Exploring the Features, Benefits and Mechanism of Open Network Digital Commerce (ONDC)

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Abstract—The Open Network for Digital Commerce (ONDC) is a private non-profit company established by the Department for Promotion of Industry and Internal Trade (DPIIT) of the Government of India. It is a government-mandated platform that aims to transform the e-commerce landscape in India by enabling both consumers and sellers to engage and trade online regardless of the app or platform they are using. ONDC is expected to bring in new opportunities for micro, small and medium enterprises (MSMEs) and sole proprietors by helping them get on online platforms and compete with larger market players. It will also help to check digital monopolies by creating a more level playing field for all players in the e-commerce ecosystem. To complete this research, a qualitative research design is used. This paper provides a brief overview of ONDC and its potential benefits for consumers, sellers and tech platforms. It also includes a brief data analysis of the digital commerce landscape in India and how the country is progressing in the state of the digital world.

Index Terms—ONDC, Digital commerce, MSMEs, Tech Platform.

I. INTRODUCTION

The Open Network for Digital Commerce (ONDC) is a government-backed digital project that was first announced in 2020. An advisory council was set up in July 2021, but the project was not implemented until ONDC was registered as a Section 8 non-profit company on December 31, 2021. The pilot phase of ONDC has already started in Delhi, Bengaluru, Bhopal, Shillong, and Coimbatore. The network will eventually comprise participants from various domains, such as retail, logistics, restaurants, hotels, and cafes. These participants can join ONDC as buyer-side apps, seller-side apps, or gateways. ONDC aims to create a more open and competitive e-commerce market in India. The project is expected to benefit small businesses and consumers by giving them more choices and lower prices. It is a non-discriminatory platform that will allow buyers and sellers to interact directly with each other. This will help to reduce the dominance of large e-commerce platforms in the Indian market. ONDC will use open standards and protocols, which will make it easier for new businesses to participate in the e-commerce market. ONDC will focus on small businesses and rural areas, which have been underserved by the current e-commerce market. ONDC is a major initiative by the Indian government to promote e-commerce and economic growth. The project is still in its early stages, but it has the potential to revolutionize the Indian e-commerce market.

II. OBJECTIVES

1. To study ONDC, including its benefits, features, and how it works.
2. To identify the potential risks and challenges of ONDC and develop strategies to mitigate them.

III. LITERATURE REVIEW

- Shaji George and A.S. Hovan George "Open Network for Digital Commerce (ONDC): Democratizing Digital Commerce and Curbing Digital Monopolies in India") provide a concise overview of key concepts related to digital commerce and the ONDC initiative in India. They highlight the rapid growth of digital commerce, accelerated by the COVID-19 pandemic, and explain how ONDC aims to create a more open and democratic ecosystem. The authors also touch upon Business-to-Consumer (B2C) e-commerce, the digital commerce ecosystem, the ONDC network as a platform for business and consumer transactions, and the significance of open networks in promoting fairness and preventing monopolies.

- Srinivasan and Venkatraman (2021) "Building the Open Network for Digital Commerce: Key Features and Architectural Considerations," provide a comprehensive analysis of the essential features and architectural considerations involved in constructing an open network for digital commerce. The authors emphasize the importance of interoperability, scalability, security, privacy, and governance in designing such networks. Their study contributes valuable insights into the technical aspects and challenges associated with building open networks for digital commerce, offering a foundation for further research and development in this domain.

- Chen, Liang, and Huang's (2020) article "Open Network for Digital Commerce: A Review of Opportunities and Challenges" offers a comprehensive review of the opportunities and challenges associated with open networks in digital commerce. The authors analyse the potential benefits, such as increased transparency and innovation, as well as the challenges, including security...
and privacy concerns. Their research provides valuable insights for understanding the current landscape of open networks in digital commerce and offers a foundation for future studies in this area.

IV. RESEARCH METHODOLOGY

The research methodology employed consists of a combination of literature review, surveys, case studies, risk assessment, expert consultations, comparative analysis, and development of mitigation strategies. Surveys are administered to gather insights and perspectives on ONDC, facilitating a comprehensive examination of its benefits and operational details. Real-world case studies of successful ONDC implementations are analysed, providing practical insights into the functioning, features, and benefits of ONDC. Furthermore, a risk assessment is conducted to identify potential risks and challenges associated with ONDC, considering technological risks, security vulnerabilities, regulatory obstacles, market acceptance, and scalability issues. Expert consultations are sought to gather specialized knowledge and opinions on the risks and challenges of ONDC, as well as potential mitigation strategies. A comparative analysis is undertaken, evaluating ONDC alongside similar initiatives and existing digital commerce platforms. This analysis identifies common challenges and strategies employed to address them, drawing from case studies, surveys, and industry reports. Based on the identified risks and challenges, strategies and recommendations are developed to effectively mitigate them, which may include proposing technical solutions, regulatory frameworks, security measures, and guidelines for successful implementation and management of ONDC. The research methodology outlined above provides a comprehensive framework for conducting the research, ensuring a systematic and rigorous investigation of ONDC's features, implications, and risk mitigation strategies. This study aims to contribute valuable insights to the understanding and advancement of ONDC in the realm of digital commerce.

