

Open Network for Digital Commerce

Democratizing Digital Commerce in India





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About the paper:

This paper intends to provide an overview of the context, underlying principles, and building blocks for the development and operation of the Open Network for Digital Commerce (ONDC). It also includes an outline of the benefits offered by ONDC to various players in the digital commerce ecosystem and the potential impact that the network can create. ONDC is intended to be a community-led development and one of the key objectives of this paper is to elicit feedback from the public and concerned stakeholders on the functional and technical design and design principles of ONDC, to ensure that ONDC caters to the diverse needs of the digital commerce ecosystem players.

1 | INDIA'S COMMERCE ECOSYSTEM

1.1 World of Digital Commerce

- 1.1.1 Digital commerce is reshaping the global business environment and can provide a fairer and more inclusive playing field for businesses. It can create economic opportunities for new sets of players, especially small businesses.
- 1.1.2 COVID-19 has fueled the growth of digital commerce across the globe. Though digital commerce in mobility and travel services declined, digital commerce in the retail sector saw a rise in the share of total retail sales, from 16% in 2019 to 19% in 2020¹. This was a result of a spike in business-to-consumer (B2C) sales, particularly evident in online sales of medical supplies, household essentials, and food products. COVID-19 also resulted in increased business-to-business (B2B) digital commerce.

1.2 Digital Commerce in India

- 1.2.1 India has emerged as the fastest-growing economy in the world and is expected to be one of the top three economic powers over the next 10-15 years. As per provisional estimates, India's gross domestic product (GDP) at current prices stood at ₹51.23 lakh crore in the first quarter of Financial Year 2022 (FY22)².
- 1.2.2 India's digital commerce industry has evolved and picked up significant momentum during the past few years which was further accelerated by compulsions on account of COVID-19. The ongoing digital transformation in terms of access to connectivity at affordable cost, increase in internet and smartphone penetration and increased investments in the start-up ecosystem are significant factors contributing to this growth. India has the third-largest online shopper base globally, with 14 crore e-retail shoppers in 2020, only behind China and the US³. This number is expected to grow significantly with the addition of 37 crore Generation-Z consumers by 2030, who have grown up in an India with ubiquitous internet, smartphones, digital media, and digital consumption platforms⁴.
- 1.2.3 However, the COVID-19 pandemic exposed the critical shortcomings of the Indian digital commerce ecosystem when most parts of the retail chain were found to be digitally absent and there was a complete breakdown of the supply chain. Around 1.2 crore Kiranas⁵ (hyperlocal neighborhood provision stores) account for 80% of the retail sector in India, with 90% of them being

COVID-19 pandemic exposed the critical shortcomings of the Indian digital commerce ecosystem when most parts of the retail chain were found to be digitally absent.

¹United Nations Conference on Trade and Development

²Ministry of Statistics and Programme Implementation

³Bain and Company: How India Shops Online 2021

⁴Future of Consumption in Fast-Growth Consumer Markets: INDIA, World Economic Forum, January 2019

⁵Asian Age coverage on digitization of Kirana stores (September 2019)

unorganized, or self-organized and most of them digitally excluded. As of September 2020, India is estimated to have 4.25 crore Micro, Small and Medium Enterprises (MSMEs)⁶ that have the potential to flourish with innovative sales and marketing efforts but are not part of this digital revolution. Even on the consumer side, only a small portion (~20%) of the internet users in India are online shoppers⁷.

- 1.2.4 Limitations are further evident from the share of digital commerce in the overall retail segment in India. The Gross Merchandising Value (GMV) for the digital commerce retail market in India was ₹2.85 Lakh Crores (US\$ 38 billion) in 2020⁸, which is only 4.3% of the total retail GMV in India and well below the e-retail penetration in countries like China (25%), South Korea (26%), and UK (23%)⁹. By 2026, digital commerce in the retail sector in India is expected to grow to ₹15 Lakh Crores (US\$ 200 billion)¹⁰.

1.3 Transformational Opportunity in Digital Commerce

- 1.3.1 Since time immemorial, humans have been operating markets and exchanging value as buyers and sellers. The interactions between a seller or provider who has something to offer, and the buyer or consumer enables the creation of marketplaces in various sizes and forms. Within the larger commerce ecosystem, across categories and geography with the fragmented and decentralized market, the execution of these transactions becomes nuanced and complex.
- 1.3.2 With the internet, the markets flourished digitally in the last few decades allowing providers and consumers to move their interactions online. Digital has brought a significant shift in how goods and services are delivered across the planet and has transformed the market interactions disrupting the way of the old in many sectors like retail, mobility, travel and hospitality.
- 1.3.3 In the digital world, platforms enabling digital marketplaces for buyers and sellers evolved into large integrated solutions connecting the seller to the buyer with integrated services like warehousing, logistics, payment, etc. under a single service provider. The rapid growth of these platforms has limited the competitiveness of new sellers coming online except as part of an established end-to-end service provider. Although more platforms can and do come online, the extent of investment required to establish such integrated solutions limits the number of players.
- 1.3.4 With the increasing size of the platforms, the buyers and sellers also face the concentration risk from the platforms. Even if it is a government-run platform, consolidating most of the trade of digital commerce in one platform increases the risk and creates a single point of failure. With that concentration of faculty, the liberty of exclusion, discretionary behavior also starts to set in. This way, the platforms become 'operators' within the market and the small and medium businesses lose the choice and freedom of participation at their own will or terms.
- 1.3.5 This also brings the key problem of portability of trust. The platforms empower the providers and consumers to build a reputation through the transactions enabled through their systems which has a significant value. Yet, if a seller is keen to port its hard-earned reputation or credibility (trust) to another platform or its own applications independent of the original platform, it is unable to do so even though it is his own data and credentials. If, due to misalignment of incentives, any of the users like to part ways with the current platform they are associated with, they have to forfeit all these values built up at the platform. They can neither carry, nor migrate the same. Thus, this model of value creation and exchange turns the platforms into a major 'store'

⁶Ministry of MSME, Annual Report 2021

⁷Bain and Company: How India Shops Online 2021 and IAMAI-Kantar ICUBE 2020 report

⁸Livemint coverage on online retail (July'21) [Conversion rate US\$ 1 = ₹ 75]

⁹UNCTAD, based on national statistics offices

¹⁰India Brand Equity Foundation, E-commerce Industry in India [Conversion rate US\$ 1 = ₹ 75]

or ‘keeper’ of value which locks sellers into a specific system (Figure 1). The “store of value” paradigm has impacted the large, unhindered, free-to-scale “flow of value” that a fair and efficient market should have.

