

## **About LEAD at Krea University**

EAD at Krea University (formerly IFMR LEAD), is an action-oriented research centre of IFMR Society, which leverages the power of research, innovation and co-creation to solve complex and pressing challenges in development. LEAD has strategic oversight and brand support from Krea University (sponsored by IFMR Society) to enable synergies between academia and the research centre. Since 2005, the centre has been at the forefront of development research and programming in India, and has managed a portfolio of over 265 projects in collaboration with over 300 academics, governments, NGOs and private sector organisations from across the globe.



#### **About IWWAGE**

nitiative for What Works to Advance Women and Girls in the Economy (IWWAGE) aims to build on existing research and generate new evidence to inform and facilitate the agenda of women's economic empowerment. IWWAGE is an initiative of LEAD, an action-oriented research centre of IFMR Society (a not for profit society registered under the Societies Act). LEAD has strategic oversight and brand support from Krea University (sponsored by IFMR Society) to enable synergies between academia and the research centre. IWWAGE is supported by the Bill & Melinda Gates Foundation.

#### **Acknowledgement**

This research study was undertaken by LEAD at Krea University as part of its initiative Udyogini, which seeks to build evidence and knowledge for enabling women's entrepreneurship.

The research team would like to thank all the stakeholders who provided invaluable insights through key-informant interviews, contributing significantly to this research.

We would like to thank all the government agencies that played a crucial role in this study. The Project Manager - Government E-marketplace, Lead Consultant - the National Rural Entrepreneurship Transformation Project (NRETP), Non-farm Lead - the National Bank for Agriculture and Rural Development (NABARD), Saras Project Lead - the National Rural Livelihoods Mission (NRLM), Under Secretary and project consultants at the Ministry of Women and Child Development, all provided extremely valuable perspectives on digital transformation measures undertaken under government initiatives.

We would also like to acknowledge the key insights provided by State Mission Manager - Maharashtra State Rural Livelihoods
Mission (UMED), Assistant Program Manager - Kerala State Rural Livelihoods Mission
(Kudumbashree), Young Professional and
SPM - Bihar State Rural Livelihoods Mission
(JEEViKA), ASPM - Jobs - Chhattisgarh State
Rural Livelihoods Mission (Bihan), Enterprise
Promotion Specialist - Odisha State Rural
Livelihoods Mission (OLM), Consultant and
Marketing Lead - Andhra Pradesh State Rural
Livelihoods Mission (SERP), as well as the State
e-commerce Department Head at the Rajasthan
State Rural Livelihoods Mission (Rajeevika).

The Project Lead of Amazon Saheli and the Business Development Manager of Flipkart Samarth shared key insights into the platform's efforts to provide technical and onboarding support to women SHG members interested in scaling their businesses. We are grateful for their time and inputs.

Civil society organizations also made noteworthy contributions to this research. The Programme Manager at Mann Deshi, and Programme Managers at Self-Employed Women's Association (SEWA) Ekta provided a comprehensive understanding of the challenges and opportunities for women's entrepreneurship in the digital economy. We deeply appreciate their time, expertise, and commitment to our research, which has enriched the findings of this report.

We would also like to thank the women entrepreneurs and SHG group members who provided their valuable time as a part of the Phase 2 of this research. Their contributions have played a vital role in shaping our understanding of the subject matter and the recommendations put forth.

We thank Ridhi Aggarwal for providing research assistance and analysing the data.

#### Technical Lead

Sharon Buteau

#### **Authors**

Sharon Buteau, Vidyuth Sreenivasan, Mridulya Narasimhan, John Victor Arun Kumar

#### Editorial Inputs

Diksha Singh, Preethi Rao

#### Design

Allan Macdonald

#### Cover Image

Erin Collins/flickr

#### Icons

flaticon.com

## Contents

Executive summary	Ę
Background	8
Factors affecting outcomes in the market economy	S
Digital commerce: The route to market access	12
Scope and methodology	15
Landscape of government initiatives	16
Central Government initiatives for enabling market access	18
State Government initiatives	20
Landscape of private sector initiatives for enabling market access	22
Public-private partnerships: caselets	24
On-going challenges with private sector initiatives	25
Seamless commerce: open networks reshaping the digital commerce landscape	27
Recommendations	32

### **Executive summary**

s the world moves towards an increasingly As the world moves towards and technology-driven future, Indian businesses have not only embraced this paradigm shift but are actively reaping its immense benefits. From traditional brick-and-mortar establishments to ambitious startups, enterprises across sectors are harnessing the potential of digitalisation and e-commerce to revolutionise their operations, expand their customer reach, and unlock unprecedented growth opportunities. In 2021, the estimated Gross Merchandise Value (GMV) of the Indian e-commerce market surpassed \$55 billion. The increase in internet penetration, improved logistics and infrastructure, favorable government policies and the growing middle class is expected to increase the GMV by \$350 billion by 2030 (Invest India).

