

Open Network for Digital Commerce -ONDC (E-Commerce) Infrastructure: To Promote SME/ MSME Sector for Inclusive and Sustainable Digital Economic growth

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ABSTRACT

Purpose: *Digital India, Make in India opened new avenues of innovation to promote the digital economy, the government of India in association with the department for the promotion of industry and internal trade launched ONDC the open source e-commerce ecosystem infrastructure similar to UPI. It is one of 17 sustainable Development Goals to promote innovation, infrastructure, Decent work in e-commerce and decentralization and democratisation. The e-commerce in SME and MSME business sectors to adapt B2B, B2C, C2C, and M-commerce across the segment such as mobility, grocery, food order, delivery hotel booking travel, with a partnership with customers, suppliers, distributors, warehouse, logistics, payments with the support by the government policy on FDI, PE/VC in e-commerce with API infrastructure, and Consumer Protection Bill 2018 regulate the online transactions by including the e-commerce sector. The worth of the e-commerce market in India is US\$200 billion by 2026 led by Walmart, Flipkart, and Amazon market share of 31.9%, 31.2% in India and social commerce market share is \$800 and mobile phones. Internet penetration drives the opportunity to develop network-based open protocol e-commerce appsto have scope for wider reach and support micro, small, and medium enterprises get into the online platform for small merchants as well as consumers of urban, semi-urban, and rural areas and it leads to a bank to introduce digitally product based lending improve the flow of credit to SMEs. The Aatmanirbhar Bharat movement gave a huge opportunity to Indian entrepreneurs to contribute to GDP by providing E-commerce credit to customers and bringing more inclusiveness, and sustainability to the consumer digital economy.*

Design/Methodology/Approach: *The Descriptive study and secondary data are collected from relevant and government websites to analyse the result and ABCD Listing Framework.*

Findings/Result: *Contribution of ONDC and other players of e-commerce towards the inclusive and economic growth of the country. The data shows that E-commerce start-ups have raised VC&PE funding for technology adoption, BNLP, B2B, and open network technology provide a huge opportunity backed by the Digital India revolution.*

Research limitations/implication: *First hand data of ONDC and other player's information is not taken for the study.*

Social implications: *It is E-Commerce digital tool to integrate small traders with integrate small traders with integration of all apps Big tech for more sustainable in incomes, business expansion, employment, economic growth. It is designed to provide equal opportunity to small retailers and merchants in the e-commerce market alongside big players like Amazon and Flipkart.*

Originality/ Value: *To Promote SME/ MSME Sector for Inclusive and Sustainable Digital Economic growth, it is important to know the ONDC infrastructure.*

Paper Type: *Conceptual and Empirical.*

Keywords: E-Commerce, social commerce, SMEs, MSMEs, FDI, Make in India, Digital India, Product-based lending, Digital Economy.

1. INTRODUCTION :

India Stack opens API, Digital India and Make in India played a catalytic role in building resilient infrastructure, E-commerce innovation ensures affordable reliable and sustainable products and services including advertising, electronic order and delivery, and paying bills (Mandasari, I. C. S., & Pratama, I. G. S. 2020) [1] change the face of India's digital economy. The Indian e-commerce sector is ranked 9th in cross-border growth in the world, according to the Pioneer report and the government of India's policy and Scheme on Digital literacy, Bharat Net, PMGDISHA, VISAKA and Aatmanirbhar Bharat Digital India movement. The Consumer Protection E-commerce Rules 2020, e-marketplace has a big drive for e-commerce infrastructure Open Network for Digital Commerce is a big push for SME/MSME entrepreneurship to connect nationwide through Digital advertisements, Hyper-local Logistics, Digital Payments, Analytics-driven Customer Engagement due to rising middle-class people, changing shopping habits, online shopping in tier-II and tier-III cities and E-commerce enables the SMEs to reach the global market and compete on the international market. The Department of Industrial Policy and Promotion (DIPP) policy initiatives have changed the outlook of e-commerce by allowing 100% Foreign Direct Investment(FDI) in Business-2-Business, a 100% automatic root marketplace model to Business-2-Consumer. E-commerce shifts the Indian retail market for sustainable growth. E-Commerce has taken shape in the year 1968 it is called an electronic data interface for transactions and in the year 1992 Netscape introduced an internet browser. Today internet revolution promoted products and services through the web, instead of having physical stores. The government are making necessary incentives and schemes to promote digitization and encourage E-commerce growth (Anuj, K., Fayaz, F., & Kapoor, N. 2018) [2] and the government-backed platform for E-commerce on the open Network for digital commerce (ONDC), an open framework similar to UPI to drive online commerce in India and bring the cost to E-commerce, Curb digital monopolies held by Amazon, Flipkart, to strengthen local economies, democratization of E-commerce and to reach economies of Scale. API is the acronym for Application Programming Interface to develop the ONDC framework to capture the E-Commerce market increase from an estimated \$75 billion by 2022 to \$ 350 billion by 2030. India's Consumer digital economy touched \$100 billion from 7.29 in 2021 and is expected to touch \$800 billion by 2030 (as per the EY India report) due to internet penetration, increasing smartphone usage, digital payments, PE/VC investment in unicorns, E-commerce and Internet company, more consumers from Tier 2,3,4 cities add to online shopping along with new E-logistics D2C, E-commerce takes either the domestic-inter-border route or cross border international (Chawla, N., & Kumar, B. 2021) [3] transactions through B2C, B2B, C2C B2A, C2A, P2P, M-commerce and Social Network Site of social commerce(S-Commerce) an integral part of the E-Commerce (Koponen, J. P., & Rytsy, S. 2020) [4]. It has increased the E-commerce opportunities to connect the economy.

Table 1: Major types of E-Commerce

Types	Example
B2C - Business to Consumer	Amazon.com is general merchandise that sells consumer products to retail consumers.
B2B - Business to Business	ESteel.com is a steel industry exchange that creates an electronic market for steel producers and users.
C2C - Consumer to Consumer	EBay.com creates a markets place where consumers can auction or sell goods directly to other consumers.
P2P – Peer to Peer	Gnutella is a software application that permits consumers to share music directly, without the intervention of a market as in C2C e-commerce.
M-commerce – Mobile commerce	Wireless mobile devices such as PDAs (personal digital assistants) or cell phones can be used to conduct commercial transactions.

Source: Drishtiias.Com [Page 1, Date 17/09/2022]

Section 2(44) of the CGST Act, 2017 E-Commerce mean the supply of goods or service or both, including digital products over a digital or electronic network. The E-commerce market accounting 2.5% of India's GDP and it will reach USD 350 billion by 2030 due to the entry of grocery, E-pharmacy, Social commerce, Direct Consumer, super apps like WhatsApp introducing payment and shopping. E-Commerce ONDC has a big drive for Digital Micro-Entrepreneurs of Tier I, II, III, IV, plus cities it can change the outlook of Brick- and -Mortal Kirana shop and ONDC is looking into the collaboration with SIDBI, NABARD. The Short term micro online credit, credit card spending by the consumers and various start-ups have transformed the consumer shopping experience and boosted E-commerce business B2B loans, D2C, B2C and M-commerce. The overall credit card spend in the year 2022 was 9.72- lakh crore as compared to 2021 Rs 6.3 lakh crore and Rs 7.3 lakh crore for the year 2020 as per the RBI data.

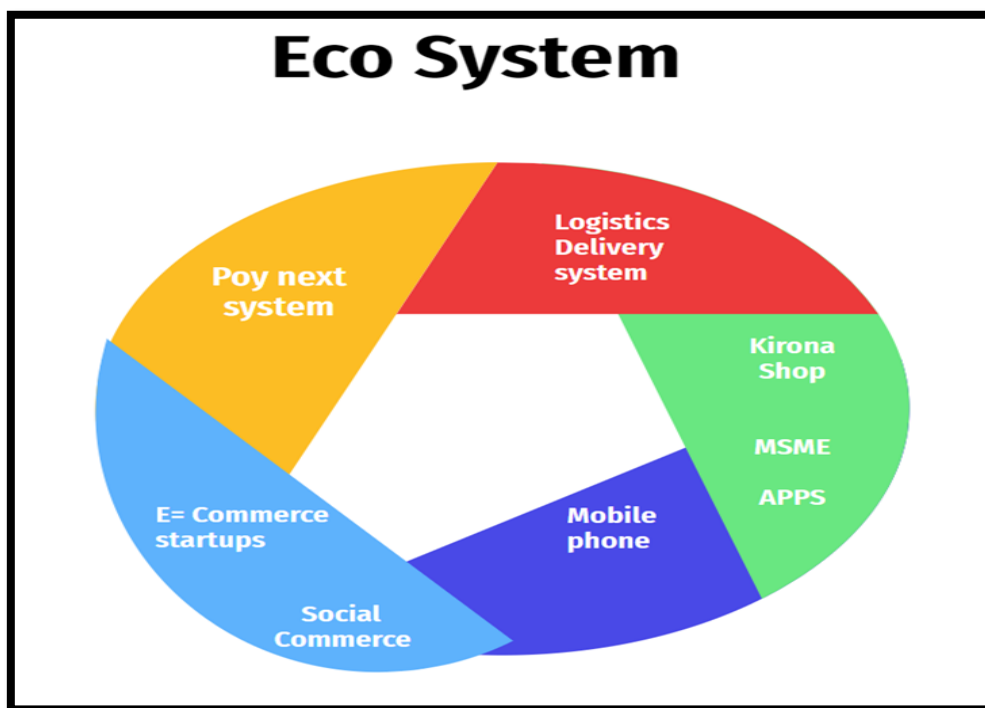


Fig. 1: Eco System [Compiled by Author]

