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**Wal-Mart's successfully integrated supply chain
and the necessity of establishing the Triple-A supply chain
in the 21st century**

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Abstract

Aim/purpose – The main purposes of the paper are to analyze features creating a Wal-Mart's successful integrated supply chain that contributes its dominant position in the retail market and identify issues existing in Wal-Mart's supply chain. Then some suggestions will be mentioned for Wal-Mart to establish the Triple-A supply chain.

Methodology – This paper is based on literature studies for reviewing Wal-Mart's integrated supply chain and designing an ideal Triple-A supply chain.

Findings – The key findings indicate that it is necessary to build the Triple-A supply chain for not only Wal-Mart but also firms in the 21st century and in order to achieve an ideal supply chain, firms need to redesign its supply chain towards an integrated supply chain with three capabilities (agility, adaptability and alignment) in which aligning incentives can be seen as the most important component.

Research implications/limitations – This research confirms that an integrated supply chain will be the first vital pre-requisite for a firm to improve the supply chain performance and achieve an ideal supply chain. However, a main limitation is that findings are only based on the literature.

Contribution – It is suggested that in order to build a successful supply chain that enhances both short-run and long-run competitive advantages, firms should follow the idea of designing an ideal Triple-A supply chain with three capabilities including agility, adaptability and alignment, in which aligning incentives among participating partners can be seen as the most important feature.

Keywords: agility, adaptability, alignment, integration, supply chain.

JEL Classification: L20, M10.

1. Introduction

It is widely recognized that instead of focusing only on their operations, supply chain capability has become a critical factor to boost the competitiveness of companies. As Harrison [2003] affirmed, companies now consider its supply chains as a competitive advantage. Through the supply chain, products or services are delivered to the final customers quickly with the lowest cost to satisfy their demands as well as increase cost-effectiveness for all internal and external participating parties [Gattorna 2006]. However, in the competitive global economy, firms have to redesign their supply chain to adapt to new environment and take advantage of the worldwide market. Managing the supply chain requires the consideration of the entire supply chain system of procurement and distribution, logistics and inventory [Manuj & Mentzer 2008].

Wal-Mart is currently the world's largest retailer kept holding its top position in fiscal year 2016 [Forbes 2016]. With \$482,130 million revenues, it ranked the number one in the Global Fortune 500 List in 2016 [Global 500 2017]. From 1962, when the first Wal-Mart store was opened by Sam Walton in Rogers, Ark to now Wal-Mart runs over 10,000 retail outlets in 27 countries. The success of Wal-Mart derived from many factors, but the key factor leading to a dominant position of Wal-Mart in the retail industry lies in its effective supply chain [Traub 2012]. More specifically, Wal-Mart is a successful retailer with its speed, cost-effective and high integrated supply chain. Furthermore, Wal-Mart's retail and supply chain management (SCM) strategies have also become competitive advantages to accelerate its growth over competitors. Information technologies initiatives are used and kept innovating to facilitate Wal-Mart's SCM efficiency. Although a speed, cost-effective and integrated supply chain brings a huge success for Wal-Mart until now, as Lee [2004] mentioned, it is not enough for this company to maintain a sustainable competitive advantage over its rivals. Thus, in the 21st century, not only Wal-Mart, but all companies should redesign its supply chain that is not just fast and cost-effective, but needs consisting of all three qualities: agility, adaptability and incentive incentives alignment [Lee 2004].

The paper mainly aims to analyze features creating a Wal-Mart's successful integrated supply chain contributing its dominant position in the retailer market and identify issues existing in Wal-Mart's supply chain in the globalization era today. Then some suggestions will be mentioned for Wal-Mart's operations aiming to establish the new Triple-A supply chain towards sustainability with three capabilities: agility, adaptability and alignment.

The present paper is structured as follows: Introduction and significance of the study are given in Section 1. Section 2 and Section 3 represent Literature review and Research methodology. Section 4 shows Wal-Mart's supply chain and key components of successful integrated supply chain formulation, while Section 5 identifies some issues existing in Wal-Mart's supply chain and suggests the necessity and how to build the ideal Triple-A supply chain for Wal-Mart's operations. Conclusion is given in the last section.

