

Exploring the Role of ICT in the transition from a Small Business owner to an Entrepreneur: A Dynamic Capabilities Perspective in a Developing Context

Brenda B.S. Didi-Quvane

Department of Informatics, University of Pretoria
didiquvanebrenda@gmail.com

Hossana Twinomurinzi

Department of Informatics, University of Pretoria
twinoh@up.ac.za

ABSTRACT

One of the preferred approaches to solving developing country (DC) challenges such as unemployment, poverty and redundant youth is through entrepreneurship and the use of ICT. Yet integrating ICT in business often presents another unnecessary challenge for Small Medium and Micro Enterprises (SMMEs) in DCs. In this paper we adopt a qualitative approach using the dynamic capabilities framework (DCF) to explore the role of ICT in transitioning SMME owners into entrepreneurs. The key findings suggest that younger SMME owners are more willing to innovate with ICTs yet lack the resources. The older SMME owners invest in ICT but struggle to make use of it. The research contributes to practice in suggesting how training in ICT to SMME owners, as part of stirring an entrepreneurial culture in DCs, needs to include these generational differences. For theory, the research shows that the DCF can sufficiently be used to understand growth in SMMEs in DCs.

Keywords

Development, Capability Approach, Information and Communication Technology (ICT), Information Society, Dynamics Capabilities, knowledge economy, e-Skills.

INTRODUCTION

Entrepreneurship, in its many features such as innovation and creativity, is often considered as the primary approach to dealing with poverty and unemployment in the long term in DCs (Carree & Thurik, 2010). The general argument is that entrepreneurship drives development through creating jobs and providing a source of income for those involved. In this paper we deliberate on an innovative development effort in South Africa to stir an entrepreneurial culture, and pay particular attention to the effect of training SMME owners in using ICT as part of a transition to becoming entrepreneurs. We make a distinction between SMMEs owners and entrepreneurs. Entrepreneurs are more success driven, take more risk and are more willing to pursue and exploit opportunities despite uncertainty (Burns, 2011).

The reason for including ICT training as part of the transition is because the economic age today, which Peter Drucker oracularly described as a knowledge-based economy (Drucker, 1978), demands that information, knowledge and technological advancement are essential components to gaining advantage in business and society (Teece, 2007). The ways in which ICT today enables information to be created, manipulated and used has a strong effect on how businesses operate. The reality of a knowledge-based economy means that ICT needs to become embedded as an integral part of any developmental effort including entrepreneurship. For example, ICT advancements have “virtually” widened the competitive field to beyond geographical and national borders, and entrepreneurs need to be able to explore those unique opportunities to establish and develop their businesses. We refer to the embeddedness of ICT in entrepreneurship as e-entrepreneurship.

Globalization and the rapidly changing technology have created the need for entrepreneurs to understand their competitive positioning and how competitive advantage can be achieved differently today. Entrepreneurs need to continuously demonstrate an ability to respond to changing markets by being innovative and effectively deploying their capability sets to exploit both internal and external opportunities (Teece, 2007). To survive today, entrepreneurs need to use ICT as part of their business practices and methods. We therefore adopted the Dynamic Capabilities Framework (DCF) to understand entrepreneurial performance, innovation and business practices in a changing knowledge-based economy. The DCF “analyses the sources and methods of wealth creation and capture by private enterprise firms operating in environments of rapid technological change” (Teece, 2007). The emphasis of the DCF is on the importance of exploiting internal and external factors so as to increase the level of competency and better handle changes within the business environment. The DCF highlights that the combination of skill, knowledge and resources within an organisation determines the capability of the organisation (capability set) and directly impacts on the level of innovation and competitive advantage. The DCF suggests that the economy today is increasingly dominated by conceptual products through digital technology (Pink, 2006). The

largely unexplored challenge now faced by SMME owners is to adapt, integrate and reconfigure themselves in terms of resources, skills and knowledge to the changing environment that characterizes the knowledge-based economy.

