Business Analysis in the South African Financial Services Environment: a Model of Business Analysis Methodology

M Jakovljevic*, A Bachoo†

*School of Economics and Business Sciences, Information Systems, University of the Witwatersrand, Private Bag 3, Wits 2050, South Africa
†First National Bank, Johannesburg, South Africa

ABSTRACT

Business analysis is regarded as one of the most important issues of systems development because no other part is more difficult to rectify later. However, current requirements analysis methodologies are inadequate because they have phases that are at a too high level and do not map activities, techniques and tools to appropriate phases.

The purpose of this paper was to investigate business analysis in the South African financial services environment and to develop a model of business analysis methodology.

This research was based on a qualitative research approach. Sixty participants made up of CIOs, business analysts, project managers and IS managers were interviewed and their experiences with regard to business analysis were investigated through focus group and individual interviews. Participants presented a purposeful convenient sample. The researchers of this study performed the data analysis which consisted of finding patterns and themes, deriving categories and sub-categories by means of the constant comparative method.

The most important findings were: the phases of a model of business analysis methodology are the feasibility phase, business case phase, analysis and design phase and the post-implementation evaluation phase. The objectives, outcomes and relevance of each of those phases were also identified. In addition, appropriate activities, techniques and tools were mapped to each of those phases.

1 INTRODUCTION

Business analysis in the workplace has become a widely talked-of-phenomenon in the IT business world. The practice of business analysis includes requirements engineering but goes further by focusing on deeper investigation of solutions that meet business needs (Rubens, 2007). Understanding the requirements of a business problem is among the most difficult tasks that face a software engineer (Pressman, 2005:174). Requirements engineering provides the appropriate mechanism for understanding what the customer wants, analysing need, assessing feasibility, negotiating a reasonable solution, specifying the solution unambiguously, validating the specification, and managing requirements as they are transformed into an operational system (Pressman, 2005:176).

Brooks (1987:10) suggested, "The hardest single part of building a system is deciding precisely what to build. No other part of the conceptual work is as difficult as establishing the detailed requirements..." This process is regarded as one of the most important parts of systems development because no other part is more difficult to rectify later (Brooks, 1987; Potts, 1991; Lubars, Potts & Richer, 1993; Avison & Fitzgerald, 1996; SEL, 2004). Moreover, requirements engineering is a communication activity (Wiegers, 2000). However, no adequate business analysis methodology exists (Hofmann & Lehner, 2001; Pfeeger, 2001; Robertson & Robertson, 1999) to elaborate on requirements engineering. The requirements engineering methodology covers the early stages of business analysis, but overlooks the latter portion of business analysis (Lobo, 2004; Wallace, Keil & Rai, 2004).

Practice show that most failures of IT projects are due to inadequate understanding of requirements. Requirements engineering helps to better understand "of what the business impact of the software will be..." (Pressman, 2005:174) but doesn't highlight a widely acceptable methodology which could contribute to better understanding of the business itself. Yet the vast majority of all available literature addresses the reality of business analysis as an emerging field (Hofmann & Lehner, 2001; Pfeeger, 2001; Robertson & Robertson, 1999). In fact, there is very little research available on a model of business analysis methodology, especially when comparing it to the volume of requirements engineering-related literature.

The present requirements analysis methodologies are composed of phases such as high-level analysis and specification (Bubenko, 1995; Jordan, Keller, Tucker & Vogel 1989; You, 2001; Davis, 2003a; Pressman, 2005). However, these phases are at such a high level that it is difficult to apply them in real project scenarios (Bubenko, 1995; Davis, 2003a; You, 2001). These phases lack clear objectives, relevance and outcomes, which results in unclear procedures for conducting business analysis (Jordan et al., 1989; Curtis, Krasner & Iscoe, 1988; Bubenko, 1995; Davis, 2003a).

