A STUDY ON EMERGENCE OF OPEN NETWORK FOR DIGITAL COMMERCE (ONDC) IN INDIA

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ABSTRACT

E-commerce has become a household name for many of us in recent years. It's come a long way from being just a marketing platform and has now become a one-stop shop for buying and selling. The E-commerce market in India has seen immense growth and is only continuing to grow bigger each day. The objective of this paper is to analyse the status of Ecommerce markets in India. The major theme of this is to investigate the buying habits of consumers in the Indian Subcontinent. The reason for the major dominance of large E-Commerce giants like Amazon and Flipkart in the Indian Peninsula. The limitation the of present E-Commerce Structure The Emergence of a government-based open network for E-Commerce revolutionizes the E-Commerce market forever. This paper also aims to scrutinize rules and regulations adopted by the Indian government to cure the dominance of MNCs like Amazon and Flipkart. This paper defines the newly implemented ONDC Network This paper will further critically study its components and the networks it functions in.

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Keywords: *E-Commerce, Open Network for Digital Commerce (ONDC), Online, Marketplace, Platform.*
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Introduction

E-commerce can be defined as the process of buying and selling goods and services online with the help of the internet. Ecommerce has augmented the number of online payments done through debit and credit cards and is hurtling the process of a cashless economy all over the world. In recent times banks have come up with innovative collaborations with these sites to provide additional benefits to their customers. According to research conducted by the United Nations conference on trade and development. The ecommerce share of global retail trade has increased from 14% in 2019 to 17%in 2020. It has further augmented the process of digital transformation. The findings show a strong interest in e-commerce across regions, with consumers in emerging economies making the greatest shift to online shopping.

Electronic commerce or e-commerce has drastically changed the way we perceive markets. It has drastically changed the traditional way of shopping. In the 21st era eCommerce sites like Amazon and eBay have just become household names These eCommerce companies have had manifold their revenue to trillions in the past recent years with minimal operational costs. While the entire business economy was stagnant and incurring losses in 2020 due to the pandemic and lockdown restrictions amazon made up to 3.8 million in revenues and the shares of amazon rose up to 41%. Many eCommerce sites are selling diverse products from daily groceries to electronic items it's all just a click away. Moreover, these sites offer numerous membership advantages. Every coin has two sides to it no matter how economical these sites are the still hold drawbacks. They have given tough time to the smaller brick and motors stores or commonly known as Kirana stores, the exorbitant delivery prices charges from the consumers is another issue. To revive our unorganised sector which accounts for more than 90% of our Indian GDP. The Open Network for Digital Commerce (ONDC) initiative aims to promote open networks for all aspects of digital or electronic product and service exchange. Open-sourced methodology, open specifications, and open network protocols, regardless of platform, will serve as the foundation for ONDC.

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It is anticipated that ONDC will make e-Commerce more accessible and inclusive to consumers. Using any compatible application or platform, consumers might be able to find any seller, product, or service, increasing their choice. Customers will be able to match demand with closest available supply thanks to this. Customers would also have the freedom to select their preferred local businesses as a result of this. As a result, ONDC would standardize operations, encourage the inclusion of local suppliers, improve logistics efficiency, and increase consumer value.

The government of India has initiated a Section 8 company ONDC to provide a trusted platform for the unorganised sector and provide an extraordinary buyer experience for consumers. Will ONDC be a revolutionary idea for the Indian sub-continent?

In this article, we have summarised the basic framework of ONDC which includes its need and features.

ONDC, a UPI of e-commerce, aims to transform digital or electronic commerce into an open network by shifting it from a platform-centric model. Merchants will be able to save their data using ONDC to build credit and reach customers.

The government-backed platform that is being proposed aims to level the playing field for offline retailers and e-commerce giants like Amazon and Flipkart, who have been complaining about these companies' unfair business practices. The platform will also be designed to comply with the Personal Data Protection Bill and the Information Technology Act of 2000.

ONDC intends to provide sellers and buyers with the ability to transact through an open network and be digitally visible on any platform or application in this system. By breaking down silos and forming a single network to drive innovation and scale, it will also empower merchants and consumers and transform all businesses, from retail goods to food to mobility.

Using open specifications and open network protocols, the new framework aims to promote open networks built on open-sourced methodology, regardless of platform.It is anticipated that it will digitalize the entire value chain, standardize operations, encourage the inclusion of suppliers, improve logistics efficiency, and increase consumer value.

