The ONDC (Open Network for Digital Commerce): Why is Everyone Talking About It? (Part 1)

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It is difficult to find a person who has never heard of the word "e-commerce". Amazon, Flipkart, Bigbasket, Zomato and Swiggy are some of the big names in e-commerce. These are all virtual (or online) marketplaces. Sellers join here to sell their goods and services. Unlike a physical mode of trading, e-commerce allows a seller to connect with a large number of customers, and that too hassle-free. Another advantage of an e-commerce platform is that it comes equipped with a bunch of trading-friendly online tools – wishlist creation, delayed order placement, and creation of gift messages, to name a few.

The concept of ONDC is the latest development on the Indian e-commerce landscape. Like Amazon (or Flipkart), ONDC too facilitates online trading between the seller and the buyer, but it'd be a mistake to equate Amazon with ONDC. There exist fundamental differences in their building blocks and operational methodologies. And these differences in architectures result in differences in macro-economic outputs produced by Amazon and ONDC.

The business communities especially those who are in digital commerce are euphoric about this new beast in town, called ONDC. They believe when rolled out even to a moderate extent, ONDC will be a formidable growth engine for the country, with its impact expected to be felt far outside the country.

Before diving into the details, let us first set the stage by reviving some backgrounds about the existing e-commerce systems.

What the Amazon, Flipkart, Bigbasket, and Zomato platforms lack.

The short answer is, at the micro level, Amazon, Flipkart and their ilks lack nothing. In fact, going by the customer satisfaction, these privately-owned e-commerce platforms seem to work perfectly fine. But, when understood by comparing the macro-economic parameters, many downsides are instantly visible. Analysis of the downsides of the existing e-commerce systems is crucial to understanding this novel ONDC concept.

To that end, first, we need to recognize that ONDC does not depend on any new technologies or resources that are not available to the existing e-commerce companies. On the contrary, these private e-commerce companies are flush with money and resources, and they hire the most skilled engineers and scientists all over the world to work for their business interests. The problem here lies in their intention or financial motivation. As a corporate entity, always motivated by profit margins, it is not possible for Amazon to prioritize the country's economy over its bottom line.

Let us start with a simple example. When a small-scale retail businessperson migrates from offline trading to online one, little does he know that his initial euphoria is not going to last long. After completing a single-digit or double-digit transactions, he finally became disillusioned of the autocratic nature of the platform, and wanted to leave it as soon as possible. He complains mainly about two things: (1) the commission charged by the platform is too high; (2) secondly, the policies and rules are meant only to increase the profits of the platform-owners. For example, one of the common tactics the owner uses is rank a retailer lower down in the list of sellers! Being ranked low, the retailer stands to get fewer orders, when the dark stores owned by the promoters get plenty.

The e-commerce promoters are veritably the judge, jury and executioner in their platforms. Pricing, advertisements, payments, packaging, delivery, return as well as dispute resolution — all remain in the full monopolistic control of the company! There is no economic incentive for them to do otherwise.

There is one more friction. These platforms work in silos. Because of this, a kirana store registers twice – one on Amazon and the other on Flipkart – if it wants to access the combined customer-base of Amazon and Flipkart. This increases the store's cost overhead.

As a result, small retailers in India with limited wherewithal stubbornly avoided e-commerce marketplaces.

A bit of statistical number crunching may be informative. In India, e-commerce penetration in the retail sector in 2020 is just 4.3% (market-cap wise). There are about 1.2 crore (12 million) retail traders in India. Of them, only 0.125% (that is, just about 15,000) use the nation's e-commerce infrastructures. In contrast, the e-commerce penetration of the retail sector of South Korea, China and UK are 26%, 25% and 23% respectively.

It is interesting to note that even this minuscule 0.125% of the retailers occupy 4.3% of the market. So, it makes sense to try to devise a mechanism that can bring this untapped 99.875% into the e-commerce business. (The numbers mentioned in the above paragraph are taken from ondc.org [1].)

Birth of ONDC (Open Network for Digital Commerce)

As discussed earlier, the root cause why the Indian retail sector vehemently opposed e-commerce platforms is their perceived risk of getting shortchanged at the hands of the

owners of the platforms. With this as the trigger point, the concept of ONDC has started to emerge. The main objective of ONDC understandably was to make e-commerce a level playing field for all stakeholders.

To achieve the goal, the operations involved in an e-commerce transaction should have to be decentralized. Another equally important question is how to create an open, interoperable and population-scale network, where all participants – buyers, sellers, delivery agents, record-keepers and policy implementers, among others – can join and leave the network at ease, and co-exist and coordinate without being bullied by others. It should be possible for "other" networks too (including the existing e-commerce platforms such as Amazon and Zomato) to join the prospective ONDC network.

ONDC (Open Network for Digital Commerce) was established by DPIIT (Department for Industry and Internal Trade, under Ministry of Commerce and Industry), and was incorporated as a not-for-profit Section 8 company on December 31, 2021. The QCI (Quality Council of India) and Protean eGOV technologies Ltd. are its founding members. In addition, ONDC receives funds from many other financial institutions; their names are given in Fig. 1.

Figure 1: The shareholders of ONDC (picture credit: ondc.org [1])

How ONDC plans to break the juggernaut and attracts large sections of small retailers into e-commerce.

