

# A supplier selection strategy within the Malaysian telecommunications industry

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**Abstract** — The telecommunication industry in Malaysia has grown rapidly over the last 15 years, with effective supply chain management becoming increasingly important within the sector. A multitude of providers and part owned Malaysian government companies, vendors and suppliers are involved in generating and creating value-adding products and services within this sector (across wireless, wireline, broadband business and consumer lines of business). This paper describes key challenges facing a major telecoms service provider in Malaysia with regards to drivers involved in the overall procurement and supplier selection with regards to components of performance management, decision-making, selection techniques, quality and cost management, procurement policy and procurement ethics. This paper further focuses on defining and detailing research currently being undertaken to develop a framework for identifying supplier selection drivers that are inherent within the sector and suggests a research approach to investigate and develop strategies for supplier selection for the telecommunications industry in Malaysia.

**Keywords** — Government policies, Procurement, Supplier Relationship, Supplier Selection, Telecoms

## INTRODUCTION

The telecommunication industry in Malaysia has grown rapidly over the last 15 years while it continues to heavily promote itself as an information technology hub in the Asia region. On the back of the Multimedia Super Corridor project (MDC, 2008) [6], the rollout of high-speed broadband has been at the centre of a national initiative to instantiate technological changes in the region. The Malaysian government has launched a National Broadband Plan which is seeking to achieve 25% penetration by 2012, and which also plans to embark on an ambitious initiative to roll out high-speed broadband services across the country (as part of the wider MSC project). In these terms, the national incumbent fixed-line carrier Telekom Malaysia (TM) has been awarded this key project, in part due to the fact that TM already owns an existing infrastructure. This would allow additional investment to be done on a lower cost basis and at a faster speed. The new high-speed broadband service is expected to be rolled out quickly and in a cost-efficient manner. However applying low cost sourcing may have severe impact on the firms' supply chain performance, and many firms recent low cost initiatives in various industries have consequently failed to deliver predicted results due to an absence of sufficient supply chain considerations and inappropriate sourcing strategies [16].

However, it is understood that TM is an undisputed powerhouse in the national telecommunications sector in Malaysia and it has a nationwide full service network born from its period as national monopoly which covers all key telco service areas. Since the supplier selection strategy is very important task the company therefore seeks to identify important factors associated with supplier selection. Supplier selection is generally considered as a five phase process starting from the realisation of the need for the new supplier, determination and formulation of decision making criteria, pre-qualification, final supplier selection which ultimately leads to the monitoring of the selected supplier. Effective selection and evaluation of suppliers along with the management of their involvement in the supply chain, are thought to be capabilities that enable organisations to achieve the four key dimensions of customer satisfaction: competitive pricing; product quality; and variety and delivery service [16].

This paper therefore focuses on providing an overview and initial analysis of the supplier selection strategy for the part/state government owned company in the telecommunications industry in Malaysia (TM) within the context of high speed broadband service provision. Principally, the paper will examine the

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complexity of the supplier selection process and decision-making involved in selecting suppliers across the public-private sector divide. Thus this research intends to study the relationship as well as the underlying mechanism that influences supplier selection strategy in the telecommunications sector in Malaysia. As a result outlining current and intended research to develop a comprehensive supplier selection strategy in this regard.

## **SUPPLIER SELECTION CHALLENGES AND CONCERNS**

This research intends to focus on posing and answering questions relating to the impact of the supplier selection strategy on company overall performance. In this context, it will also look into what is the relationship, if any between company procurement policy and supplier selection strategy as organisational measures of competitive advantage. Of principal interest to the authors is the identification of how do TM's procurement policy and procurement ethics influences and determines the supplier selection process. Hence the aim of the study is to develop a conceptual framework that explains how supplier selection strategy affects company performance and analyse the complexity of the resulting relationship. Within this, the main objectives of the study are to analyze and design specific process frameworks which can support the decision and eventual selection of telecoms suppliers. At the same time the research intends to explore the possibilities of using this model to develop and identify how best it can be used and implemented (in terms of testing the framework with regards to looking at the internal and external factors relating to supplier selection strategy). The effects of the past and current supplier selection strategy, procurement policy and procurement ethics of the telecommunications sector in Malaysia will also be examined. In terms of developing this research arc, the authors first of all outline and define those aspects of supplier selection within the telecoms industry which are pertinent to this study.