1.1. Government India initiatives for E-commerce growth buoyant:

The Government of India and RBI initiated E-commerce buoyant through Digital India, Make in India, Start-Up India, an e-marketplace portal for sellers and service providers including SMEs/MSMEs, Consumer Protection (e-commerce) rules 2020, National Retail Policy, 100% FDI in B2B Model, Ease doing business is the key driver of regulatory reforms in Indian Entrepreneurship Ecosystem and open network for internet connectivity for local bodies of every panchayat and Open Network for digital commerce (ONDC) to make E-commerce ecosystem as open-source to buyers and sellers to transact irrespective of the platform and allows inter portability. For payment transactions the Bharat Interface for Money (BHIM) app, BharatQR code, and Rupay cards and bring more awareness among the society about financial literacy through the Vittiya Saksharta Abhiyan Campaign, Pradhan mantra Gramin Digital Saksharta Abhivaan to empowered with digital literacy and realization about the importance of e-commerce and to integrate their E-commerce platform the RBI new initiative New Umbrella Entity (NUE) focusing on retail payments. To extend the benefits to SHGs in rural areas with market access for Saras collection Government e-marketplace (GeM) for uploading the various products from SHGs across the country. Through the numerous opportunities of ONDC, many segments can take part in e-commerce and also get benefits of it.

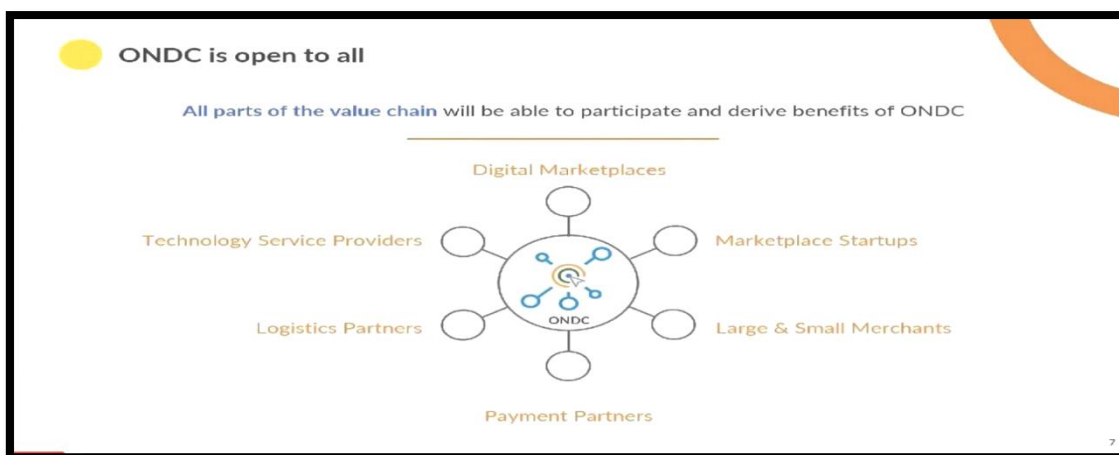


Fig. 2: ONDC value chain. Source: Capital Calculus2.0

Table 2: Government role and Impact

Government Role	Impact
Digital payments-a cashless, paperless and transparent payment system.	Enhanced digital payments and consumer confidence to make high-value transactions online.
Digital India-In 2019, Government e-Marketplace (GeM), s Bharat Net, Jan-Dhan-Aadhar-Mobile (JAM) trinity and BHIM.	The initiative has facilitated India to take a massive jump in financial inclusion with the increase in banked population and Identification.
5G network-fibre network for 5G will help boost e-commerce in India.	Improved internet services will enhance and improve consumers' online screen time experience.
Increase in foreign direct investment (FDI)- the participation of foreign players in e-commerce, FDI to up to 100% (in B2B models).	Foreign funds will result in boosting e-commerce infrastructure and will further improve customer experience.
Consumer Protection (E-commerce) Rule, 2020-Roles and Responsibilities for e-commerce market place.	Regulation will ensure fair and transparent practices in the e-commerce sector.
The Information Technology (Intermediary Guidelines and Digital Media Ethics) Rules-Social Media.	To Give legal recognition to E-Transactions and digital signatures in E-Commerce and to protect and safeguard all electronic transactions and data.
Open Network for Digital Commerce (ONDC)- Providing equal opportunities to all market players.	Regulation will not only add quality and transparency but the competitive placement of products and services.

Source: Grant Thornton Bharat [Page 3], 15/9/2022

1.2 Digital Infrastructure for the Growth of E-commerce:

Digital India and Make in India have made the Digital infrastructure at affordable hardware such as laptops, netbooks, desktop PCs and 'Smart' handheld devices, combined with rising Internet adoption, particularly in Tier-I and Tier-II cities, are sustaining the growth of the Indian e-commerce market. Moreover, the rapid growth of smartphone usage along with in-house brands to build a strong customer basis gives enhanced access to virtual shopping and e-tailing websites to the tech-savvy generation, thus driving business for the e-commerce market in India. In April 2021, the number of internet connections in India was 782.86 million, driven by the 'Digital India' programme and 61% connections in urban areas as per the IBEF report. Several 'brick-and-mortar stores have moved to an online-only presence due to digital infrastructure and Union Budget 2022-23 has given a great push to e-commerce by giving Data Centres (DCs) and Energy Storage Systems (ESSs) infrastructure status, rolling out a 5G network from FY23, digital payments, hyper-local logistics, analytics-driven customer engagement, digital advertisements and with introduction metaverse, AR, VR,3D rendered retail display, AI, ML

technology has boost e-commerce’s growth and digital disruption has driven the online relationship with customer and growth of E-commerce industry Singh, R. K. (2019) [5]. Visual AI can also make inferences and judgements about shoppers-based requirements along with on-screen processing NLP technology during the search. Example: Meta-backed meesho provided social commerce B2B and B2C for E-Commerce. Digital infrastructure is paving a new path to sustainability and innovation; it helps to scale up efficiency.

Table 3: Digital infrastructure across key growth economies

Digital Economy Metrics	USA	China	Southeast Asia	India
Internet penetration	89%	72%	64%	43% Huge penetration potential
Internet users' growth (2016-21)	8.3%	43%	33.3%	124% Bharatnet to drive growth
Smartphone growth 2016-21 (no. of connections)	17.0%	30.7%	55.3%	132.2% Highest-ever smartphone revenue, shipments in 2021
Real-time online transactions 2020	1.2 b	15.7 b	5.6 b	25.5 b Highest real-time transactions globally in 2020
Retail e-commerce growth 2021	17.9%	18.5%	14.3%	27.0% Fastest growing e-commerce market; among top 10 in sales
Network Readiness Rank*	4	29	NA	67 Among the top 3 countries in the lower middle-income group

Source: India Trend Book-2022 –EY [Page 12]

ONDC is adopted in populous sectors such as infrastructure, investment, inventory management, incomes, innovation, and industry.

