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Qn1 It depends on the nature of the industry. In the manufacturing sector, the production department alerts the purchasing team based on different techniques. MRP often helps identification of requirements of assorted raw materials and components. Companies who have IT advances that is some form of ERP system, triggers are set which helps alert Purchasing automatically. Requisitions may also be sent to the purchasing department to procede with the process of procurement.

There is also another way purchasing department get to know about the requirements of the company. Every company has the inventory manager, who always keeps an eye of the available stock of the company. Whenever he feels that available inventory has gone low, he aleartds the purchasing department on the needed items which the stock is going low.

Qn 2 According to , Lawrence and Lorsch integration is defined as, “the quality of the state of collaboration that exists among departments that are required to achieve unity of effort by the demands of the environment”.

Organizational integration encourages partners to become more entrenched members of the network and instills a sense of belonging to the supply chain. It becomes easier to generate trust among partners in an integrated supply chain. Trust promotes collaboration and decision delegation, reduces irrational behavior and “second guessing” among supply chain members thereby reducing the need for safety stocks.

The objective of organizational integration is not merely to resolve conflicts should they arise, but rather to recognize and avoid potential conflicts and/or divergence of interest in advance and device a governance structure to forestall or avoid it. True organizational integration thus paves the way for individual members of the chain to behave more like a unified entity sharing ideas, skills and culture alike. Supply chain integration may fail to blossom without organizational integration among supply chain partners.

Supply chain management requires various actors at all levels of hierarchy in multiple organizations to work together for achieving a common goal. Managing coordination among the supply chain partners therefore assumes significant importance. Organization integration can become a catalyst by facilitating information sharing within and among firms.

Much as intergration is so important in the supply chain management, it has some of the challenges which comes along side and among them are the underlined as follows

### Innovation For dynamic and innovative companies Innovation is a great deal among creative specialists and how their work can be organized to promote more effective innovation of products and processes. This challenge breaks down into two potentially conflicting integration requirements, relating to the invention and implementation stages of the innovation process. The lack of coordination among innovative division personnel may land up duplicating each other. Therefore, proper reporting to higher management up to CEO by the every divisional head help for coordination and integration. Concurrent development In case of competitive product development phase the practice of executing linked development activities in parallel rather than in sequence need high integration among the team for avoiding repeat work. During engineering phase of a project work, various discipline are involved in designing the product. Individual engineers can now wait for the outcome of the other discipline engineers to finish their work and getting very correct information due to tight schedule of the project. Coordination among thghtly interdependent and parallel tasks forces parallel team to share prelimirery information about work in progress therefore leading to berucracy and delays and sometimes leads to low production in the company Lack of Data Security

Data security should be one of the top priorities of a data integration solution. Organizations want to ensure that all data stored are secured and confidential; especially when it comes to data integration. There are certain areas that get highly affected when data integration is performed in a not so secured environment. These are as follows:

* Loss of Revenue
* Data Breach
* Data Leakage
* Loss of Trade Licenses of Organizations
* Government Penalties and Lawsuits
* Loss of Organizational Reputation

**Cost Effectiveness**

Cost plays an important factor in any intergration of an organization. Before going for integration, it is very necessary to accurately calculate the cost involved in integration solution and maintenance. Unrealistic estimation can be driven by an overly optimistic budget, particularly in case of budget shortfall and doing more with less.

When proper budget is not in place, organizations can face the following consequences:

* Delays in projects.
* Poor contract management.
* Delay in Payments.
* Dissatisfaction within workers, vendors, clients.
* Loss in organizational revenue.
* Affected owner-client relationships.

**Qn 4. Value Chain**

The term value chain refers to the process in which businesses receive raw materials, add value to them through production, manufacturing, and other processes to create a finished product, and then sell the finished product to consumers. A supply chain represents the steps it takes to get the product or service to the customer.

While a supply chain involves all parties in fulfilling a customer request and leading to customer satisfaction, a value chain is a set of interrelated activities a company uses to create a [competitive advantage](https://www.investopedia.com/terms/c/competitive_advantage.asp).

The idea of a [value chain](https://www.investopedia.com/terms/v/valuechain.asp) was pioneered by American academic Michael Porter in his 1985 book "Competitive Advantage: Creating and Sustaining Superior Performance." He used the idea to show how companies add value to their raw materials to produce products that are eventually sold to the public.

