

Worldwide Sourcing Applications of Small and Large Electrical and Electronic Companies in Malaysia

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The increasingly competitive business environment has imposed considerable pressure on companies to find different ways to develop their competitive advantages. Applying worldwide sourcing may be one particular means for a company to gain competitive advantage. While worldwide sourcing activities are often associated with large companies, small and medium-sized enterprises (SMEs) may also greatly benefit from such activities. This paper reports the findings of a study conducted to investigate the differences between SMEs and large firms in the electrical and electronics industry in Malaysia with regard to their worldwide sourcing practices. Specifically, the study examines worldwide sourcing practices in terms of their perception on the benefits, challenges and critical success factors.

Field of Research: Management

1. Introduction

In an increasingly competitive business environment, acquiring competitive advantage is becoming more and more difficult but vital to the survival of any organization. For companies that manufacture and market their products or services all around the world, understanding the benefits and challenges of globalization is crucial. This is particularly critical to firms originating from or operating in developing countries. Global sourcing is one area where companies may be able to capture the benefits of globalization. Indeed, global sourcing has become a prerequisite in venturing to compete in a global market. In global sourcing, the ultimate objective is to exploit firm's own competitive advantages (e.g. R&D, manufacturing, and marketing skills) and the comparative location advantages (e.g. inexpensive labor costs, certain skills, mineral resources, government subsidy and tax advantages) of various countries in global competition (Kotabe, 1998).

However, while pursuing global sourcing strategy might give these firms an advantageous competitive position *vis-à-vis* their domestic-bound rivals, it is not certain whether these companies fully understand the extent of commitment and the resultant scope of operations required to implement the strategy. Furthermore, do these companies possess the resources and capabilities to coordinate and handle complex and sophisticated worldwide sourcing activities? These are particularly relevant questions to be addressed by firms originating and traditionally operating in developing

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economies, especially the small and medium-sized enterprises (SMEs). This paper seeks to examine the benefits of worldwide sourcing, the challenges to successful worldwide sourcing, and the critical success factors in worldwide sourcing, among Malaysian large and SMEs operating in the electrical and electronics industry.

2. Malaysian Electrical and Electronics Industry

In 2004, the Electrical and Electronics industry was Malaysia's leading industrial sector and the largest contributor to exports, output and employment, accounting for RM 241.5 billion in exports, which represent 64.1% of total exports of manufactured products. The importance of the industry is also reflected in its contribution to output and employment, providing RM 183.1 billion or 44.9% of total manufacturing output, and 369,488 jobs or 36.6% of total employment in the manufacturing sector (MIDA, 2005). Malaysia continues to be among the leading exporters of semiconductor, room air conditioners, telecommunication equipments, computers and computer peripherals (FMM, 2004). Major traditional export destinations were United States, Singapore and Japan, while China, Hong Kong and Taiwan have emerged as the new import markets for Malaysia's electronic products. As for imports, Electrical and Electronics accounted for RM 132.1 billion or 51.9% of Malaysia's total imports of manufactured goods in 2001 (FMM, 2004).

The Electrical and Electronics industry consists of large as well as small and medium-sized firms. Following the substantial contributions of the Electrical and Electronics industry to the Malaysian economy, the significance of SMEs should not be overlooked. As noted by Harvie (2004), SMEs are important to economic growth and job creation, and for developing economies like Malaysia, the contribution of SMEs to employment tends to be higher. For example, APCITY (2004) reports that SMEs provide slightly more than one-third of total employment in Malaysia and represent more than half of total companies registered with the Companies Commission.

SMEs in Malaysia form an integral part of the value chain in the overall production network, producing high value-added parts and components and developing themselves as downstream suppliers or service providers of the larger industries (LIs) and multinational corporations (MNCs) (APCITY, 2004). In order to focus on core activities, larger organizations competing in an increasingly global market tend to rely on SMEs to provide sub-contracting facilities. Therefore, it is imperative that SMEs meet the necessary quality standards as large organizations need assurance of high quality goods and services from SMEs (Sohail and Hoong, 2003). And according to Chapman et al. (2000) effective supply chain strategy can be used by smaller businesses to improve efficiency and quality.