The official statement from the government says that ONDC will do everything in its power to keep data in the network private and confidential. Participants are not required to provide ONDC with any transaction-level data. will collaborate with its members to publish aggregate metrics on network performance that are anonymous while maintaining confidentiality and privacy.

The government has established a nine-member advisory council, which includes Nandan Nilekani from Infosys and R S Sharma, CEO of the National Health Authority, on the measures required to design and accelerate ONDC adoption. At the moment, ONDC is in its pilot phase.

India is looking directly at the future of e-commerce; set to lead the development of digital public infrastructure worldwide. This is not powered by an app or platform; rather, it is powered by a network and a set of protocols that make it possible for products and services to be traded on an even playing field. The ambitious Open Network for Digital Commerce (ONDC) launched by the Indian government is bringing about an unprecedented digital transformation of e-commerce that the nation has been anticipating for a long time. By providing buyers and sellers with access to a facilitator-driven decentralized network, ONDC is poised to reinvent and democratize the online marketplace for millions of small and medium-sized businesses in order to provide new opportunities.

Through price comparison, the network will provide buyers with additional purchasing options. Currently, a buyer must first create a profile with a particular platform before they can buy products online. This restricts the buyer from the products listed on that platform. On the other hand, ONDC will make it possible for all network apps to display products and services from all participating e-commerce platforms, including local retailers, in search results.

Why is the need for ONDC?

Promote interoperability to create an open, inclusive, and competitive marketplace

- Be an enabler with minimal public digital infrastructure
- Be scale efficient and build for population-scale adoption
- Make digital commerce, small-business friendly
- Pave the way to unlock innovation for reimagining digital commerce
- Ensure rapid digitalization of MSMEs and consumers

Literature Review

Growth of E-Commerce in India (2015), Dr. Kishore Kumar Das Registrar, Ravenshaw University, Cuttack, Odisha, India. Affreen Ara Computer Science and Engineering Padmanava College of Engineering Rourkela, India.

E-commerce is the sale of goods and services over the internet. This paper discusses the driving forces behind India's e-commerce sector's expansion in this paper. The study's methodology is based on secondary sources like conference proceedings, reports, blogs, and articles. E-commerce is one of the fastest-growing industries, and India has a huge investment potential. E-commerce has become easier to do in both urban and rural cities due to the rapid rise in mobile and internet use. The terms "study of commerce," "key drivers of growth," "market growth potential," "investment," "retail market," "logistics infrastructure," "internet regulations," "key challenges," and "future of ecommerce" are some of the topics that were discussed in the paper

Companies must provide superior website experiences and customer service to retain loyal customers. As the e-commerce sector develops, it will face obstacles, but there is room for expansion given the growing number of internet users and technological advancements. As more businesses enter the commercial sector in the future, they will need to put in more effort to improve customer service.

- Emerging Trend of E-Commerce in India: Some Crucial Issues, Prospects, and Challenges Sarbapriya Ray Assistant Professor, Shyampur Siddheswari Mahavidyalaya, University of Calcutta, India.

India's trade and fiscal policies have been based on the need to facilitate international trade through policy and procedure reforms since 1991 when economic reforms were explicitly implemented as a result of the country's opening up to the global economy.

As part of the information technology revolution, electronic commerce (e-commerce) became widely used in international trade and the Indian economy in particular. The way business transactions are done has changed as a result of technological advancements. India, a technology-savvy nation, has adopted e-commerce and is keeping up with the current state of electronic data exchange. In light of this, the purpose of this paper is to attempt to provide a snapshot of the development of e-commerce in India by indicating the chronological order, type of e-commerce business, description of organizations involved in e-businesses in India, and key characteristics of firms engaged in an e-commerce application. The government ought to establish a legal framework for e-commerce so that basic rights like privacy, intellectual property, fraud prevention, consumer protection, and others can be protected while domestic and international trade expands.

Future of E-Commerce in India

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Asia's e-commerce market is thriving and on track for rapid expansion. Some players started out well. Their understanding of the market and offering a variety of features are critical to their success. This paper discusses the future growth segments of India's e-commerce and provides an overview of its future. Also, learn about a few things that will be crucial to the expansion of Indian e-commerce in the future. This paper represents the various opportunities available to individuals, producers, wholesalers, and retailers. In this paper, we found that overall e-commerce in India's emerging market will grow at an exponential rate in the coming years. The Indian e-commerce sector has come a long way since its infancy. New players have entered the market as the market has matured. The demand for and variety of services offered by the B2C ecommerce market are both expanding in the current dynamic environment.

