Reducing Logistics Pollution And Overcoming Challenges In E-Commerce By Restricting It Within Each Local Boundary

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Abstract *- E-commerce is buying or selling goods or services using electronic medium and it have cross national boundaries. In this context, it is restricted within each local boundary. The process begins with digital marketing of local retail shops by showcasing their detailed product information data base to the interested customers. Provisions will be there to compare, order, return, and rate products. If a customer orders a product, it will be collected from the respective retailer and delivered at their door step. The money transactions will be made by COD (Cash on delivery) mode to avoid banking risk. In cross national boundaries, certain demerits such as logistics pollution, lack of trust, affecting local retailers' sales, banking risks etc. are there. But, local E-commerce solves those issues and also reduces pollution.*

Keywords — *E-commerce, Cash on delivery, logistics, retailers, pollution.*

I. INTRODUCTION

Business is an organization involved with selling of goods and services. Whereas the term commerce defines both buying and selling of goods and services. Buying or selling with the support of electronic devices like internet, telephone, and laptop etc. is known as E-commerce or electronic commerce. M-commerce is buying or selling with the support of mobile phones [1]. The term E-commerce is coined by IBM's Marketing and Internet team. They define E-commerce as commerce coupled with information and communication technology (ICT) [2]. E-commerce plays a dominant role in this digital era.

The E-commerce is classified into three types based on producers and consumers. They are

- Business to consumer (B2C) Example: Amazon
- Business to business (B2C) Example: India Mart
- Customer to customer (C2C)Example: OLX [1]

Among them B2C is more prominent due to globalization of internet [3]. Our idea suits for all the above categories, but focuses mainly on B2C category.

II. SCOPE AND STATISTICS OF E-COMMERCE

In this digital era consumers in countries like Netherlands, Germany, UK, France, Belgium, Spain and Italy uses 42 to 86 % of internet services. Consumer spends above 50% of the available internet in E-commerce websites. On average 42% of the world population are ready to accept E-commerce [8]. Thus this is a fast growing field with large scopes.

III. WORKS OF E-COMMERCE

The works of E-commerce are to

- Market products electronically
- Act as an intermediate between buyers and sellers
- Manage fund transfer
- Deliver customer orders [1].

IV. DATA COLLECTION

Marketing differs from sales. Data collection is needed to market a product. There are two types of data collection. They are qualitative collection i.e. collection of data and simultaneously dealing with it and quantitative collection i.e. collection of data and then dealing with it later [5]. In this proposal, data is to be collected about the products available in a locality in both ways. The locality limit is considered as the e-commerce limit.

V. DIGITAL MARKETING

The primary duty of E-commerce is digital marketing. It can also be known as web marketing/E-marketing/online marketing/internet marketing. It is classified into passive marketing and active marketing. Passive marketing is marketing manually through e-mails, messages etc. Active marketing is marketing automatically with soft wares. These soft wares market products to customers based on their purchase history. The soft wares provide more customized service than a human [1]. Here, active marketing is proposed to passive marketing. The database collected about the local retailers and their products will be published in a mobile app and website which are designed in a user friendly manner. Provisions will be there to compare, order, return,

and rate products electronically. The app or website will be available to use by the consumers in the respective locality. With this app orders will be taken electronically within a locality.

VI. USE OF SOFTWARES IN E-COMMERCE

In E-commerce, softwares are used not only in marketing, but also in Electronic Data Interchange (EDI). EDI is receiving and sending sales orders, purchase orders, preparing invoice and sending e-receipts through mail etc. [1].In addition to digital marketing and EDI softwares will also be used for accounting, tax calculation, office works management etc. So, the man power is reduced and eventually both money and time will be saved.

VII. RETAILERS

There are two types of retailers. They are

- Click and Brick or Multi channel retailers (Operates both on offline and online)
- Click retailers (Operates only on online)
  - With own asset (Manufacturing and selling in online)
  - Without own asset (Intermediate between retailer and customer) [8].

Out of these click without own asset retailers are not considered, because increase in intermediates increases the cost of product.

VIII. GOODS AND SERVICES

Though the order can be taken electronically, the product or service cannot be delivered electronically. If the product is also in digital form then there won't be any complication in delivery (Example- a song or movie) and it comes under service category [2]. Some digital services like Massive Open Online Course (MOOC) also come under service category. Most of the products to be delivered are in physical form and are called as goods. In E-commerce an order is categorized as a good or service with the following criteria.

- If a service is ordered digitally and delivered digitally then it is categorized as service.
- If a service is ordered digitally and delivered physically then it is categorized as good.
- If a good is ordered digitally and delivered digitally then it is categorized as service.
- If a good is ordered digitally and delivered physically then it is categorized as good [3].

Our idea can't compete in cases 1 and 3. So, main focus will be on cases 2 and 4 that fits within a locality.

IX. DELIVERY SERVICES

There are two types of delivery service in E-commerce. They are point collection and door delivery. Point collection involves collection of goods by consumer in the nearest collection centre. But door delivery service delivers goods at the door step [6]. In this proposal, goods will be delivered at the door step to provide more comfort for customers.