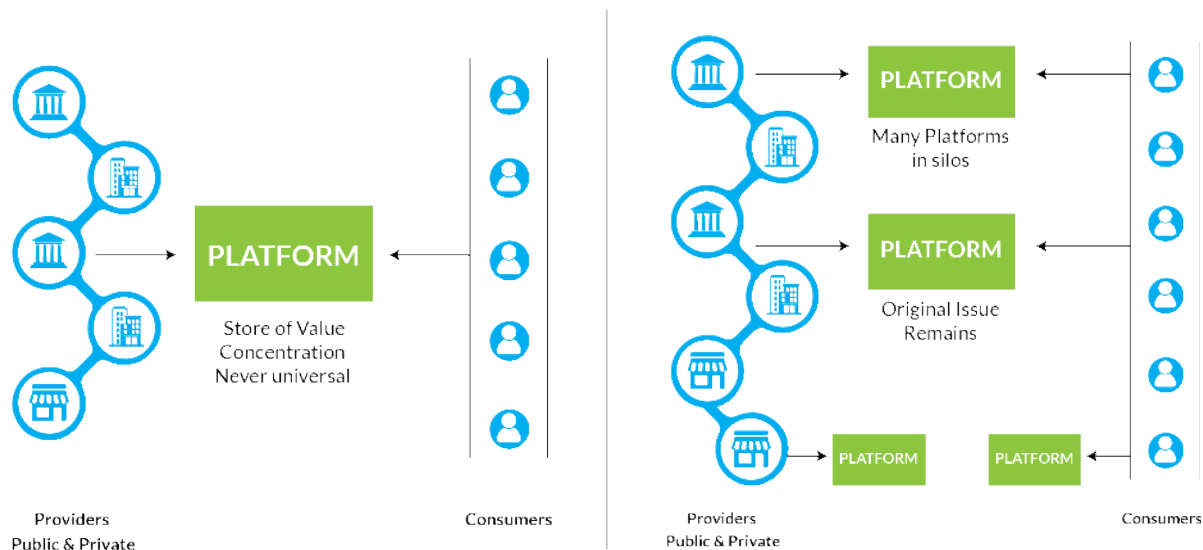


Figure 1: The digital marketplace model of commerce

- 1.3.6 This market structure could lead to many challenges. If the sellers wish to be in multiple platforms, they are required by the platforms to maintain separate infrastructure and processes, adding to their cost which also limits participation. Each platform will have its own terms & conditions that limit the flexibility of the sellers and with such limited flexibility, the extent and diversity of participation could be constrained. Further, the buyer and seller need to be on the same platform to discover each other. Such lacunae lead to limiting the choice & discoverability within the fragmented collection of platforms. Buying from a “near and now” inventory online in the neighborhood Kirana store and the neighborhood Kirana store getting to know that the somebody is looking for something from the store, is still a digital vacuum despite the seemingly rapid advancement of many digital platforms, the ubiquity of phone and internet. The pandemic only accentuated this challenge.
- 1.3.7 India’s digital commerce ecosystem which is in its early stages of evolution is not an exception to the above challenges. In fact, on account of its sheer size and diversity, the problem gets compounded in the country’s ecosystem. Multiple market participants are investing in efforts to address these challenges including initiatives focused on digitization and onboarding of small sellers & MSMEs. However, these could benefit from a coordinated strategy to solve these challenges at a population scale. There is a need to alter the current digital commerce approach of “scaling what works” to a new approach of “what works at scale”.
- 1.3.8 The digital India initiative of the government, the vibrancy of the Information Technology (IT) sector, and the urgency highlighted by the pandemic, make now an opportune time to establish and promote an

Model of value creation and exchange turns the platforms into a major ‘store’ or ‘keeper’ of value which locks sellers into a specific system. The “store of value” paradigm has impacted the large, unhindered, free-to-scale “flow of value” that a fair and efficient market should have.

alternate model to digital commerce by digital enablement of a wide cross-section of businesses. Enablement of digitalization and digital commerce for MSMEs and digital enabling a wider cross-section of buyers will be at the forefront of this strategy.

- 1.3.9 Even in the past, India has led the world and shown that it can innovate such population-scale initiatives with the power to fundamentally disrupt and democratize markets, be it Unique Identification Authority of India (UIDAI) - Aadhaar, Unified Payment Interface (UPI), or more recently Goods and Services Tax Network (GSTN) and Ayushman Bharat Digital Mission (ABDM). As UPI helped to transform the payment system in India, there is a similar need to make digital commerce in goods and services available equitably to all Indian citizens.

2 REIMAGINING DIGITAL COMMERCE BUILT ON OPEN NETWORK

2.1 Platforms to network

- 2.1.1 For the overall growth of the digital commerce sector with broad-based participation from buyers and sellers, there is a need to alter the current market structure. At such a juncture, if we want to reimagine the mechanism to bring the participants together with special emphasis on trust, we simply can't turn it into a store of value. It may be very natural to think of a 'platform of platforms' concept, but that too can't eliminate the problem of storage, universality, or trust.
- 2.1.2 Solving a problem at such a population scale necessitates a paradigm shift from an operator-driven monolithic platform-centric model, to a facilitator-driven, interoperable decentralized network as shown in figure 2 below:

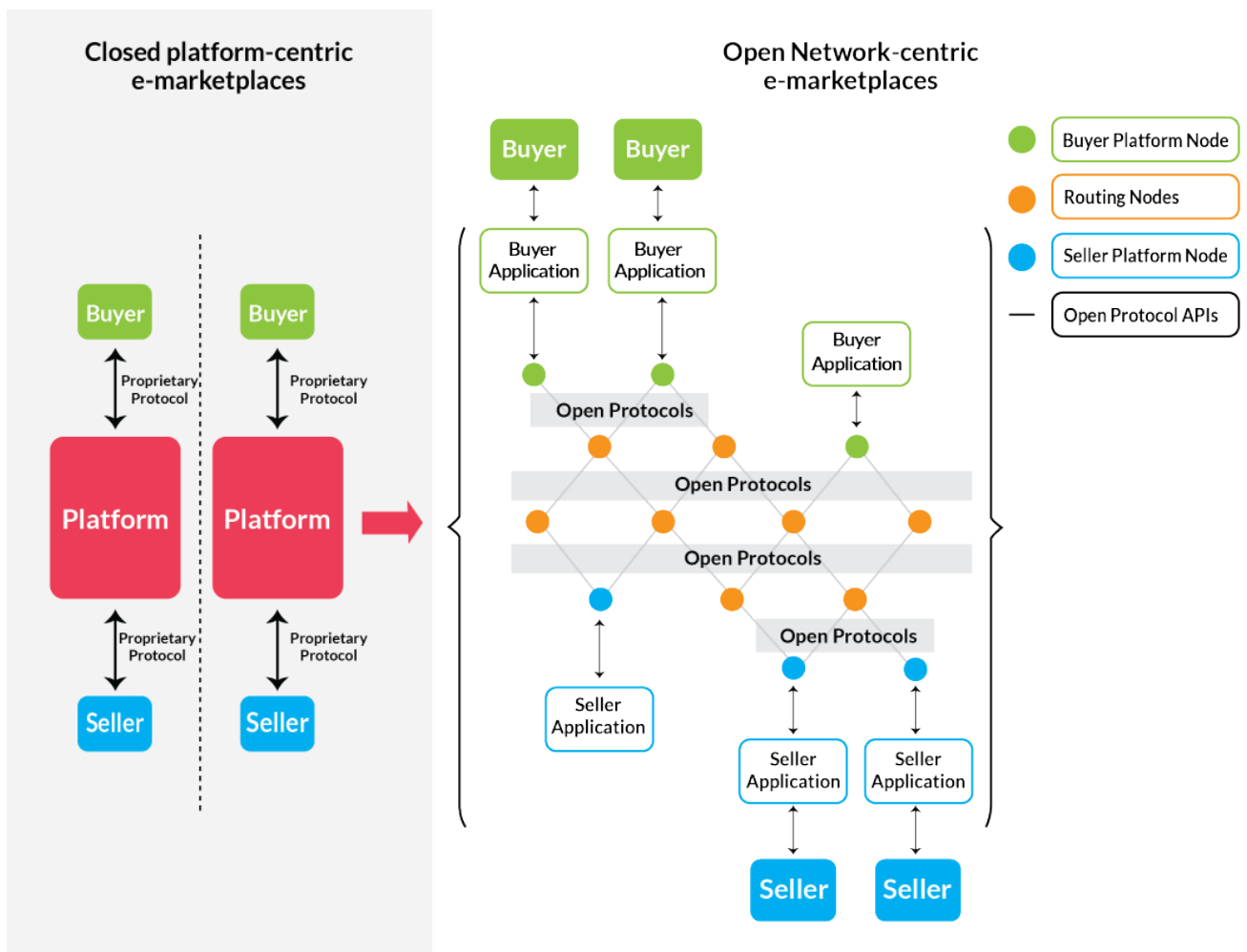


Figure 2: Platforms to network approach

Solving a problem at such a population scale necessitates a paradigm shift from an operator-driven monolithic platform-centric model, to a facilitator-driven, interoperable decentralized network

This paradigm shift from an operator-driven monolithic platform-centric model, to a facilitator-driven, interoperable decentralized network warrants:

- Encouragement for widespread participation; especially that of small and medium enterprises including hyperlocal merchants (Kirana) from all across the country.