The goal of ONDC is to create an open network (henceforth ONDC network) – not a monolithic and closed one like Amazon – where various operations and modules are managed independently by individual participants.

Let's take a concrete example. Suppose a buyer B wants to buy a unit of the product P. The operations involved in the end-to-end process are roughly as follows: (1) B searches the product, and selects the seller S; (2) B selects the delivery agent D; (3) B orders a unit of P, and makes the payment to S; (4) B makes the payment to D; (5) B makes payment for software services. (6) D picks up the unit of P from S; (7) D delivers P to the doorstep of B. This 7-step process involves three parties B, S and D; although not mentioned explicitly, it also involves software services; these services are search, select, order and payment. What ONDC network essentially achieves is create a framework where jobs of all the three entities – B, D, and S – as well and of the software services are decentralized and carried out by independent bodies. Note that in a traditional e-commerce platform, most jobs remain in full control of the platform owner (such as Amazon). This is captured in Fig. 2.

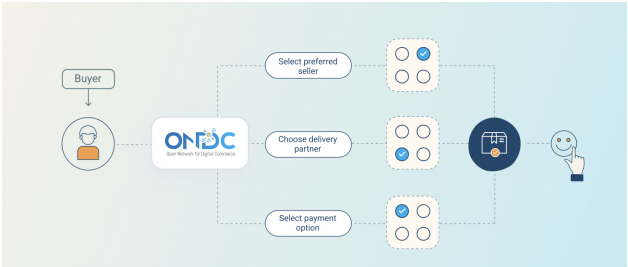

Figure 2: More options are now available to the buyers in ONDC network. (Picture credit: ondc.org [1])

In this decentralized e-commerce network, the buyers (as well as other participants) enjoy freedoms while executing various activities, such as product-search, product-selection, search-list generation, order-submission, seller-ranking, and feedback. This liberated marketplace in a natural way allows more competition among traders, which in turn helps keep the prices of the consumer goods and services low. ONDC network thus democratizes e-commerce!

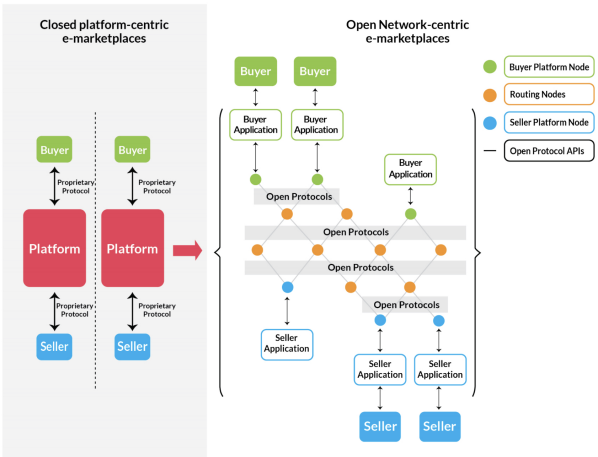

Figure 3: Platform vs. Network (picture credit: ondc.org)

The technology behind the ONDC network: it is not a platform like Amazon.com or flipkart.com.

The main difference between ONDC and Amazon is that the former is an open network, while the latter is a closed platform. The platform-centric and network-centric approaches to building an e-commerce infrastructure is presented in Fig. 3. Various components of ONDC network is provided in Fig. 4. How to determine whether an e-commerce system is network-based? For that, we must answer the following question: who owns the e-commerce system? In a network-based one – such as ONDC – there is no single owner. Fig. 4

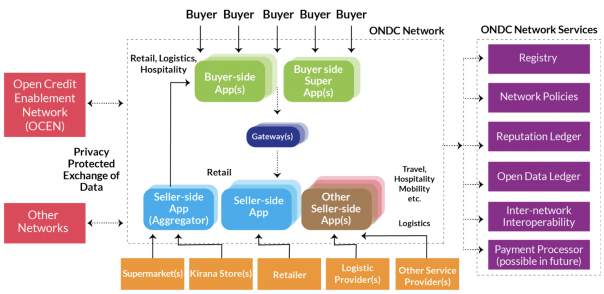

Figure 4: Component of ONDC (picture credit: ondc.org)

shows that all the colored boxes which denote the variety of software applications running on diverse servers/clients are owned by different parties. These parties are: buyers, sellers, various sorts of recordkeepers, delivery agents, external networks, etc. Then the next question is: how do these diverse sets of people/processes communicate with each other? The answer is that they communicate using something called APIs (application programming interfaces). Somewhat informally, an API is a piece of software that allows two widely different processes to talk to each other. *These APIs are the lifeblood of the ONDC network. They are the ones who ultimately create the ONDC magic!*. These APIs make the ONDC network open, transparent, interoperable, and arbitrarily scalable.

REFERENCES

[1] ONDC Paper, `https://ondc-static-web-bucket.s3.ap-south-1.amazonaws.com/res/daea2fs3n/image/upload/ondc-website/files/ONDCStrategyPaper_ucvfjm/1659889490.pdf`

In Part-2. The part-2 will be published soon! There we discuss the security/trust related issues concerning the ONDC networks. Most importantly, we comment on the ONDC business model and its viability. Last but not the least, we will also address the issue of how justified it is to compare ONDC with UPI/Internet/Email.