### **Supplier Selection Challenges related to Performance Management**

The telecommunication industry has grown rapidly and experiences a tremendous demand in the Malaysian market. The importance of supplier selection to Telekom Malaysia as a company to deploy the service to the Malaysian consumer market creates a direct and indirect impact to the company and business performance. The development of supplier strategic alliances has become an important approach in order to rationalise business operations in order to sustain competitive advantage. A strategic commitment from suppliers is therefore an important determinant of business success [4]. Selecting and evaluating suppliers grounded in the criteria of quality, delivery, reliability and product performance enhances customer satisfaction and firm performance; whilst involving the suppliers in the supply chain by way of participation on product design teams and in continuous improvement programs enriches the firm delivery service and overall performance [14]. Selecting the right supplier and developing the infrastructure has an increasing impact upon firm performance also [5].

### **Supplier Selection Challenges related to Decision-Making**

Decision-making in order to select the right supplier usually requires strategic thinking and is time consuming. The selection of suppliers is a complicated by the fact that numerous criteria must be considered in the decision-making and hence selection process. Dickson, in of the early works on supplier selection, identified over 20 suppliers attributes which purchasing / procurement managers trade off when choosing suppliers. The real challenge here is whether to "go or no go" when selecting the best available supplier [19]. The approach often goes beyond price, and consideration is typically given to the whole cost related to item, services, quantity, delivery, administration, communication, failure and maintenance [2]. Briggs (1994), suggested that optimal cost, joint development, organisational culture, forward engineering, trust, supply chain management, quality and communication were also important [17]. Adopting a participative and flexible approach which allows those involved in procurement decisions, allows the group to explore differences of opinion and choices relating to the given suppliers through developing consensus and evolving a ranking of alternatives for the supplier rating purpose [7]. In this context it is important to note that purchasing personnel today do much more than "buy things": their responsibilities now encompass the management of relationships, as well as the facilitating decision-making by bringing together the pertinent internal and external parties to the organisation [20]. They have the important responsibility of selecting suppliers within the framework of achieving system wide goals as opposed to minimising cost and price [2].

## **Challenges in Supplier Selection Models and Technique approaches**

Within the telecommunications industry in Malaysia, there is no specific technique or approach which is widely adopted in selecting suppliers. Instead there are a multitude of techniques which depend on particular business requirements and therefore there are limited generic approaches which are in use. In addition the current Malaysian telecommunication business environment, requires that the evaluation of suppliers to the industry be aligned to the latest and current initiatives with regards to the development of ICT infrastructures. The telecommunication industry in Malaysia is likewise characterized by rising complexity, high uncertainty, instability and volatility. As such, it is facing self-similar issues of addressing the pressures of rapidly changing market conditions, intensified global competition, radical change in technology and shorter product lifecycles [13]. A typical vendor selection model that has been used for well over 20 years to meet these sorts of challenges is embodied in the Total Cost of Ownership (TCO) perspective which proposes to quantify all costs associated with the purchasing process throughout the entire value chain of the firm. The cost of the acquisition and subsequent value of the item or service that is to be purchased is determined and then discounted for the entire “life” of the investment in that item. The approach goes beyond price to consider all costs that the item incurs as related to service, quality, delivery administration, communication, failure and maintenance, where costs related to the purchase and cost of services to be rendered is determined as well [20]. Degraeve, further defined a hierarchical structure of purchasing activities relating to supplier level activities, order level activities and unit level activities [2]. Of course the most well known approach for supplier selection is of the Analytic Hierarchy Process (AHP) developed by Saaty (1980), which helps the analyst to organise critical aspects of a problem into hierarchical decision tree. The AHP methodology has been proven to not only arrive at a quantified and qualified decision under specific choice criteria, but also provides a clear rationale for the choices made [11]. Although the purpose of what can be termed traditional or “crisp” AHP is to capture expert knowledge, this approach still requires a high degree of abstraction in from the underlying criteria and is limited in the sense of not completely reflecting human thinking style [3]. More recent developments in the field of AHP such as that by Sevkli (2007) have applied additional approaches such as a combined Data Envelopment Analysis (DEA) on top of the AHP prioritisation approach [11]. Similarly, Chen (2006) and Yang and Chen (2006) have described another variation whereby a hybrid AHP-FLP (Fuzzy Linear Programming) method has been developed which claims to be more appropriate in the selection of output decisions, where high value components are involved and where stringent purchasing criteria are required. Both of these models propose to integrate specialized qualitative knowledge and experience of each evaluation and combine it with quantitative data to select the best supplier [8].

