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## E-COMMERCE AND ITS EFFECTS IN SUPPLY CHAIN MANAGEMENT

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### ABSTRACT

*E-Commerce in today's world is playing an important role in global business. A quantitative and qualitative research was conducted with professional members, employees working in organization which are dealing with E-Business or online working via internet and their views gave an empirical and dynamic approach to make business efficient and effective. Connectivity with market to find best manufacture for goods and for manufacture to find its buyer for their finished goods. Flow of information become faster and gathering of data become easier to make activities of business to get optimal results. Numbers of goods are available complications to find goods are removed by complimentary goods. Supplies of goods at proper time in order to meet demand by consumer plays win to win game. Improved methods of technology like RFID make work easier and accessible information about goods to management. Manpower in forms of labor is reducing which leads to decrease in the cost of goods. Ordering cost saves time and gives a specified time both producers to make commodity and consumer for delivery of goods. E-Commerce with contrast of components of supply chain in the form of ware house, logistics, number of listing suppliers, number of listing items on one web in the form of website on one platform give dynamic image to businesses in the race of competitive world. Business transactions done with internet not only reduce time but also make documents or records for longer time able to send data from distant parts of the world. Through websites we can get complete price information and other relevant information for goods.*

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**Keywords:** Connectivity, Internet, E-Commerce, Supply chain, Digital world.

### BACKGROUND OF STUDY

Connecting supplier and buyer was the old mean of communication for the purpose of sell and buy the product. In early 90's introduction of logistics give evolution to supply chain management which deals from planning, sourcing, manufacturing, warehousing are also those activities

that will be implemented in state of 20's by United State of America (USA). Then emerges of supply chain with E-Business becomes the rapid phase of doing business as it not only save time but also lead to reduction of cost of product which will result for both seller and buyer in term of price satisfactions.

Supply chain in field of business growing rapidly. In the era of 21<sup>st</sup> century boosting of E-commerce now it's also known as E-business entering in form of versatility to from B2B business model. Now business world become race in which frequent change of business strategy, operations, information and IT (Information Technology) make work easier but make complex to meet rapid advancement in technology field.

We can find number of E-Business website that is connecting the world globally. Being a business runner to meet my customer demand need of supplies will take a second where we find number of exporter of our product. In that context E-Business give comfort zone to both exporter and importer. Main element of Supply chain is depending of raw material, manufacture, storage house, distributor, retailer and customer.

Turning Supply chain towards E-Business it merges elements of supply chain in Vendor and procure form. These electronic meetings give resolution in domain of supply chain. As upcoming time is going to be known as computerized data base because from retail shop to company level everyone is going to use different software to store data packages. E- Resource Planning current drive of E-Commerce now getting apparent feature in supply chain. Upgraded version of E-Commerce in form of ERP-II is using in business. Through E-Commerce it's lowering the cost of production and increase the efficiency of company the most important it saving the time so its result to lead competitive edge of our competitor.

#### **STATEMENT OF THE PROBLEM**

Mostly people are not familiar with E-Business. Due to unawareness people think it is only buying and selling good on platform of Internet. People think that online business is fraud here want to change mind set of public sector of business. How it changes the element of supply chain and synchronizes. Advancement of technology in business in form of E- Business changes the process of supply chain. Also how online business reduces cost of production, globally product will promote and it increases sale of business. In actual practice selling good and service is complex process and lead to high cost for product in which we need a labor, data collection, data entry, operational cost and many other miscellaneous expenses that make increase in price of production. It takes a number of days to connect supplier with actual buyer which result the

activities are going slow of business and other competitor enter in the market and win the customer satisfaction.

**RESEARCH OBJECTIVES**

1. To determine the impacts of E-Commerce on supply chain management system in industries.
2. To examine the effectiveness of the E-Commerce in reducing time and proper compliance efficiently.
3. To find out the Integration of E-Business and Supply chain is going to change and give dimensions to B2B business model.
4. To examine the Technological converge is having a profound impact on business

**RESEARCH HYPOTHESIS**

- H1: There is significant impact of connectivity on E-Commerce  
H2: There is significant impact of reduction of cost on product through E-Commerce.  
H3: There is significant impact of speed in efficient and effective way of business activity through E-Commerce.

