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DELAYED DIFFERENTIATION PRACTICES ON SUPPLY CHAIN MANAGEMENT- A THEORETICAL REVIEW

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Abstract

The literature investigates the importance of delayed differentiation on supply chain management. Its application was found in the 1920's (Yang and Burn, 2003). The literature traced the symptom of study by referring to the seminal work of Alderson (1950). Alderson argued that overall costs could be reduced by postponing a differentiating stage of production. The classical work was then extended by viewing it as an opportunity to shift the risk of owning goods from one position in a supply chain to another. Later researcher as depicted in the theory matrix perceived delayed or postponement differentiation as labeling, packaging, assembly, manufacturing and time. This perception of postponement continues in part to this day. The theory matrix also depicted the evolution of research from single activities to clustering of activities. The reconceptualization of delayed differentiation identified gaps in existing literature. Van Hoek (2001) issued five challenges for future delayed differentiation that will capture its dynamics and improve the methodological robustness of the concept. Hence after Van Hoeks more robust analysis such as Structured Equation Modeling was used to measure relationship between variables and construct. Such analysis will bring the dynamics of the research. Newer suggestion to accommodate changes of research question such as qualitative approach to be used to answer some of the research question was also identified leading to theory building as oppose to the more traditional approach of theory testing. Thus, multiple of data collection that encompasses within case study, ethnography may find way in supply chain management research. The conceptual framework suggested sustainability of business performance is pertinent as literatures pointed out the move towards strategy as part of configuring the supply chain activities with the industry structure.

Keywords : Supply Chain, Delayed Differentiation

1. Introduction

A review of supply chain (SC) literature reveals that SC management is increasingly seen as critical component of a firm strategic plan. For example Supply Chain Management (SCM) as define by Cooper, Lambert and Pagh (1998) as the integration of key business processes from end users through suppliers that provides products, services and information that adds value for customers and stakeholders. The table below depicts the evolution of postponement in supply chain from Alderson's until the present day.

<u>Author</u>	<u>Focus Area</u>	<u>Description of study</u>
Alderson (1950)	marketing channel	Original introduction on the concept of postponement
Bucklin (1965)	distribution channel	Further extension of postponement concept to speculation
Shapiro (1984)	logistic pipeline	Integration of speculation postponement to different breath of production lines
Christopher (1992)	supply chain	Role of the postponement on

		the configuration of the global supply chain
Pagh and Cooper (1998)	supply chain	Different supply chain strategies base on different combination speculation and manufacturing postponement
Naylor et al (1999)	leagile supply chain	Use of postponement to move the decoupling point to the end user and increase the efficiency and effectiveness of supply chain
Ernst and Kamrad (2000)	Supply Chain	Conceptual framework to evaluate different supply chain structures on the different modularization and postponement
Van Hoek's (2001)	Supply Chain	Reconceptualisation of postponement into 5 different typologies
Bowersox, Closs, Cooper (2002)	Supply Chain	Form postponement renamed manufacturing postponement
Yang and Burns (2003)	Supply Chain	Study the relationship between postponement and different types of uncertainty
Wikner J and Rudberg, M (2005)	Supply Chain	Positioning CODP (customer order decoupling point) with strategies and buffer sizing
Garcia Dastugue SJ and Lambert DM (2007)	Supply Chain	Introduces time based postponement relates to logistic postponement
Arawati Agus and Za'faran Hassan (2008)	Supply Chain	Strategic supplier partnership practice and implementation have significant associations with product performance and quality performance
Sweet KM and Yong Taek Lee (2009)	Supply Chain	Using RBV extended SC strategy typologies taxonomy into 6 capabilities

We extended the summary on the evolution of postponement strategy by analyzing the work left by Van Hoeks. Van Hoeks (2001) identified gaps in the existing literature and issued five challenges for future researchers

- a. postponement as supply chain concept
- b. integrating related supply chain concepts
- c. postponement in the globalizing supply chain
- d. postponement in the customized supply chain
- e. methodological upgrading of postponement

Hence since Van Hoek's the reconceptualization was to improve methodological robustness of the concept. However, cost containment takes center place and is reflective in the desire to control inventory and logistic cost. Bowersox, Closs and Cooper (2002) renamed form postponement as manufacturing postponement. The increased interest postponement is most likely a combination of many factors including response to growth in competition, more sophisticated consumers, growing product varieties and shortening product life cycle (Bowersox, 1999). Gastugue and Lambert reiterated Zinn and Bowersox ,1988 time postponement. This is done by changing the sequence of activities by changing the design of the products, manufacturing processes or supply chain network. Thus research was more concerned on the design, processes and supply chain network. This was the perception since Van Hoek's five challenges. However postponement has evolved from a strategy of product differentiation to a concept capable of reconfiguring the whole supply chain (Yang and Burns, 2003). The concept of postponement now extends from product design to beyond the point at which then end user obtain the product. Later study indicated that relationship, partnership form a thematic concept in studying

supply chain management. Ariwati Agus and Za'faran Hassan (2008) concluded that the exogenous (strategic supplier partnership in SCM) and endogenous (performance) has led to the development of causal hypothesis that improvement in internal processes will leads to improvement in external performances (supplier performance). Sweet and Yong (2009) further extended the scope of postponement by developing strategic capability taxonomy into six capabilities. Again, the research analyses relationship between different strategic groups and performances.

