

Analysis of Drivers and Barriers related to Ecommerce in Indian Market

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Abstract:-

Ecommerce or Electronic commerce has been quite an essential tool for human evolution in terms of marketing and sales of products of all sorts. It has been over advantageous side for both seller and buyer in terms of many facts such as reduction of cost, no need of physical set-ups etc., But also at the same time it does have few negative impacts over the economy such as imbalance in opportunities of different domains. To put up further analysis of the following paper, applying the circumstances of Indian market it discusses further into the explanation and effects of barriers and drivers involved into the evolution of Ecommerce domain by means of data collection from various case scenarios and AHP (Analytical Hierachy Process) tool to determine the impact factor over the ecommerce set-up.

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I. What is Ecommerce???

Electronic commerce also well known as E-commerce is acknowledged as trading of products and services using computer networking structures such as internet. Ecommerce is quite fruitful for the processes such as supply chain management, online transaction, inventory management system and automated data collection systems etc with the aid of technological support. These kind of deeds between consumers and business i.e., (business -to-business, customer-to customer, customer-to-business and vice versa) are being facilitated with the help of e-commerce equipped with high transparency and efficacy. The preeminent dominance of e-commerce compared to conventional commerce is that it brings down the cost involved in managing orders and interaction among different entities such as customers simultaneously. E-commerce is beneficial in domains where the cost and demand of products and services are more. When it comes to the evolution of e-commerce, it is exemplar due to its vast and depth scope in the business domain which led to the radical change of business methodology.

Starting of E-commerce

Electronic commerce had made its first step into the world of business by aiding the implementation of EDI (Electronic Data Interchange) during 1970 as first generation which is known as the data exchange between computers via networks. As the time passed by, in the second generation of e-commerce transaction of goods and services with the aid of internet which arose as a research gizmo turned up to a commercial asset by cause of technological development. At the eve of 1990's e-commerce have included operations such as Enterprise Resource Planning(ERP), data warehousing and data mining. But E-commerce attained its peak milestone at the year 1991 when NSFNET (National Science Foundation net) decided to resolve e-commerce of all commercial restrictions where in return paved way for many opportunities in the business world. Analysts found that top brands such as Amazon(established in 1994),Ebay and Yahoo(established in 1995) have adopted themselves at the end of 20th Century where it was considered as a blooming period for Internet in addition to the emerging of various search engines and other utilities. But to consider the dawn of e-commerce the credit goes to Michael Aldrich, an English entrepreneur who introduced the concept at 1979.As to proceed with the timeline of e-commerce development where some of the recognised actions have been mentioned.

1979: Michael Aldrich demonstrated the first online shopping system by teleshopping where he interfaced a television and transaction processing computer.

1984:CompuServe,an online commercial service provider in US launched the first electronic commercial service as Electronic Mall.

1992:Book Stack Unlimited created a website www.books.com whose main purpose is to sell books online

1995:Amazon which was launched by Jeff Bezos became the first commercial free,24*7 active cloud computing company.

1996:IndiaMART,a B2B & B2C e-commerce company was established at Noida.

1999:Alibaba Group Holding Limited, a Chinese multinational e-commerce company was established which later set its legs into retail, AI and technology.

2000:The dot com bust where many e-commerce companies did spike in its stock market value at NASDAQ .

2004:DHgate.com,a B2B e-commerce company from large scale to small scale industries was established in China which overtook other e-commerce companies.

2015:Amazon was accounted for the half of all e-commerce growth.

Benefits of E-commerce

Perks such as rapid access, long range of selection of goods and services and international scope of demand are to be quite advantageous for e-commerce. The other advantageous trait of e-commerce is that it is quite useful for expedition of “pull” type supply chain management where it is possible for customization and development of products and services with regard to customer’s requirement allowing the organisation to remain competitive in the domain. From the perspective of a buyer, they hold a upper hand while purchasing goods or services. As the Internet bestows complete access to the global market, it allows them to compare the prices of same entity among different online firms so that they get to choose the optimum choice of a firm with low cost and high quality product and service. As with regard to the information technology it’s main concern is to be certain of “rapid access to accurate dimension” which covenants global bout among firms. Aiding information technology e-commerce acts as a supporting pillar which resulted in development of information technology due to its demand among people. E-commerce is also capable of either reducing the operating cost or increasing the revenue. It is possible by creation of new market for new customers of old products. With the help of information technology it is possible to synthesize big data. Proceeding it facilitates creation of new information products and services. In conventional commerce “friction” is termed as a dawdle in transaction which needs to be nullified by expenditure of “transaction cost”. Such cost is being found out in a feeble market since they are built on inefficient structural model integrated with inappropriate technological support.E-commerce eliminates such a scenario.

