

[Field Research]

## A Review on Triple-A Supply Chain Performance

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### Abstract

**Purpose** - Today's world is rapidly changing due to swift changes in organization's infrastructures and supply chain is becoming an important factor which affects the organization's global competitiveness.

**Research design / data / methodology** - Researchers indicated that environment uncertainty is considered an external driving force to establish a unique supply chain. Market competition, reducing the gap of performance and quality between the products are compelling the practitioners and researcher to change the paradigm of managing the business processes effectively and efficiently.

**Results** - In old times, supply chain of any organization was measured on the basis of inventory turns, defect rats, lead times, stock buffering and service level. But, Lee H.L. in 2004, published an article in *Harvard Business Review* who proposed three A (*Adaptable, Agile and Aligned*) termed as "Triple-A" of successful supply chain.

**Conclusions** - He claimed that organizations can compete through the creation of Triple-A supply chain. Hence, the basic aim of this review paper is to develop basic insights regarding what is Triple-A of supply chain, its importance and functioning in today's competitive world.

Keywords : Triple-A, Adaptable, Agile, Aligned, and Supply Chain Management.

JEL Classifications : F10, L59, L81, L90, M20.

### 1. Overview of Supply Chain Management

In 21<sup>st</sup> century the organizations are facing difficulties to maintain their competitive advantage for longer period of time because the or-

ganizations had powerful insights about the strategies of their competitors through regulatory mandates and industry sources (Collins, Worthington & Reyes, 2010). Lubin and Esty (2010) claimed that to attain sustainability is becoming an emerging megatrend in business environment which is instigating a vital alteration in competitive landscape. For maintaining competitive parity, at least, organizations are taking some serious initiatives in which improving supply chain is one of the most important aspects. Researchers, practitioners and academicians have been reassessing the goal, procedure, functions and classifications of "supply chains" (Chen & Paulraj, 2004; Larson, Poist & Halldorsson, 2007). Numerous researchers (e.g., Gunasekaran & Ngai, 2004; Hoyt & Huq, 2000; Min, Mentzer & Ladd, 2007; Bovet & Martha 2000) produced evidence about the "shift from a central focus on supply and movement of tangible materials for manufacturing to a broader focus on partnerships, relationships, networks, value-creation, and value constellations".

A famous aphorism advises that "time is money!" This is the best statement which suggests that organization will suffer if they are slow movers and only those organizations reap a greater profit that complete their tasks quickly that's why now organization put more emphasis on supply chain management. Supply chain is defined by Mabert and Venkataraman (1998) "a series of units that transforms raw materials into finished products and delivers the products to customers". Another definition of supply chain is given by Van der Vorst and Beulens (2002) as "it is the integrated planning, co-ordination and control of all business processes and activities in the supply chain to deliver superior consumer value at minimum cost to the end-consumer while satisfying requirements of other stakeholders".

Managing the modern supply chain is a job which requires high quality specialists in the area of purchasing, manufacturing and distribution (Ferdows, Lewis & Machuca, 2004) which ultimately leads to organizational success. Melnyk, Lummus, Vokurta and Sandor (2007) claimed that supply chains are turning in to more dynamic, strategic and customer-driven. In current era, the modern competition among the organizations is changed from "firm versus firm" to "supply chain versus supply chain" (Ketchen & Guinipero, 2004; Boyer, Frohlich & Hult, 2005; Ketchen & Hult, 2007).

From 1990s, many organizations took strong initiatives related with the implementation of supply chain processes to enhance their organizational performance. The purpose behind these initiatives were to increase profits (such as more sales market / channels, more variety in products and introduction of new products more-frequently), cost reduction (like online auctions and outsourcing, reduction of supply base, vendor managed inventory, Just-in-Time system of inventory and

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offshore manufacturing), and assets reductions including IT, out sourcing manufacturing and logistics (Tang & Tomlin, 2008). They also question marked the effectiveness of these initiatives because they are only reliable in stable environment, as the parterres in supply chain increases, it become more “longer” and “more complex”.

Heizer and Render (2006) claimed that developing strategic and long-term relationships with the partners is considered as the key of successful supply chain management. For improving the business performance, organizations assigned the responsibilities to the managers and considered as accountable for which he or she directly responsible. However, within supply chain context, this scenario can changed as per the requirement of the supply chain management if the managers adopt external focus for understanding the impact of different strategies of the organization on supply chain partners (Whitten, Green & Zelbst, 2012). Researchers (for example, Meredith & Shafer, 2002 Chopra & Meindl, 2004) argued that “attempts to directly optimize organizational performance may prove to have a detrimental impact on overall supply chain performance, thus damaging the competitive advantage of the chain”.

