Technology Strategy and Firm's Revenue Growth: Empirical Evidence of Malaysian Industrial Automation Industry

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Abstract

Technology strategy was found by many researchers as a way to improve competitiveness. Failure to develop and integrate technology strategy and business strategy is a major contributing factor to the decline of firm's competitiveness. Many literatures also indicated that technology strategy played an important role in determining firm performance in technology-driven industries such as industrial automation company. However, most of the previous studies have generally focused on the structure-conduct-performance theory which emphasized greatly on external factors (i.e market condition and competitors) to link strategies to firm performance. Very few studies were found to link strategies with the internal factors. Thus, the present study was undertaken to relate strategic view and resource-base view theory to the firm performance of industrial automation company looking at technology selection, technology competence, technology posture and the moderating effect of the resource deployment. The empirical result based on 61 Malaysian industrial automation company found that, technology selection has positive impact towards revenue growth (measuring firm's performance). However, technology posture was found to be a negative predictor towards revenue growth and technology competence has no significant impact on revenue growth. Resource deployment on the other hand was identified to only moderate technology selection and technology posture but not technology competence.

Keywords: Technology Strategy, Industrial Automation, Resource Base View

1. Introduction

Since the Industrial Revolution, many production technologies had been introduced and evolved to improve the production efficiency and reducing the production costs. Industrial automation is one of the widely used strategies by the manufacturers to improve their competitiveness, in terms of quality and operating cost. The concept of industrial automation is widely used by manufacturers in automobile, electronic and electrical, chemicals and steel industries, for a better plant efficiency or a lower unit cost of production. Countries like USA, Europe and Japan adopted automation strategy to improve their competitiveness, in terms of cost, quality, flexibility, and delivery (Hayes & Jaykumar, 1988; Goldhar & Jelinek, 1985; Parthasarthy & Sethi, 1992).

In Malaysia, manufacturing sector has been one of the most important economic contributors. The sector grew rapidly since during 1999. As per year 2007, the manufacturing sector generated 30.3% of Malaysia Gross Domestic Product (GDP). Manufacturing sectors are expected to be the main drivers of the economic growth, which is anticipated to expand at 6.5% each year. In addition, the introduction of the third Industrial Master Plan (IMP3) for the periods of 2005-2020, will accelerate the pace of development and linkages between manufacturing-related services and enhance the development of industrial clusters. Ultimately, it will help enhancing the competitiveness of the manufacturing sectors and the industry clusters. However, the empirical studies related to the factors that affect the success especially of an automation firm is still scanty and need further research. Therefore, this study

intends to assess the factors that influence the performance of Malaysian automation firms looking at the perspective of resource base view theory.

2. Literature Review

A number of researchers (e.g. Maidique & Patch, 1978; Burgelman & Rosenbloom, 1989; Stacey & Ashton, 1990; Spital & Bickford, 1992; Herman, 1998; Cooper, 2000) have studied a few factors that contribute to the success of firms in the industrial automation sector. Of particular importance is technology strategy, which represents the pattern of decisions, the position relative to competitors and the perspective from which management makes decisions regarding technological activities, equipment, materials and knowledge (Herman, 1998). Schilling and Hill (1998) note that the purpose of technology strategy is to identify, develop, and nurture those technologies that will be crucial for the firm's long run competitive position.

One of the earliest concepts of technology strategy was provided by Maidique and Patch (1978). They conceptualize technology strategy based on three dimensions, namely (1) type of technology; (2) level of competence; (3) timing of technology introductions; (4) level of investment; (5) organization and policies, and (6) source of technology. Type of technology or technology selection is associated to the distinctiveness and the value of technologies that the firm specializes in. Level of competence refers to how specialize the firm is in its technologies. Timing of technology introduction equates to introducing a technology ahead of competitors. Level of investment is related to financial resource allocations whereas organization and policies are associated with implementation of strategy (Spital & Bickford, 1992). Source of technology on the other hand refers to mode of technology acquisition, whether it is internal R&D, external R&D or others. These are methods or ways to pursuing technology strategies. The last three dimensions (level of investment, organization and policies, and source of technology) are greatly allied to technology management processes, which are to be distinguished from technology strategy content for further evaluation of their contribution as a source of competitive advantage (Herman, 1998).