However, this disruptive growth in e-commerce and social commerce has not borne equal benefits for all businesses. Despite their important role in India's economic growth story, many small businesses, particularly those that are women-led, find themselves facing significant challenges in embracing e-commerce and digitisation. While large corporations and established businesses may have the resources and expertise to navigate the digital realm successfully, womenled enterprises often lack the necessary infrastructure, knowledge, and support to fully leverage the opportunities presented by online platforms. The digital gender divide, which includes barriers such as limited internet connectivity, lack of digital literacy, and socio-cultural restrictions, continues to exist. This unfortunate reality hinders their full participation in the digital space, limiting their potential for growth and their ability to compete in the global market.

Digitisation, particularly as they relate to women's collectives in India, has opened up new avenues for communication, networking, economic empowerment, and capacity building. Integrating digital tools and technologies into the operations and activities of various women's groups has first and foremost, facilitated communication and networking among women from diverse backgrounds and geographical locations. Digital platforms such as social media, online forums, and messaging apps have allowed women's collectives to reach a wider audience, mobilise support, and advocate on various issues and initiatives. Moreover, women's collectives in India have

leveraged digital platforms to promote and sell their products and services on e-commerce platforms and online marketplaces. This has enabled women entrepreneurs and artisans to overcome traditional barriers and access a larger customer base, leading to increased income and financial independence. Additionally, online training programs, webinars, and educational resources have equipped women with the knowledge and skills required to enhance their entrepreneurial ventures, leadership abilities, and advocacy efforts.

Yet, research on women's collectives' participation, challenges and success on e-commerce platforms as business owners remains sparse. This lack of comprehensive documentation poses a significant challenge. It hinders our understanding of the impact and effectiveness of digitization initiatives, impedes knowledge sharing, and limits the ability to replicate successful models in different regions. To close this knowledge gap, LEAD at Krea University conducted a landscaping study to answer the following key questions:

- What are the challenges faced by women-led businesses in leveraging digital commerce for business?
- What are the efforts taken so far by private and public sector organisations to support women-led businesses and women's collectives?
- What role can collectives, e-commerce platforms and public institutions play in ensuring that women-led businesses can enjoy a level-playing field in digital commerce?

A two-phase study was conducted: Phase one involved a comprehensive landscaping exercise using secondary research to identify the key stakeholders. Subsequently, private sector platform operators, government departmens, civil society organisations and representatives from SRLMs of 7 selected states were interviewed as a part of this effort. In the second phase of the study, 82 women entrepreneurs were interviewed to document their experience with utilising e-commerce and social commerce platforms for their businesses and highlight the obstacles faced in the process. Additionally, 12 Focus Group Discussions (FGDs) were also conducted as a part of the second phase of the study.

We find that women entrepreneurs face considerable obstacles in accessing markets across public and private platforms. Among public sector platforms, stakeholders reported weak skillsets among collective's and women entrepreneurs as a notable challenge. These entrepreneurs lack the necessary digital skills to effectively manage websites, handle sales, marketing, and customer service functions. For example, women's collectives in Kerala and Maharashtra under the state platforms Kudumbashree and UMED, were unable to consistently use the seller interface. As a result, the responsibility of managing these digital aspects falls on intermediaries such as state officers, instead of the entrepreneurs themselves.

In addition to the skills gap, certain state-run platforms have yet to digitise inventory and warehouse management. As a result, these tasks are carried out manually.

Besides the concerns related to payment gateway issues, price wars, and high return rates that are inherent to private e-commerce platforms, collectives and women entrepreneurs face specific challenges when engaging with these platforms. While e-commerce platforms such as Amazon Saheli and Flipkart Samarth offer dedicated capacity building and onboarding services, the study highlights the following gaps:

- 1. Taxation and Compliance: Complying with India's complex taxation and regulatory framework can be difficult for small businesses and collectives. In many cases, small businesses or collectives lack the necessary documents such as GST certification, registration of the seller's business entity, and PAN (Permanent Account Number). While some states have identified a workaround for this, the lack of documentation continues to be a challenge for women-led businesses.
- 2. Seller Support and Policies: While some platforms offer staff support, in other platforms there are no designated account managers available. This gap poses a challenge for women-led businesses that are struggle to navigate business operations in a digital world. Additionally, commission fee relaxations offered by some platforms are rarely applicable to rural women entrepreneurs due to concerns about potential misuse by their spouses. Moreover, the warehousing services are not always accessible for women entrepreneurs given their existing mobility constraints, due to which they have to forego the use of these services, especially with regards to low-value orders.

3. Platform Neutrality: A significant challenge is the lack of a level playing field for small-scale businesses. Although e-commerce helps reduce gender bias in business transactions, differential discounting, preferential treatment for 'preferred sellers', and discrepancies in contract terms make the e-commerce proposition even less attractive for women's collectives.

These experiences highlight the need for increased support and resources to empower women entrepreneurs and bridge the digital divide. The study also underscores the need for platform-level and system-level changes to improve market access for women collectives and enable them to benefit from these platforms. The recommendations aim to improve rural e-commerce by addressing inventory management challenges, optimising state infrastructure, clarifying the roles of staterun institutions, assessing digital readiness, and empowering female self-help group (SHG) members. They emphasise the importance of training women's collectives in digitalised inventory management systems and conducting needs and cost analyses before expanding warehousing facilities.

