Impact of Technology on the Business Strategy Performance Relationship in Building Core Competence in Uganda Small Medium Enterprises (SME's)

Bright Donat
School of Management, Wuhan University of Technology, Wuhan, P.R.China, 430070
(E-mail: donsbre@gmail.com, brightdonat@yahoo.com)

Abstract The paper presents qualitative study that views the effect of technology on the business strategy performance relationship which has mainly concentrated on big firms. The review of the small business literature reveals limited research has attempted to investigate the moderating effect of technology in small and medium-sized enterprises (SMEs), particularly in the Uganda's context. This study empirically examined the moderating effect of technology on the relationship between business strategy and performance of SMEs in the Uganda's manufacturing sector. Findings of the study indicate the performance of SME vary with the choice of the business strategies they adopted that result to building core competences with regard to the competitive advantages. Additionally, to a certain degree, the findings of the study suggest technology as measured by technological complexity of process moderates the relationship between business strategy and the performance of SME's. Finally the study suggests the model diagrammatic model that portray the role of technology as facilitator to performance of SME's and in meeting overall customer needs and at a balanced cost and fit of positioning in stiff competitive environment

Key words Strategic management; Competitive advantage; SMEs core competencies

1 Introduction

Uganda is one of the fastest growing economies in Africa, averaging an annual rate of growth of 6.981 GDP per cent in the 2009. Domestic investment and FDI into Uganda have increased rapidly for example Huawei china Telecom, . Much of this investment and growth has been driven by the imperative to erase an earlier decade of self-destruction, and the economy has only now begun to recover to the levels of production that existed prior to the turbulent 1970s and early 1980s. As the recovery runs its course, the sources of economic growth will need to shift from rehabilitation to expansion. Investors will need to enlarge their focus from catch-up investment, to the development of new products and markets.

Entrepreneurs will need to complement their success on the SMEs policy and competitive advantage front with an equivalent effort at improving the SMEs environment that governs enterprise and industry-level competitiveness. SMEs in Uganda face high operating costs and low productivity due to structural constraints arising from poor or inadequate technology and then coupled with weak utilities and transport networks; inadequate supply of inputs; and added transit costs from the coast of Indian Ocean the fact that it's a landlocked country. An improvement in the business environment will require attention to problems ranging from infrastructure bottlenecks to shortage of technically trained manpower

Small and medium-sized enterprises (SMEs) represent an important part of the economies of both developed and developing countries. More specifically, in Uganda, currently SMEs made up of more than 90 percent of the total number of firms and at the same time, export about 20 percent of their total output. Apart from their large numbers and contribution to generating income through exporting, Uganda's SMEs are also known to provide new job opportunities, introduce innovations, stimulate competition, and assist big companies. Despite the significant role of SMEs in the Uganda's economy, research involving small businesses still appears to be not only neglected, but also limited in their scope. The review of the small business literature in Uganda reveals that SMEs have received limited empirical attention as a field of study. Although in recent years there has been an increasing number of a research on SMEs, these studies have limited focus though they seem to be able to increase as well as improve our knowledge in this area.

Given the importance of SMEs and the limited data of the past studies, more focused research is needed in this field of study. More significant in the area of research is to address the issue of technology in influencing the business strategy-performance relationship in SMEs. A recently completed study, part of infoDev's growing series of country studies on ICT, growth and competitiveness, analyzes

the opportunities for and challenges to ICT-enabled growth in Uganda, and makes concrete recommendations for action. This has enabled competitiveness and economic growth in Uganda and in long and short run positively impacted small medium enterprises?

2 Literature Review

Technology**,** the term technology has been defined in terms of information and hardware, activities and effect of knowledge and the variability of materials and the nature of search processes. According to Rousseau and Cooke (1984), technology involved knowledge and capabilities (such as those found in organizational members and machines), the techniques and procedures available for transforming inputs into outputs, and the processes or activities associated with the application of these technologies. Robbins (1996) defined technology as how an organization transform its inputs (such as materials and information) into outputs (products and services), and is considered as one of the internal contingency variable that also influenced the structure of an organization. Earlier study by Woodward (1965) indicated that distinct relationships existed between the three basic forms of technology (unit production or batch technology, mass or large batch, and process production or continuous process technology) and the subsequent structure of manufacturing firms.