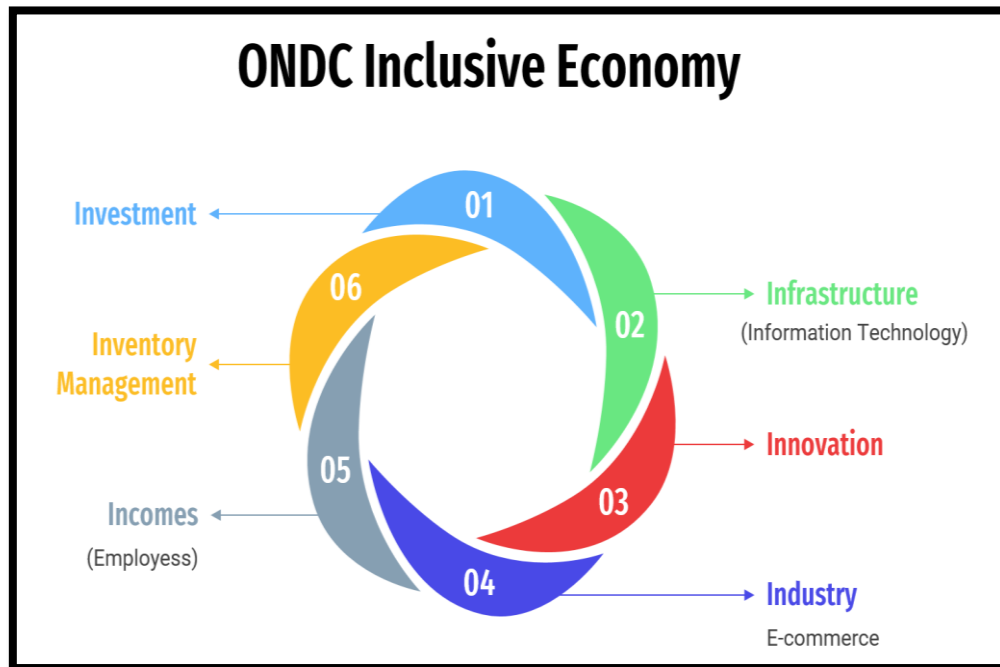


Fig. 3: ONDC Inclusive Economy. Source: [Compiled by Author]

1.3 E-commerce start-up promoting Micro, Small and Medium Digital Enterprises:

E-commerce start-ups drive small businesses to scale-up the business by providing assistance in setting up websites, inventory management, payment system, managing account and ledger, branding and online marketing platform with SaaS-based, Metaverse to the consumer for offline experience to online,web3 for overall shopping experience for reaching the large target audience of the small-medium business of Tier II and beyond due to the advent of high growth in technology adoption helps prosperity

for e-commerce start-up and they are developing an internet consumer ecosystem focussing Small-medium business to create digital brand stores, B2B, B2C, C2C, D2C Social Commerce, Cross Border E-commerce, White labels to the SMEs. E-commerce adoption, especially the application of ICT in business developments, can link social and economic progress between SMEs and their customers to growth and potential for business stability of SMEs HOSSAIN, M. B., et al. (2022) [6], E-commerce has expanding into new business lines and impedance to Environment, Social and Governance (ESG) in E-commerce segments. E-commerce Start-ups adopted the blockchain, IoT, AI, and ML to scale up rapidly and sustainable E-Commerce.

Number of Kirans in India and Tier Cities (Source: BW) [1] 17/9/2022:

- Estimated number of kiranas in India-13mln
- number of kiranas in metros- 1.7 mln
- number of kiranas in tier 1 cities- 1.2 mln
- number of kiranas in tier 2 cities and beyond- 10 mln

Today most of countries throughout the globe were using the internet for their commercial activities of SMEs.

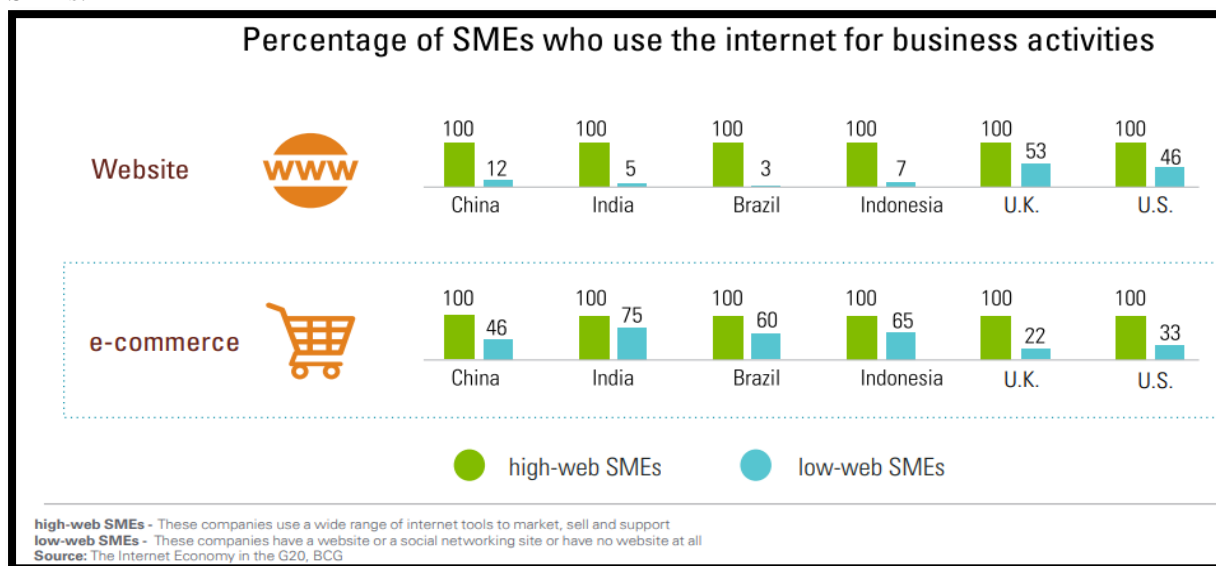


Fig. 4: Percentage of SMEs who use internet business activities. Source: KPMG-snapdeal Financial Express [Page 12] 17/9/2022

1.4 Social E-commerce for a large consumer base and sustainability:

Social E-commerce in India's market value is US \$ 38 billion and is expected to increase to US \$ 140 billion markets by 2025 it creates new business opportunities for C2C, B2C, and E-commerce start-ups. The social media platforms like Whatapp, WeChat, YouTube, FaceBook, Instagram, and LinkedIn are provided the platform for business be Aatmanirbhar Bharat and vocal for Local movement empowering domestic production to shift the business plan for taping global social E-commerce market. Social E-commerce made the marketplace a seamless manner [7]. To drive the E-commerce growth People, Products with a personalised E-commerce framework through App-based, Web-based, and M-commerce enhanced consumer interest in the E-commerce by bringing stores to the customers through digital adds, social media content AI, Chatbot, helps consumer purchasing decisions and wider the consumer base in Tier-2, Tier-3, Tier-4 with highly accessible, affordability and it creates sustainability [8].

In the modern era, many people do not have the time and patience to buy things so they prefer online shops where there are so many options to buy products at an affordable price and good quality. For this, plenty of social media platforms for buying and selling are WhatsApp, YouTube, Facebook, Instagram, and so on. Among these greater percentage (57%) of people were using YouTube and 55% of people were using WhatsApp.

1.5 Private Equity and venture capital funding for E-commerce and Economic growth:

Technology adoption has accelerated E-commerce business growth with funding support in the form of Private Equity(PE)as well as Venture Capital are the major source of investment Mix of FDI in India for E-commerce start-ups, Employment, Economic growth, creating an innovative model of E-commerce, Infrastructure and Expand Small, Medium enterprises in serving customers, it promotes inclusive economic growth [9]. India got investments totalling \$22 billion in e-commerce from VCs in 2021 against \$8 billion in 2020, due to increasing demand for online purchase or digital shopping and also in B2C, B2B, C2C,supplychain&logistics, mobility segments, and digital infrastructure, Start-up Ecosystem in Saas, Web3.0, Crypto based, new e-commerce model-social commerce& video commerce, SMB Neo Banks and Increasing competition across sectors, Cutting across the business has to widen the base for PE and VC funding in India [10].

Globally venture capital investment has increased but in India total venture capital investments grew significantly due to advanced business models. There is tremendous growth in consumer technology because of enhanced usage of a smartphone by a consumer when compared to B2C e-commerce. Digital technology adoption in several sectors such as retail, context, health tech, edtech, B2C e-commerce, etc., influenced the growth of VC in India.

2. BACKGROUND :

Open Network for Digital Commerce -ONDC (E-Commerce) conceived based on an open network with the support of India stack to expand, establish and promote an inclusive economy by using any compatible platform for customers, sellers, SMEs/MSMEs producers or service providers to encourage easy adoption of digital and to democratic e-commerce, it is a global first of kind open network to expand the digital economy with digital India initiative to improve the ease of living for the citizens of all the income categories and to bring Small business to access technology platform and make the Atmanirbhar and to expand e-commerce market, based on the success of UPI payment ecosystem and penetration of Mobile phone and internet [11]. E-commerce is growing rapidly in the country at a CAGR of 25-30% touching \$140 billion and it helps India become a \$ 5 Trillion Economy. ONDC platform provides greater choice to consumers according to their budget and requirement. ONDC wants to enable a micro-enterprises digital platform in collaboration with SIDBI, and NABARD to create an inclusive for generating jobs. The ONDC E-commerce platform is different from to WeChat platform of China GoTo in Indonesia, ONDCE has based on the 5th Pillar approach.

