpha coefficient for the summated scales varied as follows: *entertainment services* 0.861, *easy to use* 0.818 and *one-stop-service* 0.775. The factor loadings for the surrogate measures varied as follows: *advertising performance* 0.764, *loyalty rewards* 0.848 and *cellphone insurance* 0.627.

These measurement scales, which will be called "summated scales" from here onwards, were used to compile ratings of the brand performance dimensions according to network service provider user group (Vodacom and MTN users), and customer-based brand equity group.

6.3.12.4 Hypothesis testing of the summated brand performance dimensions (Vodacom and MTN users)

The null hypotheses for all the summated brand performance dimensions, that stated that there was no difference between the ratings of Vodacom and MTN users with regard to the summated brand performance dimensions, were not rejected (refer to Annexure C, table 54).

Hypothesis testing of the brand performance ratings according to customer-based brand equity group

The null hypotheses for all the summated brand performance dimensions, that stated that there was no difference between the ratings of the low and the high

customer-based brand equity groups with regard to the summated brand performance dimensions, were rejected. Based on the mean ranks contained in the Mann-Whitney U test the low customer-based brand equity group gave lower and the high customer-based brand equity group higher ratings (refer to Annexure C, table 55).

6.3.12.5 The summated brand performance dimensions as drivers of customer-based brand equity

Stepwise multiple regression was used to analyse the relationship between the summated brand performance dimensions and customer-based brand equity (refer to Chapter 5, paragraphs 5.3.8.5 and 5.3.8.11, and figure 5.7). Customer-based brand equity, the dependent variable, was measured by using the summated score for customer-based brand equity as an indicator variable (refer to Chapter 6, paragraph 6.3.3.2). The summated scores for the brand performance dimension (determined by means of summated or surrogate variable scales) were used as the independent variables (refer to Chapter 5, paragraph 5.3.8.5). Please refer to tables 56 and 57 in Annexure C for the descriptive statistics of the dependent variable and the independent variables, as well as to the ANOVA table. **As indicated in the ANOVA table, the null hypothesis that the coefficient vector differs significantly from zero was statistically significant at the 0.01 level (refer to Chapter 5, paragraph 5.3.8.8. and Annexure C, table 57).**

As previously discussed respondents could only rate performance attributes that they were using (refer to paragraph the 6.3.12). The sample size of 58 met the recommended requirement of 50 observations with a ratio of nine observations for each independent variable (refer to Chapter 5, paragraph 5.3.8.8).

A summary of the model fit statistics for the best fit is presented in table 6.46:

TABLE 6.46 MODEL FIT STATISTICS FOR THE SUMMATED BRAND PERFORMANCE DIMENSION (REGRESSION ANALYSIS)

Model	R	R square	Adjusted R square	Standard error of the estimate
1	.656 ^a	.430	.420	3.31718
2	.697 ^b	.486	.467	3.17958

a. Predictors: (constant), easy to use (BPD 3)

b. Predictors: (constant),easy to use (BPD3), one-stop service (BPD4)

Dependent variable: Customer-based brand equity (CBBE)

The model had a multiple correlation of 0.697 with an adjusted R square of .467. This implied a good fit as the model explained 46.7% of the total variation in the dependent variable. The collinearity statistics of the independent variables included, as well as independent variables excluded, fell within acceptable ranges of collinearity. A summary of the model coefficients and collinearity statistics is presented in table 6.47:

TABLE 6.47 COEFFICIENTS FOR THE SUMMATED BRAND PERFORMANCE DIMENSION (REGRESSION ANALYSIS)

Model		Unstandardised coefficients		Standardised coefficients	T	Sig.	Collinearity statistics	
		B	Std. error	Beta			Tolerance	VIF
1	(Constant)	1.870	2.306		.811	.421		
	BPD3	1.951	.300	.656	6.505	.000	1.000	1.000
2	(Constant)	-1.733	2.659		-.652	.517		
	BPD3	1.467	.349	.493	4.203	.000	.678	1.475
	BPD4	.622	.255	.286	2.440	.018	.678	1.475

Dependent variable: customer-based brand equity (CBBE)

Easy to use (BPD3), one-stop service (BPD4)

The null hypothesis that one or more of the partial regression coefficients have a value different from zero (refer to Chapter 5, paragraphs 5.3.8.3 and 5.3.8.8) was rejected for two coefficients, the *easy to use (BPD3)* and *one-stop-service (BPD4)* brand performance dimensions. These were at the 1% (0.01) and 5% (0.05) levels of statistical significance respectively. The lack-of-fit test confirmed a linear relationship between the dependent variable and the above-mentioned independent variables at the 0.01 level of statistical significance (refer to Annexure C, tables 58 and 59). This result implies a strong linear relationship between the summated score for customer-based brand equity (indicator variable) and the summated brand performance dimensions *easy to use* and *one-stop service*.

The *easy to use* summated brand performance dimension included the following statements: *contract services* and *services that are easy to use*. The summated brand performance dimension *one-stop-service* included the brand performance statements: *one-stop-service*, *e-mail access* and *voice services*.

The strong linear relationship between the summated customer-based brand equity score and the summated brand performance dimensions *easy to use* and *one-stop service* also supports the research finding suggesting a relatively low level of category involvement within the target market (refer to paragraph 6.3.3.1). The *easy to use* brand performance dimension accounted for the highest percentage of total variation, i.e. the adjusted R square increased from 0.430 to 0.486 with the *one-stop-service* brand performance dimension included. This reflects a high level of spurious loyalty - loyalty as a function of inertia (refer to Chapter 4, paragraph 4.3.5).

6.3.13 Brand association and brand performance dimensions as drivers of customer-based brand equity

Stepwise multiple regression was used to analyse the relationship of the summated brand association and brand performance dimensions in totality with customer-based brand equity (refer to Chapter 5, paragraphs 5.3.8.5 and 5.3.8.11, and figure 5.7). Customer-based brand equity, the dependent variable, was measured by using the

summated score for customer-based brand equity as an indicator variable (refer to Chapter 6, paragraph 6.3.3.2). The summated scores for the brand association and brand performance dimensions (determined by means of summated or surrogate variable scales) were used as the independent variables (refer to Chapter 5, paragraph 5.3.8.5). The ANOVA table is contained in Annexure C table 60. **As indicated in the ANOVA table, the null hypothesis that the coefficient vector differs significantly from zero was statistically significant at the 0.01 level (refer to Chapter 5, paragraph 5.3.8.8. and Annexure C, table 60).**

As previously discussed respondents could only rate performance attributes that they were using (refer to paragraph the 6.3.12). As a result the sample size for the analysis including the summated brand association and brand performance dimensions as independent variables was 48. This was just below the recommended requirement of 50 observations (refer to Chapter 5, paragraph 5.3.8.8).

A summary of the model fit statistics for the best fit is presented in table 6.48:

TABLE 6.48 MODEL FIT STATISTICS FOR THE SUMMATED BRAND ASSOCIATION AND PERFORMANCE DIMENSION (REGRESSION ANALYSIS)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.810 ^a	0.656	0.649	2.63674
2	.830 ^b	0.689	0.675	2.53629

a. Predictors: (Constant), Brand as a product/perceived value dimension brand association dimension (BAD2)

b. Predictors: (Constant), Brand as a product/perceived value brand association dimension (BAD2), Easy to use brand performance dimension (BPD3)

c. Dependent Variable: Customer-based brand equity (CBBE)

The model had a multiple correlation of 0.830 with an adjusted R square of 0.675 This implied a good fit as the model explained 67.5% of the total variation in the dependent variable. Most of the variation was accounted for by the *brand as a product/perceived value brand association dimension*. The collinearity statistics of the independent

variables included, as well as independent variables excluded, fell within acceptable ranges of collinearity. A summary of the model coefficients and collinearity statistics is presented in table 6.49:

TABLE 6.49 COEFFICIENTS FOR THE SUMMATED BRAND ASSOCIATION AND PERFORMANCE DIMENSION (REGRESSION ANALYSIS)

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	0.547	1.801	0.303	0.763		
	BAD2	1.126	0.12	0.81	9.368	0.000	1.000
2	(Constant)	-0.885	1.854	-0.477	0.635		
	BAD2	0.789	0.194	0.567	4.073	0.000	0.357
	BPD3	0.843	0.388	0.302	2.172	0.035	0.357

Dependent Variable: Customer-based brand equity (CBBE)

Brand as a product/perceived value brand association dimension (BAD2), Easy to use brand performance dimension (BPD3)

The null hypothesis that one or more of the partial regression coefficients have a value different from zero (refer to Chapter 5, paragraphs 5.3.8.3 and 5.3.8.8) was rejected for two coefficients, the *brand as a product/perceived value brand association dimension (BAD2)* and the *easy to use brand performance dimension (BPD3)*. These were at the 1% (0.01) and 5% (0.05) levels of statistical significance respectively. The lack-of-fit test confirmed a linear relationship between the dependent variable and the above-mentioned independent variables at the 0.01 level of statistical significance (refer to Annexure C, tables 61a – 62). This result implies a strong linear relationship between the summated score for customer-based brand equity (indicator variable) and the summated *brand as a product/perceived value brand association dimension* and summated *easy to use brand performance dimension*.

6.3.14 Summary of hypothesis testing

Hypothesis testing included tests of association (refer to Chapter 5, paragraph 5.3.8.3 and table 5.6), tests of difference (refer to Chapter 5, paragraph 5.3.8.3 and table 5.7), and multiple regression (refer to Chapter 5 paragraph 5.3.8.8).

Hypothesis testing using tests of association

The tests of association were evaluated by using the chi-square test statistic (refer to Chapter 5, paragraph 5.3.8.6). Table 6.48 presents a summary of the results:

TABLE 6.50 TESTS OF ASSOCIATION: CHI-SQUARE TEST

Variables tested	Chi-square Statiscal signicant/ significance level	
	User group	CBBE group
1 Profiling of the user group		
1.1 Profiling of personal demographics		
Personal total monthly income (question 8.8)	No	No
Access to a fixed-line telephone service at home (question 7.2)	No	No
Access to a fixed-line Internet service at home (question 7.3)	No	No
Subscription to pay television (question 7.6)	No	5%
Access to a laptop for personal use (question 7.1)	5%	No
Monthly household expenditure for the use of a fixed-line telephone service at home (question 7.5)	No	No
Number of people living in the household (question 8.5)	No	No
Age breakdown (question 8.6)	No	No
Gender breakdown (question 8.7)	No	No
1.2 Estate agency related demographics		
Number of estate agents employed (question 8.1)	5%	5%
Legal business form of the agency (question 8.2)	No	No
Number of years worked as an estate agent (question 8.3)	No	No
Number of years worked as a principal estate agent (question 8.4)	No	No
1.3 Decision-making about the cellular service used		
Personal decision about which service to use (question 1.2)	NE 1)	No
Responsibility to pay for the service (question 1.3)	NE 1)	No
Use of the service for personal purposes only, or for business and personal purposes (question 1.4)	NE 1)	No
1.4 Preferences regarding cellular handset used		
Preferences regarding the use of a specific brand of cellular handset (question 4.1)	No	No
Preferred brand of cellular handset (question 4.2)	No	No
1.5 Cellular Internet access		
Incidence of cellular Internet access (question 1.6)	No	No
2 Determination of the user group's brand usage		
Contract services used (question 2.4)	NE 1)	No
Subscription period (question 2.6)	No	No
Awareness of barriers preventing use of the most preferred cellphone network service provider (question 2.12)	No	1%
Incidence of brand contact (question 5.1)	No	No
3. Determination of the user group's brand awareness		
Contract brand awareness at product level (question 2.9)	5%	No
Awareness of loyalty programmes (question 5.4)	No	5%
4. Determination of the user group's preferences regarding service providers		
Most preferred cellphone network service providers (question 2.14)	1%	No

Note: 1) Not evaluated due to frequency count of less than five for more than 20% of the cells

Tests of association based on cellphone network service provider used.

The null hypotheses for the variables listed below, that stated that there was no association between the variable *cellphone network service provider used* and the variables mentioned in table 6.48 (refer to Chapter 5, paragraph 5.3.8.3 and table 5.6), were rejected:

- *access to a laptop for personal use (5%)*
- *number of estate agents employed (5%)*
- *contract brand awareness at product level (5%)*
- *most preferred cellphone network service provider (1%).*

The Cramer's V test was used to assess the strength of the association (refer to Chapter 5, paragraph 5.3.8.6). Table 6.49 presents a summary of the Cramer's V test statistics:

TABLE 6.51 CRAMER'S V TEST: TESTS OF ASSOCIATION BASED ON CELLPHONE NETWORK SERVICE PROVIDER USED

Variables tested	Cramer's V value	Approximate significance
Access to a laptop for personal use (question 7.1)	0.199	0.008**
Number of estate agents employed (question 8.1)	0.168	0.079
Contract brand awareness at product level (question 2.9)	0.190	0.042**
Most preferred cellphone network service provider (question 2.14)	0.815	0.000*

Note: * *Significant at the 1% (0.01) level*

** *Significant at the 5% (0.05) level*

The Cramer's V value varied from zero to one. A high value indicated a high degree of association (refer to Chapter 5, paragraph 5.3.8.6). As indicated in table 6.49, the Cramer's V test was statistically significant for three of the variables. The strength of the association for two of the statistically significant variables (*access to a laptop for personal use* and *contract brand awareness at product level*) was weak. The strength of the association between the variable *cellphone network service provider used* and the variable *most preferred cellphone network service provider* was very strong. Thus, the

variable *most preferred cellphone network service provider* would be of practical use to indicate use of a specific network service provider (refer to Chapter 5, paragraph 5.3.8.6).

Tests of association based on customer-based brand equity group.

The null hypotheses for the variables listed below, that stated that there was no association between the variable *customer-based brand equity group* and the variables mentioned in table 6.48 (refer to Chapter 5, paragraph 5.3.8.3 and table 5.5), were rejected:

- *subscription to pay television (5%)*
- *number of estate agents employed (5%)*
- *awareness of barriers preventing use of the most preferred cellphone network service provider (1%)*
- *awareness of loyalty programmes (5%).*

The Cramer's V test was used to assess the strength of the associations (refer to Chapter 5, paragraph 5.3.8.6). Table 6.50 presents a summary of the Cramer's V test statistics:

TABLE 6.52 CRAMER'S V TEST: TESTS OF ASSOCIATION BASED ON CUSTOMER-BASED BRAND EQUITY GROUP

Variables tested	Cramer's V value	Approximate significance
Subscription to pay television (question 7.6)	0.174	0.022**
Number of estate agents employed (question 8.1)	0.180	0.066
Awareness of barriers preventing use of the most preferred cellphone network service provider (question 2.12)	0.245	0.001*
Awareness of loyalty programmes (question 5.4)	0.166	0.039**

Note: * Significant at the 1% (0.01) level

** Significant at the 5% (0.05) level

As indicated in table 6.50 the Cramer's V test was statistically significant for three of the variables. The strength of the association for two of the statistically significant variables (*subscription to pay television* and *awareness of loyalty programmes*) was weak. The strength of the association between the variable *customer-based brand equity group* and the variable *awareness of barriers preventing use of the most preferred cellphone network service provider* was moderate. Thus, none of the variables mentioned in table 6.50 would be of practical use to classify participants into the low or the high customer-based brand equity group (refer to Chapter 5, paragraph 5.3.8.6).

6.3.14.1 Hypothesis testing using tests of difference

The tests of difference were evaluated by using the Mann-Whitney U test (refer to Chapter 5, paragraph 5.3.8.7).

Tests of difference based on cellphone network service provider used

The variables (questions) that were evaluated are listed in table 5.7 in Chapter 5 (refer to paragraph 5.3.8.3). Table 6.53 presents a summary of the statistically significant differences between Vodacom and MTN users:

TABLE 6.53 STATISTICALLY SIGNIFICANT DIFFERENCES BETWEEN VODACOM AND MTN USERS

Variables	Level of significance 1)
1. Determining the user group's brand usage	
Average monthly contract expenses (question 2.5.1)	5%
2. Preferences with regard to service providers	
Likelihood to use Vodacom (question 2.11)	1%
Likelihood to use MTN (question 2.11)	1%
3. Questions related to brand association	
Popular/most used brand (question 3.1.7)	1%
Local brand (question 3.1.2)	1%
African brand (question 3.1.4)	5%
Global brand (question 3.1.5)	1%
4. Summated brand association dimensions	
Local brand/African brand	1%
Leadership/perceived quality	5%
5. Questions related to brand performance	
Entertainment services (question 3.2.6)	5%
Services that enable users to control costs (question 3.2.9)	5%
Services that are easy to use (question 3.2.10)	5%
Prepaid services (question 3.2.11)	5%

The null hypotheses (refer to Chapter 5, paragraph 5.3.8.3) for the variables listed in table 6.53, that stated that there were no differences between the Vodacom and MTN users, were rejected. Based on the mean ranks contained in the Mann-Whitney U test:

- MTN contract users spend more than Vodacom contract users (refer to paragraph 6.3.5.2, Annexure C, table 21);
- Vodacom users rated the likelihood to use Vodacom higher (refer to paragraph 6.3.9, Annexure C, table 36);
- MTN users rated the likelihood to use MTN higher (refer to paragraph 6.3.9, Annexure C, table 36);
- Vodacom was rated higher on the brand association statement *popular/most used brand* (refer to table 6.34 and Annexure C, table 43);
- MTN was rated higher on the brand association statement *local brand* (refer to Annexure C, table 43);

- MTN was rated higher on the brand association statement *African brand* (refer to Annexure C, table 43);
- Vodacom was rated higher on the brand association statement *global brand* (refer to Annexure C, table 43);
- MTN was rated higher on the summated brand association dimension *local brand/African brand* (refer to Annexure C, table 46);
- Vodacom was rated higher on the summated brand association dimension *leadership/perceived quality* (refer to Annexure C, table 46);
- Vodacom was rated higher on the brand performance statements *entertainment services, services that enable users to control costs, services that are easy to use and prepaid services* (refer to Annexure C, table 51).