2. Literature review

Wal-Mart's integrated supply chain is the key enabler of its growth from a small retailer in rural Arkansas to a global leader. Wal-Mart has become the leading retailers because of having a decision making system that relied on data analysis through a barcode scanning system, a point-of-sale system, and real time data collection [Mark 2012]. Moreover, the leadership position of Wal-Mart in the retail industry has resulted from efficient supply chain practices provided by automated distribution centers combined with computerized inventory systems [Chandran 2003]. Wal-Mart is also well known for operating successfully its own trucking system and an innovative cross-docking logistic technique whereby products can be delivered from inbound to outbound trailers without intermediate storage [Johnson 2008].

Besides, Freeman et al. [2011] indicates that Wal-Mart is not only a business leader but also a technology leader in which its supply chain coordinating technique for collaborative planning, forecasting, and replenishment (CPFR), and vendor managed inventory. CPFR program helps Wal-Mart minimize distortion of demand information and coordinate the business plan with supply chain partners, while as for vendor managed inventory aspect, the data is shared between Wal-Mart and its suppliers in order to maintain the lowest cost of its inventory.

Emiliani et al. [2007] also confirms that Wal-Mart successfully captures the benefits of information technology. More specific, the RFID program allows Wal-Mart create real-time databases as well as the opportunity to integrate more effective targeting a minimal inventory. Minimizing inventory is considered as a means to enhance a sustained competitive advantage in the arena of cost reduction. Furthermore, as a result of an effective inventory management, Wal-Mart can reduce the costs such as inventory taxes and insurance costs, which are the motivating factors pushing companies looking for efficiency and profitability. However, according to Lee [2004], the greatest difficult of Wal-Mart in capturing the advantage competition is lied in suppliers' cooperation.

3. Research methodology

This paper is based on literature studies for reviewing Wal-Mart's integrated supply chain and designing an ideal Triple-A supply chain.

Based on the literature of Krajewski, Ritzman & Malhotra [2013, pp. 379-405] regarding an integrated supply chain, and according to Grean & Shaw [2002], Prater et al. [2005], Johnson [2008], and Natto [2014], we confirm that Wal-Mart understands how integrated its supply chain. More specifically, this company have a supply chain with a high degree of functional and organizational integration in which new service or product development, supplier relationship, order fulfilment, customer relationship processes, and its internal and external associations are integrated into the business in order to minimize the disruptions resulting from unexpected changes in demands or supplies in the supply chain.

Besides, the collaboration between Wal-Mart and its suppliers plays an important role in enhancing the efficiency of Wal-Mart's supply chain. However, it is difficult for Wal-Mart to maintain the profit margin balance between different parties [Chiles & Dau 2005]. The unbalanced allocation of interests among participating parties might result in the failure of supply chain practices, for example, generating conflicts, refusing the cooperation with each other between partners, in excess of inventory [Narayanan & Raman 2004].

Furthermore, Lee [2004] and Shin & Tucci [2015] mention that due to the misalignment of interests between Wal-Mart and its suppliers, Wal-Mart copes with the inventory problem. Also, they suggest that in the 21 century's global competitive environment, Wal-Mart needs to consider this problem as well as focused on an alternative supply chain consisting of all three qualities: agility, adaptability, and alignment, which was called "The Triple-A supply chain".

On the other hand, Lee [2004] propose the necessity of establishing the new Triple-A supply chain for not only Wal-Mart, but also all companies in the 21st century is that a supply chain which concentrated much on speed and cost-effective would lead to a worse performance, reduce customer's satisfaction regarding products availability and the company's competitiveness, while a supply chain with all three capabilities including agility, adaptability and alignment could improve the performance and enhance both short-run and long-run competitive advantages. Moreover, Lee [2004] suggests how to build three capabilities that made up a successful supply chain.