At the state-level, transferring e-commerce ownership to SHG members is essential for long-term success. It is crucial for staterun organizations to prioritise this aspect and empower women's collectives with the necessary skills. Lessons from programs in Kerala, Bihar, and Maharashtra show that inventory management remains a challenge even when digital skills and market access are addressed. Additionally, support for supply chain needs, including warehousing facilities, should be provided cautiously. Before expanding these facilities, a thorough needs and cost analysis should be conducted to ensure they benefit rural enterprises without burdening them with excessive overheads. Engaging self-help groups in owning and operating warehouses as a business can be a viable approach.

Optimising state infrastructure can also be achieved through the application of the Open Network for Digital Commerce (ONDC) tools. This framework can connect data within state-run institutions and enable buyers to search for items held in multiple organizations' warehouses through a unified interface. Moreover, clarifying the roles of state-run institutions vis à vis private platforms is vital, based on their differentiated advantages. State-run institutions can focus on providing public goods, combating monopolistic behavior and ensuring fair competition, and reducing information asymmetry.

At the platform level, verifying seller claims is essential to ensure fair market access. Private platforms often rely on search rankings without verifying claims, disadvantaging rural producers. Authentication and verification processes should be in place, particularly for hand-made products competing with machine-

made products. Additionally, the development of context-oriented platforms and systems by leveraging technology can be instrumental in enabling SHG members to independently manage their e-commerce endeavors. This, in turn, will contribute to the long-term viability of the rural e-commerce sector.



## Background

ndia has a persistent problem of low and declining levels of female labour force participation<sup>1</sup>. Recent data from the CMIE surveys shows that female labour force participation has been dropping since 2016, and has not crossed 20 percent for any age group (see figure 1)<sup>2</sup>.

Women tend to be employed in the informal sector, and employment is largely concentrated in home-based work. As entrepreneurs, women tend to occupy the lower end of value chains<sup>3</sup>, and are at a higher risk of closing operations compared to their male counterparts when faced with shocks, as was seen during the recent COVID-19 pandemic<sup>4</sup>. National level survey data in India has consistently documented women's willingness to work, if the work was available either at or near their homes<sup>5</sup>. Since, female labour force participation is an important driver and outcome of economic growth and development, it is important to focus on both increasing participation and incomes, so women can benefit from joining the workforce.

Rural entrepreneurship can help reduce income inequalities, by generating capital, increasing employment, improving standard of living, increasing per capita income, and improving distribution of economic power<sup>6</sup>.

India's rapid digitalization, combined with access to mobile phone ownership and low-cost mobile broadband data can offer a way to enable broader labour force participation and connect women with economic opportunities. Also, digital technologies may provide women entrepreneurs flexibility in their work, with regard to time and location.

## Women's collectives: A vehicle for driving rural entrepreneurship

India has a long history of development programmes aimed at women's empowerment through women's collectives. Since 1972, SEWA (self-employed women's association) movement has collectivised self-employed women and women employed in informal economy enterprises and jobs7. Since inception in the 1980s, Self-help groups (SHGs) have emerged as a vehicle to deliver WEE (Women's Economic Empowerment) programmes. An SHG comprises 10-20 women, from similar socio-economic backgrounds who operate on principles of self-reliance, solidarity, and symbiotic interests. According to recent reports by the National Bank for Agriculture and Rural Development (NABARD), 85 million Indian women are members of about 8 million SHGs across India (NABARD, 2019)8.

Over the past four decades, they have evolved beyond their original role of savings and credit groups, to deliver programmes in health care, addressing social issues and enabling livelihoods<sup>9</sup>.

Research has indicated that SHG membership has a significant positive impact on women's empowerment, influencing control over income and decision making within the household<sup>10</sup>. This is echoed in other literature that affirms the importance of collective action to empower women<sup>11 12 13</sup>.

Yet, women's collectives face challenges rooted in various socio-cultural, economic, and infrastructural factors that hinder their ability to participate more actively in the economy. These challenges are further compounded by gender discrimination, cultural norms, and limited mobility.