Tests of difference based on customer-based brand equity group

With the exception of the brand relationship questions, the differences between the low and high customer-based brand equity groups were examined, based on all the variables (questions) contained in table 5.7 (refer to Chapter 5, paragraph 5.3.8.3). The brand relationship questions were excluded from the test-of-difference analysis, as they were used to allocate respondents to the low or high customer-based brand equity groups (refer to paragraph 6.3.3.1). Table 6.54 presents a summary of the statistically significant differences between the low and high customer-based brand equity groups:

TABLE 6.54 STATISTICALLY SIGNIFICANT DIFFERENCES BETWEEN THE LOW AND HIGH CUSTOMER-BASED BRAND EQUITY GROUPS

Variables	Level of significance
1. Preferences regarding service providers	
Likelihood to use Vodacom (question 2.11)	1%
Likelihood to use MTN (question 2.11)	5%
2. Satisfaction with cellphone service used	
Overall satisfaction with cellphone service used (question 1.5)	1%
3. Questions related to brand association	
Brand association statements (questions 3.1.1 to 3.1.25 with the exception of question 3.1.2)	1%
Local brand (question 3.1.2)	5%
4. Summated brand association dimensions	
All the summated brand association dimensions (refer to Annexure C, table 47)	1%
5. Questions related to brand performance	
Brand performance statements (questions 3.2.1 to 3.2.26 with the exception of questions 3.2.4 and 3.2.14)	1%
Instant messaging (question 3.2.4)	5%
Cellphone insurance (question 3.2.14)	5%
6. Summated/surrogate brand performance dimensions	
All the summated/surrogate brand performance dimensions (refer to Annexure C table 54)	1%

The null hypotheses (refer to Chapter 5, paragraph 5.3.8.3) for the variables listed in table 6.52, that stated that there were no differences between the low and high customer-based brand equity groups, were rejected. Based on the mean ranks contained in the Mann-Whitney U test the high customer-based brand equity group gave higher ratings of all the mentioned variables.

Summated brand association dimensions - multiple regression analysis.

The null hypothesis that stated, the coefficient vector differs significantly from zero was rejected at the 0.01 level of statistical significance (refer to Chapter 5, paragraph 5.3.8.8. and Annexure C, table 49).

In the additional significance testing of the specific partial regression coefficients, the null hypothesis for one coefficient, the *brand as a product/perceived value summated* brand association dimension, was rejected. This coefficient was statistically significant at the 0.01 level (refer to Chapter 5, paragraph 5.3.8.8. and paragraph 6.3.11.5).

The strength of the association, as measured by the multiple correlation coefficient, was strong as indicated by an adjusted R square of 0.498.

Summated brand performance dimensions - multiple regression analysis.

The null hypothesis that stated the coefficient vector differs significantly from zero was rejected at the 0.01 level of statistical significance (refer to Chapter 5, paragraph 5.3.8.8. and Annexure C, table 57). In the additional significance testing of the specific partial regression coefficients the null hypotheses for two coefficients, the *easy to use* brand performance dimension and the *one-stop-service* brand performance dimension, were rejected at the 0.01 and 0.05 levels of statistical significance respectively (refer to Chapter 5, paragraphs 5.3.8.8. and 6.3.12.5).

The strength of the association as measured by the multiple correlation coefficient was strong, as indicated by an adjusted R square of 0.486.

Summated brand association and performance dimensions - multiple regression analysis

The null hypothesis that the coefficient vector differs significantly from zero was statistically significant at the 0.01 level (refer to Chapter 5, paragraph 5.3.8.8. and Annexure C, table 60). The null hypothesis that one or more of the partial regression coefficients have a value different from zero (refer to Chapter 5, paragraphs 5.3.8.3 and 5.3.8.8) was rejected for two coefficients, the *brand as a*

product/perceived value brand association dimension (BAD2) and the easy to use brand performance dimension (BPD3). These were at the 1% (0.01) and 5% (0.05) levels of statistical significance respectively.

The strength of the association as measured by the multiple correlation coefficient was strong, as indicated by an adjusted R square of 0.675.

6.4 CONCLUSION

This chapter dealt with the findings of the research study. First of all the execution of the primary research was discussed. This was followed by further exploration of the sample size realised. The research findings covered all the research objectives (refer to Chapter 1, paragraph 1.5). In the last chapter of this study, the implications of the research results will be explored and recommendations will be made.

CHAPTER 7

CONCLUSION AND RECOMMENDATIONS

7.1 INTRODUCTION

The primary objective of this study was to determine the customer-based brand equity of the major South African cellphone network service providers amongst principal estate agents in Gauteng. Principal estate agents located in Gauteng had been identified as the target market for this study, as the majority were likely to fall within the LSM seven to LSM ten groups (refer to Chapter 1, paragraph 1.2.5). The assessment of customer-based brand equity should take into account the differentiation in brand development to target the LSM one-to-six and LSM seven-to-ten groups (refer to Chapter 1, paragraph 1.3). No previous research has been done to assess the customer-based brand equity of the major cellphone network service providers within the defined target market. The difficulty to identify and reach individuals in the LSM seven to LSM ten groups and the accompanying research costs, are important reasons for the lack of this kind of research within the defined target market.

In order to meet the primary objective the secondary objectives were as follows:

- to determine a profile of the user group and to compare the profile with stated descriptors for the LSM seven to LSM ten groups;
- to determine the user group's brand relationship (customer-based brand equity);
- to determine the user group's brand usage, barriers to brand usage and brand contact;
- to determine the user group's brand awareness;
- to determine the user group's preferences regarding service providers;
- to determine the user group's satisfaction with the cellphone service used;
- to determine the user group's associations attached to the brands;
- to determine the user group's assessment of brand performance;
- to identify the key drivers of customer-based brand equity for the specific user group;
- to determine any other relevant issues that may influence customer-based brand equity;

- to contribute to the body of knowledge regarding the measurement of customer-based brand equity in South Africa;
- to identify areas for future research in this field.

The empirical research findings have been presented in Chapter 6. In conclusion the research findings will be interpreted and recommendations will be made.

7.2 RESEARCH CONCLUSIONS

First of all the research results pertaining to the profile of the user group in terms of personal demographics, requires interpretation:

7.2.1 Profile of the user group – personal demographics

The profiles of Vodacom and MTN users are very similar with regard to the following personal demographics: personal total monthly income, access to a fixed-line telephone service at home, access to a fixed-line Internet service at home, subscription to pay television, monthly household expenditure for the use of a fixed-line telephone service, number of people living in the household, age breakdown and gender. *Access to a laptop for personal use* was the only personal demographic variable that was associated with the variable *cellphone network service provider used*, at a statistically significant level. A higher percentage of MTN users (93.06%) than Vodacom users (78.30%) had access to a laptop for personal use. The strength of the association, however, was weak, as indicated by a Cramer's V value of 0.199. None of the above-mentioned personal demographics would be of practical use to distinguish between Vodacom and MTN users. With the exception of age and gender, the profile of the sample fits the stated descriptors for individuals in the LSM seven to LSM ten groups. The sample has a higher representation of respondents that were 50 years and older, as well as a slightly higher representation of males, compared to individuals in the LSM seven to LSM ten groups. This may be attributed to the selection of the target market group based on their occupational position, i.e. that of principal estate agent. The sample may

be skewed towards the upper end of the LSM seven to LSM ten groups. However, taking into account the difficulty in specifying a cut-off point based on the LSM measure, it is recommended that the stated descriptors for the LSM seven to LSM ten groups should be used as a reference (refer to Chapter 1, paragraph 1.2.4). At the time that this research was done, the major cellphone network service providers were making use of a multi-segment targeting approach which was grouping individuals in LSM one to LSM six (effectively LSM two to LSM six) into one target market, and LSM seven to LSM ten into another target market (refer to Chapter 1, paragraph 1.2.3). The use of LSM seven to LSM ten as a reference target market for this study was therefore justified.

7.2.2 Profile of the user group – estate agency-related demographics

The profiles of Vodacom and MTN users are very similar in terms of the following estate agency-related demographics: legal business form of the agency, the number of years that the principal estate agent had been working as an estate agent and the number of years that the agent had been working as a principal estate agent. The *number of estate agents employed by the estate agency* was the only estate agency-related demographic variable that was associated with the variable *cellphone network service provider used* at a statistically significant level. However, the strength of the association was not statistically significant. None of the estate agency-related demographics, as mentioned above, would be of practical use to distinguish between Vodacom and MTN users.

Most of the principal estate agents personally decided about the cellphone service that they were using and most of them were using the service for personal, as well as business purposes. The policies of estate agencies had very limited influence on the principal estate agent's decision about the cellular service that he or she was using. The profiles of Vodacom and MTN users are very similar with regard to this variable.

SMS and television were the most preferred means by which to receive marketing communication from the cellphone network service provider. The marketing communication preferences of Vodacom and MTN users were very similar.

The majority of principal estate agents (82.5%) preferred to use a specific brand of cellular handset. Nokia (74.48%) was by far the most preferred brand. The profiles of Vodacom and MTN users are very similar in this regard.

Only 35.39% of the respondents accessed the Internet via their cellular service. The profiles of Vodacom and MTN users are very similar as far as mobile Internet access is concerned.

7.2.3 Brand relationship (customer-based brand equity)

Rating of the statements used to assess brand relationship, indicated a low level of category involvement by the target market as a whole (refer to Chapter 4, figure 4.13). Factor analysis identified five statements as best suited for use in the development of a summated measurement scale. Cronbach's alpha coefficient (0.870) confirmed a high level of reliability for the summated measurement scale. The summated measure was used as an indicator variable of customer-based brand equity. The ratings of Vodacom and MTN users did not differ at a statistically significant level with regard to any of the brand relationship statements. This also applies to the summated customer-based brand equity rating. The conclusion can be made that the profiles of Vodacom and MTN users are very similar in terms of their rating of customer-based brand equity, as measured in this study.

The summated score for customer-based brand equity was used to divide respondents into a low and a high customer-based brand equity group. Those with a score equal to, or below the overall group median, were allocated to the low group, and those with a score above the overall group median were allocated to the high group.

7.2.4 Profiling variables analysed according to customer-based brand equity group

The variables selected to profile the user group were also analysed according to customer-based brand equity group. The variable *customer-based brand equity group* was associated, at a statistically significant level, with three profiling variables: fixed-line access to the Internet at home, subscription to pay television, and number of estate agents employed. The strength of the association was statistically significant for one variable only: *number of estate agents employed*. The strength of the association, however, was weak. Thus, none of the variables selected to profile the user group would be of any practical use to classify participants into the low or the high customer-based brand equity group.

7.2.5 Brand usage, barriers to brand usage and brand contact

Contract voice (91.21%) was by far the most used service, followed by other services accessed via contract subscription (36.81%), prepaid data (21.43%) and contract data (13.9%). Only 8.79% of the respondents used prepaid voice. The profiles of Vodacom and MTN users, as well as the low and high customer-based brand equity groups, are very similar in terms of services used. Talk packages were mentioned by both Vodacom and MTN users as the most used contract service.

The average monthly contract expenses of Vodacom (R1 273) and MTN (R1 474) users did not differ at a statistically significant level. Both user groups were spending significantly more than the average revenue per user, as reported by Vodacom (R474) and MTN (R365) in the 2009 financial year for contract users. The average monthly contract expenses of the low and the high customer-based brand equity groups did not differ at a statistically significant level. This is in contrast with theory (refer to Chapter 4, paragraph 4.3.7.3) stating that the share of consumer spend with a brand increase as the level of bonding with the brand increases. This may be explained by the fact that the

share of requirement for this user group within the category is largely accounted for by cellular voice only.

More than 87.22% of the respondents had been with their cellphone network service provider for more than five years. The profiles of Vodacom and MTN users, as well as the low and high customer-based brand equity groups, were very similar in terms of subscription period. This finding can be explained by the low level of involvement and commitment (high level of inertia or ease of buying) (refer to Chapter 4, figure 4.13) reported for the user group (refer to Chapter 6, paragraph 6.3.3.1).

In total 16.95% of the sample indicated that they were aware of barriers preventing them from using their most preferred cellphone network service provider. The profiles of Vodacom and MTN users are very similar as far as this variable is concerned. A higher percentage of users (27.91%) in the low group and a lower percentage of users (6.98%) in the high customer-based brand equity group indicated that they were aware of barriers preventing them from using their most preferred cellphone network service provider. Although the association between the variable *customer-based brand equity group* and *awareness of barriers preventing use of the most preferred cellphone network service provider* was statistically significant, the strength of the association was not strong enough to recommend the variable as an indicator variable to classify participants into the low or the high customer-based brand equity group.

In total 54.93% of the respondents had contact with their cellphone network service provider within the four weeks before completion of the questionnaire. The profiles of Vodacom and MTN users, as well as the low and high customer-based brand equity groups, are very similar in terms of incidence of brand contact. The forms of contact varied as follows: telephone contact by calling network service support 62.86%, a personal visit to an outlet 60.29%, telephone call to a call centre 51.52%, and website visit 39.13%.

7.2.6 Brand awareness

At the corporate level Vodacom, MTN, Cell C and Virgin Mobile all recorded high levels of prompted brand awareness: Vodacom 95%, MTN 93.95%, Cell C 89.44% and Virgin Mobile 80%. The prompted brand awareness of the other cellphone network service providers was 7.78%. This confirms that the Vodacom, MTN and Cell C brands are pre-eminent within the category in terms of brand awareness (refer to Chapter 4, paragraph 4.3.7.5 d).

A higher percentage of Vodacom users (82.47%) compared to MTN users (65.08%) indicated that they knew the name of the contract service that they were using. Although the association was statistically significant, the strength of the association was weak. Thus, the variable would not be of practical use to indicate use of a specific network service provider.

In total 11.32% of the participants (14.29% of Vodacom and 7.35% of MTN participants) indicated that they were aware of loyalty programmes offered by their network service provider. The variables *customer-based brand equity group* and *awareness of loyalty programmes* were associated at a statistically significant level. However, the strength of the association was weak. Thus, the variable would not be of practical use to classify participants into the low or the high customer-based brand equity group.

7.2.7 Preferences regarding service providers

The majority of Vodacom (92.71%) and MTN (80.29%) customers indicated that they were likely or very likely to continue using the network service provider that they were using at the time of filling out the questionnaire, assuming that they had a choice. The service provider used, i.e. Vodacom or MTN, is an important driver of loyalty. The rating by Vodacom and MTN users in terms of their likelihood to use Vodacom, MTN, Cell C or Virgin Mobile should they have the choice differed statistically significant in terms of their likelihood to use Vodacom and MTN. Based on the mean ranks contained in the Mann-Whitney U test Vodacom users gave a higher rating for the likelihood to use Vodacom and MTN users gave a higher ranking for the likelihood to use to MTN. The rating by the low and high customer-based brand equity groups in terms of their likelihood to use Vodacom, MTN, Cell C or Virgin Mobile should they have the choice differed statistically significant in terms of their likelihood to use Vodacom. Based on the mean ranks contained in the Mann-Whitney U test the high customer-based brand equity group gave a higher rating and the low customer-based brand a lower rating.

Vodacom was mentioned as the most preferred cellphone network service provider by Vodacom users (89.72%) and MTN as the most preferred cellphone network service provider by MTN users (78.08%). The variables *cellphone network service provider used* and *most preferred cellphone network service provider* were associated at a statistically significant level. The strength of the association was very strong. Thus, the variable could be used as an indicator variable of use of a specific network service provider. This finding supports the theory proposed by Ehrenberg, namely that the sheer weight of presence is the mark of success for big brands (refer to Chapter 4, paragraph 4.3.7.5 d). It also supports the use of Aaker's brand equity dimension, which he defines as leadership and popularity (refer to Chapter 4, paragraph 4.3.7.5 b (ii)). However, it should be noted that focusing on market penetration only may result in the use of marketing strategies that will be detrimental to the image of the brand and thus will be detrimental to the health of the brand in the long-term

7.2.8 Satisfaction with the cellphone service used

In total 69.06% of the respondents was satisfied or very satisfied (top-two box score) with the cellphone service that they were using. Only 10.5% of the respondents indicated that they were very satisfied. This finding is in line with the mediocre rating for the summated customer-based brand equity score, i.e. an overall mean of 16.10 out of a potential score of 25. The profiles of Vodacom and MTN users are very similar in terms of their overall satisfaction with the cellphone service that they were using. A significantly higher percentage of the high customer-based brand equity group (80.46%) was satisfied or very satisfied with the network service provider that they were using, compared to the low customer-based brand equity group (55.56%). Although the strength of the association was statistically significant, the strength of the association was moderate, as indicated by a Cramer's V value of 0.353. Thus, use of the variable *overall satisfaction with the cellphone service used* as an indicator variable, would reduce errors when classifying respondents into the low or the high customer-based brand equity group. This finding supports the theory that manifested satisfaction and as a result true loyalty is more likely to prevail amongst the high customer-based brand equity group than the low customer-based brand equity group (refer to Chapter 4, paragraph 4.3.5). The high customer-based brand equity group is also more likely to fall within the categories referred to as *supporters* and *advocates* compared to the low customer-based brand equity group (refer to Chapter 4, figure 4.11).