Note only that, the effectiveness of manufacturing firms is related to the fit between technology and structure. Looking at the technology-structure research from 1965 through 1980, Kantrow (1980) and Fry (1982) found that with some exceptions, many of the studies suggested strong support for the existence of the technology-structure and performance relationships. In addition, the research reviews carried out by Kantrow (1980) revealed that managers expressed the need to place technological decisions in the context of management. In another study that examined firms that used technology as part of their competitive strategies, Frohman reported that a strategy that emphasized technology is not necessary the best.

Regardless of their organizational size, Frohman concluded that if a firm decides to exploit technology as a competitive weapon, it must also fulfill the following three conditions which include having top management orientation, have project selection criteria; and have appropriate systems and structure. Morone (1989) also noted that technology provides a firm the opportunity of a source of competitive advantage thus he added that strategic management in firms should respond to this technological opportunity and integrate technology with their business strategy. Molloy and Schwenk's (1995) looks at the effects of technology on the strategic making decision process suggested that information technology improved decision making efficiency and effectiveness at each stage of the strategic decision process.

The study conducted by Schroeder, Congden, and Gopinath (1995) found the linkages between strategy, technology and performance in small manufacturing firms. The authors concluded that failure to adopt an appropriate new technology or the failure to realign a firm's strategy to the new technology weakened the firm's competitive position as well as affects its performance. Another study carried out by Ackroyd (1995) discovered that although information technology firms lack structure or lack hierarchy, these firms are highly successful in terms of sales turnover and value-added due to their adoption of high technology.

Over the years, the importance of business strategy in both large and small firms has been continuously emphasized in the strategic management. Firms adopt business strategy to outline the fundamental steps they need to follow in order to accomplish their organizational objectives. This further indicates that organizations can have a single strategy or many strategies, and that these strategies are likely to exist at three levels: corporate level strategies, business level strategies, and functional level strategies. Although this suggests that strategies are developed at the three different levels, siness strategy (Lee, 1987).

Past empirical research on the relationship between strategy and performance has mainly concentrated on large firms. These studies provide strong evidence that suggests business strategies are associated with the performance of large firms Although most of the empirical studies have centered upon large firms, findings of an increasing number of studies have suggested that business strategy also influenced the performance of smaller firms. Giglierano (1987) noted that effective business strategies in smaller firms depended on the type of business as well as the products they developed. Giglierano found that SMEs that adopted particular business strategies seem to achieve better performance. Forrest (1990) observed that small firms have to develop new strategies to react to the changing nature of business as reflected in such factors as increasing competition, both national and international, the

increasing internationalization of markets, and new global competitors.

Earlier on Porter (1986) pointed out that a firm can gain its competitive advantage by producing value to its customers. The author emphasized that a firm can gain its competitive advantage by performing the chain of strategically important activities such as production, marketing, sales, service, human resource management, technology development, procurement activities cheaply or better than its competitors. Based on these activities, Porter developed the following three generic business strategies; low cost, differentiation and focus (niche).

In a low cost strategy, the firm attempts to reduce cost and increase profit as well as sales by using economies of scale, scope and technology. In a differentiation strategy, the firm emphasizes on developing ways to make products appear unique and different. Finally, in a niche (focus) strategy, the firm focuses on product development and marketing efforts in a particular market segment that the firm has a cost or differentiation advantage.

Using the Porter's three generic competitive strategies of low cost, differentiation and focus, Schroeder, Congden and Gopinath (1995) indicated the linkage between the generic strategies and manufacturing technology. In addition, Mosakowski (1993) found that entrepreneurial firms that adopted focus and differentiation strategies performed better than firms that do not use these strategies. Although the literature suggests firms adopt various business strategies, several of these can be defined in terms of Porter's or Galbraith and Schendel's dimensions. Despite the relevance of the generic business strategies developed by Porter, and Galbraith and Schendel, few studies have examined them in the context of SMEs. Accordingly, this study adopts the following six common types of competitive strategies: three of Porter's generic strategies (low cost, differentiation and focus); growth and harvest strategy of Galbraith and Schendel (1983); and vertical integration strategy of David (2001).

