

## Exploratory Study on Achieving Sustainable Competitive Advantage through Supply Chain Innovation for Strengthening Organizational Performance

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### Abstract

This paper discusses a literature review concerning the importance of supply chain innovation to achieve sustainable competitive advantage. Supply chain innovations in firms are intrinsic for enhancing organizational performance and to respond dynamic markets. Supply chain integration between corporations is more and more vital for creating differential advantage over contestant by making firm capable. The instrument utilized for information gathering was a questionnaire which was administrated to a total sample of 75 managers and he response rate was 70%. Sample selection was based on convenience sampling. This explorative analysis examines linkage between organizational capabilities, competitive advantage and supply chain innovation of firms active in supply chain relationships in Karnataka state, to satisfy ever changing market conditions. Although companies concentrate on developing capabilities to innovate independently, companies however demonstrate reliance on creating their supply chain innovation capability.

**Keywords:** Supply chain; Innovation; Competitive advantage; Capabilities; Performance

### Introduction

The customer is considered as the 'king' as far as the business world is concerned, is the driving of force due to their dynamic attitudes are pushing businesses to reexamine their strategies. The primary issue of the firms to survive and flourish in a dynamic business environment [1]. As competition intensified and markets became global, the operations of organizations get to be more intricate in managing the supply chain to fulfill the products delivery to the customers; leading to increased complexity in supply chain processes are becoming. Complexity and uncertainty is what companies have to overcome in their supply chain for survival in the steadily changing business environment is currently turned into an issue of supply chain practices. The operations methodology has to be adjusted higher to the progressions as organization stretches business. Eventually contend higher over competitors.

The aims supply chain development is to enhance the interconnection and reliance among firms and also enhancing organizational benefit, customer response and ability to deliver value to the customers. Augmenting in consumer needs such as low price, quicker delivery, high quality products or services and increase the variety of items because of business sector growing from local to global market. The failure or Success of supply chains management practices are controlled by the consumer in the market place.

The innovation is especially imperative to firms possessed in creating markets where change is persistent and the standards and traditions of directing business are progressive. It is essential for organizations to innovate their supply chain strategy and approach to create competitive advantage, to differentiate from competitors

companies. Brett Able and Alex Royez [2], describe that for achieving success, reducing price through tight controls on expenses and redesigned work techniques, goal oriented man power and re-engineered supply chains are vital. The firms required to be partners with their customers. Also, Companies need to work on multiple levels —engineers working together to correct, obstacles on their manufacturing process and to improve productivity; marketing teams discussing new products and trends; and management working closely together to develop mutually beneficial business opportunities.

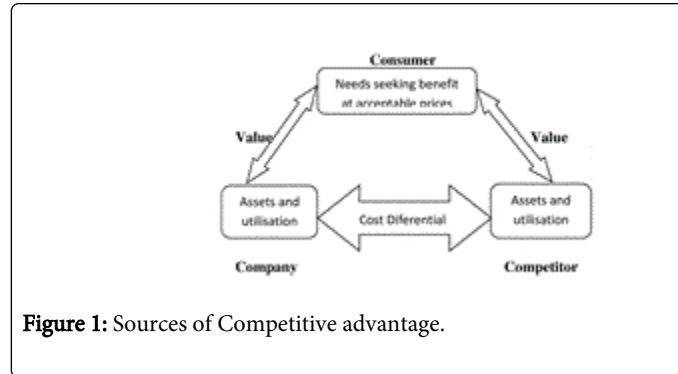
### Competitive advantage through supply chain

Competitive advantage is the degree to which an organization has the ability to create differential position over its rivals in the market. The companies develop their capabilities viz., competitive pricing, value-for- money, dependable delivery, and production innovation that allow an organization to discriminate itself from its competitors and is a result of discriminating administration alternatives. The scholars opined that low price, better quality, quick delivery are key elements to build competitive advantage.