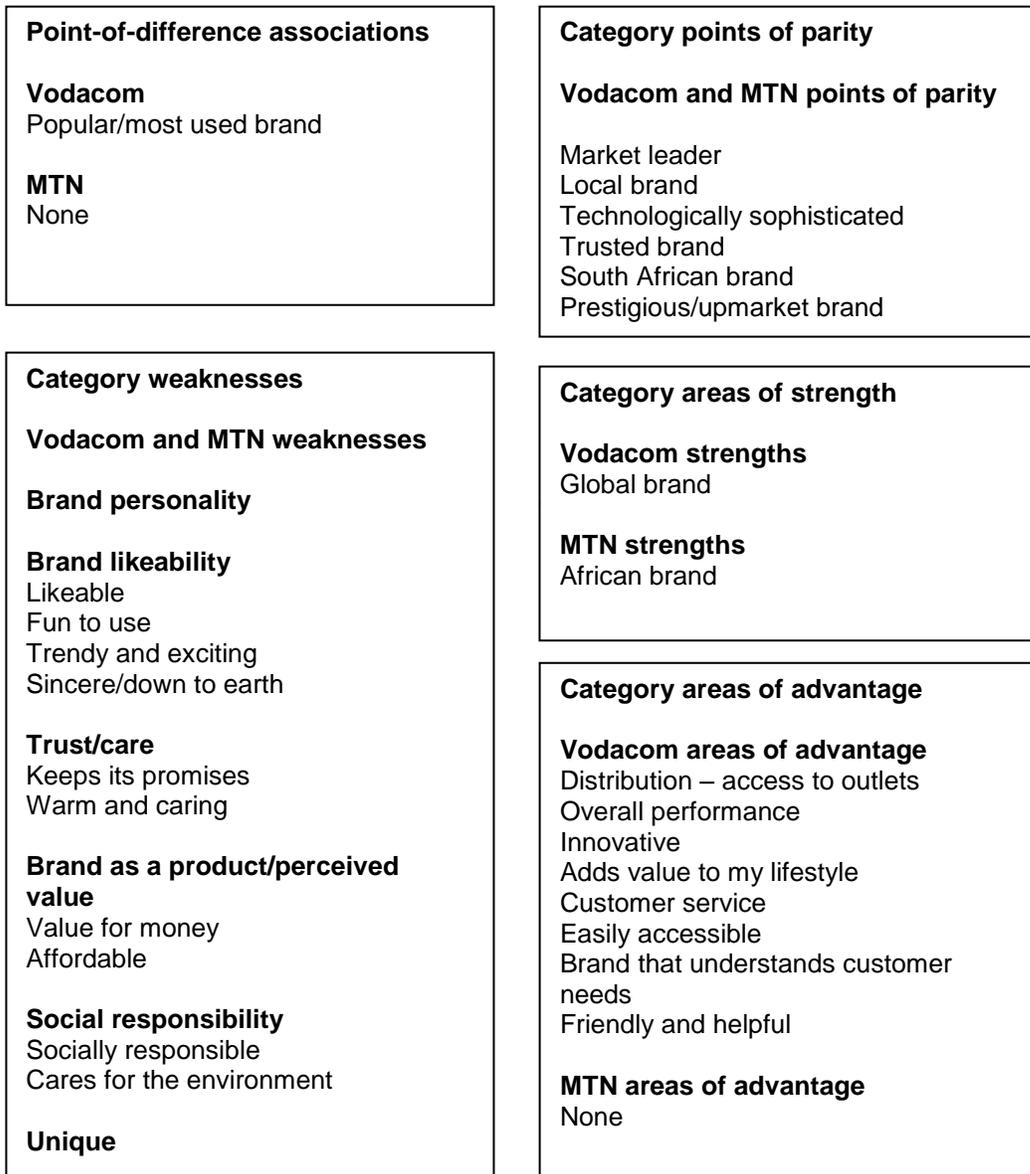
7.2.9 Brand associations

The Vodacom, MTN and Cell C corporate brands are used as master brands in a dominant driver role (i.e. it drives the purchase decision). All three the network service providers strive to create an extended corporate brand identity. Brand associations are of strategic importance to create an extended brand identity (refer Chapter 3, paragraph 3.7.1.1 e).

7.2.9.1 Rating of the brand association statements

A summary of Vodacom and MTN's brand positioning, based on the rating of the brand associations statements (refer to Chapter 6, table 6.34), is presented in figure 7.1:

FIGURE 7.1 BRAND POSITIONING BASED ON THE RATINGS OF THE BRAND ASSOCIATION STATEMENTS



Point-of-difference associations

Vodacom established a point-of-difference association (strong, favourable and unique) with the brand association statement *popular/most used brand*. Vodacom achieved a top-two box score of 87% for this statement and MTN a score of 45.6%. The Vodacom and MTN ratings differed at a statistically significant level with regard to this statement. As indicated in figure 7.1, MTN did not establish a point-of-difference association with any of the brand association statements (refer to Chapter 6, paragraph 6.3.11.1).

Category points of parity

Vodacom and MTN received high top-two box ratings (above 70%) for the brand association statements mentioned as category points of parity in figure 7.1. The Vodacom and MTN top-two box ratings for the category points of parity are presented in figure 7.2:

FIGURE 7.2 CATEGORY POINTS OF PARITY

Market leader (Vodacom 89.4%, MTN 75%)
Local brand (Vodacom 83.8%, MTN 93.8%)
Technologically sophisticated (Vodacom 82.2%, MTN 79.5%).
Trusted brand (Vodacom 79.6%, MTN 79.7%)
South African brand (Vodacom 77.1%, MTN 88.7%)
Prestigious/upmarket brand (Vodacom 70.9%, MTN 74.6%)

MTN received a higher (and statistically significant) rating for the brand association statement *local brand*. Vodacom, however, achieved a sufficiently strong association to establish a competitive point of parity. Thus, both Vodacom and MTN had strong and favourable associations with regard to these statements and they are therefore not unique. A strong association with the category points of parity will be required for a new service provider to be considered as credible in the category (refer to Chapter 3, paragraph 3.7.1.3).

Category areas of strength

Vodacom received a top-two box rating of 64.8%, compared to MTN's 34.7%, for the brand association statement *global brand*. The Vodacom and MTN ratings differed at a statistically significant level with regard to this statement. Vodacom, however, did not establish a sufficiently strong association to categorise its positioning with regard to this statement as a point-of-difference association. Thus, it was categorised as an area of strength for Vodacom.

MTN received a top-two box rating of 63%, compared to Vodacom's 44.2%, for the brand association statement *African brand*. The Vodacom and MTN ratings differed at a statistically significant level with regard to this statement. MTN, however, did not establish a sufficiently strong association to categorise its positioning with regard to this statement as a point-of-difference association. It therefore was categorised as an area of strength for MTN.

Category areas of advantage

Vodacom received higher top-two box ratings than MTN for all the brand association statements identified as Vodacom areas of advantage in figure 7.1. The Vodacom and MTN top-two box ratings for the Vodacom areas of advantage are presented in figure 7.3:

FIGURE 7.3 VODACOM AREAS OF ADVANTAGE

Distribution – access to outlets (Vodacom 76.2%, MTN 64.5%)
Overall performance (Vodacom 74.7%, MTN 59.1%)
Innovative (Vodacom 74%, MTN 60.9%)
Adds value to my lifestyle (Vodacom 70.9%, MTN 60.9%)
Customer service (Vodacom 68.9%, MTN 54.6%)
Easily accessible (Vodacom 68.3%, MTN 58.2%)
Brand that understands customer needs (Vodacom 66.7%, MTN 51.6%)
Friendly and helpful (Vodacom 65.5%, MTN 59.4%)

The ratings for Vodacom and MTN did not differ statistically significantly with regard to any of the statements categorised as Vodacom areas of advantage. None of the brand association statements were categorised as MTN areas of advantage.

Category weaknesses

Both Vodacom and MTN received top-two box ratings below 55% with regard to the brand association statements identified as category weaknesses (as listed in figure 7.1). The Vodacom and MTN top-two box scores for these statements are presented in figure 7.3:

FIGURE 7.3 CATEGORY WEAKNESSES

Vodacom and MTN weaknesses	
This brand has a personality (Vodacom 54.9%, MTN 47.7%)	
Likeable (Vodacom 52.4%, MTN 48.5%)	
Trendy and exciting (Vodacom 52.9%, MTN 50.8%)	
Value for money (Vodacom 50%, MTN 40.6%)	
Affordable (Vodacom 50%, MTN 47.1%)	
Fun to use (Vodacom 46.2%, MTN 41.5%)	
Socially responsible (Vodacom 46.2%, MTN 42.2%)	
Cares for the environment (Vodacom 44.8%, MTN 38.5%)	
Keeps its promises (Vodacom 42.5%, MTN 38.5%)	
Warm and caring (Vodacom 41.14%, MTN 41%)	
Unique (Vodacom 33.3%, MTN 29%)	
Sincere/down to earth (Vodacom 30.4%, MTN 31.2%)	

There were no statistically significant differences between the Vodacom and MTN ratings with regard to the above-mentioned brand association statements. Due to the poor performance of Vodacom and MTN with regard to these statements, the statements were categorised as category weaknesses.

7.2.9.2 Brand association dimensions

Factor analysis of the brand association statements identified five brand association dimensions that cumulatively accounted for 74.16% of the total variance. The five dimensions were labelled as follows: *brand likeability*, *brand as a product/perceived value*, *local brand/African brand*, *social responsibility* and *leadership/perceived quality*.

Five summated measurement scales were developed to measure the mentioned dimensions. Cronbach's alpha coefficient for the brand association dimensions varied from 0.949 to 0.772. The summated Vodacom and MTN ratings differed statistically significantly (based on the Mann-Whitney U test) with regard to the following two dimensions: *local brand/African brand* and *leadership/perceived quality*. Vodacom received significantly higher ratings for the *leadership/perceived quality* dimension and MTN for the *local brand/African brand* dimension. The ratings of the low and high customer-based brand equity groups differed statistically significantly (according to the Mann-Whitney U test) with regard to all the brand association dimensions. The low customer-based brand equity group gave lower ratings, and the high customer-based brand equity group higher ratings.

Stepwise multiple regression analysis identified the *brand as a product* brand association dimension as the best predictor of customer-based brand equity. The model had a multiple correlation of 0.706 with an adjusted R square of 0.498. The overall equation was statistically significant at the 0.01 level. The collinearity statistics of the independent variable included, as well as those of the independent variables excluded, fell within acceptable ranges. The coefficient for the brand association dimension *brand as a product* was statistically significant at the 0.01 level. The lack-of-fit test confirmed a statistically significant linear relationship at the 0.01 level between the dependent variable (summated customer-based brand equity score) and the independent variable included in the model.

7.2.10 Brand performance

In total 26 statements were used in the detailed functional assessment of brand performance. The detailed brand performance statements were included in the questionnaire to provide additional insight into brand performance and brand usage.

7.2.10.1 Brand performance ratings

The brand performance statements for which Vodacom received top-two box scores above 70%, compared to MTN's top-two box scores for the same statements, are presented in figure 7.4:

FIGURE 7.4 VODACOM'S TOP BRAND PERFORMANCE RATINGS COMPARED TO MTN'S RATINGS

Vodacom and MTN high performance areas (both above 70%)	
Vodacom	MTN
Advertising (88.4%)	Advertising (77.1%)
Voice services (79.4%)	Voice services (72.7%)
Vodacom high performance areas and MTN areas for improvement	
Vodacom high performance (above 70%)	MTN areas for improvement (68.6% - 43.8%)
Instant messaging services (81.5%)	Instant messaging services (81.5%)
Websites (81.3%)	Websites (64.7%)
Contract services (80.4%)	Contract services (63.8%)
Cellphone handsets (80%)	Cellphone handsets (66.7%)
Internet access services (78.6%)	Internet access services (68.6%)
E-mail access (77.3%)	E-mail access (66%)
Prepaid services (77.2%)	Prepaid services (53.1%)
Distribution – access to outlets (76.2%)	Distribution – access to outlets (64.5%)
Easy to use (76.1%)**	Easy to use (53.6%)**
Services that enable users to control costs (74.7%)**	Services that enable users to control costs (47.7%)**
Overall performance (74.5%)	Overall performance (59.1%)
Entertainment services (74.1%)**	Entertainment services (43.8%)**
Network coverage (72.6%)	Network coverage (59.7%)
Emergency services (72.1%)	Emergency services (48.6%)
One-stop-service (72%)	One-stop-service (53.6%)
Geographic positioning service (71.2%)	Geographic positioning service (55%)
Content services (70.4%)	Content services (55.6%)
Note: **Significant at the 5% (0.05) level	
All the statements were rated by more than 30 respondents	

As indicated in figure 7.4, Vodacom received higher top-two box scores than MTN with regard to all the brand performance statements. MTN achieved top-two box scores above 70% for only two of the brand performance statements: *advertising* and *voice services*. *Vodacom and MTN high performance areas* will be used to refer to these two brand performance statements. The Vodacom and MTN ratings did not differ statistically

significantly with regard to the above-mentioned statements. However, Vodacom received much higher top-two box scores for both brand performance statements.

MTN received top-two box scores that varied from a high of 68.6% to a low of 43.8% for the other brand performance statements included in figure 7.4. Therefore these statements have been categorised as *MTN areas for improvement*. Vodacom received top-two box ratings that varied from a high of 81.5% to a low of 70.4% for the other brand performance statements included in figure 7.4. Therefore they have been categorised as *Vodacom high performance areas*. The Vodacom and MTN ratings differed statistically significantly with regard to three of these brand performance statements: *services that are easy to use*, *services that enable users to control costs* and *entertainment services*. These statements gave Vodacom a significant competitive advantage in terms of brand performance.

The brand performance statements for which Vodacom received top-two box ratings below 70%, compared to MTN's top-two box ratings for the same statements, are presented in figure 7.5 (refer to Chapter 6, table 6.42):

FIGURE 7.5 BRAND PERFORMANCE AREAS FOR IMPROVEMENT

Vodacom and MTN areas for improvement	
Vodacom areas (69.2% - 40.9%)	MTN areas (54.6% - 34.1%)
Reliability of the cellphone network (69.2%)	Reliability of the cellphone network (52.9%)
Customer service (68.9%)	Customer service (54.6%)
Speed of data services (66.2%)	Speed of data services (52%)
Cellphone insurance (60.9%)	Cellphone insurance (47.8%)
Cellphone maintenance and repair (51.7%)	Cellphone maintenance and repair (38.2%)
Value for money (50%)	Value for money (40.6%)
Loyalty rewards (40.9%)	Loyalty rewards (34.1%)
Note: All the statements were rated by more than 30 respondents	

As indicated in figure 7.5 Vodacom received higher top-two box scores than MTN for all the brand performance statements included in figure 7.5. The Vodacom and MTN

ratings did not differ statistically significantly with regard to any of these statements. The low top-two box ratings for specifically the following brand performance statements should be a major concern for both Vodacom and MTN:

- reliability of the cellphone network
- customer service
- value for money
- loyalty rewards.

Based on the ratings of the brand performance statements, Vodacom has a competitive advantage over MTN with regard to the following statements: *services that are easy to use, services that enable users to control costs, and entertainment services*. Vodacom received a more favourable brand performance rating than MTN for all the brand performance statements that were rated.

7.2.10.2 Brand performance dimensions

Factor analysis of the brand performance statements identified six brand performance dimensions that cumulatively accounted for 75.84% of the total variance in the data. The six dimensions were labelled as follows: *entertainment services, advertising and customer service, easy to use, one-stop-service, loyalty rewards and cellphone insurance*.

Six measurement scales were developed to measure the mentioned brand performance dimensions. The measurement scales consisted of three summated scales and three surrogate measures. Cronbach's alpha coefficient for the summated scales varied from 0.861 to 0.775. The factor loadings for the surrogate measures varied as follows: *advertising performance 0.764, loyalty measures 0.848 and cellphone insurance 0.627*. The ratings of Vodacom and MTN users differed statistically significantly (according to the Mann-Whitney U test) with regard to the brand performance dimension *easy to use*. The ratings of the low and high customer-based brand equity groups differed statistically significantly (according to the Mann-Whitney U test) with regard to all the brand

performance dimensions. The low customer-based brand equity group gave lower ratings and the high customer-based brand equity group higher ratings.

Stepwise multiple regression analysis identified the brand performance dimensions *easy to use* and *one-stop-service* as the best predictors of customer-based brand equity. The model had a multiple correlation of 0.697 with an adjusted R square of 0.486. The overall equation was statistically significant at the 0.01 level. The collinearity statistics for the independent variables included, as well as the independent variables excluded, fell within acceptable ranges. The coefficient for the dimension *easy to use* was statistically significant at the 1% (0.01) level and the coefficient for the dimension *one-stop-service* was statistically significant at the 5% (0.05) level. The lack-of-fit test confirmed a linear relationship between the dependent variable (summated score for customer-based brand equity) and the above-mentioned independent variables at the 0.01 level of statistical significance.

7.2.11 Brand association and brand performance dimensions as drivers of customer-based brand equity

Stepwise multiple regression analysis including both the brand association and brand performance dimensions as independent variables identified the brand association dimension *brand as a product/perceived value* and the brand performance dimension *easy to use* as the best predictors of customer-based brand equity. The model had a multiple correlation of 0.830 with an adjusted R square of 0.675. The overall equation was statistically significant at the 0.01 level. The collinearity statistics for the independent variables included, as well as the independent variables excluded, fell within acceptable ranges. The coefficient for the brand association dimension *brand as a product/perceived value* was statistically significant at the 1% (0.01) level and the coefficient for the brand performance dimension *easy to use* was statistically significant at the 5% (0.05) level. The lack-of-fit test confirmed a linear relationship between the dependent variable (summated score for customer-based brand equity) and the above-mentioned independent variables at the 0.01 level of statistical significance.

7.3 RECOMMENDATIONS

The results of this study has certain implications for Vodacom and MTN. The actions that should be considered by Vodacom and MTN for implementation to benefit from the results of this study will be discussed in this section.

7.3.1 Services used

Considering the brand portfolio roles of the services used, the sub-brand *talk contract packages* is of strategic importance to both Vodacom (refer to Chapter 3, figure 3.17) and MTN (refer to Chapter 3, figure 3.18) in the target market for this study. The sub-brand *talk contract packages* is the current power or mega brands (refer to Chapter 3, paragraph 3.7.4.7) and should be allocated the resources required to succeed. The data products, prepaid data and contract data (the future power brands) present a growth opportunity that should be exploited to grow future revenues as the talk contract packages have reached a high level of saturation. The other services accessed via contract subscriptions (mostly content-related services) also present an opportunity to grow future revenues.

7.3.2 Customer relationship value

The target market is a group of high value to the service provider that spends significantly more than the average revenue per user (ARPU) reported by Vodacom (R474) and MTN (R365) for contract users in the 2009 financial year (refer to Chapter 2, table 2.4 and 2.7).

Loyalty programmes feature prominently as an important component of the integrated marketing communication of both Vodacom and MTN (refer to Chapter 3, paragraph 3.7.4.7) The low level (11.32%) of awareness of the loyalty programmes offered by the network service providers, indicates that the customer retention programme for the

target market can be improved. The development of a retention programme targeted specifically at the user group should be considered.

The segmentation of customers based on their relationship value (refer to Chapter 4, figure 4.12) is an important requirement for successful customer relationship management. The target market is not only of high value to the service providers in terms of money spent on monthly contracts, but the principal estate agents also have a long customer lifetime if considered that at least 87.22% of the respondents had been with the same network service provider for five years or more at the time that the survey was done. Based on average monthly contract expenses of R1 280, the five-year revenue potential for these customers equals R76 800. (This value was not discounted to a net present value.) Based on a conservative estimate of 10 000 principal estate agents, the five-year market potential equals R768 million. This further justifies the development of a retention programme aimed specifically at the target market in question.