There is substantial amount of research regarding the linkage between technology strategy and firm performance, which mostly focus on new product development. Cooper and Kleinschmidt (1996) have found high correlation between new product or technology strategy and firm performance. Similarly, Zahra and Covin (1993) have found a clear correlation between business strategy-technology strategy fit and firm performance. This supports most research findings that, organizations who know how to link their technology strategy with their business strategy will be more competitive in the global marketplace (Roberts, 2001; Mitchell, 1992; Frohman, 1982; Spital & Bickford, 1992; Herman, 1998).

A good technology strategy will never achieve success without effective resource deployment in embracing the strategy. Numerous literatures emphasize the important role of resources in determining performance of technology intensive industries. Cooper and Kleinschmidt (1996) found that adequate allocation of resources of people and money is one of the critical drivers of superior performance. Based on earlier works, Cooper (2000) further elaborates the point that having the right resources and sufficient resources in the right projects is one of the important cornerstones of high-performing businesses. Hofer and Schendel (1978) argue that the deployment of firm-specific resources is central to strategy and performance. Norton (1998) argues that resource allocation should offer evidence of strategic significance. If a firm differentially commits resources, that commitment suggests a relative emphasis. It is this relative emphasis that underlies the strategic significance.

3. Theoretical Framework and Methodology

Researches suggest that firm's technology strategy such as technology selection, technology competence and technology posture, can effect company's revenue growth (e.g. Maidique and Patch, 1978; Cooper, 2000 Herman, 1998, Zahra & Covin, 1993). In addition, revenue growth can be enhanced by internally deploying resource namely financial, human and physical resources.

The proposed conceptual model is based on the premise that industrial automation industry, as a technology-based industry, competes primarily on technology. Consequently, technology is a competitive weapon to be used to gain market share and corporate growth (Schilling, 1998; David, 1998; Mitchell, 2000). A well-formulated technology strategy draws a direction for the firm towards technological and business competitive advantage against other competitors (Cooper & Kleinschmidt, 1996; Schilling & Hill, 1998; Khalil, 2000), which leads to the success of the automation firm. Therefore, technology strategy is proposed as the primary independent factor that affects revenue growth of a company.

However, technology strategy must be implemented with proper resource deployment (Cooper & Kleinschmidt, 1996; Cooper, 2000; Khalil, 2000). A well-formulated technology strategy, if deployed with proper resources, will have tactical advantage in achieving success. The proper resources provide the basis for a firm's sustainable advantage (Barney, 1991; Leonard-Barton, 1992; Godfrey & Hill, 1995). Contrarily, a well-formulated technology

strategy, if deployed with improper resources, will not lead to the desired performance. This suggests the moderating characteristics of resource deployment.

The unit of analysis for this research is Malaysian-owned automation firm, defined as a company that is locally incorporated and has at least 51% Malaysian equity. The information was collected via survey questionnaire obtained from Penang Development Center (PDC), Federation of Malaysian Manufacturers (FMM) and Small and Medium Industries Development Corporation (SMIDEC). All of the questions were asked based on six-point Likert scales. For technology selection, this research adapted the characteristics of core competencies of the technology owned by the company, proposed by Prahalad and Hamel (1990); For technology competence, the measures was developed based on Quinn's four levels of intellect (1996); For technology posture, the instruments was adapt from Conant et al. (1990) on the dimensions associated with strategy typology and the dimensions of resource deployment was from Cooper and Kleinschmidt (1996).

4. Research Hypotheses

4.1 Technology Strategy

This research draws upon prior researches by Maidique and Patch (1978) to develop a set of key dimensions of technology strategy. Technology strategy is conceptualized in this study through the use of three dimensions: (1) technology selection, (2) technology competence, and (3) technology posture.