- Enabling flow of value more than the store of value i.e., shift from 'central platforms storing and exchanging value' to a 'decentralized network of interconnected ecosystem actors orchestrating the flow of value'.

- Addressing discoverability and trust, agnostic of a platform and across platforms

- Unification of the siloed platforms to overcome the challenges inherent in the platform model instead of pursuing the notion of one universal platform or platform of platforms.

- Enabling autonomy of buyers and sellers.

- Align incentives of the network, platform, and end-users so that the collective succeeds only through the success of the end-users.

2.1.3 The Government of India (GoI) is encouraging such an open network for commerce with the help of new technology models¹¹. With the use of digital commons in the form of an open protocol which is merely a non-code open specification, GoI is enabling the establishment of an interoperable open network (Open Network for Digital Commerce - ONDC) to unlock the value trapped within the ecosystem.

¹¹PIB press release, Move to democratise digital commerce & move it from platform-centric model to an open-network model, August 2021

2.2 Principles of building an alternative approach

2.2.1 Solutions that are built to support the enormous growth of digital marketplaces across industries and geographies, should be inclusive in their very core. The plan of such a population scale initiative should be built on a strong foundation as highlighted in figure 3 below:



Figure 3: Principles of building an alternative approach

2.3 Concept of Open Network

2.3.1 Open Network goes beyond the current platform-centric model where the buyer and seller must be part of the same platform/ application to enable transactions between them. Instead, in an open network so long as the platforms/applications are interoperable, buyers and sellers can transact no matter what platform/application they use to be digitally visible/available enabling the flow of value as depicted in figure 4:

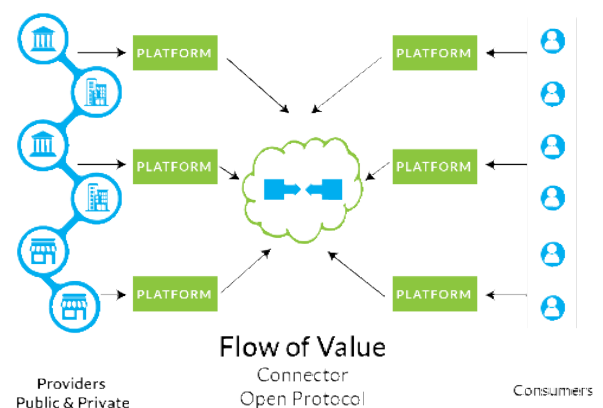


Figure 4: Concept of Open Network

In an open network so long as the platforms/ applications are interoperable, buyers and sellers can transact no matter what platform/ application they use to be digitally visible/ available.

An open network can unlock innovation and value by enabling 'interoperability' and 'unbundling'.

- 2.3.2 An Open Network based on the open protocol will enable location-aware, local commerce across industries to be discovered and engaged by any network-enabled application. As the Internet Message Access Protocol (IMAP) / Simple Mail Transfer Protocol (SMTP) is for emails, Hypertext Transfer Protocol (HTTP) is for the World Wide Web, UPI for the payment systems, the Open Network idea has been conceived to transform digital commerce in India.
- 2.3.3 The open network is premised upon the core concepts of decentralization, openness, and greater user utility. Building on these concepts, the network will enable and encourage the adoption of technology stacks and tools like artificial intelligence, machine learning, blockchain, etc. at an accelerated pace through innovation and experimentation at each of the nodes.
- 2.3.4 The open network protocol is expected to act as a force multiplier for various segments – businesses, consumers, application developers, governments, and other relevant participants – through the creation of an interoperable and open playground for various sections to function and compete. This open network will unbundle the supply chain thus shifting the power from the intermediaries to the end, that is, to the consumers, merchants, and providers of support services. This will be most impactful for small businesses looking to unlock innovation and scale their operations through digital commerce.
- 2.3.5 The open network concept is not restricted to the retail sector and its use cases and benefits can be extended to any digital commerce domains including wholesale, mobility, food delivery, logistics, travel, urban services, etc. – any digital transaction between a buyer and seller for good or services. It has the potential to transform both B2C and B2B transactions.

2.4 Constituents of an Open Network

- 2.4.1 To set up an open network one needs to rethink the way tech infrastructure allows the flow of value. Currently, the marketplace structure is a 'one-box-system' where both the providers and consumers are onboarded and asked to transact following the set of rules set by the box. To create an open arrangement with each of the individual participants with the ability to derive decisions, there is a need to 'unbundle' the current system .
- 2.4.2 'Unbundling' refers to the breaking down of a complex system into granular activities or microservices which can be separately operated to orchestrate a whole transaction. After federating the individual items, different actors can take up these individual activities. Any actor can choose to perform one or more activities (even the design permits actors to participate in all the activities simultaneously). The elements are non-exclusive and hence there can be multiple actors performing the same element. The market along with users will allow the best possible combination(s) to exist. For example, in a transaction, the seller, logistics, and buyer side activities can be unbundled and taken up by different entities.

- 2.4.3 Unbundling will also open up opportunities for innovation and the advent of new players in the areas of logistics, warehousing, etc. Further, it will also encourage players who were hitherto providing certain specialized services to buyers and sellers (for example entities offering accounting software solutions to manufacturers and traders or entities providing payment platforms or digital wallets or even mobile services) to extend digital commerce interfaces to sellers or buyers, taking advantage of their existing strength without worrying about establishing complete and integrated digital commerce platforms.
- 2.4.4 Once unbundled, there is a need to create a medium of exchange between these individual entities, to ensure that each of the actors will have to individually make efforts to connect with each consumer-provider pair. There is a need for a common vocabulary, hereby called 'open protocol'¹², which re-bundles the distributed network components as the need be. The open protocol enables discovery, ordering, execution, fulfillment, and post fulfillment without mandating the provider and consumer to come to the same platform. This interoperability, not as a tech feature, rather as a market principle, is the way to reimagine how digital marketplaces could thrive.

2.5 Genesis of ONDC

- 2.5.1 Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce and Industries conducted a massive outreach during the outbreak of the COVID-19 pandemic in the country to understand its impact on small sellers and hyperlocal supply chain functioning. As a result of these interactions, it was realized that there is a huge disconnect between the scale of online demand and the ability of the local retail ecosystem to participate. Further studies on the matter underlined the bottlenecks of the existing digital commerce ecosystem in India which have been highlighted as part of Chapter 1.
- 2.5.2 Subsequently, consultations were held with multiple ministries as well as industry experts to identify possible solutions to address the bottlenecks in India's digital commerce ecosystem. Taking inspiration from population-scale solutions such as the UPI, IMAP/SMTP (email protocols), HTTP (protocols for data communication and browsing), etc., 'Open Network for Digital Commerce (ONDC)' was envisioned to revolutionize digital commerce in India.
- 2.5.3 Taking cognizance of the inherent challenges of the commerce ecosystem, the DPIIT Government of India constituted a Steering Committee of experts to analyse the potential of ONDC as a concept and its possible impact. On the recommendation of the Steering Committee, a Project Management Unit (PMU) was set up under the aegis of the Quality Council of India (QCI) to convert the ONDC concept to reality.
- 2.5.4 Upon the initial success to accelerate the implementation an Advisory Council was constituted with leaders involved in the execution of population-scale initiatives in India in addition to the Steering Committee members.
- 2.5.5 Subsequently QCI was mandated to lead the charge of the implementation of ONDC until the Open Network for Digital Commerce, a Section 8

Taking inspiration from population-scale solutions such as the UPI, IMAP/SMTP (email protocols), HTTP (protocols for data communication and browsing), etc., 'Open Network for Digital Commerce (ONDC)' was envisioned to revolutionize digital commerce.