**LITERATURE REVIEW**

E-Business customizes the process of supply chain. It gave rapid phase to complete the business targets without any was time, good and services. Environment of E-Commerce give speed, complete information, market information and competition, visibility of product, services and finance facility. In contrast with connecting main component of supply chain supplier and buyer on one platform. Relationship between E-Commerce and Supply chain is becoming and developing more rapidly because it gives ease to do business online and internet that connect and make web of connectivity of people. The value of working in stage and by best segments is captured wholly by constructive a new “Web” connecting the globe of world through internet integrates and shorter supply chain elements and wastages of time only on one click you can order numbers of order just in time (Bordin, *et.al.*, 2007)

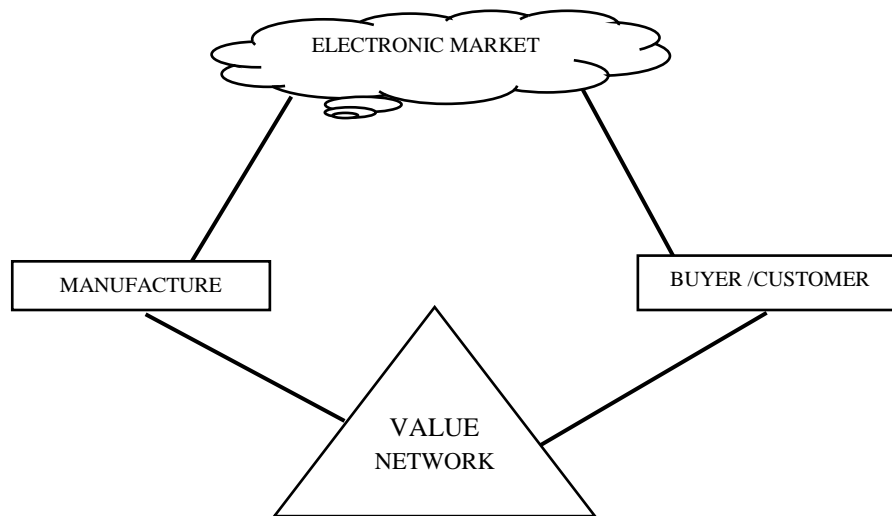
This introduction depicts that how variable both dependent and independent create interlinked connection that make and give use full impact that E-Business relies on component of supply chain management. Every component of SCM play vital role to make E-Business efficient and effective. When we talk about the relationship of E-commerce with Supply chain we not only discuss the benefits it brings to the companies but also the customers as it is a mutually benefitting relationship. It helps

make things easier to handle and to cope with the increasing demand of supplies as it is a more effective method of delivering things on time.

### E-COMMERCE

The next business resolution is the nexus of people, computer, network in terms to achieve business goals by selling good and service by reducing cost of good these combinations will be called as E-Commerce (Balzer, *et.al.*, 1997). Electronic data has been used to interchange widely in transformation between supplier buyer and customer. Boost implementation in micro and macro level in supply chain (Spreitzer, G. 2007). Internet fairly entertains E-Customer to access the product and services, vertical information (product access to supplier) easily accessible at low cost (Sparrowe, R. T. 2016).

### E-COMMERCE HIERARCHY



**Figure-2.1 Hierarchy of E-Commerce with produce, consumer and market.**

The above E-Commerce hierarchy and model tells internet plays vital role for supply chain components connecting supplier and buyer on one platform. Making a web of people that connect with each other from one part to another part of country, above hierarchy model was found in (Chiang, 2012; Cairncross, F. 2007). One surface of picture describes the manufacture phase that includes the supplier side and plays role of distributor and on other hand buyer become end customer in form of importer. The above hierarchy shows manufacture or producer for goods

in E-Commerce plays vital role because for supplies of goods and buyer the final consumer who makes the purchase of goods and valued market leads to distributor who plays role of intermediate to make Electronic market possible to run (Collins, C. J., & D. Clark, K. 2003; Dainty, 2002). Development of industry so far on computing channel with medium to grow business is globally via internet and interchange of information form source of digital medium (Dolber, *et.al.*, 2015; Cook, 2014).

Following are the various types of E-Business:

- Teleshopping.
- Automated market (transaction in form of EFT, EDI, SWIFT).
- Automated market (human decision, choice is required).
- Wireless cellular mobile phone.
- WWW most common form website.

