

SUPPLY CHAIN PARTNERING PRACTICES AMONG MANUFACTURING FIRMS IN MALAYSIA: A CONCEPTUAL APPROACH

MURUGA CHINNIAH

Mara University of Technology – Johor Campus, Faculty of Business Management
KM 12 Jalan Muar, 85009 Segamat Johor, Malaysia
murug480@johor.uitm.edu.my

PREMKUMAR RAJAGOPAL

AIMST University, Semeling Kedah, Malaysia

VEERA PANDIYAN KALIANI SUNDRAM

Mara University of Technology – Johor Campus, Faculty of Business Management
KM 12 Jalan Muar, 85009 Segamat Johor, Malaysia

MUHAMMAD AWAIS BHATTI

College of Business, University Utara Malaysia
Sintok-Kedah, Malaysia
Email: awais@uum.edu.my

ABSTRACT

Purpose: This paper aims to identify and discuss a robust conceptual framework on Supply Chain partnering and the various factors that enable its partnering efforts.

Design/Methodology/Approach: Analyzing several research frameworks from various sources of literature in order to obtain the measurement instrument for major independent variable that supports the Supply Chain Partnering efforts.

Findings: Analyzing information from literature search, have identified three major independent variable that supports the Supply Chain Partnering efforts; 1) Organizational Linkage, 2) Information Flow and 3) Resource sharing. Key success moderating variables are 1) Company's line of business by Value Chain activity, 2) Industry experience, 3) Range of Products and World Best Practice

Research Limitations / Application: Supply chain partnering is found to be an important ingredient to ensure close collaboration between supply chain members. Nevertheless, there are limited studies in this area. As such, identifying literature pertaining to supply chain partnering and its enabler is of challenge.

Practical Implication: It is important for supply chain managers and practitioners to place specific attention in developing Supply Chain partnership in an attempt to gain, cost saving, efficiency and competitive advantage, especially among firms in the Electrical and Electronic industries.

Originality/ Value: In addition this framework brings out the fact that Supply Chain Partnering can be effectively applied in the areas of Demand Forecasting & Planning, Procurement, Outsourcing and Inventory Management, which are directly link to maximizing profits.

Keywords: Conceptual Framework - Supply Chain Partnering – Malaysian Electrical and Electronics Industries

Paper Type: Conceptual Paper

INTRODUCTION

The phrase “Supply Chain management “ have originated in the early 1980s- Oliver and Webber (1982) discussed the potential benefits of integrating the internal business functions of purchasing, manufacturing, sales and distribution. Success in supply chain is no longer measured by a single transaction; it is the ability to be competitive within an industry.

Realizing that exports from the electrical and electronic companies formed a bulk of the country's exports, The Federation of Malaysian Manufacturers (FMM), is now spearheading the effort to prepare local industries to compete globally by automating their supply chain management processes (Alex Yong , 2002). On the Government's part, it has already allocated a grant of RM5 million to relize the TIGeR project goals by enabling manufacturers that are involved in the local Electrical and Electronic (E&E) sector to implement RosettaNet, an Internet-based common messaging standard for global supply chain management. This paper aims to present the conceptual framework for supply chain partnering based upon the secondary data analysis and gauge further respond on the towards this research.

RESEARCH OBJECTIVES

This study is motivated by the need to understand the nature of supply chain partnering among the Electrical and Electronic industries in Malaysia. This paper aims to look at the following questions:

- i. To what extent is supply chain partnering being implemented in Malaysian environment?What is supply chain partnering in practice?
- iii. To provide an interesting framework on partnering towards Effective supply chain performance.

Specific research objective:

- Is the organizational linkage related to the effective supply chain performance?

- Is the information flow related to the supply chain Partnering efforts?
- Are the resource sharing related to the supply chain Partnering?
- Are the organizational linkage, information flow and resource sharing mediated by strategic planning which relates to the supply chain partnering ?

SIGNIFICANCE OF STUDY

The study will help us to understand and develop a sharable representation of Supply Chain Partnering knowledge on Malaysian perspective. Next it intends to add to the growing body of knowledge surrounding Supply Chain management in Electronic and Electrical Industry. Recently, research on supply chain management has focused on a debate regarding the need for closer relationship between customer, supplier and other relevant parties in search for competitive advantage. There is evidence of benefits accruing to proponents of closer relationships sometimes called supply partnerships (Lamming et al., 2000).