7.3.3 Opportunity to provide converged services

The high level of access to telecommunication-related services, i.e. a fixed-line telephone at home (79.33%), fixed-line Internet at home (64.25%), subscription to pay television (85.31%) and access to a laptop for personal use (84.27%), creates an opportunity for cellphone network service providers to provide converged services. This opportunity is supported by a high personal total monthly income and fits very well into Vodacom's intention of becoming a one-stop communication service provider. The recent introduction of an uncapped ADSL offering by MWeb is an example of a competitive action to acquire high bandwidth users who are the most likely potential users of converged services.

7.3.4 Marketing communication

Principle estate agents are the primary decision-makers about the cellular services that they use. Thus the cellphone network service providers should target their marketing communication directly at the principal estate agent.

SMS (26.24%) and television (21.29%) were indicated as the most preferred communication channels, followed by inserts in the cellphone account (12.47%) and radio (10.75%). The marketing communication programmes of cellphone network service providers for this target market therefore should include a mix of all the marketing communication media, as prompted in the questionnaire (refer to Chapter 6, table 6.11).

7.3.5 Measurement of the brand relationship (customer-based brand equity)

The high level of agreement with the statement indicating use of the brand to avoid the effort of switching (58.99% agreed/strongly agreed) reflects the obligatory nature (refer to Chapter 4, paragraph 4.3.6) of the relationship between the target market and the cellphone network service providers. It indicates that the five key principles that underpin the development of a relationship between the organisation and its customers (understanding, trust, collaboration, commitment and adaptation) have not been developed and this should be addressed by the cellphone network service providers.

The summated measurement scale for customer-based brand equity meets the requirements in terms of reliability to measure the concept of customer-based brand equity as defined in this study. The profiles of the low and high customer-based brand equity groups differ statistically significantly with regard to all the brand association and brand performance measures assessed in this study. This confirms the importance of measuring customer-based brand equity. The cellphone network service providers should develop an instrument to measure their customer-based brand equity. The

measuring instrument should become a standard tool to be used in future marketing research.

The statements included in the summated scale for customer-based brand equity as developed in this study, are of sufficient relevance to be used as criterion variables in the measurement of customer-based brand equity (refer to Chapter 4 paragraph 4.3.7.5 (a)). In other words the summated scale for customer-based brand equity can be used by Vodacom and MTN in the development of a measuring instrument to measure customer-based brand equity, and to validate the measuring instrument (refer to Chapter 5, paragraph 5.3.8.10). Profiling variables, that has a high correlation with the summated customer-based brand equity score would qualify as potential measures for inclusion in a measuring instrument to measure the customer-based brand equity of Vodacom and MTN .The profiling variables will have to meet conceptual requirements for use as variables to measure customer-based brand equity.

The differences in the profiles of the low and high customer-based brand equity groups, in terms of their ratings for brand associations and brand performance, confirm the importance of loyalty segmentation. Thus, the cellphone network service providers should regularly include loyalty segmentation in their future marketing research efforts. Vodacom and MTN can use the summated scale for customer-based brand equity for loyalty segmentation purposes as well.

7.3.6 Performance in terms of brand relationship (customer-based brand equity)

Although the principal estate agents could be classified as heavy users (refer to Chapter 4, figure 4.12), they have achieved a median value of only 16 (64%) on the summated scale for customer-based brand equity. Thus, their customer-based brand equity (brand relationship) can only be considered as moderate. The cellphone network service providers will have to take action to improve their customer-based brand equity within this target market. Recommendations on specific actions to be taken to remedy the

situation will be discussed in the sections covering brand positioning and brand performance.

7.3.7 Performance in terms of overall satisfaction

The overall satisfaction ratings by Vodacom and MTN users do not indicate customer delight. Only 12.96% of Vodacom users and only 6.85% of MTN users were very satisfied with the cellphone service that they were using. Thus, both Vodacom and MTN should take action to improve their overall satisfaction ratings in the target market.

7.3.8 Brand positioning

A summary of Vodacom and MTN's brand positioning, based on the rating of the brand association statements, was presented in figure 7.1. The following recommendations are based on brand positioning:

The **category points of parity** will have to be maintained by both Vodacom and MTN. In order to be considered as a credible cellphone network service provider by the target market, the category points of parity will be the minimum brand associations that will have to be achieved in terms of brand image. MTN has established the strongest association with the statement *local brand*, but Vodacom has established a competitive point of parity with regard to this statement.

Based on the brand association ratings, only one **point-of-difference association** currently exists. The point-of-difference association that Vodacom has established with regard to the statement *popular/most used brand* is neutralised, to some extent, by the competitive point of parity that has been established by MTN with regard to the statement *market leader*. Vodacom, however, has established the strongest association with both statements and should use this to strengthen its positioning as the market leader in South Africa.

Vodacom should consider growing the strength of its association with the statement *global brand*. The company should also develop a sustainable competitive advantage based on this association. The link with Vodafone should be used by Vodacom to strengthen its positioning. The development of this sustainable competitive advantage could also be used to strengthen Vodacom's positioning with regard to the brand association statements *technologically sophisticated* and *prestigious/upmarket brand*.

An opportunity exists for MTN to strengthen its association with the statement *African brand* in order to create a point-of-difference association. It is, however, recommended that the importance that the target market would attach to such a point-of-difference association should be investigated, before investing resources to establish the point-of-difference association.

Vodacom should consider the Vodacom areas of advantage in the development of their future brand positioning for the target market. Improvement on the statement *brand that understands customer needs* should be considered as key priority, as theory (refer to Chapter 4, paragraph 4.3.6) suggests that understanding customer needs is the fundamental basis for the development of a relationship between an organisation and its customers. The same applies to the current strength of the association with the statement *customer service*. By focusing on improving performance with regard to these two statements, it is likely that the ratings for the other statements identified as areas of advantage for Vodacom will also improve. With reference to MTN it should be noted that the Vodacom areas of improvement include statements that do not differ statistically significantly. Thus MTN also has the opportunity to develop point-of-difference associations based on the statements labelled as *Vodacom areas of advantage*.

The **category weaknesses** should be considered as areas of concern for both Vodacom and MTN. Vodacom's top-two box scores varied from a high of 54.9% to a low of 30.4% and those of MTN from a high of 50.8% to a low of 29% with regard to all the statements included in the category weaknesses. None of the ratings differ statistically significantly between the two groups.

The poor top-two box ratings for the statements included under the initial dimension labelled as *trust/care* should be considered as a top priority, as it fundamentally addresses one of the five key principles, i.e. the development of trust that is required in the development of a relationship between an organisation and its customers. It can be argued that by improving the understanding of customer needs (as previously discussed), and the statements mentioned under *trust/care*, *brand likeability* will most probably also improve. It is also important to note that reliability (keeping promises) is considered as the core of service quality. Reliability is also considered to be of critical importance in brand development of a brand relationship with customers (refer to Chapter 3, paragraph 3.5.2.1 and Chapter 4, paragraph 4.3.3.3).

The poor top-two box ratings for the statements included under the initial dimension *social responsibility* justify further research, as both Vodacom and MTN have extensive programmes focusing on corporate social responsibility. This issue will be included in the section addressing areas for future research.

The poor top-two box ratings for the statements *brand personality* and the statements included under the initial dimension *brand likeability* indicate that the brand relationship between both Vodacom and MTN and the target market, is at the brand performance level, as presented in the customer-based brand equity pyramid (refer to Chapter 3, paragraph 3.5). Thus, the brand relationship is at a functional level and does not include attitudinal attachment which is created by providing emotional and self-expressive benefits (refer to Chapter 3, paragraphs 3.5 and 3.7.1.1, and Chapter 4, paragraph 4.3.6). The cellphone network service provider that succeeds in creating a point-of-difference association based on the statements *brand personality* and the statements included under the dimension *brand likeability* would create a competitive advantage in retaining a highly valuable customer base. By addressing the previously mentioned weaknesses with regard to brand positioning, the relationship with the target market will be more likely to move towards the establishment of trust, collaboration, commitment and adaptation - the ultimate destiny in the development of the relationship between an

organisation and its customers. This will also contribute towards improving the low level of category involvement by the target market.

The poor top-two box rating for both Vodacom and MTN with regard to the brand association statement *unique* should be improved by the development of a value proposition aimed specifically at the target market. This should be done in order to support the development of the brand relationship with the target market. The suggestions regarding brand personality and brand likeability, that should improve the weaknesses regarding brand positioning, will contribute towards the development of an improved value proposition for the target market and thus will improve scores for the statement *unique*.

Both Vodacom and MTN should use the brand association dimensions, identified by means of factor analysis, in the development of a measuring instrument to measure customer-based brand equity. The rating of the brand association dimensions confirms Vodacom's dominant position with regard to the dimension *leadership/perceived quality* and MTN's dominant position with regard to the dimension *local brand/African brand*. The analysis of the brand association statements, based on the original dimensions, suggested a sufficiently strong brand association for Vodacom to maintain competitive parity. However, the summated scale includes the brand association statement *African brand* in the dimension, resulting in MTN dominating brand positioning as far as this dimension is concerned. During assessment of the brand positioning for the target market the definition of the dimension local brand/South African brand should be given careful consideration. If African brand is included in the definition this will indicate an extended regional context. This issue will be addressed in the section addressing areas for future research.

The strong relationship identified between customer-based brand equity and the brand association dimension *brand as a product/perceived value* confirms that the brand relationship is at a functional level only. Thus, the recommendation to improve brand

positioning, by improving the relationship based on emotional and self-expressive benefits, is supported by this finding.

7.3.9 Brand performance

The analysis of the brand performance statement ratings indicated that Vodacom has a competitive advantage in terms of the brand performance statements indicated in figure 7.4. Vodacom has a significant competitive advantage with regard to the statements *services that are easy to use*, *services that enable users to control costs* and *entertainment services*. Vodacom should ensure growth and maintenance of the strategic advantage that it has with regard to the above-mentioned brand performance statements. However, Vodacom should pay serious attention to improving performance in the areas mentioned in figure 7.5. Improving performance with regard to the statement *reliability of the cellphone network* can create an additional area of competitive advantage for Vodacom. MTN has a serious deficiency in terms of brand performance, with only two brand performance statements receiving top-two box ratings exceeding 70%. Thus, improvement in terms of brand performance should be a key area of focus for MTN.

The brand performance dimensions identified by means of factor analysis should be considered in the development of a measuring instrument to measure customer-based brand equity. Careful consideration should be given when defining the brand performance dimensions, specifically taking into consideration the benefits of using a summary measure of brand performance, as opposed to numerous individual brand performance measures. However, a value proposition driven by a selected number of key brand performance dimensions could create a sustainable competitive advantage to retain a highly valuable customer base (refer to Chapter 3, paragraph 3.7.1.1 (d) (iv), 3.7.1.1 (e) and Chapter 4, paragraph 4.3.7.5 (c) (i)). This issue will be revisited in the section on areas for future research.

Rating of the summated brand performance dimensions did not identify statistically significant differences between Vodacom and MTN. This result should take into consideration the limitations in terms of sample size, as previously discussed. This issue will be revisited in the section addressing the limitations of this research.

The strong relationship between customer-based brand equity and the brand performance dimensions *easy-to-use* and *one-stop-service* that was identified, confirms that the brand relationship is at a functional level and supports the research finding suggesting a relatively low level of category involvement by the target market. Thus, the recommendation to improve brand positioning by improving the relationship based on emotional and self-expressive benefits is supported by this finding. It is also supported by the strong relationship between customer-based brand equity and the brand association and brand performance dimensions *brand as a product/perceived value* and *easy to use*.

7.4 RECONCILIATION OF THE OBJECTIVES OF THE STUDY

Table 7.1 presents a reconciliation of the objectives of the study and the achievement of the objectives.

TABLE 7.1 RECONCILIATION OF THE OBJECTIVES OF THE STUDY

Objective	Achievement of the objective
The primary objective of this study was to determine the customer-based brand equity of the major South African cellphone network service providers within the defined target market	A summated measurement scale was developed and used as indicator measure for the concept of customer-based brand equity, as defined for the purpose of this study. Refer to Chapter 6, paragraph 6.3.3.2.
To determine a profile of the user group and to compare this with stated descriptors for individuals in the LSM seven to LSM ten groups	The user group was profiled in Chapter 6, paragraph 6.3.2. The profile was compared with stated descriptors for individuals in the LSM seven to LSM ten groups.
To determine the user group's brand relationship (customer-based brand equity)	The user group's brand relationship was evaluated in Chapter 6, paragraph 6.3.3. In paragraph 6.3.3.1 rating of the brand relationship statements was evaluated and in paragraph 6.3.3.2 a summated measure was developed for use as an indicator variable for the concept of customer-based brand equity.
To determine the user group's brand usage, barriers to brand usage, and brand contact	This objective was achieved in Chapter 6, paragraphs 6.3.5, 6.3.6 and 6.3.7. In paragraphs 6.3.5.1 to 6.3.5.3 brand usage was covered in terms of services used, average monthly expenses, and subscription period. In paragraph 6.3.6 barriers to brand usage were determined, and in paragraph 6.3.7 brand contact was determined.
To determine the user group's brand awareness	This objective was achieved in Chapter 6, paragraph 6.3.8. In paragraph 6.3.8.1 the user group's brand awareness at corporate level was determined. In paragraph 6.3.8.2 the user group's brand awareness at product level was determined and in paragraph 6.3.8.3 the user group's awareness of loyalty programmes was determined.
To determine the user group's preferences regarding service providers	This objective was achieved in Chapter 6, paragraph 6.3.9.
To determine the user group's satisfaction with the cellphone service used	This objective was achieved in Chapter 6, paragraph 6.3.10.
To determine the user group's associations attached to the brands	This objective was achieved in Chapter 6, paragraph 6.3.11.
To determine the user group's assessment of brand performance	This objective was achieved in Chapter 6, paragraph 6.3.12.
To identify the key drivers of customer-based brand equity	This objective was achieved in Chapter 6, paragraphs 6.3.11.5 and 6.3.12.5.

Objective	Achievement of the objective
To determine any other relevant issues that may influence customer-based brand equity	This objective was achieved in Chapter 6, paragraph 6.3.4.
To identify areas for future research in this field	This objective was achieved in Chapter 7, paragraph 7.5.
To contribute to the body of knowledge regarding the measurement of customer-based brand equity in South Africa.	Extensive secondary research revealed that no similar studies have been conducted within the defined target market. This study provides empirically verified information contributing to the body of knowledge regarding the measurement of customer-based brand equity in South Africa. This objective was achieved in chapters 6 and 7.

7.5 AREAS FOR FUTURE RESEARCH

The following areas have been identified as areas for future research in the field of customer-based brand equity measurement in South Africa:

1. The relatively low incidence of brand contact via website visits requires further investigation. The web portals of the cellphone network service providers are important components of their marketing mix to increase the use of content-related services (refer to Chapter 3, paragraph 3.7.4.8). These portals are used to a very limited extent by the target market. Ease of access could be improved by creating easy access to service delivery via a web portal. The high incidence of personal visits to an outlet (60.86%) could be reduced by creating convenient online service delivery channels and by educating users on how to use them. This should be used to differentiate the value proposition for this target market and to move the brand relationship towards collaboration, commitment and adaptation (refer to paragraph 7.3.6).
2. The low level of awareness of loyalty programmes as offered by the cellphone network service providers requires further investigation. Loyalty programmes feature prominently as an important component of the integrated marketing communication of both Vodacom and MTN (refer to Chapter 3, paragraph 3.7.4.7). The low level of awareness also suggests that the current loyalty

programmes do not address the “sweet spot” in terms of the self-concept of the target market under discussion (refer to Chapter 3, figure 3.21). It suggests that the low level of awareness should also be addressed as part of the process to develop customer relationships with the specific target market (refer to paragraph 7.3.2 and Chapter 3, paragraph 3.7.4.7).

3. There is an indication that access to a fixed-line Internet service at home positively influences customer-based brand equity. Internet access via the cellular service was indicated by 35.39% of the respondents. A much higher percentage of the respondents (64.25%) indicated that they had fixed-line Internet access at home, while 84.27% indicated that they had access to a laptop for personal use. Considering that these respondents were spending an average of R1 368 per month for the use of contract services, further research is required to determine the target market’s specific needs in terms of value added services, such as cellular Internet access and an integrated voice and data solution, similar to the BlackBerry which could be packaged as a business solution for this target market. This research should provide additional insight that can be used to develop a differentiated value proposition for this target market. The research will thus help to define the brand performance dimensions that should be used by the measuring instrument, in order to measure customer-based brand equity for this target market (refer to paragraph 7.3.9 and Chapter 6, paragraph 6.3.2.6).
4. Both Vodacom and MTN are weakly associated with the statements included in the social responsibility dimension. Considering the importance of caring for the environment and social responsibility in the marketing of a brand further research is required to determine why both brands failed to establish a strong association with regard to the social responsibility dimension, despite much effort to do so (refer to, Chapter 3, paragraphs 3.7.2).
5. Further research is required to determine the relevance of the brand association African brand for the target market. The research should determine whether a

strong positioning with regard to this dimension would add value to the brand image for the target market. The research should clarify whether African brand should be included in the brand association dimension local brand/African brand. This should provide insight as to whether MTN can capitalise on their dominant position with regard to this association, in order to use it as a point-of-difference association. Further research should also attempt to answer the question about what Vodacom should do to create a competitive point of parity (if a point of parity is necessary), by taking into account the relevance of the association. Future research should also investigate the extent to which a strong positioning with regard to the dimension local brand/African brand versus global brand can be used to drive the brand association prestigious/upmarket brand (refer to paragraph 7.3.8, Chapter 3, paragraph 3.7.4.1).

6. Further research is required to determine whether the brand associations likeable, trendy and exciting, and sincere/down to earth are relevant to the target market, considering the older age profile. The research should provide insight into the brand associations that can be used to develop a relationship based on emotional and self-expressive benefits. A relationship based on emotional or self-expressive benefits will be useful in creating a point-of-difference association for Vodacom and MTN. Thus the research should also address how the brand personality should be presented to contribute to the brand relationship and the development of the point-of-difference association. The use of organisational associations to create a sustainable competitive advantage, and to support the corporate brand, should be addressed. This research should also suggest how the brands can be positioned to become unique (refer to paragraph 7.3.8, Chapter 3, paragraphs 3.7.1.1 and 3.7.1.2, and Chapter 4, paragraph 4.3.7.5 (c) (ii),(iii) (iv)).
7. Refinement of the instrument developed to measure customer-based brand equity.