Acquiring a position of enduring performance over competitors is critical for fulfilling vested interests of its supply chain partners and attaining competitive advantage through effective supply chain management. Enhanced productivity and process duration and keeping minimum inventory are metrics to measure Short-term objectives. While, long-term objectives are increasing market share and profit for all supply chain stakeholders. For looking at associations and assessing an association's conduct over times, financial parameters are also utilized.

Enhanced organizational performance should be any organizational drive and evaluated using both financial and market criteria such as return on investment, market share, profit margin, the sales growth,

and comprehensive position. The “three C’s-the consumer, the competition, and the company are the important sources of competitive advantage (Figure 1).



### Supply chain relationships as competitive advantage

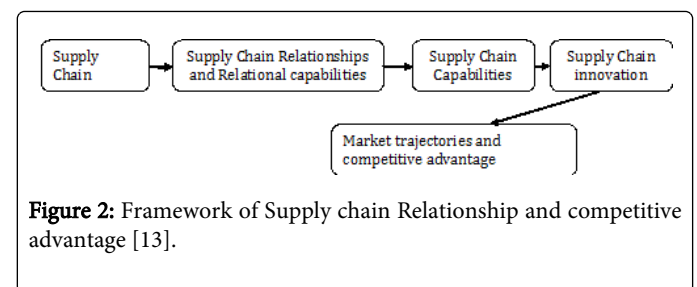
The firms started to comprehend whole supply fastens need to be made focused yet upgrading interior efficiencies is not sufficient [3]. The competition no longer revolves around individual organizations. Depending on individual organization for economic and industry competitiveness is not sustainable. But, organizations must have effective relationship across supply chain partners to achieve coordination and integration. Lambert, D. M. and associate [4-6], explained Supply chain relationships as groups of companies going into a business to secure supply and demand as component of a dynamic business environment. In the middle of supply chain integration and organizational accomplishment, competitive edge would be negotiate.

Sl.No.	Activities that are important in maintaining supply chains	Low (%)	Importance	Moderate Importance (%)	High importance (%)	N/A (%)
1	Aligning functions across supply chain organizations	20		25	50	5
2	Aligning complementary organizational capabilities	15		29	46.6	9.4
3	Integrating and aligning communication and information systems	16		34	45	5
4	Integrating logistics across supply chain organizations	7		33.5	52	7.5
5	Integrating governance and quality systems	16		29	49.5	5.5
6	Aligning management strategies	23		28.5	39.5	9
7	Aligning financial capability	37		37	20	6
8	Integrating and aligning research, development and innovation capability	24.5		45	24	6.5
9	Developing collective market strategies	20		50.4	18.6	11
10	Developing joint capability to respond to changing market conditions	2		36	52.3	9.7

**Table 1:** Important Activities for maintaining supply chains

An improvement in Supply chain management obliges faraway from arms-length relationships toward partnership relations. This includes integration, co-ordination and collaboration throughout the supply chain i.e., intra-organizational and inter-organisational integration. It depicts the different relationships that exist between departments within a organizations or the relationship between various organizations. Competitive relationship as those rivalries between supply chain organisations within the same supply chain, for the material goods and capabilities in order to supply to an end user [7,8]. Contrary, Cooperative relationships, are the various levels of interconnection, such as formal and informal states of coordination, partnerships, collaboration, and cooperation inside the supply chain, as they amalgamate varied interests and infer to derive common benefits [9]. The coordinated supply chain relationships are the simplest form of cooperation between supply chain partners, often exemplified in third party and fourth party logistics. The competitive or non-competitive relationships, either the inside or outside organisational levels within the supply chain forms the partnerships. Supply chain partnerships are specific to either two-way [10] or three way formal relationships [11], and share a high degree of integration through mutual and specific agreements.

Strategic supply chain relationships are seen as critical to high performance and developing innovation capacity to meet both demand and supply as globalization drives rapid changes in market and company operations [12]. The way to accomplishment that uniting the customer value, strong supply chain operations and vigorous risk management. Supply chain relationships are strategically assembled by firms to acquire resultant capabilities that ensure competitive advantage through the innovation capacity of the supply chain (Figure 2).