LITERATURE REVIEW

Basically the term Supply Chain management is referred to the;

- The internal Supply Chain that integrates all the business functions involved in the flow of materials and information from the receiving point of raw material till the shipment of finish goods.
- The external features of the supply Chain that implies to the management of the stakeholders who are in the chain of business including suppliers, a supplier's suppliers, a customer and a customer's customer.

The first definition – The internal supply Chain is adopted by Oliver and Webber (1982). It relates closely to the pre-existing concepts of materials management and the value Chain (Porter, 1985). While the second definition refers to the interconnected business that involved in the ultimate provision of product and services packages required by end customers.

MALAYSIAN ELECTRICAL AND ELECTRONIC INDUSTRY

In 2001, electrical and electronic (E&E) accounted for 56.6 per cent of Malaysia's total exports and 68.6 per cent of the exports of manufactured products. Reflecting the global slowdown:

- Production index of E&E decreased by 16.5 per cent, with electronics components recording the biggest decline of 20.1 per cent. Nevertheless, the index for electrical products increased by 17.3 per cent.
- Major markets for E&E exports recorded decreases - the USA, by 13.4 per cent, Singapore (23.6 per cent) and Japan (10.6 per cent). On a positive note, exports to the People's Republic of China increased by 55.5 per cent to RM7.1 billion from RM4.6 billion in 2000.
- To enhance the position of Malaysia as a supply hub for many of E&E components, RosettaNet, an internet-based common messaging system for global supply chain management, has been adopted. Financial assistance of RM5 million has been allocated for companies wishing to participate in the RosettaNet programme, this Internet-based supply chain standard launched in January 2002, has taken off to a good start with 29 companies and government agencies signing up as members within four months.

