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Executive Unease About Enterprise Mobile Apps To Remain ompetitive

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Abstract: The competitive environment today requires organisations to be agile and flexible to client changes in order to survive. In this paper, we draw on the literature of dynamic capabilities to explore the extent to which organisations in South Africa consider enterprise mobile app strategies as a means to consistently reconfigure, renovate and reuse their resources to better explore the environment and exploit opportunities. The study used responses from 39 executives and employed Fisher's exact test. The findings suggest that the executives had a cognitive dissonance about the adoption of emergent new technologies, that is, the executives are hesitant to invest in enterprise apps despite knowing such apps could add value. The research recommends the importance of selecting executives who are promoters of new technology opportunities.

Keywords: Competitive advantage, dynamic capabilities, mobility, mobile applications, strategic management.

1. INTRODUCTION

The intense competitive environment of today requires that organisations constantly reconfigure, renovate and reuse their existing tangible and intangible resources to better explore the environment and exploit opportunities^[13]. An example of intangible resources are employees while Information and Communication Technologies (ICT) are an example of an organisational tangible resource. The increase of ICT savvy consumers means that organisations need to innovate their business models to take into account the embeddedness of ICT in their consumers^[9].

In this paper, we drew on the dynamic capabilities frame work to understand how South African organisations consider adapting their business models to take into account the explosion of mobile phones, in particular the use of mobile apps. The dynamic capabilities framework, which draws from the social and behavioural sciences, illustrates the capability of an organisation to take into account technological advances in the client base to readapt its resources for greater competitive advantage^[13]. Specifically, we investigate the capability of the organisations to readapt themselves in light of the explosion of smart phones and the accompanying usage of mobile apps^[8]. The paper argues that mobile apps present new opportunities for organisations to create value^[14]. The paper therefore sought to answer the following primary research question: "How are South African organisations leveraging mobile apps to remain competitive?"

The remainder of the paper is structured as follows: the literature review section presents the literature on mobile apps and dynamic capabilities. The research approach section describes the means of inquiry to conduct the research. The analysis and findings are discussed in the subsequent section. The last section infers the insights the paper makes from the findings.

2. LITERATURE REVIEW

2.1 The mobile revolution

There is a well acknowledged global uptake of mobile at 96.8%. In developing countries the uptake is at 91.8%, Africa at 73.5% and South Africa at 149.7%^[8]. The falling prices of smart phones and the greater access to mobile internet enabled services means that the embeddedness of mobile app options is increasing among consumers. Basic feature phones are also capable of a degree of interactivity using Short Message Service (SMS), Unstructured Supplementary Service Data (USSD) and SIM Application Toolkits (STK)^[12]. There is therefore an expectation that organisational decision-makers will find ways to add value to the clients by expanding their offering to include mobile technology. However, a strategy for mobile has unique considerations compared to traditional organisational ICT mainly in terms of device size, choice of device type and platform, and the degree of user personalisation required^[4, 12].

The two most popular smart phone operating system platforms today are Android (by Open Handset Alliance led by Google) and iOS (by Apple), with Android holding a 78% global market share and iOS an 18.3% share^[10]. These platforms are upgraded regularly, for Android almost every six months. Each of the platforms provide a unique user experience and interaction design. The productivity software, better known as mobile apps (apps), provide functionality. Apps are typically downloaded for a fee or for free from platform stores, although they can also be loaded directly onto the smart phone.

In terms of the mobile software, there are three types: web apps, native apps and a combination of native and web app scaled hybrid apps. Web apps use containers that house web technologies mainly Hyper Text Markup Language (HTML), Cascading Style Sheets (CSS) and Javascript. The main advantage of web apps is the ability to update content without being constrained by the platform app stores. The downside however is the limitation in accessing the device hardware. Native apps on the other hand are designed to run independently on the smart phone and do not need any connection to the internet. Native apps have the advantage of providing richer and direct access to the platform features. Hybrid apps straddle between native and web apps by running on the device while maintaining content updates from the internet^[12]. Applications are essentially shaped to provide a person with the capability to have everything they require in the palm of their hand.