Technology selection refers to the distinctiveness and the value of the core technologies that the firm develops. Maidique and Patch (1978) state that, the selection of the technology or technologies in which the firm will specialize in, is of paramount importance for a technology intensive firm. Core technologies provide the technological basis for differentiation. Relative strength in core technologies, and the ability to sustain proprietary advantage in these technologies, is critical to successful competition (Burgelman & Rosenbloom, 1989). Firms that possess high value-added core technologies will have competitive advantage over its competitors. Thus, it is hypothesized that,

Hypothesis 1: *Firms that develop high-value core technologies will perform better than firms that do not posses high-value core technologies.*

Technology competence refers to the sophistication of the technology employed by the firm relative to the state of the art (Maidique & Patch, 1978; Herman, 1998). It measures the level of competence or specialization of a firm in its technologies. Quinn (1996) proposes that these intellect can operate at four levels: know-what, know-how, know-why, and care-why. Know-what or cognitive knowledge is the basic mastery of the discipline. Know-how or advanced skill is the translation of book learning into effective execution. Know-why or system understanding is knowledge of the cause-and-effect relationship underlying a discipline. Care-why or self-motivated creativity is the will, motivation, and adaptability needed for success. These collective sets of knowledge and skills form the roots of firm's core competencies, which determine the company's competitiveness (Prahalad & Hamel, 1990). It is hypothesized that:

Hypothesis 2: *Firms with strong technology competence will perform better than firms without strong technology competence.*

Technology posture refers to a firm's propensity to proactively use technology as a competitive weapon and as a key positioning factor (Zahra & Covin, 1993). The posture can be a technology leader, a follower, or a laggard (low cost) (Ansoff & Stewart, 1967; Maidique & Patch, 1978). Firms that lead and innovative in technology gain "first mover" advantages against its competitors. Since technology leader enters new product market before other competitors do, the leader has the advantage to capture a larger market share. Leaders can also protect their technology through patents and other means to prevent late entrants from competing, giving those better opportunities to fully exploit their technology. Since technology leaders establish a technology gap between their products and their customers or competitors, they are able to reap abnormal profits by charging a high price for their products (Khalil, 2000). Therefore it is hypothesized that.

Hypothesis 3: *Firms with strong technology leadership will perform better than firms without strong technology leadership.*

4.2 Resource Deployment

Financial resource deployment refers to the allocation and the utilization of funds and capital resources. The importance of financial resources in high technology industries has been noted by prior researchers (Maidique & Patch, 1978; Burgelman & Rosenbloom, 1989; Cooper & Kleinschmidt, 1996). Empirical studies show that R&D spending correlates strongly with the success of R&D programs, annual sales growth rate and profitability (Frohman, 1985; Maidique & Patch, 1978; Maidique & Hayes, 1984; Mansfield, 1981; Cooper & Kleinschmidt, 1996). Without sufficient funding, it is difficult to enable an automation firm to develop its core technologies, specialize in

its fields, come up with innovative products, and position itself in the technology leading edge. Technology strategies need to be implemented before it can bring about the desired performance. In a technology-intensive industry sufficient financial resources must be made available. Hence, it is hypothesized that

Hypothesis 4: *Deployment of sufficient financial resources will enhance the impact of technology strategy on revenue growth.*

4.3 Firm Revenue Growth

Herman (1998) stated that growth rate is an important performance indicator that reflects the effect of technological decisions. Revenue growth furthermore is less susceptible to financial manipulation than some other measures (Michalisin, 1996; Herman, 1998). Therefore Revenue growth is the dependent variable.

5. Research Findings

5.1 Descriptive Analysis

There are more than 80 companies in industrial automation industry. However, a total of 61 questionnaire responses received and were usable. Out of these, 77 percent are fully Malaysian-owned. The remaining 23 percent are joint ventures with more than 51 percent equity being held by Malaysian. Most of the firms (47.5%) have been in this industry between 5 to 10 years. There are 8.2% of firms with less than 5 operation years in this industry, indicating that the number of new entrants is not high. Interestingly, there are only 6.6% of firms that have been operating in this industry for more than 20 years. This may be because Malaysia is still young in manufacturing field.

