Leadership in Innovation: Lessons from Malaysia's Multimedia Super Corridor (MSC)

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Abstract

This paper reports the preliminary findings of a study examining the impact of leadership on innovation among Small and Medium Enterprises (SMEs) within Malaysia's Multimedia Super Corridor (MSC). Leadership style has a profound impact on how an organization adapts to the changes in its environment. The ability of the leader to select the best strategy suited to his or her style will enhance the innovativeness of the organization. This paper discusses the findings from a pilot study that provides insights and lessons for both enhancing our understanding of the managerial task environment of innovation intensive SME, as well as possible implications effecting the future development of the MSC and similar initiatives like it.

Keywords: Innovation, Leadership, Small and Medium Enterprises, Strategy.

INTRODUCTION

Innovation is a multidimensional construct that can involve new or significant improvements to products or processes, and can be technological or administrative in nature (Cooper, 1998). Innovation has been identified as either radical or disruptive and discontinuous in nature, or incremental imitative and evolutionary (Garcia & Calantone, 2002). Due to its multidimensional characteristics, innovation can include a new product or service, a new production process technology, a new structure or administrative system, or a new program (Damanpour, 1991). For the purposes of this study innovation can be defined as the development and successful implementation of a new or improved product, service, and technology and work process or market condition, directed towards gaining a competitive advantage (De Jong and Brouwer, 1999).

Innovation is recognised as having a positive impact on the productivity of a country. Crosby (2000) for example found evidence to suggest that a partial decline in Australia's productivity in the 1970s could be attributed to declines in innovation in the late 1960s. It is also generally accepted that innovation is an important factor in the growth and prosperity of firms (Janszen, 2000). The level of innovation is also found to be the key for growth and employment creation in SMEs (North & Smallbone, 2000).

Thus, the need to innovate successfully is assuming greater importance due to the increasingly rapid technological change and associated market instability as well as increasing demands from customers for new and better products (O'Regan & Ghobadian, 2006).

An SME may be defined as a business enterprise that has fewer than 250 employees and an annual turnover less than EURO 50 million (OECD, 2004) has been the engine to economic growth in the 21 Asia Pacific Economic Cooperation (APEC) economies (APEC, 2005). A recent study by the Organization for Economic Cooperation and Development (OECD) demonstrated that small innovative firms, especially young ones, play a key role in ensuring the vitality of regional and national innovation systems, and thus raising the growth potential of the 30 OECD economies (OECD, 2001). The same phenomenon also applies to Malaysia where there is a positive correlation between the innovation activities taken by SMEs and their contribution to that country's economy (MASTIC, 2001; MDeC, 2004).

It is argued that the entrepreneur's attitude and orientation is often the key to innovativeness within the small firm (Chandler et al., 2000). His or her ability to provide practical, insightful, and innovative solutions to problems is crucial in creating the firm's competitive advantage (Mazzarol, 2002; Battacharya, 2006). As the leader of the firm, the entrepreneur is often referred to as the locus of control of the firm (Daily, 2001), where he or she is responsible in developing strategic decision making in selecting the most appropriate strategy to ensure that the firm is innovative. Empirical evidences have shown that leadership plays an important role in innovation (Cummings & Oldham, 1997; Oldham & Cummings, 1996). At the same time, the ability of leaders and senior level managers to develop an appropriate strategy would also enhance their firms' performance and competitiveness (Papadakis, & Barwise, 2002).

Souitaris (2001) contends that most of the empirical research on the influence of innovation has been carried out in industrialized developed nations. He argues that it is rather inappropriate to use findings of innovation studies undertaken in technologically advanced countries to explain innovative behaviour in countries with a less developed technological base. Hadjimolis and Dickson, (2000) suggest that a study into how SMEs in a developing nation, in this case Malaysia, innovate in this challenging environment would be valuable. It is in the interest of filling this gap in the literature that the following study is being undertaken.

LEADERSHIP AND INNOVATION

Research on the determinants of innovation has identified several factors involving individual, group and organizational level variables (Damanpour, 1991; Souitaris, 2001; Mumford et al, 2002). At the individual level, personality, technical knowledge, expertise, motives, and the supervisor's feedback style are known to play an important role in stimulating innovation while assignment structure, communication types, and assignment autonomy are important at the group level. Similarly, organizational level variables, such as strategy, organizational structure, culture and climate, and resources have a substantial effect on innovation.