Table 4: The Five Pillars of the ONDC Ecosystem

S. No.	Five Pillars	Application
1	Buyer-side Apps	Any Application that will interact with the buyer, i.e., the demand side of any transaction where the transaction originates
2	Seller-Side Apps	Any application which will interact with the seller's catalog of goods and services and fulfil buyers' orders
3	Adaptor Interfaces	Adaptor interfaces are the open APIs developed based on the Open Source interoperable Specification of the Beck protocol
4	Gateway	An application that will ensure discoverability of all sellers in the network by mitigating the search request received from buyer application
5	Open Registries Application(S)	That maintains the list of Participants who join the ONDC list of Network

Source: Money Control.com [Page 6] 17/9/2022

In the closed-loop model of e-commerce transactions platforms have unilateral pricing power for goods sold, logistics, and financial services. But an open network model of e-commerce initiated modularity across the levels of transactions which increases competition and brings down pricing power.

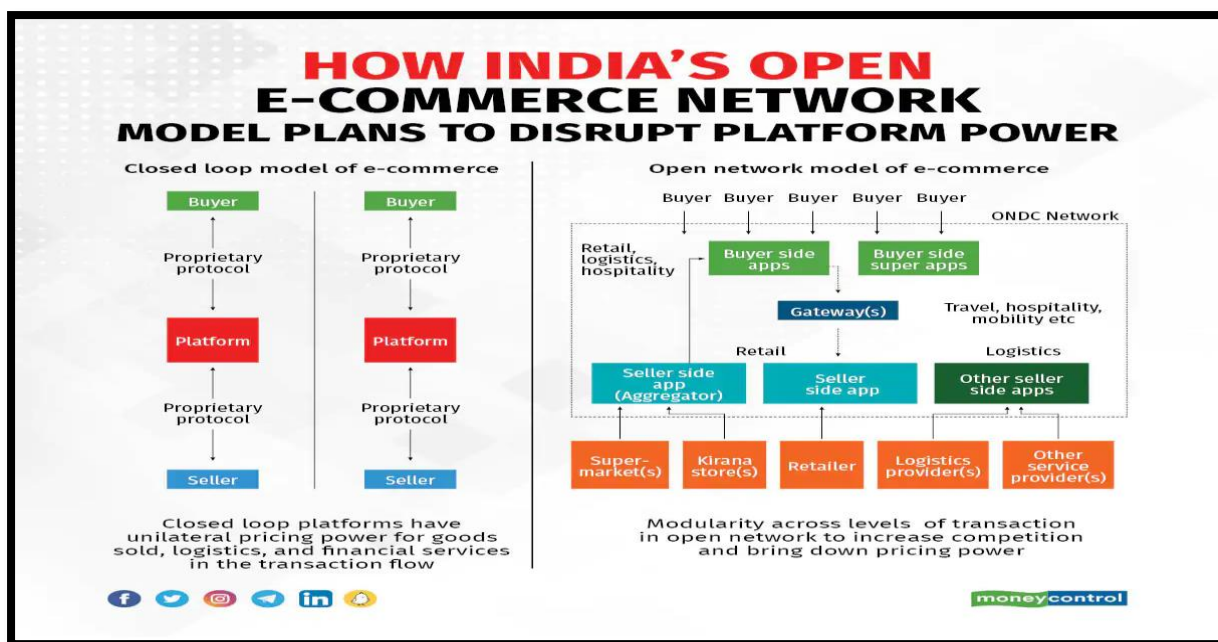


Fig. 5: India’s open E-Commerce networks Source: Money Control.com [Page 1, 17/9/2022]

3. RELATED WORKS :

The related works section focus on E-commerce and ONDC, MSME, SME, BNPL and other players information. Authors enlighten on the above points in their own way.

Table 5: Review of literature

S. No.	Focus	Author & Year
1	Adoption of e-commerce in MSME sector research scholar silky bhatra This paper proposed the importance of e-commerce and the adoption of technology in MSME and how it affects the organisation's culture, social influence, and technical competency in the landscape of a business organisation. It also analysed that organizational culture is a very crucial factor for the adoption of e-commerce through the chi-square test and type of business occupation, education and so on are the factors which do not influence the adoption of e-commerce. The author explains the model of TAM (Technology acceptance model that creates the basis for the establishment of electronic E-Commerce in the MSME sector to enhance productivity.	Batra, S., & Arora, A. (2020). [12]
2	Challenges faced by Indian MSME in the adoption of the internet market and e-commerce. The primary information collected by the author through a survey regarding different challenges faced by MSME is in India over the adoption of online marketing and e-commerce. These qualitative responses from the various firms of MSMEs provide a piece of information about the difficulties and challenges faced by the MSMEs while adopting online marketing and e-commerce for their business. This article also suggests the MSME owners and policymakers of the organisation work together and identify, and assessed the major challenges faced by MSMEs in the adoption of e-commerce. It also recommends the	Mohan, V., & Ali, S. (2019). [13]

	owners of MSME is to invest adequately in skill development so that they can easily attain commercialization marketing activities through digital channels.	
3	Impact of e-commerce on the Indian economy Kumar Anuj, Fahad Fayaz, Namitha Kapoor Truda's analysis and findings of this paper reveal the importance of the e-commerce industry and the growth of digital penetration in India. It also focuses on various initial initiatives undertaken by the government of India to create awareness among rural people about the cashless economy and the role of the Internet in India in the modern era and enhance the growth and development of e-commerce that will aid to attend the economic growth of the country.	Anuj, K., Fayaz, F., & Kapoor, N. (2018). [14]
4	Growth of e-commerce in India: an analytical review of literature-Madhurimakolsa Harish Kumar: The evolution of e-commerce and it mainly focused on the growth of b2c e-commerce through the awareness of consumers trust of investors and technology of the country full stop it also he Wills that the online business practices are much better than the offline business practices that will enhance the stable existence in the market. Therefore sustainable business practices will encourage E-Commerce and m-commerce in their business rather than a traditional business. This paper also suggests the form needs to develop a more secured online payment infrastructure because of increased opportunities in the rural market through mobile penetration along with mobile app infrastructure.	Khosla, M., & Kumar, H. (2017).[15]

4. SCOPE OF THE STUDY :

- (1) The present study focuses mainly on the infra infrastructure of ONDC which consist of different inclusive economic growth in investment, innovations, inventory management, and industry (E-Commerce) information technology.
- (2) It highlights the growth of internet usage both in rural and urban areas and various innovative e-commerce platforms along with unique e-Commerce techniques as SMEs and MSMEs in their business through creating a connection between demand and supply.
- (3) It enlightens the role of e-commerce in increased sales of retail business due to a large number of digital buyers and the growth of the e-commerce market in the country.
- (4) It is primarily concerned with the growth of e-commerce in both SMEs and MSM and also enhances the adoption of innovative technology in the advanced e-commerce market through many online platforms, open source technologies, etc.

5. OBJECTIVES OF STUDY :

- (1) To know the current status of ONDC in e-commerce.
- (2) To understand the inclusive mechanism of ONDC in the e-commerce ecosystem.
- (3) To analyse the various factors influencing DC.
- (4) To examine the ONDC through ABCD analysis.
- (5) To assess the development of SMEs/MSMEs in E-Commerce through ONDC.

6. METHODOLOGY :

The Research article is based on secondary data collected from newspapers, magazines, and magazine search agency's websites. The collected data are presented in the form of a table, diagram and charts to frame the ABCD approach.

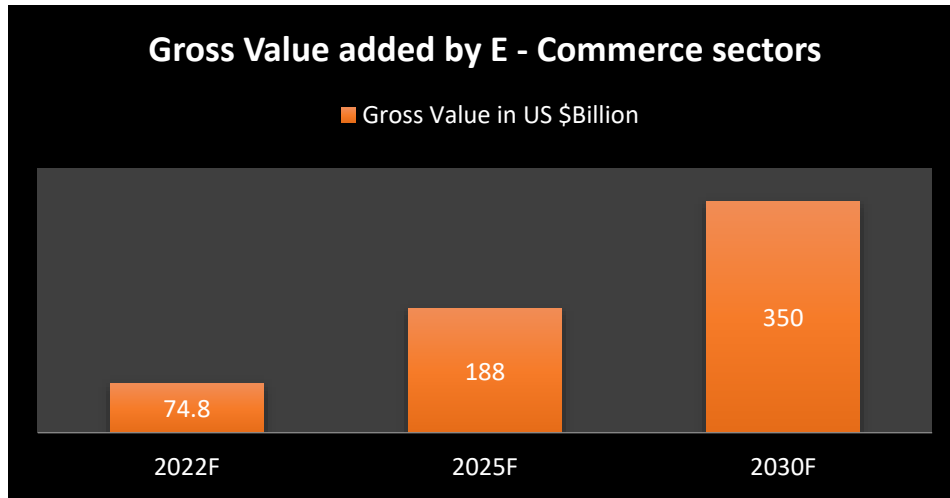
7. DATA ANALYSIS :

Table 6: Gross Value added by E-Commerce sectors

Years	Gross Value in the US \$Billion
2022F	74.80
2025F	188.00

2030F	350.00
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Source: ibef.org, [Page 3, date 17/09/2022]