The result from table 1 shows that majority of the firms perceived their selected technology as high to medium value, with beyond medium level of technology competence and in high to medium level of technology posture. Apparently none of the respondents perceived themselves as low in technology selection, technology competence, and technology posture. For financial resources deployment, majority of the firms perceived their resource deployments are high.

Table 1. Descriptive statistics of major variables

Dimension	Mean	Std. Deviation
Technology Selection, x1	4.3279	0.9742
Technology Competence, x2	4.9959	0.6689
Technology Posture, x3	4.5123	0.7366
Financial resources deployment, z1	4.0710	1.0401
Revenue Growth, y	28.45%	43.88%

Notes: scale range: 1(low) to 6 (high)

The information about revenue growth is obtained from respective firm's annual reports. The sample mean for revenue growth is 28.45% with the standard deviation of 43.88%. Most of the firms (32.8%) achieved the revenue growth rate in between 0% to 25%. This is followed by 18% of the firms that recorded the revenue growth rate in between 25% to 50%.

5.2 Test of Relationship

Hypotheses Testing

Table 3 indicates the model summary of the hierarchical regression analysis. R^2 results show that the relationships exist between the variables. F-statistics for revenue growth indicating that the model exists and F value was large enough to accept alternate hypotheses and reject null hypothesis.

Table 2. Results for hierarchical regression

	Model 1 (control variable)	**Model2** (independent variables)	**Model3** (moderating variable)	**Model4** (Interaction variables)
F value	1.559	2.589**	2.216**	2.293**
R square	0.115	0.287	0.287	0.381
R square change	0.115	0.172	0.000	0.094
F change	1.559	3.622**	0.003	2.068

*significant at the 0.1 level; ** significant at 0.05; ***significant at 0.01

Table 3. Standardized beta coefficients

INDEPENDENT VARIABLES	DEPENDENT VARIABLE REVENUE GROWTH			
	Model1	**Model2**	**Model3**	**Model4**
Control variables				
Years of operations	-0.352**	-0.340**	-0.340**	-0.311**
Company size	0.318*	0.375**	0.375**	0.469***
Joint venture ownership	0.055	0.099	0.098	-0.019
Joint venture R&D	-0.065	0.114	0.114	0.141
Model variables:				
Technology selection, x1		0.671***	0.672***	3.768***
Technology competence, x2		0.319*	0.279	0.200
Technology posture, x3		-0.874***	-0.868***	-0.3997***
Moderating variable				
Financial Resources Deployment			-0.010	-1.905*
Interaction variable				
Tec. Selection*FRD				-5.518**
Tec. Competence*FRD				0.496
Tec. Posture*FRD				7.070***

*significant at the 0.1 level; ** significant at 0.05; ***significant at 0.01

Table 4 shows the significance test results of the regression analysis for testing Hypotheses 1, 2 and 3. Company years of operation and its size have significant impact on revenue growth. Both technology selection and technology competence have significant positive relationship with revenue growth at 5% and 1% level respectively. Technology posture on the other hand has significant negative relation on revenue growth only at 10% significance level. the magnitude of the standardized coefficient of these independent variables indicates that technology posture has the strongest impact on revenue growth.

In testing Hypotheses 4, the results show that financial resources deployment has a pure moderating effect on technology strategy-revenue growth relationship. It was found that only the interactions between technology selection and technology posture with financial resources deployment are significant. Thus, financial resources deployment moderates the relationship between technology selection and technology posture with respect to revenue growth.

