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The importance of information in Supply Chain Management

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ABSTRACT

There is a lot of change that is happening in business and that change is reflected even in the supply chain. Business, as usual, is dead and dying, similarly in supply chains, if business is not digitally transformed, it becomes very difficult for the business to survive in the next era. With proper digitization and digital transformations in the supply chain, you get the better of the supply chain flexibility. This supply chain flexibility is the key for the success of most of the business. Supply chain flexibility is perceived as an upper hand in the present business, and supply chain information system is a basic instrument to encourage flexibility. The greater part of this research looks into the importance of information in the supply chain flexibility, supply chain information system, and supply chain management.

Keywords— *Information, Information Systems, Supply Chain Information System, Supply Chain Management*

1. INTRODUCTION

Supply Chain is a major part of the business right from the beginning and supply chain transformation was always the key area of importance in business. The early 90s have begun to understand that a standardized methodology is not sufficient to manufacture an effective supply chain hidden the active market. The highly competitive weight urges organizations to reduce product life cycles, increment product mixture, execute new products quickly and adjust creative technology change within a brief span. One might say, today's competition is never again organization to organization, however, supply chain to supply chain. Within the specific situation, supply chain flexibility is characterized as a note valuable competitive weapon which creates customer-arranged supply chains and rapidly reacts to environmental changes.

Supply chain flexibility (SCF) includes utilizing supply chain resources as indicated by promoting elements. It expects relations to create cross-utilitarian and cross-authoritative systems to take out bottlenecks and make an element of performance enable firms to support and maintain their competitive advantage in uncertain markets. The analyst has created a lot of definitions as indicated by distinctive parts of elements of supply chain flexibility. Characterized supply chain flexibility as the flexibility to address customer issues in the supply chain. This definition is stretched out to the ability of all supply chain individuals to embrace a chain point of view to meet the expanding variety of uncertain demands without over-the-top costs, time, and hierarchical interruptions or recital misfortunes. To bring greater supply chain flexibility inside organizations. The organizations have to capitalize on the information generated using the emerging technologies, our research focuses on the importance of information in this supply chain management.

2. METHODOLOGY

2.1 Research methodology

The data has been collected from various sources. Those are the primary and secondary sources. Primarily sources, the data was collected using detailed discussions with the experts and a set of individuals. From various areas of supply chain management, secondary data was collected using the daily newspapers. The business newspapers, the journals books, and various three sources. Based on the data. Which is collected. The author. Finds at information is the key to the success of. Business and the supply chain management and the organizations which are capitalizing on this information are winning.

Iinformation place in a major role in business and supply chain. Even if there are a lot of papers which are written in supply chain management and its various operational issues. This paper is looking at the importance of information and information systems impact in supply chain management. In this area, there are very few papers that are written.

We have seen in various areas of business; digital transformation is making a lot of impacts. The reason why I took this topic is that simply because if digital transformation can bring inefficiency into business in a huge manner, one of the major areas where. It can make its big impact is in supply chain management. That is why I have decided to take up this topic for the research.

To the learning of the scientists, numerous looks expressed the importance of supply chain flexibility and information system, be that as it may, the examination of indicating and profoundly explaining the connection among supply chain flexibility and supply chain information system is limited. With the developing uncertainty and market competition, the two zones are fretfully required, consequently, filling the hole is vital and basic. A hypothetical display system would be a guide for organizations in choosing, adjusting the proper key task to their destinations to react evolving business sector, and which would be an unexpected scheme both for organizations and research.

2.2 Analysis

2.2.1 Literature Review

Role of Information Technology in Supply Chain Management- Rohita Kumar Mishra

In this paper. The role of information technology in supply chain management. The author, Rohit Kumar, has looked at the importance of. Information technology in automating the various processes in supply chain management and he comes to a conclusion saying that information technology is the key to the success of supply chain management.

Status of Supply Chain Management in India- M. Venkata Ramana Reddy

The status of supply chain management in India is a paper which is written by M Venkata, Rama Reddy in this paper. The author is looking at what state is the application of information technology in. These supply chain processes in India. His objective was to. Examine and identify the significant decisions of supply chain management and evaluate the key drivers.

