Leadership Styles among Entrepreneurs in Technology based SMEs

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Abstract—Several strategies have been devised in order to harness science, technology and innovation as the key drivers for enhancing the capabilities of a nation. These strategies aim to improve the capability to innovate as well as to increase the number of companies that are based on science and technology by promoting techno-entrepreneurship. In addition to, and in line with these planned strategies, the area of leadership must also be emphasized to ensure that entrepreneurs are ready to face global challenges that demand them to both evolve and improve their readiness for competition. The success of an organization is usually attributed to the quality and the effectiveness of the applied leadership. Thus, this study highlights the importance of leadership in the management of technology-based SMEs by identifying the various leadership styles and proposing the optimal style most suitable to the nature of the business. This would help business leaders to manage their business ventures effectively and efficiently.

Keywords—component; leadership styles, entrepreneurs, technology based SMEs

I. Introduction

From the perspective of entrepreneurship, [1] explains that entrepreneurship and innovation have several closely related elements. Therefore, the government has taken several steps and devised various strategies to encourage the involvement of more innovative technopreneurs. However, although various incentives and facilities have been provided to these technopreneurs, they still have to face various economic challenges.

Despite the opportunities available to the entrepreneurs in this globalised era, the current situation requires them to change drastically to ensure that they are able to compete in the global market. Entrepreneurs who aim to compete in this market have to prepare and consolidate their knowledge as well as possess both high mental resilience and excellent management capabilities [2].

A common notion that needs to be put into practice is that the key to success is an effective leadership. A high-quality leadership in an organization will improve the effectiveness of the organization. In addition, effective leadership is required to ensure that our country’s economy continue to grow, develop and acquire competitive capabilities [3].

II. Leadership

Leadership has been an actively researched subject yet it remains as a complex area as it involves human styles or behaviors [4][5]. Previous research has shown that leadership is an inter-related systematic process [5] between the leaders and their followers [6]. Leadership is actually a process that creates understanding between a leader and his team members in order to achieve the goals of an organization [7][8].

Leadership is closely associated with a development process that depends on the choices made by the leader, either a choice based on understanding or a choice based on achievements [9]. Therefore, leadership demands that the leader plays an important role in ensuring that each team member agrees with the planned work and the method of execution as well as in fostering the teamwork required to achieve the goals of the organization [7][10].

A leader is someone who is responsible for coordinating the team’s responsibilities in order to achieve the set goals. Therefore, leaders have to convince the team members to fulfill their responsibilities voluntarily and must also prove their credibility through their actions [5].

In reality, forming a concise conclusion on leadership is not an easy task as there are different definitions of an effective leadership [11]. Although there are different ways and methods to define leadership, there are several important elements that have been used to explain leadership:

- Leadership is an activity or a process
- The process includes the elements of influencing, persuasion or exemplary actions
- Involves two parties: the leader and the followers (team members).
- Depending on the method of execution, the processes or activities involved will generate different effects. Usually, the obvious effects are the achieved goals, the commitment given by each individual to achieve the set goals, the unity and mutual understanding
distinct traits that differentiate a leader and these traits are related to their successful leadership process, and therefore, from 1960 to the early 1970s, two studies were conducted that focused on the behavior of leaders and identified the different dimensions that characterize leadership behaviors that are related to performance and work satisfaction of team members [6][13]. These studies were conducted in Ohio State University and the University of Michigan [8][13]. In the studies, employees were requested to list how frequent their leaders exhibit several behaviors [13].

The first study that was conducted in Ohio State University contributed two dimensions of leadership that are either based on structure or relationship with team members [6][14][13]. A leadership dimension that is based on relationships refer to behaviors that exhibit empathy towards team members either by giving recognition, building confidence or creating trust between each other [6][18][14][13]. A leadership dimension that is based on the relationship with team members also has the same foundations as a leadership style that is employee-oriented [8].

Structure-oriented leadership dimension is defined as behaviors that are related to the management of a group, the definition of relationships, the assigning of tasks and the method to execute them, the definition of requirements in order to meet a certain deadline and the preservation of existing qualities as well as the definition of the responsibilities of each team member [6][18][14][13]. In short, the structure-oriented dimension initially provides a clear communication channel, work procedures and relationship between members of a team or an organization [6].

The study conducted also proposed a model of the behaviors performed by leaders. Based on the proposed model, leaders who are in the third square have the biggest influence. This study by the University of Ohio is different from the study conducted by the University of Iowa as the former used environmental factors that are produced in a workplace and clear work objectives as measures to determine the effectiveness of leadership. This study also successfully characterized behavior styles that are consistent with the action of the leaders compared to the study conducted by the University of Iowa that is only able to explain three behavior styles of leaders but is not able to specifically explain their actions.

The second study that was conducted by the University of Michigan also produced similar results as the first study [14][13]. The similarities are due to the use of the same fundamental principles: effectiveness of a leader depends on how he/she behaves in order to balance results and relationship between team members [14]. The study by the University of Michigan has contributed a leadership model that consists of two dimensions of leadership styles:

(i) a leadership style that is production-oriented and
(ii) a leadership style that is employee-oriented [6][18][8][13].