¹²'Beckn protocol' is such an open protocol. Find more details at- <https://becknprotocol.io/>

Company, is established to provide focused attention to nurturing the network. Towards this QCI has engaged a core team comprising of experts with prior experience in the design and development of other population-scale initiatives.

2.6 Conceptualization of ONDC

2.6.1 ONDC is being established as a first-of-its-kind initiative globally to pave the way for reimagining digital commerce in India and establishing a globally replicable model for digital commerce. This will be an open network developed on open protocols based on open-source specifications with established registries, enabling wide-scale participation by digital commerce ecosystem players in India through multiple gateways.

2.6.2 ONDC is being set up with the following objectives:

- » 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

2.6.3 ONDC is based on three foundational pillars as highlighted in figure 5 below:

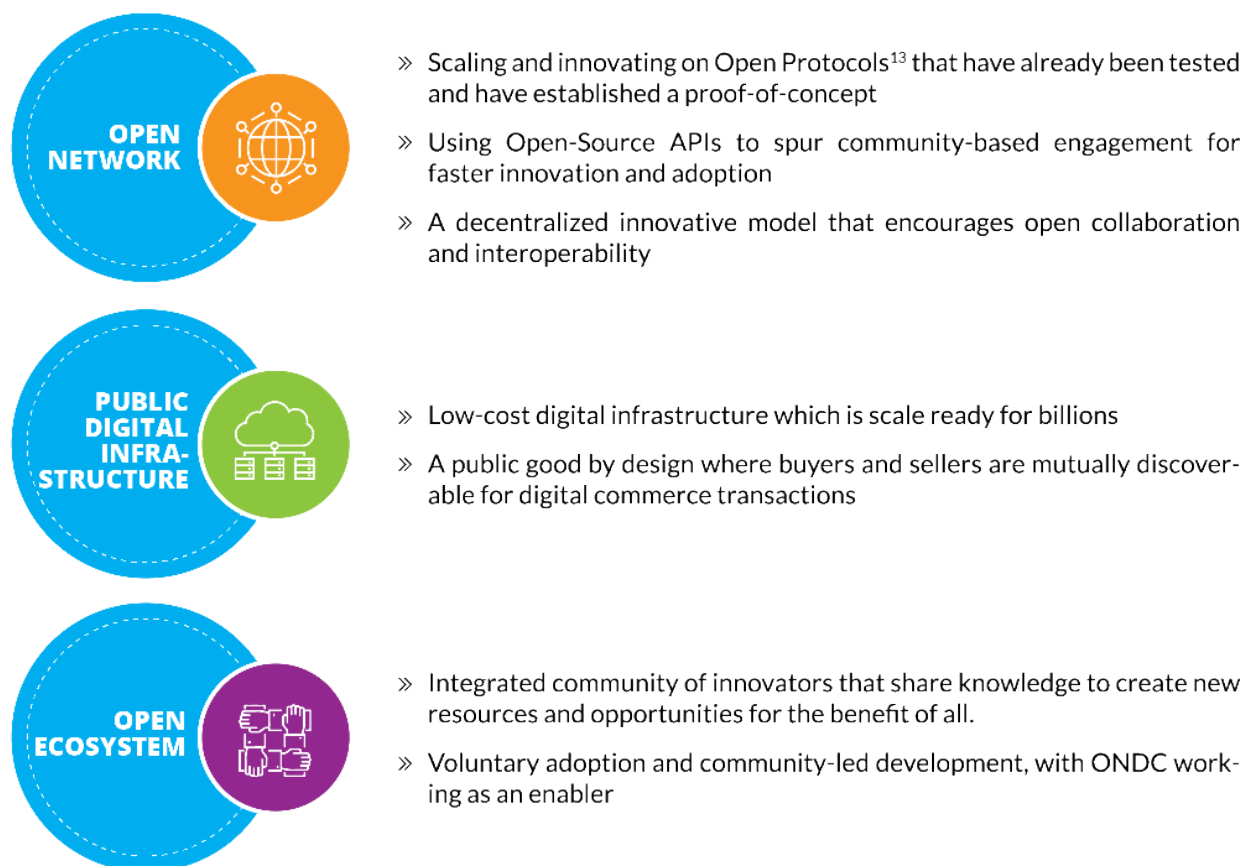


Figure 5: ONDC Foundation Pillars

¹³Based on open source decentralized protocol called the Beckn Protocol

2.7 Understanding ONDC better

2.7.1 ONDC is a network that enables location-aware, local digital commerce stores across industries to be discovered and engaged by any network-enabled applications. It is neither a super aggregator app nor a hosting platform. All existing digital commerce apps and platforms can voluntarily choose to adopt and be a part of the ONDC network. In addition, the responsibility for onboarding of sellers and buyers and the management of the end-to-end order lifecycle will also continue to reside with the network-enabled applications. Figure 6 below further demystify ONDC:

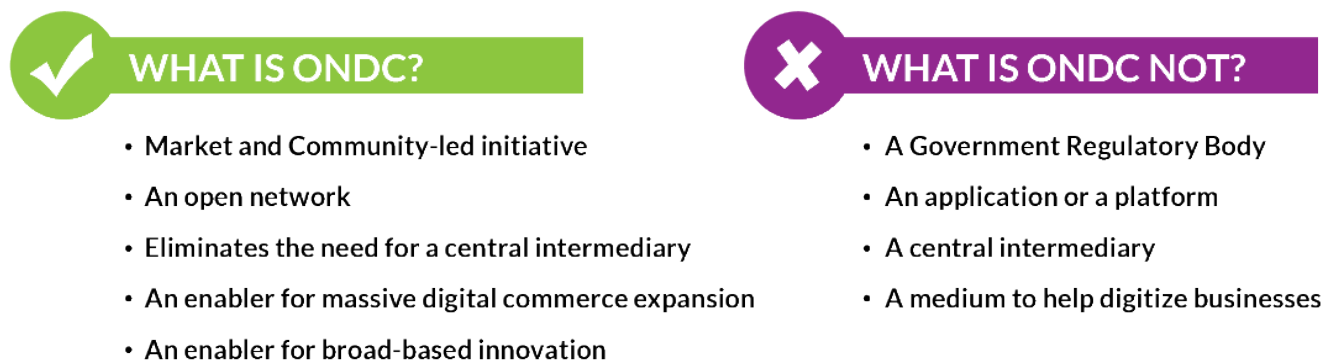


Figure 6: Demystifying ONDC

2.7.2 ONDC will enable large-scale democratization of digital commerce in India by providing a level playing field for large and small digital commerce apps and platforms through the opportunity to be ONDC enabled and make buyers/sellers registered with them visible and discoverable.

ONDC will enable large-scale democratization of digital commerce in India by providing a level playing field for large and small digital commerce apps and platforms.

