

# Role of Technology in Smooth Functioning and Effectiveness of Supply Chain Management

**Dr. Gaurav Saxena**

Assistant Professor

IBM, GLA University, Mathura

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## **Abstract:**

Today, supply chain management network board is as a rule fundamental the execution of electronic business world. The reason for this article is the audit of production network the executives issues and in the wake of communicating its ideas, its association with web based business and its job as a rule data innovation has been contemplated. Data innovation and its uses in association are exceptionally famous in each nation. IT is a valuable for association and reconciliation inside the partners of the production network. For the most part IT will decrease the operational costs of store network the board. This will help for settling on a decent choice help in regards to the exchange preparing and arranging. A sample of 217 employees in which 54.38% male and 45.62% female has been considered through a standard questionnaire designed on five point interval scale. The statistical tools such as mean and t-test and regression analysis were applied to derive the result of the survey. It was observed from the result that the use of Information Technology is very effective and smoothens the work in Supply Chain Management.

**Keywords:** *Information Technology (IT), Supply Chain Management (SCM), Development, Infrastructure, Enterprise.*

## **Article History**

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## **I. Introduction**

Inventory network the executives (SCM), an incorporated way to deal with the arranging and control of materials, administrations, and data streams from providers through manufacturing plants to the end-client, speaks to one of the most critical perspective changes of present day business the executives. It perceives that singular organizations never again contend as exclusively independent units, yet rather as supply chains. Today, re-appropriating of materials, administrations, and segments to outside providers is progressively observed as a wellspring of upper hand for firms. Through vital joint effort, providers can have an immediate and significant

effect on cost, quality, conveyance and responsiveness of purchasing firms. New advances, worldwide challenge, and expanded client requests are driving associations to rethink how they can exploit Information Technology (IT) capacities to all the more likely deal with their inventory chains. Customarily, Supply Chain Management (SCM) is essentially viewed as a procedure for getting and moving merchandise and ventures. Current angles center around vital SCM, where supply chains are utilized as a way to make upper hands and upgrade firm execution. IT practices and strategies are utilized to empower data sharing across inventory network accomplices, by incorporating both inner and outer business capacities. What's more, the

arrangement of IT objectives and destinations with vital SCM can build proficiency, efficiency, and benefit. In the first place, organizations need IT systems and techniques to empower the coordination of their interior business capacities. This can help organizations to get proficient, improve their profitability, and react quickly to client needs. SCM frameworks are data frameworks for coordinations the board, transportation the executives, key arranging, warehousing, stock, fabricating, provider the board, and client the executives. Endeavor Resource Planning (ERP) frameworks are incorporated as a major aspect of the more extensive SCM programming.

In any case, it took very nearly two decades during which the figuring power has colossally expanded and the Internet has gotten omnipresent for DEC's 1986 vision of making an arranged association to turn into a reality. Data assumes an essential job in empowering exchanges in supply chains. Making a satisfactory data foundation to interface the individuals from a stock system has consistently been testing. With the utilization of current innovation all the organizations can have a superior authority over their production network, which will assist them with remaining in front of the challenge in the business. Innovation can likewise assist with disentangling store network the board, which will empower organizations to work all the more proficiently, give business greater perceivability and command over their stock, and help to diminish their operational expenses. Furthermore, through an increasingly steady and productive inventory network, firms can extraordinarily improve consumer loyalty and maintenance. With all the new present day advancements and Internet-based programming, organizations can improve the inventory network process and in the long run diminish shipping botches. Programming resembles Flash View empowers some wise entrepreneurs to solidify all parts of their inventory network in one spot. The

product permits firms to carefully arrange stock information, screen and oversee transporting and following data, and make electronic solicitations easily. Using store network the executives advancements, organizations can incredibly lessen the time spent transportation, accepting, following, and incorporating request information, which will spare the organization both time and cash.