With the penetration of mobile it would be expected that every organisation would pursue a form of mobile strategy which takes into account the users, the changing smart phone platforms, types of app, and types of device manufacturer. In the next section, the dynamic capabilities framework as an organisational framework for achieving competitive advantage taking advantage of technology innovation is reviewed.

2.2 Dynamic capabilities

The economic environment today requires that organisations importantly complement their business models to include a conceptual element because conceptual products are increasingly becoming what customers value^[11]. Invention and innovation by themselves cannot generate success, multiple inventions and innovations are needed today. Helfat^[7] identified two dimensions of capabilities; technical / operational fitness and evolutionary / external fitness. Technical / operational fitness refers to how effectively a capability performs its function, regardless of how well the capability enables a firm to make a living. Evolutionary / external fitness refers to how well the capability enables the organisation to make a living, the ability of the organisation to survive in the

market, adapt and even grow.

In order to sustain their competitiveness, organisations must have the ability to sense new opportunities, seize the opportunities and then shape those opportunities by reconfiguring the organisation's assets, that is, technologies and resources, both locally and indistant markets^[7, 13]. This study considers mobile apps as the conceptual element that organisations need to consider as a complementary asset.

Capabilities define the unique and difficult-to-replicate ways that an organisations deploy the internal resources^[1]. A capability is the ability of the organisation to deploy internal resources; and further includes the way the resources are deployed. It is capabilities, which cannot be traded, that make an organisation unique^[1]. The three primary capabilities - adaptive, absorptive and innovative - are interrelated yet remain theoretically discrete^[15]. Adaptive capabilities are differentiated from adaptation in the sense that adaptive capabilities are multidimensional and include the organisation's ability to adapt their product-market scope to respond to external opportunities. Absorptive capability focuses on taking in external knowledge, combining it with internal knowledge and ensuring optimal rejuvenation. Innovative capability focuses on the links between the firm's resources and capabilities and its product market. These capabilities are common across organisations and industries; however, whether or not they enable innovation depends on the way the organisation adopts and transforms these capabilities. Absorptive capabilities are the ability of the organisation to recognize the value of new, external information, assimilate it, and apply it to commercial ends^[2]. Absorptive capabilities are often related to the historically embedded knowledge of the organisation. Innovative capabilities refer to the organisations ability to develop new products and/or markets, through aligning strategic innovative orientation with innovative behaviours and processes. Innovative capabilities, which are related to the skills within the organisation to formulate and implement an innovation strategy, are reflected in an organisations investments into research and development.

Teece^[13] delves further into the microfoundations of these capabilities to label them as "the capacity to sense and shape opportunities and threats, seize opportunities and to maintain competitiveness through enhancing, combining, protecting, and, when necessary, reconfiguring the business enterprise's intangible and tangible assets". For Teece (2007), sensing and shaping opportunities and threats is a soft activity which involves scanning, creating, learning and interpreting the market. The capability is often reflected in research and development activities. An opportunity having been identified (sensed) needs to be translated (shaped). For example, interpret new events and developments, which technologies to pursue, and which market segments to target. Seizing opportunities involves creating new products, processes and/or services. Seizing is a process of delivering value to customers and enticing the customers to pay for products and services, and to make those payments into a profit. Seizing is reflected in the business models of the organisation. The business model will define whether the promoters of the new technological investment will defeat the naysayers especially in conditions of uncertainty. The naysayers often have more social and financial clout to sink any new idea. Managing threats is the way to ensure the organisation stays on top. Organisational change is costly and is rarely perceived as a good thing unless a culture of continuous change is created within the organisation.

This research therefore sought to find answers to the following hypotheses and proposition:

H1: Organisations that use mobile apps to enhance routine business processes are more likely to invest in mobile

apps for research and development than those that do not.