Noting that these methods has thus far been considered for generic business situations, there are few if any supplier selection or prioritisation methods aligned to the telecoms industry. Again it is worth noting that in dealing with telecommunications industry in Malaysia, there is a tendency to source and select international suppliers as opposed to identifying local suppliers – which increases the number of decision variables to include those relating to managing and maintaining business relationships remotely. Considering this factor, the Multi Attribute Utility Theory (MAUT) proposed by Min (1994), may appear to be more appropriate since it attempts to overcome the limitations of AHP, MOP and VPA approaches by accounting for both qualitative and quantitative factors in uncertain decision-making environments [3] rather than seeking to codify and translate them. Verma and Pullman (1998) have also proposed a supplier selection technique using a method known as Discrete Choice Analysis (DCA) and Multi Nominal Logic (MNL) in order to identify and quantify the relative weights of attributes involved in a supplier selection process to focus on the selection of suppliers which have a number of “trade-off” attributes such as those as might be found in international supplier relationship scenarios [15] (e.g. cost-quality, performance-reliability, reputation-customer orientation etc).

### **Supplier Selection Challenges related to Supplier Relationship Management**

Supplier relationship management and selection is a critical issue in any supply chain partnership since such relationships are dynamic and the commitment to multi-network and multi-tier partnerships is not necessarily permanent due to the enterprises becoming engaged in switching their business partners to meet changing market conditions and to maintain or increase their firm’s performance [17]. As an initial consideration, the synchronisation of cycle times across the buyer-seller relationship is an important predictor of relationship success as it has a significant effect on high volume and long term continuously repeated trend purchases. For example, Krause (2000) has suggested that buyers within product-based firms can improve

supplier performance through direct involvement in activities that relate to and integrate with both organisation's business cycles [16].

However as already discussed, supplier relationships also have to be managed in the context of a globalised and technically sophisticated environment, under constraints of cost reduction and quality improvement. In actual business practice however, firms are adopting programs that seek to develop closer relationships in order to achieve lower product cost, reduced cycle time, on time delivery, efficient inventory management, improved product quality, good after sales service and low maintenance cost. In such a respect, the management of supplier relationships then begins to include much deeper constructs than direct relational or operations-based factors alone. In this vein, the literature on this area has tended to focus on the general construct of trust between the parties, and the level of interaction between the parties and the commitment of the parties to the relationship [4]-[5]. For instance, Gulati (1995) mentions that suppliers and customers are less likely to use equity sharing agreements as they gain more experience with each other through the ongoing development of their existing relationships. An emphasis on building the buyer-seller and developing long term relationships may necessitate an improvement of not just the operations and business process aspect of the enterprise, but also will highlight the need to develop an effective communications process to be a key element of the supplier selection process [4]-[5]. In contrast to this though, some researchers take an opposite view and suggest that sourcing partners may tend to add rather than diminish value to the portfolio of supplier relationships – but only when the buyer and supplier have the necessary capabilities or can be expected to develop such relationships with all their sourcing partners [9]-[10]. This further serves to underline the complexity of buyer-supplier relationships and the inherent human aspects of the procurement process.

### **Challenges in Supplier Selection in Quality and Cost Management**

Within the TCO philosophy mentioned previously, the least expensive supplier is not necessarily the best choice if one takes into account all of the possible additional costs which are generated across the supply chain [2]. As such the management of quality as well as cost continue to be important underlying factors within procurement and supplier selection processes. Once again, cycle time along with the competitive price have been noted to be important but not dominant factors in the initial selection process [1]. Selecting and evaluating suppliers grounded in the criteria of quality, delivery, reliability and product performance enhances customer satisfaction and firm performance – and as Waber (1989) note, quality is perceived to be a most important attribute followed by delivery performance and cost [12]. Thus managers should not select suppliers based only on low cost but should consider quality, delivery performance and other attributes [18].