7.6 LIMITATIONS OF THE RESEARCH

As previously discussed, the difficulty to get access to respondents in the target market (LSM seven to LSM ten) had a significant influence on the cost of the research. This was aggravated by the large number of inactive estate agencies. Due to these practical considerations, the total number of interviews completed was limited to 250 (refer to Chapter 6, paragraph 6.2.3). The factor analysis and multiple regression analysis of the detailed brand performance assessment should take the sample size limitation into consideration (refer to Chapter 6, paragraphs 6.3.11.3, 6.3.12.2). The limited number of responses for the detailed brand performance assessment was due to the fact that respondents could not rate brand performance with regard to the statements referring to services that they were not using. The limitation was overcome by using a summary brand performance measure (refer to Chapter 5, paragraph 5.3.5.3 (h) and Chapter 6, paragraph 6.3.12.5).

Research by Hofmeyr (2007:189) suggests that a value measure that provides a summary indication of the brand's success in creating the value proposition is more appropriate than numerous individual brand performance measures (refer to Chapter 5, paragraph 5.3.5.3 (h)). The summated brand association dimension the *brand as a product/perceived value* provided a good summary measure of brand performance (refer to Chapter 6, paragraph 6.3.11.2). The statement *overall brand performance* also provided a good summary measure of brand performance. The detailed brand performance statements were included in the questionnaire to provide additional insight on brand performance and brand usage (refers to Chapter 6, paragraph 6.3.12).

Quota sampling, a non-probability sampling technique was included in the research design to ensure sufficient representation of Vodacom, MTN and Cell C users (refer to Chapter 5, paragraph 5.3.6.2). However, in the execution of the research it was found that the quotas realised were primarily determined by the market share of major cellphone network service providers. The sample size constraints mentioned for the factor analysis of the brand performance statements (refer to Chapter 6, paragraph

6.3.12.2) and the stepwise multiple regression analysis assessing the relationship between customer-based brand equity and summated brand performance dimensions (refer to Chapter 6, paragraph 6.3.12.5) as well as the summated brand association and brand performance dimensions (refer to Chapter 6, paragraph 6.3.13) should take into account the risk of “overfitting” the results to the sample (refer to Chapter 5, paragraph 5.3.8.8 and paragraph 5.3.8.9).

7.7 CONCLUSION

In this study the customer-based brand equity of Vodacom and MTN was determined, based on the relationship of these two companies with the defined target market. The study also investigated the profile of the target market and compared it to stated descriptors for individuals in the LSM seven to LSM ten groups. The target market’s brand awareness, brand usage, brand contact, preferences regarding service provider, overall satisfaction, brand associations and perceptions of brand performance were also investigated.

According to this study the profiles of Vodacom and MTN users are very similar in terms of the selected personal demographic and estate agency-related demographic variables. The profile of the user group compares favourably with that of users in the LSM seven to LSM ten groups in terms of the selected personal demographics and variables selected to assess access to telecommunication-related services.

A summated scale for customer-based brand equity that met requirements in terms of reliability and content validity was developed for use as an indicator variable to measure customer-based brand equity. The customer-based brand equity for the user group as a whole can be described as moderate: 16 out of 25 (64%). The customer-based brand equity of Vodacom and that of MTN do not differ at a statistically significant level. The median value of the summated customer-based brand equity score was used to divide the target market into a low and a high customer-based brand equity group, in order to assess the differences in the brand knowledge structures of the mentioned groups.

The profiles of Vodacom and MTN users are very similar in terms of brand awareness, brand usage, brand contact, and overall satisfaction. The *service provider used* is a key driver of *likelihood to use*, assuming that the user have a choice. The profiles of the low and high customer-based brand equity groups are very similar in terms of access to telecommunication-related services, brand usage and brand contact, but differ statistically significantly in terms of overall satisfaction, rating of the brand association statements and rating of the brand performance statements. Based on the summated brand association dimensions identified by means of factor analysis, Vodacom has a significantly better positioning than MTN with regard to the dimension *leadership/perceived quality*. MTN, on the other hand, has a significantly better positioning with regard to the dimension *local brand/African brand*. Both brands are poorly positioned with regard to the dimensions *brand likeability* and *social responsibility*. The dimension *brand as a product/perceived value* is the best predictor of customer-based brand equity of all the brand association dimensions.

Both brands have failed to establish the five key principles that underpin the development of a relationship between an organisation and its customers: understanding, trust, collaboration, commitment and adaptation. The brand performance assessment indicates that Vodacom is better positioned than MTN in terms of overall performance. However, the performance of both brands is a serious concern with regard to the following brand performance statements: *reliability of the cellphone network*, *customer service*, *value for money*, and *loyalty rewards*.

The brand relationship (customer-based brand equity) of Vodacom and MTN within the defined target market is mediocre. It resides at the brand performance level as defined in the customer-based brand equity pyramid. A low level of category involvement and a high level of inertia suggest that the loyalty of a high percentage of the customers in the defined target market can be defined as spurious loyalty (behavioural loyalty), rather than true loyalty (refer to Chapter 4, paragraph 4.3.5). Customers have been acquired due to first-mover advantages, significant infrastructure investment and a regulatory

environment that stifled competition. As competition opens up in the market, Vodacom and MTN may find it difficult to retain this high value customer group should a new entrant offer an improved value proposition, supported by an effective marketing programme to develop a customer relationship based on true loyalty.

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ANNEXURE A

STRUCTURED QUESTIONNAIRE

PRINCIPAL ESTATE AGENT SURVEY				
<p>The purpose of this questionnaire is to determine your perceptions and service experience of cell phone network service providers. The questionnaire will take approximately 15 minutes to complete. Your participation in completing this short questionnaire is appreciated.</p> <p>Please enter your email address. It will only be used for sample control purposes.</p> <p>.....</p>				
1. USE OF CELLULAR SERVICES				
1.1 Do you personally use a cell phone service?				
Yes		No		
1.2 Do you personally decide about the use of this service?				
Yes		No		
1.3 Who is responsible for the payment of this service? (Indicate only one of the options)				
1. I pay for the service in full				
2. My employer pays for the service in full				
3. The service is paid for jointly by myself and my employer				
4. The service is paid for by another party				
1.4 Do you use this service for :				
1. Personal purposes only		2. Both personal and business purposes		
1.5 Please rate your overall satisfaction with the cell phone service that you use. If you use more than one cell phone service, rate your satisfaction with the service that you use the most.				
1. Very dissatisfied	2. Dissatisfied	3. Neither dissatisfied nor satisfied	4. Satisfied	5. Very satisfied
1.6 Do you access the internet through the cell phone service that you use? (Note that this refers to internet access through your cell phone service and exclude internet access through a fixed line telephone service e.g. dial up or ADSL).				
Yes (Go to question 1.7)		No (Go to question 2.1)		
1.7 Which of the following devices do you use to access the internet through the cell phone service that you use? (Multiple options are possible)				
1. Cell phone				
2. Personal Digital Assistant (PDA) or Smart Phone e.g. BlackBerry				
3. Laptop				
4. Desktop PC				
1.8 Which access technology do you use to access the internet through the cell phone service that you use?				
1. EDGE / GPRS		2. 3G / 3G with HSDPA / HSUPA		3. Don't know
2. AWARENESS AND SERVICE PROVIDER PREFERENCES				
2.1 Which of the following cell phone network service providers are you aware of / have you heard of before? (Multiple options are possible)				

1.Vodacom		7.MWeb	
2. MTN		8. i-Talk Cellular	
3.Cell C		9.Smart Phone	
4.Virgin Mobile		10.Supercall Cellular	
5.Nashua Mobile		11.iBurst	
6.Autopage Cellular			
2.2 Which of the following cell phone network service providers do you use? (Multiple mentions possible)			
1.Cell C	2. MTN	3. Vodacom (including iBurst provided by Vodacom)	
2.3 If you have indicated the use of more than 1 cell phone network service provider in question 2.2 indicate which one you use most frequently.			
1.Cell C	2. MTN	3.Vodacom (including iBurst provided by Vodacom)	
2.4 In the table below, indicate whether you use the services of your cell phone network service provider on contract and/or prepaid. (Only indicate for the cell phone network service provider that you use most frequently. Refer to question 2.3 if you use more than 1).			
Contract			
Voice services (including voice calls, voice mail, SMS and MMS)		Yes	No
Data services (including all internet related use, sending and receiving of files as well as e-mail services)		Yes	No
Other services (including all content related use e.g. music downloads and other services)		Yes	No
Prepaid			
Voice services (including voice calls, voice mail, SMS and MMS)		Yes	No
Data services (including all internet related use, sending and receiving of files as well as e-mail services)		Yes	No
Other services (including all content related use e.g. music downloads and other services)		Yes	No
2.5 How much do you spend on average per month for the use of contract and/or prepaid services provided by the cell phone network service provider mentioned in question 2.3 (the one that you use most frequently)?			
2.5.1 Average per month for contract services :			
2.5.2 Average per month for prepaid services :			
2.6 How long have you been using your most used cell phone network service provider?			
1. Less than 1 year			
2. More than 1 but less than 2 years			
3. More than 2 but less than 5 years			
4. More than 5 years			
2.7 If you indicated the use of a prepaid service(s) in question 2.4, do you know the name of the prepaid service(s) (e.g. Vodago from Vodacom)?			
Yes (Go to question 2.8)	No (Go to question 2.9)	Not Applicable (Go to question 2.9)	
2.8 If you indicated yes at question 2.7, mention the name of the prepaid service(s) that you use.			

2.9 If you indicated the use of a contract service(s) in question 2.4, do you know the name of the contract service(s) (e.g. Talk 75 S from Vodacom)?					
Yes (Go to question 2.10)		No (Go to question 2.11)		Not Applicable (Go to question 2.11)	
2.10 If you indicated yes in question 2.9, mention the name of the contract service(s) that you use					
2.11 How likely is it that you will use the cell phone network service providers mentioned below, should you have the choice? Rate all the cell phone network service providers mentioned.					
Cell phone Network Service Provider	Very unlikely	Unlikely	Neither unlikely nor likely	Likely	Very likely
Cell C					
MTN					
Vodacom					
Virgin Mobile					
2.12 Are you aware of anything that prevents you from using your most preferred cell phone network service provider?					
Yes (Go to question 2.13)			No (Go to question 2.14)		
2.13 If you indicated yes in question 2.12, what prevents you from using your most preferred cell phone network service provider? (Multiple options are possible.)					
1.Service not easily available due to distribution limitations					
2.Subscription fees are too expensive					
3.Usage charges are too expensive					
4.I am locked into a contract with another cell phone network service provider					
5.It is too inconvenient to change from one cell phone network service provider to another					
6. I prefer to use one cell phone network service provider for all my cell phone services					
7.Other (specify)					
2.14 Please tick to indicate your most preferred cell phone network service provider below.(One mention only)					
1.Cell C	2. MTN (specify)	3. Vodacom	4. Virgin Mobile	5.Other	

3. BRAND ASSOCIATIONS AND BRAND PERFORMANCE

3.1 Rate the following statements/attributes and indicate to what extent you agree or disagree that they describe the cell phone network service provider that you use most frequently. Only rate the cell phone network service provider that you use most frequently (refer to question 2.3 if you use more than 1).

Statements/attributes		Rating varying from strongly disagree to strongly agree or don't know					
		Strongly Disagree	Disagree	Neither agree nor Disagree	Agree	Strongly Disagree	Don't know
3.1.1	Prestigious/up market brand						
3.1.2	Local brand						
3.1.3	Market leader						
3.1.4	African brand						
3.1.5	Global brand						
3.1.6	South African brand						
3.1.7	Popular/most used brand						
3.1.8	Trusted brand						
3.1.9	Brand that understand customer Needs						
3.1.10	Technologically sophisticated						
3.1.11	Cares for the environment						
3.1.12	Warm and caring						
3.1.13	Friendly and helpful						
3.1.14	Affordable						
3.1.15	Innovative						
3.1.16	Socially responsible						
3.1.17	Unique						
3.1.18	Keeps its promise						
3.1.19	This brand has a personality						
3.1.20	Sincere/down to earth						
3.1.21	Likeable						
3.1.22	Easily accessible						
3.1.24	Fun to use						
3.1.25	Adds value to my lifestyle						

3.2 Please rate the performance of the cell phone network service provider that you use most frequently on the services/statements mentioned below. (Only rate the cell phone network service provider that you use most frequently, refer to question 2.3 if you use more than 1).							
Statements/attributes		Rating varying from very poor to excellent or don't know					
		Very Poor	Poor	Neither poor nor good	Good	Excellent	Don't know
3.2.1	Voice services (including voice calls, voice mail, SMS and MMS)						
3.2.2	Internet access service						
3.2.3	E-mail access (not SMS and MMS)						
3.2.4	Instant messaging services (similar to MXit e.g. Meep, noknok)						
3.2.5	Content services (e.g. news, sport, traffic, weather, etc.)						
3.2.6	Entertainment services (i.e. down loading of music, ringtones, games)						
3.2.7	Emergency services (e.g. road side assistance, medical emergency services)						
3.2.8	Geographic positioning (GPS) service(s)						
3.2.9	Services that enable users to control costs						

Statements/attributes		Rating varying from very poor to excellent or don't know					
		Very Poor	Poor	Neither poor nor good	Good	Excellent	Don't know
3.2.10	Services that are easy to use						
3.2.11	Prepaid services						
3.2.12	Contract services						
3.2.13	Cell phones/handsets						
3.2.14	Cell phone insurance						
3.2.15	Cell phone maintenance and repair service						
3.2.16	One-stop- service (meeting all cell phone usage needs)						
3.2.17	Network coverage						
3.2.18	Reliability of cell phone network						
3.2.19	Speed of data services						
3.2.20	Value for money						
3.2.21	Distribution (access to outlets)						
3.2.22	Advertising						
3.2.23	Website(s)						
3.2.24	Customer service						
3.2.25	Loyalty rewards						
3.2.26	Overall performance						
4. CELL PHONE HANDSET PREFERENCES							
4.1 Do you prefer a specific cell phone handset make/ brand (e.g. Nokia or Samsung)?							
Yes (Go to question 4.2)				No (Go to question 5.1)			
4.2 If yes to question 4.1 mention the cell phone handset make/brand that you prefer (one option only)							
1 Alcatel		6 i-mate			11 Philip		
2 Apple		7 LG			12 Samsung		
3 BlackBerry		8 Motorola			13 Siemens		
4 HP		9 Nokia			14 Sony-Ericsson		
5 HTC		10 Panasonic			15 Other (please specify)		
If you selected other please (specify)							
4.3 You mentioned the cell phone handset brand that you prefer in question 4.2. Do you prefer a specific model from this brand?							

Yes (Go to question 4.4)		No (Go to question 5.1)	
4.4 Please mention the model that you prefer.			
5. CONTACT WITH CELL PHONE NETWORK SERVICE PROVIDER			
5.1 Have you had any contact with the cell phone network service provider that you use most frequently within the past 4 weeks?			
Yes (Go to question 5.2)		No (Go to question 5.4)	
5.2 Please indicate the nature of the contact (Multiple mentions possible)			
a) Personal contact visiting an outlet	Yes	No	
b) Telephonic contact by dialing the cell phone network service support number	Yes	No	
c) Telephonic contact by dialing the call centre of the cell phone network service provider (e.g. Vodacom Direct)	Yes	No	
d) Internet access via a website	Yes (Go to question 5.3)	No (Go to question 5.4)	
5.3 If you selected yes in 5.2d, please indicate the website(s) and or web pages visited.			
5.3.1 Vodacom	5.3.2 MTN	5.3.3 Cell C	
www.vodacom.co.za	www.mtn.co.za	www.cellc.co.za	
www.vodacom.4me.co.za	www.mtnloaded.co.za	Hola7Club	
www.vodacomdirect.co.za	MyMTN		
5.4 Are you aware of any loyalty programmes provided by the cell phone network service provider that you use most frequently?			
Yes (Go to question 5.5)		No (Go to question 6.1)	
5.5 If yes to 5.4. Please indicate the loyalty programme(s) that you are aware of.			
5.5.1 Vodacom	5.5.2 MTN	5.5.3 Cell C	
Vodacom card	1-4-1 loyalty	Hola7Club	
Talking points		Woza"whenever"	
YeboMillionaires		Friends&Family	
6. RELATIONSHIP WITH CELL PHONE NETWORK SERVICE PROVIDERS			
6. Rate the extent to which you disagree or agree with the statements mentioned below regarding the cell phone network service provider that you use most frequently.			

Statements/attributes		Ratings varying from strongly disagree to strongly agree.				
		Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
6.1	I am considering to switch from this brand to another brand					
6.2	I use this brand because it is the most easily available					
6.3	I use this brand to avoid the effort involved in switching to another brand					
6.4	I use this brand because it is the most affordable					
6.5	I use this brand because it best suits my needs					
6.6	I am willing to put in an extra effort to use this brand (e.g. I would be willing to search for an outlet where it is available if necessary)					
6.7	I have a personal relationship with this brand					
6.8	I will recommend this brand to my friends and colleagues					
6.9 Which of the following would be your three most preferred means to receive marketing communications from the cell phone network service provider that you use most frequently? Indicate your 3 most preferred options.						
1.	SMS					
2.	Website of the service provider					
3.	Insert in cell phone account received by mail					
4.	TV					
5.	Radio					
6.	Daily newspaper					
7.	Sunday newspaper					
8.	Magazine					
7. USE OF OTHER TELECOMMUNICATION RELATED SERVICES						
7.1 Do you have access to a laptop PC for personal use?						
Yes				No		
7.2 Do you have access to a fixed line telephone service at home?						
Yes				No		
7.3 Do you have access to a fixed line internet service at home?						
Yes (Go to question 7.4)				No (Go to question 7.5)		
7.4 If you indicated yes to question 7.3, is this a dial up or ADSL service?						
Dial up		ADSL			Don't know	

7.5 How much does your household spend on average per month for the use of a fixed line telephone service? NOTE THIS IS THE TOTAL EXPENDITURE, INCLUDING THE INTERNET SERVICE PROVIDER FEE AND USAGE CHARGES IF APPLICABLE. Tick the applicable category below.							
Less than R250		R251 to R500		R501 to R1000		More than R1000	
7.6 Does your household subscribe to a pay TV service (e.g. M-NET or DSTV)?							
Yes (Go to question 7.7)				No (Go to question 8.1)			
7.7 If yes to question 7.6 please mention the service.							
M-NET		DSTV		Other			
8. DEMOGRAPHICS							
8.1 How many estate agents does your estate agency employ in total?							
1 Agent			2 to 10 Agents			More than 10 Agents	
8.2 What is the legal business form of your estate agency?							
Sole proprietorship		Partnership		Close corporation	Private company	Public company	Other
8.3 For how many years have you been working as an estate agent?							
Less than 1 year		2-3 years		4-6 years		7-10 years	more than 10 years
8.4 For how many years have you been working as a principal estate agent?							
Less than 1 year		2-3 years		4-6 years		7-10 years	more than 10 years
8.5 How many people, excluding domestic workers and household helpers, are currently living in your household?							
8.6 Into which of the following age categories do you fall?							
16 - 19	20 - 24	25 - 34	35 - 44	45 - 49	50 - 54	55 - 64	>65
8.7 Please indicate your gender							
Male				Female			
8.8 Which of the following categories best describe your PERSONAL TOTAL MONTHLY INCOME before tax and other deductions (this refers to gross income)?							
R1 – R2 499		R2 500 – R4 999		R5 000 – R7 999		R8 000 – R10 999	
R11 000 – R15 999		R16 000 – R29 999		R30 000 – R39 999		>R40 000	
Submit Response							

Thank you for your participation in this study

ANNEXURE B

OFFICIAL UNISA LETTER

Faculty of Economic and Management Sciences

Cell: 0823713643

Dear Respondent

SURVEY AMONGST PRINCIPAL ESTATE AGENTS IN GAUTENG

Mr H Mentz is doing research for a doctoral thesis in the Department of Business Management at Unisa. The purpose of the research is to determine the perceptions and experiences of principal estate agents in their use of cell phone network service providers.