## II. Literature Review

New technologies, global competition, and increased customer demands are forcing organizations to reconsider how they can take advantage of Information Technology (IT) capabilities to better manage their supply chains. Traditionally, Supply Chain Management (SCM) is mainly considered a process for obtaining and moving goods. New technologies, global competition, and increased customer demands are forcing organizations to reconsider how they can take advantage of Information Technology (IT) capabilities to better manage their supply chains.

Traditionally, Supply Chain Management (SCM) is mainly considered a process for obtaining and moving goods. Sharma and Kaur (2017) found that the Supply chain the executives and data innovation are fragmented without each other. The present current time organization has not overlooked the advantages of innovation so it is organization's obligation to empowered store network to succeed and turn into a guide to the SCM supervisor. . A qualification can be created between the volume of data and the extravagance of data trade. It is certain that the significance of IT and essential data will assume a significant job for the organization. The organization will take care about the data from digital dangers/IT chances with the goal that anybody doesn't abuse that data. Organization won't completely rely on the IT in such a case that the IT devices will get into mischief it will be destructive for the

organization. Principally with the assistance of programmer devices numerous programmers will effectively take the information or change the information. In the business world nature of information will assume an essential job with the goal that it is organization's obligation to ensure the IT devices by various software's.

Varma and Khan (2014) uncovered that because of globalization, re-appropriating, customization, time to market and evaluating pressure has constrained undertakings to embrace proficient and viable inventory network the executives. To endure, associations will find that their ordinary production network joining should be extended past their limits in order to incorporate all partners. There will consistently be new and unforeseen difficulties to remain in front of digital crooks and digital fear based oppressors yet we can win just through organization and coordinated effort of the two people and government.

Kumar (2014) considered the significance of incorporating both inside and outside frameworks in the inventory network to make the coordination of exercises simpler. In writing survey, a few writers enlightened that not all accessible data should be shared but rather the significant data as an excess of confounds individuals. The creators host showed that albeit numerous gatherings, with their own inner advancements, are engaged with the inventory network the executives the chain can be made data innovation empowered if top administration support is invested and advances for joining are chosen cautiously.

Jadhav (2015) found that the significance of IT and nature of data are integral to one another on the grounds that manual separating may vanish. Albeit mechanized data handling forestalls manual missteps, it additionally makes the procedure less straightforward and in this way, wrong data or data of low worth may be created if the data input is as of now of awful quality and not appropriately

checked. A distinction can be seen between the volume of data and the extravagance of data trade. The sharing of data in efficient language includes more activity and responsibilities backing to upgrade the nature of any association which is valuable in the light of inventory network arrange.

Waghmare and Mehta (2014) uncovered that a viable inventory network is an unpredictable system of providers, wholesalers and clients who share deliberately oversaw data about interest, choice and execution, and who perceive that accomplishment for one piece of production network implies accomplishment for all. Fringes and obstructions will be evaporated. So as to work viably in a domain of borderless markets, worldwide companies need to deal with their way of thinking so as to support right now globalization and data innovation. Data innovation is an incredible truth of this century and it greatly affects globalization.

Sidhu et al. (2014) uncovered that the hugeness of IT and prevalence of data are adjusting over each one extra since physical sifting power evaporate. Albeit mechanical data agreement forestalls work serious mistakes, it additionally makes the course less understood and subsequently, inaccurate data or data of short rate might be produced if the data commitment is beforehand of awful worth and not accurately checked. A distinction can be created among the degree of data and the abundance of data supplant. The division of data in precise verbal correspondence includes more deed and responsibilities hold to improve the nature of any affiliation which is useful in the glow of production network organize.

Biniazi et al. (2011) uncovered that the quickly changing innovation in this day and age, particularly in the generation cycle and store network industry, transforms it increasingly incapable and wasteful. Subsequently update production network the board procedures to

getting a charge out of the numerous advantages innovation benefits the association will pick up. Production network frameworks, today has make course match and inventory network insight, another system coordinated effort highlights and across various gatherings to manage dynamic frameworks, for example, providers fall flat or vulnerability of interest. As to significance of data in inventory network, it infers that the reasons for existing wasteful in production network are non solid data and powerlessness of data frameworks in handling and giving the data.