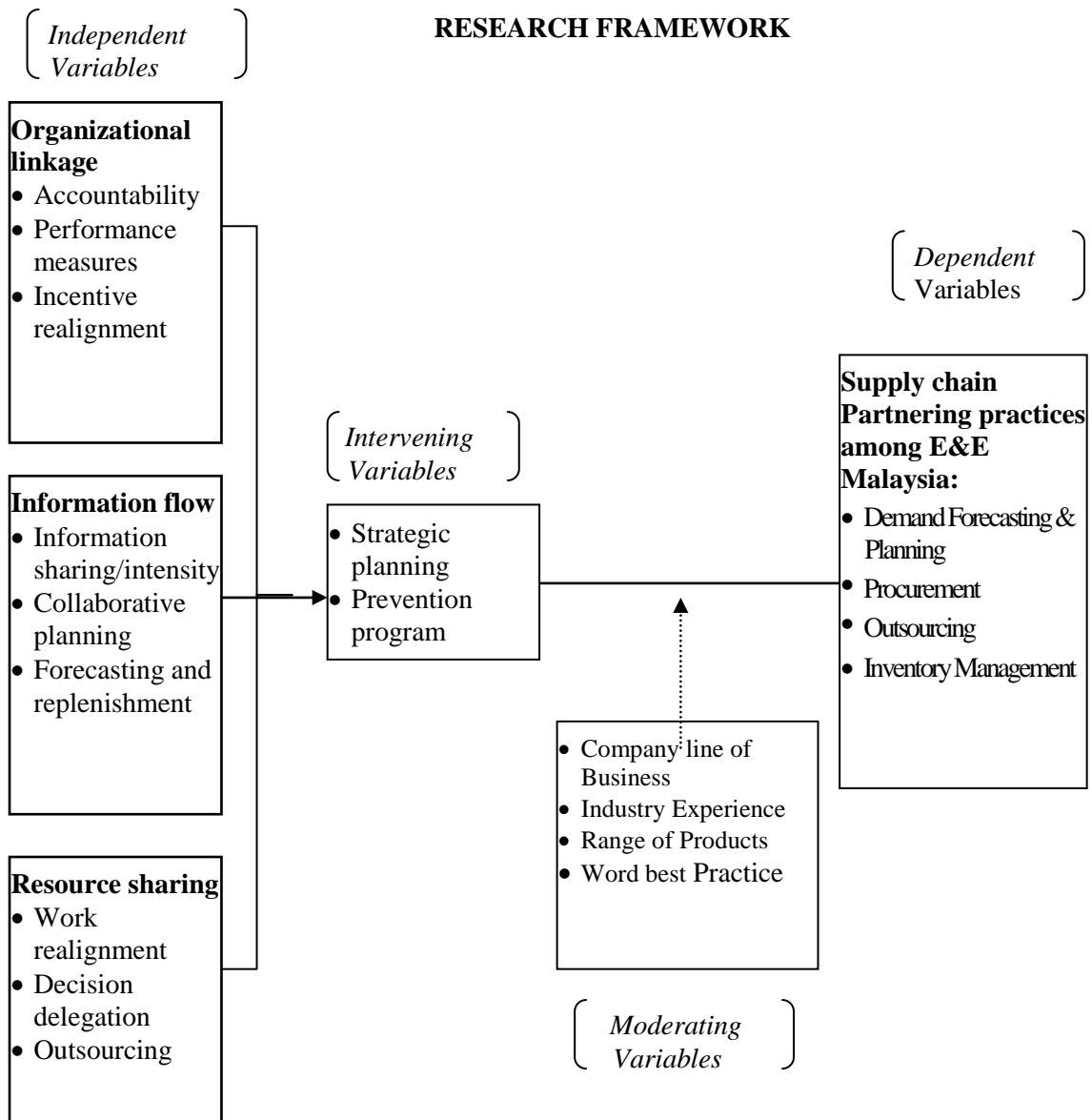
SUPPLY CHAIN PARTNERING

The terms "partnership" and "partnership sourcing" have been used to refer to these closer, longer-term relationships with suppliers, Macbeth and Ferguson, 1994; Hines 1994 (as cited

in Christine et al., 1999). HP had the flexibility to maximize the inventory availability without the risk of excess inventory through partnering (Gianpaolo Callioni and Corey Billington, Oct 2001). Dalal (2002) stated that Manufacturers and distributors are more likely to invest in PRM (partner relationship management). solutions rather than generic CRM Under partnering, all parties agree from the beginning in a formal structure, to focus on creative cooperation and work to avoid adversarial confrontation. Partnering provides participants with a win-win orientation toward problem resolution and fosters synergistic teamwork.

Britain's Pilkington Group uses partnership to secure strong supply relationship in Japan. Pilkington provides glass for two-thirds of all Japanese-made glass. To ensure its ties to firms that cut, edge, harden, and polish the glass, Pilkington gives them needed technical and other help (Lewis, 1990).

The firm is willing to work on a cooperative basis with customs to ensure that it provides them with all the information they require to perform their duties, whenever, wherever, and however they need it is partnering (Handfield & Nichols, 1999). Besides that getting operations of all functions incorporating employee, manager, customer and supplier input into all work-related decisions is another form of partnering. There is much confusion over what partnering means, as well as some cynicism. My definition of it is: 'The process whereby firms internally and externally agree to work together in a more co-operative fashion.' In another word it is the organizations efforts to work closely among the upstream and downstream entities to achieve operations excellence with the least cost.



THE THEORIES RELATED TO THE FRAMEWORK

This research uses Deutsch's (1980,1973) theory of **Cooperation and Competition** and Michael Porter's (1985) **Value Chain** theory to understand the nature of the relationships between supplier, manufacturer and customer that supports effective supply chain partnering.

Deutsch suggested that the way in which people believe their goals are related is an important variable affecting the dynamics and outcomes of their interaction (as cited in Alfred Wong, 2001). He identified three alternatives of people's interpretation of their goal interdependence: cooperation, competition and independence. Perceptions of goal interdependence affect interaction outcomes significantly because these perceptions affect their expectations and actions. When partner believe that their goals are cooperative, it means that their goals are positively related so that, as one partner moves toward goal attainment, others move towards reaching their goals as well.

The theory of cooperation and competition may be able to analyze the relationship that promotes effective supply chain partnering in electrical & Electronic industry in Malaysia. This study also tests the theory of cooperation and competition in Malaysian setting.