Your participation by completing the short questionnaire attached will be appreciated. All responses will be treated as confidential. Data collected will only be used for statistical analysis. No individual or company specific information will be revealed. Do not hesitate to contact Mr H Mentz at the above telephone number should you require any further information or assistance completing the questionnaire.

Your valuable contribution to the development of Services Marketing in the South African Estate Agent Industry is sincerely appreciated.

Click here to access the questionnaire.

Yours faithfully

**PROF JW STRYDOM
DEPARTMENT OF BUSINESS MANAGEMENT**



ANNEXURE C

TABELS C.1 to C.62

TABLE C.1 TOTAL PERSONAL MONTHLY INCOME: LSM SEVEN TO LSM TEN

Category (Rand)	LSM 7 to 10 (%)	LSM 7 (%)	LSM 8 (%)	LSM 9 (%)	LSM 10 (%)
1 – 2 499	13.82	21.90	15.10	9.30	6.80
2 500 – 4 999	10.45	14.20	11.80	8.70	5.40
5 000 – 7 999	11.92	13.20	12.20	12.50	8.80
8 000 – 10 999	10.82	8.60	10.40	14.00	10.40
11 000 – 15 999	6.79	3.90	6.40	8.30	9.80
16 000 – 29 999	6.27	2.40	3.30	7.70	13.90
30 000 – 39 999	0.94	0.20	0.30	1.10	2.50
>40 000	1.04	0.30	0.30	0.70	3.70
No personal income	27.07	27.00	31.40	26.10	22.30
Refused	10.88	8.30	8.80	11.60	16.40
Total	100.00	100.00	100.00	100.00	100.00

Source: AMPS 2009RB SAARF, 2010

TABLE C.2 PEARSON CHI-SQUARE TESTS: PERSONAL DEMOGRAPHICS AND NETWORK SERVICE PROVIDER

Variable	Pearson chi-square value	Degrees of freedom (Df)	Significance of test statistic (2-sided)
Personal total monthly income	3.196	4	0.526
Fixed-line telephone at home	0.002	1	0.965
Fixed-line Internet at home	0.56	1	0.813
Subscription to pay television	0.97	1	0.755
Access to a laptop for personal use	7.041	1	0.008**
Expenditure on a fixed-line telephone service	0.431	3	0.934
Number of people living in the household	1.978	3	0.577
Age	1.411	4	0.842
Gender	0.57	1	0.811

** Significant at the 5% (0.01) level

TABLE C.3 CRAMER'S V TEST: PERSONAL DEMOGRAPHICS

Variable	Value	Approximate significance
Access to a laptop for personal use (table 6.6)	0.199	0.008**

**** Significant at the 5% (0.05) level**

TABLE C.4 ACCESS TO TELECOMMUNICATION-RELATED SERVICES

Variable	Total (%)	LSM 7 (%)	LSM 8 (%)	LSM 9 (%)	LSM 10 (%)
Fixed line at home	15.90	24.40	34.30	44.10	60.20
Fixed line Internet at home 1)	5.50	4.20	7.60	18.30	41.50
Subscription to pay television 2)	18.00	24.70	36.50	56.90	79.30
Access to a laptop for personal use 3)	6.70	5.60	11.20	22.90	45.70

Notes: (1) Includes ADSL/dial-up/ISDN

(2) Any DStv service

(3) Personal laptop at home

Source: AMPS 2009RB, SAARF 2010

TABLE C.5 PEARSON CHI-SQUARE TESTS: ESTATE AGENCY-RELATED DEMOGRAPHICS

Variable	Pearson chi-square value	Degrees of freedom	Significance of test statistic (2-sided)
Number of estate agents employed (table 6.16)	5.082	2	0.079**
Legal business form (table 6.16)	2.233	3	0.526
Number of years working as an estate agent (table 6.16)	7.252	4	0.123
Number of years working as a principal estate agent (table 6.16)	4.369	4	0.358

**** Significant at the 5% (0.05) level**

TABLE C.6 CRAMER'S V TEST: ESTATE AGENCY-RELATED DEMOGRAPHICS

Variable	Value	Approximate significance
Number of estate agents employed (table 6.16)	0.168	0.079

TABLE C.7 PEARSON CHI-SQUARE TESTS: DECISION-MAKING VARIABLES

Variable	Pearson chi-square value	Degrees of freedom	Significance of test statistic (2-sided)
Personally decides about the use of the service (table 6.19)	4.768 1)	1	0.029
Responsibility to pay for the service (table 6.19)	2.168 2)	3	0.538
Use of the service for personal and business purposes (table 6.19)	7.252 3)	4	0.123

Notes: (1) 2 cells (50%) have an expected count of less than 5. The minimum expected count is 2.42

(2) 3 cells (37.5%) have an expected count of less than 5. The minimum expected count is 40.

(3) 2 cells (50%) have an expected count of less than 5. The minimum expected count is 1.21.

Due to expected frequency counts of less than 5 for more than 20% of the cells in all three of the contingency tables, no conclusions can be based on the Pearson chi-square tests.

TABLE C.8 PEARSON CHI-SQUARE TEST: PREFERENCE TO USE A SPECIFIC BRAND OF CELLPHONE HANDSET

	Value	Degrees of freedom	Asymptotic significance (2-sided)
Pearson chi-square	.496	1	.481
N of valid cases	176		

TABLE C.9 PEARSON CHI-SQUARE TEST: PREFERRED HANDSET BRANDS

	Value	Degrees of freedom	Asymptotic significance (2-sided)
Pearson chi-square	5.063 ^a	7	.652
N of valid cases	145		

TABLE C.10 PEARSON CHI-SQUARE TEST: CELLULAR INTERNET ACCESS

	Value	Degrees of freedom	Asymptotic significance (2-sided)
Pearson chi-square	.646	1	.422
N of valid cases	178		

TABLE C.11 PEARSON CHI-SQUARE TEST: CELLULAR INTERNET ACCESS AND INCIDENCE OF FIXED-LINE INTERNET AT HOME

	Value	Degrees of freedom	Asymptotic significance (2-sided)
Pearson chi-square	2.238	1	0.135
N of valid cases	176		

TABLE C.12 BRAND RELATIONSHIP RATINGS: MANN-WHITNEY U TEST

Statement (question numbers given in brackets)	Mean	Mean rank		Mann-Whitney U	Wilcoxon W	Z	Sig. (2-sided)
		Vodacom	MTN				
I use this brand because it best suits my needs (6.5)	3.427	93.34	83.72	3388.000	5944.000	-1.302	0.193
Respondents	178	107	71	-	-		-
I use this brand to avoid the effort involved in switching to another brand (6.3)	3.382	88.67	89.49	3418.000	9196.000	-1.210	0.226
Respondents	177	106	71	-	-		-
I use this brand because it is the most easily available (6.2)	3.295	81.89	73.63	2632.500	4712.500	-1.194	0.232
Respondents	156	92	64	-	-		-
I will recommend this brand to my friends and colleagues (6.8)	3.249	91.97	84.46	3427.500	5912.500	-0.997	0.319
Respondents	177	107	70	-	-		-
I am willing to put in an extra effort to use this brand (6.6)	3.006	90.72	86.36	3560.500	6045.500	-0.573	0.567
Respondents	177	107	70	-	-		-
I use this brand because it is the most affordable (6.4)	2.814	88.67	89.49	3728.500	9399.500	-0.111	0.911
Respondents	177	106	71	-	-		-
I have a personal relationship with this brand (6.7)	2.756	88.60	88.36	3717.500	6273.500	-0.31	0.975
Respondents	176	105	71	-	-		-
I am considering switching from this brand to another brand (6.1)	2.303	87.17	93.01	3549.000	9327.000	-0.797	0.426
Respondents	178	107	71	-	-		-

Z (Z test statistic), Sig. (Significance)

TABLE C.13 TOTAL VARIANCE EXPLAINED: BRAND RELATIONSHIP

Factor	Initial eigen values			Extraction sums of squared loadings			Rotation sums of squared loadings		
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	3.809	47.616	47.616	3.809	47.616	47.616	3.594	44.923	44.923
2	1.525	19.066	66.682	1.525	19.066	66.682	1.741	21.759	66.682
3	.702	8.770	75.452						
4	.631	7.889	83.341						
5	.470	5.870	89.211						
6	.401	5.007	94.218						
7	.292	3.646	97.864						
8	.171	2.136	100.000						

Extraction method: principal component analysis

TABLE C.14 RELIABILITY STATISTICS: SUMMATED CUSTOMER-BASED BRAND EQUITY MEASUREMENT SCALE

Statement (question numbers given in brackets)	Valid cases	Item-to-total correlation	Squared multiple correlation	Cronbach's alpha if item deleted
I use this brand because it best suits my needs (6.5)	175	0.771	0.627	0.828
I am willing to put in an extra effort to use this brand (6.6)	175	0.671	0.497	0.848
I have a personal relationship with this brand (6.7)	175	0.684	0.571	0.846
I will recommend this brand to my friends and colleagues (6.8)	175	0.833	0.728	0.807
I am considering switching from this brand to another brand (6.1)	175	0.546	0.413	0.878

TABLE C.15 SUMMATED CUSTOMER-BASED BRAND EQUITY SCORE ACCORDING TO CELLPHONE NETWORK SERVICE PROVIDER USED: MANN-WHITNEY U TEST

Mean rank		Mann-Whitney U	Wilcoxon W	Z test statistic	Significance (2-sided)
Vodacom	MTN				
91.11	83.34	3348.500	5833.500	-0.997	0.319

TABLE C.16 PROFILING VARIABLES ANALYSED ACCORDING TO CUSTOMER-BASED BRAND EQUITY GROUP: CHI-SQUARE

Profiling questions (question numbers given in brackets)	Chi-square Value	Df.	Sig.	Resp.
Personal total monthly income (8.8)	0.456	4	No	175
Fixed-line telephone at home (7.2)	0.824	1	No	173
Fixed-line Internet at home (7.3)	3.407	1	5%	173
Subscription to pay television (7.6)	5.222	1	5%	173
Access to a laptop for personal use (7.1)	0.000	1	No	172
Monthly household expenditure on a fixed-line telephone service (7.5)	4.430	3	No	162
Number of people living in the household (8.5)	1.859	3	No	168
Age breakdown (8.6)	1.044	4	No	174
Gender breakdown (8.7)	0.695	1	No	173
Number of estate agents employed (8.1)	5.619	2	5%	174
Legal form of business (8.2)	2.525	5	No	174
Number of years working as an estate agent (8.3)	0.410	4	No	172
Number of years working as a principal estate agent (8.4)	1.070	4	No	171
Decision about cellular service used (1.2)	0.667	1	No	175
Responsibility to pay for the service (1.3)	1.355	3	No	175
Personal or personal and business use (1.4)	0.328	1	No	175
Preference to use a specific brand of cellular handset (4.1)	1.750	1	No	171
Handset brand preferred (4.2)	8.167	7	No	141
Cellular Internet access (1.6)	1.005	1	No	172

Df (Degrees of freedom), Sig. (Significance), Resp. (Respondents)

TABLE C.17 PROFILING VARIABLES ANALYSED ACCORDING TO CUSTOMER-BASED BRAND EQUITY GROUP: CRAMER'S V ANALYSIS

Variable	Cramer's V Value	Approximation significance
Fixed-line Internet at home	0.140	0.065
Subscription to pay television	0.174	0.022**
Number of estate agents employed	0.180	0.060

**Significant at the 1% (0.01) level*

***Significant at the 5% (0.05) level*

TABLE C.18 USE OF CONTRACT VOICE SERVICES (VODACOM AND MTN USERS): CHI-SQUARE TEST

Variable	Pearson chi-square value	Degrees of freedom	Significance of test statistic (2-sided)
Contract services			
Voice 1)	2.867	1	0.090

Note: 2 cells (50%) have an expected count of less than 5.

TABLE C.19 USE OF CONTRACT AND PREPAID SERVICES ACCORDING TO CUSTOMER-BASED BRAND EQUITY GROUP

Service	Frequency			Percentage (%)		
	Total	Low	High	Total	Low	High
Contract services						
Voice 1)	161	80	81	92.00	90.90	93.10
Data 2)	23	12	11	13.14	13.64	12.64
Other 3)	66	29	37	37.71	32.95	42.53
Respondents	175	88	87	-	-	-
Prepaid services						
Voice 1)	15	3	12	8.57	3.41	13.79
Data 2)	39	14	25	22.29	15.91	28.74
Other 3)	4	1	3	2.29	1.14	3.45
Respondents	175	88	87	-	-	-

Notes: (1) Voice calls, voicemail, SMS and MMS

(2) Internet-related use, e-mail services, sending and receiving of files

(3) Content-related use e.g. downloading of ringtones, music, all other services

TABLE C.20 USE OF CONTRACT VOICE SERVICES ACCORDING TO CUSTOMER-BASED BRAND EQUITY GROUP: CHI-SQUARE TEST

Variable	Pearson chi-square value	Degrees of freedom	Significance of test statistic (2-sided)
Contract services			
Voice 1)	1.000	1	0.317

Note: (1) 2 cells (50%) have an expected count of less than 5.

TABLE C.21 MONTHLY CELLULAR CONTRACT EXPENSES (VODACOM AND MTN USERS): MANN-WHITNEY U TEST

Variable	Mean	Mean rank		Mann-Whitney U	Wilcoxon W	Z	Sig. (2-sided)
		Vodacom	MTN				
Monthly contract spending	1 368.38	36.36	45.08	624.000	1527.000	-1.680	0.093
Respondents	80	42	38	-	-		-

Z (Z test statistic), Sig. (Significance)

TABLE C.22 MONTHLY CONTRACT CELLULAR SPEND ACCORDING TO CUSTOMER-BASED BRAND EQUITY GROUP: MANN-WHITNEY U TEST

Variable	Mean	Mean rank		Mann-Whitney U	Wilcoxon W	Z	Sig. (2-sided)
		Low CBBE	High CBBE				
Monthly contract spending	1368.38	42.24	35.11	599.000	1229.000	-1.394	0.163
Respondents	77	42	35	-	-		-

Z (Z test statistic)

TABLE C.23 SUBSCRIPTION PERIOD (VODACOM AND MTN USERS): CHI-SQUARE TEST

	Value		Asymptotic significance (2-sided)
Pearson chi-square	.022	1	.882
N of valid cases	180		

Note : responses grouped < 5 years and > than 5 years

TABLE C.24 SUBSCRIPTION PERIOD ACCORDING TO LOW AND HIGH CUSTOMER-BASED BRAND EQUITY GROUPS: CHI-SQUARE TEST

	Value	Df	Asymptotic significance (2-sided)
Pearson chi-square	.569	1	.451
N of valid cases	174		

Note : responses grouped < 5 years and > than 5 years

TABLE C.25 AWARENESS OF BARRIERS PREVENTING USE OF THE MOST PREFERRED BRAND (VODACOM AND MTN USERS): CHI-SQUARE TEST

	Value	Df	Asymptotic significance (2-sided)
Pearson chi-square	2.397	1	.122
N of valid cases	177		

TABLE C.26 AWARENESS OF BARRIERS PREVENTING USE OF THE MOST PREFERRED BRAND ACCORDING TO LOW AND HIGH CUSTOMER-BASED BRAND EQUITY GROUPS: CHI-SQUARE TEST

	Value	Df	Asymptotic sig. (2-sided)
Pearson chi-square	10.336	1	.001*
N of valid cases	172		
* Significant at the 1% (0.01) level Df (Degrees of freedom), sig. (significance)			

TABLE C.27 AWARENESS OF BARRIERS PREVENTING USE OF THE MOST PREFERRED BRAND ACCORDING TO LOW AND HIGH CUSTOMER-BASED BRAND EQUITY GROUPS : CRAMER'S V TEST

	Value	Approximation significance
Cramer's V	.245	.001*
N of valid cases	172	

** Significant at the 1% (0.01) level*

TABLE C.28 INCIDENCE OF BRAND CONTACT (VODACOM AND MTN USERS): CHI-SQUARE TEST

	Value	Df	Asymptotic significance (2-sided)
Pearson chi-square	.417	1	.518
N of valid cases	178		

Df (Degrees of freedom)

TABLE C.29 INCIDENCE OF BRAND CONTACT ACCORDING TO LOW AND HIGH CUSTOMER-BASED BRAND EQUITY GROUPS: CHI-SQUARE TEST

	Value	Df	Asymptotic significance (2-sided)
Pearson chi-square	.350	1	.554
N of valid cases	174		

Df (Degrees of freedom)

TABLE C.30 CONTRACT BRAND AWARENESS AT PRODUCT LEVEL (VODACOM AND MTN USERS): CHI-SQUARE TEST

	Value	Df	Asymptotic significance (2-sided)
Pearson chi-square	6.3465	2	.042**
of valid cases	169		