3. Levels of Worldwide Sourcing Activities

International purchasing refers simply to a commercial transaction between a buyer and supplier located in different countries. Global sourcing, on the other hand, involves greater scope and complexity and often strategic in nature. The internationalization of sourcing process takes place as firms evolve or progress from domestic purchasing

only to global coordination and integration of common items, processes, designs, technologies, and suppliers across worldwide locations (Monczka and Trent, 1991). In this paper, the more generic term “worldwide sourcing” will be used to describe international purchasing and global sourcing.

As illustrated in Fig. 1 below, worldwide sourcing can be differentiated according to different levels of activities and commitments. At Level 1, firms purchase all their requirements from domestic sources. They may use foreign goods purchased from domestic suppliers or distributors, who are responsible for managing international sourcing. At Level II, firms begin to engage in basic international purchasing, driven by events such as supply disruption, rapidly changing currency exchange rates, a declining domestic supply base, or the sudden emergence of worldwide competitors.

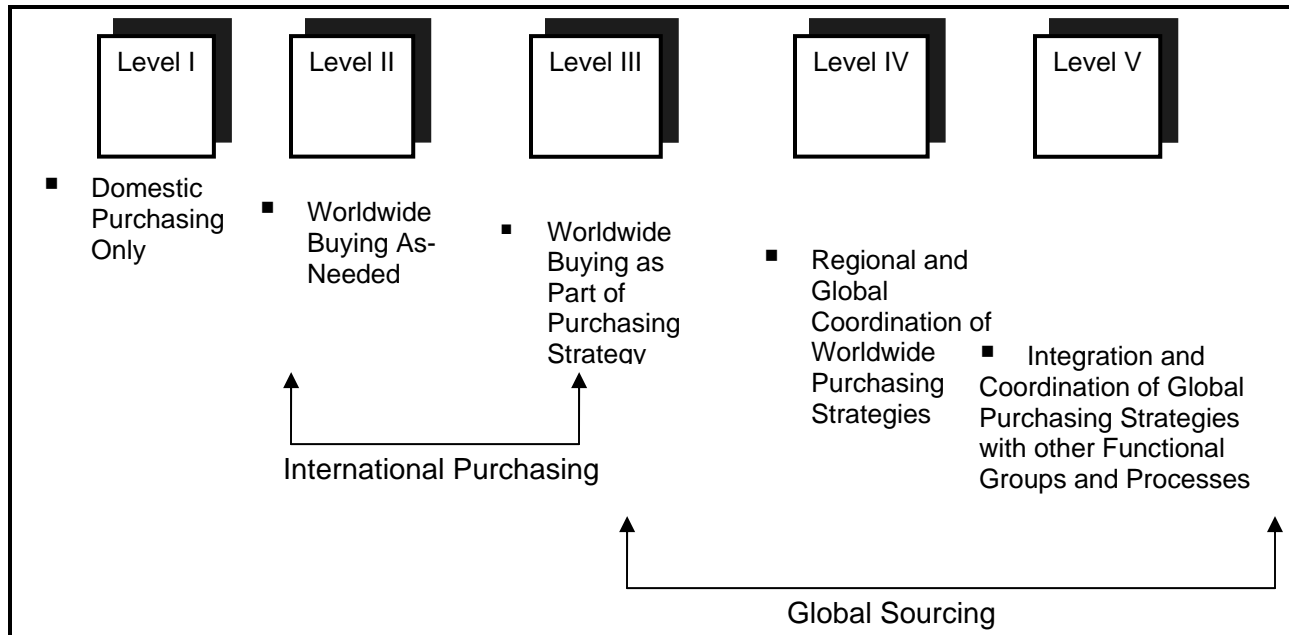
At Level III, firms take a worldwide perspective and execute international purchasing as a strategy to achieve major performance improvements. However, their procurement strategies are still not well coordinated across worldwide buying locations, operating centers, or, business unit, where each major buying center tends to operate independently of the others. Frequently, purchasing focuses on emerging markets for price reductions, and firms often designate certain buyers to manage international purchasing, solicit international help from worldwide subsidiaries, or rely on international purchasing offices to support purchasing activities. At Level IV, firms integrate and coordinate material and service requirements, usually through central coordination, across worldwide divisions or business unit locations. Here, firms may require worldwide information systems, personnel with advanced skills and knowledge, organizational structure that emphasizes control and coordination of global activities, and executive leadership committed to globally-integrated sourcing.