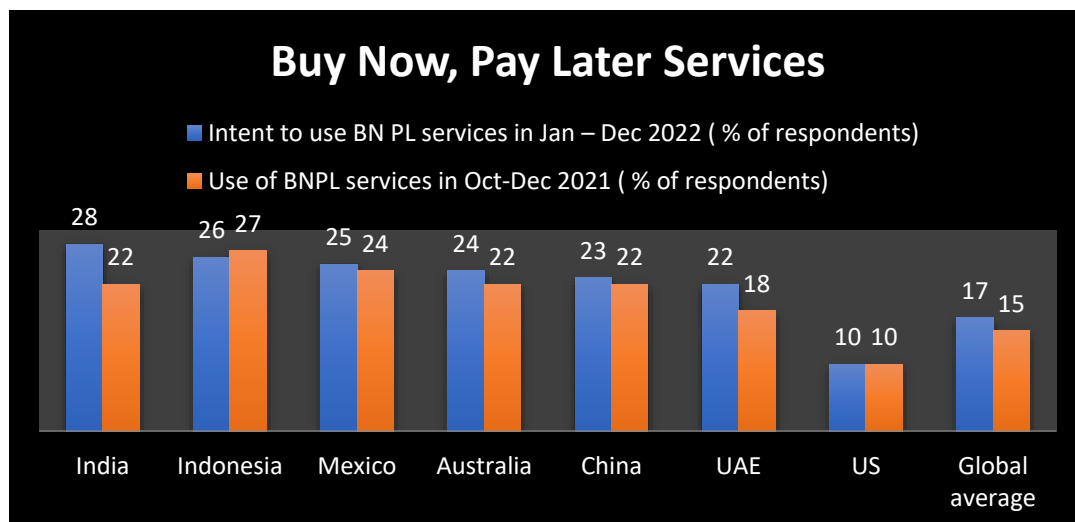
Graph 1: Gross Value added by E-Commerce sectors

Buy Now, Pay Later (BNPL) is a type of short-term financing that allows consumers to make purchases and pay for them at a future date, often interest-free. Also referred to as "point of sale instalment loans," BNPL arrangements are becoming an increasingly popular payment option, especially when shopping online.

Table 7: BNPL Services

Countries	Intent to use BNPL services in Jan – Dec 2022 (% of respondents)	Use of BNPL services in Oct-Dec 2021 (% of respondents)
India	28	22
Indonesia	26	27
Mexico	25	24
Australia	24	22
China	23	22
UAE	22	18
US	10	10
Global average	17	15

Source: BCCL



Graph 2: BNPL Services

BNLP:

Most people were using it for that various financial activities throughout the globe. So the survey was conducted to find out the percentage of respondents who intend to use BNPL services in 2022 and 2021 according to the country wise. Therefore report was prepared based on a sample of over 20000 respondents but in India, only 1011 urban respondents were considered for the online survey. As per the analysis in 2022 India got the 3rd largest country where people were using BNPL services to fulfil their short-term financial requirements but in 2022 India is the first largest country because of the increased option rate of Intex services and digital innovations.

Private Banks drive ECLGS disbursal:

So many sectors such as the public sector, private sector, foreign banks and NBFCs encourage fresh borrowers and repeat borrowers for getting the funds for ECLGS [Emergency Credit Line Guarantee Scheme] disbursal.

Table 8: Private Banks drive ECLGS disbursal

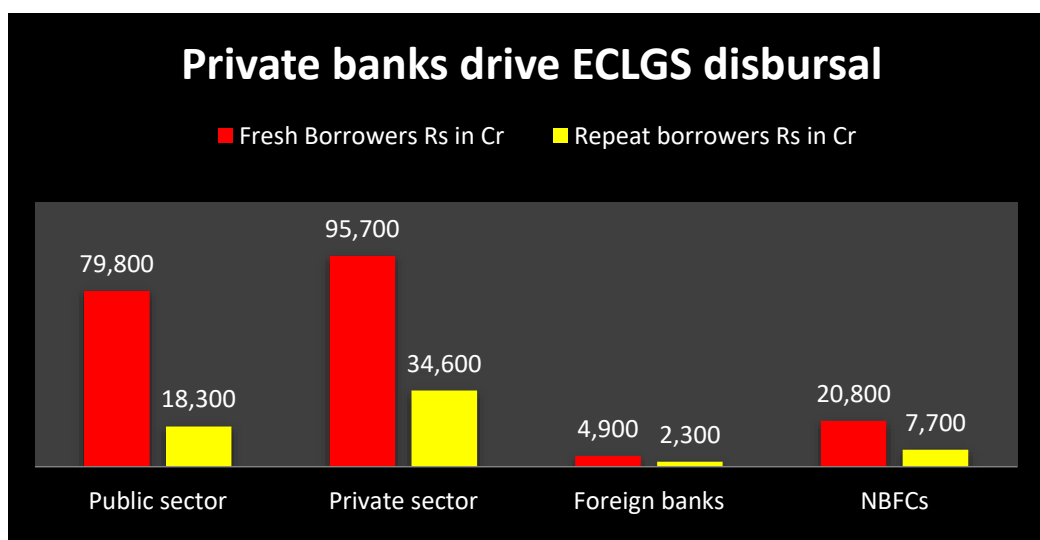
Sectors	Fresh Borrowers Rs in Cr	Repeat borrowers Rs in Cr
Public sector	79,800	18,300
Private sector	95,700	34,600
Foreign banks	4,900	2,300
NBFCs	20,800	7,700

Source: Financial Express [Page 1, 16/9/2022]

Table 9: Extent of Restructuring [Banks provide funds to SMEs and MSMEs]

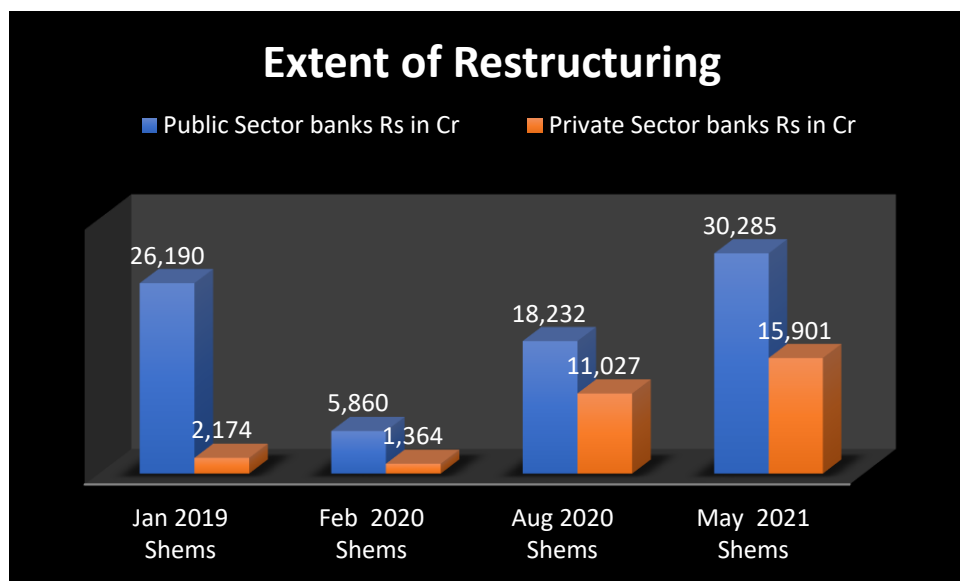
Years	Public Sector banks Rs in Cr	Private Sector banks Rs in Cr
2019	26,190	2,174
2020	5,860	1,364
2020	18,232	11,027
2021	30,285	15,901

Source: Financial Express [Page 1, 16/9/2022]



Graph 3: Private Banks drive ECLGS disbursal

Through the restructuring of schemes, most of the private and public sector banks provide funds to SMEs and MSMEs. When compared to the 2019 report, in 2021 both private and public sectors banks increased their monetary benefits.