#### **SUPPLY CHAIN**

A store network can be characterized as at least three associations specifically connected by at least one of the streams of items, administrations, accounts, and data from a source to a client (Conger, J.A., & Kanungo, R.N. 2008).

#### **CONNECTIVITY**

The system of B2B (Business to Business) exchange and transaction are typically related with the companies purchasing and supply chain management. The connectivity is just like a life blood in business management. Currently, the business sector has changed the business trends. However, various mergers, ventures and partnership are being done by the leading brands.

One click become most important and familiar use and growing of this strategy at rapid fast nowadays. Saving time without any wastage of product and time, fastest work in form of speed, reduction of cost, collaboration of supplier and buyer at one platform, product and service are now most common trend use by business expert to make business activities done efficiently and effectively, that all lead towards B2B business model (Bill Dubious, 2015).

Supply Chain Management is considered as the back bone of E-Commerce because it uses multiple components of Supply Chain Management (SCM) in form of resource, finance, raw material, warehouse, shipments facility (Carter, 2009). Connectivity leads with two major asserts of internet which include interaction and market access to understand value of E-Commerce with connectivity (Hamill, 1947). Firms

are no longer restricting their business activities within domains as it should have an access to grow business globally and also opening it to the new markets (Cairncross, 2007). Manufacture of physical products have also returned to the internet as direct channel of distribution via email on electronic medium if there is any error in product customer contact with distributor, manufacture claim the request and Product Quality Complain (PQC) and manufacture solve and return goods as soon as possible making customer satisfaction (Buchanan, D. & Huczynski, A. 2011).

#### **E-COLLABORATION**

Without the e-collaboration no any business firm can be developed. Collaboration refers to the help and supports each other. It was found that in pervious time the organizations/firm believed that the competition is the base of business growth. However, with the passage of time the business tycoons realized that the collaboration is better than competition. Hence, at present the organizations/companies/firms are working much on e-collaboration through e platform.

#### **THE FUTURE TEND- IT'S INTELLIGENCE**

In fact the business trends are being changed with the passage of time. Now the Information Communication Technology (ICT) is emerging in every sphere of the life. However, the business could not be excluded. There are various applications are being used by the organizations. Most of the firm use the software either they are the service based companies or production based. Secondly new trends are also coming rapidly i.e. Research and Development (R&D). We can also see the success of multinational companies is because of the R&D.

#### **REDUCTION OF COST**

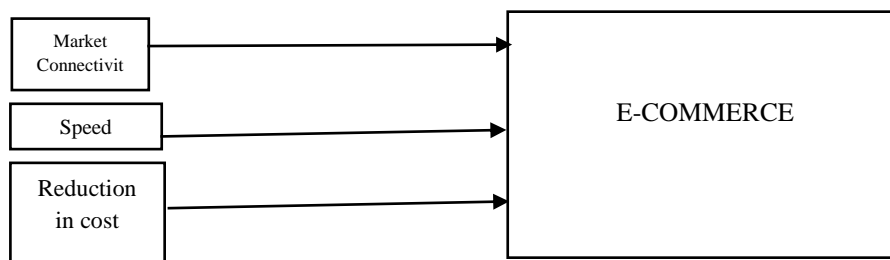
Two major component of supply chain (Exporter and Importer) are giving dynamic impact on E-Commerce platform which reduces cost of production, operation of business, wastage of product and time, save ordering cost and no need for safety good. On B2B platform we have variety of choices to order our desire good in form of quantity we order. This model facilitates from order to shipment when product is transfer from seller to buyer (Arneson, 2006). Supplier is the component of supply chain management which leads a main role of distributor channel because it supplies the good to retailer from warehouse this is the general practice when it emerges in B2B model supplier play the role of wholesaler, exporter and manufacture. It is only because when supplier display it goods on via internet in form of it have chance to make showcase of

product and details about product and company where it will see by other people on global level (Armstrong, M. 2007).