### **CASE CONTEXT**

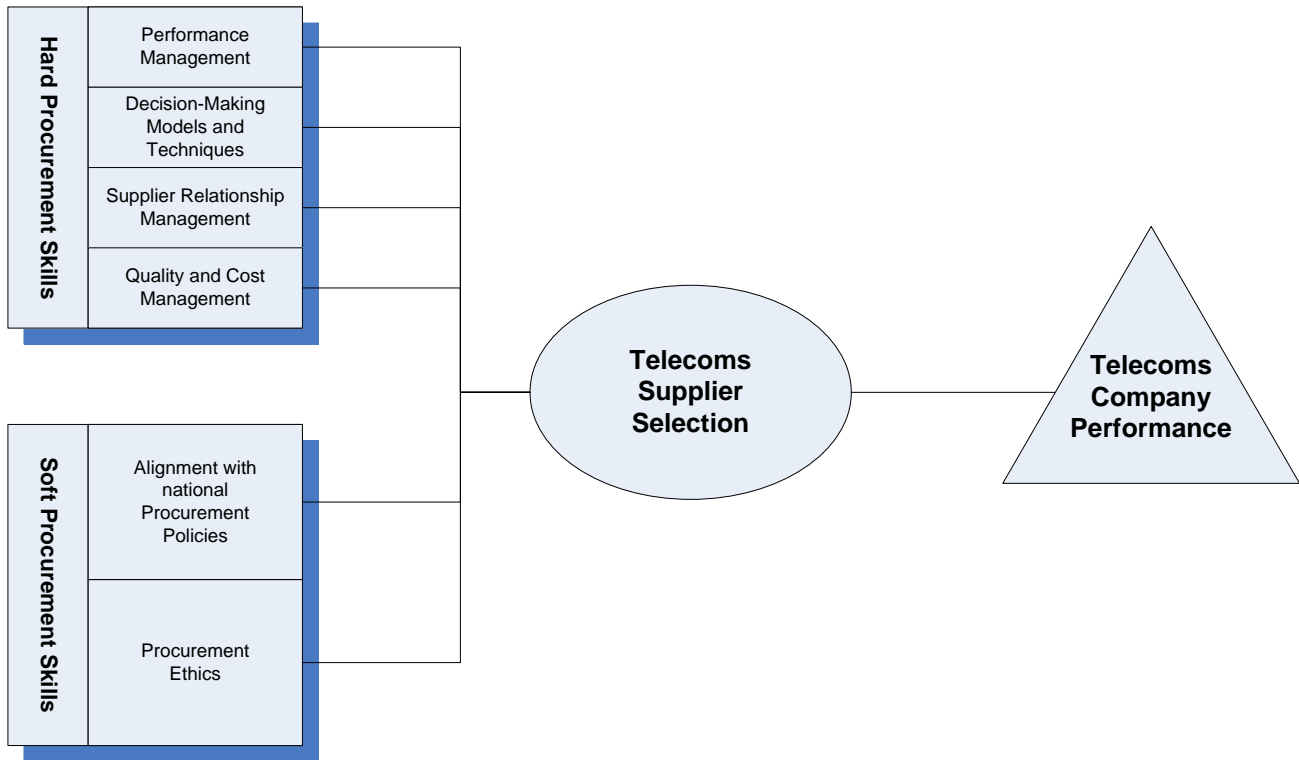
The authors now provide details of a case organisation as specific context to the discussion thus far on the procurement and supplier selection process within the Malaysian telecommunications industry. As a part-owned government company, Telekom Malaysia (TM) is largely guided by government rules and regulations as part of its governance and decision-making structure. The procurement policy does not therefore follow other private sector approaches but instead has to adhere to Malaysian government procurement guidelines. Amongst the government policy and guidelines is the concept of local co-ownership and inclusion of Malaysians in such public-private enterprises (the so-called “Bumiputra”). TM procurement policy therefore emphasises the promotion of competitive local input in order to ensure that the Bumiputras' equity share in the nation's economic growth is balanced with developing Bumiputra vendors' capabilities as part of a wider national economic and wealth creation agenda. With this kind of protection and advantage to the local market, most of the high profile or big project business opportunities available to TM have to be given to local (hence Malaysian) companies. Whilst this approach may appear to be wholly couched within the auspices of protectionism, these guidelines have been set up to give priorities to locally owned companies, in order to help and protect the local Bumiputra and to ensure local participation and increase the competitiveness level of these business communities targetted to major business industries. Thus, the policy requires TM to ensure the Bumiputras' equity share in the nation's economic growth, with a fair and equitable distribution of national wealth.