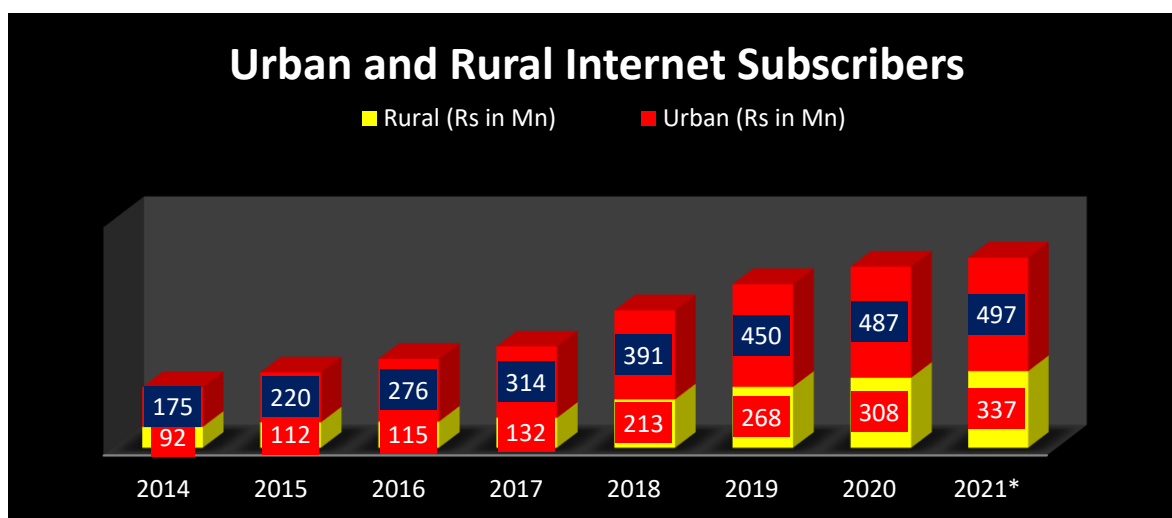


Graph. 4: Extent of Restructuring [[Page 1, 16/9/2022]]

Table 10: Urban and Rural Internet Subscribers

Years	2014	2015	2016	2017	2018	2019	2020	2021*
Urban (Rs in Mn)	175	220	276	314	391	450	487	497
Rural (Rs in Mn)	92	112	115	132	213	268	308	337

Source: inc42.com [Page 1 date 17/9/2022]



Graph. 5: Urban and Rural Internet Subscribers [1]

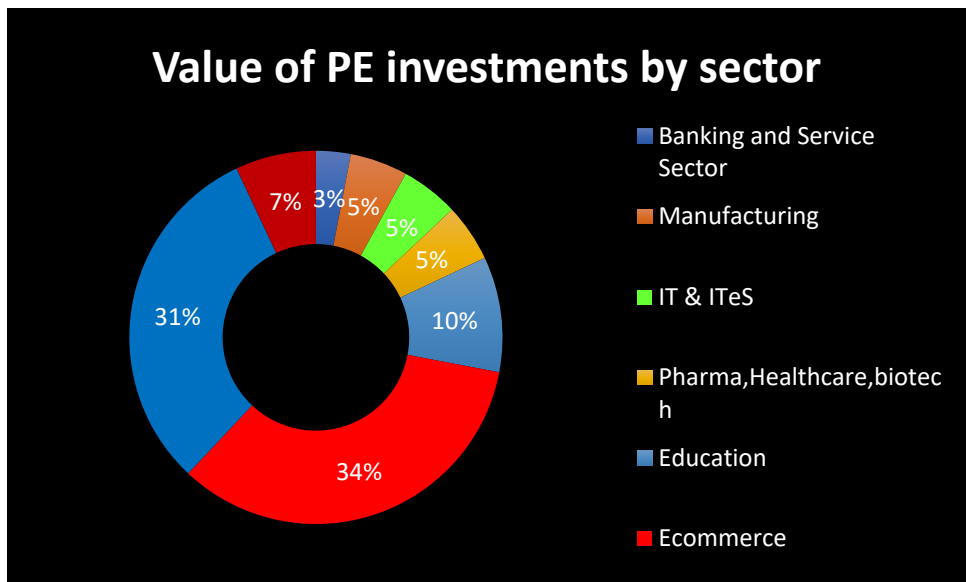
In the current scenario, most people were using smartphones with an internet connection. Therefore, even in rural areas also people know how to operate and get benefits from online facilities. According to the survey in 2014, 267 million people subscribed internet among these 175 subscribers from rural but in 2021 it has been raised to 834 million internet subscribers among 497 urban and 30037 rural due to the awareness about digital technology and its benefits.

Table 11: Value of PE investments by sector

Various Sectors	Percentage
Banking and Service Sector	3
Manufacturing	5
IT & ITeS	5
Pharma, Healthcare, biotech	5
Education	10

Ecommerce	34
Start-ups	31
Others	7

Source: The Economic Times-tech [1]



Graph 6: Value of PE investments by sector [1]

According to the Grant Thornton Deal tracker report for Q1 2022, many sectors were contributing to PE investments in the country. Out of these sectors, e-commerce is one of the sectors which is contributing 34% more than the other sectors toward private equity.

ONDC HAS SET BIG TARGETS WITH A 5 YEAR TIMELINE

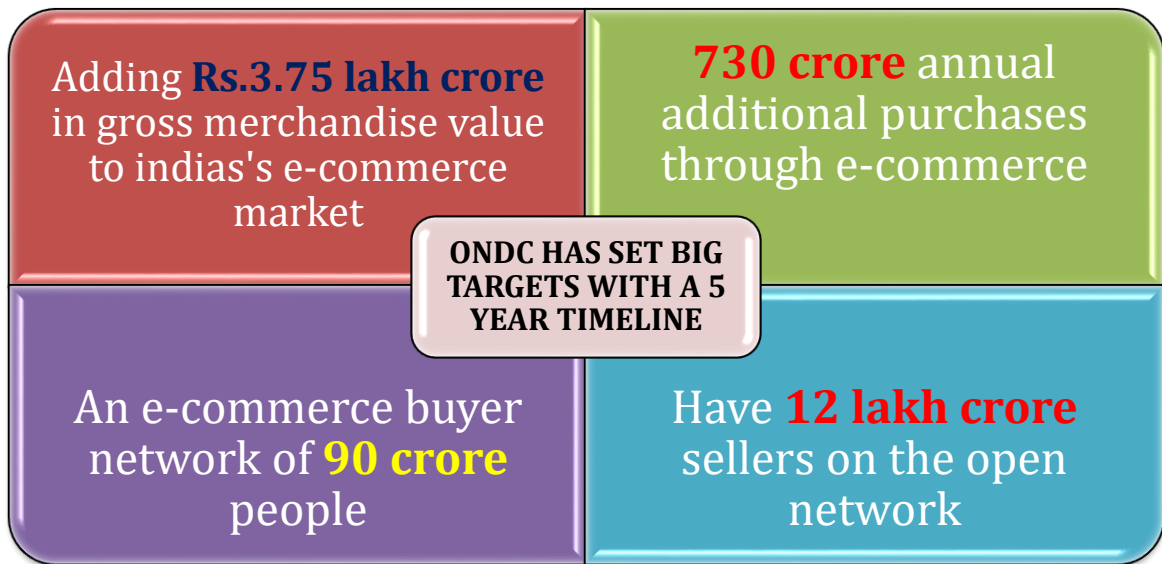


Fig. 6: ONDC HAS SET BIG TARGETS WITH A 5 YEAR TIMELINE

Source: Money control.com [Page 1 17/9/2022]

E-commerce plays a vital role in the retail sector through increasing employment opportunities(500000 gig workers) boosting the digital economy of the country, increasing sales which are expected to grow by about 1.5 trillion dollars by 2020 and also GMV contribution of small town shoppers on e-commerce is about 160 million us dollar. As per recent data, India is the third largest online retail market throughout the globe after us and china.

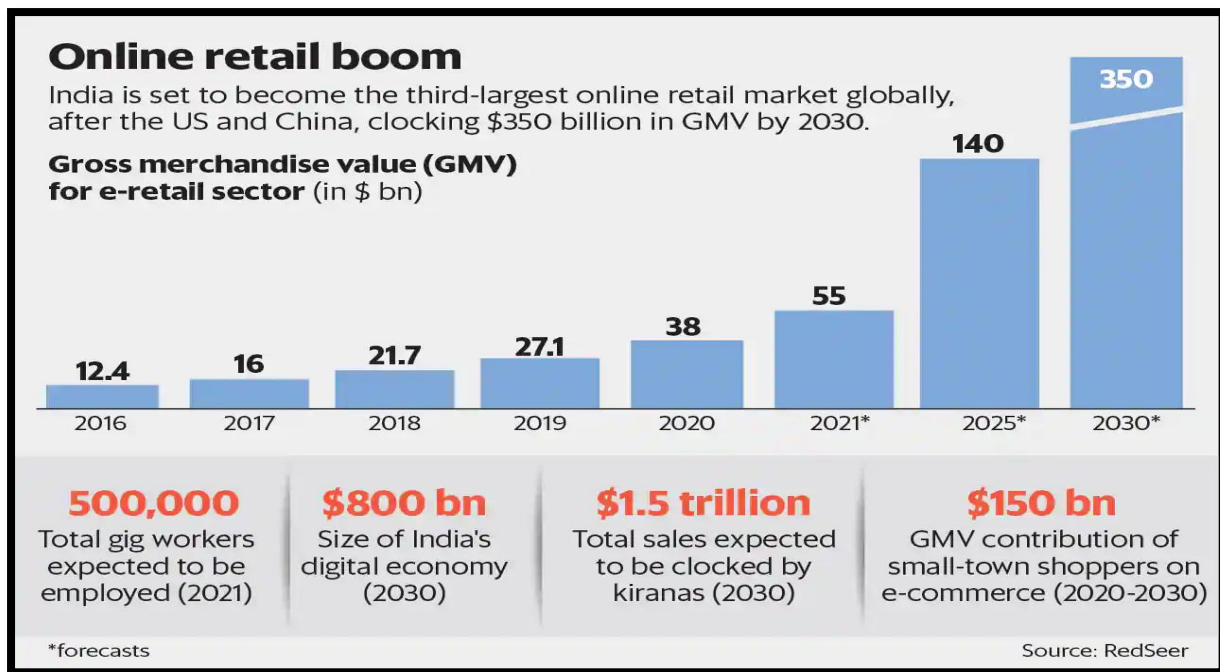


Fig. 7: Online Retail Boom Source Live mint [1]