In the Indian market, the transition from traditional purchasing to online purchasing is taking a long time. E-commerce encompasses not only the purchase and sale of goods over the Internet but also a variety of supporting business procedures within individual organizations. Similar to e-commerce, e-business (also known as an electronic business) has a variety of definitions and applications.

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E-Commerce in India

A Review Pradeep Kaur, Dr. Mukesh M Joshi Singhania University, Rajasthan, India

Commerce is communication between two parties whose roles are very similar: seller and buyer. Someone must carry out the buying and selling in order for commerce to take place, and these two parties must have a fundamental understanding of how the transaction is typically supposed to proceed. The buying and selling of goods and services over electronic systems like the Internet and other computer networks are known as electronic commerce, or e-commerce.

Since the introduction of the Internet, there has been a significant increase in the volume of electronic commerce. Electronic funds transfer, supply chain management, Internet marketing, online transaction processing, Electronic Data Interchange (EDI), automated inventory management systems, and automated data collection systems are just a few of the many types of commerce that are conducted in this manner. We have discussed the advantages and disadvantages of e-commerce as well as its structure in this paper.

E-commerce is the purchase and sale of goods and services via the internet. E-commerce encompasses not only the purchase and sale of goods over the Internet, but also a variety of supporting business procedures within individual businesses. Similarly to e-commerce, e-business (electronic business) is defined in a variety of ways and utilized in a variety of settings. In particular, the utilization of information and communication technology (ICT) in business has resulted in cost reductions, increased productivity, increased customer participation, and mass customization. IBM was one of the first companies to use the term when it launched a campaign centered on e-business in October 1997.

Major corporations are rethinking their operations in light of the Internet's new culture and capabilities at the moment. In practice, the terms "e-business" and "this" are frequently used interchangeably.

The term "e-tailing" is occasionally used to refer to online retail sales.

Although it can also include a wider range of technologies like e-mail, modern electronic commerce typically makes use of the World Wide Web at least once during the transaction's lifecycle. For "virtual" items like access to premium content on a website, only a small portion of electronic commerce is carried out entirely online. However, the majority of electronic commerce involves the transportation of physical goods in some way. Online retail is referred to as e-tail, and online retailers are sometimes referred to as e-tailors. The sales aspect of e-business is typically referred to as e-commerce or electronic commerce. E-business is the use of Internet technologies to change important business processes. A company that can adapt to constant change is an e-business.

Objective of the Study

- To identify the demographics of customers active in online places
- To study the structure of the Open Network for Digital Commerce (ONDC) and how it can revolutionize the Indian markets
- The Government policies regarding the E-Commerce market in India.

Research Methodology

This study intends to make use of primary and secondary data, which is both quantitative and qualitative in nature. Primary data has been collected from the potential customers. It makes use of the questionnaire filled by them. The data collected is analysed for understanding their attitude towards using a descriptive approach. Secondary data has been analysed to understand the intricacies of ONDC.It has been extracted from credible reports and news websites.
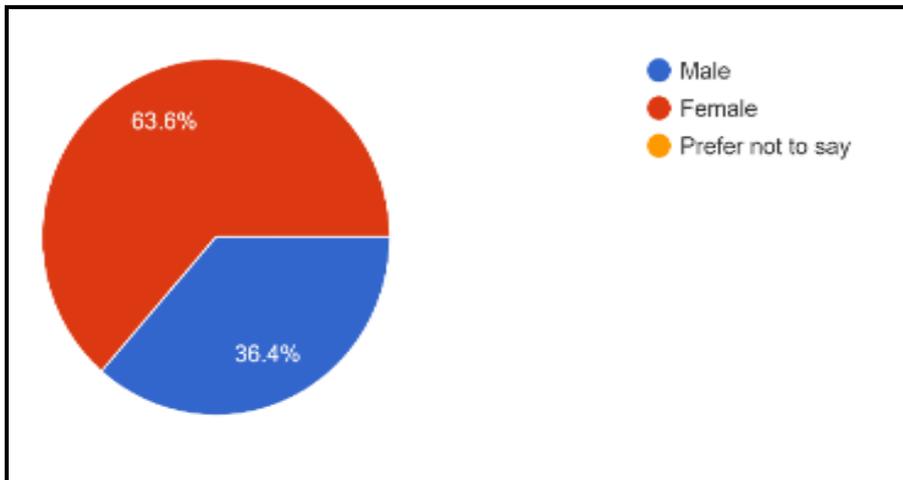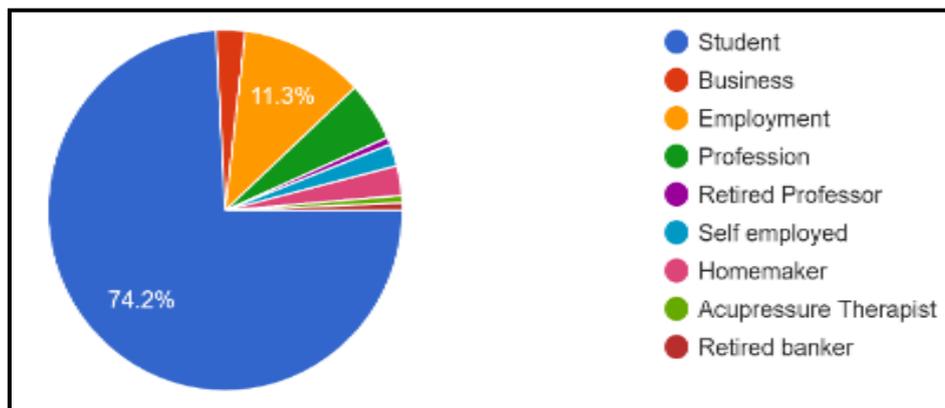
Data Analysis