At the ultimate Level V, firms proactively integrate and coordinate common items, processes, designs, technologies, and suppliers across worldwide purchasing centers and with other functional groups. Structurally, Level V global sourcing strategy is linked horizontally with other functional groups such as engineering, operations, and (increasingly) marketing. The assignment for designing, building, and sourcing responsibilities are often invested in the most capable units around the world.

4. Literature Review

International sourcing emerged as an area of research in the late 1980s and early 1990s. The primary research focus during this period was on international purchasing and influenced by the trend towards international purchasing among many Western firms looking for ways to reverse their declining competitiveness (Monczka and Trent, 2003). Thus, the conventional wisdom to buy products from domestic or local suppliers as much as possible to maintain predictable deliveries and ensure quality control was challenged as firms became increasingly exposed to opportunities of global sourcing (McGowan, 1997).

Fig 1: Worldwide Sourcing Levels



Source: Monczka and Trent (2002).

The most widely recognized benefit of global sourcing has been lower costs (Fagan, 1991; Rajagopal and Bernard, 1993; Kohn, 1997), although there are other reasons such as to gain exposure to worldwide process and technology. However, Scully and Fawcett (1994) found that small firms perceived lower levels of attainable benefits from international sourcing compared to large corporations.

In implementing worldwide sourcing, the greatest challenge seems to be strategic in nature such as the use of Just-in-Time (JIT), the qualification of suppliers and the development of logistics support for longer supply lines (Birou and Fawcett, 1993). Other challenges include the need to determine whether cost savings realized from worldwide sourcing can be effectively captured by the organization, and whether the services of a third party freight forwarder are necessary to increase the efficiency of sourcing activities (Fraering and Prasad, 1999). However, Scully and Fawcett (1994) found that small firms, despite their limited resources, do not seem to find international sourcing to be more difficult than large firms.

Birou and Fawcett (1993) identified two important steps in implementing an international sourcing program: the need to develop a well-defined understanding of the firm's purchasing needs and objectives, and the need to go through the planning for implementation. Another area that requires attention is the establishment of close buyer-supplier relationship. However, according to Scully and Fawcett (1994), small firms tend to rate the acquisition of outside expertise and skills as the most important factor.

5. Research Methods

The primary data are obtained by administering a questionnaire devised from the instrument of measurement used by Birou and Fawcett (1993) and Scully and Fawcett (1994). The questionnaire is divided into four parts relating to (1) the extent of benefits attained from worldwide sourcing (8 items), (2) the extent of challenges to a successful worldwide sourcing (9 items), (3) the critical success factors of worldwide sourcing (12 items), and (4) information on the organizational profile.

The survey was conducted in Kuala Lumpur and Selangor; Kuala Lumpur (the capital city of Malaysia) and Selangor (an adjacent state). The area was selected because they constitute an area with the largest concentration of manufacturing companies in Malaysia. Out of 377 companies, identified from the Federation of Malaysian Manufacturers' FMM-MATRADE Industry Directory for Electrical and Electronics, only 288 questionnaires were sent out. Those excluded were either, had no purchasing activity at all, had limited international purchasing activities, changed address or were out of business. A total of 52 completed surveys were returned, for a response rate of 18%, which compares favorably to the response rate of other similar studies such as Birou and Fawcett (1993) and Scully and Fawcett (1994).

Based on the literature review discussed above, three hypotheses are formulated:

- H1: Large firms that engage in worldwide sourcing realize greater benefits compared to SMEs
- H2: Large firms that engage in worldwide sourcing face greater challenges compared to SMEs.
- H3: There are differences in the rating of factors critical to their sourcing efforts between SMEs large firms

6. Research Findings

Profile of Respondents

Majority of the companies in the survey are locally-owned and have been in business between 5 to 15 years, and they equally represent the larger and the smaller firms (26 each). With respect to purchases from outside Malaysia to total purchase, the percentages tend to be almost uniformly distributed although the larger firms (i.e. those having over 150 employees) report 61 to 81 percent of their total purchases were from outside Malaysia (see Table 1).