H2: Organisations that invest in research and development on mobile apps are more likely to embark on co-specialisation thus creating faster organisational value than those that do not.

H3: Organisations that possess absorptive capabilities have a history of investing in emerging ICT as opposed to those that do not.

P1: Organisations have differing absorptive, adaptive and innovative capabilities with regards enterprise apps.

3. RESEARCH METHOD AND APPROACH

3.1 Research design

The study adopted a quantitative research design to make sense of the how South African organisations are adapting mobile apps as a key technology to remain competitive. A survey was administered to a convenient sample of 52 executives in organisations that have considered in incorporating mobile apps into their overall strategies for growth. The executives included chief executives officers, chief financial officers, chief information officers and, depending of the organisation and its applicable organisational structure, senior managers. The survey was administered using www.surveymonkey.com. 51 responses were received out of which 9 were discarded owing to invalid or incomplete data entries. 2 other responses had a number of missing values. 39 complete responses were found useful. Formal ethical clearance was received for the study, and all the respondents gave informed consent. Content validity was ensured by using questions aligned to the literature and the hypotheses being tested. Reliability was also confirmed by ensuring that all the executive answered the same questions in the survey.

4. ANALYSIS AND DISCUSSION OF FINDINGS

4.1 Overview of the organisations

Table 1 and 2 are placed in Appendix A for space and size considerations. The descriptive statistics presented below are drawn from the two tables. 48.7% (19) of the organisations were in the ICT sector, 41% (16) in the financial services. 80% (33) of the organisation were older than 10 years and 14.3% (6) between 5 and 10 years. 73.8% (29) of the organisations had more than 100 employees (large enterprises) and 26.2% (10) less than 100 employees (small and medium enterprises).

P1: Organisations have differing absorptive, adaptive and innovative capabilities with regards enterprise apps

4.2 Absorptive capabilities: Sensing and shaping using mobile apps

The absorptive capability involves scanning, creating, learning and interpreting the market^[2, 16]. The capability is often reflected in the organisational investment in research and development. 80.5% (33) of the organisations are considering investing in research and development in mobile apps within the organisation, while 97.6% (40) have communities within the organisation that are keen on adopting mobile apps as a strategic resource. The result reveals that as much as organisations are aware of the employee keenness to adopt mobile strategies, there is a degree of hesitance within executives to invest in research and development in an enterprise app strategy.

4.3 Adaptive capabilities: Seizing opportunities using mobile apps

Adaptive capabilities describe how organisations seize opportunities that have been sensed. The options include creating new and / or improved products, processes and/or services. Seizing opportunities is a process of delivering greater value, enticing customers to pay for the organisations products and services, resulting in higher profits or better competitiveness^[6]. 71.4% (30) of the organisations are already using mobile apps to enhance their processes. There is however no agreement as to whether using apps is disruptive to the business (46.3%). The finding reveals a cognitive dissonance between what the organisational leadership believe is beneficial compared with the amount of disruptions caused by investing in mobile apps that they can manage.

4.4 Innovative capabilities:

Innovative capabilities refer to the behaviours, skills and processes within the organisation that are necessary to connect seizing the opportunities to actually creating new products ^[3, 15]. An equal number, 50%, of the organisations use enterprise apps to identify new opportunities. An equal number do not use apps to identify opportunities. The above finding when contrasted with the 72.5% who have a history of investing in emerging ICT for competitive advantage suggests that a number of organisations do not see investing in enterprise apps as an emergent ICT technology. This is probably a result of the fear of disruption.

4.5 Hypotheses Findings

Owing to the small numbers of responses, Fisher's exact test was used to measure the associations in the hypotheses^[5]. The hypotheses were tested using cross-tabulation and Fisher's exact test of association.

H1: Organisations that use mobile apps to enhance routine business processes are more likely to invest in mobile apps for research and development than those that do not.