2. Literature review

According to Van Hoek (2001) postponement can be defined as an “organizational concept hereby some of the activities in the supply chain are not performed until customer orders are received”. A broader definition of postponement definition of postponement is given by Yang et al (2004) who see postponement as the tactic to delay activities until the last possible point in time. Postponement is an idea that be traced down to Alderson (1950) as a “process of bringing closer to the customer and demand matched.” One straight forward example of postponement is a point of sale paint color mixing. Instead of stock piling a large range of different colors, a store can stock tint base and pigments made at a factory and mix them accordingly to customer demand in the shop while customer is waiting for it. The benefit is a large variety of possible colors out of which the customers can choose, while inventory levels are low. However the shop has to invest in a paint mixing equipment and to train the personal to mix colors in the shop. Bucklin (1965) extended the postponement principle by extending it to the principle of speculation. Speculation permits goods to be ordered in large quantities rather than small frequent orders. This reduces the costs of sorting and transportation. Speculation limits the loss of consumer goods due to stock outs. Finally it permits the reduction of uncertainty in a variety of ways.. The postponement and speculation principle from Bucklin (1965) was translated into current literatures approaches. Harrison and Skipwort (2008) identify form postponement as pertinent to manufacturing supply chain, Others Yang, Yang and Wijngaard 2007 classifies postponement into

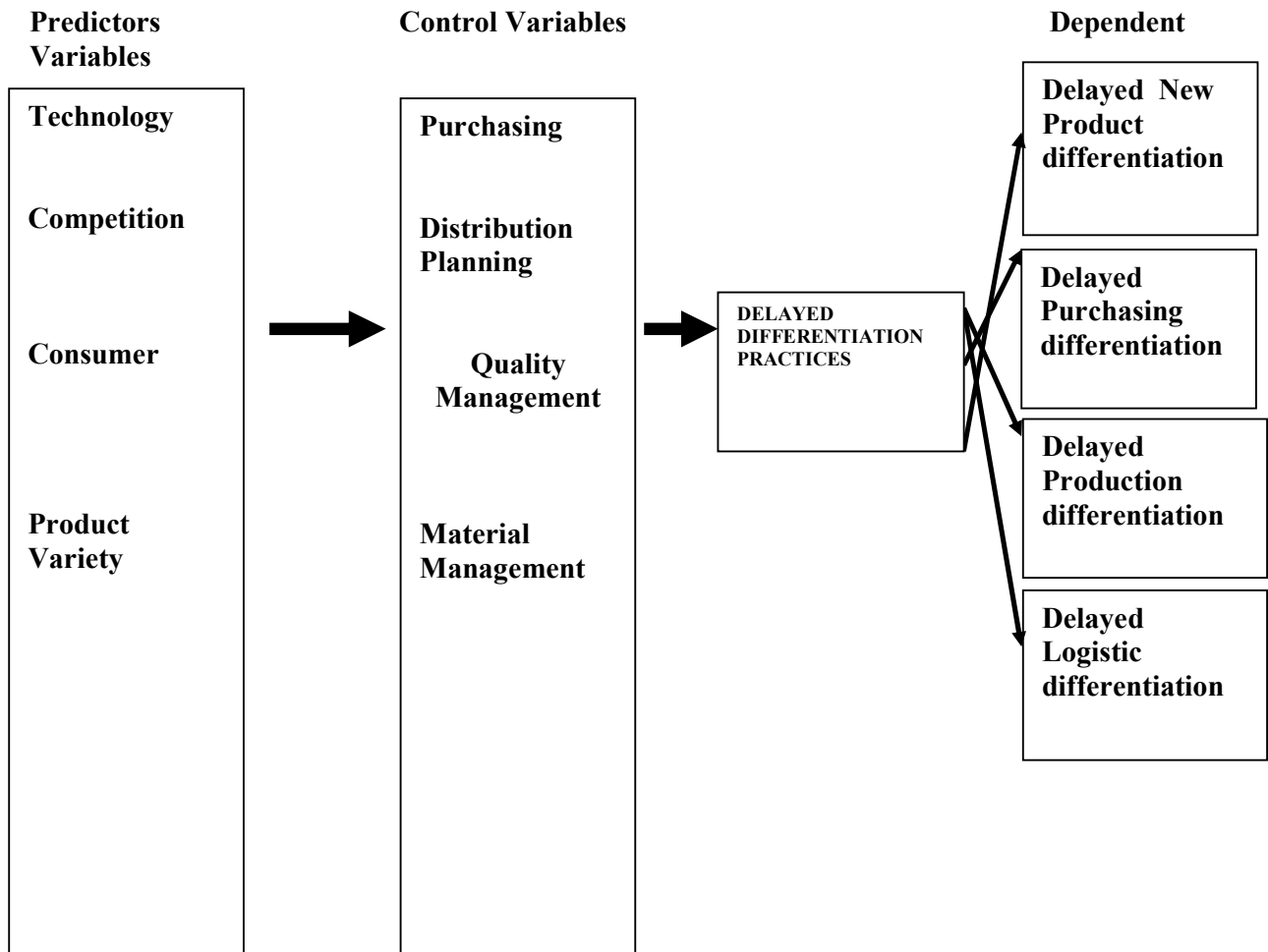
- i. Product development postponement
- ii. Purchasing postponement
- iii. Production postponement
- iv. Logistic postponement