II. Literature Review:-

Nanehkaran, Y. A. (2013), stated that electronic commerce has been an extensive uphold for the revolution of Information and Communication Technology which aids in the economy.It also terra formed the approach and methods practiced in trading because of world-wideness with regard to human convenience and benefits. He also stated that e-commerce was quite helpful in elimination of cons from the traditional business.**Mann, C. L. (2000)**, stated that domestic services are being edified , globalized production via integration and leaping towards advanced technology are some of the assets due to ecommerce and its analogous processes. **Chanana, N., & Goele, S. (2012)**, stated that the transition from traditional trading to online trading does take very long time in certain locations. In addition to business transactions of goods and services over internet, e-commerce also performs various processes within firms that support the goal. **Singh, N Et al., (2010)** predicted that companies are beginning to expand their trading range by drawing the attention of the spectators from the global market with the help of e-commerce. This allows them to set-up their sell spots not only in developed countries, also in developing countries with blooming economies such as China, Brazil, India and others. Due to such an agenda it also allows such firms to be equipped with a tactical approach against new competition threatening their trading. But as a contrary disclosing a disadvantage **Dahiya, M. (2017)** states that it affects offline traders with such a huge impact. When customers are being attracted towards e-commerce due to its perks, as a selling strategy offline traders are being forced to reduce the selling price which leaves them with no profit at the end. It also resists them to behold large amount of stock in order to avoid any risks. Adding to that **Nogoev, A. Et al.,(2017)** stated that drawbacks such as delivery issues, security issues, international legislations etc., acts as a hindrance for e-commerce to attain its full potential. He also asserted that innovative technology are required to overcome these in future. **Mirescu, S. V. (2010)** stated that even the legislative systems are being supportive to the e-commerce process by removal of legal vacuum. This could be inferred as the chain reaction of a potential customer who completely trusts e-commerce. But on the other side still some amount of diffidence are being present among customers despite of many security solutions and support provided by the online firm. **Rodríguez-Ardura, Let al.,(2008)** discloses that using e-commerce as a gateway, under the influence of internet privacy is being placed at stake in such a vast domain with jillion of opportunities. He also mentioned that it is quite easy when it comes to combination and integration of private data from online workspace. And it is also observed that certain customers find access to online information as a tedious, time-consuming and low cost effective process. In some of the cases it is mandatory that the customers are being forced to provide their personal data where customers feel diffident that they might be influenced or disquieted by using those data. **Razavi, S. G. Et al.,(2014)** stated that e-commerce is being contributing to the journey over the road to economic development which is to be considered as a vital factor especially for a developing country. Spike in production rate and income have been the most important requirement to be

attained at high certainty. In addition to that as e-commerce requires technological advancements and support it plays an important role of creating in ICT sectors. **Daviy, A. et al.,(2015)** compared traditional markets and e-commerce markets by laying emphasis over the validity of models being implemented in e-commerce. He also stated that e-commerce focuses on both customer retention and customer acquisition unlike traditional commerce which focuses on any one. After the introduction of e-commerce it is found that the market space is well segmented, customized and interactive. But **Noce, A. et al.,(2005)** portrayed that e-commerce is not analogous for all firms which are being shifted to online marketplace. Because when it comes to connectivity among customers and sellers then it is an essential task to provide an status of themselves which looks quite satisfactory for a large firm when compared to a small firm. This allows the difference in perspective of them by a customer. **Chan, C. et al.,(1999)** from an unique perspective stressed that management sector of e-commerce also plays a vital role in existence of a company. Under any circumstances problems from technical, managerial and environmental aspects may tend to happen during implementation, where it is the responsibility of management sector to address them and on the other side to express the benefits reaped by implementation. **El Gawady, Z. M. (2005)** asserted that e-commerce have become very influential over the world, such that banks and other financial systems will need to adopt an online working model in order to support e-commerce and its other activities. He also compared developing and developed countries, came up with a conclusion that impact of e-commerce is more in developing countries due to its innumerable opportunities.