Reddy et al. (2015) found that the progression of innovation, clients' desires are additionally expanding and organizations are inclined to increasingly more unsure condition. Organizations will find that their traditional production network mix should be extended past their peripheries. Its utilization in production network arranging and coordination, thus, was seen as driven by the usage of cross-hierarchical procedures, frequently the VMI framework. In contrast to expected, capricious and strategically requesting condition didn't stand apart as a driver for this utilization of IT. At long last, venture direction of business and in-travel union were found to drive the utilization of IT for request following and conveyance coordination. Besides, this utilization of IT was for the most part determined by the need to arrange different exercises or conveyances dependent on the advancement of explicit followed conveyances.

Agrawal and Narain (2018) considered that the progressive changes will occur because of digitalization of production network the board. This paper has endeavored to feature a portion of the issues that underscore the significance of computerized store network the executives, its difficulties and how these difficulties can be changed over into upper hand. Applying new advances, for example, large information, distributed computing and web of thing can help

conquer these difficulties. Digitalization will help in progress of inventory network perceivability. Utilization of creative computerized advances will permit the Modularization, disentanglement and institutionalization of item and procedures.

Nimna (2017) found that the successful inventory network the board is turning into the methodology decision for the venture to contend in the corporate world. Web based business gives significant intends to successful operational store network the executives. It utilizes the ICT to relate the clients, retailers, makers, providers, and businesses, improve enormously the degree of big business the board.

### **III. Objective of the study**

- To find the role of Information Technology in the effectiveness of Supply Chain Management.
- To find the significance of various aspects of Information Technology in the effectiveness of supply chain management
- To find the impact of various aspects of information technology in smooth functioning of supply chain management

### **IV. Methodology:**

The present study is empirical nature in which survey method was used to collect the data. The study is based on the empirical evidences collected from the respondents. The appropriate statistical tools have been used to analyze the data. Consent has been taken first from all the respondents. Survey data was collected from a sample of 217 individuals (male=118 and female=99) through a circulation of forms. A standard questionnaire was distributed to the respondents to collect the data. The sampling method was random sampling. Mean and T-test and multiple regression were adopted to curate an appropriate result of the study.



## V. Findings of the study

Table 1 demonstrates the general profile of the respondents that have the questions regarding their age, gender and position in the company. The forms were filled by 54.38% male and 45.62% female in which (32.26%) are from the age group of 30-40 years, (27.15%) 41-50 years, (21.69%) 51-60 years and (18.90%) are above 60 years of age (17.05%) are from Top Management, (18.90%) Middle Level Management, (35.49%) Operational Management Level and (28.56%) are Junior Employees.

**Table 1. Table1. Demographic profile of the respondents**

Variables	No. of respondents	%age
<b>Gender</b>		
Male	118	54.38%
Female	99	45.62%
<b>Total</b>	<b>217</b>	<b>100%</b>
<b>Age Group</b>		
30-40 years	70	32.26%
41-50 years	59	27.15%
51-60 years	47	21.69%
Above 60 years	41	18.90%
<b>Total</b>	<b>217</b>	<b>100%</b>
<b>Level of Staff (position)</b>		
Top Management	37	17.05%
Middle Level Management	41	18.90%
Operational Management Level	77	35.49%
Junior Employees	62	28.56%
<b>Total</b>	<b>217</b>	<b>100%</b>

**Table 2 Impact of IT in Supply Chain Management**

Sr. No.	Statements	Mean Score
1.	Information Technologysupport in selecting supplierson the basis of their quality	4.83
2.	With the help of IT system can be shared without much efforts and quickly within or outside the organization	3.51
3.	Market conditions can be tracked effortlessly with the help of Information technology	4.06
4.	Any problem or issues can be resolved mutually with the suppliers with the assistance of IT	3.17
5.	Decision making is made easy with the support of full information by the support of IT	4.01
6.	Information system helps in making quick decisions by gathering information from all required sources	3.70
7.	Quality of the product can be improved as required with the help of IT system	2.88
8.	Information systems helps in the improvement of the operation productivity with new technologies	3.30
9.	Requirement of the material can be managed in a proper way by the help of IT system	4.30
10.	Managing production between supplier and seller can be managed properly with the help of IT system.	3.01