The subsequent literatures demonstrate the application of different industries such as retailing which focus more on logistic postponement (Ganesan, George, Palmatier and Weitz (2009b). Manufacturing focuses more on production and logistic (LeBlance, Hill, Harder and Greenwell, 2009). Baier, Hartmann and Moser (2008a) studied purchasing postponement. The concept of new product development postponement was studied in Da silviera et al, 2001.

Wisner and Tan (2000) defined SCM as integration of different key functions consisting of purchasing, demand management, distribution planning, quality management, manufacturing planning and materials management throughout the entire supply chain for the purpose of moving material components, products and services until final delivery to the end user. The definition of SCM may include purchasing chain management (Baier, Hathmann and Moser, 2008b). Arawati Agus and Za'faran Hassan (2008a) suggested that the definitions of SCM are too limited in scope because they imply that supply chain focuses on manufacturing or logistic processes. This again may imply that different industry have different business processes hence changes in SCM definitions. For the purpose of this research paper, SCM definition will take on a broader scope cutting across industries as we do not wish to limit the definition too narrowly, thus limiting the definition to a certain industry. SCM can be defined as key business processes that brings end users through suppliers that add value to customers and stakeholders.

Realising the importance of both inter and intra organizational collaboration impact supply chain performance adoption of strategic partnership (Arawati Agus and Za'faran Hassan, 2008b) and integration process (Wisner and Tan, 2000b), organizations need to develop their own core competencies and design superior supply chains by strengthening partnerships with suppliers, retailers (Ganesan, Geoge, Palmatier and Wietz 2009), distributors and customers (Kothler and Keller, 2005). The notion of alignment-performance link has been recognized in operation literature. Despite agreement on this matter, research and practice lacks knowledge on how exactly such alignment can be achieved and what performance implications it has. This brings into the literature the notion of strategic approaches and configurations.

Conceptual Framework of the Delayed Differentiation Practices on Strategic Supply Chain Management and Sustainable Business Performance



3. Discussion

This paper investigates the importance of delayed differentiation on supply chain management. The evolution of supply chain was attributed, due to the change from single activities to clustering of activities. The perception among researcher, change in line with the re-conceptualization of supply chain management. Supply Chain Management (SCM) as define by others as the integration of key business processes from end users through suppliers that provides products, services and information that adds value for customers and stakeholders. The current definition demonstrate the need to cut down cost by having efficient supply chain and the importance of cost control, Subsequently, delayed differentiation stress the importance of both inter and intra organizational collaboration impact supply chain performance adoption of strategic partnership and integration process. Organizations need to develop their own core competencies and design superior supply chains by strengthening partnerships with suppliers, retailers. The theoretical perspective, move from production process to strategic and integration process depicting future realization of profitability and renewed strategic options.

4. Conclusions

There are suggestions that qualitative approaches will contribute to the theoretical robustness as it will answer some of the research questions. However, since empirical finding are more preferred in business researches, the voluminous data through case study and ethnography may find sanity in supply chain management research methodology. How it can achieve depends on how researchers frame the research questions in lieu with the theoretical framework. If there is a swing of research on supplier behavior then SCM will need to accommodate

culture and behavioral dimensions. The present shift of SCM towards strategic partnership will be viewed as culture integration as business began to consolidate to reduce costs.

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