X. LOGISTICS

Logistics comes into the play when there is need of physical goods delivery. There should be a coordination between E-commerce and logistics. Logistics is transporting goods from the point of origin to point of consumption. The steps involved in logistics are stock holding, route planning and transporting. Transport is done with terrestrial, aviation and marine transports. 60% of the E-commerce companies use Third Party Logistics (3PL) on a contract basis. Due to high competency within companies they concentrate more on digital marketing and shift the shipping tasks to their logistics partner. A 3PL company provides logistics service for multiple companies. Because of mass transportation it is cheap [5]. The 3PL should balance both cost and service [7]. Some companies have mixed logistics. Some 3PL companies misuse the customer information. Due to bulk transport, rough handling of goods will be there in 3PL [5]. Thus own logistics service is proposed in this case. By limiting service area within a locality, focus will also be balanced on logistics. The main objective of the own logistics department is to protect consumer information and build trust. The open window availability period affects delivery of goods. Also it is unable for customers to predict their free time in advance. But in this case goods will be delivered within few hours even in peak traffic time. It is also easy for the customers to quote their convenient time within a day. Food and grocery items are excluded from our delivery services considering their shelf life, temperature maintenance and complicated packing issues. Traditionally in India the quality of the food items are decided with physical touch and smell. Food products consume high volume but low value margin [6]. So, avoid food products will be avoided.

XI. REVERSE LOGISTICS

Reverse logistics is just opposite to logistics. It deals with the transport of goods from point of consumption to point of origin. The return policy of an E-commerce company states that, if the customer is not satisfied with the delivered product then he can return it within a deadline and he will be repaid later. Considering this policy a hidden reverse logistics charges will be collected in advance. But survey says only 0.25% of goods are returned [5]. This reverse logistics is a complicated process. The fuel consumption, pollution, time and everything will be doubled [5].But in our case delivery distance is within short range. Though all the parameters increases exponentially, they are negligible. So, it is not needed to collect hidden return charges.

XII. MONEY TRANSACTIONS AND SECURITY

In E-commerce, money transactions are mostly made through online by internet banking, debit/credit cards, E-wallets etc. These pre-payment options are cheaper than post payment mode (COD). But it is not secure. There are many loop holes in law. So, many fraudulent attempts occur often. There is lack of trust among customers [6]. But, inside a locality a fraudulent shop can easily be spotted and further actions can be taken. The discount in pre-payment is because 3% of the total product value goes to the logistics partner as service charge for COD [5]. But independent logistics department will be established in this case. Cash will be collected on delivery with our own logistics department without collecting any service charge. But, if a customer cancels a product while delivering then there will be a small loss in reverse logistics.

XIII. ADVANTAGES

There are various advantages to the organization, consumer and society.

- Goods are cheap and affordable due to high competition [1] [11]
- Provides job opportunity [1]
- International market and cross border transaction [1] [3]
- User friendly interface [1]
- Wide variety of products and more options [1]
- 24*7 service [2]
- No need to wait (in queue) [2]
- Reduction of paper usage [11]
- Personalised marketing [13]
- Promote cottage industries
- Customer feedback [11].

XIV. DISADVANTAGES

Our proposal will solve maximum of the below issues.

Challenges in International boundary E-commerce	**Solution by Local E-commerce**
Involvement of 3PL [5],	In this case independent logistics will be used.
Not secured [1][5]	Money transactions are made by COD and third party doesn't involve at any stage. So, highly secured.
Lack of trust [1]	Individual identity of local shop will develop trust among people.
Hidden charges for reverse logistics [5]	Logistics charges are negligible because of short distance delivery.
Loop holes in law [5]	
Difficult to transport food and grocery items [6]	
Need to wait for the product[6]	Delivery will be done with in few hours even in peak traffic hours.
Disturbs livelihood of local retailers.	Promotes livelihood of local retailers and cottage industries.
Unable to touch and feel the product physically [6]	
When there is increase in network traffic, improved facilities are to be provided[12]	
Requires more packing materials [6]	The product travels only a short distance. So, simple packing is enough.
In world 76.45% of cars and 9% of Trucks exist. So, if E-commerce develops drastically, world should be ready to meet out logistics vehicle requirement [9].	Only small vehicles are used for delivery services within locality.
Unable to predict open window availability [6]	Available time in a day can be quoted.
Trucks are used for logistics and shipping. Their engine runs with diesel. Thus polluting the environment. Mostly they are driven in highways at high speed. At this stage enormous emission of carbon monoxide takes place due to incomplete combustion. Also Nitrogen oxides and Hydrocarbons are emitted leading to pollution [4] [9].	Two wheelers are used for logistics. They run with petrol. Mostly they are driven within the city at moderate speed. So, the emission will be low compared to diesel trucks running at high speed.

XV. CONCLUSIONS

By restricting E-commerce within each local boundary, most of the issues in E-Commerce can be solved. Logistics pollution will be reduced.

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