Benefits of Worldwide Sourcing

The first part of this study asks respondents about their perception of the benefits gained from worldwide sourcing, ranging from "extremely not beneficial" to "extremely beneficial" on a seven-point Likert-scale. Generally, both SMEs and large firms see only

slight benefits gained from worldwide sourcing as evidenced by their overall mean scores (see Table 2). For SMEs, access to higher quality goods is considered to confer the highest benefits followed by access to lower-priced goods and access to worldwide technology. On the other hand, the most important benefit for large firms lies in access to worldwide technology. In fact of all the factors, the two categories of firms differ significantly only in access to worldwide technology. Generally, the results support findings from earlier studies that identify access to higher quality goods, lower-priced goods and worldwide technology as the major benefits sought in worldwide sourcing.

Other factors do not figure prominently for both SMEs and large firms. Interestingly, the emphasis on these other factors were only identified in the more recent studies (see for comparison: Monczka and Giunipero (1985), Birou and Fawcett (1993), Rajagopal and Bernard (1993), Scully and Fawcett (1994), Monczka and Trent (2003), and Trent and Monczka (2003). The findings suggest that Malaysian firms tend to seek access to higher quality goods, lower-priced goods, and technology in their early stages of global sourcing.

Table 1: Profile of Organizational Respondents

<i>Organizational Profile</i>	<i>Variables</i>	<i>Frequency</i>	<i>(%)</i>
Years in Operation	Less than or equal to 5 years	2	3.8
	More than 5 years but less than or equal to 10 years	14	26.9
	More than 10 years but less than or equal to 15 years	20	38.5
	More than 15 years but less than or equal to 20 years	4	7.7
	More than 20 years	12	23.1
Total		52	100
Full-time employees	Up to 50 employees	18	34.6
	51 to 150 employees	8	15.4
	Over 150 employees	26	50
Total		52	100
Percent of total purchases from outside of Malaysia	Less than 5 percent	6	11.5
	5 to 10 percent	6	11.5
	11 to 20 percent	8	15.4
	21 to 40 percent	8	15.4
	41 to 60 percent	12	23.1
	61 to 80 percent	10	19.2
Total		52	100
Ownership Status	Multinational company (MNC)	2	3.8
	Locally Owned	38	73.1
	Joint Venture	2	3.8
	Foreign owned: Taiwanese	2	3.8
	Foreign owned: Korean	2	3.8
	Foreign owned: Japanese	2	3.8
	Foreign owned: Others	4	7.7
Total		52	100

Challenges to Successful Worldwide Sourcing

Table 3 gives the results of second part of the study, i.e. the perceived challenges to successful worldwide sourcing, graded along a seven-point Likert-scale ranging from “not a challenge” to “major challenge”. The low overall mean scores seem to suggest that generally respondents see these factors as posing only slight challenges to them. Individually, fluctuation in currency exchange rates is ranked highest by both SMEs and large firms. However, large firms see currency fluctuation as much more critical than their smaller counterparts. This can perhaps be explained in terms of deeper involvement and the larger amount of resources invested in worldwide sourcing activities. These findings support the view of Fagan (1991) who stresses that organizations must develop effective ways of handling exchange rate fluctuations to overcome the risk involved in worldwide sourcing.

