


Global Sourcing Strategy of Electrical and Electronics Foreign

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ABSTRACT

Multinationals will source from within their company (intra) as well as from independent supplier (inter) and these suppliers may be located locally or overseas. This study highlights the percentage of components sourced from intra-domestic, intra-foreign, inter-domestic, and inter-foreign sources by electrical and electronic foreign multinationals in Malaysia. These global sourcing strategies were found to be different among the different nationality of the parent company for the electrical and electronic foreign multinationals. However, the dependency on sourcing from parent country or from its subsidiaries in foreign country was not reduced even when the product is at the maturity stage.

Keywords: *Global sourcing, strategy, multinationals, Malaysia*

Malaysia's development from a country that depended on agriculture to that of an export-oriented nation have brought about the realization of the importance of manufacturing sector in the country. With the current global competitive environment, manufacturing sector that continues to be the engine of growth for Malaysia even after the financial crisis in 1997 has to be innovative and proactive in constantly striving for the competitive advantage for the firm. One method is through purchasing that is known to be the eyes and ears of the firm in the suppliers' marketplace (Krajewski & Ritzman, 1993); and that its

decisions will have impact not only on the firm but the country as a whole. This department has many strategies with one of them being the sourcing strategy. Global or worldwide sourcing is an approach that requires purchasing to view the entire world as a potential source for components, services and finished goods (Monczka & Trent, 2003). Literature in the global sourcing strategy is commonly carried out in the developed countries while in Malaysia only a few had attempted to unveil the mechanism of global sourcing strategy by the firms. Sieh and Yew (1997), Sieh (2000) and Jantan, Ramayah, and Khaw (2000) investigated global sourcing strategy but only from the aspect of ownership of sourcing strategy that is intra-firm and inter-firm sourcing strategy. The purpose of this study is to empirically determine the global sourcing strategy patterns of foreign electrical and electronics (E&E) in Malaysia pertaining to the ownership (intra-firm and inter-firm) and location (domestic-firm and foreign-firm) perspective.

Global sourcing strategy

Global sourcing strategy is the procurement of components from more than one country that are used for further processing regardless whether the import source is internal or external to the company (Kotabe & Murray, 1990, Murray, Wildt & Kotabe, 1995). Global sourcing strategy can be viewed from the perspective of ownership and location. Ownership is known as intra-firm or inter-firm sourcing strategy. Companies that carried out intra-firm sourcing are procuring components from within their own corporate system that could be from the parent company itself or from the subsidiaries (Kotabe, 1998; Kotabe, Murray & Javalgi, 1998; Kotabe & Murray, 2004). On the other hand inter-firm sourcing is procuring components from independent suppliers within and across national boundaries (Kotabe et al., 1998, Kotabe & Murray, 2004). Studies have shown intra-sourcing continues to be important in a firm since it allows the firm to exploit technologies and expertise within itself when such technology are rarely found in other companies. Nevertheless it still does not undermine inter-firm sourcing since external companies may have certain expertise and innovativeness that the firm did not have. However heavy reliance on inter-firm sourcing may in the end be detrimental to the firm since it may cause the firm to lose the ability to be innovative and losing sight of emerging technologies and expertise in the long term (Kotabe & Murray, 2004).

Locational aspect of global sourcing strategy refers to domestic versus foreign suppliers (Kotabe et al., 1998). It was found that companies would source critical items from foreign suppliers (Handfield, 1994; Rajagopal & Bernard, 1994) if they were unable to source from their own companies (Rajagopal & Bernard, 1994). Handfield's (1994) study was conducted in North America while Rajagopal and Bernard (1994) study was in United Kingdom. It was further confirm by Oumlil, Sekely, and Yates (1994) study, when they found 83 per cent of the U.S. firms surveyed sourced their products from foreign suppliers. It was found that as the firm increases in size, sourcing from foreign suppliers also tend to increase. The study further found that 11.5% sourced from U.S. suppliers located outside the country while 8.3% from company's subsidiary outside U.S.. Nassimbeni (2006) reported for the year 2001. Italian firms have had 30 percent of all purchases from foreign country. It was found that in U.S. European manufacturers tend to source from host country compared to Japanese manufacturers (Swamidass & Kotabe, 1993).