Harvard professor Michael Porter is widely credited with popularizing the term "value chain" in his 1985 book, *Competitive Advantage*: Value chain analysis is based on the simple idea that every activity (primary and secondary) performed within an organization adds some value to the final good or service produced by that particular organization. The final output is simply the aggregate of values contributed by organizational activities and resources within it.

These two sets of variables (primary and secondary) support each other in creating a chain of value through the organization. For the interest of this research, organizational linkage,

information flow and resource sharing between the primary and secondary activities will be focused.

RESEARCH VARIABLES IN STUDY

Organizational linkage, information flow, resource sharing are the component of Supply Chain Partnering. This component may clearly be implemented in different contexts for different purpose, it appears that they are highly interrelated. This provides the theoretical rationale for examining the degree of involvement of electrical and electronic industries of Malaysia in supply chain partnering.

Dependent variables

Dr. Ernst offers an in-depth look at four key supply chain elements, examining their role in effective supply chain practices, their direct link to maximizing profits and how to avoid common pitfalls.

1. Successful demand forecasting is able to seamlessly connect, though effective analysis, the external inputs of market and consumer demand to the internal supply chain process, allowing a shift in supply chain planning from "make-to-forecast" closer to a real-time "make-to-order", Build-to-order and Fuse-to-order. A product with a stable demand and reliable source of supply should not be managed in the same way as one with a highly unpredictable demand and an unreliable source of supply (Hau L.Lee, 2002).
1. Procurement- By tradition ,the user department defined a need and a variety of paper-related, clerical activities were executed and processed through the purchasing cycle (Steven, 2001). A successfully streamlined procurement process effectively leverages

relationships with suppliers while at the same time minimizing the drain on internal resources.

2. Outsourcing allows a company to free up resources and focus on core competencies, lowering cost and increasing profitability. The conclusion from a survey on E-Logistics at Japan was that “52% of companies out of 153 companies answered they would like to outsource logistics and 41% said outsourcing is an interesting option” (Tadakai, 2001) A successful outsourcing strategy requires a strong understanding and partnership of the company's operational integration.
3. Inventory Management- Financial constraints as well as space considerations often ensure that balancing inventory and service level is a difficult task. Successful inventory management through supplier partnership maintains a balance between inventory carrying costs and product availability. In recent years, several approaches have had a major impact on inventory management: Material Requirements Planning (MRP) Just-In-Time (JIT) and vendor managed Inventory (VMI)

Independent variable

Analyzing data from secondary literature search, have listed the key independent variables, which has major influence on the effective supply chain partnering.

1. Organizational Linkage- Terms such as downsizing, flattening, networking, clustering, right-sizing, delivering, reengineering, and nonhierarchical are abundant in the popular managerial press (Donald & David, 1996). Internally organization has to frame their workforce towards partnership/collectiveness in accountability and performance measures.

2. Information flow- Most companies face similar global market and competitive pressure- ever-shortening product life cycles, a need to lower cost. Hau Lee (2002) stated that information should be interoperability, which says that one system talks to the other. Traditional method of having information in silo concept no longer seems to work. But the emergence of the Internet and e-commerce provide a new opportunity to create a “Smart” integrated supply chain. Information links between internal primary data repositories and business applications and those of partners allows faster and better demand forecasting and planning.
3. Resource sharing- Traditionally managers were concerned with his or her individual function of operation management, order processing, inventory control, traffic management and the like. Each of this function is being in bureaucratic silo. As supply chain partnering developed, managers do not think in terms of a separate silo for each function. Instead suppliers and customer will have to embrace partnership as an agile and long continuous relationship.

Intervening variables

Van Mieghem’s 1995 analysis of many customer-supplier relationships, identified Strategic Planning and Prevention program as characteristics to define a sound relationship among partners (as cited in Norausky, 2000).

1. Strategic Planning – Customer and supplier in partnering will jointly conduct planning sessions to address cost saving efforts and innovative initiative in engineering, manufacturing, and quality contribution that will benefit both parties. Supply chain partnering should be aligned from the top level corporate strategy to the frontline tactical operation (Bob Carbo, 2002). William, 2000 states, “ The organization manages the

suppliers to terms and conditions of its contracts, deploys supplier quality programs, and manages supplier scorecards that measure supplier performance”.