Barriers:-

When it comes to e-commerce adoption few barriers and drivers do play a major role in developing countries like India. **Internet and Mobile Association of India (IAMAI) affirmed that the Indian ecommerce market was expected to touch Rs 46520 crores turnover in the year 2011.** This statement was enough suffice to assert that ecommerce is quite a fruitful source for the economic development of a country and global expansion of its market. Barriers are the factors which acts as a hindrance to the adoption and growth of ecommerce in a country. They are location dependent and it comprises of physical and non-physical elements in it. Barriers are primitively classified as economic, rational, technical and legal barriers. This classification is further executed by consideration of consumer's and business perspective.

Economic Barriers:-

These are the type of barriers that encompasses the factors influencing the economy of a country. Economy deals with the production and supply of goods, services, and money. Deliberating from the customer's perspective credit card penetration, inadequate tele density, electricity and purchasing power are the some instances of problems to be eradicated. Purchasing power is the amount of goods or services affordable for unit money. It is dependent on the demand and cost of the product whereas tele density is defined as the number of telephone connections available per unit area of the country. It is an inconsistent factor which is dependent on other sub factors such as location, public awareness about connectivity etc., Credit card penetration deals with the amount of credit cards available among a certain group of people. It is varying from cities to villages due to lack of awareness and technology courting among the village people. But due to technological advancements lack of electric supply is not considered as a major problem. From the business perspective underdeveloped financial systems, lack of economies of sale, ICT (Information and Communication Technology) with supporting infrastructure, and finally low attraction of ecommerce among traditional sectors are some of the problems. Financial systems are entirely dependent of the firm. Economies of sale is due to the low participation from the customer's side. ICT are the combination of software and hardware that are required to facilitate online transmission and exercising of ecommerce. Traditional sectors are comfortable with old techniques and principles, but when it comes to ecommerce transition they feel diffident or taking long time.

Rational Barriers:-

These are the type of barriers which are being influenced by the facts of the field, and the current status of a domain. In other words it is entirely dependent on logic towards a domain. Discussing from the customer's perspective lack of Computer and English skills, lack of confidence in provider are few problems to be solved. Both computer and English skills are entirely dependent upon the literacy rate of the country, and it is naturally inconsistent throughout the country. For example the literacy rate of Kerala (93.91%) is higher than Tamilnadu. (73.44%) as of 2018 which varies due to other internal governing factors of the state. Few prefer for ecommerce websites of a firm in local languages which is not available for all websites. When it comes to lack of confidence levels it is dependent upon the public image of ecommerce among the public. Ecommerce is beneficial for some and not for some because of their professional orientation towards ecommerce i.e., business using ecommerce and not. And from the business perspective lack of delivery services and infrastructure, risk aversion and lack of workforce are some examples. Workforce recruitment is to be done by the firm, but for

ecommerce it is not just about physical work to be done, the labour must be capable of working with ICT which is not available in a large scale. Transition from traditional to modern ecommerce is being considered as a big leap of faith. Factually affording ecommerce is expensive and if it leads to failure then it turns as a heavy loss, so to avert such situations firms are hesitant to convert as an online firm. At last delivery services and infrastructure must be certain of its quality and agility because it acts as a perk for adopting ecommerce. When such a factor lags it becomes a huge drop for ecommerce adoption. And it is also difficult recruit robust labour and afford infrastructure for delivery purposes. Even if did maintaining them is a difficult task too.

Legal Barriers:-

These barriers are due to the legal influence of government over the ecommerce of a country. It is quite mandatory that government aid is required to ensure proper working and development of ecommerce. If it not approves then it is not possible for ecommerce to emerge as a successful domain contributing to Indian Economy. The main problems are lack of legal framework and support. Legal frameworks could be defined as a set of rules and regulations within which the ecommerce actions of a firm must be performed. Because they are framed in such a way that the communication channel between the customer and provider must be in such a way that there must be interchange of data only for purchase purpose, where some may tend to extract personal data of customer which could be used against them. This ideology restricts people to prefer ecommerce over traditional method. And then comes the legal support where it is to be provided by the government itself with the co-operation of the firm. In this case it is mandatory to ensure that the legal frameworks are being executed with high certainty. This is what the legal support do. It requires proper security interface between customers and providers. Even if it tends to fail the provider must be certain of safeguarding the client data and completion of purchase quickly. And in addition it also requires labour skilled with online security and networking.