An additional problem with requirements analysis methodologies relates to the selection of appropriate activities, techniques and tools to address the objectives and out-
comes of the different phases of business analysis (Davis, 2003a; Lobo, 2004). Business analysts often select activities, techniques and tools in an ad hoc fashion, which results in an output, which inadequately addresses the objectives of that phase (Lobo, 2004). If a business analyst has appropriate tools and techniques to analyse the business itself it could help a client to understand the requirements better. Thus, there is a lack of an appropriate business analysis methodology in current research findings which could improve ineffective requirements practices (Young, 2001; cited by Pressman, 2005:174).

This research attempted to discover how business analysis has been performed in the South African financial services environment. Based on the results, a model of business analysis methodology has been created in this study. To do this, the following research questions were set:

1. What are the phases\(^1\) of a business analysis model and why are they relevant?
2. What are the objective, relevance and outcomes for each of these phases?
3. Which activities\(^2\), techniques\(^3\) and tools\(^4\) are appropriate to each phase of business analysis?

The study examines issues pertaining to business analysis in the workplace, in a financial sector arena, and finally, propose a model of business analysis methodology.

2 THE FRAMEWORK FOR A MODEL OF BUSINESS ANALYSIS METHODOLOGY

Business analysis is an emerging practice and an even younger research area compared to other disciplines. A practical and integrated business analysis methodology is of particular importance to practitioners because 80% of project failures are related to business analysis problems (Standish group, 2004). However, there is a staggering amount of information on requirements analysis methodology (Zucconi, 1999; Richards, 2003; Davis, 2003b; Karlsson, Berander, Regnell & Wohlin, 2004).

2.1 Present methodologies applied during business analysis process

Due to the lack of an adequate business analysis methodology, business analysts have adopted different requirements analysis methodologies. Consideration was given to relevancy, currency, reliability, accuracy and objectivity when selecting and evaluating the methodologies (Cooper, 1998). As previously stated, business analysis encompasses requirements engineering, but is a wider process that focuses on the solution to a problem. The characteristics and shortcomings of the present methodologies applied during business analysis process are discussed in the following paragraphs.

Requirements engineering process methodology: This methodology is comprised of five phases: requirements analysis, concept generation, concept comparison and conflict detection, negotiation and evaluation. This methodology specifies a single technique for each phase, only covers early stages, has an inadequate level of detail, and does not specify activities and tools (Richards, 2000; Richards, 2003; Iyer & Richards, 2004).

Requirements triage methodology: The methodology contains five phases: risk analysis, cost and schedule estimation, price analysis and market analysis (Davis, 1993; Davis, Fairley & Yourdon, 1999; Davis, 2003b). However, this methodology fails to describe the outcomes, as well as the activities of each phase of business analysis (Karlsson, Berander, Regnell & Wohlin, 2004). The requirements triage methodology also only focuses on the middle portion of business analysis after the requirements have been specified (Karlsson et al., 2004). As a consequence of this, its applicability is restricted as this methodology has to be plugged into other methodologies for effective usage (Karlsson et al., 2004).

Knowledge level process methodology: This methodology consists of three phases: elicitation, manipulation of requirements and maintenance of requirements. This methodology does not specify techniques and tools for the phases (Abbink, et al, 2004; Brage, Merisio-Rantinen & Hallikainen, 2005; Herlea, Jonker, Treur & Wijngaards, 1999).

Win-win spiral methodology: The methodology combines the waterfall and prototyping approaches with elements of risk analysis and customer negotiation. The methodology has an inadequate level of detail, and activities, techniques and tools are not specified (Boehm, Bose, Horowitz & Lee, 1994; SEI, 1994; Brage, Martin & Tunnunen, 2005).

Process framework methodology: This methodology consists of four phases: analyse requirements, build solution specification, verify specification and capture user requirements. The methodology has an inadequate level of detail and only provides an overview of phases. Activities and tools are also not specified for the phases (Alazar & Monzon, 2000).

Requirements generation methodology: The methodology consists of two phases: requirements definition and requirements analysis. The methodology specifies constraining components in the form of protocols and guidelines. This methodology also has an inadequate level of detail, and techniques and tools are not specified for the phases (Arthur & Groener, 2005; Lobo, 2004).