E-Commerce focused on reduction of price and downward pressure price of market to channel medium of internet by giving different offer in form of paid member ship and give services of warehouse, logistics where sell and buy made on one part to other part on paid membership (Ambad, 2012). In organization reduce cost of good in form there is no need of third person part to introduce goods and make commission on products in such way it reduces the price of goods (Dilts R., 2015). Examine the interesting question to cutting down the price of goods when it gets to consumer by retailer and retailer from manufacture sposticatic method of E-Tailer raised question for decreasing price and soon E-Tailor are known to market to cut manufacturing price (Indradevi, 2012). Efficient mode of channel introduced to mark the price down is Application To Application (A2A) and consumer to application C2A methods of logistics were introduced to control the span of material and this is special service for supplier (Fisher, W. P., & Stenner, A. 2011). Buyer this concept depicts that customer bought the good from retailer and if product in display on outlets this is general practice. While when we see the buyer buy product on platform of B2B model here buyer will know as importer. Now the retailer is removed directly by end customer. Buyer has generated Request For Quotation (RFQ) to acquire to the commodity and service. There are several types of supplier:

- Exporter
- Whole seller
- Middle men
- Manufacture

#### THEORETICAL FRAME WORK



**Figure-2.2 Frame Work of E-Commerce with Supply Chain**

The theoretical framework of any research paper is the most important part for it because it provides a short summary and skeleton of what is happening, in this case, in the world of E-commerce and Supply chain. Our theoretical framework says that it is important we keep speed, market and reduction in the cost as primarily important aspects of E-commerce as without these three factors and their efficiency, the E-commerce world cannot survive. These factors are what distinguish E-commerce from the other methods of trade and business in supply chain world.

#### **IMPACT OF E-COMMERCE IN SUPPLY CHAIN**

The shopping and trading on internet is called E-commerce. Now-a-days it can be seen that the business efficiency is growing day by day because of the E-commerce. Without the E-commerce the survival is going to be very difficult for them. There are various advantages of using the E-commerce and supply chain management (Grigoroudis, 2010). Technology in this time is one of the powerful sources to grow business efficiently. ERP is one of the visible examples to manage businesses in smooth way. The bigger firms are working and controlling through the ERP. Indeed it is one of the great moves towards incorporation of the IT in business sector. Most of the companies have trained their human resource to work on ERP (Hedge, 2012). The vital vehicle companies are using the ERP as their prime software. They are also getting so many benefits through using it. It effortless system, the cost cutting can be done easily.

#### **METHODS AND PROCEDURES**

This research followed the method of quantitative analysis. Availability of existence research papers, blog & book references become the part of this research. Experience of people are major part of accountability in this research because their professional life makes this thesis authentic in a way their work in different organizations in the field of supply chain and using of E-Business makes easy to obtain the desired result. Data is also gather from different websites as there are number of E-Business Links are available it gathers both secondary and primary data. For making questionnaire on the variables which I select that give and significant impact on E-Business field are the component which is use full for my research.

Questionnaire is made on the basis of hypothesis statement which made number of questions through which data is gathered. Personal experience is also included in this research design for this purpose being a



student I gather the data for my project through survey for this purpose I worked with organization of Abraa.com totally work on E- Business which give me an idea to select topic for my project. In this period the practice of E-Business was new and dynamic fields for me as the major of supply chain components are the most prominent feature of E-Business websites as Internet business wholly depends on supply chain elements.

Major source of data collection of my project are the links of E-Business that was now commonly getting privilege in Pakistan. Now every business uses this E-link of commerce that's why we find a giant competition in business market. Questionnaires are filled by 100 employees of different organizations in order to get appropriate result for my project.

### **SAMPLING**

Simple Random Sampling technique is used to measure the result of project. Statistical Package for the Social Sciences software is used to calculate random sampling of data. In which we analysis the component of supply chain is important for E-Business. ANOVA testing applied to get the result of project keeping E-Commerce a major tool of speed, reduction and connectivity make the efficiency of business. In which designation, age, genders play the vital rule in part to gather information. Random selection is used to get the desired result focusing people who work in different companies of supply chain. Linear Regression is calculated to show the desired result between dependent versus independent variables. ANOVA test is used to measure results between number of groups by which we get desired result to analysis the variables between independent and dependent.

### **DATA COLLECTION**

Survey, interaction with employees, existing research papers filling of questionnaire personal experiences working with employees are the part of data collection. Secondary data with internet resource and the elective of Enterprise Resource Planning are the major source of collecting data. Supervisor guidelines and key points of researches and articles are the major part of collecting data. Data gathered at secondary and primary level secondary are the articles, research paper while primary data is questionnaire finding variable which fits by frame work conceptually ideas jot down and approved by experts who are in field of supply chain. Supply chain components are in way of supplier, manufacture, warehouse, and logistics. Employee involvement both male

and female from top to bottom management helps in gathering data to get the desired outcomes of input.