The DCF has traditionally been applied only to large organisations, and little research has been done on its applicability in SMMEs, more especially in developing contexts. SMMEs differ from large organisations. For example, the performance of an SMME is directly linked to the owner's knowledge and capability set (Burns, 2011). The paper therefore sought to understand the influences on SMME owners to integrate ICT in order to develop and grow the business, moving to a point where they have high performing entrepreneurial businesses that create, discover and exploit opportunities. More particularly, the paper explored the role that ICT plays in the transition from being an SMME owner into an entrepreneur who can sense and shape opportunities and threats, seize opportunities and maintain competitiveness through enhancing, combining, protecting, and when necessary, reconfiguring the business intangible and tangible ICT assets.

The rest of the paper is organized as follows; the next section reviews the literature on the knowledge economy, the notion of e-skilling, the Capabilities Approach and the dynamic capabilities framework. The research approach section follows to explain the means of inquiry employed in the research. It is followed by the discussion section which offers how the findings were elicited. The final section discusses the conclusions and generalization coming from the paper.

LITERATURE REVIEW

South Africa is a DC with a medium human development index, an indication of the degree of the well-being of the majority of its population in terms of health, education and income (UNDP, 2011). Being a developmental state means that South Africa's policies are inclined towards human development particularly job creation, poverty, inequality and health (South Africa, 2013). The recently approved National Development Plan (NDP) of South Africa ratified in 2012 is oriented towards a developmental approach that favours enhancing the capabilities of people so they can live the lives that they desire (South Africa, 2013). The developmental approach echoes Amartya Sen's Capabilities Approach (Sen, 1999). The Capabilities Approach (CA) is a broad development framework that has been frequently drawn upon in IS to understand the role of ICT in development (Avgerou, 2009; Twinomurinzi, Phahlamohlaka, & Byrne, 2012; Walsham, Robey, & Sahay, 2007).

The Capabilities Approach

The CA considers the end of development and well-being as the capability of people to function, for example the ability to read and write, work, rest, be healthy, be respected, be part of a community etc. Capabilities are fundamental skills that an individual needs to have to do what he/she desires (Sen, 1999). The CA not only focuses on the capabilities but also the "commodities" required to attain an achievement such as the opportunities, freedoms and choices of the individual. The CA shifts the focus to what the individual succeeds in doing with the commodities and the characteristics of the commodities at his command (pg. 7). It is however not enough to aim for an individual's desires. For example, research on the lifestyle of people living in deprivation shows that they spend half of their income on alcohol, tobacco and other forms of entertainment, e.g. weddings, funerals and religious ceremonies (Banerjee & Duflo, 2008, p. 151). Consequently, for e-entrepreneurship to meaningfully contribute to job creation and reducing poverty, it must enable people to take advantage of opportunities using ICT based on broader social conceptions of what is good, rather than on individual desires alone.

South Africa does not consider ICT to be a luxury of a privileged few but seeks to enable individuals from all the sectors of society to use ICT in ways that will enable them to achieve what they desire more efficiently (NeSPA, 2010). For e-entrepreneurship, this means that entrepreneurs today need to have adequate access and sufficient skills to enable them to use whatever ICT resources are within their reach in pursuit of business growth. The CA is however not prescriptive enough about how an individual makes a choice. In the e-entrepreneurship context, choice would relate to how an SMME owner who has adequate access to ICT and sufficient skills to use the ICT will actually exploit the capabilities to grow the business. We therefore drew on the dynamic capabilities framework (DCF) to understand the exploitation of ICT in a rapidly changing business environment.

The Dynamic Capabilities Framework

The DCF has predominantly been used to understand how large organisations sense, shape and seize opportunities in the knowledge-based economy (Teece, 2007). The DCF attempts to illustrate how large organisations identify and invest in new technologies and ICT innovations in order to more dynamically and efficiently identify their target markets and customer needs (Helfat, 2007). The aim is to be able to use technological and ICT investments to be more responsive to the environment in an age of constant change (Eisenhardt & Martin, 2000). The emphasis of the DCF is on exploiting internal and external organisational factors as the combination of skill, knowledge and resources (Winter, 2003). Nonetheless, there was little to no research found where DCF was applied to small businesses in a developing context.