3 BUILDING BLOCKS OF ONDC

3.1 Technology Components

- 3.1.1 The technology components include the different network components such as registry, gateway, buyer and seller applications and other building blocks, such as adaptor interfaces, that can be used to create these network components.
- 3.1.2 **Adaptor Interfaces:** Adaptor interfaces are the open APIs developed based on the open-source interoperable specification of Beckn protocol¹⁴. Detailed documentation on these interfaces is available at www.ondc.org. These APIs will enable the exchange of information for the execution of transactions, allowing all participants of the network to interact and integrate using standardized ONDC certified interfaces.
- 3.1.3 **Gateway:** Application that will ensure discoverability of all sellers in the network by multicasting the search request received from buyer applications to all seller applications, based on criteria such as location, availability, and other customer preferences. Initially, ONDC intends to offer a Gateway through its technology partners to kick-start the operations. However, it is envisaged that multiple gateway providers will come into existence with independent service offerings in the network with an increased scale of transactions.
- 3.1.4 **Open Registries:** Application(s) that maintains the list of participants who join ONDC, list of network policies, etc.
- 3.1.5 **Buyer and Seller Side Applications:** These will be the applications that will enable end-users and sellers/service providers to transact on the ONDC network.

Buyer-Side Apps:

Any application that will interact with the buyers i.e., the demand side of any transaction, where the transaction originates. These can include different types of applications including User Experience (UX) based applications, voice assistants, chat-bots, etc. depicting the demand layer for the good or service.

Seller-Side Apps:

Any application which will interact with the sellers, i.e. the supply side of any transaction. These can be any applications that receive buyer requests and, in response, publish their catalog of goods and services and fulfill buyer orders.

To stimulate participation initially, ONDC may rollout reference buyer and seller side applications by itself or through its technology partners. Reference applications will also be made available in open source for any service providers to adopt and build on to become part of the ONDC network.

¹⁴Beckn (short for beckn protocol) is a set of open interoperable specifications that helps re-imagine the world of digital commerce marketplaces. [<https://becknprotocol.io/>]

3.1.5 Figure 7 below showcases the components of the Open Network enabled by ONDC and how it interacts with other networks:

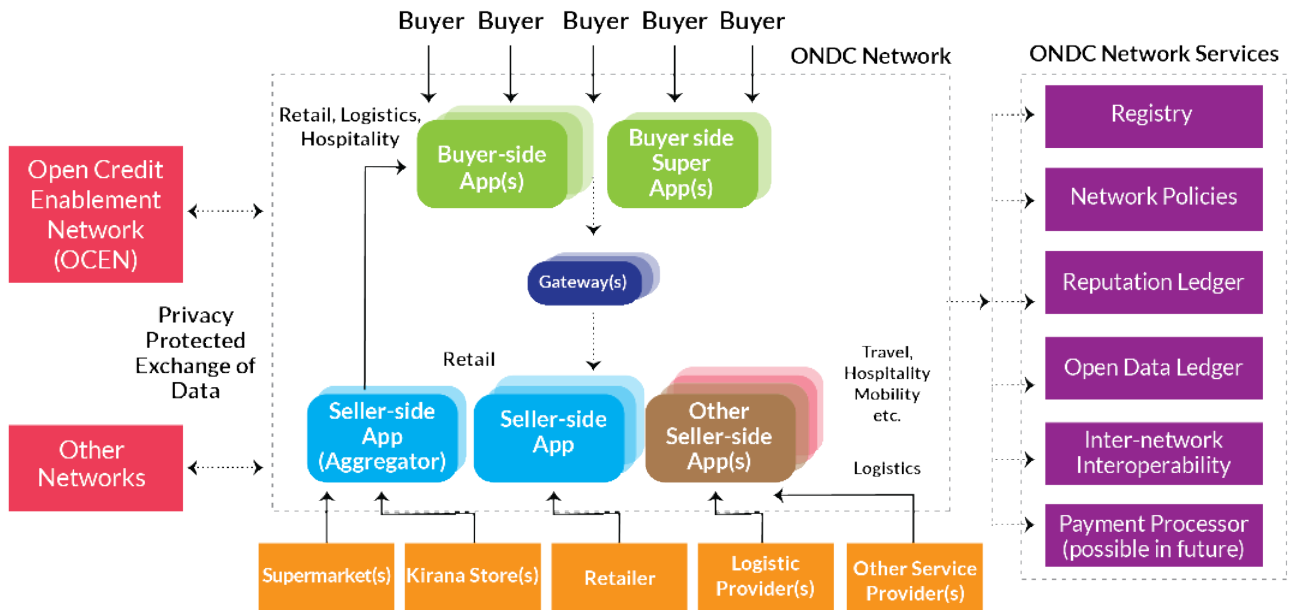


Figure 7: Components of open network enabled by ONDC

- a) ONDC Network (at the center) – comprises of network participants who join ONDC as a buyer-side app, seller-side app, or gateway coming together to form the open network.
- b) ONDC Network services (on the right) – shows the common network services that will enable network participants to transact on the network and will form the digital infrastructure offered by ONDC.
- c) Other networks (on the left) – shows other such open networks in other domains, e.g., Open Credit Enablement Network (OECN), with which it can seamlessly interface.

3.2 Network Participants (NP)

3.2.1 As a decentralized network, the success of ONDC is contingent upon the participation and adoption of a wide range of network participants and through them merchants on one side and buyers on the other side. While network participants will be from a broad spectrum of domains ranging from retail, logistics service providers, restaurants, hotels, etc., they may be broadly classified into the following two categories:



BUYER SIDE



SELLER SIDE

The success of ONDC is contingent upon the participation and adoption of a wide range of network participants and through them merchants on one side and buyers on the other side.

- 3.2.2 One network participant can play the role of both buyer and seller as part of the network offering enhanced options to buyers, sellers, and network participants, e.g. a marketplace with retailers can act as a seller side participant in the retail domain but can also act as a buyer side participant in the logistics domain for a digital retail transaction.
- 3.2.3 Network participants would include participants with a varying scale of operations and technological ability covering large digital commerce platforms, small and medium start-ups, and enterprises making their products available over the network or enabling other entities to make their products/ services available either as an aggregator acting as the seller on record or as a white-labeled seller application. The unbundling of digital commerce will also provide an opportunity for innovation by technology service providers and help them move up the value chain e.g., existing white label digital commerce platforms can transform their platforms from a cost centre to a profit centre simply by making their product ONDC compliant and enabling a new potent order acquiring channel for their clients - through ONDC enabled buyer applications.
- 3.2.4 Network participants will be responsible for managing the order life cycle depending on their roles in the network—including but not limited to customer/seller onboarding, catalog management, order management, invoicing & reconciliation, warehousing and inventory management, logistics, customer support, returns management, payments, etc.

ONDC will adopt a minimalistic and non-restrictive policy framework to promote transparent, inclusive, and sustainable practices on the network.

3.3 Network Policies

- 3.3.1 ONDC will adopt a minimalistic and non-restrictive policy framework to promote transparent, inclusive, and sustainable practices on the network. Towards this, ONDC in consultation with the network participants will develop the rules and code of conduct for various activities that are performed by the network participants starting from implementation to run-time. These rules will be published as Network Policy and continuously updated as the network evolves. These rules will cover areas like Implementation, Registration, Subscription, Transaction, Payment, Data Transmission, and Communication. To the extent it is possible and meaningful, ONDC will attempt to make these policies machine-readable and enforceable for better compliance and transparency.
- 3.3.2 Further, ONDC will act as a facilitator of dispute resolution among the participants through fair and transparent practices. Towards this, ONDC will attempt to establish mechanisms adopting from the Online Dispute Resolution (ODR) plan published by NITI Aayog and guidelines on this issued by the Reserve Bank of India (RBI) for the financial sector.