In Malaysia, Sieh and Yew (1997) found that MNCs from Europe, Japan, and U.S. source majority of their inputs through intra-firms channels or within their company's system. This they suggested because of production process that were split up into stages across national borders and the controlled purchasing by international or regional purchasing officer. Sieh and Yew identified three patterns of MNCs in Malaysia. First, Malaysia's manufactured exports have high import content. Secondly, Japanese E&E and automotive industries source majority of their input from home country, and finally, European automotive MNCs reduce their dependency on home-country sourcing and source from third countries or locally. However they found MNCs from new industrialized economies (NIE) such as Hong Kong, Korea, Taiwan, and Singapore relied heavily on local vendor. While in food industries Sieh (2000) found that the industry do not depend on their parent companies in home countries for supply of raw materials, but instead purchase locally from competitive suppliers. Both the empirical research by Sieh and Yew (1997) and Sieh (2000) did not identify whether intra-firm and inter-firm suppliers are from foreign countries or local/domestic. Jantan et al., (2000) study on whether sourcing strategy (intra-firm and inter-firm) will lead to better supplies' quality, delivery or cost on E&E MNCs in Penang, Malaysia found that companies prefer to source intra-firm than inter-firm when issues of quality, delivery or cost is pertinent to the company. It highlighted that 37 out of 82 companies sourced from intra-

firm from both local and abroad and 63 companies that sourced from inter-firm are also from local and abroad. However, the nationality of the companies was not informed thereby the inability to confirm on the trends of nationality and their sourcing patterns in Malaysia. Nevertheless previous studies have showed that nationality of MNCs do have influence on the global sourcing behaviour at the host country. This study will identify the ownership and locational aspect of global sourcing strategy and the nationality of the MNCs that practices these strategies.

Product Life Cycle

Product life cycle is consists of four stages that a new product will go through. These stages are introduction, growth, maturity and decline. During the introduction stage, the product sales growth is slow and profits are non-existent due to the heavy expenses used for the product introduction. During the growth stage, the product began to have rapid market acceptance and profits are substantial. At this stage the company starts to lower prices to attract buyer. While at the maturity stage the sales as well as profit starts to slow down since competitors start to emerge. This is the stage that lasts the longest, and finally the decline stage in which profits and sales starts to decline (Kotler, Keller, Swee, Siew & Chin, 2006). Swamidass and Kotabe's (1993) study on foreign multinational in U.S. found that the more recent the introduction of a product in the U.S. market, the more dependent it will be on home sourcing. However, when product matured, home sourcing begins to decrease, and sourcing from the host country starts to increase. The new products are manufactured in the home country to avoid disclosure of technological secrets of the new product. Thus products produced by the manufacturing MNCs in developing countries are usually at the maturity stage (Vernon, 1966). This study will identify the product life cycle stage of the products produced by foreign MNCs in Malaysia and the global sourcing strategy adopted by them.

Methodology

This confirmatory study is to identify the types of sourcing strategy adopted by foreign MNCs in Malaysia, the nationality of the foreign MNCs that carries out this sourcing and whether the products produced

in Malaysia are at the maturity stage of the product life cycle. Since sourcing strategy may differ by components, the unit of analysis for this study was based on components of one major product. The industries important to this study are those that manufacture products that are made of easily identifiable and separable components that can be easily identified and would enable an unambiguous examination of component sourcing (Kotabe & Omura, 1989; Murray & Kotabe, 1995). The industries that met the above criteria are transportation equipment, scientific and photographic equipment, non-metallic product, basic metal product, fabricated metal product, and E & E. These industries however need to carry out a minimum of three to a maximum of four types of sourcing strategy. This is required since global sourcing strategy is viewed from the perspective of intra-domestic, intra-foreign, inter-domestic, and inter-foreign, that is, from ownership and locational perspective.

A mail survey was conducted to gather the data. To ensure the sampled firms carry out three to four types of global sourcing strategy, the firms were contacted in advance by telephone to confirm their sourcing strategy and to enquire the appropriate personnel to respond the survey. The respondents need to answer three to four different scenarios. This would mean for one company the maximum number of response would be four and the minimum would be three. Clear instruction and definition were written in the questionnaire for ease of understanding and a self-addressed stamped envelope was enclosed for the respondents to mail the filled questionnaire.

The data was collected from foreign multinational manufacturing companies in Malaysia listed under Malaysian International Trade (MITI) Investor's Directory 2004. Telephone calls were made randomly to ten companies in the respective categories to determine their sourcing strategy. It was found only E&E carried out between two to four different types of sourcing strategy. Using purposive judgemental sampling, out of a total of 578 of E&E foreign MNCs companies listed in MITI Investor's Directory 2004, 34 companies could not be reached owing to the change in telephone number. Five companies were found not to be operating the manufacturing plant, and out of the remaining companies only 118 companies carried out between three to four types of sourcing strategy. However, seven companies refused to participate in the survey. From the 111 companies that fulfilled the criteria for this study, 89 companies (80%) are using three types of sourcing, and the remaining 22 (20%) are using four types of sourcing strategy. Using census study, a total of 39 companies returned the survey forms but only 35 were found to be

useable. Rejected questionnaires were because of incomplete responses. Since one company has between three to four types of sourcing strategy, the total response came to 113. Data collected from the survey were then prepared for analysis that includes editing, coding, and data entry to transform the raw data into a form that would be appropriate for analysis. Descriptive analysis and chi-square were done to describe the characteristics of the study sample.