SMMEs are especially owned by one or two people, and the way in which SMMEs operate is directly linked to the owner's personality (Burns, 2011). The implication is that SMME ability to be dynamic and responsive in the rapidly changing environment is significantly dependent on the SMME owner, unlike in large organisations. Depending on the SMME owners' affinity for risk, change and innovation, the business will probably adopt the safest approach to doing business; to carry on in the same way. The risk aversion is one of the reasons most SMMEs remain in a survivalist mode. The probability that an SMME owner in survival mode will invest in ICT to sense, shape and seize opportunities and grow the business in response to the environment is very low.

From a human development perspective, it is necessary to therefore transition SMME owners into entrepreneurs, and further equip them with access to and the skills to operate ICT. In this paper we argue that by increasing SMME owner capabilities with entrepreneurship and ICT training should enable them to use ICT to scan, sense, shape and seize opportunities in their local environments and grow the business in a rapidly changing environment. In South Africa, the government has embarked on an effort to make ICT a resource that is available across all sectors of society in what is labeled the e-Skilling initiative.

e-Skilling in a Knowledge-Based Economy: South Africa

The e-Skills Institute (eSI) is a South African government initiative to encourage the use of ICT to address declining e-readiness indicators. It is more importantly designed to enable people to harness ICT to deal with the significant socio-economic challenges of poverty, unemployment, education, business and health (NeSPA, 2010). The eSI defines e-Skilling as "the ability to develop and use ICTs within the context of a knowledge environment and associated competencies that enable the individual to participate in a world in which ICT is a requirement for advancement in business, government and civil society" (Mitrovic, Sharif, Taylor, & Wesso, 2012).

The eSI encourage the creative and innovative use of ICT so that everyone can actively participate in the knowledge-based economy. Seven primary e-skills have been identified (Twinomurinzi, 2012):

- e-Literacy Skills which looks at the basic use of ICT i.e. internet and email
- e-Participation and e-Democracy Skills which focuses on citizen and government engagement through ICT
- e-Government/Governance Skills to increase the efficient and productive use of ICT within government
- e-Business Skill to increase organizational efficiency and productivity through the use of ICT
- e-User Skills which focuses on enhancing ICT efficiency of people
- e-Practitioner Skills which looks at the more traditional mainstream ICT professional
- e-Community Skills: aimed at communities for building social cohesion within local contexts

The e-skills initiative success will be measured based on the degree of:

- Increased employment opportunities due to the increased use of ICT;
- Effective e-governance and service delivery, using ICT to improve government services;
- Business development by leveraging ICT to enhance business productivity;
- Socio-economic development in terms of increased national productiveness
- Research and development that will guide policy and curriculum development

In this paper, we explore one of the eSI pilot initiatives to understand the role of ICT in transitioning SMME owners into entrepreneurs by equipping the SMME owners with both ICT and entrepreneurship training. The next section presents the means of inquiry used to carry out the research.

RESEARCH APPROACH

The research sought to understand the contextual influences of ICT on SMME owners and therefore drew from the qualitative means of inquiry. Qualitative approaches focus on the primary research question, the purposes of the study, the information that can appropriately answer specific research questions, and which strategies are most effective in obtaining understanding (Denzin & Lincoln, 2005). The research question drew from the interpretive paradigm to gain a deeper understanding of the role of ICT through the lived experiences and meaning of SMME owners (Klein & Myers, 1999). We employed hermeneutics as the interpretive method to guide data collection and make sense of the lived experiences. Hermeneutics is a theory of understanding where meaning is extracted from data through a iterative interpretation between the context and the data (Figure 1) in what is known as the hermeneutic circle (Mingers & Willcocks, 2004).