Soft systems methodology (SSM): The soft systems methodology (SSM) is a methodology for dealing with problem situations in which there is a high social and human component (Checkland & Scholes, 1999; Checkland & Holwell, 1998). However, SSM does not determine whether a project is a success or a failure, and produces models of system activity that are largely informal and therefore subject to misunderstanding (Wilson, 2001; Flood & Jackson, 1996).

Agile methodologies: Agile methodologies make use of short time boxes called iterations (Cohen, Linvall & Costa, 2004). Iterations are managed as a mini project, and focuses on customer satisfaction by rapid, delivery of working software (Cohen et al., 2004). However, agile
methodologies do not show the business analyst how to approach a problem in a logical manner, and what phases to follow in order to find the best solution to a business problem.

Agile methodologies are inappropriate for business analysis because they give an analyst too much leeway, do not suit non-technical projects (Archer, 2003) and produce insufficient structure and necessary documentation (Paetsch, Ehlers & Maurer, 2003).

It was thus evident that current methodologies are inadequate for business analysis. Many requirements analysis methodologies address only portions of the complete business analysis process (Gottedeiner, 2002; Richards, 2000; Laplante & Neil, 2004). For example, the requirements engineering process methodology covers the early phases of business analysis, but overlooks the latter phases (Lobo, 2004; Wallace, Keil & Rai, 2004). The requirements triage methodology focuses on the middle phase of business analysis after the requirements have been specified (Karlsson, Berander, Regnell & Wohli, 2004; Sud, 2004). As a consequence of this, its applicability is restricted as these methodologies have to be plugged into other methodologies for effective usage (Karlsson, Berander, Regnell & Wohli, 2004; Sud, 2004).

There are some inadequacies associated with the implementation of these methodologies, particularly with regard to their impact in understanding wider aspects of business processes. Furthermore, the high level phases, activities, techniques, and tools are not mapped directly to business analysis making existing requirements analysis methodologies insufficient. The next section deals with the methods used to carry out this research.

3 RESEARCH METHODOLOGY

3.1 Research Approach

This research can be described as descriptive and exploratory; seeing that the business analysis experience is being investigated relating to a specific context (Yin, 1994; Creswell, 1994). A qualitative approach was selected for this research because it allowed for in-depth probing of business analysis issues and a greater detail in responses (Denzin & Lincoln, 1994; Merriam, 1998). Qualitative research approach characterises the complexity of data and the need for simultaneous analysis and data gathering procedures (Merriam, 1998). It also allowed for interaction with the participants whereby probing questions could be asked based on previous responses. Further, it allowed for interaction between group members in the focus group interviews, which often stimulated discussion and uncovered issues unanticipated by the researcher (Dixon, Bouna and Atkinson, 1988; Hussey and Hussey, 1997). Thus this approach could better address the objectives of this research.

3.2 Sampling, profile of participants and research settings

Using a snowball approach with non-randomised purposive sampling (Creswell, 1994), 60 participants made up of CIOs, business analysts, project managers and IS managers from Bank A and Bank B were selected for this study.

For Bank A, twelve (4 business analysts, 2 CIOs, 3 project managers and 3 IS managers) participants were interviewed individually. Eighteen participants comprising of 9 business analysts, 5 project managers and 4 IS managers contributed to the first focus group interview.

For Bank B, ten (4 business analysts, 1 CIO, 3 project managers and 2 IS managers) participants were interviewed individually. Twenty participants comprising of 6 business analysts, 9 project managers and 5 IS managers contributed to the second focus group interview.

The individual and focus group interviews were conducted by the researcher on the work premises of the participant, usually in the interviewee’s office. Participants in this study were only involved with one data gathering method, i.e., if a participant was interviewed individually, then that participant did not participate in the focus group interviews. Moreover, feedback from all participants was treated equally, and no extra weighting was given to any participant based in their characteristics.