In 2006, AMR Research conducted a study and concluded that over 42% companies in a single industry have more than 5 different supply chains steps to manufacture several products range for multiple markets just to fulfill the needs of customers (AMR, 2006). Complex and long supply chains are considered as more susceptible to business disruptions because these chains respond to changes very slowly. A study was conducted in 2004 by Computer Sciences Corporation to determine the disruptions of supply chains and results showed that 60% of the firms reported their supply chains were “vulnerable to disruptions”. Some other examples related with supply chain disruptions like Dell retracted 4 million batteries of laptop made by Sony in 2006 because of fire hazard. In 2000, Ericsson’s supplier’s semiconductor plan caught on fire and lost 400 million Euros.

Similarly, in 2001, Land Rover’s supplier became insolvent due to which the management laid off his 1400 workers (Tang & Tomlin, 2008).

Whitten et al. (2012) stated that it does not means that, for strategic supply chain management, organization put emphasis on expensive and cutting-edge technologies, exclusive equipments or teamwork at each stage of the supply chain but focusing on “... matching the chain’s approach to each problem to the nature of the problem that needs to be solved”. Lee (2004) claimed that successful organizations have capabilities to establish their supply chains that are aligned, adaptable and agile (Triple-A’s of supply chains) which will enhance the supply chain performance but organizational performance as well.

## 2. Triple A-s of Supply Chain

Supply chains are also taken as the “value chains” which expands its boundaries from suppliers to final customers. Supply chain managers have to pay their responsibilities in coordination and integration of marketing, finance and productions operations with their supply chain partners through their organizations (Whitten et al. 2012).

Success of the organizations lies on the ability of all concerned supply chains affiliates to concentrate on their ultimate customers and

satisfy their demands by providing them their desired products / services. Lee (2004) contended that “the success of each of the organizations comprising the supply chain depends upon the ability of the overall supply chain to respond to changing customer demands, to restructure the supply chain in response to changing markets and economic environments, and to align production, marketing, and financial strategies throughout the supply chain”.

Successful organizations respond rapidly while working within the supply chains to any kind of short-term problems to fulfill the customers’ demands (agility), easily adjusting themselves in long-term by streamlining in the markets and economies (adaptability), and coordinating business processes by sharing equitable costs, risks and benefits for all partners associated with it (alignment) (Whitten et al. 2012). Organizational capabilities of Triple-As are considered as dynamic capabilities which provide the competitive advantage by renewing and developing their strength in accordance to customer demands, market and needs of economies. Overview of Triple-A supply chain is presented hereunder.

### 2.1 Agility

Agility in supply chain is considered as significant aspect to get achievement for all supply chain members (Van Hoek, 2006 Forsberg & Towers, 2007). Lee (2004) referred the agility as “the ability to respond to short-term changes in demand or supply quickly [and] handle external disruptions smoothly.” Successful organizations cultivate agility by taking following point into consideration:

- Build-up long-term relationships with suppliers which are strong and collaborative;
- Promotion of synchronous flow of actual information among the partners;
- Avoid postponement by designing effective production processes;
- Develop inventory buffers of inexpensive but key elements;
- Establishing trustworthy logistics partner or system and
- Design unique contingency strategies
- Sketching contingency plans (Lee, 2004).

Baker (2008) asserted that agility encompasses the ability to work together with supply chain partners to respond quickly to the changes in customer demands. The more supply chain partners coordinated and integrated with each other the more rapidly they can respond to the changes through their supply chains (Green, Whitten & Inman, 2007 Swafford, Ghosh & Murthy, 2008) which is considered as key of supply chain (Lee, Jang, Kim, Kim & Lee, 2008; Thomas, 2008). Zhang, Vonderembse & Lim (2006) said that “the ability to provide information connections across the supply chain allows supply chain partners to share knowledge about plans, requirements, and status resulting in improved supply chain performance”. Olhager and Selldin (2004) argued that sufficient agility can only be achieved if all supply chain members functioning as dependable partners. Organizations should develop flexible supply chain so that it can respond effectively with the risk related to the likelihood of customer demands (Ronchi, Luzzini & Spina, 2007; Tang & Tomlin, 2008).

## 2.2 Adaptability

By maintaining adaptability, members of supply chain can easily cope up with the dynamics related with supply chain (Stevenson & Spring, 2007). Lee (2004) explained the adaptability as “the ability to adjust the supply chain’s design to meet structural shifts in markets [and] modify the supply network [to reflect changes] in strategies, technologies, and products.” To fostering adaptability, successful organization should follow:

- Identify new markets and supply bases by monitoring the economies;
- For developing logistics infrastructure and fresh suppliers, intermediaries will be used;
- Assessing the immediate and ultimate customers’ needs
- Flexibility in design of the products; and

Determine the product life cycles and technology used in developing the products (Lee, 2004).