2.2.2 Importance of information

But these terms have radically different meanings in the information processing or management literature. Data are a collection of observations, which may or may not be true. Thus, data may not be facts. Data become information when they are processed. To process data, one needs to (1) clean the data from errors and reduce sources of unreliability, (2) analyse data to make it relevant to the decision at hand, and (3) organize data in ways that help to understand. In this definition, information is "meaningful data." Data are the building blocks (the bricks and mortar) and information is the finished house. The raw materials are useless as a pile but once organized into a structure they become someone's home. Likewise, data are useless for managers unless organized into information. Information is a critical resource in the operation and management of organizations. The timely availability of relevant information is vital for the effective performance of managerial functions such as planning, organizing, leading, and control. An information system in an organization is like the nervous system in the human body: it is the link that connects all the organization's components and provides for better operation and survival in a competitive environment. Indeed, today's organizations run on information.

The term information system usually refers to a computer-based system, one that is designed to support the operations, management, and decision functions of an organization. Information systems in organizations thus provide information support for decision-makers. Information systems encompass transaction processing systems, management information systems, decision support systems, and strategic information systems. These days computers and information processing are everywhere. Computers influence what decisions are made when decisions are made, what information is available at the point of decision, and who is asked to decide. Computers and information processing affect how work is organized and how employees feel about work. Information processing and computing are pervasive.

From our perspective, the essential elements of management are information processing and thus computers are expected to heavily influence management.

Information is the gathered, organized, and interpreted data. If the data are the letters of the alphabet, organizing the letters into words is information. If the data are customers, organizing the list into a usable format is the information needed. In organizations, one person's information is based on the data from another with value-added. For example, people at level one write reports (information) for management. The level one manager gathers the reports (data at this point) and writes another report (information) for level two management. The process continues to the chief executive officer, who uses the information to make his (her) decisions.

Information requires a communication process between a sender and receiver. The information could be an informative beep or audible message telling the person the phone is ringing. The beep gives form to the data and tells one to act. Usually, the receiver decides when the message is information, "noise," or another piece of data. The message may contain an unintended message that reflects on the judgment or intelligence of the sender.

Information moves around organizations by paper, voice, and electronic communications. Examples are e-mail, paper mail, notices on bulletin boards, voice mail, and computer transmissions. Information may be machine or human-generated. Information storage and transmission are heavily dependent on technology.

The figure given below shows the. Interconnect between data information, knowledge, and intelligence. This hierarchy is known as an information hierarchy.

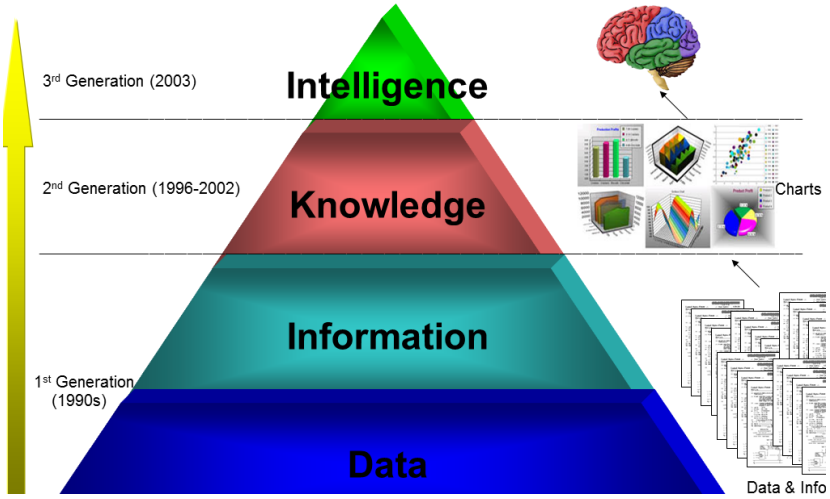

Figure 1.1 Hierarchy of Information

Figure 1.2 describes the interrelationship between data, information, knowledge, and intelligence. Understand the relationship between data then you get information. From the information, if you can pull out the patterns within these information elements, you get knowledge. If you can understand the knowledge elements and the principle behind the knowledge elements, then we get wisdom or intelligence. Wisdom or intelligence is the highest form of information. This is the highest. The peak last point in the information hierarchy. In supply chain management, if the organizations can use the information systems or very specifically supply chain information systems to convert this data into intelligence, all wisdom, then the managerial decision making of this organizations are much better and this organization's will. Make sure the supply chains are so streamlined.