- **Demographic Analysis**

A Survey was conducted to ascertain the buying habits of Indian consumers. There were 151 respondents. It is observed that unemployed female students are frequent users of E-commerce websites.
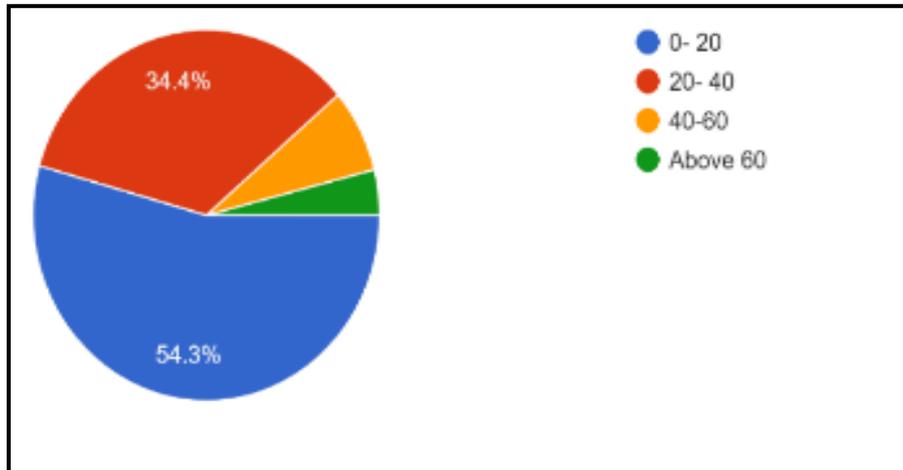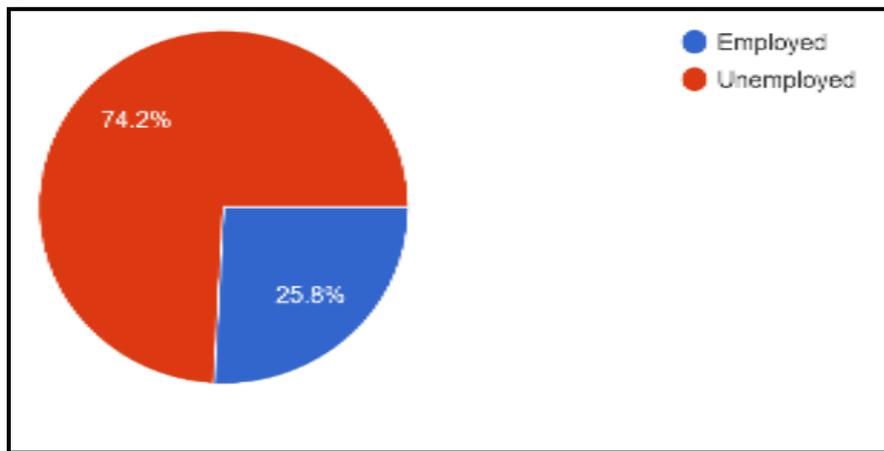
• **Age of the respondents**

• **Gender** of **the respondents**

• **Occupation of the respondents**

- **Employment Status of the respondents**

Fig 1. Demographic Analysis

Structure of ONDC

A primer on the design of the ONDC Network

The architecture of the ONDC Network is significantly different from that of conventional platform-based e-commerce solutions. In a platform model, the platform has a disproportionate influence over deciding all supply chain elements. As a result, the platform establishes the rules of engagement (i.e. terms of use/sale), has a contractual relationship with all buyers and sellers, and frequently controls payment and settlement. As a result, the platform serves as the "central store of trust".