#### DATA ANALYSIS

Analysis of connectivity with E-commerce

#### REGRESSION ANALYSIS

**TABLE-1**  
**DESCRIPTIVE STATISTICS**

	Mean	Std. Deviation	N
E-Commerce is medium of inter exchange information.	4.03	.979	100
Connectivity at same time with different manufactures.	4.06	.962	100
Connect different complimentary goods.	3.91	.944	100
Connectivity reduce supply and demand time.	3.96	1.014	100
Ecommerce reduce the cost of handling inventory.	4.02	1.015	100
It offers competitive discounts of goods.	3.67	1.138	100
Reduce Labor Cost.	4.04	1.044	100
Fast access on website.	4.02	.864	100
Fast transaction done through Ecommerce.	4.11	.909	100
Through RFID pickup of goods shortens.	4.04	.790	100

The table above shows that there is a variety of values and that they are descriptive statistics. They show the number of observations, mean and standard deviation for all the other variables with respect to the variable connectivity with E-commerce.

**TABLE-2**  
**VARIABLES ENTERED/REMOVED**

Model	Variables Entered	Variables Removed	Method
1	Connectivity at same time with different manufactures		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

- a. Dependent Variable: Significant impact of E-Commerce with connectivity

The above table shows the variables entered, removed and the method pertaining to the connectivity at the same time with different manufacturers.

**TABLE-3**  
**ANOVA<sup>a</sup>**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	26.008	1	26.008	36.992	.000 <sup>b</sup>
	Residual	68.902	98	.703		
	Total	94.910	99			

**a Dependent Variable:** Significant impact of E-Commerce with connectivity.

**b. Predictors:** (Constant), Connectivity at same time with different manufactures.

**TABLE-4**  
**RESIDUALS STATISTICS**

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.87	4.53	4.03	.513	100
Residual	-2.998	1.133	.000	.834	100
Std. Predicted Value	-4.220	.977	.000	1.000	100
Std. residual	-3.575	1.351	.000	.995	100

**Dependent Variable:** Significant impact of E-Commerce with connectivity.

The above table of dependent variables shows us the minimum, maximum values of the variable, along with the mean and number of observations so that we can better analyze them to get our results through SPSS.

#### **VARIANCE**

The change apportions how spread the information is about their mean. The difference is equivalent to the standard deviation squared. The more prominent difference, the more noteworthy, the spread in the information. Since difference ( $\sigma^2$ ) is a squared amount, its units are additionally squared, which may make the change hard to use by and by. The standard deviation can be less demanding to utilize in light of the fact that it is a more natural estimation. For instance, an example of holding up times at a transport stop may have a mean of 15 minutes and a

difference of 9 minutes<sup>2</sup>. Since the change isn't in indistinguishable units from the information, the difference is frequently shown with its square root, the standard deviation. A fluctuation of 9 minutes<sup>2</sup> is proportionate to a standard deviation of 3 minutes.

## CONCLUSION

Supply chain nowadays is the privilege taking department in all business. Mass market and Multi Nationals Companies have their supply chain department because to make their work efficient and effective. The era of 21<sup>st</sup> century is digital medium where the business activities running online B2B business are taking part internet is connecting from one platform to another platform. Websites, web pages, online shopping, knows what to buy? How to buy are become easier with E-Commerce.

E-commerce with the elements of supply chain is making efficient and smart work of business. When business runs online it's not reduce the pressure of work but also give you to connects with world, your product is on known to be globally with the connection contrast it makes work speedy to access what you want and gets in connection with your desired manufacture. Workforce of labor in form of manpower is reducing. Due to competitive market business work smartly in order to become online business, transactions. Following points are followed by enterprise by U.S. practice is:

- Encourage in meaning full strategically theories, not budgeting.
- Improvement in finical, managerial and technological strengths.
- Adds value to products.
- Integrate supply chain to improve business performance.

In online business you will connect your business with competitor business where you make business work more efferent, connection with importer and exporter meeting supply and demand time finding of complimentary good. Handling of goods properly, transaction done online, access to world wide web, getting information and updating yourself, reduction in cost of goods and manpower, services offered online such as warehouse that makes the wastages of goods reduced modern technologies means give significant impact on E-commerce.

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