Findings and analysis

Respondents were required to identify one major product of the company and to identify the sourcing of the components of this product. As shown in table 1, from the 113 responded survey forms, 10.6% sourced their components from intra-domestic, 30.1% from intra-foreign, 30.1% from inter-domestic, and 29.1% from inter-foreign.

Table 1: Types of component sourcing

Types of component sourcing	Frequency	%
Internal Malaysia (intra-domestic)	12	10.6
Internal Foreign (intra-foreign)	34	30.1
External Malaysia (inter-domestic)	34	30.1
External Foreign (inter-foreign)	33	29.1
Total	133	100

From the total of 113 responded survey forms, the parent company of this components are from France (4), Japan (72), Singapore (4), Taiwan (6), United Kingdom (UK)(3), and United States of America (U.S)(24) (refer to table 2). For France and Singapore, each component is sourced in all the sourcing strategies. Japan's highest sourcing strategy is from external company in Malaysia (inter-domestic) followed by internal company from foreign country (intra-foreign), external company from foreign country (inter-foreign) and lastly from internal companies in Malaysia (intra-domestic). For Taiwanese firms, one component each is sourced from intra-domestic and inter-domestic while two components each are sourced from intra-foreign and inter-foreign respectively. Firms from U.K. do not have intra-domestic sourcing; rather they have one component each in intra-foreign, inter-domestic and inter-foreign sourcing

strategy. Finally for American firms they have three components sourced through intra-domestic, and seven components each using intra-foreign, inter-domestic, and inter-foreign sourcing strategies.

Table 2: Parent country and global sourcing strategy

Parent Country	Global Sourcing Strategy							
	Internal Malaysia (intra-domestic)		Internal Foreign (intra-foreign)		External Malaysia (inter-domestic)		External Foreign (inter-foreign)	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
France	1	8.3	1	2.9	1	2.9	1	3.0
Japan	6	50	22	64.7	23	67.6	21	63.6
Singapore	1	8.3	1	2.9	1	2.9	1	3.0
Taiwan	1	8.3	2	5.9	1	2.9	2	6.1
UK	0	0	1	2.9	1	2.9	1	3.0
U.S.	3	25	7	20.6	7	20.6	7	21.2
Total	12	100	34	100	34	100	33	100

Table 3 shows that the products produced in Malaysia are either at the growth or maturity stages, in which 26 components are at the growth stage while 87 components are at the maturity stage. The firms from France, Singapore and UK produced product that is at the maturity stage. For Japanese firm out of 6 components sourced from intra-domestic, 1 is at the growth stage and 5 at the maturity stage. For components sourced from intra-foreign, 4 components are at the growth stage and 18 at the maturity stage. For components sourced from inter-domestic, 4 are at the growth stage and 18 at the maturity stage. Finally for inter-foreign, 4 components are at the growth stage and 17 components are at the maturity stage. For the American firms, 1 out of 3 components sourced from intra-domestic are at the growth stage. For the 7 components sourced each from intra-foreign, inter-domestic and inter-foreign; 3 components from respective sourcing strategies are at the growth stage. Taiwanese firms have 1 component each at growth stage for each sourcing strategies except for inter-domestic.

Table 3: Product Life Cycle and Global Sourcing Strategy

Product Life Cycle	Global Sourcing Strategy							
	Intra-domestic		Intra-foreign		Inter-domestic		Inter-foreign	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Growth stage	3	25.0	8	23.5	7	20.6	8	24.2
	Japan (1)		Japan (4)		Japan (4)		Japan (4)	
	USA (1)		USA (3)		USA (3)		USA (3)	
	Taiwan (1)		Taiwan (1)				Taiwan (1)	
Maturity stage	9	75.0	26	76.5	27	79.4	25	75.8
	Japan (5)		Japan (18)		Japan (18)		Japan (17)	
	USA (2)		USA (4)		USA (4)		USA (4)	
	France (1)		Taiwan (1)		Taiwan (1)		Taiwan (1)	
	S'pore (1)		France (1)		France (1)		France (1)	
			S'pore (1)		S'pore (1)		S'pore (1)	
			UK (1)		UK (1)		UK (1)	
Total	12	100	34	100	34	100	33	100

Respondents were asked to rank which of the internal and external suppliers on the basis of first and second priority. Since the response for internal supplier would be the reflection of external supplier, table 4 provides the priority of firms for internal suppliers only. It was found that the French and Singaporean firms give first priority to internal suppliers, while firms from Taiwan and UK give first priority to external customers. Japanese firms give higher priority to internal suppliers than external as denoted by the higher percentage while U.S. firms give higher priority to external suppliers than internal suppliers.