4. Wal-Mart's supply chain

4.1. Wal-Mart's competitive strategy

Wal-Mart's competitive strategy is to provide the best quality of products and services at the lowest affordable price for customers [Chandran 2003]. In order to implement this strategy, this company applied a new trend of 'discounting merchandise off the suggested retail price' in the 1960s and then employed an 'Everyday Low Prices' (EDLP) program in the 1970s and 1980s to guarantee a wide range of quality products and services at a relatively low price than most of retailers [Walmart 2012]. By using the EDLP program, Wal-Mart saved a large number of advertising expenditure, which transferred into its price reduction, and then became the best known retailer in the world [Johnson 2008].

Besides, Wal-Mart's efforts in retail strategy were made to cut operating costs. Wal-Mart's distribution centers were put closer to real-time information on in-stock levels of each store, which enables this company push the products to stores automatically. The information systems at the store level allowed producers to be informed whenever a product was sold. In forecast of changes in goods' demand, associates had the power to manually input requirements or override impending transportations. Indeed, to ensure that the staffs were informed, managers shared in-depth information about day/week/month store sales with all workers in 10 minute-long informal meeting every day [Johnson 2008].

4.2. Managing the Wal-Mart's supply chain

As Manuj & Mentzer [2008] mentioned, managing the supply chain means that the company needs to consider three segments within a supply chain, comprising of procurement and distribution, logistics and inventory management. Wal-Mart is a successful company which adopted the information technology for managing its supply chain as well as enhancing its core competencies.

4.2.1. Procurement and distribution

In order to adhere to "Everyday Low Costs" (EDLC) policy, Wal-Mart decided to eliminate the intermediaries and go directly to suppliers to procure needed things. In addition, before placing orders, Wal-Mart has always negotiated with manufacturers, learned their cost structure and make purchasing estimations [Chandran 2003].

Wal-Mart was the first retailer that experimented central database, store-level point-of-sale systems and satellite network in the mid-1980s. When combining with the use of barcodes, employees were able to acquire and analyze real-time store-level information. Moreover, the giving information of sales and external data such as weather forecast helped buyers improve the accuracy of its purchasing predictions [Johnson 2008].

In regards of Wal-Mart's distribution, its distribution centers are located in different areas and the company divided each distribution centre into different sections in accordance with the quantity of products. The company usually requires a frequency of inventory turnover and a high percentage of products in distribution centers before directly transporting to stores. Thus, the efficiency in managing distribution centers is critical factor for Wal-Mart to ensure the stable and consistent flow of goods [Chandran 2003].

The application of information technologies such as barcodes or currently RFID (radio frequency identification tags) makes this process smooth. By using these information technologies, employees can easily acquire the real-time information about all merchandise stored in distribution centers [Mark 2012]. However, a RFID technology, which can better satisfy the needs and demands of retailers, is more innovative than traditional barcodes technology because of some reasons. Firstly, RFID tags are capable of storing more data than barcodes. RFID tags enables employees to access the information of products, for instance, the time and location the goods were produced and its expiry date. Secondly, RFID technology helps Wal-Mart to identify and track inventory from manufactures to warehouses to stores [Jones et al. 2005].

4.2.2. Logistics

Wal-Mart is successful in operating its private trucking system. A powerful transport system is the highlight of Wal-Mart's logistics infrastructure with more than 3,500 trucks serving for distribution centers. These truck fleets enables logistics division to finish goods shipment from distribution centers to stores for a short time and to replenish inventory every week. Also, this organization has an innovative cross-docking logistics technique that can enhance the efficiency of distribution, which is able to classify and convey the merchandise from factories to warehouses of Wal-Mart, and then fast and directly transfer products from inbound to outbound trailers without extra storage. In other words, this cross-docking technique helps Wal-Mart reduce the inventory, handling costs, operat-

ing costs, as well as saving the space and enhancing the efficiency of distribution [Chandran 2003].

Furthermore, the combination of these logistics technologies with REMIX technology and a satellite network that has brought great benefits for Wal-Mart in recent times, now have changed the approach to dispense the high velocity goods, for instance, bread, vegetables, etc. from lower level of automation to automation. By using these technologies, one distribution centre can serve a cluster of retail outlets as well as add food distribution centers in the supply chain to handle the high velocity goods [Abbaterusso 2010].