3.4 Data Policy

- 3.4.1 The data policy will be compliant with the Information Technology Act, 2000 while making efforts to comply with the emerging Personal Data Protection Bill. ONDC will strive to adopt an evolvable regulatory, institutional, and technology design for secure data sharing to be in line with the evolving policy and the discourse around data privacy in India as well as globally. This will balance forward-looking data policy and privacy considerations with the realized needs and limitations of India's business ecosystem.

3.4.2 Therefore, ONDC at the outset will adopt the following key principles of Data Privacy:

- i. Digital commerce by design requires the exchange and transmission of data for transactions.
- ii. Transaction data will reside only with the buyer and seller applications and will not be visible to ONDC. ONDC will not be storing/viewing transaction data.
- iii. Policies around the exchange of this data will evolve and would be consent-based and bound by the limitation of purpose.
- iv. ONDC will ensure data security and credibility at the transaction level, which will be key to the growth of digital commerce and the success of ONDC.
- v. User's Personally Identifiable Information (PII), as well as seller data critical to trade (i.e., competitive data), will be protected from third-party access.
- vi. ONDC will foster and promote established and viable principles for platforms to emit anonymized performance metrics enabling informed policymaking and network robustness, empowering network participants fairly and equitably, and making network-wide reputation available helping buyers to make informed decisions

3.4.3 With the Data Empowerment and Protection Architecture, set to launch soon, India will be taking a historic step towards empowering individuals with control over their data, by operationalizing an evolvable regulatory, institutional, and technology design for secure data sharing. ONDC will attempt to learn and adopt such initiatives to lead the way in Data Privacy and Protection nationally and internationally.

Transaction data will reside only with the buyer and seller applications and will not be visible to ONDC. ONDC will not be storing/viewing transaction data.

4 | ENHANCING VALUE FOR THE ENTIRE ECOSYSTEM

4.1.1 The establishment of ONDC and its role in enabling Open Network would have benefits ranging from the significant increase in the availability of choices to merchants and consumers to the strong financial gains through the increase in business efficiencies and reduction in customer acquisition cost. ONDC will act as an evangelist for technology platforms by helping them socialize their solutions on customer and/or seller acquisition, experimenting with new business models, providing them greater scope for innovation and value-added services. Figure 8 below explains ONDC value proposition for various stakeholders in digital commerce value chain:

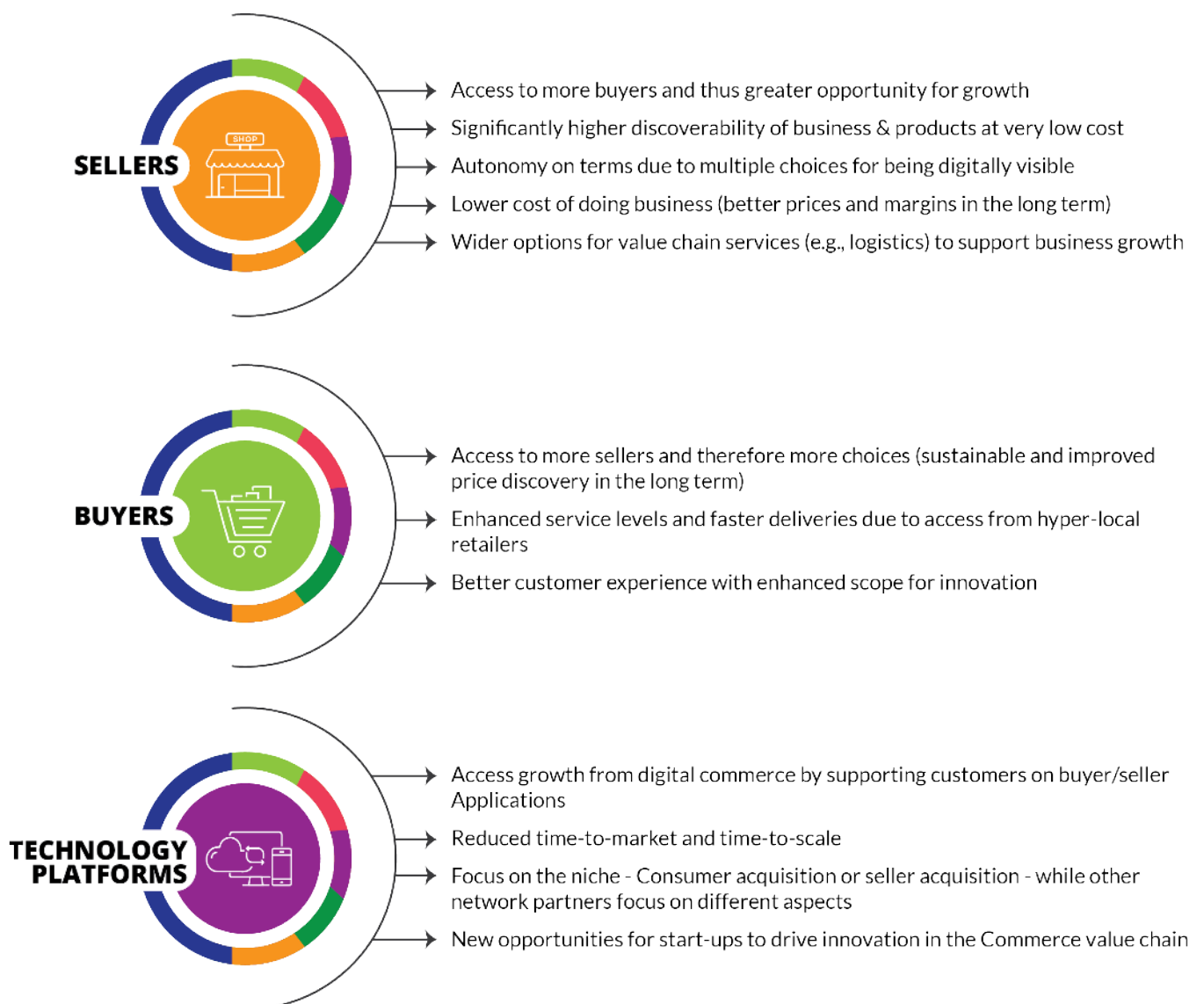


Figure 8: ONDC value proposition for digital commerce stakeholders

5 | EVANGELIZING DIGITAL COMMERCE IN INDIA

5.1.1 ONDC initiative will support the transformation of the ₹2.85 Lakh Crores (USD 38 Billion) Indian digital commerce market by revolutionizing and democratizing large-scale participation. The envisioned aspirations of ONDC include:

- i. Enable local retail ecosystems to access and fulfill online demand
- ii. Enable easy participation in the digital commerce coverage to all the businesses irrespective of size, location, digital quotient, etc.
- iii. Expand the digital commerce landscape in India by amplifying geographic and socio-economic coverage
- iv. Formalize businesses by creating active digital history and enable easier access to finance options
- v. Economic development and livelihood creation opportunities across the digital commerce value chain i.e., logistics, packaging, final-mile delivery, etc.
- vi. Enhance business efficiencies through a reduction in cost overheads (e.g., acquisition costs, digital presence cost) and inventory costs across businesses in India
- vii. Enable increased trade of locally manufactured goods in India, thereby multiplying investment and production of MSMEs

5.1.2 With a focus on the above-mentioned aspirations, ONDC will endeavor to enhance the market potential of digital commerce in retail. ONDC is expected to fuel significant growth (as per figure 9 below) over the next 5 years to include:

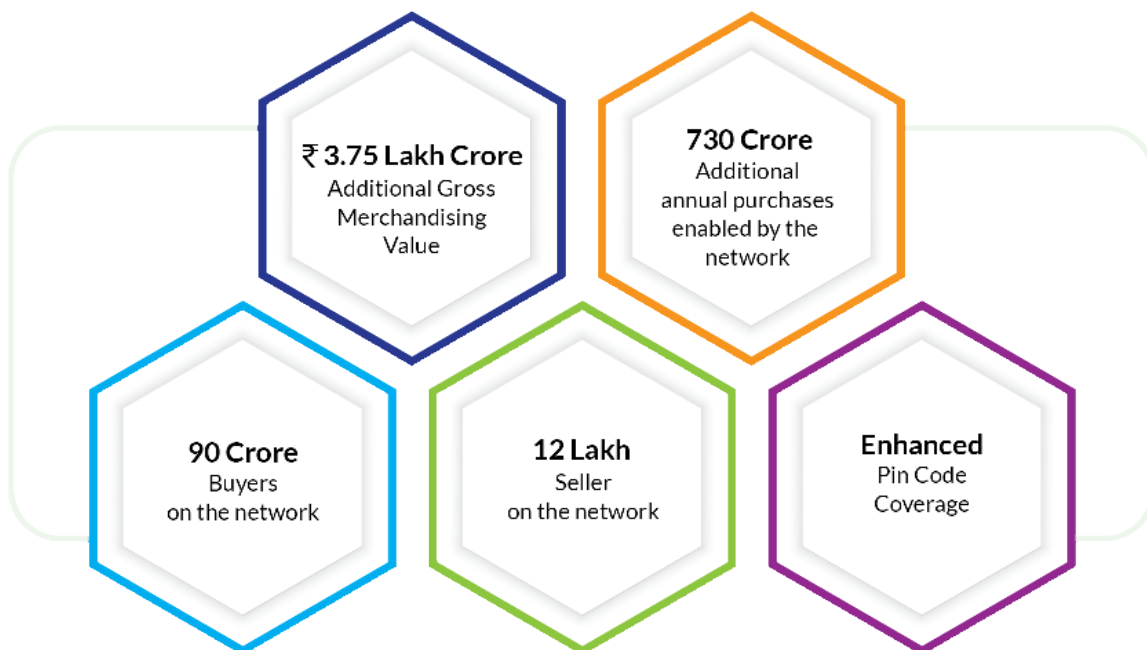


Figure 9: Potential market transformation opportunity due to ONDC in the next 5 years

6 | IMPLEMENTING ONDC

Open Network for Digital Commerce entity has been incorporated as a Section 8 Company (not for profit) on 30th December 2021.

6.1 Institutional Setup

- 6.1.1 To accomplish its path-breaking objectives, ONDC must be structured in a way so that the entity can make decisions quickly, build trailblazing technology and be responsive to the fast-changing business landscape and needs of digital commerce. For this, ONDC must attract a team with relevant experience and expertise and who will be able to continuously innovate and experiment. The human capital should be driven by the passion to ideate and excel to transform the market and they should not consider it as an ordinary job for power and prestige.
- 6.1.2 To achieve this an independent entity has been envisaged in such a way that it should be able to work without the need for day-to-day guidance and advisory from the shareholders/members. The management will be independent and empowered to take quick and efficient business decisions pertaining to attracting and retaining talent, rapid response to business dynamics, adopting new technologies, etc. The independence of the management is linked to the financial independence of the entity. Therefore, the entity will be required to get funding independently and have a self-sustaining financial model (e.g., levy user charges for services) taking care of operations and investment required for its sustenance and growth.
- 6.1.3 Accordingly, Open Network for Digital Commerce entity has been incorporated on 30th December 2021 as a section 8 company (not for profit) with limited liability and subject to sound corporate governance norms, such as those required for listed companies. This company is majority-owned by private sector institutions to allow for the close alignment with market and flexibility and agility in decision making and resourcing as envisaged above for the success of this globally pioneering initiative.
- 6.1.4 Section 8 company (not for profit) structure removes any incentive for the owners to drive for profit maximization to retain its purity of intent of establishing a public good. Being a section 8 company, it will not be listed on a stock exchange, however, the board composition, accountability, and transparency norms may be the same as prescribed for listed companies.

6.2 Role of Open Network for Digital Commerce entity

6.2.1 Open Network for Digital Commerce entity will be responsible for three roles as shown in figure 10 below:

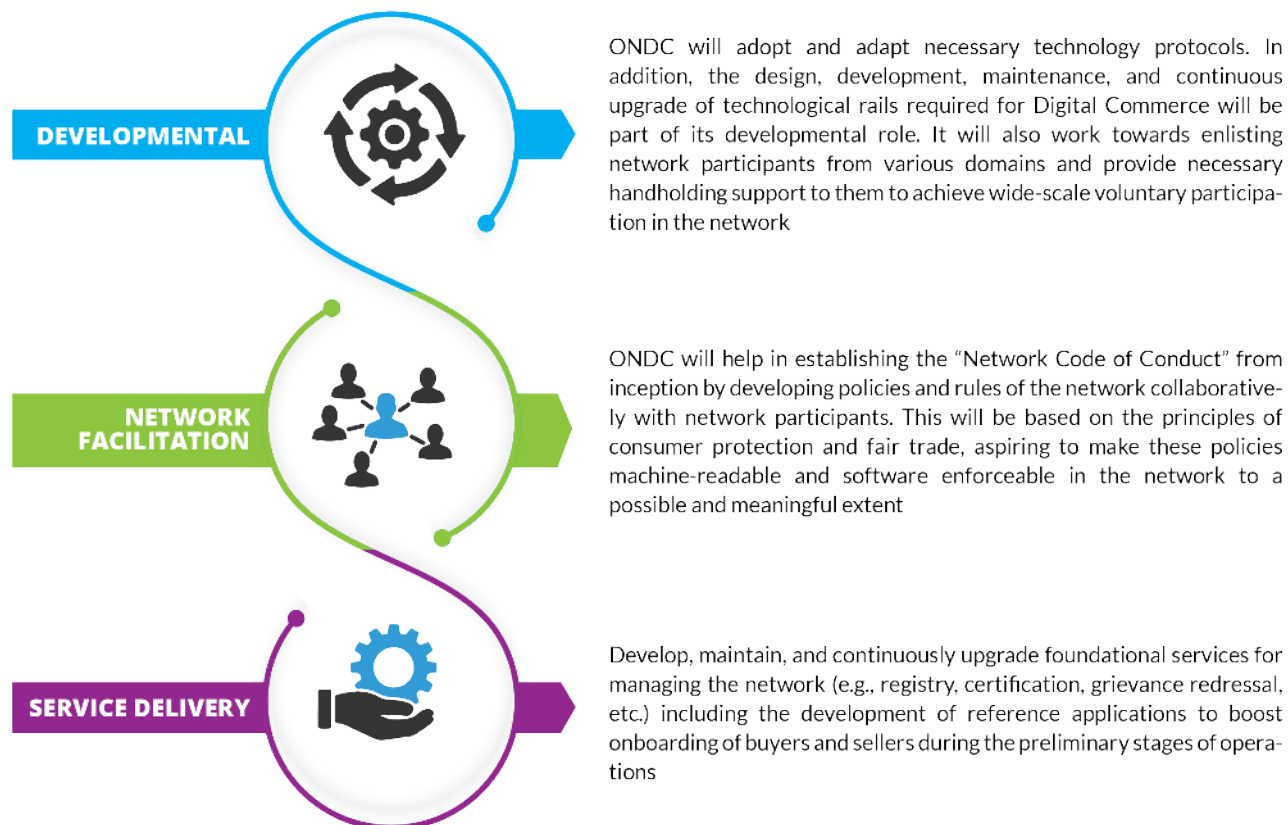


Figure10: Role of Open Network for Digital Commerce entity

6.3 Governance

6.3.1 ONDC as a body will function under the regulatory oversight of the existing framework provided by the relevant Ministries that have an impact on digital commerce. From the beginning, ONDC as the network enabler will help to establish the Network Code of Conduct by collaboratively developing policies and rules of the network based on principles of consumer protection and fair trade. Towards this ONDC may establish a council with representation from network participants who could play a formal role in the development and adoption of network policies and code of conduct

6.3.2 ONDC as a Network Facilitating entity will provide a base framework of mutually accepted policies and guidelines that all network participants must abide by. To continuously evolve network rules and policies for quick adoption of the network by a broader set of participants and users, ONDC will establish a user council consisting of members of the network participants, users, and subject matter experts. Therefore, ONDC could build on the earlier idea of a self-regulatory organization in case of its role as a network orchestrator.