It is well known however, that most of the telecommunication industry suppliers in Malaysia are international foreign companies which have high quality telecommunication products and standards. This poses a predicament in the supplier selection process. Thus in terms of supplier selection, TM is still dependent upon international as well as national (Bumiputra) suppliers. As a result, TM is frequently in the position of having to pay non-competitive (and potentially higher) cost/price of product and equipment procured locally. In this case, TM still procures item equipment from international suppliers but has to go through local Bumiputra company representatives or joint ventures to do so. A typical process is described as follows. Company A, B and C which work with TM are all well known and established international telecommunication suppliers. Each of them submits their bid tenders to TM alongside company X (a local Bumiputra company). After the evaluation has been done, the evaluation result is presented back to the tender board committee within TM for board approval. In these circumstances, even though the evaluation result shown may show that supplier A, B or C may provide greater benefit to TM, there is a need to assign a favourable result to supplier X (the Bumiputra firm), due to the Bumiputra priority clause. In this manner, the governance and regulatory framework for including local suppliers within the tendering process may skew the selection (integrity, transparency and favouritism within the evaluation of tender bids which then may reflect internal as well as external stakeholder influences). This then rapidly encroaches upon issues of ethical sourcing and fair supplier relationship behaviour, which may ultimately lead to increasing customisation requirements because of the effect of having to include local companies in the tendering and supply process. Hence as a part owned government company, TM has to balance both their business commercial value needs and targets with the impacts relating to social responsibility, staff welfare, and government enterprise policy rules and regulations.

## **CONCEPTUAL FRAMEWORK FOR TELECOMS PROCUREMENT**

Given the above components of the procurement cycle in the given context, this research attempts to fill the need to explore ways in which to understand and improve the supplier selection within the Malaysian telecoms industry. A conceptual framework which draws together the previously-cited literature and the specific business challenges noted above is shown in Figure 1. This figure highlights that supply chain management and procurement functions still need to be recognized as drivers of cost reduction and increasing efficiency towards the overall company business and financial performance growth. In the context of the telecommunications industry in Malaysia, TM company performance is affected by supplier performance which has an implication on the service quality experienced by the end consumer. Thus it is very important that selecting the right supplier contributes to improving company performance for both parties (i.e. TM and its supplier). Apart from this performance management aspect, the decision-making element plays a critical role for the successfully selected supplier company. Decision-making clearly needs to be based on the evaluation of supplier capabilities, market demand and supply within the context of national rules and regulations as described in previous sections of this paper. Transparent and tangible supplier selection is therefore critical to such a venture. Hence the appropriate choice of evaluative tools and technique will assist in the mitigation of misleading or erroneous supplier decisions.

The relationship between supplier selection and supplier relationship management in the telecoms procurement case is also vitally important in order to build trust and increase co-operation across all parties. The challenge for organisations such as TM in their particular context is to balance and marry the requirement for local as well as external supplier capabilities within a continuum of relationships.



**FIGURE. 1**  
Conceptual Framework for Telecoms Procurement in Malaysia.

In addition to the above “hard skill” challenges, the telecoms sector needs to also balance these traditional supplier selection requirements with “soft skill” aspects relating to the justified and reasonable application of private-public sector procurement policy and procurement ethics (transparency in order to eradicate positively or negatively skewed decisions towards local suppliers).

## CONCLUSIONS

As discussed and noted in this paper, supplier selection strategies play a very crucial role within the telecoms sector in Malaysia. The authors have outlined previous studies which have suggested that elements of product quality, technology, total cost of ownership, competitive pricing, delivery performance, responsiveness, cycle time, supplier involvement, and strategic alliance result in an improvement in company performance. The appropriate use of analytical evaluation and selection tools (such as AHP, hybrid AHP, TCO and others) must be seen as an integral, though not solely dependent part of the supplier selection process. As such the authors subsequently outlined the requirement to include supplier relationship management, procurement policy and procurement ethics as additional aspects of a supplier selection strategy, as part of a conceptual framework developed. The authors therefore suggest future research geared towards the development and implementation of such a strategy to be realised through a decision-making approach that can be used within the selection of procurement suppliers in the Malaysian telecoms industry.