- 1 Deshpande, Ashwini, and Jitendra Singh. "Dropping Out, Being Pushed Out or Can't Get in? Decoding Declining Labour Force Participation of Indian Women." IZA Institute of Labor Economics, August 2021. https://docs.iza.org/dp14639.pdf
- $\textbf{2} \text{ "CMIE." Accessed September 25, 2022. https://www.cmie.com/kommon/bin/sr.php?kall=warticle&dt=20220718144307\&msec=886. https://www.cmie.com/kommon/bin/sr.php.kall=warticle&dt=20220718144307\&msec=886. https://www.cmie.com/kommon/bin/sr.php.kall=warticle&dt=20220718144307\&msec=886. https://www.cmie.com/kommon/bin/sr.php.kall=warticle&dt=20220718144307\&msec=886. https://www.cmie.com/kommon/bin/sr.php.kall=warticle&dt=20220718144307\&msec=886. https://www.cmie.com/kommon/bin/sr.php.kall=warticle&dt=20220718144307\&msec=886. https://www.cmie.com/kommon/bin/sr.php.kall=warticle&dt=20220718144307\&msec=886. https://www.cmie.com/kommon/bin/sr.php.kall=warticle&dt=20220718144307\&msec=886. https://www.cmie.com/kommon/bin/sr.php.kall=warticle&dt=20220718144307\&msec=886. https://www.cmie.com/kommon/bin/sr.php.kall=warticle&dt=20220718144807\&msec=886. https://www.cmie.com/kommon/bin/sr.php.kall=warticle&dt=20220718144807\&msec=886. https://www.cmie.com/kommon/bin/sr.php.kall=warticle&dt=20220718144807\&msec=886. https://www.cmie.com/kommon/bin/sr.php.kall=warticle&dt=20220718144807\&msec=886. https://www.cmie.com/kommon/bin/sr.php.kall=warticle&dt=2022078807\&msec=886. https://www.cmie.com/kommon/bin/sr.php.kall=warticle&dt=202$
- **3** "Together Women Will Deal with Barriers Better." Statement, April 22, 2021. http://www.ilo.org/newdelhi/info/public/sp/WCMS\_782069/lang--en/index.htm
- **4** "Preparing MSMEs for Future Crises: Lessons From COVID-19 | Center for Financial Inclusion." Accessed September 25, 2022. https://www.centerforfinancialinclusion.org/preparing-msmes-for-future-crises-lessons-from-covid-19
- **5** Deshpande, Ashwini, and Jitendra Singh. "Dropping Out, Being Pushed Out or Can't Get in? Decoding Declining Labour Force Participation of Indian Women." IZA Institute of Labor Economics, August 2021. https://docs.iza.org/dp14639.pdf.
- 6 Rural entrepreneurship: How hinterland's young enterprises could solve India's social challenges. (2020). Financial Express. Retrieved from: https://bit.ly/2Z3Ej6H
- 7 https://web.worldbank.org/archive/website00819C/WEB/PDF/INDIA\_SE.PDF
- 8 https://www.nabard.org/auth/writereaddata/File/SHG-BLP%20as%20on%2030%20June%202019.pdf
- 9 Neha Kumar, Kalyani Raghunathan, Alejandra Arrieta, Amir Jilani, Shinjini Pandey, The power of the collective empowers women: Evidence from self-help groups in India, World Development, Volume 146, 2021,105579, ISSN 0305-750X, https://doi.org/10.1016/j.worlddev.2021.105579.
- 10 Neha Kumar, Kalyani Raghunathan, Alejandra Arrieta, Amir Jilani, Shinjini Pandey, The power of the collective empowers women: Evidence from self-help groups in India, World Development, Volume 146, 2021,105579, ISSN 0305-750X, https://doi.org/10.1016/j.worlddev.2021.105579.
- $\textbf{11} \ \text{https://www.careindia.org/wp-content/uploads/2019/04/Community-Based-Collectives-for-Women-Empowerment-1.pdf}$
- 12 Mansuri, G. and Rao, V. (2013) Localizing development: Does participation work? Policy Research Report. Washington, DC: World Bank. https://openknowledge.worldbank.org/handle/10986/11859 License: CC BY 3.0 IGO
- 13 Ostrom E. (2004) Understanding collective action. In: Meinzen-Dick R, Gregorio M Di (eds) Collective action and property rights for sustainable development, 2020 vision for food, agriculture and the environment. Focus 11, IFPRI International Food Policy Research Institute, Washington.

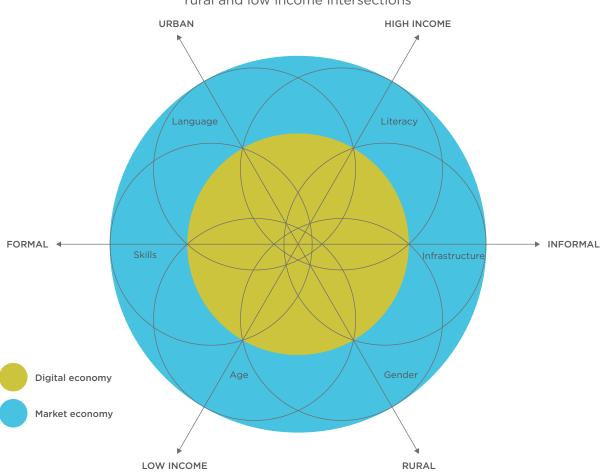
## Factors affecting outcomes in the market economy

espite the vast potential presented to women entrepreneurs in India, gender, age, skills, language, literacy, infrastructure, pose fundamental barriers to market access (See figure 2 for visual representation). The intersection of these factors presents insurmountable challenges for those in the informal, rural and low-income sections of the economy.

be removed and the digital divide must be bridged.

In this section we will explore five barriers that tend to impact women entrepreneurs who are informal, rural and low income.

- · Access to different forms of capital
- · Extent of formalisation of a business
- · Skills of the entrepreneur
- Ambitions and motivations of the entrepreneur
- Stage of enterprise



**Figure 1:** Exclusion is highest for the informal, rural and low income intersections

The intersection of gender, age, skills, language, literacy, and infrastructure confers advantages to a small group of urban, high income individuals in the formal economy.

Individuals in rural areas from low-income households employed in informal jobs are disadvantaged because of their age & gender, poor language, literacy & skills and poor access to infrastructure. For these individuals, barriers to participation in the formal economy must

#### Access to different forms of capital

For entrepreneurs, being informal, rural and/ or low income impacts access to different forms of capital (human, economic, social, and cultural), which also affects access to and outcomes in the digital arena. Human capital is the sum of skills and experiences embodied in an individual. Economic capital is the amount of money, credit, debt or equity one can access and use. Social capital refers to an individual's social networks which affects access to other forms of capital. Cultural capital refers to qualifications or knowledge of tastes and preferences of consumers that are constantly changing.

