

## ANALYSIS OF THE ROLE OF E-COMMERCE IN REDUCING OPERATIONAL COST IN AMAZON

Sandeep Kaur<sup>1</sup>, Kavita<sup>2</sup><sup>1,2</sup>Guru Kashi University, Talwandi Sabo**ABSTRACT**

E-commerce evolution is related to the rapid perfection of information technologies, the growing possibilities of their adoption in various areas, and the decrease of their usage cost. The study is descriptive and analytical and based on primary data collected through a questionnaire e-mailed to 112 senior officials working in Amazon. Descriptive statistics such as mean, standard deviation, and percentage were used. Exploratory data analysis and logistics regression were used to analyze data collected from the survey. The study showed the statistical analysis results on the operational costs of storage, distribution, inventory, salaries, and employees' wages. It was found that the company is seeking to benefit from the advantages of using e-commerce to reduce operational costs. It also showed that the company is interested and allows the exchange of experiences and views with customers through electronic commerce and efficient access of information, reduced processing errors, reduced response times, and lowered services costs.

**Keywords:** Communication and Information Technology, E-commerce, Operational Cost.

**Introduction**

E-commerce evolution is related to the rapid perfection of information technologies, the growing possibilities of their adoption in various areas, and the decrease of their usage cost. Though the e-commerce boom in 2000-2002 ended in bankruptcies of large companies based solely on e-commerce, the impact of that boom on e-commerce spread was minimal. Today, e-commerce decisions are often treated not as a competitive advantage but as a necessity, which helps avoid lagging behind competitors. Since the mid-1990s, e-commerce conception has evolved from separate electronic transactions in goods purchase or resource supply based on business-to-customer or business-to-business models to dynamic business ecosystems based on the merger of separate markets and value chains created in the network communication framework. Within the aspect of business processes, e-commerce can be defined as the use of electronic networks to simplify and fasten all phases of business processes – from the production of goods to their sale and delivery.

E-commerce has become an essential part of business performance that can generate significant additional value for the company and other subjects in the value-added chain. The important role of e-commerce is in supply chain management. There are many possibilities to improve business processes using modern technologies based on e-commerce philosophy. Most e-commerce implementation decisions in business processes are based on the possibility of reaching significant cost efficiency, which means bigger company profitability and a higher level of competitiveness in the market.

Various authors (Benjamin and Elsie, 2003; Brown, 2001; Cloete et al., 2002; E-Business Watch, 2003; Nienhaus et al., 2003; Subramani, 2003) try to state how e-commerce decisions may impact company cost efficiency. In most cases, e-commerce is treated as a perfect technological tool for recurrent processes realization, which helps to reduce some cost positions or avoid them. The main problem in this research area is determining those cost positions to determine the real impact of e-commerce on business. This problem's importance is the complexity of e-commerce decisions that may impact various business processes depending on company process structure, implemented e-commerce decisions, similar modern technologies used in a company, and other elements that create the totality of company performance.

E-Commerce is the process of conducting business electronically among various entities to satisfy an organizational or individual objective. A key ingredient of E-Commerce, sometimes referred to as electronic trading, is the advertisement and procurement of goods and services over the Internet (Rhodes & Carter, 1998). The success and volume of E-Commerce on the web have been widely reported. With success in establishing an environment in which E-Commerce can grow and flourish, every computer can become a window open to every business, large and small, around the globe.

Internet-based E-Commerce has been embraced to reduce operating costs and as a high potential means of generating revenue (Levis, 1996). The electronic medium we call the Internet can minimize actual transaction time, processing time, and operational cost dramatically while at the same time making information available globally. The ubiquity of the web and the

availability of browsers across different platforms provide a common base upon which E-Commerce applications can be built, especially in the enterprise. This common platform has reduced the significance of software distribution and installation issues, thus encouraging the expansion of E-Commerce via Intranets, Extranets, and the Internet.

E-Commerce provides new channels for the global marketing of tangible goods and presents opportunities to create new businesses providing information and other knowledge-based intangible products (Rhodes & Carter, 1998). Although most E-Commerce is currently at the inter-corporate and inter-organizational level, services targeted at individual customers evolve rapidly. The Internet is the most obvious example of this. It is a major catalyst in the diffusion of E-Commerce, helping to foster a common environment for electronic transactions of all kinds. E-Commerce encompasses all forms of interactive business transactions facilitated by networks of computers. E-Commerce is expanding because of the more significant number of businesses and individuals who can use these networks and the growing number of ways businesses can conduct transactions electronically with other organizations and directly with consumers at a reduced cost (Bartell et al., 1999). At present, business-to-business E-Commerce seems to be of greater volume than business-to-consumer E-Commerce with the primary motive of operational cost reduction, but this may change in the future. These trends are important to the global economy and individual countries' economies because E-Commerce contributes to economic efficiency.