Technical Barriers:-

These kind of barriers is entirely dependent upon the technology advancements, and its familiarity among the people. For developing countries like India there are technological developments throughout the country but it is not consistent throughout. In these barriers both the customer's and business perspectives seem to be cordially united. Problems such as difficulty in technological adaption, lack of many online payment mechanisms etc., are the examples of few problems to be taken care of. As observed for the past decades over the Indian history we have faced many new technological advancements in fields of engineering, business, health and entertainment. But it was not certain that it reached throughout all the socio-economic levels among the people. So the higher ones are being updated periodically as the new development is throughout the past decades. But when it comes to ecommerce, service or product provider from all levels need to be capable of adapting to new infrastructure. For low level providers it must be very tough to adapt since they are being exposed in all of a sudden. The last one is lack of online mechanisms which do play a major part. The familiar method of online payment is by credit/debit card which was the premier one. But in this trend many payment mechanisms have been emerging such as online banking where one performs traditional technique of money transfer from one account to another by online platform. Even android applications such as PayPal, Google wallet etc., are capable of online payment with high security and certainty. But it is not accepted throughout among all the online firms because some firms hire few online money transfer service providers based on its reputation so others will not be given a chance. On the other hand few online money transfer service providers are being rejected by firms in order to save their relationship with previous service providers. In addition to that few avoid online money transfer service providers since they take up most of the profit under the name of transaction services which are quite expensive.

Drivers:-

Drivers are factors which upholds the persistence of e-commerce in developing countries like India. Similar to barriers they are also inconsistent throughout the country because of interdependent factors such as geographical locations, people's competency etc.,. It comprises of many physical and non-physical elements in it. Drivers could be primitively classified as environmental, knowledge, organizational, technological and economical drivers. As similar to barriers even drivers could be influencing from both customers and traders perspective.

Environmental Drivers:-

These are the type of drivers which are entirely dependent upon the geographical locations i.e., the external elements which ensure the existence of customers in the certain region such as ease in reach to all facilities, governmental influence etc.,. As the relentless competition among firms from the same domain to prevail over the market exists they tend to improve continuously to gain customer's attention, it contributes to the development of e-commerce simultaneously. It is also mandatory that the government lends its hand for the

persistence of ecommerce. In return it also helps government in various aspects such as increased taxation, interaction with foreign countries during import/export etc., As people are well exposed to technology they tend to expect state-of-the-art quality in everything, so in regard to that the suppliers are always primed with required facilities to satisfy them which exhibits the preparedness of suppliers towards ecommerce. This holds a great contribution to ecommerce. But to mention regarding exposure to technology it varies from place to place over a country. It depends on factors such as literacy rate, telephonic density etc.,

Knowledge Drivers:-

These drivers are liable to the competency of the customers i.e., the knowledge possessed by them which could be exercised for the usage of ecommerce in an auspicious manner. But knowledge comes along with the education and awareness, so it could be mentioned that education does play an important role in existence of ecommerce in a country. From a customer's perspective he/she expects a lot of beneficial elements from technology implementation, this is due to the knowledge over a domain gained by education which acts as an essential driver. Now discussing from a supplier's perspective with the aid of knowledge he possess he comes up with new strategic developments in his approach of ecommerce towards his customer's like new business models, ways of advertising etc., In addition to these knowledge over internet and other supporting technology helps customers to understand the demand and perks of adopting ecommerce. It also increases their competency levels.

Technological Drivers:-

These drivers are dependent of technological development and its influence among customers. It is also invariant in nature. Compared to traditional methods when incorporated with technology ease in purchasing with less time consumption and money transaction. But during the evolution of ecommerce at its beginning there was a fear of loss in quality and money but in its technological advancements such kind of fears have been eradicated. As the suppliers are being updated with their technological infrastructure it is observed that their profit rate s increased due to cancellation of many unwanted tasks and equipments. From a supplier's perspective it also saves them a lot of energy and money when compared to traditional commerce. Now-a-days technology is improved in such a way that customers are being mixed with technology as an integral one, so the suppliers also need to be technologically adaptable in order to accommodate the customer's requirements with absolute certainty. This holds a greater part of contribution to the existence of ecommerce.