Technology in the form of Information and Communication Technologies (ICT), Social Networking Sites (SNS), e-commerce platforms intend or claim to provide access to economic, social and cultural capital. However, technology confers competitive advantages to those already in possession of these different forms of capital.

#### **Extent of formalization of a business**

A business in the formal economy can assume several structures. The structures range from a sole proprietorship to section 8 companies to private or public limited companies. While the process of formalising a business has been vastly simplified, it can still be a significant barrier for women's entrepreneurs or SHGs running home based businesses. The barriers posed by formalisation and compliance may be real or perceived.

Each company structure has its own compliance and disclosure requirements. Compliance involves periodic disclosure of financial and administrative records to the government. Even the seemingly simple act of filing GST returns every month or quarter can be challenging in the absence of meticulous record keeping and specialist accounting skills which may be in short supply. Also, entrepreneurs may not be willing to disclose actual earnings which could restrict the amount of formal credit available to them.

The transition from the informal to the formal is a slow process that requires the cultivation of new habits. This could add pressure to women who are already time-poor.

Social networking sites, ICTs, UPI based payments services enable informal businesses with digital skills to persist in the digital economy. While this may be good for the entrepreneurs and society, it is not for the economy.

#### Skills of the entrepreneur

Lack of skills is a barrier for use. Skills, broadly classified into digital skills, content creation skills, marketing skills and business skills also affect outcomes in the digital economy. Individuals possess these skills in different combinations and levels of expertise. These factors are intertwined, and a combination of these factors can affect the opportunities available to an individual and the probability of positive outcomes.

## Ambitions and motivations of entrepreneurs

Bruni, Gherardi, and Poggio (2004) provides us with the typology of WEs profiles which illustrates differences in ambitions and motivations of various women entrepreneurs (Table 1). Since entrepreneurs differ in their ambitions and motivations, and it is important to consider this factor while planning initiatives for rural enterprises, since it affects the scale of business, nature of training inputs and capital investment required.

Table 1: Typology of profiles for WEs

Types	Motivations	
Aimless	Young females who enter entrepreneurship as a result of unemployment	
Success-oriented	Young women who perceive entrepreneurial activity as a long-term strategy	
Strongly success-oriented	Women who perceive entrepreneurship as an opportunity for self-fulfilment or as a means to overcome the "glass ceiling" phenomenon	
Dualists	Females seeking flexibility to balance their family and job obligations	
Return workers	Women who left their jobs to care for family duties and are still motivated to self-fulfilment outside their families	
Traditionalists	Women who have a strong family entrepreneurial tradition background	
Radicals	Women who initiate introducing more pro-female tendencies in society	

Source: Bruni, A., Gherardi, S., and Poggio, B. (2004)

#### Stage of the enterprise

Based on the work of Delmar and Holmquist, (2004), Ascher (2012) classified the obstacles that WEs face at different stages of entrepreneurship (Figure 3).

This framework describes the various obstacles faced by women entrepreneurs that can impact outcomes for rural and home based businesses.

Women entrepreneurs face several barriers at various stages of their entrepreneurial journey. These challenges are often exacerbated by the unique circumstances of operating in rural or home-based settings. Deep-rooted gender stereotypes also pose challenges, as women may face unequal treatment or limited opportunities.

In the opportunity identification and ideation phase, deep-rooted cultural norms may assign traditional roles to women, which can limit their perceived capabilities as entrepreneurs. Social expectations surrounding women's domestic responsibilities can make it challenging to balance family obligations with business aspirations.

During the start-up stage, securing funding can be challenging due to biases and perceptions by traditional lenders that women-led ventures are less profitable or high-risk. This barrier is greater for collectives and rural entrepreneurs as financial institutions may have limited presence in rural areas, making it difficult for women to secure the necessary funding. Additionally, women may have limited exposure to entrepreneurial support networks and fewer opportunities for mentorship which are crucial for gaining knowledge, support, and connections in the business world. This isolation can result in a lack of guidance, knowledge, and access to valuable resources.

In the growth stage, women entrepreneurs struggle with balancing work and family responsibilities. The demands of their business and family life can impact their ability to grow their ventures at the same pace as male entrepreneurs. Furthermore, limited access to markets, supply chains, and government contracts can hinder their growth opportunities. In this phase, collectives and home-based business can face specific challenges related to market access. Rural areas may have limited local markets or face transportation and logistical challenges, which can restrict their ability to reach a wider customer base. Moreover, home-based businesses often struggle with visibility and marketing since they operate from residential areas. The scarcity of visible female role models in entrepreneurship further complicates matters, as it becomes harder for women to envision and strive for SUCCESS

When reaching the scaling stage, gender-based discrimination and biases persist, affecting interactions with suppliers, partners, customers, or potential investors. This can hinder their growth and scaling efforts. Scaling a rural or home-based business is particularly challenging due to the limited infrastructure and resources available. Rural areas may lack the necessary support systems, such as business incubators or accelerators, which can impede the expansion of these enterprises. Moreover, the remote location and limited access to industry-specific knowledge can make it difficult for women entrepreneurs to innovate and stay competitive. Additionally, investor bias contributes to the challenge, as women-led ventures receive less funding compared to their male counterparts. making it harder to secure the necessary resources for scaling.