Figure 2. Moderating effects of financial resources deployment

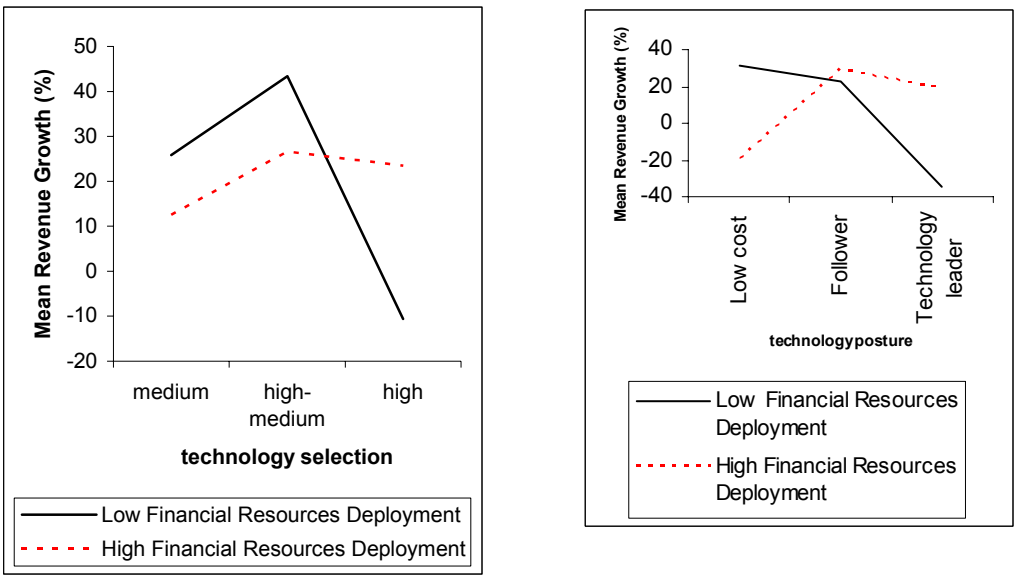

Figure 2 above was plotted to further elaborate on the moderating effect from financial resources deployment. It is observed that when financial resources deployment is high, the impact of technology selection on revenue growth is positive when the level of technology selection is medium to high-medium, and become negligible when the level goes beyond the high-medium. This suggests that in situation that high financial resources can be made available, there is a limit on the positive impact of technology selection on revenue growth. On the other hand, when the financial resources that can be readily deployed is low, the impact is positive when technology selection is medium to medium-high, and negative beyond medium-high level. Assessing the moderating effect of financial resources deployment on technology posture, it is observed that if financial resources deployment is high, there is high positive impact of technology posture on revenue growth rate from low-cost posture to follow-the-leader posture. However, the impact becomes negative once the posture moves towards being a technology leader. On the other hand, when financial resources deployment is low, the impact of technology posture on revenue growth is generally negative, with the impact being slightly negative when the posture is from low cost to follower, but the revenue decline is seriously jeopardize when the company assumes a technology leader posture.

6. Conclusion and Discussion

6.1 Technology Strategies Adopted by Malaysian Automation Firms

The result shows that technology selection was perceived as high to medium level, meaning that most of the industrial automation firms understand the importance of providing value-added technology to customers. However, the automation technologies of most firms are not too difficult to be imitated. Thus, the average value score of technology selection is in between medium to high. For technology competence, it was beyond medium level. This is not surprising as industrial automation is a technology-intensive industry. Furthermore, industrial automation firms must be technologically competent to provide stable and reliable machines for customers; else customers will switch to other competent rivals since unstable and unreliable machines have high down time and add costs of production to the customers. Technology posture also shows high-medium scale; indicating that they follow the-leader posture.

Table 5. Average return-on-sales of the firms by technology posture

Technology Posture	**Laggard**	**Follower**	**Leader**
ROS (%)	3.23	14.81	-5.45

Table 5 above shows a most probable reason for this. It is observed that followers have an appealing average Return on Sale (ROS) than other postures. Technology leaders, due to their high costs associated with R&D and testing, on average run into losses. Followers on the other hand learn from leaders' mistakes and weaknesses. They then imitate and improve leaders' design or technology with lower initial investment in R&D and higher chances of success. Thus, they are able to achieve better net profit margin. On the other hand, technology laggards do not have technological advantage and therefore have to adopt low cost strategy to compete with others. They under price the competition in the market place to gain market share, by sacrificing their net profit margin. Hence, their ROS is lower than followers.

It is also observed that financial resource deployment has significant positive correlations with technology strategies. That also explains the rationale of adopting certain technology strategy. Firms that have insufficient resources will find themselves hard to establish high value core technologies. They typically also lagged in technologies and find difficulties to develop high technology competence. Hence, these are normally the firms that adopt lower value of technology selection, lower technology competence together with low cost strategy.