4.2.3. Inventory management

The effective inventory management of Wal-Mart mainly depends on the adoption of information systems. Wal-Mart used information technology (IT) capacities to control the level of inventory, for instance, Wal-Mart applied IT to capture the customers' demand information and then store more popular products for the customers' demand leading to an overall reduction in the inventory. Moreover, computers help Wal-Mart to connect to the vendors. The cooperation between P&G and Wal-Mart is a successful example for Wal-Mart's collaborative planning, forecasting, and replenishment (CPFR) program. This cooperation enables Wal-Mart to maintain the inventory in retail outlets and establish a reordering system that links all computers of P&G to Wal-Mart's stores and warehouses. P&G will receive a message from the computer system whenever this system identifies certain merchandise needed to be replenished, and then a replenishment order will be sent to the nearest P&G through this system before delivering products to distribution centre or to stores [Kim & Mahoney 2006].

Besides, Wal-Mart developed Retail Link in the early 1990s – another IT application applied for storing data, sharing data with its vendors and helping in shipment routing assignment [Chiles & Dau 2005].

Furthermore, RFID can also facilitate inventory management because this technology enables retailers to know where and how many of inventory goods correctly without counting manually, resulting in time savings for Wal-Mart. [Dunne & Lusch 2005].

4.3. The effectiveness of Wal-Mart's integrated supply chain

Wal-Mart has reached a dominant position in retail market with the most rapid growth in its discount provision network through reducing the extra costs in operations and preventing the marginal expansions. Wal-Mart was stronger

than its rivals through having the most powerful relationships with suppliers, always customizing their operations, giving a large platform to their brands, and merging with the industry [Natto 2014].

Wal-Mart also looks after their customers' demands and maintains an efficiency in-stock level as well as permits the suppliers to be informed about the sale of its merchandise on run-time. This company became the leader in the retail market because of owning some strengthens. More specifically, the supply chain division of Wal-Mart can keep track of the product's demand and follows their movement from other stores through implementing an effective information system that ensure all sorts of transits and transactions. Furthermore, this division can analyze the sales of products and customer's trend in line with market information as well as become a middle party between the distributors and the wholesale dealers [Barry 2006].

More important, a successfully integrated supply chain is a key means of competitive advantage for the fast and impressive growth of Wal-Mart as well as maintains its leading position in the retail industry in the world. According to National Research Council [2010], an integrated supply chain is defined as the association of suppliers and customers, who are collaborated to optimize their collective performance in manufacture, distribution, and support of the final products. In another ways, an integrated supply chain is considered as an enabler of supply chain management helps improve the supply chain performance and brings some competitive advantages for firms. As regards to Wal-Mart's integrated supply chain, the data on sales and inventories between partners are shared throughout the supply chain that helps create the collaboration among partners' activities, reduce the bullwhip effect, cut pipeline inventories, limit short supplies to customers' behaviors in case of inflating the orders when customers estimate the shortage of products in the future, aiming to ensure the operational stability of organization [Walmart 2012].

Furthermore, Wal-Mart understands how integrated its supply chain. Wal-Mart have a supply chain with a high degree of functional and organizational integration in which new service or product development, supplier relationship, order fulfillment, customer relationship processes, and its internal and external associations are integrated into the business in order to minimize the disruptions resulting from unexpected changes in demands or supplies in the supply chain [Johnson 2008].

With regards to new service or product development process, because Wal-Mart is a retailer, instead of focusing much on this process, this company started working directly with local manufacturers to produce the private label products of Wal-Mart in the 1980s and sold them at a significant discount. This

branded products' campaign brought higher margins for Wal-Mart compared with other suppliers [Johnson 2008].