****Significant at the 5% (0.05) level**

Df (Degrees of freedom)

TABLE C.31 CONTRACT BRAND AWARENESS AT PRODUCT LEVEL (VODACOM AND MTN) USERS: CRAMER'S V TEST

	Value	Approximate significance
Cramer's V	.190	.042**
N of valid cases	169	

****Significant at the 5% (0.05) level**

Df (Degrees of freedom)

TABLE C.32 CONTRACT BRAND AWARENESS AT PRODUCT LEVEL ACCORDING TO CUSTOMER-BASED BRAND EQUITY GROUP: CHI-SQUARE TEST

	Value	Df	Asymptotic significance (2-sided)
Pearson chi-Square	2.476	1	.109
N of valid cases	156		

Df (Degrees of freedom)

TABLE C.33 AWARENESS OF LOYALTY PROGRAMMES (VODACOM AND MTN USERS): CHI-SQUARE TEST

	Value	Df	Asymptotic significance (2-sided)
Pearson chi-square	1.863	1	.172
N of valid cases	175		

Df (Degrees of freedom)

TABLE C.34 AWARENESS OF LOYALTY PROGRAMMES ACCORDING TO CUSTOMER-BASED BRAND EQUITY GROUP: CHI-SQUARE TEST

	Value	Df	Asymptotic significance (2-sided)
Pearson chi-square	4.26	1	0.039**
N of valid cases	154		

****Significant at the 5% (0.05) level**

Df (Degrees of freedom)

TABLE C.35 AWARENESS OF LOYALTY PROGRAMMES ACCORDING TO CUSTOMER-BASED BRAND EQUITY GROUP: CRAMER'S V TEST

		Value	Approximation significance
	Cramer's V	.166	0.039**
	N of valid cases	154	

****Significant at the 5% (0.05) level**

TABLE C.36 LIKELIHOOD TO USE PRIMARY CELLPHONE NETWORK SERVICE PROVIDER (VODACOM AND MTN USERS): MANN-WHITNEY U TEST

Likelihood to use	Mean	Mean rank		Mann-Whitney U	Wilcoxon W	Z	Sig. (2-sided)
		Vodacom	MTN				
Vodacom	4.098	97.33	61.56	1840.00	4186.00	-5.120	0.000*
Respondents	164	96	68	-	-	-	-
MTN	3.400	63.43	108.92	1497.00	5962.00	-6.242	0.000*
Respondents	165	94	71	-	-	-	-
Cell C	2.136	79.37	75.95	2756.00	4709.00	-0.492	0.623
Respondents	155	93	62	-	-	-	-
Virgin Mobile	2.387	81.23	73.28	2600.500	4616.500	-1.123	0.261
Respondents	155	92	63	-	-	-	-

*** Significant at the 1% (0.01) level**

Z (Z test statistic), Sig. (Significance)

TABLE C.37 LIKELIHOOD TO USE CELLPHONE NETWORK SERVICE PROVIDER ACCORDING TO CUSTOMER-BASED BRAND EQUITY GROUP: MANN-WHITNEY U TEST

Likelihood to use	Mean	Mean rank		Mann-Whitney U	Wilcoxon W	Z	Sig. (2-sided)
		Low CBBE	High CBBE				
Vodacom	4.0276	71.93	87.97	2522.500	5682.500	-2.366	0.018**
Respondents	159	79	80	-	-	-	-
MTN	3.400	74.66	86.95	2701.500	6271.500	-1.726	0.084
Respondents	160	84	76	-	-	-	-
Cell C	2.1355	78.71	72.95	2623.500	5179.500	-0.856	0.392
Respondents	151	80	71	-	-	-	-
Virgin Mobile	2.3504	72.33	65.42	2546.000	5174.000	-1.150	0.250
Respondents	137	71	66	-	-	-	-

**** Significant at the 5% (0.05) level**

CBBE (Customer-based brand equity), Z (Z test statistic), Sig. (Significance)

TABLE C.38 MOST PREFERRED CELLPHONE NETWORK SERVICE PROVIDER (VODACOM AND MTN USERS): CHI-SQUARE TEST

	Value	Df	Asymptotic significance (2-sided)
Pearson chi-square	1.139E2	1	.000*
N of valid cases	168		

***Significant at the 1% (0.01) level**

Df (Degrees of freedom)

TABLE C.39 MOST PREFERRED CELLPHONE NETWORK SERVICE PROVIDER BY VODACOM AND MTN USERS: CRAMER'S V TEST

	Value	Approximation significance
Cramer's V test	.815	.000*
N of valid cases	168	

***Significant at the 1% (0.01) level**

TABLE C.40 MOST PREFERRED CELLPHONE NETWORK SERVICE PROVIDER ACCORDING TO CUSTOMER-BASED BRAND EQUITY GROUP: CHI-SQUARE TEST

	Value	Df	Asymptotic significance (2-sided)
Pearson chi-square	.153	1	.696
N of valid cases	162		

*Note: Only Vodacom and MTN have been included in the analysis, as the expected frequency count for the other cellphone network service providers was too low.
Df (Degrees of freedom)*

TABLE C.41 OVERALL SATISFACTION RATING (VODACOM AND MTN USERS): MANN-WHITNEY U TEST

Variable	Mean	Mean rank		Mann-Whitney U	Wilcoxon W	Z	Sig. (2-sided)
		Vodacom	MTN				
Satisfaction rating	3.57	93.56	87.21	3665.5000	6366.500	-0.898	0.369
Respondents	181	108	73	-	-		-

Z (Z test statistic), Sig. (Significance)

TABLE C.42 OVERALL SATISFACTION ACCORDING TO CUSTOMER-BASED BRAND EQUITY GROUP: MANN-WHITNEY U TEST

Variable	Mean	Mean rank		Mann-Whitney U	Wilcoxon W	Z	Sig. (2-sided)
		Low CBBE	High CBBE				
Satisfaction rating	3.57	72.65	103.52	2477.500	6393.500	-4.486	0.000*
Respondents	175	88	87	-	-	-	-

**Significant at the 1% (0.01) level*

CBBE (Customer-based brand equity), Z (Z test statistic), Sig. (Significance)

TABLE C.43 COMPARISON OF BRAND ASSOCIATION RATINGS (VODACOM AND MTN USERS): MANN-WHITNEY U TEST

Brand association (question numbers given in brackets)	Mean	Mean rank		Mann- Whitney U	Wilcoxon W	Z	Sig. (2- sided)
		Vodacom	MTN				
Prestigious/upmarket brand (3.1.1)	3.86	79.48	90.07	2830.500	8186.500	-1.489	0.136
Respondents	166	103	63	-	-	-	-
Local brand (3.1.2)	4.02	74.36	93.82	2411.500	7361.500	-3.145	0.002*
Respondents	163	99	64	-	-	-	-
Market leader (3.1.3)	4.04	85.24	77.76	2835.500	4665.500	-1.092	0.275
Respondents	164	104	60	-	-	-	-
African brand (3.1.4)	3.45	64.93	79.37	1843.000	5584.000	-2.154	0.031**
Respondents	140	86	54	-	-	-	-
Global brand (3.1.5)	3.46	76.55	55.44	1491.500	2716.500	-3.117	0.002*
Respondents	137	88	49	-	-	-	-
South African brand (3.1.6)	3.99	74.51	87.23	2497.000	7153.000	-1.922	0.055
Respondents	158	96	62	-	-	-	-
Popular/most used brand (3.1.7)	3.87	91.48	57.10	1601.500	3254.500	-4.909	0.000*
Respondents	157	100	57	-	-	-	-
Trusted brand (3.1.8)	4.01	83.17	85.33	3211.000	8567.000	-0.306	0.759
Respondents	167	103	64	-	-	-	-
Brand that understands customer needs (3.1.9)	3.64	85.78	80.99	3068.500	5021.500	-0.653	0.514
Respondents	167	105	62	-	-	-	-
Technologically sophisticated (3.1.10)	3.99	80.02	82.61	2952.000	8002.000	-0.375	0.708
Respondents	161	100	61	-	-	-	-
Cares for the environment (3.1.11)	3.39	72.05	66.57	2083.500	3461.500	-0.834	0.404
Respondents	139	87	52	-	-	-	-
Warm and caring (3.1.12)	3.23	79.49	82.14	2919.500	7869.500	-.366	0.714
Respondents	160	99	61	-	-	-	-
Friendly and helpful (3.1.13)	3.59	88.64	88.28	3676.500	6091.500	-0.049	0.961
Respondents	176	107	69	-	-	-	-
Affordable (3.1.14)	3.23	88.50	88.51	3671.500	9557.500	-0.002	0.999
Respondents	176	108	68	-	-	-	-
Innovative (3.1.15)	3.75	85.70	77.49	2879.500	4959.500	-1.184	0.236
Respondents	164	100	64	-	-	-	-
Socially responsible (3.1.16)	3.47	75.57	75.39	2644.000	4297.000	-0.027	0.978
Respondents	150	93	57	-	-	-	-
Unique (3.1.17)	3.06	80.98	81.02	3067.500	8017.500	0.005	0.996
Respondents	161	99	62	-	-	-	-
Keeps its promises (3.1.18)	3.31	85.60	84.04	3317.500	5462.500	-0.214	0.830
Respondents	169	104	65	-	-	-	-

Brand association (question numbers given in brackets)	Mean	Mean rank		Mann- Whitney U	Wilcoxon W	Z	Sig. (2- sided)
		Vodacom	MTN				
Has a personality (3.1.19)	3.42	84.53	83.17	3261.000	5406.000	-0.187	0.852
Respondents	167	102	65	-	-	-	-
Sincere/down to earth (3.1.20)	3.08	81.26	87.06	3036.00	8289.000	-0.812	0.417
Respondents	166	102	64	-	-	-	-
Likeable (3.1.21)	3.40	85.11	87.42	3371.500	8936.500	-0.321	0.749
Respondents	171	105	66	-	-	-	-
Easily accessible (3.1.22)	3.55	88.44	82.21	3230.000	5508.000	-0.860	0.390
Respondents	171	104	67	-	-	-	-
Trendy and exciting (3.1.23)	3.49	84.13	83.79	3301.500	5446.500	-0.047	0.962
Respondents	167	102	65	-	-	-	-
Fun to use (3.1.24)	3.34	86.08	85.88	3437.000	5582.000	-0.027	0.978
Respondents	171	106	65	-	-	-	-
Adds value to my lifestyle (3.1.25)	3.65	85.91	80.92	3099.000	5179.000	-0.703	0.482
Respondents	167	103	64	-	-	-	-

*** Significant at the 1% (0.01) level**

****Significant at the 5% (0.05) level**

Z (Z test statistic), Sig. (Significance)

TABLE C.44 COMPARISON OF BRAND ASSOCIATION RATINGS ACCORDING TO CUSTOMER-BASED BRAND EQUITY GROUP: MANN-WHITNEY U TEST

Brand association (question numbers given in brackets)	Mean	Mean rank		Mann- Whitney U	Wilcoxon W	Z	Sig. (2- sided)
		Low CBBE	High CBBE				
Prestigious/upmarket brand (3.1.1)	3.86	60.48	96.52	2212.000	5615.000	-4.088	0.000*
Respondents	164	82	82	-	-	-	-
Local brand (3.1.2)	4.02	74.20	88.80	2689.000	6010.000	-2.419	0.016**
Respondents	162	81	81	-	-	-	-
Market leader (3.1.3)	4.04	71.39	90.26	2479.500	5639.500	-2.892	0.004*
Respondents	161	79	82	-	-	-	-
African brand (3.1.4)	3.45	58.22	82.66	1564.000	4192.000	-3.753	0.000*
Respondents	139	72	67	-	-	-	-
Global brand (3.1.5)	3.46	59.13	79.62	1642.000	4198.000	-3.154	0.002*
Respondents	137	71	66	-	-	-	-
South African brand (3.1.6)	3.99	70.42	87.92	2393.500	5633.500	-2.721	0.006*
Respondents	157	80	77	-	-	-	-
Popular/most used brand (3.1.7)	3.87	63.05	91.22	1878.500	4728.500	-4.225	0.000*
Respondents	154	75	79	-	-	-	-
Trusted brand (3.1.8)	4.01	66.21	98.01	2057.000	5297.000	-4.710	0.000*
Respondents	164	80	84	-	-	-	-
Brand that understands customer needs (3.1.9)	3.64	64.99	98.80	1943.500	5264.500	-4.842	0.000*
Respondents	163	81	82	-	-	-	-
Technologically sophisticated (3.1.10)	3.99	68.02	92.98	2202.000	5442.000	-3.732	0.000*
Respondents	160	80	80	-	-	-	-
Cares for the environment (3.1.11)	3.39	53.90	83.98	1288.000	3773.000	-4.790	0.000*
Respondents	136	70	66	-	-	-	-
Warm and caring (3.1.12)	3.23	61.42	97.58	1692.000	4852.000	-5.175	0.000*
Respondents	158	79	79	-	-	-	-
Friendly and helpful (3.1.13)	3.59	65.37	108.13	1859.000	5687.000	-6.068	0.000*
Respondents	172	87	85	-	-	-	-
Affordable (3.1.14)	3.23	66.46	105.31	1994.000	5649.000	-5.379	0.000*
Respondents	171	85	86	-	-	-	-
Innovative (3.1.15)	3.75	64.33	99.46	1889.500	5210.500	-5.217	0.000*
Respondents	163	81	82	-	-	-	-
Socially responsible (3.1.16)	3.47	58.01	92.38	1464.000	4467.000	-5.331	0.000*
Respondents	148	77	71	-	-	-	-
Unique (3.1.17)	3.06	64.71	97.10	1903.500	5306.500	-4.648	0.000*
Respondents	160	82	78	-	-	-	-
Keeps its promises (3.1.18)	3.31	63.70	102.83	1820.500	5223.500	-5.563	0.000*
Respondents	166	82	84	-	-	-	-

Brand association (question numbers given in brackets)	Mean	Mean rank		Mann- Whitney U	Wilcoxon W	Z	Sig. (2- sided)
		Low CBBE	High CBBE				
Has a personality (3.1.19)	3.42	66.41	99.39	2042.500	5445.500	-4.674	0.000*
Respondents	165	82	83	-	-	-	-
Sincere/down to earth (3.1.20)	3.08	67.05	99.95	2044.000	5699.00	-4.748	0.000*
Respondents	165	85	80	-	-	-	-
Likeable (3.1.21)	3.40	66.12	102.88	1984.500	5554.500	-5.295	0.000*
Respondents	168	84	84	-	-	-	-
Easily accessible (3.1.22)	3.55	64.72	105.52	1846.000	5501.000	-5.800	0.000*
Respondents	169	85	84	-	-	-	-
Trendy and exciting (3.1.23)	3.49	63.05	105.20	1726.500	5296.500	-6.015	0.000*
Respondents	167	84	83	-	-	-	-
Fun to use (3.1.24)	3.34	61.71	108.01	1614.000	5184.000	-6.580	0.000*
Respondents	169	84	85	-	-	-	-
Adds value to my lifestyle (3.1.25)	3.65	65.78	100.86	1955.500	5525.500	-5.110	0.000*
Respondents	165	84	81	-	-	-	-

* **Significant at the 1% (0.01) level**

****Significant at the 5% (0.05) level**

CBBE (Customer-based brand equity), Z (Z test statistic), Sig. (Significance)

TABLE C.45 TOTAL VARIANCE EXPLAINED

Factor	Initial eigenvalues			Extraction sums of squared loadings			Rotation sums of squared loadings		
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	15.428	53.198	53.198	15.428	53.198	53.198	8.062	27.801	27.801
2	1.975	6.812	60.010	1.975	6.812	60.010	3.717	12.816	40.617
3	1.743	6.011	66.021	1.743	6.011	66.021	3.398	11.719	52.336
4	1.270	4.378	70.399	1.270	4.378	70.399	3.182	10.972	63.308
5	1.090	3.757	74.156	1.090	3.757	74.156	3.146	10.848	74.156

Extraction method: principal component analysis

TABLE C.46 RATING OF BRAND ASSOCIATION DIMENSIONS (VODACOM AND MTN USERS): MANN-WHITNEY U TEST

Customer-based brand equity dimension (brand association factor)	Mean	Mean rank		Mann-Whitney U	Wilcoxon W	Z	Sig. (2-sided)
		Vodacom	MTN				
Brand likeability	30.25	74.53	71.84	2427.000	4023.000	-0.375	0.708
Respondents	146	90	56	-	-	-	-
Brand as a product	14.11	79.69	71.04	2382.000	3978.000	-1.192	0.233
Respondents	152	96	56	-	-	-	-
Local brand/ African brand	11.44	60.89	77.92	1590.000	4993.000	-2.540	0.011**
Respondents	152	82	52	-	-	-	-
Social responsibility	6.84	68.75	66.76	2079.000	3405.000	-0.297	0.766
Respondents	135	84	51	-	-	-	-
Leadership/perceived quality	7.90	87.23	60.46	1790.000	3386.000	-3.797	0.000*
Respondents	154	98	56	-	-	-	-

***Significant at the 1% (0.01) level**

**** Significant at the 5% (0.05) level**

Z (Z test statistic), Sig. (Significance)

TABLE C.47 RATING OF BRAND ASSOCIATION DIMENSIONS (HIGH AND LOW CBBE): MANN-WHITNEY U TEST

Customer-based brand equity dimension (brand association factor)	Mean	Mean rank		Mann-Whitney U	Wilcoxon W	Z	Sig. (2-sided)
		Low CBBE	High CBBE				
Brand likeability	30.25	52.42	94.58	1126.000	3827.000	-6.033	0.000*
Respondents	146	73	73	-	-	-	-
Brand as a product	14.11	51.70	100.63	1003.000	3929.000	-7.008	0.000*
Respondents	151	76	75	-	-	-	-
Local brand/South African brand	11.44	55.63	80.48	1409.000	3894.000	-3.799	0.000*
Respondents	134	70	64	-	-	-	-
Social responsibility	6.84	49.66	87.02	991.000	3476.000	-5.783	0.000*
Respondents	135	70	64	-	-	-	-
Leadership/perceived quality	7.90	62.57	89.71	1855.500	4630.500	-4.025	0.000*
Respondents	154	74	78	-	-	-	-

***Significant at the 1% (0.01) level**

CBBE (Customer-based brand equity), Z (Z test statistic), Sig. (Significance)