Since leadership in small organizations has been identified as the central element in influencing the firm's competitive advantage, he or she is increasingly becoming an important determinant of innovation (West et al, 2003). Mumford & Licuanan (2004) and Jung Chow & Wu (2003) argue that the leader has the ability to influence innovation in the firm through introducing new ideas into an organization, set specific goals, and encourage innovation initiatives from subordinates. The literature has pointed out that the firm's leader characteristics (e.g. education, background, attitude, and personality) play an important role in influencing innovation (Tushman & Nadler, 1986; Howell, 1993; Storey, 2000; Jung, 2001; Jung et al, 2003).

An influential leadership concept within the literature is the full-range leadership theory (FRLT) which presents transformational leadership and transactional leadership (Bass, 1985, 1998; Avolio, 1999; Avolio, Bass, & Jung, 1999). Transformational leadership encompasses four factors namely inspirational motivation idealized influence (attributed) idealized influence (behaviour) and intellectual stimulation. Meanwhile, transactional leadership consists of factors like contingent reward leadership and management by exception (active) and management by exception (passive).

The combination of these behavioural components recognised as improving performance and innovation among the followers within organizations especially in relation to transformational leadership (Bass & Yammarino, 1992; Jung, 2001; Sosik, Kahai & Avolio, 1998). Pawar and Eastman (1997) suggest that transformational leaders are associated with certain environmental conditions – complexity, uncertainty, and novelty of the work – that involve constant changes. For example, Jung et al (2003) in their study of 32 Taiwanese companies in the electronics/telecommunications industry found a direct and positive relationship between the firms' organizational innovation and the leadership style of the CEO. Transformational leadership provides vision and actively stimulates their employee's intellectually while providing empowerment and a supportive environment for the pursuit of innovation. However, a firm's innovativeness is moderated by its management's choice of goals, strategies for growth and competitive intensity (Engelland & Summey, 1999).

LEADERSHIP, STRATEGY AND INNOVATION

Strategy is a process through which firms pursue the creation of a sustainable competitive advantage that can ensure increased financial performance and long term survival (Hunt, 2000). In order to be competitive, all firms regardless as to whether they operate in the same industry or not will respond differently to their environment (O'Regan & Ghobadian, 2005). Some will adopt a strategy based on their traditional strengths, while other will take more risk by becoming adventurous leading the market that

they operate in. Small firms however manage strategy differently from large its large counterparts (Mazzarol & Reboud, 2006). Bhide (1994) contended that small firms lead by entrepreneurs usually practice informality in planning strategy by constantly adapting to their external environment. Their strategy formulation is characterised by being 'emergent' rather than systematically planned (Mintzberg, 1994).

A leader's role is to provide a strategic posture to the organization that he or she leads (e.g., Gupta & Govindarajan, 1984; Miller and Toulouse, 1986). This is particularly so in small firms where there are fewer constraints on leaders in terms of the firm's structure complexity and systems. The smaller the size of the firm also increases the leaders' managerial discretion (Finkelstein & Hambrick, 1996), which can exert a distinct influence on organizational processes and outcomes (e.g., Daily & Johnson, 1997). Markides (2000) argues that the essence of strategy is for leaders to make choices on three critical issues: whom to target as customers, what to offer these customers, and how to do all this. These three issues are critical because they become the parameters within which employees are free to operate, experiment and innovate.

Due to the dynamic nature of competition in the external environment, the ability of business leaders to develop an appropriate strategy may enhance their firms' performance and long term survival. Even though small firms are usually associated with informality and spontaneity in their strategy, there is evidence that they take a strategic approach (O'Regan & Ghobadian, 2005). This can affect their reaction to the external environment. This reaction can be categorised according to strategic orientation which defined by Manu & Sriram (1996, p. 79) as "how an organization uses a strategy to adapt and/or change aspects of its environment for a more favourable environment".

Miles and Snow (1978) proposed a strategic typology containing four main strategy orientations that are important in addressing three basic problems facing most firms: i) the organization's competitiveness in

the market (entrepreneurial problem); ii) the deployment of resources to achieve the competitiveness (engineering problem); and iii) the administration to implement all these actions (administrative problem). The four main orientations are: i. Prospector, ii. Analyzer, iii. Defender, and iv. Reactor.

According to Miles and Snow (1978), prospectors devote more resources to entrepreneurial tasks, monitoring evolving trends in the marketplace, and new product development, and are led by a dominant coalition that possesses an expertise in marketing and R&D. Prospector welcome and thrive in innovative, dynamic environments, maximizing new opportunities where they are likely to be first to the market and exploit the opportunity, hence, they have higher tolerance for risk and are flexible to adapt necessary changes. In contrast, Miles and Snow (1978) described defender organizations as the one which focus on engineering tasks, place a high priority on improvements in efficiency, and prefer stability and status quo. Instead of venturing aggressively, they concentrate on their strength and try to improve it so that they are capable to improve the efficiency and capability of their existing product.