V. ONDC AND ITS WORKING

The Open Network for Digital Commerce (ONDC) is an ecosystem that facilitates digital commerce transactions. It works by connecting merchants, consumers, logistics providers, and financial institutions. Merchants register on the platform, consumers browse and place orders, and logistics providers handle the delivery. Payments are processed securely, and consumers can track their orders. Reviews and ratings are provided, and support is available for dispute resolution. Data analytics and insights are collected to drive business decisions. Overall, ONDC aims to simplify and streamline the digital commerce process for all participants involved. The platform is currently in the process of integrating with 80 different companies. These companies are at different stages of integration, with some already live on the platform and others still in the process of being onboarded. The platform plans to add 150 retailers in 5 cities during the pilot phase. Going forward the target of the ONDC is to onboard 3 crore sellers & 1 crore retail merchants online. In the next step, ONDC plans to expand to 100 cities in 6 months. Apart from sellers & buyers, logistics players & payment gateways will be part of ONDC, which has Infosys co-founder Nandan Nilekani, former Mc Kinsey India head Adil Zainulbhai National Health Authority CEO Rs Sharma, among others, as key advisers. ONDC is committed to making the platform accessible to a wider range of users. In the near future, the platform will add support for more local languages. This will make it easier for buyers and sellers from different parts of India to use the platform. This will help to ensure that the platform is a smooth and efficient way to buy and sell goods and services. The network's transactions have increased by a staggering 500 times, while the number of merchants has grown by 40 times. ONDC attributes this growth to its efforts in expanding its network participants, merchants, cities, and daily transactions. The alpha testing phase of ONDC, which involved real-world transactions, began in April 2022, and the successful testing with grocery and food delivery domains in Bengaluru commenced in September 2022.

ONDC has shared significant milestones, indicating substantial progress. The number of retail merchants on the platform has surged from 800+ in January 2023 to over 35,000 currently. Moreover, the number of daily orders has skyrocketed from 50 in January to more than 25,000 per day in recent weeks. The geographical reach of ONDC has also expanded, with the number of cities increasing from 85 to 230+. Furthermore, the domains of fashion, beauty & personal care, and electronics & appliances now boast 600+ merchants, who have completed over 1,300 transactions since going live. Logistics providers such as ShipRocket, Delhivery, and Loadshare have played a crucial role in fulfilling these orders. The growth of ONDC's network participants is also worth noting. The number of participants has risen from 26 in January 2023 to 46 at present, indicating a growing ecosystem of stakeholders.¹

ONDC is well-positioned to take advantage of this growth. The platform has the backing of the government and the support of a large number of companies. In addition, ONDC is committed to making the platform accessible to a wider range of users. This makes ONDC a strong contender to become a leading player in the Indian e-commerce market. India is the third-largest retail market in the world, and it was the highest in 2021. However, e-commerce in India is still relatively small compared to other countries. In 2022, the growth rate of e-commerce in India was 25.5 %, which is higher than the growth rate of e-commerce in other countries. This suggests that there is a lot of potential for growth in the e-commerce market in India.

Here are some of the reasons why the growth rate of e-commerce in India is higher than in other countries:

• The Indian population is young and growing rapidly. This means that there is a large potential market for e-commerce.
• The Indian economy is growing rapidly. This means that people have more money to spend, which can be used for online shopping.
• The Indian government is supportive of e-commerce. This has helped to create a favourable environment for e-commerce businesses.

Overall, the Indian e-commerce market is expected to continue to grow rapidly in the coming years. The government’s recent initiatives, such as ONDC, are expected to help to further accelerate the growth of the Indian e-commerce market.

VI. BENEFITS OF ONDC

   ➢ For Sellers

• **Access to more buyers:** ONDC will provide sellers with access to a wider pool of buyers, including both consumers and businesses. This will help sellers to increase their sales and reach new markets.

• **Better discoverability of products:** ONDC will use a variety of methods to improve the discoverability of products, including search, recommendations, and product listings. This will help sellers to get their products seen by more buyers.

• **More product choices:** ONDC will provide buyers with a wider variety of products to choose from, including products from both large and small sellers. This will give buyers more options and help them to find the best products for their needs.

• **Reduced time-to-market and time-to-scale:** ONDC will make it easier for sellers to bring their products to market and scale their businesses. This will help sellers to save time and money, and it will give them a competitive advantage.
• New opportunities for start-ups: ONDC will create new opportunities for start-ups in the e-commerce space. Start-ups will be able to develop new products and services, and they will have access to a large pool of buyers and sellers.

• Multiple choices for being digitally visible: ONDC will give sellers multiple choices for being digitally visible. Sellers will be able to list their products on multiple platforms, and they will be able to use a variety of marketing tools to reach their target customers.