Table 2 shows the impact of Information Technology in Supply Chain Management through a five point interval scale. It is seen that factor “Information Technologysupport in selecting supplierson the basis of their quality” has the highest mean (Mean value of 4.83), second highest is “Requirement of the material

can be managed in a proper way by the help of IT system” (Mean value 4.30), next comes “Market conditions can be tracked effortlessly with the help of Information technology” and “Decision making is made easy with the support of full information by the support of IT” (Mean value 4.06 and 4.01 respectively), another important impact is “Information system helps in making quick decisions by gathering information from all required sources”, “With the help of IT system can be shared without much efforts and quickly within or outside the organization” and “Information systems helps in the improvement of the operation productivity with new technologies” (Mean value 3.70, 3.51 and 3.30) respectively, “Any problem or issues can be resolved mutually with the suppliers with the assistance of IT”, “Managing production between supplier and seller can be managed properly with the help of IT system.” and “Quality of the product can be improved as required with the help of IT system” (Mean value 3.17, 3.01 and 2.88) respectively.

**Table 3 Effectiveness of IT in supply Chain**

Sr. No.	Statements	Mean Score	t Value	Sig
1.	Information Technologysupport in selecting supplierson the basis of their quality	4.83	23.717	0.000
2.	With the help of IT system can be shared without much efforts and quickly within or outside the organization	3.51	0.249	0.402
3.	Market conditions can be tracked effortlessly with the help of Information technology	4.06	8.518	0.000

4.	Any problem or issues can be resolved mutually with the suppliers with the assistance of IT	3.17	-5.177	0.000
5.	Decision making is made easy with the support of full information by the support of IT	4.01	6.296	0.000
6.	Information system helps in making quick decisions by gathering information from all required sources	3.70	2.984	0.002
7.	Quality of the product can be improved as required with the help of IT system	2.88	-10.877	0.000
8.	Information systems helps in the improvement of the operation productivity with new technologies	3.30	-3.426	0.000
9.	Requirement of the material can be managed in a proper way by the help of IT system	4.30	11.992	0.000
10.	Managing production between supplier and seller can be managed properly with the help of IT system.	3.01	-6.908	0.000

Table 3 describes the effectiveness of IT factors which are influencing the smoothness of Supply Chain Management the t-test evaluation. “Information Technologysupport in selecting supplierson the basis of their quality” (mean

value=4.83), “Market conditions can be tracked effortlessly with the help of Information technology” (mean value =4.06), “Decision making is made easy with the support of full information by the support of IT” (mean value=4.01), “Information system helps in making quick decisions by gathering information from all required sources” (mean value=3.70), “Requirement of the material can be managed in a proper way by the help of IT system” (mean value=4.30) and factors which are not effective are “Any problem or issues can be resolved mutually with the suppliers with the assistance of IT”, “Quality of the product can be improved as required with the help of IT system”, “Information systems helps in the improvement of the operation productivity with new technologies” and “Managing production between supplier and seller can be managed properly with the help of IT system.” because t-value of all these statements are negative. “With the help of IT system can be shared without much efforts and quickly within or outside the organization” is not significant because value is more than 0.5

**Table 4 Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.687 <sup>a</sup>	.473	.464	.91308
a. Predictors: (Constant) and 10 independent variables				

Table 4 shows the model summary shows that the value of R square is .473 which shows that around 48% of the variance of dependent variables is explained by the independent variables.

**Table 5 ANOVA**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	439.907	10	43.991	52.765	.000 <sup>b</sup>
	Residual	491.053	206	.834		
	Total	930.960	216			

Table 5 shows the results of ANOVA. It is found from the table that the significance value in the last column is .000 which shows that there is a significant impact of independent variables on dependent variable.