6.2 Impact of Technology Strategy on Revenue Growth

Technology selection has positive impact on revenue growth. In other words, the higher the value of selected technology, the higher its revenue growth. High-value technologies can help the customers to create products with significant cost and value advantages. The value of technology selection shapes the roots of competitiveness for an automation firm. If these high-value technologies are difficult for competitors to imitate, it will form the core technologies that provide distinctive advantage to the firms. If a firm can sustain proprietary advantage in its high-value core technologies, it will continuously outperform its competitors and experience high revenue growth. This supports the literatures which state that core technology is a fundamental concept in the formulation of a technology strategy, which is critical to build the inner strength of a strategy (Khalil, 2000). Also the findings are consistent with the literature that says; company's core technology determines its competitiveness (Prahalad & Hamel, 1990; Burgelman & Rosenbloom, 1989).

Technology competence also has significant positive impact on revenue growth, suggesting that the more technologically competent automation firm is likely to enjoy higher revenue growth. Technology competencies in the forms of "know-what", "know-how", "know-why", and "care-why" (Quinn, 1996 help shapes the critical capabilities that form the building blocks of technical competencies. As business environment is dynamic and competition is so intense, customers are under pressure to reduce new product's time-to-market with maximum volume ramping flexibility and product manufacturability. Hence, customers expect automation firms are able to advise them on product and process design issues, and improving their current processes in terms of yield, throughput, efficiency and quality. This support the literatures which states that competency enables companies know how to do uniquely well and that provide them with a better-than-average degree of success over the long term (Gallon, Stillman, & Coates, 1995). Dierickx and Cool (1989) also stated that technical knowledge is a basis for competitive advantage, and thus should be related to performance. Similarly, Ansoff (1984) stated that strength in product technologies is essential to economic success under conditions of product technology dynamism.

Of the three elements of technology strategy, technology competence has the least relative impact on revenue growth compared to technology selection and technology posture. This suggest that technology competence may not be a unique competitive advantage to industrial automation form, as firms are similar (as indicated by the smaller standard deviation values for this variable; see Table 1. This implies that technology competence is already a market expectation or what is usually refers to as competition qualifier. Hence, technology competence may not be a strong base for differentiation as technology selection and technology posture.

The results also indicates that *technology posture* has negative impact to revenue growth. In other words, a Malaysian automation firm that positions itself as a cost leader will grow faster than as a technology leader. This is not surprising as their customers are under a lot of cost pressures from intense global competitions. These cost pressures are partly translated to lower capital investments. Hence, automation firms that adopted low cost strategy will benefit the most from customer's production capacity expansions and thus enjoy high revenue growth. The findings are consistence with the literatures which argue that as product technology matures (which is quite true for automation technology) and superior designs are copied, the difference in product performance narrows and products become more standardized. Under these circumstances, price becomes a more important basis of competition. Under such a price-competitive environment, cost leadership is associated with success (Utterback & Abernathy, 1975; Abernathy & Utterback, 1978; Tushman & Moore, 1982).

6.3 Moderating Effects from Financial Resources Deployment

The result also showed that automation firms that choose to develop high value technology can only be successful if they deploy sufficient financial resources for their R&D programs. In fact, substantial empirical research has indicated that investment R&D is positively related to technical output (Frohman, 1985; Mansfield, 1981). Consistent investment in R&D is also related to generating positive results (Maidique & Hayes, 1984). The differential impact of technology strategy on revenue growth is evident only for technology selection and posture. In the event that there is high allocation for financial resources to implement the technology selection, the positive impact of technology selection is only valid for medium to high-medium levels of technology selection. In the context of low financial allocation, technology selection jeopardizes revenue growth when technology is excessive.

In addition, if financial resources deployment is low, there is high negative impact of technology selection on revenue growth rate from high-medium- to high-value technology selection. Again, low level of financial funds cannot support high-value technology development effectively. However, this also implies that under insufficiency of financial resources a Malaysian automation firm should focus on high-medium level of technology values. There is a better strategic fit to focus on high-medium value technology selection, as it does not require very high investments for effective strategy adoptions.