Analyzers are hybrid in nature, where they combined prospector and defender characteristics. In stable product-market domains, analysers emphasise production and strive for improved efficiency. In more turbulent product markets they closely monitor key competitors and adopt only those innovations which appear to have strong market potential. They behave like defenders in the more stable areas and like prospectors in the more turbulent areas and their organizational structures and processes are a combination of those found among prospectors and defenders. Thus, by implementing either one these strategic orientations, the leaders can influence their firms' level of innovation and competitive edge.

AIMS AND METHODOLOGY

Against this background, there is a need to understand the role of leaders in managing innovation within small firms, and how does strategy enhance this relationship. This paper will try report the exploratory data on the impact of the relationship between leadership and innovation within small firms, and to

investigate the impact of strategy on the level of innovation. The research questions that the study was seeking to address were:

1. Do leaders play a role in influencing the innovation activity within small firms?
2. Does strategy selection impact the innovation activity within small firms?

The Questionnaires and Measures

Leadership within the firm was measured using a 32-item scale from the Multifactor Leadership Questionnaire (MLQ) developed by Bass & Avolio (1997). All four theoretically distinctive behavioural components of transformational leadership which consists of idealized influence, inspirational motivation, intellectual stimulation and individualized consideration were estimated through MLQ. The three behavioural components of transactional leadership; e.g. contingent reward, management by exception (active) and management by exception (passive); were also measured.

Innovation was measured using a scale developed by Soutar and McNeill (1993) of organizational innovativeness. These items measure the level of innovation activity in the firms by examining the frequency, type, success, importance and impact of innovation. Finally, the strategic orientation of the firm was estimated by a multi-item scale developed by Segev (1987). The multi-items approach used allows the attributes of each strategic orientation typology to be conceptualized. Each concept was divided into the basic components where they were individually evaluated. The study used managerial perceptions because they play an important role in influencing the strategic behaviour of the firms (O'Regan & Ghobadian, 2006). It is consistent with earlier studies conducted related to innovation (i.e. Jung et al, 2003; Howell & Avolio, 1993)

The Sample

This was a pilot study involving 32 small information and communication technology (ICT) with the Malaysia's Multimedia Super Corridor (MSC) status. The MSC is a corridor developed by the Malaysian government to be the hub of the ICT industry in Malaysia. The firms within the MSC have been given certain privileges by the government of Malaysia including tax relief, access to grants, training development and few more. They come from several ICT industrial niche area including software and hardware development, content development and multimedia, and internet business. The database from which the sample of firms was acquired is held by Malaysia's Multimedia Development Corporation (MDeC), the government agency responsible in coordinating and monitoring these firms. A questionnaires survey was posted to the CEO after they have given their consent to participate in this first stage of the research.

Seventy two percent of the respondents were CEOs and senior managers who owned either all or some of the equity in the firm. Their average age was 43 years old with the oldest at 63 and the youngest at 32. Eighty-eight percent were below 50 years of age. In terms of work experience, 81 percent of them have 10 or more working experience in the industry. Lastly, the respondents are largely from diverse education background with 12 of them are from IT background, 10 from management and 8 from engineering with the rest comprising marketing, physical sciences, social sciences and other education background. The majority of them have some bachelor degree (67 %), followed by those having some postgraduate qualification (31 %) and the rest some college education.

The average age of each firm was 8.3 years old. All of them had fewer than 250 employees with an average of 40 employees. The largest number of employee is 125 and the minimum is 4. The top management team in the firms are around 5 people with the smallest number is 2 people and the largest is 16 people.

RESULTS

Descriptive Statistics from the Survey

Using the multi-item scale of Segev (1987) the firms can be classified into three strategic orientations based on the original typology proposed by Miles and Snow (1978); prospector, analyser and defender. Half the firms were categorized as prospectors, 28 percent as analysers and 22 percent as defenders. In terms of leadership style 66% of managers were classified as transformational in behaviour and 67% were found to be transactional. Table 1 shows these results.

Table 1: Description of Firms According to Strategic Orientation

Strategic Orientation Type	Numbers / Percentage	Average Age (Years Est.)
Prospector	16 (50 %)	8.5
Analyzer	9 (28%)	8
Defender	7 (22%)	8.5
Leadership Type	**Numbers / Percentage**	
Transformational	66%	
Transactional	67%	

Case Study Analysis

To better understand the nature of these results all 32 cases were examined to determine patterns of association between strategic orientation, leadership style and the demographic characteristics of the firm and the CEO/Senior Manager. To illustrate the findings from the analysis three cases were selected from the database for further investigation. These cases were selected on the basis that each strongly represented the three strategic types. It should be noted that the strategic orientation measure is more a continuum than a categorical index. The firm's generate a score on each of the three strategic orientations and some firms obtained outcomes that suggested they were not strongly oriented towards a single strategic type. However, most firms indicated a bias towards one of the three types. The three cases used in the following descriptive analysis were selected on the basis of their strength of orientation towards one of the three strategic types. Interviews were conducted with the CEO or Senior Manager from each firm

following the initial distribution of the questionnaire by mail via the MDeC. The details of these cases are shown in Table 2.