Organisational Drivers:-

These drivers are entirely business based and it depends upon the characteristics of a firm and its basic working structure and strategy. As ecommerce developed most of the traditional methods have been eradicated but also the amount of working force also being reduced which saves up the recruitment and training cost for the firm. This is quite advantageous for the firm in terms of revenue. Moving further with the adaption of ecommerce, it transformed the traditional customer-supplier relationship to the next level so that the efficiency of the firm increases in ways such as spiked sales rate etc., Adoption of ecommerce also decreases the operational and maintenance costs where most of manual handling equipments and techniques are being replaced by new elements which saves up a lot of money and energy. As most of the unwanted resources which were hindering the operation and development of a firm are being identified and eradicated by the concept of ecommerce, most of the business firms are biased to ecommerce compared to traditional methodologies for its innumerable perks.

Economic Drivers:-

These drivers are dependent upon the economy among the customers. When a firm steps into the ecommerce it is essential for the firm to completely understand the economy of the country for deciding various elements such as price fixing, price competitiveness, forecasting sales etc., By fixing an optimum price the product / service is made available for every socio-economic level people and in return it also increases the purchasing power of the country. But if the economy is enriching it is also possible to yield maximum profit from the customers by exchange of services. But on the other side it also need to be mentioned that ecommerce also contributes for the expansion and development of the country's economy.

Ranking of barriers and drivers:-

With the help of AHP (Analytical Hierarchy Process) and the collected data based upon the case studies which were investigated for the repetition of types of barriers involved in. And based upon the following data importance is being allocated for each type of barriers and with help of that ranking is being done which is listed in the following table.

Individual Barriers	Impact Factor (Out of 1)
Lack of ICT and supporting infrastructure	0.173316
Lack of English language skills	0.121604
Lack of confidence in service provider	0.089688
Traditional sectors find internet less attractive	0.067468
Inadequate legal framework for business using ecommerce	0.0577458
Lack of computer literacy	0.04444
High degree of risk aversion	0.040804
Difficulty to adapt new technology	0.030888
Underdeveloped financial systems	0.029492
Lack of Delivery services	0.026664
Lack of awareness and knowledge about ecommerce	0.025856
Personal computer cost/Cost for using internet services	0.02418
Preference to examine products by consumers	0.02184
Consumption of time taken to implement changes alone	0.021
Lack of online payment mechanism	0.02028
Lack of knowledge to use ICT profitably	0.019796
Lack of valuable and useful contents for consumers	0.015912
Lack of top management support	0.015912
Lack of purchasing power	0.015352
Lack of Delivery infrastructure	0.01414
Payment option as the service charge depending upon bank	0.010764
Lack of work force for ecommerce	0.007676
Vendor reputation and honesty	0.005616
Changing regulations with each government change	0.0052479
Inequality in socioeconomic levels	0.003432
Lack of customer service	0.003432
Socio-cultural environment	0.003432
Security issue for card frauds	0.00016564
Lack of local language websites	0.00012928
Lack of legal protection for online purchase	0.000007722
Low teledensity	3.9064E-06
Low credit card penetration	0.000001799
Prefer face to face communication than email	1.3563E-06
Lack of legal support towards ecommerce	8.217E-07
Lack of electric supply	7.453E-07

And the same methodology is being followed in order to prioritise the drivers which are ensuring the existence of ecommerce where the cede for ranking them based upon importance is being derived by investigating the same set of case studies which were done for the barriers, The ranking list is tabulated as follows.

Individual Drivers	Impact Factor (Out of 1)
Reducing the cost of operations	0.19845
Price competitiveness	0.12987
Communication Efficiency	0.09506
Competitive pressure from other Internet adopters within my industry	0.09477
Improves customer support and services	0.09114
Cost to setup and maintain	0.068685

Readiness of suppliers for electronic business	0.051246
Transforming the whole business	0.0441
Understanding of available opportunities and options with e-commerce	0.036205
Market Viable market or customer base for e-commerce	0.034398
Increasing the volume of sales	0.03136
Trust or confidence in Web and Internet Technologies	0.0208
Government rules and regulations	0.017199
Technology Orientation	0.01653
Employee Reduction	0.01519
Profitability of e-commerce	0.01519
Partners/Vendors Availability of the right partners with whom to work	0.011934
Promotion adaption	0.011583
Product uniqueness	0.009785
Models of successful use in industry	0.007995

III. Conclusion

As referred from the above tabular results is it possible to identify the drivers and barriers of ecommerce and its supporting aspects. This also provides a future scope where with further deep analysis of an ecommerce system and its support elements where deciphering the inter-relationships between them could unlock various methodologies and strategies to improve and sustain an ecommerce entity amongst this competitive world. In addition to the following boon, in developing countries such as India where it acts as a perfect soft spot for landing the ecommerce methodologies which

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