## Supply chain innovation capacity

The sustainable innovations will need to extend beyond one individual firm to a connected supply chain of firms needing to innovate together to reach a new market's potential. To accomplish a sustainable competitive advantage over competitors by linkage between the innovative firm and its supply chain is substantially vital. Customers increasingly demands a sustainable supply chain and individual firms to verify that different firms in the supply chain adopt appropriate management practices if they wish to protect their brands. Firms must work with their supply chain partners, both upstream and down, to deliver a truly sustainable service.

The practitioners and scholars believe that the effective supply chain management has become an important enabler to improve organization performance and valuable way of securing competitive advantage. Depending on simply individual or single central organization for economic and industry competitiveness is not sustainable. Endorsing a strategic approach to developing supply chain relationships are seen as basic to survival for many firms [14]. Skjoett-Larsen [15] indicates that supply chain relationships are affected by coordination, cooperation and collaborating within supply chains. Particularly, the range of intra and inter organisational competence and dynamic capabilities available from its participants [16-19]. These capabilities are most relevant in developing innovation capacity in supply chain, which is frequently the impetus to realign to address the needs of potential or emerging conditions in the market, and create

new market trajectories. The organizations with effective supply chain and risk management are capable to manage risks, surpass the market and acquire competitive advantage [20].

The objective of this paper is to explore how does intra and inter organizational relationships influence in developing capabilities of supply chain and what capabilities do firms what capabilities do firms develop to create innovation capacity within a supply chain?

## Methodology

It is an exploratory study across a small sample of companies located in North-Karnataka. Information gathered through a self-administered questionnaire sent by email to a purposive sample of 75 organizations, actively involved in the wide range of supply chain activities and relationships. The questionnaire developed by Maree Storer and Paul Hyland [13]. used by validating it in this study. Completed questionnaires were received from 53 respondents after follow-up and telephonic discussion. The Respondents selected from senior levels within the organizations. As the study sample size is small and descriptive statistics utilized and the results only provide basic indications about how some firms relate to their supply chain in terms of organizational capabilities and innovation capacity. The parametric tests that are more suitable to smaller sample sizes are used. Descriptive ranges utilized in this study relate to the levels of importance the firms attach to the relevant topics, from no importance to moderate importance to high importance, or not applicable at all.

Sl.No.	Supply chain dynamic capabilities to meet changing markets and customer requirements	Low Importance (%)	Moderate Importance (%)	High Importance (%)	N/A (%)
1	Ability to align functions with supply chain demands	5	28.13	54	11.63
2	Ability to align infrastructure requirements with supply chain demands	10	27	53	10.00
3	Ability to align human resources and capabilities with supply chain demands	10.88	26.13	52.11	10.88
4	Ability to adapt processes, products and systems to market and customer needs	3	18.88	64.13	14
5	Ability to reconfigure/recombine resources and capabilities on demand	3.1	20.88	63.03	13
6	Ability to coordinate and integrate resources and capabilities on demand	3.1	20	62.03	14.88
7	Ability to develop individual and group barriers to market imitation	26	20	40.63	13.33
8	Ability to identify and react to market dynamics- moderate Markets versus high-velocity	3	37.63	45.5	13.88
9	Ability to acquire/shed resources and capabilities on demand	16.53	42.88	32	8.59
10	Ability to couple and decouple supply chain relationships to acquire different mix of resources and capabilities	14.33	45.38	26.3	14
11	Ability to attract new combinations of resources and capabilities to meet customer and market demand	11.5	22.88	52	13.8
12	Ability to revamp existing operational capabilities	11	19.45	58.68	10.88
13	Ability to revamp existing strategic directions in line with market dynamics	8.38	26.25	54	11.37

**Table 2:** Supply chain capabilities to meet changing markets and customer requirements.

## Results and Discussion

Many of the respondent firms under study were developing or attempting to develop strategic supply chain relationships over the

longer term, particularly through supply chain partnerships as opposed to larger scale collaborations. Significantly more number of firms indicated they were always seeking long-term dyadic or triadic contractual partnerships. On the other hand with only few firms were

involved in short term contracts. However, organizations involved on a regular basis in cooperative arrangements with competitors significantly lower. The results of the study are discussed below.