3.3 Data gathering methods

Qualitative data gathering methods consisting of twenty-two individual semi-structured interviews and two focus group interviews. Two interview protocols were developed to guide the researcher during the individual and focus group interviews (Merriam, 1998). Both interview protocols contained semi-structured and probing questions pointing to the major business analysis issues and research goals of this study.

The design of the protocol was influenced by the need to elicit qualitative information in order to develop a model of business analysis methodology (Goguen & Linde, 1993). Thus, the purpose of the individual interviews and the focus group interviews was to examine participants’ experience and opinions regarding the process of business analysis in their companies. The major issues covered in each interview were:

- phases of a business analysis methodology;
- objectives, relevance and outcomes of these phases;
- activities of a business analysis methodology;
- techniques of a business analysis methodology; and
- tools of a business analysis methodology.

Individual interviews lasted 30 to 45 min and the data was tape recorded and later transcribed. The focus group interview lasted 45 min and the data was also tape recorded and later transcribed. All interviewees agreed to allow the interview to be recorded using a tape recorder. The individual interviews commenced with an introduction, followed by the first question from the interview protocol related to their understanding of business analysis. The probing questions were asked to make sure that the interviewee had covered all the areas deemed important by the objectives of this research. Interviewees were permitted freedom to digress from the theme of a particular question, as long as the information given was useful to the research objectives (Creswell, 1994).

3.4 Analysis of data

Content analysis within and between interviews was used for the analysis of the data. For the data coding process,
codes were assigned by the researcher. Responses received from the individual interviews and focus group interviews (Merriam, 1998; Neundorf, 2002). After the data coding, categories for a business analysis methodology were defined. Based on the research questions, categories, and subcategories such as phases, activities, techniques, and tools were constructed and represented in the form of tables (Merriam, 1998; Strauss, 1987). Responses were then summarised in the tables for each question and the number of times each response was mentioned was counted (Merriam, 1998; Strauss, 1987). Each question’s response was then ordered in descending number of mentions, causing the most popular responses to be at the top of each table (Merriam, 1998; Strauss, 1987).

After data coding and the category construction, the results from each of these methods were cross-checked against each other by selecting high frequency mentions and eliminating low frequency mentions (Silverman, 2000). This strategy allowed the comparison of one result against another to check for patterns, contradictions and examine overlapping facets, to increase the reliability of the final results (Baskerville, 1999).

3.5 The assessment of trustworthiness

To ensure these results were trustworthy, an assessment of trustworthiness was conducted. Necessary preparations were performed to improve the researcher’s essential competence in the field, which included the clarification of biases and assumptions (Creswell, 1994). The criteria used to increase the trustworthiness of this research were a thick description, prolonged engagement, peer and referential adequacy (Lincoln & Guba, 1985). Additionally, Yin’s (1994) criteria for reliability (diachronic, synchronic and inter-judge reliabilities) and validity (instrument, internal, construct and generalisability) were also applied. Permission to interview, anonymity and confidentiality, informed consent and researcher integrity were the ethical considerations adhered to, to the best of the researcher’s ability (Neuman, 1994).

Thus, data were gathered through multiple data gathering methods (individual interviews, focus group interviews) which satisfy the criteria for triangulation (Creswell 1994; Yin 1994; Merriam 1998).

4 FINDINGS

Findings from this study addressed the experience of the participants regarding business analysis within two financial companies. In particular, the phases were identified (categories), as well as objectives, relevance and outcomes of each phase (sub-categories). Moreover, appropriate activities, techniques and tools of each of the phases were identified (sub-subcategories). These findings served as a basis in forming a model of business analysis methodology. Figure 1 presents the model of business analysis methodology derived from data gathered through individual and focus group interviews in two financial institutions.

The business analysis model (see Figure 1) contains the following components: phases, objectives and outcomes for each of the phases; activities, techniques and tools which have been mapped to address the objectives of each phase. These components and their relationships reflect a particular structure which forms a model of business analysis methodology. The following paragraph presents actual findings derived from the experience of the respondents gathered through individual and the focus group interviews.