The concept of the value chain comes from a business management perspective. Value chain managers look for opportunities in which to add value to the business. They may look for ways to cut back on shortages, prepare product plans, and work with others in the chain to add value to the customer.

There are five steps in the value chain process. They give a company the ability to create value exceeding the cost of providing its good or service to customers. Maximizing the activities in any one of the five steps allows a company to have a competitive advantage over competitors in its industry. The five steps or activities are:

1. **Inbound Logistics:**Receiving, [warehousing](https://www.investopedia.com/terms/w/warehousing.asp), and inventory control.
2. **Operations:** Value-creating activities that transform inputs into products, such as assembly and manufacturing.
3. **Outbound Logistics:** Activities required to get a finished product to a customer. These include warehousing, inventory management, order fulfillment, and shipping.
4. **Marketing and Sales:** Activities associated with getting a buyer to purchase a product.
5. **Service:** Activities that maintain and enhance a product's value, such as customer support and warranty service.

In order to help streamline the five primary steps, Porter says the value chain also requires a series of support activities. These include procurement, technology development, human resource management, and infrastructure.

A profitable value chain requires connections between what consumers demand and what a company produces. Simply put, the connection or sequence in the value chain originates from the customer's request, moves through the value chain process, and finally ends at the finished product. Value chains place a great amount of focus on things such as product testing, innovation, [research and development](https://www.investopedia.com/terms/r/randd.asp), and marketing.

**Supply Chain**

The [supply chain](https://www.investopedia.com/terms/s/supplychain.asp) comprises the flow of all information, products, materials, and funds between different stages of creating and selling a product to the end user. The concept of the supply chain comes from an operational management perspective. Every step in the process—including creating a good or service, manufacturing it, transporting it to a place of sale, and selling it is part of a company's supply chain.

The supply chain includes all functions involved in receiving and filling a customer request. These functions include:

* Product development
* Marketing
* Operations
* Distribution
* Finance
* [Customer service](https://www.investopedia.com/terms/c/customer-service.asp)

Supply chain management is an important process for most companies and involves many links at large corporations. For this reason, supply chain management requires a lot of skill and expertise to maintain.

While many people believe logistics or the transportation of goods to be synonymous with the supply chain, it is only one part of the equation. The supply chain involves the coordination of how and when products are manufactured along with how they are transported.

The primary concerns of supply chain management are the cost of materials and effective product delivery. Proper supply chain management can reduce consumer costs and increase profits for the manufacturer.

# Qn 3. IT Capacities

A new generation of shopping options through eCommerce and mCommerce has made supply chain management a vital area of concern for many businesses. It is particularly critical for manufacturing companies, which are heavily dependent on the supply chain partners to deliver their products.

Manufacturers, suppliers, retailers, shippers and distributors are the major stakeholders in the supply chain of manufacturing companies, which ends with product delivery to the customer. With an increasing emphasis on technological advancements, as well as the changes in customer expectations, the need for an integrated supply management has become increasingly important.

**Value of Information Technology in Supply Chain Management**

**Increased Control Over Production**

Use of information technology in supply chain management provides improved visibility and accountability. In order to bring efficiency to the total production process, it is important that a manufacturing company have clear sight into the current stage of in-production products, foresee any potential problems or delays they might face and be able to align production schedules accordingly. Use of technology can bring the necessary transparency into the whole process. It allows the manufacturing companies to have better control over product flow and information flow across the supply chain.

**Better Inventory Management**

Maintaining optimal levels of inventory is a challenge faced by all manufacturers. While excess inventory leads to risk of waste and for an increased need for working capital funds, too low of inventory may lead to stoppages in the production cycle and of losing business through stockouts. With the use of technology, manufacturers can create adaptable business processes that provide flexibility to handle varied demand situations. The analytics will help you achieve financial goals with predictable success by managing your inventory and sales orders effectively.

**Increased Collaboration Between Supply Chain Partners**

With the IT enabled, real time information sharing, manufacturers can increase the collaboration with their key partners. Manufacturers can also track activities through the whole supply chain, with visibility into supplier end and distributor processes. Such information can help the manufacturers in making more informed decisions and better forecast future demand. This helps control the manufacturing process and leads to lower costs through more effective decisions in procurement and contract management.