Similarly technology posture need to account for the financial resources allocation, if an automation firm is to benefit in terms of revenue growth. Automation firms with high financial resources benefits (in terms of revenue growth) only when they move from a low cost to a follower posture. In fact, taking a technology leader posture for such firm will be detrimental to their revenue growth. . This is supported by literatures that innovating differentiators produce new products and technologies with strong emphasis on R&D (Miles & Snow, 1978; Miller & Friesen, 1984; Lawless & Finch, 1989).

It is also clear that firms with low financial resources cannot hope to improve their revenue growth through technology posture. The least impact for such firm would be to adopt a low cost of a follower posture. This is because low level of financial funds cannot support intensive technology development that leaders need to operate. However, this also implies that under insufficiency of financial resources, follower strategy is still possible since it

does not require such an extensive investment as leaders need. Coupled with cost advantage over the technology leaders, followers are able to capture higher revenue growth particularly in this price-sensitive marketplace.

6.4 Implications and limitation of the study

Firms that currently focus on low value technologies must upgrade their technologies to higher value chain. Low-end technology is easily duplicated by others and the only market strategy to compete is low cost. This leads to a price competition and erodes firm's revenue.

Technology competence is a basic customer expectation nowadays. Firms that do not have good technical competence will eventually been knocked out from the business. However, technology competence is not a good basis for differentiation. It is just a qualification needed in today marketplace. Proper training and development should be provided continually to maintain high technology competency. Malaysian automation firms should also try to recruit and retain those talented designers and engineers. Government should also co-organize skill development programs with privates to help develop local technology competency.

Follow-the-leader is still the most attractive strategy. It associates with fewer costs and lesser risks, as well as high ROS. Malaysian automation firms should try to keep close attention to the latest technology, especially those leaders' pace. Technology leaders should revise its R&D programs carefully in terms of risks and costs. This is to avoid major failures that will erode the firm's profitability. It is important to clarify that technology leader strategy does not mean worse then the follower strategy. Technology leaders still have a lot of "first-mover advantages", but their R&D directions must be carefully managed and deployed with right resources. Technology laggards have to move themselves up towards followers. This does not mean that they should abandon their low cost advantage. They still can keep their cost structure low as one way of segment invasion strategy.

This study however, limits its focus to the effects of technology strategy and resources deployment on revenue growth. In doing so, a number of other factors that may affect firm's revenue are omitted, e.g., marketing strategy, financial structure, culture, people innovation etc. Scope of the study was also limited to the northern part of Malaysia thus, the results may be skewed towards the northern situations and may not be generalizable to overall Malaysian industrial automation.

7. Conclusion and Recommendation for Future Research

There is very limited literature on industrial automation industry in Malaysia and abroad. This research offers only a small insight into how the firm performance in this industry is being affected by technology strategies. Industrial automation will continue to be one of the important clusters under IMP to further develop our manufacturing sector towards higher value chain. Appropriately, a few suggestions are provided below for future research.

For future research it is suggested that the scope of study should be extended to include marketing strategies and business strategies on the tactical side. Ultimately, technology strategy must break down to action and be implemented with integration of marketing strategies and business strategies. Future research should also look at the operations strategies that affect ROS, as profit is still crucial to an organization.

This research was primarily set to seek some answers to how technology strategy impacts the performance of Malaysian automation firm, which was measured in terms of revenue growth. The impact of technology selection, technology competence, and technology posture was studied. The resource deployment was thought to moderate the relationship across three dimensions; financial resources deployment, human resources deployment, and physical resources deployment.

Base on this study of 61 local automation firms, it is found that technology selection has positive impact on revenue growth at 5% significance level while technology competence has positive impact on revenue growth at 10% significance level. However, technology posture is found negatively relate to revenue growth at 5% significance level. Only financial resources deployment moderates on technology selection and technology posture.

These findings have rendered more understanding on industrial automation industry as how to achieve high growth in this industry. Overall, Malaysian industrial automation still has long way to go to navigate Malaysia's manufacturing industry towards an advanced level. R&D is the engine of this cruise. Technology strategy is the rudder of the cruise.

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