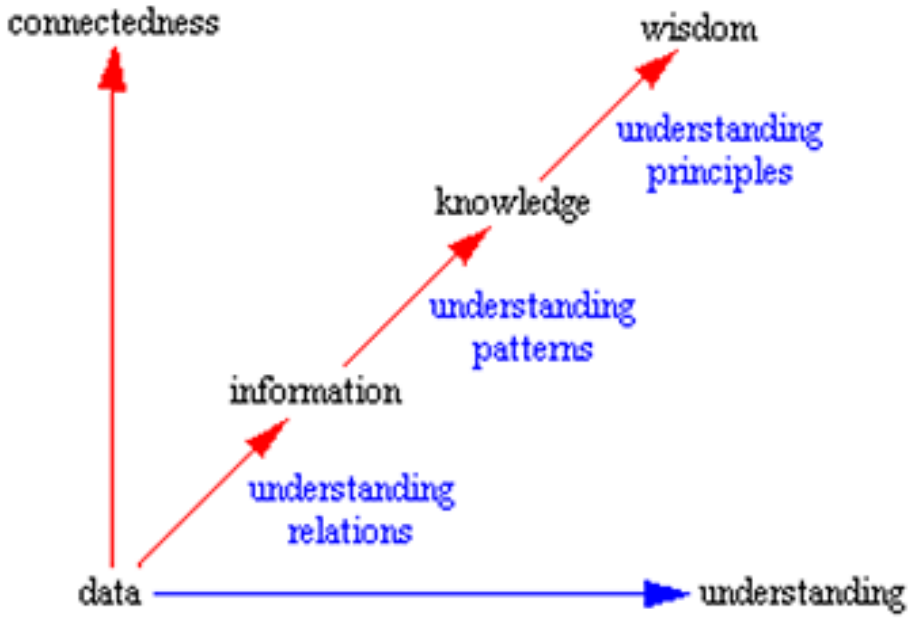

Figure 1.2 Difference between data, information, Knowledge, and Wisdom

The information revolution has been fuelled by the computer, both by its hardware and software. The hardware technology has improved in size, speed, cost, and storage capacity. Entire reference libraries can now be stored offline but can be readily accessed by the computer's main processor. Not only the hardware, but the software as well, have influenced the information revolution. For example, more than one station can use the same computer and more than one program can be in operation at the same time.

Knowledge is the learning process and change in behavior that occurs in a person or organization after internalizing the information. Knowledge is a fluid mix of experience, values, evaluated experiences, and information. Knowledge originates in the minds of experts. The collective knowledge of an organization is evidenced by its corporate behavior. Documents preparation, organizational routines, business processes, and business culture are the essence of corporate behavior. Organizations must be careful not to confuse knowledge and information or knowledge management with information technology.

From figure 1.1 it is very clear the organization that can collect the data process that data, convert it into information, not just information. Use that to make it take it to the next level of processing and convert it into knowledge. And finally, take it to make it into intelligence are the organizations which are winning. This replicates in the case of supply chain management. You can see the organizations which are using the best of the technologies to collect this information. Collect this data. Using IoT AI, robotics, machine learning, and then convert this data into. information knowledge and intelligence this organizations based on them based on the data which we have collected and analysed we have come to the organization which is putting a lot of efforts to collect this data

2.2.3 Information System

An Information System is a combination of hardware, software, people, procedures, and data that provides data processing capabilities for a business or organization. More sophisticated information systems provide the decision-makers in a business (eg. the executives or managers) with on-demand reports and inquiry capabilities as well as routine periodic reports.