**More Effective Order Tracking and Delivery**

Timely delivery of product is an important factor in ensuring customer satisfaction. Higher customer satisfaction levels lead to higher customer retention and repeat business. Technology solutions can play a vital role in increasing speed of delivery and in keeping the customer informed about the product delivery schedule. Processes can be designed to keep customers informed throughout the process, from order confirmation to order fulfilment. It can also provide a platform for the customer to track their order, increasing a customer’s sense of self-sufficiency and control, while at the same time transferring customer service tasks to the customer, which saves manufacturers time and money. Manufacturers can also develop mechanisms to interact with their logistic providers and get real time updates on shipments of both their inventory and product delivery.

## Supply chain capablities

One important element in any supply chain is the talent. The supply chain depends on smart supply chain managers and how they deal with people, relationships and contemporary issues. In this special issue, we focus on knowledge, talent and human resources. Contemporary supply chain management faces many challenges, such as globalisation, increasing in logistics cost, greater product variety, shorter product life cycles, increased level of risk, increased labour costs in developing countries, rapid development of information technology, sustainability and volatility of commodity prices. These challenges require capable workers with dynamic skills to make the supply chains of the future successful.

This special issue uncovers the latest knowledge and techniques available to supply chain managers who deal with supply chain dynamics. In addition, this special issue helps build research surrounding management capabilities that improve supply chain performance.

### Market understanding and customer insight

Ramanathan et al. discuss ways and means to improve retail stores’ supply chain management capabilities, such as planning and replenishment as per customer behaviour and loyalty. Predominantly, the study aims to increase the value of customer service and operational efficiency. An interesting finding of the study is the indirect relationship between service operations and customer behaviour, which is quite different than the conventional wisdom that pays attention to loyalty and promotions.

### Supplier development techniques

A study by Li et al. reveals the potential of supplier development capability and how it can reduce the risk of opportunism, increase flexibility and increase overall outsourcing performance. The authors direct future researchers to include multi-dimensional outsourcing performance that includes the economic, strategic, and relational perspectives when evaluating the effect of supplier development. Developing suppliers’ social responsibility capability is a vital aspect in dealing with triple bottom line performance. Using multiple case studies, Zhang et al. expose how standard operation procedures, audits, collaboration and training can be helpful in developing supplier capabilities. Moreover, they identify the root causes as direct and indirect causes. Indirect causes are standard operation procedures and audits caused by institutional pressures, whereas collaboration and training are direct causes for developing supplier social responsibility capabilities. We can understand from their study that supplier social responsibility capability development is at an early stage, and that this particular concept needs rigorous testing on a larger scale to find its impact on a wider variety of industries and the corresponding mutual benefits of the inclusion of wider constructs, such as indirect and direct supplier development and supply chain social responsibility. The authors realise the role of social capital on the relationship between supplier development and supply chain social responsibility.

### Management of complexity and change

Shamsuzzoha and Helo explain the challenges faced by a product designer and the essential capabilities of managing a product portfolio. To deal with product design challenges, the study proposes a sustainable platform architecture and design guidelines for modular products, its also importantsince it points out the need for further analysis to show the break-even analysis for adopting the proposed design guidelines and checklist. The authors express concern for developing a decision support tool for evaluating improved design architecture over integrated architecture in terms of quality, cost effectiveness and volume of demand. They also feel the need for robust measures and methods to compare different procedures quantitatively.

### Information systems and information technology expertise

Helo and Hao show, with the support of extensive review and case evidence, the use of a cloud-based platform in sheet metal processing and, in particular, how it could enhance collaboration during production planning. Basically, the study emphasises the role of technological capability that managers must adapt over time to survive and compete in the modern era. The authors also foresee security issues with the use of a cloud computing platform, which sits on a network of computers where internal risk is predominant. They suggest investigating and developing intelligent, networked, service-oriented features for the digitalised manufacturing industry.

### Prioritising supply chain improvement efforts

Automotive supply chain competitiveness is investigated by Khompatraporn and Somboonwiwat. They prioritise 10 factors that influence competitiveness in the Thai automotive industry using a DEMATEL technique. The results of the study reveal the importance of human factors on the competitiveness of the industry. The authors feel that micro-level analysis considering environmental and supply chain disruptions is essential and could pave the way to developing automotive supply chains’ resilience and risk-mitigation capabilities. Importantly, they suggest analysing the effect of automation, multiple sourcing and location.