3 Methodology

The mythology used to source data on small medium enterprises Uganda was mainly from secondary tools. Literature on prior work, including studies and survey reports on SMEs various importable products, markets for Uganda and present intervention program documents were reviewed as a starting point.

In undertaking this research study, we took the advantage of information already available in Uganda through various national program's and other expertise from various regional and international institutions as follows: National reports made development of SMEs, Providers, universities, NGOs etc., Available training curricula, training and awareness materials on SMEs, Policy documents such as the strategic plans, Academic and research institutions publications and the means in place for accessing. Basically secondary data was the major source of information and data on this research.

Business Strategy

In Ugandan SME's, low cost strategy, product differentiation strategy, and niche strategy (Porter, 1980), growth and harvest strategies (Galbraith and Schendel, 1983), and vertical integration strategy (David, 1999) were adopted in the study. In the literature review, indicates most of these business strategies have been widely used in previous studies.

Technology

Technology was operationalized by measuring the level of technological complexity of product and the level of technological complexity of process found in the SMEs. As a result, most SME's best described the level of the technological complexity of their products and processes of production

Performance

Performance was measured using the actual figures of shillings- Ugandan currency sales volume, the amount of assets, the amount of equity, the number of employees, return on investment (ROI), return on sales (ROS) and return on assets (ROA) over a specific period. The ROI, ROS and ROA can be computed as follows:

ROI = net profit/total equity

ROS = net profit/total sales

ROA = net profit/total assets

Average performance measures are derived by adding the annual figures of shilling sales volume, the amount of assets, the amount of equity, the number of employees, ROI, ROS and ROA) for over the specific period of time..

The growth (average rate) performance measures are computed by taking the average percentage change in the performance measures that is sales volume, the amount of assets, the amount of equity,

and the number of employees, ROI, ROS and ROA for over a specific period. The rate of change of each of the performance measures is computed by taking the difference between two years and divided by the earlier year, resulting in each performance composite index (BPCI) as the mean values of ROI, ROS and ROA.

4 Findings and Discussion of Findings

Findings point out that business strategy may lead to better performance under condition of greater technology complexity of process, but not technological complexity of product. The technological complexity of process moderates the relationship between business strategy and performance as consistent with the contingency theory. The contingency theorists viewed technological process as an important moderator.

Note that, strategy theorists such as Kentrow (1980), Frohman (1982 and 1985), Moron (1989) acknowledged the connection between strategy used and technology. Theorists have argued that competitive advantage can come from any technological process. According to the theorists, firms should therefore incorporate their technological process in formulating and implementing their business strategies. The strategy theorists are of the view that the matching of business strategy with the technological process should significantly improve a firm's performance.

Performance

From the analysis I found that different companies in SME's tend to emphasize on different performance measurement, this suggests financial profitability and growth to be the most common measures of organizational performance. Claims have been forward that profitability is the best indicator to identify whether an organization is doing performing well and hence profitability can be used as the vivid measure of organization success. Nash (1993)

More so, profitability has been the most common measure of performance in Uganda SME's western companies. Profit margin, return on assets, return on equity, return on sales are considered to be the common measures of financial profitability (Robinson et al 1982; found sales, sales growth, net profit and gross profit were among the financial measures preferred by Uganda's manufacturing firms.

Competitive advantages

From the study I found out, that Uganda's SME's has the potential to serve as a granary of East Africa and as a major supplier of food and agricultural commodities to the world markets have long been recognized. Varied topography, fertile soils and excellent climatic conditions comparatively favor annual and bi- annual agricultural production. The country has a potential to develop into a major exporter mostly processed agricultural products but production constraints such as low levels of technology, low R&D, and market access constraints are limiting factors.