Figure 2: Barriers faced by women entrepreneurs at various stages

# Opportunity Identification and Entrepreneurial Intent » Absence of benchmarking possibilities

- » Lack of experience,
- » Lack of social capital,
- » Lack of financial
- » Lack of time
- » Risk perception

#### Obstacles in Start-up Phase

- » Gender discrimination in external financing
- » Lack of network and mentorship
- » Unequal opportunities, especially in male-dominated industries

#### Obstacles in Management Phase

Stereotypical attitudes

#### Obstables in Growth Phase

- » Family and financing issues
- » Balancing work and family responsibilities
- » Gender stereotypes limit access to markets and contracts
- » Lack of role models and peer network

#### Obstacles in Scaling Stage

- » Investor-bias
- » Discrimination and biases when dealing with suppliers, partners, customers

## Digital commerce: The route to market access

ow-income rural producers, such as those found among women's collectives, have the following options to access the market:

- A. They can sell products through traditional supply chains that include several layers of middlemen, who can be wholesalers, distributors or dealers, who in-turn supply to retailers or consumers
- B. They can supply to large retail outlets and become part of a larger supply chain
- C. Direct-to-Consumer: They can travel with their products to fairs, melas and weekly markets
- D. Digital intermediaries: They can sell through digital platforms and digital marketplaces

Digitally mediated commerce:

- Bridges urban & rural communities, the formal & informal sectors, and high & low income households, expanding market access beyond their geographical boundaries
- Eliminates middlemen and brings in transparency to supply and value chains
- Offers greater choice to consumers and wider markets for sellers
- Facilitates flexible work arrangements, allowing women to balance their personal and professional commitments
- Enables women to operate their businesses from home or remote locations, without physical interactions, bypassing cultural biases and stereotypes
- Offers access to data on demand and customer feedback allowing enterprises to stay competitive by customizing their offerings and adapting their business strategies.

#### e-commerce definition

The Ministry of Electronics and information technology defines e-commerce as "a type of business model, or segment of a larger business model that enables a firm or individual to conduct business over an electronic network, typically the internet. Electronic commerce operates in all four of the major market segments: business to business, business to consumer, consumer to consumer and consumer to business."

When it comes to empowering rural women entrepreneurs, digital solutions have several advantages over traditional methods in helping overcome the challenges they face in accessing markets. By providing access to essential resources, tools, and connections, these solutions can equip them to succeed in an increasingly digital world. The digital economy presents a wealth of opportunities for women entrepreneurs to secure funding, acquire skills, manage risk, and formalize their businesses. With the right support, if rural women entrepreneurs can tap the full potential of digital technology for business purposes, they will be able to scale up and expand their ventures (Jalan & Gupta, 2019).

Digital commerce has several advantages over other market access pathways, especially for women entrepreneurs.

The e-commerce market in India has witnessed a remarkable surge<sup>14</sup>, driven by its largest consumer base, rapid digitization, and a wave of increasing investments in key sectors such as grocery and fashion/apparel<sup>15</sup>. In 2022, the Indian e-commerce and consumer internet start-ups managed to raise a total of \$15.4 billion through PE/VC funding across 506 deals, which was nearly double the funding raised in 2020 amounting to \$8.2 billion<sup>16</sup>. After it's initial surge of 33% CAGR between 2016-2021, India's digital commerce journey is now moving towards stabilised growth, with a projected CAGR of 20% between 2021-2030. With projections estimating India's consumer digital economy to reach an astounding US\$1 trillion by 2030, the country has firmly established itself as a powerhouse in the global e-commerce landscape. The numbers do present a very optimistic picture for the future.

 $<sup>\</sup>textbf{14} \ \textbf{NielsenIQ}. \ \textbf{https://nielseniq.com/wp-content/uploads/sites/4/2023/01/NIQ-E-Commerce-Report-2022.pdf}$ 

<sup>15</sup> India Brand Equity Foundation. "E-Commerce in India: Industry Overview, Market Size & Growth| IBEF." Ibef.org, 2019, www.ibef.org/industry/ecommerce.aspx

<sup>16</sup> https://assets.ey.com/content/dam/ey-sites/ey-com/en\_in/news/2023/02/ey-commerce-and-consumer-internet-sector.pdf?download

#### **Emergence of platforms**

Platforms can be defined as two- or three-sided marketplaces. They aggregate different types of users and transactions. A platform gains traction through network effects (many users on one side of the platform attracts a large number of users on the other side).

e-commerce has given rise to different types of platforms: Advertising platforms, cloud platforms, industrial platforms, product platforms, and lean platforms. (Srnicek, 2017).

e-commerce allows software to be sold as a service and to be delivered electronically. Software as a Service (SaaS) business models charge subscription and / or a transaction fee to users of the platform. Producers and sellers in India must navigate more than one platform to engage in e-commerce.