E-Commerce contributes to economic efficiency in five important ways. They include shrinking distances and timescale, lowering distribution and operational costs, speeding product development, providing more information to buyers and sellers, and enlarging customer choice and supplier reach (Turban et al., 2000). However, this study is focused on the role of E-Commerce in reducing operational costs in an organization. Whether one order or thousands come in, the operating cost varies across the E-Commerce business. Furthermore, when offline stores calculate operational costs, they have to factor in countless business expenditures along with the actual number of transactions. When there are fewer transactions, the cost per transaction is higher. On the flipside, transactions arriving in high quantity can overwhelm the personnel and distributors.

## II. Review of Literature

Aleksandar Andonov et al. (2021) stated that E-commerce has emerged as one of the most successful business models that have provided numerous benefits to businesses in the contemporary environment. Some imperative impacts have been the international marketplace, no time constraints, better relationship building with customers, lesser fixed costs, and some more. This study focuses on assessing the impact of E-commerce on business performance.

E-commerce has been regarded as buying and selling products and services using the internet. The business model is designed to provide its offerings online and allow the consumers to select and purchase the desired products. Planning for an e-commerce business is critical. This allows the firm to consider the related dynamics and implementation of the business model consider the probable adversities and challenges that may arise during the process and functionality (Tzavlopoulos et al. 2019).

The planning further considers the associated risks and limitations to which the company may be exposed so that an effective contingency plan may be developed through critical planning and considerations. The other aspect is technology selection along with mediums and approaches. The firm must select adequate technology to carry out the desired tasks and activities to function online. In this regard, the considerations need to be made according to the nature and type of customers and the capabilities, resources, and kind of business involved in the process. The technology usage may differ for various businesses and their specific target audiences, and critical analysis in this regard could be conducted to ensure optimum results (Nyagwencha, 2018).

Rajneesh Shahjee (2015) studied the impact of Electronic Commerce on Business. The research study has highlighted the Management Information Systems, Finance and Accounting, Marketing and Computer Sciences of E-Commerce on Business. E-commerce is a way of conducting business over the Internet. Though it is a relatively new concept, it can alter the traditional form of economic activities. It already affects such large sectors as communications, finance, and retail trade and holds education, health, and government promises. The most significant effects may be associated not with many of the impacts that command the most attention but with less visible, but potentially more pervasive, effects on routine business activities. The integration of Electronic Commerce and Business will bring a renaissance in the marketing function. It presents opportunities to get close to the customer to bring the customer inside the company, explore new product ideas, and pretest them against real customers.

Kumar, Sameer, and Petersen, Palo (2006) understood how e-commerce had affected companies' abilities to serve the customers' needs and raise their satisfaction level. The research showed a direct correlation between the use of e-commerce

and improved customer service. In particular, e-commerce has improved the availability of information, reduced processing errors, reduced response times, lowered costs of services, and has effectively raised customer satisfaction and the level of service that customers expect to receive. The research revealed that many businesses are transitioning to integrated e-commerce business operations. This is being done with the expectation of lowering operational costs and significantly improving their service offerings. The study is unique in applying the logistics regression approach to multi-company data across various industries to analyze the impact of e-commerce on the service aspect of business operations. It also addresses the research question – whether e-commerce use in a business effectively raises customer service and overall business operation to a more desirable quality.

**III. Objectives of the Study**

To examine the role of E-commerce in reducing operational costs in Amazon in India.

To identify the limitations and disadvantages of E-commerce in India.

**IV. Hypothesis of the Study**

H01: There is no significant relationship between E-commerce and reduced operational cost in Amazon. H1: There is a significant relationship between E-commerce and reduced operational cost in Amazon.

**V. Research Methodology**

The study is descriptive and analytical and based on primary data. It aims at studying the role of e-commerce in reducing operational costs in Amazon in India. Primary Data was collected through a questionnaire e-mailed to 112 senior officials working in Amazon. Descriptive statistics such as mean, standard deviation, and percentage were used. Exploratory data analysis and logistics regression were used to analyze data collected from the survey. The analysis showed that companies had improved the level of service they can provide to their customers with e-commerce.

**VI. Variables for the Study**

Independent Variables: The main operational costs incurred by Amazon were storage, distribution, inventory, salaries, and wages of employees.

Dependent Variables: E-commerce Data Analysis and Interpretation Reduction of Cost in Amazon

Table 1: Reduction of Cost in Amazon

	Results	SA	A	N	DA	SD
1	The operational costs of Amazon were reduced after improving the process of information flow	25 (22.3%)	54 (48.2%)	33 (29.5%)	-	-
2	The operational costs of Amazon were reduced after improving the coordination of business	30 (26.8%)	47 (42.0%)	29 (25.9%)	6 (5.4%)	-
3	E-commerce reduced administrative costs such as distribution	32 (28.6%)	54 (48.2%)	14 (12.5%)	12 (10.7%)	-

4	With the improvement in communication technology, processing errors have reduced in Amazon	33 (29.5%)	48 (42.9%)	18 (16.1%)	13 (11.6%)	-
5	With the improvement in communication technology, response time has reduced in Amazon	36 (32.1%)	50 (44.6%)	16 (14.3%)	10 (8.9%)	-
6	With the improvement in information flow and communication technology, response time towards customer queries has been reduced in Amazon	22 (19.6%)	59 (52.7%)	29 (25.9%)	2 (1.8%)	-