According to Krajewski, Ritzman & Malhotra [2013, pp. 431-441], the supplier relationship process shows the methods to establish the relationship between the company and both upstream suppliers and downstream suppliers. This process indicates how to select, monitor and evaluate upstream suppliers, as well as to collaborate with key suppliers in designing new services or products, to negotiate and to exchange operating information. In case of Wal-Mart, this company has powerful relationships with its suppliers, always customizes their operations, give a large platform to their brands, and merge with the industry [Natto 2014]. More specifically, most of its largest suppliers were located near the company, so it was much convenient for the company to select and collaborate with its suppliers to receive supports from them. Moreover, Wal-Mart was extremely successful in negotiating with its suppliers when it emphasized on 'a single invoice price' and ignored the costs of cooperative advertising, discounting and distribution [Johnson 2008]. In addition, in order to facilitate the information exchange between Wal-Mart and its suppliers and save time, this company used information technologies such as barcodes or currently RFID (radio frequency identification tags) and Vendor Managed Inventories. These technologies enabled employees and suppliers to access the information of products' situation that helped improve the service level of suppliers as well as track and control the inventory level [Prater et al. 2005].

Regarding the order fulfillment process, Krajewski, Ritzman & Malhotra [2013, pp. 442-451] mentions that this process consists of from customer demand planning, supply planning, manufacturing to logistics. The stage of supply planning aims to manage inventories effectively and schedule resources to create a suitable level of supply. Production process bases on demand and supply planning to implement, and then logistics focus on decisions on ownership, location, method selection, capacity and cross-docking when delivering products to the end customers. In case of Wal-Mart, unlike key competitors, Wal-Mart's stores were located 'in low-rent, suburban areas' and stores only were far away from a distribution centre about 130 miles so that one distribution center could serve a large number of stores aiming to gain scale advantages. Besides, this company owned the largest private truck fleets and an innovative cross-docking logistics technique that could deliver its products from distribution centers to stores for a short time, reduce operating costs and inventory, and then increase the inventory turnover as well as speed up cash flow for its operation [Johnson 2008].

Customer relationship is an important process in an integrated supply chain, which aims to identify, attract and establish relationships between suppliers and

customers, and to make the transmission and tracking of orders easily [Krajewski, Ritzman & Malhotra 2013, p. 455]. In this process, Wal-Mart spent a large amount of money on the development of information systems, for instance, central database, store-level point-of-sale systems, a satellite network in the mid-1980s and Retail Link in the early 1990s. These information systems allowed the creation of real-time databases that helped Wal-Mart minimize the inventory level and adapt to the customers' demand quickly. Besides, in order to build the relations with customers, Wal-Mart implemented a unique strategy namely "store of the community", in which each store could supply tailored products in line with distinct tastes of the community where the store was located in [Johnson 2008].

The last process in a Wal-Mart's integrated supply chain focuses on internal relationship between the company and its workers and external relationships between the company, suppliers and customers. Regarding internal linkages, Wal-Mart established uniform standards for operating in stores to minimize miscommunication between coordinators, truckers and workers, and shared in-depth information about day/week/month store sales with employees in every day informal meetings, as well as frequently notified the newest information of the company's development to employees through satellite network [Johnson 2008]. Also, Wal-Mart paid a special attention on external linkages. More specifically, when starting work with its suppliers, Wal-Mart focused on standardizing box sizes and labeling to ensure efficient movements of products. In order to increase sales, Wal-Mart cooperated with its suppliers through price rollback campaigns. Moreover, Wal-Mart permitted its suppliers to be informed about the sales data of its merchandise through Retail Link database. Indeed, Wal-Mart applied the collaborative planning, forecasting, and replenishment (CPFR) program and vendor-managed inventory (VMI) program to promote the association with its suppliers, minimize the distortion of demand information and coordinate the business plan with supply chain partners [Johnson 2008]. The strongly cooperation between Wal-Mart and its supplier (P&G) is a successful story for Wal-Mart's CPFR program. This CPFR program enables Wal-Mart to maintain the inventory in retail outlets and establish a reordering system that links all computers of P&G to Wal-Mart's stores and warehouses. P&G will receive a message from the computer system whenever this system identifies certain items needed to be replenished, and then a replenishment order will be sent to the nearest P&G through this system before delivering products to distribution centre or to stores [Grean & Shaw 2002].