A leadership style that is production-oriented is designed to measure two behaviors performed by leaders that are related to the assignment, which emphasizes on objectives and facilitation of work [8][19][13].
iv. Technology Based Small and Medium Enterprises (SMEs)

Schumpeter clearly states in his concept of development that entrepreneurs are the carriers of innovation and an individual who innovates could be defined as an entrepreneur [20]. Innovation and entrepreneurship actually have several closely-related elements comprising the idea (‘spin-off points’), the infrastructure (premise, incubator, supplier, venture capitalists, corporate resources etc), the network (supporting structure) as well as the educated and capable individuals (who help to generate initiative and business growth, including the entrepreneur and the inventor of the innovation) [1].

In Malaysia, efforts to drive innovation do not rely solely on multinational companies (MNC), but also rely on the consolidation of the entrepreneurship ecosystem in the country and the efforts undertaken to foster innovation. Entrepreneurship and innovation cannot exist without sufficient support from the government and the concerted effort by all involved parties to strengthen the entrepreneurship ecosystem [21].

Several measures and approaches have been planned to realise the national plan of harnessing science, technology and innovation. Such efforts started with the 8th Malaysia Plan (8-MP) that focused on strengthening the capabilities of science and technology in order to increase competitiveness and to support the growth of productivity drivers. The 8-MP was more of a catalyst to lay the foundations of a society that is advanced in science and technology. The measures that were implemented in the 8-MP were the increase of both the diffusion and the application of technology, the encouragement of research commercialization and the increase of human capital in science and technology [22].

Following the 8-MP, efforts were continued through the core development of the 9th Malaysia Plan (9-MP). The 9-MP harnessed science, technology and innovation as the key drivers for encouraging innovation and enhancing the nation’s capabilities in acquiring and applying the relevant knowledge. Several strategies were devised to ensure that such efforts were able to both generate wealth and preserve social well-being. Among the strategies were:

i. To increase both the ability of the nation to innovate and the number of companies based on science and technology by encouraging entrepreneurship; and

ii. To equip SMEs with the technological capabilities and capacity to face the challenges of both globalization and increasing competition.

In order to strengthen the technological capabilities of SMEs, support services, including technical and business skills training, as well as technical consultancy services were provided by several agencies based on research and technology. Furthermore, a number of facilities and funding were provided with the aim of encouraging the manufacturing of value-added products [22]. Technology-based SMEs require comprehensive funding because financial assistance is important throughout the initial stages (for research and development), the middle stage, the production stage, up to the market development stage [23].

Efforts to create technopreneurs were intensified by concentrating on the development of technology incubators that act as a catalyst to attract interest and guide the technopreneurs. Technology incubators are one of the six important elements required to produce technopreneurs [24]. Therefore, a number of government agencies implemented technology incubator programmes that served as a medium for technopreneurs to increase the number of technology-based SMEs in Malaysia. Among these agencies were SIRIM Berhad, Technology Park Malaysia (TPM), Malaysian Technology Development Corporation (MTDC), Multimedia Development Corporation (MIDC) and Kulim Hi-Tech Park.

As the provider medium for technopreneurs, technology incubators are designed to help entrepreneurs develop technology-based SMEs by effectively combining their talent, technology, capital and knowledge. In short, technology incubators serve as a platform for entrepreneurs to market their product and business ideas by harnessing their talent in entrepreneurship. The objectives of the technology incubators are to develop technology-based SMEs and to accelerate the commercialization of technology [25].

In conclusion, technology-based SMEs are SMEs that are powered by technology incubators as these incubators play a significant role in the formation of the SMEs, starting from the initial preparation stage for the technopreneurs themselves up to the commercialization stage of their products. Therefore, SMEs that are driven by the incubators are SMEs that are founded and developed in a strategic framework that is planned specifically by the incubators. The strategic framework consists of potential collaborators as well as professional service providers [26]. In terms of the activities conducted, technology-based SMEs can be defined as enterprises that develop technology, produce high-technology products and later market them as their main product [23].

v. Management Characteristics of Technology based SMEs

A study conducted by [27] showed that an innovative organization differs from a less innovative organization. The results of the study prove that the differing elements could be identified from the culture and the working practices of the organization, the background of the owner or the manager, the barriers to innovate, the strategic orientation and the applied leadership.

An innovative organization is a goal-oriented organization and such an organization could be identified from the objectives of the organization as well as from the materials they use for publicity. An innovative organization could be identified if it displays several key factors such as a good working environment, the type of training provided to each employee and the projects undertaken [27].

An innovative organization has a strong commitment towards innovation which requires thoroughness in each
process. A study carried out by [27] identified four main factors that contribute to innovative management in SMEs:

(i) the culture,
(ii) the working practices,
(iii) the leadership, and
(iv) the strategic orientation of the organization.