On the other hand, ONDC is a network of various organizations working together to manage sellers and provide goods or services to buyers. Interoperability, common rules of engagement at the network level, and dynamic digital contracts enable Network Participants to coordinate their actions to complete orders on the Network and Fulfill them. This eliminates the need for a centralized entity to monitor and control operations. Some mechanisms designed into the system's design ensure accountability and good behavior in commodities such as groceries, straight from merchants to consumers.

On the ONDC Network, there are three types of Network Participants:

- Buyer Apps, also known as Buyer Nodes, are Network Participants that facilitate the buyer's ability to place orders on the network and handle buyer-side operations like buyer acquisition, search, and discovery.

- **Seller Apps:** Two types of Seller Apps can be used to manage seller-side operations.
    - Marketplace Seller Nodes (MSNs): MSNs act as aggregators in essence.

They permit dealers (who are not themselves network members) to execute on the Network. MSNs are pure-play marketplaces that do not hold any inventory.

    - Inventory Seller Nodes (ISNs): ISNs are sellers who also participate in the network.
- **Gateways:** Gateways are merely nodes that are used for multicasting search queries and storing the results. As a result, they are very important in search and discovery.

Under the e-Commerce Rules 2020, the Buyer Nodes and Marketplace Seller Nodes NP types are included in the definition of Marketplace e-commerce entities. Stock online business substances fall inside the meaning of Stock online business elements. Passages fall under the general meaning of online business elements.

The diagram shows how ONDC's architecture clearly defines rights and responsibilities without compromising its decentralization principle. The terms of any individual sale are binding on both the Buyer and the Seller, and the invoice conveys ownership of the goods to the Buyer. Through the terms and conditions of the Buyer App, the Buyer has a pre-existing legal relationship with the Seller App, and the Seller App has a pre-existing merchant agreement or terms and conditions. A Buyer and Seller App

and a Seller and Buyer App have no direct legal relationship. Through the Network Participant Agreement (NP Agreement), ONDC is the only party with whom the Buyer App and Seller App have a pre-existing legal relationship. While the NP Agreement establishes the legal relationship, the ONDC Network Policy explains how a participant can conduct business on the ONDC Network.

The Buyer App and the Seller App have no prior legal relationship before entering into a transaction. Through the Transaction-level Contract, they establish an instantaneous legal relationship to facilitate a Buyer and Seller transaction. A digital contract between the Buyer App and the Seller App that is executed over the ONDC Protocol is known as a Transaction-level Contract. ONDC is not involved in that deal.

Figure 1: Legal relationships between participants in the ONDC Network
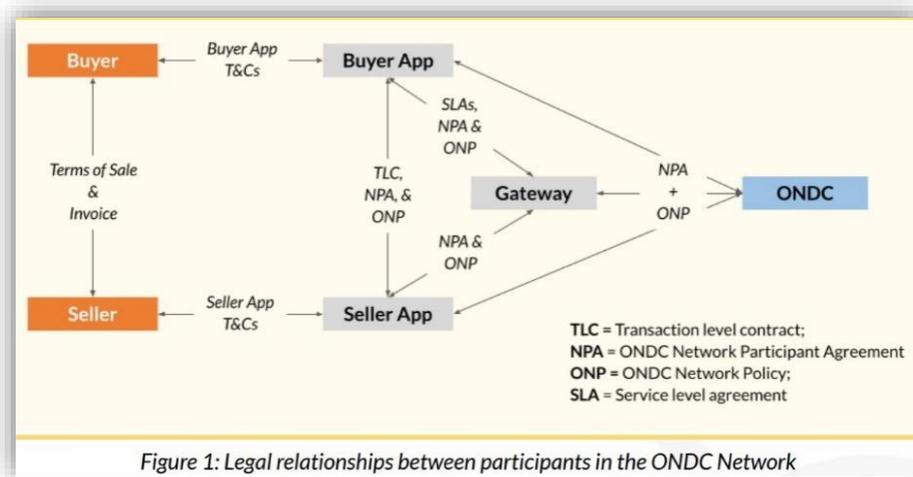
Fig. 2: Digital E-Commerce on ONDC