2. Prevention program - Norausky (2000) states, “ Supplier uses preventive methods and techniques to operate systems and processes to avoid quality, performance, delivery, and cost problems”. Also the customer uses a specification process compatible with the supplier’s systems and processes for cost effective production.

Moderating variables

1. Company’s line of business- The line of business by value chain activity in electrical & electronic industry would be OEM Manufacturing, Subcontracted manufacturing, Outsourced manufacturing and Logistics. The various line of business has its own degree of partnering efforts in the supply chain pipeline.
2. Industry experience -To work in partnership with suppliers and customers in achieving mutual business goals extensive industry experience is needed. Industry experience will act as a valuable sounding board for Supply Chain Partnering efforts.
3. Products- The greater the number of product the greater supply chain strategic mix a company must create. As companies grow and expand their products, supply chain partnering needs to reconfigure with the proliferation of the products.
4. World Best Practice- “Best practices” are documented strategies and tactics employed by highly admired organizations. Identifying, analyzing, adapting, and sharing best practices allows organizations to do more than simply improve a particular business process. It promotes the emergence and evolution towards the next level of excellence in the enterprise.

RESEARCH HYPOTHESES

Several hypotheses have been developed and will examine them individually as to their effect on Supply Chain partnering in Electrical and electronic industries in Malaysia. The main ones are as below:

Hypotheses 1:

In general, even organization, which had not announced Supply chain practices, will still have partnering efforts in it.

Hypotheses 2:

Organizational linkage, information flow and resource sharing are mediated by strategic planning efforts.

Hypotheses 3:

Organizational linkage, information flow and resource sharing are mediated by prevention program efforts.

Hypotheses 4:

As a result of strategic planning there will be a significant impact to supply chain partnering in Electrical and electronic industries in Malaysia.

Hypotheses 5:

As a result of prevention program there will be a significant impact to supply chain partnering in Electrical and electronic industries in Malaysia.

DATA AND METHODOLOGY

In conjunction with the extensive literature review, a multi-method empirical approach involving both surveys and case study interviews will be used to gain the insight of supply chain partnering in electrical and electronic industries. This triangulation approach – literature review, survey and case studies will provide a broad-based knowledge on supply chain practices in the electrical and electronic industries in Malaysia.

Mail Survey

For the purpose of survey, a mail survey methodology to the purchasing managers in the selected organization will be conducted. This method will include three mailings of a cover letter, an instruction sheet, and the survey instrument. As far as the quality of answer concerned; mail questionnaire are likely to be the best in this regard while face-to-face interviews encounter more problems than either mail or telephone methods (D. A. de Vaus, 1996).

Case study

The case study method generally emphasizes qualitative analysis of a small number of cases. It allows an investigation to retain the holistic and meaningful characteristics of real-life events. Case studies are even found in economics, in which the structure of a given industry, or the economy of a city or a region, may be investigated by using a case study design (Robert K. Yin, 1994). The case study method was also chosen for this research because a well-defined, agreed-upon definition of supply chain partnering on Malaysian context does not exist to date.

In the context of this research, various types of data and information will be collected, including general data about the industry and specific information about the companies that agreed to participate.

The study sample

The sample used in this research will not obey the principle of statistical sampling, but the principle of maximum variation sampling, as defined by Patton (1990) and those of theoretical sampling, as defined by Strauss and Corbin (1990). As an effective case study methodology, a sample of 4 companies will be selected from the mail survey response.

Mail survey respondents:

The sample will incorporate 200 companies: these includes Multinational corporations' (MNCs) and Medium-scale enterprises in the electrical and electronic industries in Malaysia. For statistical purposes, the Department of Trade and Industry of European Commission definition will be used for the classification of companies, which are as below:

- Medium firm: 50 - 249 employees
- Large firm: over 250 employees

CONCLUSION

An important aspect of this research will be to monitor the degree and extend to which organization exercise partnering among supplier and customer. If the conclusive variable relationships are validated by the results of the proposed study, we may help to understand and develop a sharable representation of Supply Chain partnering on Malaysian perspective. It will further add to the growing body of knowledge surrounding Supply Chain management in Electronic and Electrical Industry.

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