## REFERENCES

- [1] Akesson, J., Jonsson, P., and Edanius-Hallas, R. (2007). An assessment of sourcing strategies in Swedish apparel industry. *International Journal of Physical Distribution and Logistics Management*, 37 (9):740-762
- [2] Degraeve,Z.,Labro,E. and Roodhooft, F.(2000). An Evaluation of Vendor Selection models from a total cost of ownership perspective. *European Journal of Operation Research*, 125 : 34-58
- [3] Hokey Min,(1994).International Supplier Selection. *International Journal of Physical Distribution & Logistics Management*. *International Journal of Physical Distribution and Logistics Management*, 24 (5):24-33
- [4] Kannan Vijjay,R. and Tan Choon,Keah.(2002). Supplier Selection & Assessment, The impact on business performance. *Journal of supply Chain Management*, 38 (4):11-21
- [5] Kannan Vijjay,R. and Tan Choon,Keah.(2006). Buyer–Supplier relationship. The Impact of Supplier Selection & buyer-supplier engagement on relationship and firm performance. *International Journal of Physical Distribution and Logistics Management*, 36(10) : 755-775.
- [6] MDC (2008). MSC Malaysia. Available. [on-line]. <http://www.msomalaysia.my/>
- [7] Muralidharan,C.,Nantharaman,N. and Deshmukh,S.G. (2002). Multi criteria group decision making model for supplier rating. *Journal of supply Chain Management*,38(4):22-33
- [8] Petroni,A.and Bragila,M.(2000). Vendor Selection using principle component analysis *Journal of supply Chain management*. *International Journal of Supply Chain Management*,: 63-69.
- [9] Puschmann,T. and Alt,R.(2005). Successful use of e-procurement in supply chains. *International Journal of supply Chain Management*, 10 (2) : 122-133
- [10] Rinehart,Lloyd M., Eckert,James A.,Pager,Thomas J.and Atkin,Thomas.(2004). *Journal of business logistics*,25 (1):25-62
- [11] Sevkli,M., Koh Lenny,S.C., Zaim,S. and Tatoglu,E. (2008).Hybrid analytical hierarchy process model for supplier selection. *Journal of Industrial Management and Data Systems*, 108 (1):122-142.
- [12] Sharland,A.,Eltantawy Reham,A. and Guinipero, Larry C.(2003). The Impact of cycle time on supplier selection and subsequence performance outcomes. *Journal of supply Chain Management*,: 4-12
- [13] Tarofder Arun,K.,and & Haque,A.(2007).Exploring critical factor for supplier selection in Telecommunication Industry in Malaysia. *Asian Journal Marketing*, 1 (1): 1-13
- [14] Tracey,M, and Tan Chong,L. (2001). Empirical analysis of supplier selection and involvement, customer satisfaction and firm performance. *International Journal of Supply Chain Management*, 6 (4): 174-188
- [15] Verma,R.and Pullman, M.E. 1998). An analysis of the supplier selection process. *International Journal of Management Science*, 26 (6):739-750
- [16] Vonderembse Mark,A. and Tracey,M. (1999).The impact of supplier Selection Criteria and supplier involvement on manufacturing performance. *Journal of supply Chain Management*, 35 (3):33-39
- [17] Wu Liang,C.(2009).Supplier selection under uncertainty: a switching options perspective. *Journal Industrial Management and Data System*, 109 (2):191-205
- [18] Wu Wann,Yih.,Sukoco, Badri Munir.,Li,Chia Ying.,and Chen, Shu hui.(2009). An intergrated multi-objective decision-making process for supplier selection with bundling problem. *Expert System with Applications*,36 : 2327-2337
- [19] Dickson, G.W. (1996). An analysis of vendor selection system and decision. *Journal of Purchasing*, (2): 5-17
- [20] Ellram, L.M. and Cooper, M.C. (1993). Characteristics of Supply Chain Management and the implications for purchasing and logistics strategy. *International Journal of Logistics Management*, 2 (4): 1-10