Table 2: Case Summaries on Firms' Characteristics According to Strategic Orientation Typology

Firm	Strategic Orientation Typology	Age (Years Est.)	Leadership Style	Innovativeness
A	Prospector	3	Transformational	High
B	Analyzer	8	Transformational	Medium
C	Defender	12	Transformational	Low

Firm A – Transformational Prospector in 3D Animation

Firm A was established in 2005 and employed 35 employees. It had six top management team members. The CEO was about 50 years old with a bachelor's degree in Engineering. He had an extensive working experience of 28 years in the industry. The core business of the firm was multimedia content development and its strategic intent was to spearhead Malaysia's animation industry and providing opportunities for the local graduates to showcase their talent. The firm specialized in producing high quality 3D animation with local images but with global appeal. Among the industrial awards received by the firm were Best Media and Entertainment Merit and Start-up Companies and Best Start-up Company.

Firm B – Transformational Prospector in Educational Multimedia

Firm B was headed by a CEO of 37 years of age with a background in engineering and management. He held a bachelor's degree in engineering and had just completed his post-graduate study in management. He had been in the industry for about 10 years. When the company was established in 2000, it was producing creative multimedia content related to education. At time of interview the firm now employed about 15 employees supervised by 3 people in the top management team. It had been awarded the ICT Entrepreneurship Award in October 2004 by the Ministry of Entrepreneur and Co-operative Development (MECD) in the ICT Category. The focus of the firm's research was now shifting to the implementation of SMS Purchasing system and e-learning products.

Firm C – Transformational Prospector in Smart Card Solutions

Established in 1988, Firm C was a card solution provider that manufactures cards as well as personalizing the cards, provides fulfilment services, supplies credit card terminals and develops card systems. The CEO was 47 years old and had about 20 years of experience in the industry. He had a broad background education in the field of engineering, IT and management. At time of interview the firm employed about 52 employees and 16 of them within the top management team. The firm practiced a strict regime of Total Quality Control through every step of the card production process. This was done to ensure that the products and services meet the requirements of the most discerning of customers.

DISCUSSION AND CONCLUSION

This paper has outlined some early findings from a pilot study of the role of leadership in innovation activities within small firms in the MSC. As might be expected from a cross-section of firms drawn from a dedicated technology precinct, the sample firms were all small and relatively immature in their development. All were highly innovative and their senior leadership was characterised by being relatively young, highly educated and with a strong track record and depth of experience in the industry. The profiles of these senior managers and their firms confirmed the technology entrepreneurship and innovation typologies proposed elsewhere in the literature (Rizzoni, 1991; Jones-Evans, 1995; Autio & Lumme, 1998). High growth SMEs require strategies that follow aggressive new product development (NPD) led strategies with the top management team possessing not only strong technical competencies, but also strong marketing competencies (McDougall, Covin, Robinson & Herron, 1994). The need to balance the technical and marketing issues within the NPD and commercialisation process has been highlighted in the literature (Huang, Soutar & Brown, 2002; Lee & O'Connor, 2003). Managers from small firms who are engaged in commercialisation of new technologies need to be competent in project management from a technical perspective (Salomo, Weise & Gemunden, 2007), however they also need to be capable of leading their teams in change and communicating these ideas to customers (Zahay &

Griffin, 2004). The top management team within such firms needs to be balanced with a good cross section of functional skills (Weinzimmer, 1997). Given the focus of the MSC precinct it was not surprising to find that ICT and engineering dominated their educational training and contributed to their deep understanding of the industry. Preliminary analysis of the three strategic orientation typology categories suggests some interesting data about the nature of the inter-relationship between the three variables namely leadership innovation and strategy. While no concrete conclusion can be given at this stage, it is noteworthy that most CEOs were technologists rather than people with marketing or wider management experiences. Their transformational leadership style is unsurprising given their focus on new technology and innovation. However, their ability to successfully commercialise their ideas may require a strong transactional leadership style during the implementation process. It is anticipated that when the larger scale of data collection started during the second stage, more understanding about these relationships can be uncovered.

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