2.2.4 Supply chain information system

The supply chain information system broadens the range and productivity of supply chain organizes by giving a framework to facilitate useful trade of data among taking an interested individual. It aims at organizing and monitoring the supply chain tasks by utilizing an effective information stream component.

A supply chain (SC) is a coordination organization that comprises a lot of stages from product design to delivery to end customers and includes different individuals, for example, provider, producer, retailer, and customer. Supply chain management (SCM) aims at giving products or administrations through a coordinated supply chain, including value for customers and different partners. It often requires the incorporation of intra-and between authoritative relationships just as planning and close coordination of money-related stream, information stream, and material stream within the entire chain.

2.2.5 Supply chain integration and coordination

An information system is a tool to incorporate procedures and activities crosswise over associations. For the most part, more elevated amounts of supply chain complexity and uncertainty lead to more prominent interests in information incorporation. Goodhue et al. (1992) showed mix facilitates hierarchical communication yet additionally the coordination between

One great execution of information systems is a virtual combination. Virtual incorporation is often seen when associations work in an uncertain market. It enables associations to accomplish more tightly collaborative activity execution and process planning and control by coordinating a lot of providers through IT. It makes the ability for associations all the more likely to control the procedure and to oversee demand volatility and enhances resource use for the two producers and providers, thus, virtual combination can be perceived as a system to decrease the effects of ecological uncertainties by improving between firm information handling, coordination, and control.

2.2.6 Real-time information sharing

The exactness of data has been perceived as critical for data, for example, inventory records, bills of material and other planning information. Plus, having auspicious data has been underlined by associations to settle on opportune choices. Information sharing is a critical supply chain information system work that could influence the method for supply chain design and management. The information and technology foundation lies at the core of virtual association, information sharing should effect on each task activity all through the supply chain. Current supply chain information system and Internet technologies facilitate the sharing of constant information in the supply chain subsequently expanding powerful coordination at sys. level.

Information system additionally assumes an imperative job in facilitating between plant flexibility. Quite often an association which has the plant work together with the unit which has faculty or some different resources to complete one anticipate. In this coordinated effort, information system, for example, web technology gives inventory visibility between plants. This common sharing of information alarm plants when the inventory isn't dispensed to a customer.

3. RESULTS AND DISCUSSION

After going through all the primary data and secondary data, it has been found that the data is the key to the success of supply chain management. Not just having data. You have to convert this data into information. From the information understand the pattern behind each of these information elements and then convert this information into knowledge again this knowledge also is not good enough if you can understand the pattern of the knowledge, how it is interconnected between each other look at the principles behind these knowledge elements you can come to intelligence which is the key. Intelligence is the highest element in the information hierarchy. The organizations which are having this information will take much better decisions and succeed in business. The same was seen in supply chain management. If this has to happen, you should have a proper system, not just a system. You should have a proper information system and that information system is very critical in the supply chain management process. That is what our research has shown and these information systems have to be well integrated with all the major functions of the business and supply chain information system. Nowadays we can use the latest emerging technologies to capture this real-time data. Not just collect the data and there are loads of technologies that allow you to process this data. Into knowledge, uniform information, knowledge, and intelligence, the major emerging technologies which are used for this are artificial intelligence machine learning deep learning IoT big data cloud computing blockchain drones, etc

4. CONCLUSION

India is one of the fastest growing economy of the world. Managing the supply chain of a large country like India is also a huge challenge. On top of this, the technology is also radically changing. With respect to the industry4.0, what are the major technologies in industry 4.0 artificial intelligence machine learning? Deep learning, Internet of Things, cloud computing, blockchain, robotics, etc. When you apply these emerging technologies in to any functions of business, the business productivity will improve. This applies to even supply chain management and if supply chain management is well integrated with all these emerging technologies, the productivity of the business will improve radically. The customers are also expecting much more from the. Supply chain systems of the organizations. They expect everything to be delivered through drones, etc. The tech in short, the tech implementation is the key for the success of supply chain management, and for that there should be a clear information vision by the organizations.

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