The current market structure must be altered if the digital commerce industry as a whole is to expand with widespread buyer and seller participation. At this point, we simply cannot turn it into a store of value if we want to rethink the mechanism for bringing participants together with an emphasis on trust. Though the idea of a "platform of platforms" may seem very natural, it doesn't solve the storage, universality, or trust issues.

A paradigm shift from an operator-driven monolithic platform-centric model to a facilitator-driven, interoperable decentralized network is required to solve a problem at such a population scale.

A facilitator-driven, interoperable decentralized network, as opposed to an operator-driven monolithic platform-centric model, is warranted by this paradigm shift:

- Incentives for broad participation; particularly that of small and medium businesses, which includes hyperlocal merchants (Kirana) from all over the nation.

- Moving away from "central platforms storing and exchanging value" and toward a "decentralized network of interconnected ecosystem actors orchestrating the flow of value," which allows value to flow rather than be stored.

- Addressing trust and discoverability across platforms rather than pursuing the idea of a single universal platform or platform of platforms • Unifying the siloed platforms to overcome the difficulties posed by the platform model

- Providing buyers and sellers with autonomy.

- Align the incentives of the network, platform, and end users so that the network and platform as a whole can only succeed if the end users succeed.

With the assistance of brand-new technology models11, the Government of India is encouraging such an open network for commerce. GoI is facilitating the establishment of an interoperable open network (Open Network for Digital Commerce - ONDC) to unlock the ecosystem's value by utilizing digital commons in the form of an open protocol that is merely a non-code open specification.
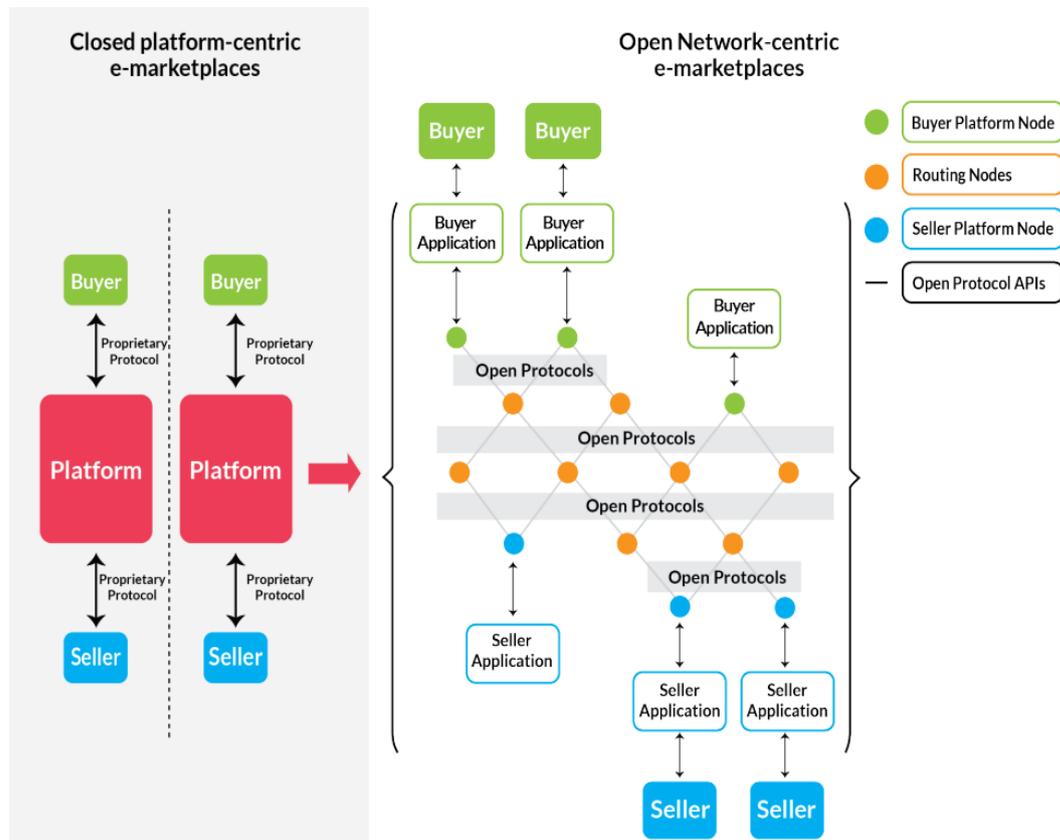
Fig. 3: Closed & Open Network –centric E-marketplaces