Table 2: Benefits of Worldwide Sourcing

<i>Benefits</i>	<i>SMEs</i>	<i>Large firms</i>	<i>Difference</i>	<i>p-value</i>
Access to higher quality goods	5.8462	5.9231	-0.0769	ns
Access to lower priced goods	5.7692	5.9231	-0.1538	ns
Access to worldwide technology	5.3077	6.1538	-0.8462	0.05
Enhanced competitive position	5.2308	5.7692	-0.5385	ns
Increased number of suppliers	5.1538	5.0000	0.1538	ns
Better customer service	5.0769	4.4615	0.6154	ns
Helps meet counter-trade obligations	4.7692	4.6923	0.0769	ns
Better delivery service	4.7692	4.3846	0.3846	ns
Overall mean of perceived benefits	5.24038	5.28846	-0.04808	ns

Table 3: Challenges to Successful Worldwide Sourcing

<i>Challenges</i>	<i>SMEs</i>	<i>Large firms</i>	<i>Difference</i>	<i>p-value</i>
Fluctuations in currency exchange rates	5.0769	6.0000	-0.9231	0.05
Finding qualified foreign sources	5.0000	5.4615	-0.4615	ns
Just-In-Time sourcing requirements	4.9231	5.4615	-0.5385	ns
Logistics support for longer supply lines	4.7692	4.9231	-0.1538	ns
Lack of knowledge about duty/customs requirements	4.6923	4.8462	-0.1538	ns
Lack of knowledge about foreign business practices	4.6923	4.6154	0.0769	ns
Culture/language differences affecting communication	4.5385	4.4615	0.0769	ns
Nationalistic attitudes and behavior	4.0000	4.7692	-0.7692	ns
Understanding the political environment	4.0000	4.7692	-0.7692	ns
Overall mean of perceived	4.63254	5.03423	-0.40169	ns

 challenges

Critical Success Factors of Worldwide Sourcing

In the last part, respondents were asked to rate the critical success factors represented by twelve items using a seven-point scale (1 = strongly disagree; 7 = strongly agree). The results indicate that there are three areas of emphasis - developing communication skills, developing internal knowledge and skills of personnel on international purchasing, and establishing long-term relationships with suppliers (see Table 4). These are shared by both SMEs and large firms; in fact, for all the critical success factors, there is no significant difference reported in terms of their importance to both categories of firms. These results suggest that, regardless of their sizes, Malaysian companies are generally newcomers to worldwide sourcing that there is a great need for them to be able to communicate effectively. This requirement is certainly crucial in international dealings as is also the case with having qualified personnel with specific knowledge and skills. These findings find support in the work of Scully and Fawcett (1994) and Monczka and Trent (2003) that show international sourcing success requires development of certain knowledge and skills.

Table 4: Critical Success Factors of Worldwide Sourcing

<i>Critical success factors</i>	<i>SMEs</i>	<i>Large firms</i>	<i>Difference</i>	<i>p-value</i>
Developing communication skills	6.1538	6.1538	0.0000	ns
Developing internal knowledge and skills of personnel on international purchasing	6.1538	6.1538	0.0000	ns
Establishing long-term relationships with suppliers	6.0769	6.0000	0.0769	ns
Top management support	5.7692	5.0769	0.6923	ns
Foreign supplier certification/qualification	5.6923	5.8462	-0.1538	ns
Knowledge of foreign business practices	5.6923	5.6923	0.0000	ns
Understanding global opportunities	5.6154	6.2308	-0.6154	ns
Knowledge of exchange rates	5.5385	5.6923	-0.1538	ns
Planning for international purchasing requirements and implementation strategies	5.3077	5.7692	-0.4615	ns
Obtaining expert assistance	5.2308	4.9231	0.3077	ns
Use of third-party logistics services	4.7692	4.3846	0.3846	ns
Establishing foreign buying offices	4.3077	4.6154	-0.3077	ns
Overall mean of critical success factors	5.52569	5.54485	-0.01915	ns

7. Conclusion

In order to compete successfully in an increasingly globalized business environment, firms must pursue international sourcing strategy. In this study, both SMEs and large firms in Malaysian electrical and electronics industry, see worldwide sourcing mainly as

immediate means to secure access to higher quality and lower-priced goods and worldwide technology. Malaysian companies often operate mainly as suppliers of standardized parts and components to larger branded manufacturers and they do not often perform downstream activities such as customer service, and delivery and trading activities. The findings on perceived challenges further strengthen the notion that strategic issues is not as important yet compared to the more immediate concerns such as managing currency fluctuation. Issues relating to customers and foreign cultures and institutions also do not appear to be of particular importance, and again may be because these companies mainly perform upstream value chain activities. Findings on the perceived critical success factors further support the impression that their behavior has been much shaped by their position in the value chain. Future studies may have to specifically frame the issue of challenges and benefits of worldwide sourcing in the context of firm's position within the industry's value chain.