In India, platforms also function as marketplaces. The operators of platforms and marketplaces are concentrated in three sectors: sale of goods, travel booking and hospitality, food delivery & cloud kitchens. Challenges faced by sellers on platforms and marketplaces are discussed in Section 7



### e-commerce and Social Commerce in India - an overview

It would be remiss to explain the e-commerce and market access story in India without speaking of social commerce.

#### Features of e-commerce

e-commerce transactions typically take place through a website or a mobile application. Payments are received through payment gateways that offer a seamless shopping experience. e-commerce websites or applications are situated in the formal economy.

#### Features of social commerce

Social commerce allows individuals & small businesses to reach consumers across geographies, transact electronically, and be part of the digital economy without undergoing the rigors of formalization. Social commerce can be a gateway to engaging in e-commerce. Not all players engaging in social commerce may graduate to e-commerce.

To engage in social commerce, one needs to have a smartphone, internet access, a social media profile, messaging app like whatsapp, a bank account linked to a UPI based payment system like GPAY.

Sellers manage their own inventory and use third party logistics providers or Indiapost to fulfill orders. Sellers incur advertising costs to reach and acquire new customers. The informal economy can persist through social commerce.

### Difference between e-commerce and social commerce

A key difference between e-commerce and social commerce is the extent of interaction between buyers and sellers. On e-commerce platforms, the operators mediate between the buyer and the seller. Buyers and sellers do not interact with each other. They only interact and negotiate with the platform and not with each other. Buyers and sellers only negotiate with the platform and not with each other. Social commerce, on the other hand, allows interactions between the buyer and seller. Relationships are forged between buyer and seller using the messaging and follow functions on social networking sites. Sellers on e-commerce platforms must also maintain a social media presence to interact with their customers.

e-commerce and social commerce offer several benefits for both consumers and businesses. Consumers have greater choice and businesses have access to a large market. Businesses are not restricted by geography and. Businesses do not need brick & mortar presence in the markets they wish to sell. Businesses offering niche products and services can access consumers located all over the world. Rural businesses can sell to urban consumers without having distributors, dealers, and sub-dealers. e-commerce and social commerce can bridge the gap between urban & rural, formal & informal and high- & low-income households but the task is much harder than it appears. e-commerce has the potential to make the market economy more efficient by eliminating middlemen, but private sector platforms may have only succeeded in supplanting these middlemen. Section 7 will cover some of the problems of platform driven e-commerce in the private sector.

#### Scope and methodology

Given this context, we conducted a study to map initiatives taken by

- 1. The state
- 2. Private sector
- 3. Public private partnerships

And how they act as enablers for SHGs to transact and conduct business in the digital economy. The next section outlines the scope and methodology.

This report provides an overview of the existing interventions by the government for rural women-led enterprises and the systems supporting e-commerce and digital market linkages. This report is based on a study conducted in two phases. Additionally, 12 focused-group dicussions were also conducted as a part of the second phase.

#### Phase 1

The first phase involved conducting a landscaping exercise through secondary research to map the stakeholders and Interviews with the following stakeholders.

- Private sector platform operators: Amazon Saheli (Project Lead), Flipkart Samarth (Business Development Manager)
- Government E-marketplace (Product Manager)
- Governmental Departments: MoRD, NRETP (Lead Consultant), NABARD (Non-farm sector lead), NRLM (Saras Project Lead)
- Civil Society Organisations: Mann Deshi (Women entrepreneurs and Programme Manager), SEWA Ekta (Programme Managers)
- Mahila-E-Haat (Under Secretary and project consultants)

Interviews were also conducted with representatives from SRLMs of 7 selected states. The states were selected based on criteria suggested by NRLM. The criteria are as follows:

- States with well-established e-commerce businesses and high digital literacy amongst SHG women
- States with initial planning for setting up e-commerce platforms and aiming towards increasing digital awareness of women SHGs, and
- States with little to no infrastructure for supporting women-led microenterprises to onboard onto digital platforms.

Kerala, Andhra Pradesh, Bihar, Maharashtra, Chhattisgarh, Odisha and Rajasthan were selected based on these criteria.

#### Phase 2

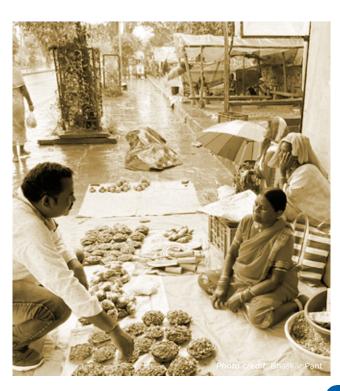
The second phase of the study involved conducting interviews with 82 women entrepreneurs who were chosen based on the following criteria:

- Those doing business on a commercial platform / platform supported by government / other initiative
- Those who are doing business using social media platforms
- Those engaged in entrepreneurship but not online

This study will provide a roadmap for further investigation and identify systemic gaps that hamper rural women entrepreneurs.

#### Limitations

The findings have been described with certain caveats such as the comparative analysis of e-commerce models of different states is being limited due to the extensive reliance on qualitative data collected through semi-structured key informant interviews. Secondly, non-availability or restricted access to administrative data of GeM portal, Amazon, Flipkart, as well as state-level data on SHGs involvement in Ecommerce and finally the measurement of impact of e-commerce platforms penetration has been limited due to the COVID-19 pandemic.