The establishment of ONDC and its role in making Open Network possible would have a number of advantages, including a significant increase in the variety of options available to both consumers and businesses, as well as substantial financial gains due to an increase in business efficiencies and a decrease in the cost of acquiring new customers. By assisting technology platforms in socializing their solutions for acquiring customers and/or sellers and attempting novel business models, ONDC will promote technology platforms by giving them more room for innovation and value-added services.

Evangelizing Digital Commerce in India

The first ONDC initiative, will revolutionize and democratize large-scale participation in the 2.85 billion rupee (USD 38 billion) Indian digital commerce market. ONDC's envisioned goals include the following:

- Make it possible for local retail ecosystems to access online demand and meet it
- Make it simple for all businesses, regardless of size, location, digital quotient, or other factors, to participate in the digital commerce coverage.
- By broadening the geographical and socioeconomic scope of coverage, India's digital commerce landscape can be improved. Form businesses by creating an active digital history and making it easier to get financing.
- Opportunities for economic development and the creation of new jobs throughout the digital commerce value chain, such as logistics, packaging, and last-mile delivery, among other things
- Reduce overhead costs like acquisition costs and the cost of a digital presence as well as inventory costs across all Indian businesses to improve efficiency. With a focus on the aforementioned goals in mind, ONDC will work to increase the market potential of digital commerce in retail. This will result in an increase in the investment and production of MSMEs and a rise in the trade of locally manufactured goods in India.

E-Commerce Laws in India

India allows 100 percent foreign direct investment (FDI) in the marketplace model of e-commerce, which it defines as a tech platform that connects buyers and sellers.

- India has not allowed FDI in inventory-driven models of e-commerce. The inventory model, which Walmart and Amazon use in the United States, is where the goods and services are owned by an e-commerce firm that sells directly to retail customers.

- The restriction is aimed largely at protecting India's vast unorganized retail sector that does not have the clout to purchase at scale and offer big discounts.

- It means that Amazon and Flipkart can only operate the marketplace model in India. Both companies have wholesale units that bulk purchase goods and sell them to vendors listed on their platforms. These vendors in turn sell to retail customers.

Restrictions on Controlling Inventory

- Traders and small online sellers have accused Amazon and Flipkart of violating the spirit of the law and of using the structures to offer deep discounts, accusations they deny.

- The new rules state that the inventory of a seller or vendor will be seen as being controlled by a marketplace if the vendor purchases more than 25 percent of its inventory from the marketplace or any of its group firms.

- The new regulation replaces a rule that said an e-commerce firm could not permit one vendor's retail sales to overshoot 25 percent of the overall sales of the marketplace by value in a fiscal year.

The government has also prohibited e-commerce firms from pushing merchants to sell any product exclusively on its platform. The sellers can, however, choose to have a preferred online partner.

Conclusion

To accomplish, we have briefly discussed the status of E-Commerce websites in the Indian Sub-Continent through the recent shift in laws in Indian market .

The major shift of Indian consumers from traditional brick-and-mortar stores to online shopping, the manner in which people transact business has undergone rapid change over the past two decades. E-commerce platforms, which have played a crucial role in this development, had to carefully consider how to build trust in an environment where buyers and sellers never meet. The approach that has so far proven successful is for the central platform to take control of each and every step of the value chain and serve as the central repository for trust. However, there are some drawbacks to this centralized approach, such as potential issues with competition and high entry barriers.

The ONDC Network was established to fundamentally reimagine and democratize e-commerce. The ONDC Network's paradigm shift, which includes interoperability, decentralization, and unbundling the e-commerce value chain, calls for yet another rethinking of the issue of fostering trust. In this archive, we have made sense of how ONDC is handling the subject of cultivating trust among purchasers, merchants, and Organization Members.

By identifying opportunities for improvement at this early stage of implementation, ONDC invites the general public to participate in the process of establishing trust by conducting this consultation.

Limitations

This work acknowledges the following limitations:

- Limited sample of population.
- The respondents are primarily limited to college students.

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