Table 4: Parent country and priority between internal and external suppliers

Parent Country	Internal supplier			
	First priority		Second priority	
	Frequency	%	Frequency	%
France	4	7.7	-	-
Japan	41	78.8	31	50.8
Singapore	4	7.7	-	-
Taiwan	-	-	6	9.8
UK	-	-	3	4.9
USA	3	5.8	21	34.4
Total	52	100	61	100

Respondents were asked to rank their priority in sourcing suppliers from Malaysia. It turns out firms from France, Singapore and UK considered it as a second priority when it comes to selecting suppliers from Malaysia. This also includes Japanese as well as American firms by the higher frequency when comparing between the first and second priority column (refer to table 5). The Taiwanese firms however gave equal weightage indicating equal priority in sourcing suppliers from Malaysia or vice-versa.

Table 5: Parent country and suppliers from Malaysia

Parent Country	Suppliers from Malaysia			
	First priority		Second priority	
	Frequency	%	Frequency	%
France	-	-	4	4.8
Japan	20	27.8	52	72.2
Singapore	-	-	4	4.8
Taiwan	3	10	3	3.6
UK	-	-	3	3.6
USA	7	23.3	17	20.5
Total	30	100	83	100

When it comes to ranking priority of sourcing from foreign suppliers from parent country, developed country or less developed country; French, Japanese and American firms have the same pattern that is their first priority will be sourcing from home country, followed by developed country and less developed country. Singaporean and Taiwanese firms share the

same pattern that is the first priority is to source from foreign suppliers from developed country, followed by home country and then less developed country. Only UK has its own pattern, that is first priority to source from developed country followed by less developed country and finally home country.

Table 6: Supplier and parent country

Supplier	Parent country					
	France	Singapore	Japan*	Taiwan	UK	U.S.*
Foreign supplier from parent country	1	2	1	2	3	1
Foreign supplier from developed country	2	1	2	1	1	2
Foreign supplier from less developed country	3	3	3	3	2	3

*based on highest percentage

1= first priority, 2= second priority, 3= third priority

Implications

Malaysian economy to some extent is dependent upon the foreign direct investment (FDI). To ensure that there will be continuous inflow of FDI in Malaysia, the Malaysian government needs to understand the patterns of the foreign MNCs. One of the many patterns is the preference of sourcing strategy by foreign MNCs. This is important since it has a direct impact on the choice for local suppliers that indirectly correspond to the ability of our local supplier to meet the needs of the foreign MNCs. It was found that foreign MNCs give equal weightage to sourcing from intra-foreign (30.1%) and inter-domestic (30.1%). It would have been expected for a higher increase of dependency on local supplier rather than from subsidiaries in a foreign country since 77% of products produced in Malaysia are at the maturity stage which confirms Vernon (1966) statement that as firms find their technological secrets not to be critical the company are willing to invest abroad particularly in developing country; so why the dependency on components from subsidiaries in foreign country? Is it because of instructions by the parent company to source components from 'sister's company' in foreign country? In fact, even when firms source from external supplier it will still source from

independent suppliers from foreign country (29.1%). It was further found that majority of the firms give higher priority to foreign suppliers than local suppliers in sourcing the components with the exception of Japanese (20) and American firms (7). Why would the company willing to incur shipment or transportation cost for the components from subsidiary and independent suppliers from abroad? Could it be the local suppliers are not able to produce the components as needed by the firms? This study is not without its limitations. The study may only generalize for E&E industry as such the inability to discuss or generalize for other industries. The hesitant of the purchasing managers or executives to participate in the survey resulted in a low response. Nevertheless, this study has unveiled in detail the preference of foreign MNCs of suppliers in its global sourcing strategy.

These issues require further investigation into the competitive and comparative advantages of local suppliers and those from abroad. Issues such as technology, product quality, product-delivery, and product cost have to be addressed. It would also be pertinent to identify the level of knowledge that the local suppliers have in understanding and meeting the needs of the foreign MNCs. Areas such as logistics and transportation costs may need to be looked into in the face of globalisation and high speed of technology revolution in that it has created a borderless world of suppliers.

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