The p-value of 0.011 (<0.05) indicates an association between using mobile apps to enhance routine business processes and investing in mobile apps for research and development. With the newness of the mobile phenomenon, it is probably understandable why organisations that are daring enough to adopt the new technology are more likely to invest in how to harness other new emerging technologies.

H2: Organisations that investing research and development on mobile apps are more likely to embark on co-specialisation to create faster organisational value than those that do not.

The p-value of 0.472 (>0.05) suggests that there is no association between organisations investing in mobile apps research and development and organisations considering co-specialisation. It could also suggest that organisations co-specialise irrespective of whether the organisation invests in research and development or not.

H3: Organisations that possess absorptive capabilities have a history of investing in emerging ICT as opposed to those that do not.

The p-value of 0.275 (<0.05) indicates no significant association between organisations' absorptive capability and investing in emerging ICT. The result points to the importance of appreciating that organisations have historical biases. The finding further suggests the importance of identifying executives who are inclined towards promoting the use of new technologies.

5. CONCLUSION

The paper sought to understand how organisations in South Africa are adapting their business models to incorporate the mobile app phenomenon. The research adopted the dynamic capabilities framework as a

theoretical basis using the quantitative approach.

The findings suggest that executives of organisations are fully aware of the importance of adopting an enterprise mobile app strategy. There are however a number of the executives that remain hesitant, probably afraid of the disruption of new technologies. The organisations that are more likely to invest in research and development are the same ones that have already invested in a mobile app strategy. The findings also suggest that those organisations that are historically hesitant about the disruptive changes brought about by new technologies will similarly not invest in research and development efforts anyway.

Organisations in selecting their executives ought to be careful in ensuring whether the executive is a promotor or a naysayer of new technology advancements as a business strategy.

The study was limited in selecting only executives of organisations, and also in the low response rate. Further investigations should compare between the smaller organisations and large organisational dynamic capabilities, and the relationship between dynamic capabilities and research and development.

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APPENDIX A: LARGE TABLES AND FIGURES

Table 1: Descriptive statistics

	Yes	No	I do not know
Can organisations remain relevant considering the rapid technological advancements that are currently taking place?	38 90.5%	4 9.5%	0 0.0%
Does the organization have plans of adapting to any of the rapid technological advancements?	39 92.9%	2 4.8%	1 2.4%
Does your organisation consider investing in Research and Development (R&D) on mobile applications (apps)?	33 80.5%	5 12.2%	3 7.3%
Does your organisation have a community of people keen on mobile technologies?	40 97.6%	1 2.4%	0 0.0%
Is your organisation using mobile apps to enhance some of the business processes?	30 73.2%	11 26.8%	0 0.0%
Will the use of mobile applications to enhance business processes, require huge technological changes within the organisation?	19 46.3%	19 46.3%	3 7.3%
Is there a need for your organisation to understand their strategic alternatives in as far as the use of mobile apps is concerned?	32 78.0%	9 22.0%	0 0.0%
Should the organisation look at mobile apps as a resourceful way of creating organisational value?	39 97.5%	0 0.0%	1 2.5%
Does your organisation have a history of investing in emerging ICT for competitive advantage?	29 72.5%	9 22.5%	2 5.0%
Does your organisation use mobile apps to identify new opportunities and changes that could be made to the organisation?	20 50.0%	20 50.0%	0 0.0%
Does the organisation face any problems in trying to create a business model that will fit in with new technological developments?	13 32.5%	26 65.0%	1 2.5%
Does the current organizational model take into consideration how fast the customer will adapt to the new technology?	24 60.0%	10 15.0%	6 62.5%
Does your organisation use mobile apps to connect with customers?	25 62.5%	14 35.0%	1 2.5%
Do you think organizations should use mobile apps to connect with their customers?	37 92.5%	3 7.5%	0 0.0%

Table 2: Characteristics essential to remain competitive

An organisation that is ever-developing and considering new technologies	39	92.9%
None of the above	1	2.4%
A static organisation with minimum technology enhancements	0	0%