**Table 6 Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.509	.266		1.913	.056
	Information Technologysupport in selecting supplierson the basis of their quality	.123	.040	.096	3.063	.002
	With the help of IT system can be shared without much efforts and quickly within or outside the organization	.221	.041	.198	5.380	.000
	Market conditions can be tracked effortlessly with the help of Information technology	.340	.036	.370	9.463	.000

Any problem or issues can be resolved mutually with the suppliers with the assistance of IT	.061	.041	.069	1.493	.136
Decision making is made easy with the support of full information by the support of IT	.193	.039	.220	4.966	.000
Information system helps in making quick decisions by gathering information from all required sources	.434	.032	.453	13.447	.000
Quality of the product can be improved as required with the help of IT system	.034	.032	.036	1.044	.297
Information systems helps in the improvement of the operation productivity with new technologies	.217	.042	.215	5.201	.000
Requirement of the material can be managed in a proper way by the help of IT system	.117	.031	.124	3.759	.000
Managing production between supplier and seller can be managed properly with the help of IT system.	.036	.039	.038	.924	.356

Table 6 shows the various independent variables that affect the overall smooth functioning of the supply chain management. It is found from the significance value that the various aspects of supply chain namely - Information Technology support in selecting suppliers on the basis of their quality, With the help of IT system information can be shared without much efforts and quickly within or outside the organization, Market conditions can be tracked effortlessly with the help of Information technology, Decision making is made easy with the support of full information by the support of IT, Information system helps in making quick decisions by gathering information from all required sources, Information systems helps in the improvement of the operation productivity with new technologies Requirement of the material can be managed in a proper way by the help of IT system

However, at the same time -Any problem or issues can be resolved mutually with the suppliers with the assistance of IT Quality of the product can be improved as required with the help of IT system, Managing production between supplier and seller can be managed properly with the help of IT system were found having no impact on the overall smooth functioning of supply chain management.

## VI. Conclusion

Through this study it is found that the involvement of Information Technology and its use will help the system of Supply Chain Management to be smooth and effective. It is incorrigible that the significance of IT and superiority of information are balancing to every one additional since physical filtering power vanishes. Although automated data agreement



forestalls work concentrated mistakes, it likewise makes the course less understood and subsequently, mistaken data or data of short rate might be produced if the data commitment is already of horrible worth and not effectively checked. A distinction can be produced among the degree of data and the abundance of data supplant. The division of data in precise verbal correspondence includes more deed and responsibilities hold to improve the nature of any affiliation which is useful in the radiance of production network organize. It was additionally found from the examination Information innovation helps in better providers' quality, quick data handling, give adequate data bolster cautious dynamic, improve the proficiency of activity significantly affect by and large smooth working of the inventory network the board.

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## Questionnaire

### General Profile of Respondent

1. **Name:**..... (Optional)
2. **Mobile Number**..... (Optional)
3. **E-Mail:**.....(Optional)
4. **Gender:** Male  Female
5. **Age:** 30-40  41-50  51-60  above 60 yrs
6. **Level of Job:** Top Management  Middle Level Management   
Operational Management

The following statements are related to Influence of online review consensus on Consumer Goods e-Purchase Satisfaction. Kindly rate them as per the given scale, please tick in the appropriate box:

SA – Strongly Agree      A = Agree      N = Neutral      D = Disagree  
SD = Strongly Disagree

Sl. No.	Statements	SA	A	N	D	SD
1	Information systems help to select supplier based on their quality					
2	Information systems help to quickly share information within firms					
3	Information systems help to monitor change in market condition					
4	Information systems help to solve problems jointly with your suppliers					
5	Information systems help to provide sufficient information to support careful decision making					
6	Information systems help to provide support for decision making					
7	Information systems help to suppliers to improve product quality					
8	Information systems improve the efficiency of operation					
9	Information systems manage material requirement of our facility					
10	Information systems manage production between supplier and us					