From the contingency point of view, I found out that, technology is considered as an important contingency tool. This framework viewed technology as source of competitive advantage for a firm. However, a firm will need to align its technology to its strategy. The contingency theory suggests that firms that adapt their technology to their business strategies tend to improve their performance. SME's that have adapted technology they produce at cheap cost compared to those SME's.

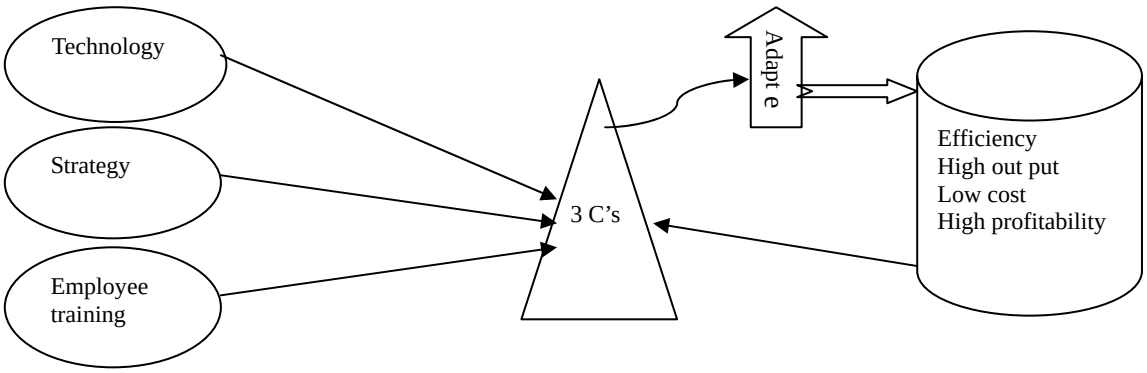

Figure 1 The Significance of Technology, Strategy and Training in Meeting the End Goals of Revenue of Small Medium Enterprises

From the contingency viewpoint, different types of firms operating in different situations require different technological complexity. Mass production technology or more complex technology is

normally effective for manufacturing firms involve in high volume products. Likewise, unit product or less complex technology is more suited for firms involved with the production of customized production. I therefore suggest **(**Anderson M 2002) the models that educate role technology and performance strategies focusing customer needs through flexibility and adaptability to change, this is portrayed in the diagram below.

3 Cs are customer, costs and competition should be mixed to meet the overall objectives of the small medium enterprises. Therefore from the diagram presented above, technology should match with strategy and employee training to meet the demands of the market. Adaptability to change is a greatest tool because technology is ever changing from time to time. This will brings efficiency, high output, low costs and high profitability as the main objective to the small medium enterprises revenue.

5 Conclusion

The three generic strategies that are, low cost, differentiation, and niche developed by Porter are not only relevant to large firms, but also to SMEs. The studies have found out those SMEs adopted different strategies. In addition, they discovered that SMEs that adopted certain business strategies were more viable for certain industrial environments. If hypothesized the moderating effect for technology might occur on the business strategy-performance relationship. Contrary to expectation, the results of the moderated regression analyses on technological complexity of product are not significant.

Small businesses in Uganda are exposed with a number of competitive advantages that lead to business success. These causes of success are quite diverse in nature. They have resulted in more than fifty percent of businesses success in recent years. The study established causes of small businesses success, among which are: flexibility, innovation, low costs, Spatial benefits and the potential for decentralized supply opportunities, Lower congestion costs, Restricted choice by the user caused by restrictions on competition, Lobbying costs, Market structure costs and Protectionism The aim is to help the business owners to utilize these advantages and work with one another. If followed, then businesses might move from where they are today to where their owners, investors and managers want them to be. However it is recommended to much attention on the following; Strategic investment in productivity enhancing technologies, Research and development (R&D), Human resource development, Development of a financial sector that is supportive to the export Sector, Speeding up interventions and reforms in policy issues supportive of trade such as commercial laws, Customs Union protocol among others.

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