### Important activities for maintaining supply chains

Table 1 shows the level of importance respondent firms place on alignment and integration activities identified as integral to partnering or collaborating for competitive advantage. Interestingly, the results were in tune with the study of Maree Storer and Paul Hyland [13], more than 52% of firms believe that developing joint capabilities to respond to market changes is of high importance. Following amalgamating logistics (52%), aligning functions across supply chain (50%) are next important activities. However, contradicting this are the low numbers of firms identifying the need to align other strategic and innovative activities with supply chain partners of high importance.

### Supply chain capabilities to meet changing markets and customer requirements

The literature identified that supply chain actors need to be able to react to change and realign their capabilities to address changes in the market to achieve competitive capabilities required to develop supply chain innovation capacity. Indication of the respondents' attitudes toward adapting, reconfiguring and coordinating capabilities to meet

supply chain market needs provided in Table 2. Following areas adapting processes, products and systems to market and customer needs (64.13%), reconfigure resources and capabilities on demand (63.03), coordinate and integrate resources and capabilities on demand (62.03%) are highly important respondent firms in the study. On the other hand coupling and decoupling supply chain relationships to acquire a different combination of resources and capabilities are important to 26.3% of respondents. Ability to align functions to meet supply chain demands is also important for 54% of respondents.

### Supply chain innovation capacity to ensure competitive advantage of supply chain

In the minds of these respondents various organizational capabilities are more important than others for ensuring a supply chain competitive advantage through innovation capacity within the supply chain. Table 3 shows that maintaining a competitive advantage through supply chain activities is overwhelming through the development of a continuous improvement capability (82.5%) and having the ability to develop and manage new technologies (76.25%). Interestingly, 42.88% of respondents believe that ability to adapt and align to climate change and other environmental challenges as highly important considering the importance of climate change and the proposed carbon trading emissions scheme at this time.

Sl.No.	Important capabilities to create a competitive advantage	Low Importance (%)	Moderate Importance (%)	High importance (%)	N/A importance (%)
1	Ability to realign supply chain relationships to create new capability and resources	14.63	30.75	41.63	13
2	Ability to create a new vision and strategic direction and manage for change	8.51	16.5	61	12.5
3	Ability to successfully create implement and transfer new ideas across supply chain relationships	6.25	25	56.25	14
4	Ability to harness internal and external organizational intelligence to create new markets	1	30	52	17
5	Ability to develop organizational structures and systems for changing demand	14	28	50	14
6	Ability to adapt to cultural shifts in line with new product, processor system developments	13.25	18.5	52	16.25
7	Ability to develop and manage new technologies	1	11.38	76.25	11.38
8	Ability to continuously develop and manage incremental improvements and changes top products processes and systems	2.5	5.6	82.5	9.38
9	Ability to adapt and align to climate change and other environmental challenges	13.63	33	42.88	12.5
10	Ability to adapt and align to political and regulatory change and challenges	11.88	23	53.25	11.88
11	Ability to develop and implement financial and cost-benefit solutions for changing market conditions	5.13	26.13	57.38	11.38
12	Ability to develop and implement integrated logistics solutions for changing market conditions	13.25	25.75	45.33	17.13
13	Ability to develop and implement quality and monitoring systems	10.38	10.38	67.88	10.38
14	Ability to develop and implement full tracking and trace-back systems for product	16.24	23.88	44.88	15