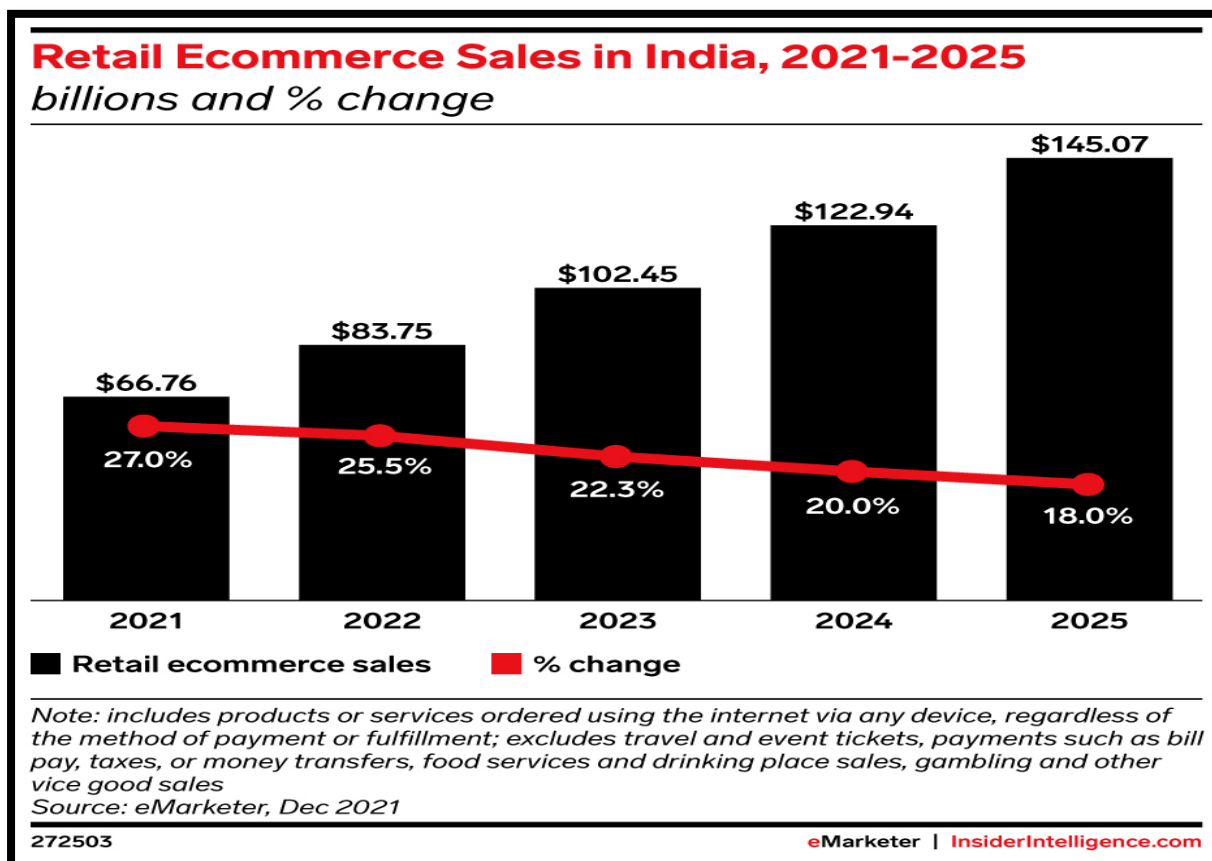


Fig. 8: Retail E-commerce Sales in India, 2021-2025. Source: eMarketer [1] <https://www.insiderintelligence.com/chart/253577> date 17/9/2022

Retail e-commerce sales in India:

Adoption of e-commerce in the retail sector has boosted the sales of the retail sector in India and also greater usage of smartphones, laptops or any other electronic devices to make payments, money transfers, and gambling, etc., e-commerce impacts the retail market to a greater extent through its

advancement, tools and techniques. Therefore in 2021 sales of retail e-commerce is about \$ 66.76 US, and it is expected to grow by \$145.07 US by 2025.

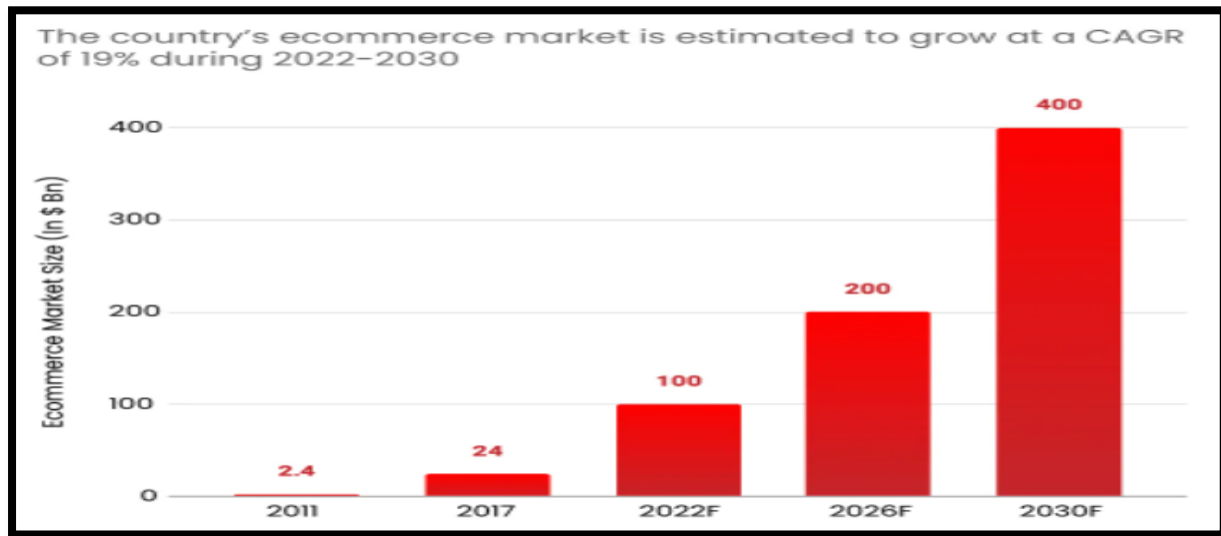


Fig. 9: The country’s e-commerce market is estimated to grow at a CAGR of 19% during 2022-2030
Source: Forbes.com [Page1, 18/19/2022]

From year to year, there is extreme growth in the market size of e-commerce. This is because of the higher adoption rate of digital technology with the benefit of time consumption, accuracy and cost-effectiveness. So the market size of e-commerce is expected to grow 200\$Bn and 400\$Bn by 2026 and 2030.



Fig. 10: Top e-commerce companies by Market value. Source: Oberio.in [Page 1, 18/19/2022]

The Amazon.com had \$1,649 billion market value by top E commerce companies and other companies are also analysed.

8. DIGITAL MODEL :

Digital infrastructure: digital infrastructure refers to the technological infrastructure which connects the physical and virtual Technology such as mobile towers, fibre, cables, modem, mobiles and computer software are the platforms that helps to bring advanced business operations all over the globe. It targets

the E-Commerce startups to enhance their operations through the setting up of various websites, inventory management, advanced payment systems, branding packaging and marketing platform where a large number of customers is available in ONDC (open network for Digital commerce) provides and equal opportunities to many market players that leads to sustainable growth of E-commerce market of MSE and MSME. ONDC established compatible and digital platform where there are large number of customers, MSE and MSME producers, sellers in order to increase easy adoption of digital E-Commerce through extensive usage of Smartphones internet, and modern digitalization.