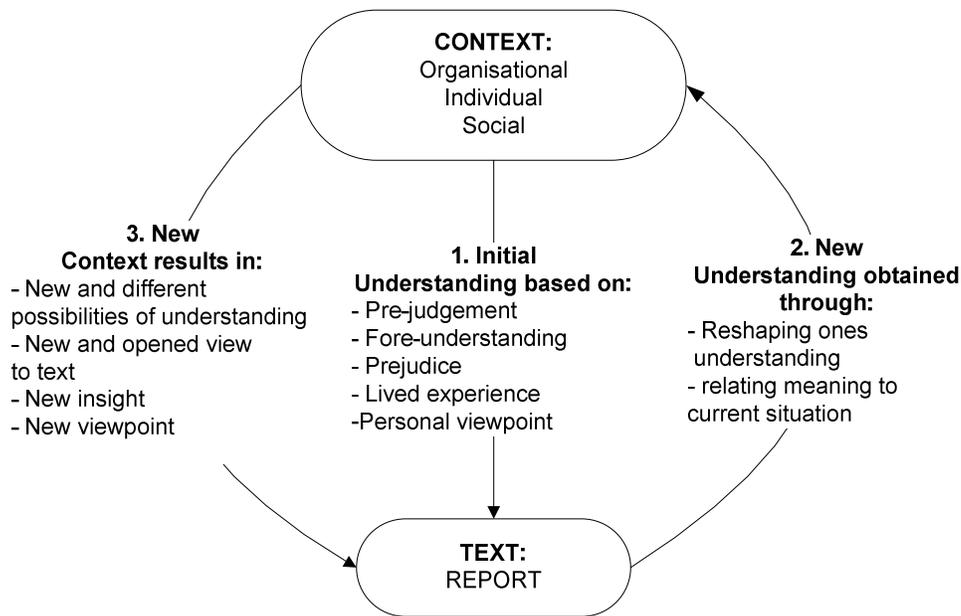


Figure 1: The Hermeneutic Circle (Introna, wp)

The Case Scenario: The Siyabuswa e-Entrepreneurship Community Project

Principles of case study research were drawn on to makes sense of the data as we were exploring a contemporary phenomenon through direct observation of an event, and by directly interacting with the people involved in the event, the SMME owners (Yin, 2003). The research was guided by the dynamic capabilities framework (Teece, 2007) with the unit of analysis as the SMME owners from the Siyabuswa rural community in Mpumalanga, South Africa.

Siyabuswa is a rural community in the Dr. J.S. Moroka Local Municipality, Mpumalanga Province, South Africa. The Dr. J.S. Moroka Local Municipality falls under the Nkangala District Municipality inhabited mainly by two local tribes, the Pedi and the Ndebele. Siyabuswa although regarded as a rural community has access to essential basic amenities such as health and education. However, it suffers from high unemployment and redundant youth. The eSI entered into a collaborative partnership with the community centre in Siyabuswa for the centre to implement e-Skilling at the local level.

As a pilot project to understand the role of ICT in transitioning SMME owners into entrepreneurs, 20 budding and existing SMME owners were selected by the community leaders of the Siyabuswa community to attend two courses on entrepreneurship and ICT. The entrepreneurship course is designed to offer practical training to SMME owners and is followed by 10 weeks of mentorship where the SMME owners are monitored on a weekly basis to ensure that the business ideas they developed during the course are actually implemented. Only 17 SMME owners completed the entrepreneurial and ICT training.

Pre-assessments were done before the courses to understand the SMME owners ICT capabilities in terms of:

- Access (mobile and PCs)
- Usage (internet and productivity tools)
- Duration of usage
- Experience and training
- Support
- Perceptions of use in their businesses

The second purpose of the pre-assessments was to identify the ICT training to be focused on. The pre-assessments revealed the following:

- Access (mobile and PCs)
 - All had access of the computers and smartphones
 - Most of them did not know they owned smartphones

- Usage (internet and productivity tools)
 - The preferred usage was internet and email
 - Most had general knowledge of the office productivity tools
 - Only 3 of used Facebook, only 1 used both Tweeter and Skype
- Duration of computer usage
 - Except 1, all had used for more than 2 years
- Experience and training
 - All have experience and training in computer literacy
- Support
 - Support equally varies between themselves, family, friends and employees
- Perceptions of use in their businesses
 - They are more comfortable with using ICT than with mobile phones for business
 - There are nonetheless strong security concerns

Data collection

In August 2012, almost six months after the ICT and entrepreneurship courses ended, the researchers held a reflection workshop with the SMME owners to understand the influence of both courses. 11 of the 17 SMME owners made it to the workshop, eight male and three female. 3 were between the ages 26-35 and the others in the 43-51 age range.