**Table 3:** Ensure competitive advantage through Supply Chain Innovation Capacity.

### Important capabilities to create a competitive advantage

Finally, in terms of dynamic capabilities and creating a competitive advantage, while incremental innovation was critically important for competitive advantage at a firm level, this appears unsupported at the inter-organizational level of the supply chain, with only 40.3% of respondents raising this as highly important. The fact in the study that only 41% of respondents saw the ability for organizations within a supply chain to reconfigure and recreate resources and capabilities on demand as highly important. However 64% of respondents do acknowledge the role that the ability of organisations within a supply

chain to innovate internal resources and capabilities plays. Another important aspect, as related earlier is the ability for individuals and groups within a supply chain to create new learning from each other (55.1%). Similarly only 52% of firms felt it was highly important to align and integrate resources and capabilities as required on demand to meet the nature of business exchange and create new product, process and systems in the supply chain (Table 4). It is apparent that these respondent firms in Karnataka supply chains focus more on innovation and improvement at the firm level than in utilizing their relationships with their supply chain partners.

Sl.No.	Important capabilities to create a competitive advantage	Low Importance (%)	Moderate Importance (%)	High importance (%)	N/A importance (%)
1	Ability for individuals and groups within supply chains to create new learning from each other	8	33.1	55.1	3.8
2	Ability for organizations within a supply chain to reconfigure and recreate resources and capabilities on demand	8	46.5	41	4.5
3	Ability of organizations within a supply chain to innovate by integrating resources and capabilities as required and on demand	7.1	40.5	50	3.6
4	Ability of individual organizations to innovate internal resources and capabilities or the competitive advantage of the supply chain	2	32.1	60.3	5.6
5	Ability of a supply chain to align and realign organizational resources and capabilities to meet the nature of the business exchange	18.5	26	52	3.5
6	Develop intergroup relationships that create new product, process and systems development across the supply chain	21	23	52	4
7	Develop intergroup relationships that develop continuous product, process and systems improvements across the supply chain	11.1	45	40.3	3.6
8	Develop strategic practices that ensure new and continuous improvement in management and operational practices across the supply chain	10	36.4	49.5	4.1

**Table 4:** Important capabilities to create a competitive advantage.

### Conclusion

Firms in a supply chain focused on a new and dynamic market that is marked with dynamism and emerging rules will need a strategic emphasis on innovativeness within firms and across the supply chain to be successful and sustainable. This is an exploratory study of firms and their attitude toward developing competitive capabilities and innovation capacity within the supply chain. Initial findings indicating that firms still firmly focus on their own individual innovation capacity. There is some recognition of the potential of aligning and developing supply chain innovation capacity through supply chain relationships. At the same time, the literature advocates that supply chains that have engaged effective organizational relationships, in the form of partnerships or joint efforts, can and do make advancement capacity, by sharing competencies, capabilities and resources which often occurs in a dynamic and innovative manner in response to changes in the business environment or in response to customer demand.

In the literature, coordinating, cooperating, partnering and collaborating within supply chains, and key methodology to creating supply chain relationships [14] are seen as critical to survival. The firms in this study have only recognized the benefits of long term partnerships. It is not surprising that few firms have been able to bridge competition with cooperation in supply chain relationships,

and engage in competition [21]. It appears the respondents can see that strong relationships in the supply chain give rise to formal cooperation and provide some impetus to improve competitive advantage especially through continuous improvement and innovation practices. However, weakly aligned supply chains fails, if allocating resources and trans-positioning abilities and skills, are not highly important to developing a supply chain's capacity to innovate in response to rapid changes in the market.

Further, the discoveries structure a piece of a more extensive study to educate and amplify the current hypothetical models of Ketchen Hult [22], and comprehend whether firms can strategically create intra and inter-organisational relationships within a supply chain to enhance innovation capacity and competitive advantage. Particularly of interest is the ability of the supply chain partners to adapt, incorporate and adjust new aptitudes, assets and useful abilities to match the prerequisites of an evolving environment [23] in a dynamic manner. These discoveries despite the fact that not generalisable and restricted through the small sample and scale of the study still give great data to further research to figure out whether the discoveries apply to other supply chains both in India and internationally.



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