Source: Primary Data

The table shows respondents' opinions concerning the reduction of cost in Amazon. 54 respondents (48.2%) agreed that the operational costs of Amazon were reduced after improving the process of information flow. 47 respondents (42%) opined that the operating costs of Amazon were reduced after enhancing the coordination of business. 54 respondents (48.2%) opined that e-commerce reduced administrative costs such as distribution. 48 respondents (42.9%) opined that processing errors had been reduced in Amazon with improved communication technology. 50 respondents (44.6%) stated that Amazon's response time had been reduced with improved communication technology. 59 respondents (52.7%) agreed that with improved information flow and communication technology, response time towards customer queries has reduced in Amazon.

**VII. Testing of Hypothesis**

H01: There is no significant relationship between E-commerce and reduced operational cost in Amazon.

H1: There is a significant relationship between E-commerce and reduced operational cost in Amazon.

Table 2: Results of Regression

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.874	.763	.122	.1057

Source: Output from SPSS

From the above regression analysis, R obtained was 0.874, and the R Square value was 0.763. Further, the adjusted R square value was 0.122, which indicated the significance of explanatory variables (E-commerce and reduced operational cost). The value obtained for the standard error of estimate is 0.1057.

Table 3: Results of ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	.301	1	.301	7.28	.001
Residual	100.041	111	.327		
Total	100.342	112			

**Source: Output from SPSS**

The Regressional ANOVA table revealed significant mean differences in components of E-commerce and reduced operational cost in Amazon. F test revealed a significant mean difference with an F value of 7.28 and a significance level of 0.001, which is less than p (0.05), showing a statistical significance between E-commerce and reduced operational cost in Amazon.

Table 4: Unstandardized and Standardized Coefficients with t values and significance

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.478	.235		16.614	.000
Operational Costs	3.460	.067	.065	-1.239	.003

Source: Primary Source, Output from SPSS

The regression coefficient of operational costs is 3.460, indicating a relationship between E-commerce and reduced operating cost in Amazon, which is statistically significant as the significance value is lesser than 0.05 (5%).

**VIII. Conclusion**

The study showed the statistical analysis results on the operational costs of storage, distribution, inventory, salaries, and employees' wages. It was found that the company is seeking to benefit from the advantages of using e-commerce to reduce operational costs. It also showed that the company is interested and allows the exchange of experiences and views with customers through electronic commerce and efficient access of information, reduced processing errors, reduced response times, and lowered services costs. It also showed that the company is interested in using electronic commerce to meet the needs and requirements of customers and achieve the highest degree of satisfaction to have. Hence. It is suggested to Amazon to enable e-commerce companies and businesses to coordinate strategy and resources and skill composition of long-term relationships, particularly those institutions or dense information technology companies, and through electronic networks that allow information sharing.

**IX. References**

- Aleksandar Andonov, Georgi P. Dimitrov, Vasil Totev (2021), Impact of E-commerce on Business Performance, TEM Journal. Volume 10, Issue 4, Pages 1558-1564, ISSN 2217 8309, DOI: 10.18421/TEM104-09, November 2021.
- Bartell, R.L. Blackwood, N.A. Eggenschwiler, D. Nguyen, M. Schnidrig, C. Yatchman, M.J. (1999), The MediaXactt system – a framework for personalized electronic commerce services, Bell Labs Technical Journal 4 (2) 153–173.
- Levis, K. (1996) Electronic commerce, British Telecommunications Engineering 14 (4) 281–285.
- Turban, E. Lee, J. King, D. Chung, H.M. Electronic Commerce: A Managerial Perspective, Prentice- Hall International (UK) Limited, London, 2000.
- Rhodes, E. Carter, R. Electronic commerce technologies and changing product distribution, International Journal of Technology Management 15 (1/2) (1998) 31–48.
- Kumar, Sameer & Petersen, Palo. (2006). Impact of e-commerce in lowering operational costs and raising customer satisfaction. Journal of Manufacturing Technology Management. 17. 283-302. 10.1108/17410380610648263.
- Nyagwencha, A. N. (2018). E-Commerce Adoption And Business Performance Of Automotive Firms In Nairobi, Kenya (Doctoral dissertation, University of Nairobi).
- Rajneesh Shahjee (2015), THE IMPACT OF ELECTRONIC COMMERCE ON BUSINESS ORGANIZATION, Scholarly Research Journal for Interdisciplinary Studies, ISSN: 2278-8808, NOV-DEC 2016, VOL-4/27
- Tzavlopoulos, I., Gotzamani, K., Andronikidis, A., & Vassiliadis, C. (2019). Determining the impact of e-commerce quality on customers' perceived risk, satisfaction, value, and loyalty. International Journal of Quality and Service Sciences, 11(4), 576-587
- Zhai CJ (2010), Research on post-adoption behaviour of B2B e-marketplace in China, Business Administration and Institutional innovation in China