### Supply chain knowledge management techniques

Alletto et al. discuss the prominence of knowledge flow in terms of patents, research services, and development commodities other than conventional flows in a supply chain, such as information, material and finance. Specifically, they investigate the relationship between collaboration experience in knowledge supply chain and the propensity of firms to develop patents. In addition, they study the mediating effect of firms’ structural embeddedness within knowledge supply chain. Interestingly, they find strong support for accumulation of collaborative experience being central to translating into patents. The authors use a secondary data-set to verify the relationship, and they feel primary data is essential to understanding various issues in depth. The study’s focus is on the biotechnology industry, and for the purpose of generalisation, the study has to be expanded to other sectors. In the future, the authors suggest including other characteristics, such as relational and cognitive embeddedness of the social network, which includes cliques, repeated ties and shared values instead of structural holes and centrality.

Creating a knowledge base is an essential aspect for cross-fertilising in the competitive fashion industry. Considering the footwear industry, Zangiacomi et al. emphasise the need for knowledge and competence to configure and manage the modern supply chain, which has to satisfy customers’ individual needs. The dominant finding of the study is to share best practices between industries and rapidly improve the supply chain managers’ competence. The study foresees the need for a smart, collaborative, customer-driven network model where small and medium fashion industries work in tandem with large enterprises by aligning best practices with the use of information and communication technologies. We can see the need for solid performance dimensions in terms of knowledge, ICT and organisational perspectives to forge collaborative partnerships between heterogeneous companies within an industry.

### Inter-firm relationship skills

The role of formal and informal controls in strengthening the relationship between buyers and suppliers is emphasised by Li et al. in the Chinese manufacturing outsourcing context. Evidence from the study reveals the role of popular phenomena such as *guanxi* in enhancing outsourcing performance. Overall, the study sheds light on managers of capability in working with the suppliers from high-context countries. The authors also realise the limitations of their findings related to manufacturing and logistics, and they suggest replicating the studies to diverse sectors to generalise the findings. In addition, the authors sense that the future studies should investigate the contextual effects such as efficiency outsourcing, innovation seeking outsourcing, complexity of tasks and length of relationships to understand the dependence of manufacturers on suppliers.

### Dynamic performance measurement techniques

McAdam et al. study two issues relevant to dynamic performance measurement techniques and the necessity of focusing on management capability within a horizontal supply chain using dynamic capability and goal theory. Through empirical evidence, they show how motivators and behaviours play a role within performance measurement dynamic capability theory. In particular, they show that management capability can create consensus in goal setting and resource change. In the future, the authors suggest developing management capability for horizontal supply chains using other perspectives instead of performance measurement. Since the concept of supply chain management capability is at an evolving stage, the authors emphasise the need for ethnographic and longitudinal studies. Similarly, the authors suggest validating their management capability performance measurement model in different contexts at both the macro and micro levels. There is an immediate need to develop a measurement scale to conduct cross-sectional empirical survey in the future.

### Organisational proactive management techniques

The study by Yusuf et al. investigates the proactiveness of companies in implementing the returnable transport packaging practice in the African context. The study primarily captures the natural resource-based view capabilities of firms to engage in the practice through empirical evidence based on drivers and barriers classification. The study also identifies the relationship between the returnable transport packaging and the firm performance. Interestingly, the study reveals that the firms in the emerging economy are eager to develop capabilities to deal with these practices if there is a sufficient availability of funds within the firm. At the moment, only larger firms are adapting to claim elite status, saying they are implementing sustainability initiatives, but still it is not common due to financial constraints.

### Measurement and management of supply chain skills

The inclination of supply chain managers toward green collaboration is a vital element in promoting green supply chain management in the Chinese automotive industry. A study by Yu et al. emphasises the role of human capital and appropriate supplier selection that can lead companies to implement green supply chain management and to achieve environmental and operational performance. The authors mention that they have considered only limited dimensions, and that future research should include supplier evaluation and monitoring. There is a need to consider the downstream side of supply chain to develop green supply chain management capabilities and reinforce the buyer–supplier relationship to take care of reverse logistics and find out the various pressures that either moderate or mediate the relationship.