In terms of the culture and working practices, an innovative organization always:

(i) involve the employees in every decision-making process,
(ii) conduct market research and
(iii) Provide training to the managers.

In addition, innovative organizations have classified only time and money as the barriers for them to innovate. In contrast, less innovative organizations consider that the barriers to innovate are time, money and the lack of market demand. Furthermore, for an innovative organization, the owner or the manager of the organization is more closely involved with each of the processes in the organization such as the development of new products or the working practices compared to their less innovative counterparts. Such involvement affects the productivity of the organization through the leadership of the owner of the manager.

The results of the study conducted also show that the owner or the manager of an innovative organization is an individual who has background knowledge in marketing, accounting management or has been self-employed. The study also considered the effect of demographic factors. However, the results of the study show that there is no correlation between how innovative the organization is and the sector, size, age or the structure of the organization. However, the background of the owner or the manager of an innovative organization is found to contribute and determine how innovative the company is.

Overall, [27] explained that the corporate culture in an innovative organization plays an important role in the process of developing a new product, the innovation process as well as the work culture. In this situation, corporate culture is derived from the values and the working practices that support innovation which include innovative behaviors and the commitment of the leaders. For an innovative organization, employees and customers are important assets. Therefore, the effectiveness of the leadership applied by the owners or the managers of an innovative organization is of great importance.

VI. Demographic

[28] introduced the term ‘relational demography’ to explain the difference between a manager and his team members. ‘Relational demography’ is an important factor that influences perception, attitude or work output. Most studies related to demographic traits tend to focus on the age factor and the tenure of the individual in the organization as the main variables that affect turnover.

However, the process of social comparison clearly shows that turnover does not depend solely on the age factor because all individuals have different demographic backgrounds.

Therefore, all future analyses that study the effect of demography should take into account the overall impact of the demographic profile of each individual without focusing only on certain specific factors [28].

Several studies that have been done on leaders have considered demographic elements such as their age, sex, relationship with the companies, educational background, management experience, tenure in the position held, marital status as well as the size of the organization (Somech, 2003; Oshagbemi, 2004; Hasan A. As-Sadeq and Khoury, 2006; Hsin Kao, 2006; Sarros and Cooper, 2006; and Salleh, 2009).

All these demographic traits are applied in order to identify the correlation between the traits and the leadership style adopted by the leaders.

Analyses done on the studies carried out by [29][30][31][32] Somech (2003), Oshagbemi (2004), Hasan A. As-Sadeq and Khoury (2006), Hsin Kao (2006), Sarros and Cooper (2006) and Salleh (2009) show that almost all the studies identified that there is a significant correlation between the demographic traits considered and the leadership style adopted by the leaders.

VII. Conceptual Framework

This study aims to identify the leadership styles adopted by the leaders of technology-based SMEs. In addition, this study will also identify the profile of the leaders and the correlation between the profiles with the leadership styles that they adopt. For the purpose of this study, a conceptual framework is built based on the literature research carried out (Figure 1). The findings of this study are expected to provide a guide to the leadership styles that could be successfully applied to technology-based companies.

**Figure 1. Conceptual Framework**

<table>
<thead>
<tr>
<th>Dependent variables</th>
<th>Independent variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographic</td>
<td>Leadership Styles</td>
</tr>
<tr>
<td>- Age</td>
<td>- Transformational</td>
</tr>
<tr>
<td>- Gender</td>
<td>- Transactional</td>
</tr>
<tr>
<td>- Relationship to the company</td>
<td>- Laissez-faire</td>
</tr>
<tr>
<td>- Legal status of the company</td>
<td>- Previous managerial experience</td>
</tr>
<tr>
<td>- Education background</td>
<td>- Length of service at current post</td>
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<tr>
<td>- Previous managerial experience</td>
<td>- Length of service at current company</td>
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**Conclusion**

It is generally accepted that the success or failure of an organization is attributed to two situations. The first situation is when a company is said to be successful because it has strong and effective leaders. In contrast, the second situation is
when a company fails or has a slow growth. The situation would change depending on the adopted leadership practices [33] because the concept of an effective leadership is not merely being accepted by the followers by fulfilling their needs [6].

Actually, in leadership, the emphasis is on the leader as he is the person who both decides what needs to be done and carries out a set of planned work [34][19]. In this globalized era, a systematic and consistent progress in the field of leadership is required to ensure sustainable organizational management processes and business practices [35]. This is because the leadership of an organization must not only be successful today but must also be applicable in the future to ensure that the organizations are always well-managed and continue to develop [33].

In the context of an innovative organization, technology-based SMEs must have a stronger commitment towards innovation compared to their less innovative counterparts. Therefore, leaders, as the key drivers, have to play a significant role in ensuring that the mission of the organization is achieved through effective leadership [27]. As the management of an innovative organization is clearly different to the management of a less-innovative organization, leaders must choose and adopt the best and most suitable leadership style in their day-to-day management.

References