4.1 The feasibility phase

The first phase of a business analysis methodology was identified as the feasibility phase, illustrated in Figure 1. During individual interview probing, a CIO from bank A commented regarding the objective of this phase, “The first phase should provide a good foundation to allow pre analysis and design activities to commence in a focused manner...” The deliverable outcome was found to be a feasibility report, “...The end product of this phase should be a clear, concise feasibility report to management...” A feasibility phase was found relevant because it “minimised project failure based on poor business requirements...”

4.1.1 The feasibility phase activities

The comments regarding the activities were as follows: an IS manager in the first focus group said, “During this phase, the activities, identifying a need or opportunity, defining boundaries, performing information gathering, performing opportunity identification, conducting opportunity analysis and finally making recommendations help a business minimise loss on a poor business idea and help them avoid financial mistakes...These activities can help a business analyst determine whether or not to implement a particular project or system”.

4.1.2 The feasibility phase techniques

The techniques for this phase were interviews, observations and task demonstrations. To quote an IS manager from the second focus group, “these techniques interviews, observations and task demonstrations assist in providing a better understanding of the requirements; they support validation, assist with business concerns, and aid in design of the software system”.

4.1.3 The feasibility phase tools

The tools included Visible Analyst, Cool Biz and Visio. During probing, a participant from an individual interview (bank A) said, “Various graphical representations Visible Analyst, Cool Biz and Visio are produced by these tools that assist a business analyst in the understanding and formulation of requirements for the first phase”. The benefit of these tools for this phase according to the individual was that, “…these tools help to elicit and capture requirements adequately, so that a business analyst can develop, modify, structure, and present business requirements appropriately”.

4.2 The business case phase

This research identified the business case phase (see Figure 1) as the second phase of a business analysis method-
Business Analysis Methodology

Phase 1: Feasibility phase (PH1FE)
Feasibility phase objective: Conduct a preliminary analysis of a requirement
Relevance: minimizes project failure based on poor business requirements
Feasibility phase outcome: Feasibility report

Feasibility phase activities:
- Identification of need or opportunity (PR11N)
- Define boundaries (PR11D)
- Information gathering (PR11G)
- Opportunity identification (PR11D)
- Opportunity analysis (PR11A)
- Recommendations (PR11RE)

Feasibility phase techniques:
- Interviews (TE11N)
- Observations (TE10B)
- Cool Biz (TO10C)
- Task demonstration (TE11D)

Feasibility phase tools:
- Visible Analyst (TO1VA)
- ViVo (TO1V)

Phase 2: Business case phase (PH2BC)
Business case phase objective: elaboate and structure the intended solution
Relevance: defines the scope of the intended solution
Business case phase outcome: Business case document

Business case phase activities:
- Identification of solution (PR26B)
- Role boundaries (PR26B)
- Collect more information (PR26M)
- Analysis of solution (PR26S)
- Assumptions (PR26A)
- As-is analysis (PR26A)
- Recommendations (PR26RE)

Business case phase techniques:
- Critically analysis (TE26A)
- Risk reduction (TE26R)
- Fault tree analysis (TE26T)
- Detailed analysis (PR26A)
- Design of solution (PR26S)
- Change mgt (PR26M)
- Modelling (PR26M)

Business case phase tools:
- Borland Together (TO2B)
- Telelogic (TO26T)
- Telelogic (TO26G)

Phase 3: Analysis and design phase (PH3AD)
Analysis and design objective: develop analysis model and a logical solution
Relevance: generates documentation in the form of an analysis and design models
Analysis and design phase outcome: analysis and design document

Analysis and design phase activities:
- Refinement (PR36R)
- Functional hierarchy (TE45H)
- Requisite Pro (TO36P)
- Ownership (PR36W)
- Modelling (TE56M)
- Redesign (PR36R)