References

- APCITY. 2004. Economic Performance and Prospect, 2003/2004, The Treasury Department of Malaysia. Available from <http://unpan1.un.org/>. Accessed February 12th, 2005.
- Alexander, G. 2001. "Global Sourcing: Electronics buyers search the world". *Semiconductor International*, Vol. 24 No. 4, p. 192.
- Birou, L.M. and Fawcett, S.E. 1993. "International purchasing: benefits, requirements and challenges". *International Journal of Purchasing and Materials Management*, Vol.29 No.2, p. 27.
- Chapman, S., Ettkin, L. and Helms, M.M. 2000. "Do small businesses need supply chain management?" *IIE Solutions*, Vol. 32 No.8, pp. 31-36.
- Fagan, M.L. 1991. "A Guide to Global Sourcing." *Journal of Business Strategy*, March/April, pp. 21-25.
- FMM. 2004. FMM – MATRADE Industry Directory: Electrical and Electronics, Federation of Malaysian Manufacturers.
- Fraering, M. and Prasad, S. 1999. "International sourcing and logistics: an integrated model", *Logistics Information Management*, Vol. 12 No. 6, pp. 451-459.
- Harvie, C. 2004. "East Asian SME Capacity Building, Competitiveness and Market Opportunities in a Global Economy." University of Wollongong, Economics Working Paper Series. August. Available from <http://www.uow.edu.au/>; Accessed February 12th, 2005.
- Kohn, F.L. 1993. "Global sourcing: Broadening Your Supply Horizons." *Business Forum*, Winter/Spring, pp. 17-20.

- Kotabe, M. 1998. "Efficiency vs. effectiveness orientation of global sourcing strategy: A comparison of U.S. and Japanese multinational companies." *Academy of Management Executive*, Vol. 12 No. 4, pp. 107-119.
- MIDA. 2005. Performance of the Manufacturing and Related Services Sector in 2004. Malaysian Industrial Development Authority. Available from [http://www.mida.gov.my/beta/pdf/press report2005](http://www.mida.gov.my/beta/pdf/press%20report2005); Accessed May 24th, 2005. .
- McGowan, K. 1997. "The rise of global sourcing and logistics implications for shippers". *Transportation & Distribution*, Vol. 38 No.10, p. 83.
- Monczka, R.M. and Giunipero, L.C. 1985. "International Purchasing: Characteristics and Implementation". *The International Executive*, Vol. 27 No. 1, p. 11.
- Monczka, R.M. and Trent, R.J. 2003. "Understanding integrated global sourcing". *International Journal of Physical Distribution & Logistics Management*, Vol. 33 No. 7, pp. 607-629.
- Monczka, R.M. and Trent, R.J. 2002. "Pursuing competitive advantage through integrated global sourcing." *Academy of Management Executive*, Vol. 16 Issue 2, pp. 66-80.
- Monczka, R.M. and Trent, R.J. 1991. "Global Sourcing – A Development Approach". *International Journal of Purchasing and Materials Management*, Vol. 27 No. 2, pp. 2-8.
- Rajagopal, S. and Bernard, K.N. 1993. "Globalization of the procurement process." *Marketing Intelligence and Planning*, Vol. 11 No.7, pp.44-56.
- Scully, J.I. and Fawcett, S.E. 1994. "International procurement strategies: challenges and opportunities for the small firm". *Production and Inventory Management Journal*, Vol. 35, No. 2, pp. 39-46.
- Sohail, M.S. and Hoong, T.B. 2003. "TQM practices and organizational performances of SMEs in Malaysia: Some empirical observations." *Benchmarking*, Vol. 10 No. 1, pp. 37-53.
- Trent, R.J. and Monczka, R.M. 2003. "International purchasing and global sourcing – what are the differences?" *Journal of Supply Chain Management*, Vol. 39 No. 4, pp. 26-37.