TABLE C.48 DESCRIPTIVE STATISTICS

Variable	Mean	Std. deviation	N
Dependent variable: Customer-based brand equity	16.0882	4.47015	102
Brand association dimensions (independent variables):			
Brand likeability (BAD 1)	29.8529	7.90588	102
Brand as a product/perceived value (BAD 2)	13.9608	3.31191	102
Local brand/South African brand (BAD 3)	11.3235	2.18529	102
Social responsibility (BAD 4)	6.7745	1.64050	102
Leadership/perceived quality (BAD 5)	7.8627	1.52237	102

BAD (Brand association dimension)

TABLE C.49 ANOVA TABLE

Model		Sum of squares	DF	Mean square	F	Sig.
1	Regression	1005.350	1	1005.350	99.259	.000a
	Residual	1012.856	100	10.129		
	Total	2018.206	101			

Predictors: (constant), brand as a product/perceived value (Brand association dimension)

Dependent variable: customer-based brand equity (CBBE)

TABLE C.50 ANOVA TABLE : LACK OF FIT TEST

Description		Sum of Squares	df	Mean Square	F	Sig.
Brand as a product/perceived value (BAD2)	(Combined)	1501.147	14	107.225	10.343	0.000
	Linearity	1377.469	1	1377.469	132.872	0.000
	Between Groups Deviation from Linearity	123.678	13	9.514	0.918	0.537
	Within Groups	1409.899	136	10.367		
	Total	2911.046	150			

TABLE C.51 COMPARISON OF BRAND PERFORMANCE RATINGS (VODACOM AND MTN USERS): MANN-WHITNEY U TEST

Brand performance (question numbers given in brackets)	Mean	Mean rank		Mann- Whitney U	Wilcoxon W	Z	Sig. (2- sided)
		Vodacom	MTN				
Voice services (3.2.1)	3.83	87.89	85.55	3435.500	5646.500	-0.335	0.737
Respondents	173	107	66	-	-	-	-
Internet services (3.2.2)	3.82	64.44	56.28	1544.500	2870.500	-1.431	0.152
Respondents	121	70	51	-	-	-	-
E-mail service (3.2.3)	3.74	59.67	53.26	1375.000	2503.000	-1.167	0.243
Respondents	113	66	47	-	-	-	-
Instant messaging (3.2.4)	3.90	46.15	43.23	883.000	1513.000	-0.607	0.544
Respondents	89	54	35	-	-	-	-
Content services (3.2.5)	3.72	46.61	43.83	912.000	1578.000	-0.552	0.581
Respondents	90	54	36	-	-	-	-
Entertainment services (3.2.6)	3.66	49.42	38.38	700.500	1228.500	-2.170	0.030**
Respondents	90	58	32	-	-	-	-
Emergency services (3.2.7)	3.72	51.29	43.64	897.500	1527.500	-1.399	0.162
Respondents	96	61	35	-	-	-	-
Geographical positioning GPS) service (3.2.8)	3.69	52.34	46.55	1042.000	1862.000	-1.073	0.283
Respondents	99	59	40	-	-	-	-
Services that enable users to control costs (3.2.9)	3.57	65.67	50.33	1224.500	2214.500	-2.557	0.011**
Respondents	119	75	44	-	-	-	-
Easy to use (3.2.10)	3.74	79.66	66.03	2101.500	3697.500	-2.050	0.040**
Respondents	148	92	56	-	-	-	-
Prepaid services (3.2.11)	3.83	48.65	38.50	704.000	1232.000	-1.977	0.048**
Respondents	89	57	32	-	-	-	-
Contract services (3.2.12)	3.76	89.34	81.06	3178.000	5593.000	-1.221	0.222
Respondents	171	102	69	-	-	-	-
Cellphones/handsets (3.2.13)	3.86	80.78	77.56	2870.500	4886.500	-0.477	0.633
Respondents	158	95	63	-	-	-	-

TABLE C.51 COMPARISON OF BRAND PERFORMANCE RATINGS (VODACOM AND MTN USERS): MANN-WHITNEY U TEST (CONTINUED)

Brand performance (question numbers given in brackets)	Mean	Mean rank		Mann- Whitney U	Wilcoxon W	Z	Sig. (2- sided)
		Vodacom	MTN				
Insurance (3.2.14)	3.45	60.37	54.45	1423.50	2504.500	-1.034	0.301
Respondents	115	69	46	-	-	-	-
Maintenance & repair (3.2.15)	3.12	75.19	65.66	2071.500	3611.500	-1.398	0.162
Respondents	142	87	55	-	-	-	-
One-stop-service (3.2.16)	3.53	81.76	72.68	2474.000	4070.000	-1.323	0.186
Respondents	156	100	56	-	-	-	-
Network coverage (3.2.17)	3.64	90.62	81.27	3167.000	5445.000	-1.310	0.190
Respondents	173	106	67	-	-	-	-
Reliability of network (3.2.18)	3.50	92.81	80.43	3123.000	5469.000	-1.694	0.090
Respondents	175	107	68	-	-	-	-
Speed of data services (3.2.19)	3.54	67.28	58.95	1672.500	2947.500	-1.345	0.179
Respondents	127	77	50	-	-	-	-
Value for money (3.2.20)	3.26	86.27	79.08	2981.000	5061.000	-0.995	0.320
Respondents	166	102	64	-	-	-	-
Distribution (3.2.21)	3.68	84.97	77.17	2831.500	4784.500	-1.184	0.236
Respondents	163	101	62	-	-	-	-
Advertising (3.2.22)	4.11	85.18	75.40	2708.500	4599.500	-1.427	0.153
Respondents	162	101	61	-	-	-	-
Website(s) (3.2.23)	3.83	67.38	57.79	1621.500	2947.500	-1.617	0.106
Respondents	126	75	51	-	-	-	-
Customer service (3.2.24)	3.53	90.87	79.48	3035.000	5246.000	-1.591	0.112
Respondents	172	106	66	-	-	-	-
Loyalty rewards (3.2.25)	2.90	58.67	56.92	1514.500	2504.500	-0.284	0.777
Respondents	115	71	44	-	-	-	-
Overall performance (3.2.26)	3.66	89.89	81.05	3138.500	5349.500	-1.282	0.200
Respondents	172	106	66	-	-	-	-

* **Significant at the 1% (0.01) level**

****Significant at the 5% (0.05) level**

Z (Z test statistic), Sig. (Significance)

TABLE C.52 COMPARISON OF BRAND PERFORMANCE RATINGS ACCORDING TO CUSTOMER-BASED BRAND EQUITY GROUP: MANN-WHITNEY U TEST

Brand performance (question numbers given in brackets)	Mean	Mean rank		Mann- Whitney U	Wilcoxon W	Z	Sig. (2- sided)
		Low CBBE	High CBBE				
Voice services (3.2.1)	3.83	65.88	103.90	1963.500	5533.500	-5.663	0.000*
Respondents	169	84	85	-	-	-	-
Internet services (3.2.2)	3.82	45.28	70.95	915.000	2626.000	-4.644	0.000*
Respondents	115	58	57	-	-	-	-
E-mail service (3.2.3)	3.74	45.48	65.52	961.500	2501.500	-3.744	0.000*
Respondents	110	55	55	-	-	-	-
Instant messaging (3.2.4)	3.90	37.12	48.22	665.000	1485.000	-2.384	0.017**
Respondents	85	40	45	-	-	-	-
Content services (3.2.5)	3.72	36.74	49.90	653.000	1433.000	-2.683	0.007*
Respondents	87	39	48	-	-	-	-
Entertainment services (3.2.6)	3.66	32.51	53.51	472.000	1333.000	-4.389	0.000*
Respondents	86	41	45	-	-	-	-
Emergency services (3.2.7)	3.72	35.34	55.75	602.000	1343.000	-3.845	0.000*
Respondents	94	38	56	-	-	-	-
Geographical positioning service (3.2.8)	3.69	38.85	56.33	724.500	1670.500	-3.327	0.001*
Respondents	96	43	53	-	-	-	-
Services that enable users to control costs (3.2.9)	3.57	38.34	72.08	664.500	1840.500	-5.820	0.000*
Respondents	115	48	67	-	-	-	-
Easy to use (3.2.10)	3.74	49.58	90.84	1093.000	3173.000	-6.428	0.000*
Respondents	144	64	80	-	-	-	-
Prepaid services (3.2.11)	3.83	34.69	51.56	573.000	1353.000	-3.444	0.001*
Respondents	87	39	48	-	-	-	-
Contract services (3.2.12)	3.76	63.37	103.15	1793.500	5196.500	-6.039	0.000*
Respondents	166	82	84	-	-	-	-
Cellphones/handsets (3.2.13)	3.86	58.45	96.55	1497.500	4500.500	-5.827	0.000*
Respondents	154	77	77	-	-	-	-

* **Significant at the 1% (0.01) level**

****Significant at the 5% (0.05) level**

TABLE C.52 COMPARISON OF BRAND PERFORMANCE RATINGS ACCORDING TO CUSTOMER-BASED BRAND EQUITY GROUP: MANN-WHITNEY U TEST (CONTINUED)

Brand performance (question numbers given in brackets)	Mean	Mean rank		Mann- Whitney U	Wilcoxon W	Z	Sig. (2- sided)
		Low CBBE	High CBBE				
Insurance (3.2.14)	3.45	49.56	63.81	1191.000	2676.000	-2.551	0.011**
Respondents	113	54	59	-	-	-	-
Maintenance & repair (3.2.15)	3.12	54.75	85.04	1362.500	3777.500	-4.606	0.000*
Respondents	139	69	70	-	-	-	-
One-stop-service (3.2.16)	3.53	58.61	95.15	1528.500	4454.500	-5.577	0.000*
Respondents	153	76	77	-	-	-	-
Network coverage (3.2.17)	3.64	67.48	104.39	2042.500	5870.500	-5.331	0.000*
Respondents	170	87	83	-	-	-	-
Reliability of network (3.2.18)	3.50	66.02	106.98	1937.000	5678.000	-5.788	0.000*
Respondents	172	86	86	-	-	-	-
Speed of data services (3.2.19)	3.54	45.54	78.11	930.500	2641.500	-5.408	0.000*
Respondents	125	58	67	-	-	-	-
Value for money (3.2.20)	3.26	57.22	105.89	1337.500	4577.500	-6.965	0.000*
Respondents	163	80	83	-	-	-	-
Distribution (3.2.21)	3.68	66.60	96.32	2042.000	5528.000	-4.659	0.000*
Respondents	161	83	78	-	-	-	-
Advertising (3.2.22)	4.11	66.16	93.66	2067.000	5227.000	-4.178	0.000*
Respondents	159	79	80	-	-	-	-
Website(s) (3.2.23)	3.83	49.88	72.13	1197.000	2793.000	-3.849	0.000*
Respondents	123	56	67	-	-	-	-
Customer service (3.2.24)	3.53	64.63	105.61	1838.500	5493.500	-5.935	0.000*
Respondents	169	85	84	-	-	-	-
Loyalty rewards (3.2.25)	2.90	44.31	70.87	844.000	2614.000	-4.472	0.000*
Respondents	113	59	54	-	-	-	-
Overall performance (3.2.26)	3.66	60.90	107.55	1568.500	5054.500	-7.021	0.000*
Respondents	168	83	85	-	-	-	-

* **Significant at the 1% (0.01) level**

****Significant at the 5% (0.05) level**

CBBE (Customer-based brand equity), Z (Z test statistic), Sig. (Significance)

TABLE C.53 TOTAL VARIANCE EXPLAINED

Factor	Initial eigen values			Extraction sums of squared loadings			Rotation sums of squared loadings		
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	12.475	47.981	47.981	12.475	47.981	47.981	4.913	18.898	18.898
2	2.015	7.749	55.730	2.015	7.749	55.730	4.635	17.828	36.725
3	1.710	6.575	62.305	1.710	6.575	62.305	3.540	13.617	50.342
4	1.355	5.212	67.517	1.355	5.212	67.517	3.135	12.057	62.399
5	1.131	4.351	71.868	1.131	4.351	71.868	2.246	8.637	71.036
6	1.033	3.975	75.843	1.033	3.975	75.843	1.250*	4.808	75.843

Extraction method: principal component analysis

TABLE C.54 RATING OF BRAND PERFORMANCE DIMENSIONS (VODACOM AND MTN USERS): MANN-WHITNEY U TEST

Brand performance dimension (Brand performance factor)	Mean	Mean rank		Mann-Whitney U	Wilcoxon W	Z	Sig. (2-sided)
		Vodacom	MTN				
Entertainment services	11.11	37.40	32.64	508.000	914.000	-0.999	0.318
Respondents	70	42	281)	-	-	-	-
Advertising	4.11	85.18	75.40	2708.500	4599.500	-1.427	0.153
Respondents	162	101	61	-	-	-	-
Easy to use	7.50	76.96	65.29	2051.000	3591.000	-1.729	0.084
Respondents	144	89	55	-	-	-	-
One-stop-service	11.20	51.22	47.86	1057.000	1723.000	-0.576	0.565
Respondents	99	63	36	-	-	-	-
Loyalty rewards	2.90	58.67	56.92	1514.500	2504.500	-0.284	0.777
Respondents	115	71	44	-	-	-	-
Cellphone insurance	3.45	60.37	54.45	1423.500	2504.500	-1.034	0.301
Respondents	115	69	46	-	-	-	-

(1)Sample size less than 30

Z (Z test statistic), Sig. (Significance)

TABLE C.55 RATING OF BRAND PERFORMANCE DIMENSIONS ACCORDING TO CUSTOMER-BASED BRAND EQUITY GROUPS: MANN-WHITNEY U TEST

Brand performance dimension (brand performance factor)	Mean	Mean rank		Mann-Whitney U	Wilcoxon W	Z	Sig. (2-sided)
		Low CBBE	High CBBE				
Entertainment services	11.11	25.32	41.75	294.500	759.500	-3.546	0.000*
Respondents	68	30	38	-	-	-	-
Advertising	4.11	66.16	93.66	2067.000	5227.000	-4.178	0.000*
Respondents	159	79	80	-	-	-	-
Easy to use	7.50	46.45	89.62	927.000	2880.00	-6.616	0.000*
Respondents	140	62	78	-	-	-	-
One-stop-service	11.20	35.07	63.35	507.500	1683.500	-5.054	0.000*
Respondents	98	48	50	-	-	-	-
Loyalty rewards	2.90	44.31	70.87	844.000	2614.000	-4.472	0.000*
Respondents	113	59	54	-	-	-	-
Cellphone insurance	3.45	49.56	63.81	1191.000	2676.000	-2.551	0.011**
Respondents	113	54	59	-	-	-	-

*Significant at the 1% (0.01) level

** Significant at the 5% (0.05) level

CBBE (Customer-based brand equity), Z (Z test statistic), Sig. (Significance)

TABLE C.56 DESCRIPTIVE STATISTICS: DEPENDENT AND INDEPENDENT VARIABLES

Variable	Mean	Std. deviation	N
Dependent variable: Customer-based brand equity (CBBE)	16.6034	4.35664	58
Brand performance dimensions (independent variables):			
Entertainment services (BPD 1)	11.0517	1.88645	58
Advertising (BPD 2)	3.9828	.80549	58
Easy to use (BPD 3)	7.5517	1.46506	58
One-stop-service (BPD 4)	11.6552	2.00483	58
Loyalty rewards (BPD 5)	3.1897	.99924	58
Cellphone insurance (BPD 6)	3.4828	.75490	58

BPD (Brand performance dimension)

TABLE C.57 ANOVA TABLE

Model		Sum of squares	Df	Mean square	F	Sig.
1	Regression	465.674	1	465.674	42.320	.000 ^a
	Residual	616.206	56	11.004		
	Total	1081.879	57			
2	Regression	525.843	2	262.921	26.007	.000 ^b
	Residual	556.036	55	10.110		
	Total	1081.879	57			

a. Predictors: (constant), easy to use (Brand performance dimension 3)

*b. Predictors: (constant), easy to use (BPD 3), one-stop-service (BPD 4)
BPD (Brand performance dimension)*

TABLE C.58 ANOVA TABLE: LACK OF FIT TEST

Description			Sum of Squares	df	Mean Square	F	Sig.
Easy to use (BPD3)	Between Groups	(Combined)	1458.067	8	182.258	17.807	0.000
		Linearity	1389.312	1	1389.312	135.738	0.000
		Deviation from Linearity	68.755	7	9.822	0.96	0.464
		Within Groups	1340.819	131	10.235		
		Total	2798.886	139			

TABLE C.59 ANOVA TABLE: LACK OF FIT TEST

Description			Sum of Squares	df	Mean Square	F	Sig.
One-stop service (BPD4)	Between Groups	(Combined)	989.193	11	89.927	8.604	0.000
		Linearity	807.097	1	807.097	77.225	0.000
		Deviation from Linearity	182.096	10	18.21	1.742	0.084
		Within Groups	898.807	86	10.451		
		Total	1888	97			

TABLE C.60 ANOVA TABLE

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	610.105	1	610.105	87.754	.000 ^a
	Residual	319.811	46	6.952		
	Total	929.917	47			
2	Regression	640.442	2	320.221	49.78	.000 ^b
	Residual	289.475	45	6.433		
	Total	929.917	47			

c. Predictors: (Constant), Brand as a product/perceived value dimension brand association dimension (BAD2)

d. Predictors: (Constant), Brand as a product/perceived value brand association dimension (BAD2), Easy to use brand performance dimension (BPD3)

e. Dependent Variable: Customer-based brand equity (CBBE)

TABLE C.61 ANOVA TABLE: LACK OF FIT TEST

Description		Sum of Squares	df	Mean Square	F	Sig.	
Brand as a product/perceived value dimension brand association dimension (BAD2)	(Combined)	1501.147	14	107.225	10.343	0	
	Between Groups	Linearity	1377.469	1	1377.469	132.872	0
		Deviation from Linearity	123.678	13	9.514	0.918	0.537
	Within Groups		1409.899	136	10.367		
	Total		2911.046	150			

TABLE C.62 ANOVA TABLE: LACK OF FIT TEST

Description		Sum of Squares	df	Mean Square	F	Sig.	
Easy to use brand performance dimension (BPD3)	(Combined)	1458.067	8	182.258	17.807	0	
	Between Groups	Linearity	1389.312	1	1389.312	135.738	0
		Deviation from Linearity	68.755	7	9.822	0.96	0.464
	Within Groups		1340.819	131	10.235		
	Total		2798.886	139			