6.4 Implementation Strategy

6.4.1 Considering the diversity of use cases and players in the ecosystem, implementing ONDC on a population scale to make it a public utility is a long-term plan. Given the transformational change that ONDC will bring to how the digital commerce industry operates today, it will face challenges in building trust amongst small

To continuously evolve network rules and policies for quick adoption of the network by a broader set of participants and users, ONDC will establish a user council consisting of members of the network participants, users, and subject matter experts.

and large digital commerce companies, management of user expectations, management of customer and seller fraud/issues. Hence, the initial phase of the ONDC needs to be rolled out quickly to gain acceptance and find practical considerations for rolling it out at a larger scale. The implementation strategy for ONDC execution has been designed to focus on three key aspects - technology, business, and institution building.

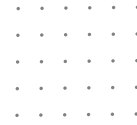
Short Term Implementation Strategy:

- 6.4.2 The ONDC mission team incubated under the Quality Council of India (QCI) will proceed with the implementation of the network on a project mode.
- 6.4.3 On the engineering front, the ONDC Registry and Gateway have been developed to enable the launch of the ONDC initiative. In addition, to provide user-friendly tools for rapid deployment and easy integration in the short term, technology tools like adapter interfaces and other building blocks are being developed for accelerated onboarding of the network participants.
- 6.4.4 In addition, ONDC will focus on ecosystem expansion to make this a market-led community initiative. ONDC will onboard various network participants including large and small marketplaces as well as the technology service providers. ONDC will conduct a strong and sustained Information, Education, and Communication (IEC) campaign to encourage businesses across the value chains to be a part of ONDC.
- 6.4.5 In parallel, Open Network for Digital Commerce entity will develop its in-house capabilities to take over the implementation of ONDC and take steps to make it a population scale initiative.

Long Term Implementation Strategy:

- 6.4.6 As a long-term strategy, ONDC aspires to significantly strengthen its roles in development, network discipline, and service delivery. ONDC will work towards the development of innovative solutions in active collaboration with the network community and the start-up ecosystem. It will study and refine network rules and establish strong compliance through automated network policies. It will ensure that foundational services with respect to registries, certification, gateways, and grievance redressal are scaled up and strengthened to meet the exponential growth.
- 6.4.7 ONDC is a powerful concept to transform the entire digital commerce in India. Its uses and benefits can be extended across different sectors, domains, socio-economic strata, and geographic locations. Therefore, as part of the long-term implementation strategy, ONDC will continue to expand across multiple dimensions.
- 6.4.8 ONDC will also continually develop powerful communication to address the concerns of the ecosystem and attractive business models for diverse segments of the whole stratum.

7 | APPENDIX



7.1 Appendix 1 – ONDC Advisory Council

The Government of India constituted an advisory council to analyze the potential of ONDC as a concept and to advise the Government on measures needed to design and accelerate the adoption of ONDC. The esteemed members of the Advisory Council are listed below:

Nandan M. Nilekani
Non- Executive Chairman, Infosys



R.S. Sharma
CEO, National Health Authority

Adil Zainulbhai
Chairman, Quality Council of India
and Capacity Building
Commission



Anjali Bansal
Founder and Chairperson, Avaana
Capital

Dilip Asbe
Managing Director and CEO,
National Payments
Corporation of India



Suresh Sethi
Managing Director and CEO,
Protean eGov Technologies Ltd.

Kumar Rajagopalan
CEO, Retailers Association of India



Anil Agrawal, IPS
Additional Secretary, Department
for Promotion of Industry
and Internal Trade, Ministry
of Commerce and Industry,
Government of India



Arvind Gupta
Co-Founder & Head, Digital India Foundation

In future, the council will be expanded with representation from network participants, consumers, fintech companies, SME etc. This will help to further evolve the network and its policies

7.2 Appendix 2 - Supporters of ONDC

The ONDC initiative is supported by multiple organizations including:



7.3 Appendix 3 – Invitation for feedback

ONDC is intended to be a community-led development and this paper is intended to elicit feedback from the public and concerned stakeholders on the functional and technical design and the design principles of ONDC. Following are some key subjects where ONDC would like to solicit feedback of the public, potential network participants, and the industry. Please share your feedback by writing to team@ondc.org

Section 1 - India's commerce ecosystem

Are there some significant challenges acting as barriers to the larger adoption and penetration of digital commerce (both on the buyer and seller side) that have not been addressed in the paper?

Section 2 - Reimagining digital commerce built on open network

Platform to Network is about re-imagining digital commerce for the next decade and a new way of thinking about digital commerce that promises to be more inclusive and drive greater adoption. What are some of the teething challenges one should be mindful of and plan for as the network expands? What would be your recommendations to strengthen the approach and address gaps if any?

Section 3 - Building blocks of ONDC

ONDC is a market and community-driven initiative where there is no central intermediary there by driving the flow of value across the network participants as against a store of value in the traditional platform approach. Even from a data standpoint, only the transaction participants (buyer and seller app) have visibility to the same, and ONDC will not be storing or viewing any transaction data, thereby making a truly democratized network where the participants are in control of their data and insights thereof. From a network policy standpoint are there any recommendations on policies that should be governed at a network level and policies that should be left to the market participants to decide and implement? What are some of the open data requirements that the participants should contribute voluntarily for the larger good of the network governance?

Section 4 - Enhancing value for the entire ecosystem

ONDC may not solve all challenges that today act as barriers to the adoption and penetration of digital commerce (both on the buyer and seller side), but goes a long way in addressing some of the critical challenges the segment faces. What kind of innovations and possibilities do you see that could come because of a network like ONDC which could help solve a greater set of challenges and currently not envisaged?

Section 5 - Evangelizing digital commerce in India

ONDC is a market-creating opportunity that will not only help drive the expansion of the digital commerce market but will also have a significant impact on the economy and in specific employment, livelihood creation, supply chain efficiencies, and much more. What are some of the other strategic and tactical benefits and more importantly impact that ONDC can create?

Section 6 - Implementing ONDC

ONDC is being set up as a digital public good and in line with that aspiration and objective has been set up as a section 8 company with no profit motive (while it will still make revenue to sustain its operations). Given the value that the participants and the ecosystem can derive from the network, what should be the revenue model of ONDC which is a win-win for all stakeholders?

NOTES:

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Disclaimer:

Please note that the above document is intended to be purely consultative in nature and is intended to provide an overview of the creation and operation of the Open Network for Digital Commerce (ONDC). Nothing contained in this document should be considered to be legally binding in any manner. ONDC as an organization, its employees and advisors, make no representation or warranty and shall have no liability to any person, under any law, statute, rules or regulations or tort, principles of restitution for unjust enrichment or otherwise for any loss, damages, costs or expenses which may arise from or be incurred or suffered on account of anything contained in this document or otherwise, including the accuracy, adequacy, correctness, completeness or reliability of the document and any assessment, assumption, statement or information contained therein or deemed to form part of this document.



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