5. Some issues existing in Wal-Mart's supply chain, the necessity and how to build the new Triple-A supply chain

The collaboration between Wal-Mart and its suppliers is critical to improve the efficiency of supply chain. In fact, Wal-Mart owns a large number of vendors differing from the company size and the quantity of product sales, thus this company requires a collaborative network to ensure its suppliers provide products relying on customers' demand at the lowest price. However, it is difficult for Wal-Mart to maintain the profit margin balance between different parties [Chiles & Dau 2005]. The unbalanced allocation of interests among participating parties might result in the failure of supply chain practices, for example, generating conflicts, refusing the cooperation with each other between partners, in excess of inventory [Narayanan & Raman 2004].

Furthermore, Shin & Tucci [2015] indicated that even though Wal-Mart's supply chain was fast and cost-effective, this company faced serious problems relating to its failure in "holding the inventory growth to half the level of sales growth" in 2006. Even since 2010, the inventory growth rate has been higher than sales growth rate, leading to the conflict of incentives between participating parties.

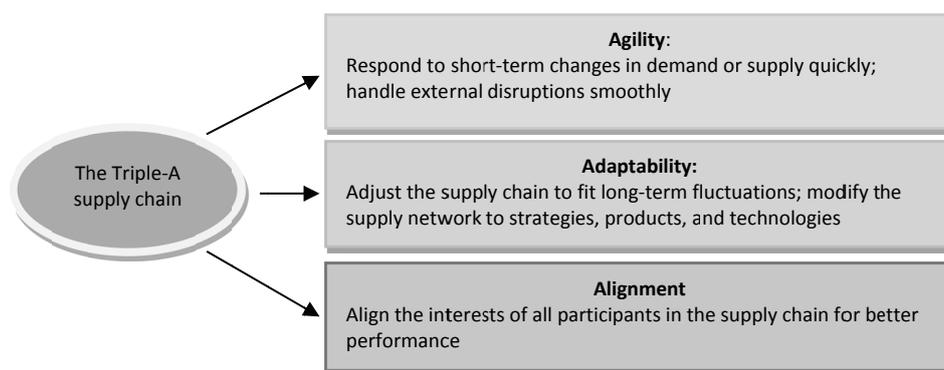
Similar to the idea of Shin & Tucci [2015], Lee [2004] confirmed that despite having an agile and adaptable supply chain, Wal-Mart coped with the inventory problem due to the misalignment of interests between the company and its suppliers. He suggested that in the 21 century's global competitive environment, Wal-Mart needs to consider this problem as well as focuses on an alternative supply chain consisting of all three qualities: agility, adaptability and alignment. This new supply chain is called "The Triple-A supply chain".

On the other hand, Lee [2004] also proposed the necessity of establishing the new Triple-A supply chain for not only Wal-Mart, but also all companies in the 21st century was that a supply chain which concentrated much on speed and cost-effective would lead to a worse performance, reduce the customer's satisfaction regarding products availability and the competitiveness of company.

As seen in Figure 1, the first quality that an ideal supply chain needed is agility, which is designed to respond quickly to sudden and unexpected changes in customers' demand or supply, handle unpredicted external disruptions smoothly and cost-efficiently, and recover quickly from shocks such as natural disasters, product recovery and economic instability. Agility is critical because in fact, both supply and demand now fluctuate rapidly than before, while an agile supply chain can cope with these sudden changes quickly and cost-effectively. In other words, agility is the ability to act and react. When a shock happens, supply chains in its network will adjust their daily routines to adapt to

its customer needs [Lee 2004]. In terms of agile, Wal-Mart's supply chain worked well. More specially, Wal-Mart has acted carefully in preparing for hurricanes. This company usually focused on global weather conditions, analyzing point-of-sale data to determine which products sold more frequently in past storms and then trucking in those extra products to stores to adapt customer demand. It also pre-positions trailers loaded with items such as water and food that can be distributed easily. In general, Wal-Mart's ability to act quickly is directly associated with its agile supply chain [Johnson 2008].

Figure 1. Characteristics of the Triple-A supply chain



Source: Lee [2004].