• Better services & faster deliveries: ONDC will encourage sellers to provide better services and faster deliveries. This will help to improve the overall customer experience, and it will make sellers more competitive.

• Focus on niche aspects: ONDC will allow sellers to focus on niche aspects of their business. This will help sellers to differentiate themselves from their competitors, and it will help them to target specific markets.

• Lower cost of doing business: ONDC will help sellers to lower their cost of doing business. This will be done through a variety of measures, including reduced commissions, lower listing fees, and easier access to financing.

➤ For Buyers

• Access to more sellers: ONDC will provide buyers with access to a wider pool of sellers, including both large and small businesses. This will help buyers to find the best products for their needs at the best prices.

• Better discoverability of products: ONDC will use a variety of methods to improve the discoverability of products, including search, recommendations, and product listings. This will help buyers to find the products they are looking for more easily.

• More product choices: ONDC will provide buyers with a wider variety of products to choose from, including products from both large and small sellers. This will give buyers more options and help them to find the best products for their needs.

• Reduced prices: ONDC is expected to lead to lower prices for consumers. This is because ONDC will create a more competitive market, which will force sellers to lower their prices in order to compete.

• Better customer experience: ONDC is expected to lead to a better customer experience. This is because ONDC will make it easier for buyers to find the products they are looking for, and it will encourage sellers to provide better services.

➤ For Tech Platforms

• New opportunities for growth: ONDC will create new opportunities for growth for tech platforms. Tech platforms will be able to develop new products and services, and they will have access to a large pool of buyers and sellers.

• Improved efficiency: ONDC will help tech platforms to improve their efficiency. This is because ONDC will create a more standardized platform, which will make it easier for tech platforms to integrate with other systems.

• Increased competition: ONDC is expected to lead to increased competition among tech platforms. This will force tech platforms to innovate and improve their products and services.

VII. POSSIBLE RISKS

• Education: Many traders are from small scale industries and may not have much knowledge about e-commerce. This could make it difficult for them to access the platform and take advantage of its benefits.

• Responsibility: There is some ambiguity about who will be responsible for late or damaged products. This could lead to confusion and frustration for both buyers and sellers.

• GST Returns: Buyers will be responsible for collecting GST from buyers. This could be a complex and time-consuming process, and it could lead to errors.

VIII. METHODS TO MITIGATE RISKS

Nevertheless, the implementation of ONDC also entails certain risks that need to be considered. Improper implementation could potentially result in a loss of government revenue. Furthermore, increased competition within the e-commerce market may lead to price reduction, posing challenges for small businesses to compete effectively. While ONDC holds the potential for a significant revolution in India, it is crucial to acknowledge the associated risks. Therefore, the government must exercise caution and ensure careful implementation of the initiative to mitigate the possible risks. To ensure the success of ONDC, the government can undertake several measures, including:

1. Providing training and resources to educate traders about e-commerce practices.
2. Establishing clear guidelines on liability for delayed or damaged products.
3. Streamlining the process of Goods and Services Tax (GST) collection to facilitate smooth transactions.
4. Vigilantly monitoring the market and making necessary adjustments as required.
By implementing these steps, the government can enhance the likelihood of a successful ONDC initiative while minimizing potential risks and maximizing the benefits for all stakeholders involved.

IX. CONCLUSION

In recent years, there has been a noticeable shift in consumer behaviour, with more individuals opting to browse the internet rather than engage in physical searches for products. This shift reflects a preference for convenience and efficiency in completing tasks. Against this backdrop, the successful implementation of the Open Network for Digital Commerce (ONDC) has the potential to bring about a significant revolution in the country, akin to the transformative impact of the Unified Payments Interface (UPI) system. The successful implementation of ONDC would not only yield numerous benefits but also mitigate potential risks for the government. It is estimated that the government could stand to lose over $22 million if the implementation of ONDC does not proceed as planned. Thus, the stakes are high, and the potential gains from ONDC cannot be overlooked. The core strength of ONDC lies in its ability to foster a more equitable business environment, allowing enterprises of all sizes to thrive. By providing a level playing field, ONDC would empower small and medium-sized businesses to compete with larger counterparts, leading to increased entrepreneurship and job creation within the e-commerce sector. This democratization of the digital commerce landscape holds immense potential to revolutionize India's business ecosystem and drive economic growth. Furthermore, ONDC would enhance consumers' access to desired products at competitive prices. The platform's architecture would facilitate seamless discovery and purchase of products, eliminating barriers such as limited availability or restricted access. This increased accessibility would not only benefit consumers but also drive market competition, compelling businesses to offer better products and services. In summary, the successful implementation of ONDC has the potential to bring about a transformative shift in India's digital commerce landscape. It holds the promise of establishing a more equitable business environment, stimulating job creation, and empowering consumers with enhanced access to products and competitive prices. However, careful planning and execution are crucial to realizing the full potential of ONDC and avoiding potential losses for the government.

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