### Relationship management in all processes

The study by Jabbour et al. investigates the relationship between green supply chain proactivity and firms’ critical success factors. The study uses resource-based view theory and multiple case studies from the Brazilian context to develop a research framework and propositions to find the significance of critical success factors such as information management, measurement, competence for greener products and processes, training and total involvement of employees for green supply chain management. The authors suggest that green human resource management is not yet fully developed, and that firms need to develop capability to support the selection and training of human resources.

#### Market understanding capabilities

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| --- | --- |
| • | What are capabilities e-businesses need to develop as per customer behavior and loyalty to exceed the expectations of the customer? |
| • | Development of operations capabilities such as planning and replenishment as per business-to-business and business-to-customer. |
| • | Operations capabilities to segregate customers as per satisfaction and profitability and find a suitable trade-off. |
| • | What are the specific adapting skills required for managers to deal with online retail logistics? |

#### Complexity management capability

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| --- | --- |
| • | Need for decision support system to understand break-even analysis of new design procedures and verify in terms of quality, cost effectiveness, and volume of demand. |
| • | Robust measures and methods to compare different design procedures quantitatively. |
| • | Need to develop a process improvement capability. |

#### Information systems capability

|  |  |
| --- | --- |
| • | Need for decision support system to understand break-even analysis of new design procedures and verify in terms of quality, cost effectiveness and volume of demand. |
| • | How to improve security in the cloud computing platform? |
| • | How to mitigate risk in internal networks due to the cloud computing platform? |
| • | How to increase ambidexterity skills of managers due to the arrival of new technology, such as internet of things and autonomous devices? |
| • | Investigate the suitability of intelligent and service-oriented features for digital economical activities. |
| • | What are country-specific micro-level factors that managers need to consider to improve the resilience of the supply chain? |

#### Supply chain knowledge management capability

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| --- | --- |
| • | Supply chain knowledge management is studied using secondary data, and there is a strong need for the development of an evidence-based system. |
| • | How to include relational and cognitive factors such as cliques, repeated ties, and shared values when developing a knowledge management system of upstream and downstream supply chain network. |
| • | What dimensions need to be considered when studying heterogeneous firms in terms of knowledge, ICT and organisational perspectives? |

#### Inter-firm relationship skills and relationship management within process capabilities

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| --- | --- |
| • | Influence of macro- and micro-level factors to validate management capability model for horizontal supply chain. |

#### Performance measurement and prioritising supply chain improvements capabilities

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| --- | --- |
| • | How to develop management capability for horizontal supply chain instead of using performance measurement perspectives. |
| • | Need for ethnographic and longitudinal studies for supply chain management capability development. |
| • | Need for the development of measurement scales for dynamic performance measurement. |

#### Proactive management and risk management capabilities

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| --- | --- |
| • | Investigate packaging issues at the micro level in the future based on product status. |
| • | Investigate the contextual effects, such as efficiency outsourcing, innovation seeking outsourcing, complexity of tasks, and length of relationships, to understand the dependence of manufacturers on suppliers. |

#### Skills/talent management capabilities

|  |  |
| --- | --- |
| • | Need to consider the downstream side of supply chain to develop green supply chain management capabilities and reinforce buyer–supplier relationship to take care of reverse logistics and find out the various pressures that either moderate or mediate the relationship. |
| • |  |

Qn 6. Internal customers can be anyone employees interact with in the organization as a regular part of their roles and responsibilities.

Yet, while the traditional customer relationship is generally only one way, internal customers can flow in any direction. As an example, let’s take a look at pilots and flight attendants on a commercial airplane.

The flight attendants are internal customers of the pilots. The pilots must provide both information and direction to the flight attendants so they can do their job.

Likewise, the pilots are also internal customers of the flight attendants. The pilots rely on the flight attendants to keep them aware of any issues in the cabin, to provide refreshments, and even to help secure the area when the cockpit needs to be opened in flight.

The key to identifying internal customers is looking for those you provide some form of “service” to or whom you manage. Subordinates should virtually always be thought of as internal customers, as managers owe them the information, guidance, and resources necessary for them to do their jobs.

Internal customers can be anyone employees interact with in the organization as a regular part of their roles and responsibilities.