Also, Lee [2004] mentioned that companies can build the agile supply chain effectively through implementing some rules. Firstly, the company needs to provide the data on fluctuations of supply and demand to its partners frequently so that its partners can respond quickly with changes. Secondly, the company and its suppliers should work together to restructure the processes, components, and products in ways that bring the business edge for this company over its competitors. Thirdly, in order to prevent the delay in manufacturing, the company should keep a small inventory, non-bulky product components to finish products even if supply chains are broken down.

Adaptation is the second quality identifying the ability to adjust the supply chain in the face of long-term fluctuations in product life cycles and markets such as economic growth, political shifts, demographic trends and technological advances (Figure 1) [Lee 2004]. Companies keep adapting to the supply chain means that it adjusts the supply chain structure to fit market changes. Building an adaptable supply chain requires two characteristics: understanding trends and changing the supply network. More specifically, in the global competitive environment, companies must periodically check economic changes because these

changes influence the operation of supply chain. Besides, when working in unfamiliar parts of the world, companies should develop new reliable vendors by using its intermediaries [Magretta 2002]. In addition, creating different supply chains for different product lines is necessary to optimize the capability of each supply chain. For instance, for highly customized and low-volume products, companies should cooperate with suppliers which close to its major markets to adapt to the customer demand quickly, while with standard and high-volume products, a main company should provide the commission for production contractors in low-cost nations to produce and supply [Lee 2004].

As above mentioned, a big problem of Wal-Mart's supply chain is the misalignment of interests between the company and its suppliers in the supply network. In other words, the operation of divisions of a company usually tries to maximize only its own interests, thus misaligned interests between participating parties leads to the failure of supply chain practices, for example, generating conflicts, partners refused the cooperation each other, and in excess of inventory. In this case, creating the right alignment among participating parties, including suppliers, manufacturers, distributors and retailers is a key factor that helps the company optimize its supply chain performance.

According to Lee [2004], alignment aims to ally the interests of all participants in the supply chain with their own company (Figure 1). There are three types of alignment, including alignment of information, alignment of identities such as roles, duties and responsibilities, and alignment of incentives in relation with risks and costs. The supply chain consisting of all three types of alignment can operate partners' activities in supply chain easily, and then benefits the entire supply chain's performance as well as improves the organizational performance. Not only supporting the idea of putting the alignment into supply chain, Lee [2004] also recommends four steps to achieve a alignment supply chain. Firstly, in order to align the interests of partners, the company has to provide an equal opportunity for all partners to access to the data of sales, forecasts and plans. Clarifying the roles and responsibilities of each partner is the next important step to avoid conflicts. Furthermore, the company should redefine the terms of partnership to share risks, costs and rewards equitably aiming to improve the supply chain performance. More importantly, the company must align incentives so that its partners act in a way maximizing both the entire supply chain's performance and their profits. And one way the company can use to align incentives between participating partners in the supply chain is related to changes in the contract which rewards or penalizes partners relying on its operating results [Narayanan & Raman 2004].

6. Conclusions

6.1. Research implications

The paper presents Wal-Mart's successful supply chain. More specifically, this paper focuses on a speed, cost-effective and integrated supply chain of Wal-Mart and key components of its successful integrated supply chain that enhance the supply chain performance. Then, some problems existing in Wal-Mart's supply chain are identified before suggesting the new Triple-A supply chain for Wal-Mart. Also, the necessity and how to build the Triple-A supply chain in the global competitive environment in the 21st century are presented. In the case of Wal-Mart, this research confirms that the more integrated a supply chain is, the greater improvement the supply chain performance ensures. In other words, an integrated supply chain will be the first vital pre-requisite for a firm to improve the supply chain performance and achieve an ideal supply chain.

6.2. Research contribution

The important finding is that in order to achieve a successful supply chain which enhances both the short-time and long-term competitive advantages, firms need to redesign its supply chains towards an integrated supply chain with three capabilities – “Triple A” (agility, adaptability and alignment) in which aligning incentives among participating partners is the most important feature.

6.3. Limitations and future works

The main limitation is that findings are only based on the literature and how to build an ideal supply chain for firms in the 21st century is a debate topic among researchers. Hence, this topic will open a new research field for researchers in the future.

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