Analysis and design phase techniques:
- Affinity analysis (TE36A)
- Rational Rose (TO36R)
- Telelogic (TO36D)

Analysis and design phase tools:
- Telelogic (TO36T)
- Telelogic (TO36G)
- Telelogic (TO36M)

Post-implementation evaluation (PH4PE)
Objective: compare implemented solution to business case objectives
Relevance: ensures lessons learnt from the project are fed-back to the org process
Outcomes: post-implementation review report

Post-implementation evaluation activities:
- Review requirements (PR44R)
- Review business case (PR44C)
- Review traceability (TE66T)
- Traceability (TE66G)

Post-implementation evaluation techniques:
- Traceability matrix (TE46M)
- Traceability (TO46E)
- Traceability (TO46C)

Post-implementation evaluation tools:
- Telelogic (TO46R)
- Telelogic (TO46G)
- Telelogic (TO46M)
ology. According to a project manager (bank B) from an individual interview, "The business case phase formally presents the business problem, identifies project options, benefits, costs, risks and defines the scope..."

4.2.1 The objective and relevancy of the business case phase

One participant (bank A) commented on the objective: "The objective was to elaborate and structure the intended solution from the feasibility phase. The function of this phase is to help gain approval from management for a project to proceed to address the problem and to obtain common agreement on exactly what the project will deliver..." The outcome was found to be "...a business case document..." The business case phase was relevant because "...it defined the scope of the intended solution", the project manager (bank B) stated.

4.2.2 The activities of the business case phase

The project manager (bank B) noted that the activities were "...to identify a solution, refine the boundaries of a solution, to collate more information, to analyse a solution, to determine the assumptions and dependencies, to conduct ‘as-is analysis’ and finally to make recommendations". A business analyst remarked, "These activities can help define the project’s resource requirements, investment costs and revenue projections when writing a business case".

4.2.3 The techniques of the business case phase

The techniques were "criticality analysis, risk reduction leverage and fault tree analysis," commented a project manager (bank A). Referring to this phase, "...These techniques help a business analyst present a clear, concise, fact-based business case. They help a business analyst measure the full range of business benefits including intangible benefits".

4.2.4 The tools of the business case phase

The tools were "Borland Together, Rational Rose and Telelogic". A participant in the second focus group said, "For a business case, these tools enable business analysts to communicate the proposed features, functions, and specifications of a product or system with greater clarity, so that the developers can fully understand, build, and test the intended product or system". Findings indicate that the business case phase provides a baseline for determining success and failure at the end of the project, and the objectives of the business case phase should be reviewed in the final phase of business analysis.

4.3 Analysis and design phase

The business strategies and tactics are written into the blueprint for a system. It could entail system function, processing, size and scope, structure, hardware and software details".

4.3.1 The objective and relevancy of the analysis and design phase

The focus group participated further stated that, the objective entailed, "...an in-depth study of the solution from the business case and producing an analysis and design model representing that solution". The outcome was "...an analysis model, in the form of an analysis design document..." This phase was relevant because "...it generated documentation in the form of analysis models".

4.3.2 The activities of the analysis and design phase

One participant (bank B) commented: "The activities consisted of refining the solution, determining the scope, ownership, redesigning the solution from the business case. Conducting detailed analysis, designing a solution, conducting change management, modelling, and finally the signing off the design". During probing, a participant remarked, "The business case solution is at a high level, and these activities give structure and focus to the solution and speed up the development process".

4.3.3 The techniques and tools of the analysis and design phase

During an individual interview, a business analyst (bank A) said regarding techniques "...affinity analysis, functional hierarchy decomposition and modelling" whereas the...tools included "...Telelogic, Requisite Pro and Rational Rose". During probing an IS manager (bank B) said, "Analysis and design phase involves creating a formal model of the problem to be solved. These techniques and tools guide a business analyst by creating standardisation for this phase. It helps a business analyst to assess user needs in order to understand the complete problem being solved".