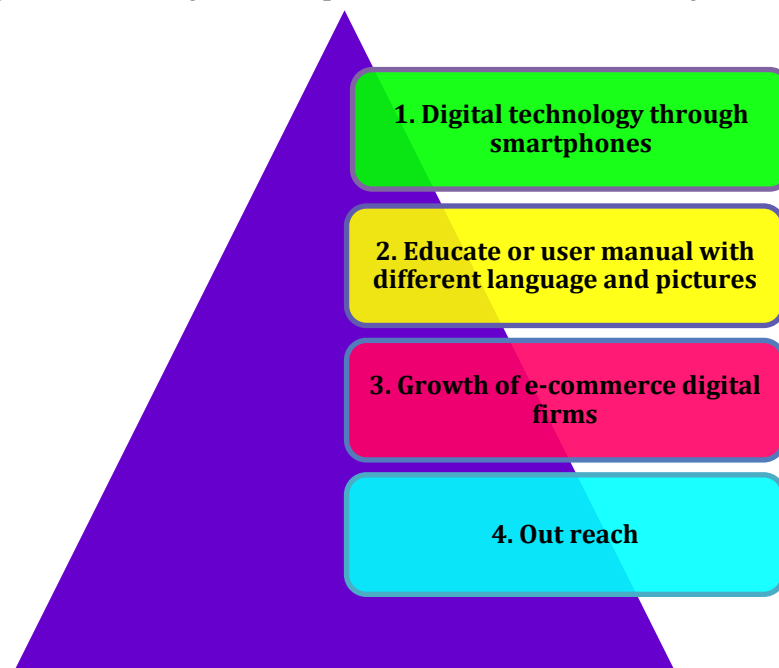


Fig. 11 : Model Created by Author

8.1. Digital technology through smartphones:

In the current scenario most of the people were using smartphone with internet connection for the different activities. Due to the penetration of Smartphones and success of upi payment systems scale up the expansion of e commerce market in India.

Due to the pandemic condition accelerates the usage of Internet in education shopping business especially in SMEs and MSMEs. This is because of easy accessibility affordability profitability and it will a bridge between customers and sellers in the market. Usage of Internet in India was expected to grow 25% usage GB by 2025 as per the recent projection. Smartphones over the devices that takes less time to done work through different online platforms by the people especially after the spandomic condition people were using smartphone for shopping buying groceries and also for trading. Due to the digitalization in every sectors people can easily get services and products without any physical contact with the seller. Great usage of mobile phones laptops and other electronic devices increases online payments money transfer gambling and also creates awareness about online platforms with the several benefits like fundraising, BNPL services (buy now pay later) to fulfill their short term financial requirements. India is the third largest country where people using BNPL service for the financial requirements.

8.2. Educate or user manual with different language and pictures:

Many advertisements or add to television sign boards banners provides details about most latest mobile phones with the unique features that AIDS to undertake business smoothly online shopping online education etc. These unique features understand with the help of user manual that provides detailed information about smartphones with latest options. Most of the company like Samsung, Vivo, Redmi, iPhone, etc, acquired market in India today to a greater extent. This is because of demand for smartphones in India is 300 million in 2021 as per the Deloitte's analysis.

These features of mobile can easily understood by the customers in their local language and through the pictures. Therefore in rural areas also people know how to operate and get benefits from online

platforms full stop according to the survey in 2021 among total number of 834 internet subscribers 337 subscribers from rural and 497 subscribers from urban. India's digital economy has accelerated due to an increase in the demand for the internet and due to pandemics has increased online education, e-shopping, and WFH Environment. The average monthly data usage per user in the year 2015 is 0.8 (GB), in 2020 13.5 GB, 2021 14.1 GB and it is projected for 2025 to be 25 usage GB as per Nokia MBIT Report, Ericson Mobility report [Source: Times of India [Page 7], 18/9/2022].

8.3 Growth of e-commerce digital firms:

There are tremendous growth in the number of internet subscribers throughout the globe and also big eCommerce firms like Flipkart and Amazon acquired 1810 billion US dollars domestic retail market. The main objective of ONDC is to provide platforms and establish connection between Shoppers Technology platforms and retailers. ONDC was launched by government of India to enhance the open digital ecosystem across various sectors and also helps to avoid the monopolistic competition between the big Tech firms full stop it gives an opportunity for the consumers small business Enterprises and also MSME to access multiple digital options to be discoverable over networks and conduct business. ONDC enable the consumers to choose their preferred products or conduct local business that helps to match the demand with the nearest available supply in the market.

8.4 Out reach:

ONDC increase the digital opportunities for E-Commerce players and also consumers through many e-Commerce plat forms available under single roof where they can opt best out of available in the market. Through this digital Revolution most of the people were easily participate in this open network so that they can carried their business with the objective of making profit and for the accumulation of wealth. Government of India launches many digital literacy schemes that will enhance B2B, b2c, c2c, d2c, small scale business, MSME is and also retail market. It brings open network for both buyers and sellers who are participated in ONDC that will leads to increased sustainable economic growth of the country. ONDC creates a huge window for e-commerce where there is a connection between demand and supply of goods and services for the growth of GDP of the country. Growth rate of e-commerce and also retail eCommerce has been increased from the last 5 years due to the innovation, accessibility, affordability and reduced monopolistic competition between Digital E-Commerce firms through the introduction of ONDC.

9. ABCD LISTING FRAMEWORK :

Analysis of advantages, benefits, constraints and disadvantages of the Open Network for Digital Commerce -ONDC (E-Commerce) Infrastructure SME/ MSME Sector for Inclusive and Sustainable Digital Economic growth and various reports are used for analysis [16-20].

9.1 Advantages:

- (1) Urban and Rural populations have experienced more internet usage during covid-19, Therefore, more scope for digitization and FinTech in Urban and Rural areas.
- (2) The Digital India movement has enhanced technology adoption and accelerated E-Commerce business growth in India.
- (3) E-payments like Credit Card spending create healthy momentum and lead to raising E-Commerce transactions.
- (4) Easy Doing Business police have pushed the Small units using E-Commerce to be exempted from compulsory registration but the declaration of place, PAN is mandatory.
- (5) E-Commerce platform helps the Small Businesses and MSMEs in the adoption of new age technology like ONDC in creating a connection between demand and supply and also in scalability.
- (6) New E-Commerce techniques of Buy Now Pay Later, quick commerce, Quick service restaurant, digital supply networks, New age B2B start-ups, D2C, 3D digital along with the metaverse in product branding, social media have increased e-commerce visibility.

9.2 Benefits:

- (1) Online products and services are Lower prices compared to the Brick and mortar stores due to fewer overhead expenses.
- (2) ONDC E-Commerce connects a wider range of goods and services providers like solo Entrepreneurs to Large size entrepreneurs.
- (3) ONDC E-Commerce expands the market for tier 3, 4, &5 City and rural areas due to Internet adoption and integration of social media apps and creating additional earnings opportunities.
- (4) ONDC E-commerce provides opportunities for Small, mid-size, Mom and pap kirne stores to adopt technology and start-ups to provide technology-based solutions for a wider range.
- (5) Open source technologies have provided scalability, innovation, funding decisions, speed in delivery, flexibility, and customer engagement in e-Commerce and Sustainable Economic Growth.
- (6) Indian government schemes like an Indian Stack the repository on Indian tech products, the GeM portal for B2G for the government procurement and UPI for digital transactions have created an impact on ONDC e-commerce.

9.3 Constraints:

- (1) More expensive ads, Competitive, and hardware/Software issues, skill sets can bring customer dissatisfaction.
- (2) The delivery of a brand experience to customers and the absence of a Feedback mechanism.
- (3) There is lacking in small business operations in terms of Wi-Fi-enabled payments UPI, top-Cards modes in tier5, and rural areas for redefining E-Commerce.

9.4 Disadvantage:

- (1) For Safe, Secure, Success, and swift response required technology sandboxes mechanism due to emerging technology in e-commerce.
- (2) Data privacy and security are the foundation to bringing trust among consumers in the digital Economy.
- (3) ONDC has to create innovative technology trends like augmented reality and virtual reality for Small and Medium retail trades for a shopping experience of "touch and feel" for the shopping process efficient and quicker.
- (4) Skill gap in E-Commerce logistics is necessary for securing employment and industry growth.

10. FINDINGS :

- There is a boom in the growth of ONDC due to digital advancement and a higher adoption rate.
- E-commerce and other digital platforms for BNPL are developing and sustaining in India.
- ONDC is playing a major role in the development of MSME and SME sectors.
- Increased digital subscribers lead to sustainable development in e-commerce.
- Contribution of ONDC and other players of e-commerce towards the inclusive and economic growth of the country.

11. CONCLUSION :

Analysis of secondary data on ONDC E-commerce has a tool to democratise and create inclusive growth under one umbrella by supporting smaller local businesses, apps, social media, payments, logistics, big tech e-commerce, and SMEs. The data shows that E-commerce start-ups have raised VC & PE funding for technology adoption, BNPL, B2B, and open network technology provide a huge opportunity backed by the Digital India revolution.

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