The reflections workshop generated data through questionnaires elicited from the DCF and the literature review. The questions focused on the SMMEs owners' capabilities to sense, shape and seize business opportunities using ICT (Appendix). The questionnaires were facilitated using the ThinkTank™ collaborative tool (www.groupsystems.com). The ThinkTank™ collaborative tool allows anonymous responses to questions, immediate collated feedback, and captures all the data within a short time. The SMME owners therefore had the freedom to express their true opinions. During the workshop the researcher was able to directly interact with research participants to clarify questions and even probe a little deeper on answers where necessary.

ANALYSIS AND DISCUSSION

As noted, hermeneutics was adopted as the interpretive method to guide data collection and analysis. Hermeneutics provides a rich approach to present a discussion on the meanings drawn from the data through constant comparison with the context and the research questions. The section is grouped into three broad areas of ICT accessibility, sensing and shaping opportunities, and seizing opportunities.

Accessibility to ICT and its features

There was a very good level of access to the internet for all the SMME owners except for one person, noticeably the only person who had not started or grown the entrepreneurial venture. In terms of email, despite all of the SMME owners having knowledge on how to use email, only six of them who responded said they had access to email. Nine of the 11 SMME owners claimed to currently use social media such as Facebook actively, a surprising rise in usage compared to before the ICT training when only 3 people used Facebook, and only one of Skype and Tweeter.

It is ironic that five of the SMME owners claimed not to have access to email since the platform from which they use social media and the internet, the cellphone, is the same from which email can be accessed.

Sensing (And Shaping) Opportunities and Threats

Eight of the SMME owners had grown or started new entrepreneurial ventures with four of them branching into more than one product/service within their business. The three who had not started any entrepreneurial venture cited financial challenges but expressed a keenness to start a business at some point. We argue therefore that the entrepreneurship training appears to have enabled some but not all to move towards being entrepreneurial.

SMME client base - Customer Needs Analysis

All the SMME owners appeared to have a clear understanding of their client bases in terms of the geographic location, gender, age group, income source as well as their ICT level of skill, knowledge and accessibility. The SMME owners were able to articulate the type of equipment that they might need to invest in so as to target the client base more efficiently using ICT.

Higher yet different risk-taking approaches to growing into new markets

The SMME owners were able to identify other target markets. It was interesting how the SMME owners from two unique age groups responded differently to growing the entrepreneurial ventures. Those between the ages 26-35, 3 of the 11, had started businesses in photography, video recording, and internet cafes. Those in the 43-51 age range, 7, had opened catering and dress making services, poultry farming and grocery shops. The 'older' group is clearly more interested in widening the product range and service offerings. The 'younger' group appears more interested in growing into ICT type ventures. For example, one of the younger SMME owners noted how his client base has access to cell phones, computers and internet and use social media. He is therefore considering using a website, Facebook and Twitter to advertise his services. On the other hand, one of the older SMME owners with a poultry business noted that while he understands that his older clients may have smartphones, they are probably not fully utilizing it. For the older owner, it is better to use traditional SMS text messages rather than social media.

From a gender perspective the 3 young males seemed to be more eager to increase their client bases while the 2 females and the 5 'older' males wanted to focus on the quality of the product. It therefore appears that the younger generation SMME owners are more willing to take risks by venturing into new markets while the older and female SMME owners take a different approach to risk by maintaining their existing client base but improving their services.

Knowledge of Future Client Needs

As much as the SMME owners displayed a clear understanding of their client base and the other markets they would like to attract for growth, they were not clear on their assumptions about the future needs of their existing customers. It suggests that some of these SMME owners may grow in directions that may not allow them to fully achieve what they want. The ambiguity may impact on the ICT investments they may decide to make.