4.4 Post-implementation evaluation

Findings indicated that a post-implementation evaluation (see Figure 1) was the final phase of a business analysis methodology. "A post-implementation evaluation" according to one outspoken business analyst from the second focus group "is an assessment of the overall success of the project. This phase", according to her, "...should include an assessment of how the project performed against the objectives, scope, benefits, expenses and deliverables from the business case".

4.4.1 The objective and the relevance of the phase

A CIO (bank A) stated that the objective was to "...evaluate the implemented solution by comparing it to the business case objective..." The deliverable outcome was "...a post-implementation review report." This phase was relevant because "...it ensured lessons learnt from the project were feedback to the organisation, to benefit future projects".
4.4.2 The activities of the post-evaluation phase

Participants from the focus groups were asked to elaborate on the activities. "...The activities were to review the requirements, review the business case and to review the objectives...". A participant said, "These activities help a business analyst ensure that the system is operating effectively as intended in the business case by identifying improvements for its operation. Based on this, an action plan can be prepared to implement these improvements to minimize project failure based on poor business requirements..."

4.4.3 The techniques and tools of the post-implementation phase

Probing on the techniques and tools revealed the following response from a participant during an individual interview, the techniques were "traceability matrix, inspections and traceability tree" and the tools were "ideogrammatic, Teleologic and Rational Rose"... These techniques and tools help a business analyst trace the original project expectations from the business case as well as performance, investment and operating costs, schedules, benefits, and technical capability to the actual project". He further added, "They also permit a business analyst to estimate cost and schedule deviations".

Eleven participants from the individual interviews stated that there were no tools for the post-implementation evaluation phase. Notably, all focus group participants named tools for this phase. The reason that all the focus group participants named tools for this phase could be attributed to prompting from other focus group participants, an inherent weakness of focus group interviews (Hussey & Hussey, 1997).

Comparing the all the evidence from the individual interviews and focus group interview findings, no outstanding difference was found in the comments to make any strong conclusions. Comparing the evidence from Bank B against Bank A, no substantial difference in the phases was found, but strong differences in the selection of activities, techniques and tools utilised was discovered. This could be traced to the structure and governance procedures of each organisation. Bank B has a centralised structure, with a strong governance policy. Bank A has a decentralised structure where business units have freedom to select techniques and tools based on personal preferences. As a result, participants from Bank A specified more activities, techniques and tools.

5 DISCUSSION

The research objectives included identifying the relevant phases of a business analysis methodology as well as the objectives and outcomes relevant to those phases. The above findings addressed those objectives and found the phases of a business analysis methodology to be a feasibility phase, business case phase, analysis and design phase and post-implementation evaluation phase. The other objective of this research was to map appropriate activities, techniques and tools to each of the phases identified. These findings form a model of business analysis methodology (see Figure 1).

The theoretical framework highlighted the problems of current methodologies: the requirements engineering process methodology (Iyer & Richards, 2004), requirements engineering methodology (Boehm et al., 1994), requirements engineering process methodology (Alcazar & Moniz, 2000), requirements generation methodology (Arthur & Groenew, 2005), soft systems methodology (Checkland & Scholes, 1999) and agile methodologies (Cohen et al., 2004).

For example, the requirements engineering methodology provides an overview of the phases and does not clearly define the objectives and outcomes of the phases (Lobo, 2004; Wallace, Keil & Rai, 2004). The win-win spiral methodology however, lacks adequate detail for the phases (Brage, Martin & Tuunanen, 2005; Parets-Llorca & Grumbacher, 1999). Moreover, all the phases are briefly explained on a high level, with their activities also stated on a high level. Furthermore, outcomes, techniques and tools are not specified for the phases (Brage, Martin & Tuunanen, 2005; Parets-Llorca & Grumbacher, 1999).