For supply chain adaptability is an imperative component to change the life cycle of the product or technologies over the period (Lee, 2004). Supply chain partners should pay greater intentions to adaptability while working in dynamic environment so that all participating organizations performed effectively (Richey, Tokman & Wheeler, 2006). Due to uncertain quality, costs and delivery numerous issues arises among the supply chain partners (Newman, 1992). So, organization should continuously establish contacts with fresh vendors and suppliers (McCullen, Saw, Christopher & Towill, 2006). Whitten et al. (2012) argued that “this uncertainty dictates that organizations focus on environmental scanning and infrastructure renewal in an effort to develop new supply bases and markets”. McCullen et al., (2006) claimed that to successful in supply chain organization should focus on creating flexible designs. As the varieties of products are increasing but the products and technologies life cycles are shrinking as well (Wang, Keshavarzmanesh & Feng, 2008).

## 2.3 Alignment

Alignment defined by Lee (2004) as “the ability of great firms to align the interests of all of the firms in their supply chains with their own.” Companies want to become successful in the supply chain by foster alignment through:

- Exchanging information with customers and suppliers freely;
- Define clear rules and regulations, responsibilities for customers and suppliers; and
- Equitable sharing costs, risks and obtain improvements

Matthyssens and Vandenbempt (2008) stated that supply chain partners should externally and internally align with each others. As a strategic viewpoint, business functions like manufacturing, logistics, marketing and purchasing must be internally and externally aligned to attain competitive advantage as ultimate goal (Bryson, 2004).

Coordinated and integrated information systems played a vital role

for better alignment among supply chain partners (Green et al., 2007; Walters, 2008) which is beneficial for all them (Ballou, Gilbert & Mukherjee, 2000) because these partners are sharing risk associated with supply chain (Tang & Tomlin, 2008). Within the context of supply chain, all partners played their significant role (Chi, Holsapple & Srinivasan, 2007) which enhanced the organizational performance (Arend & Wisner, 2005).

## 3. Concluding Thoughts

Supply chain management is shifting its paradigm constantly and developed itself in accordance to strategic modifications in the organizations, shift in technology, customers/suppliers demand and competitive actions by the competitors (Khan & Pillania, 2008). The best value supply chains are founded in multiple sets of practices and assumptions having primarily focus on creating “strategic supply chain management” or to create competitive advantage through the means of supply chain to enhance organizational performance (Upson, Ketchen, & Ireland, 2007; Hult, Ketchen, & Slater, 2004). Numerous well renowned firms including Toyota, Dell and Wal-Mart taken their supply chain management as key weapon to get and attain competitive advantage over others (Ketchen & Hult, 2007).

Triple-A supply chain is considered as viable strategy, when successfully implemented, which directly related with the supply chain and indirectly associated with organizational performance. Whitten et al., (2012) claimed that “organizational success depends on supply chain success which depends on the abilities of a supply chain partnering organizations to build a supply chain that simultaneously exhibits agility, adaptability, and alignment”. Long-term strategic relationships are considered as key of supply chain management (Heizer & Render, 2006) that should essentially developed by the managers by taking accurate decisions with respect to all supply chain partners. Managers should work to build-up adaptable, agile and aligned supply chain to harvest higher organizational performance (Lee, 2004).

Triple-A of supply chain is considered as relatively new concept within the literature of supply chain. Researchers should delve further in this concept and identify what other factors contributed to triple-A supply chain like contextual background (culture, industry etc.). Apart from establishing triple-A supply chain, organization should develop collaborations to harvest potential benefits regarding the desired expectations of the firms (Sabath & Fontanella, 2002). Leading companies, who want to survive in uncertain economies of 21<sup>st</sup> century, are already developed marketing strategies in the light of triple-A supply chain. Christopher (2000) argued that “marketing management has not traditionally recognized the importance of logistics and supply chain management as a key element in gaining advantage in the marketplace. However, in today’s more challenging business environment, where volatility and unpredictable demand becomes the norm, it is essential that the importance of agility be recognized”.

This review article presented the concept of triple-A supply chain by reviewing the existing literature and also provided the in-depth description of the terms associated with triple-A supply chain. This research will provide a gateway for the research scholars and practi-

tioners to conduct longitudinal and empirical researches on those companies which are treated supply chain as unit of analysis. The authors are also interested to conduct their own empirical study in Pakistani context in the light of issues associated with triple-A of supply chain.

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