Client access to computers and internet

The SMME owners claimed to know their clients' ICT accessibility and technology challenges. This could be because the clients come from the same community. 5 of them indicated that their clients who have access to ICT and internet were especially from a younger age group. However, all the SMME owners claimed to know that all their clients have access to smartphones, cellphone with access to the internet and social media. All the SMME owners claimed to understand the capabilities of social media and its ability to widen their market segments. They particularly noted social media as an appropriate tool for advertisement. For example, SMME owner:

M_4351_173820 noted that *"I am still a little beat behind, but I am prepared to get used to it because is the most helpful asset to support and make the business to grow faster this now days"*

(M_4351_172049) that *"I am striving to capacitate myself fully with ever changing modern technology"*.

The SMME owners however were quick to cite as a challenge that their clients do not have access to the internet on PCs.

Seizing Opportunities

Improving technology competency / Technology investment

Eight SMME owners had invested in ICT through purchasing computers and training in the use of computers so as to grow their business. They had also invested in purchasing smartphones to allow them to have easy access to the internet, email as well as social media. Of these 8, 7 were from the 'older' generation. It further indicates the willingness of the older SMME owners to grow and develop through the use of ICT. The investment in ICT is however ironic as the same group were skeptical about their clients having ICT. The 'younger' generation on the other hand who could not afford the ICT or smartphones, knew their clients actively use ICT.

CONCLUSIONS

In concluding, we reflect on the research objective to understand the role that ICT plays in the transition from being SMME owner into an entrepreneur. An entrepreneur who can sense and shape opportunities and threats, seize opportunities and maintain competitiveness through enhancing, combining, protecting and when necessary reconfiguring the business using ICT. The research was grounded in the human development ideas of Amartya Sen that focus on enhancing human capabilities, and was theoretically guided by the dynamic capabilities framework (DCF). The DCF framework considers entrepreneurial advantage in a rapidly changing environment strongly characterized by advances in ICT. The empery was a rural community of South Africa. In reflecting on the analysis and research question, the following were inferred:

Age and ICT innovativeness

From an age perspective, the findings suggest that age is an important factor in the role of ICT in the transition from SMME owner to entrepreneur. The younger SMME owners aged 26-35 were more creative and innovative when it came to finding uses for ICT. These younger owners were however unable to invest in ICT. The older SMME owners aged 43-51 were on the other hand investing more in ICT than the younger SMME owners. The ICT investments embarked on by the older SMME owners ranged from laptops, smartphones, printers, computers, internet connection as well as ICT training. However, the older owners could not find any innovative uses for the ICT. We therefore conclude that while the younger generation of SMME owners cannot afford to invest in ICT they are more willing to experiment with it. On the other hand the older SMME owners are investing in ICT yet are not as creative in how to use it.

From a development and training perspective it is clear that both young and older SMME owners have identified the need and importance of ICT training, particularly for sustaining their business competitive positioning. The research results suggests that e-entrepreneurship appears to have made a positive step in actively dealing with important development problems of skilling and job creation in a development context.

Investing in ICT

There was a shift from wanting cost effective means of using ICT prior to the training, to investing in ICT despite using it. The research results now suggest that SMME owners after training in ICT are more willing to embrace the idea that ICT might after all improve business.

The Dynamic Capabilities Framework in a Developing Context

We conclude that for any SMME to be able to fully implement the DCF as a framework for innovation, wealth creation and performance improvement there would have to be some community awareness and use of ICT. The DCF can be used from an entrepreneurial perspective but it is highly dependent on the community that business operates.

Contribution to theory and practice

From a theory perspective the research results have shown that the DCF can be adopted as a theoretical framework to understand SMMEs in a rapidly changing environment characterized by ICT even in a developing context. However, it is clear that training in ICT would have to be conducted in order for the SMMEs owners to embrace the capabilities that ICT can bring.

Limitations and Areas for further research

The research was limited in its findings since the data was taken from one pilot project and from only one community. The ability to make broader generalisations can only therefore be to context and theory. Nonetheless, the findings do begin to indicate how the study can be carried out on a wider scale.

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