Therefore, the problems of current requirements analysis methodologies included the fact that the phases were at a high level and there was an inadequate level of detail in these phases. Different activities, techniques and tools have different advantages and disadvantages, therefore incorrect selection could hamper the objective of a phase (Davis, 2003a; Lobo, 2004). Findings in this study addressed these shortcomings by mapping appropriate activities, techniques and tools to each of the relevant phases identified (see Figure 1).

The evidence suggests that the objective of the first phase was "to provide a good foundation to allow pre-analysis and design activities to commence in a focused manner". "Elaboration and structure" is the outcome of the business case phase. "Producing an in-depth study of the solution from the business case" is the outcome from the analysis and design phase. "Evaluation of the implemented solution" is the outcome of the post-implementation evaluation phase. The phases have end products such as "a concise feasibility report... a business case document... an analysis and design document... and a post-implementation review report".

From evidence that has been revealed, it would seem that a variety of activities are necessary during the business analysis phases. For example, the starting point is to "conduct opportunity analysis and make recommendations... and help them avoid financial mistakes." Furthermore, the business case phase highlights activities which can help "define the project's resource requirements, investment costs and revenue projections when writing a business case". From the results, the analysis phase highlights "modelling, and finally the signing off the design". The last phase indicates activities which point to "review the requirements, review the business case and to review the objectives". Findings indicate various graphical representations, techniques and tools. These techniques and tools "assist a business analyst in the understanding and formulation of requirements for the first phase".
From comments it was revealed that a relationship exist between the post-implementation evaluation phase and the business case phase. The business case phase provides a baseline for determining success and failure at the end of the project and the objectives of the business case phase should be reviewed in the final phase of business analysis.

Another interesting outcome was found in a focus group interview that a "post-implementation evaluation phase should be conducted twice i.e., directly after the project is implemented and then repeated after a period of time, approximately six months, following the implementation". It would seem that the reason for this is the time taken to achieve a stable operating environment.

A closer examination of the results revealed that tools such as Rational Rose and Telelogic are appropriate to the business case phase, analysis and design phase as well as the post-implementation evaluation phase. This is due to the ease of use, financial and tractability features of these tools. These tools were the part of the standard system development methodology in the bank B.

There is "no silver bullet" (Brooks, 1987, p10) for business analysis, but research (Standish group, 2004; Avison & Fitzgerald, 1996; IEEE, 2004) confirms that projects that adopt a logical and structured approach have a greater probability of success than projects that adopt a chaotic ad hoc approach. If the business analysis is done well, the probability is the rest of the development will also go well.

Finally, the findings in this study indicate that business analysis is the process of business problem solving. Findings indicate that business analysis was the understanding of business requirements that could be business problems, opportunities, needs or wants. Business analysis was found to consist of providing business or technical solutions to the requirements and documenting these solutions in a clear and understandable way.

6 IMPLICATIONS FOR BUSINESS ANALYSTS

This research was conducted to add value to the body of accumulated knowledge regarding business analysis applicable to a financial service environment in South Africa. Some specific conclusions were derived in the attempt to create an appropriate environment for managing business analysis:

- The most obvious course of action is that companies need to develop a business analysis methodology as early as possible. This should ideally be in conjunction with designing a model of business analysis methodology.

- A model of business analysis methodology ought to address relevant phases, with clear objectives and outcomes. In addition, the mapping of activities, techniques and tools for each of these phases should be applicable to financial services in South Africa.

- Having a clearly defined business analysis methodology in a form of the model creates a standardised approach for business analysts and promotes consistency in software development by ensuring a repeatable process and less confusion for business analysts. A clearly defined business analysis methodology positively influence business analysis as a problem solving process.

- The model of business analysis methodology revealed new paths making business analysis more logical, structured and standardised. A standardised business methodology within the model results in easier training, accurate requirements, measurable deliverables and improved productivity for business analysis practitioners.

Future research needs to be done into the implementation aspect of the model of business analysis methodology. There are many business analysis aspects that would benefit from further investigation, especially in a South African context. This would include the creation and testing of different activities, techniques and tools, as well as investigations into the successes and problems of their actual use.

REFERENCES