## Landscape of Government initiatives

↑ / hile there are barriers to accessing the digital economy at the level of individual entrepreneurs, the policy environment in India is evolving to be conducive for greater inclusion. Examples of major initiatives launched by the Government of India at the policy level include Digital India, Make in India, Start-up India, Skill India and Innovation Fund. As of January 2021, there are about 7,600 startups, 2,228 Self Help Groups, 4,500 TRIFED members, 0.14 million weavers, 39,000 artisans. 56,000 women entrepreneurs, 26,000 SC/ST entrepreneurs associated with Government E-MarketPlace. The centrality of women's collectives in catalysing rural entrepreneurship in the digital age urges us to examine the various policies at central and state level, and the specific gaps they address in enabling market access for women's collectives. This section provides insight on the role of state intervention and how it can help in translating the potential of women's collectives to reality.

## NRLM and SRLMs for skills and capacity building

The National Rural Livelihoods Mission (NRLM) under the Ministry of Rural Development attempts to reduce poverty and promote economic empowerment predominantly by promoting self-employment and organization of low-income rural households. It has three major pillars: Universal Social Mobilization, Financial Inclusion and Livelihood Enhancement. The Livelihood Enhancement pillar of NRLM runs several programs in nurturing self-employment and entrepreneurship in farm, off-farm and nonfarm settings.

NRLM along with its state chapters reaches a diverse group and a total of 62,52,898 rural SHGs. They acknowledge the role and importance of technology in the effectiveness of SHGs and promote various digitization initiatives.

**State Rural Livelihood Mission (SRLM)** is an autonomous implementing agency of NRLM at the state level to reach out, mobilize and support all poor rural communities in the state through self-managed SHGs and their federal institutions and livelihood collectives. Its long term goal is to facilitate poverty alleviation. SRLMs work on three pillars— enhancing and expanding existing livelihood options of the poor; building skills for the job market and nurturing self-employed entrepreneurs for growth of their respective micro-enterprises.

SRLMS also facilitate increased access to rights, entitlements & public services, diversified risks and better social indicators of empowerment.

As highlighted in the previous sections, women micro-entrepreneurs in rural India can face several challenges in participating in the digital economy. However, they hold potential if provided support, training and capacity building. The SRLMs are positioned to provide such support to emerging micro-entrepreneurs.

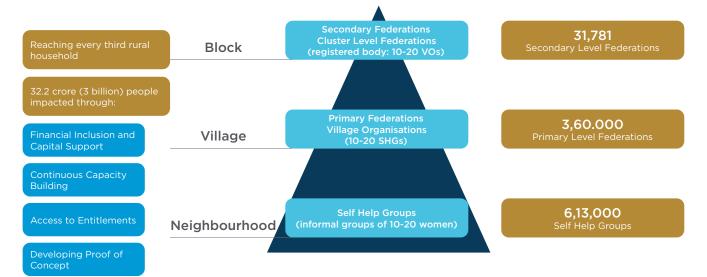
NRLM and SRLMs can work with clusters of women's collectives in the farm and non-farm sectors to create market access since they already deliver services to the last mile through

- Banking and financial correspondents for commercial banks and insurance companies;
- Farm extension services, agro-input supply, procurement, grading, and processing franchises for agri-business enterprises;
- · Courier services for logistic providers; and
- Service delivery channels for social safety net programmes etc.



## Structure & Impact of NRLM on women's collectives/SHGs

Figure 3: NRLM institutional architecture



#### **Impact on SHGs**

Source: World Bank

- NRLM has extended the SHG model to 28 States and 6 Union Territories of the country, reaching more than 67 million women. The women have collectively saved \$1.4 billion and leveraged a further \$37 billion from commercial banks.
- SHGs are intended to be provided assistance with MSME registration, GST registration and an income tax registration so that they qualify for the 59-minute bank loan sanction scheme.
- An exercise to identify SHGs with potential has led them to benefit from Rs 10 lakh each as loan without collateral over a period of six to eight years.



## Central Government initiatives for enabling market access

#### ■ GeM - SARAS Aajeevika

Government e-Marketplace, also known as GeM, is India's National Public Procurement Portal. Before the establishment of the portal, all of the government ministries and departments, Public Sector Undertakings and other apex autonomous bodies of the Central Government used to procure supplies and materials through the erstwhile Director General Supplies & Disposals (DG S&D), GeM came about following the recommendations of two groups of Secretaries suggesting the reform of DG S&D. GeM is a paperless, cashless and system driven e-market place that enables procurement of common use goods and services by ministries and government agencies, forming part of the many digital and technology driven changes made by the central government recently.

Launched in 2019, the Womaniya initiative is a special provision to promote women entrepreneurs to sell their products through GeM. This is part of the initiative of the MSME ministry to reserve 3 percent of public procurement from women- run micro, small and medium enterprises. The businesses that register on GeM through Womaniya become a part of the larger pool of enterprises showcasing their products on the portal. There are about 11,000 women owned enterprises onboarded on GeM till date and they have been able to achieve 3000 crore sales/ procurement through the portal.

GeM and MoRD have worked along with National Informatics Centre to create a special gallery on the GeM portal that would be dedicated to showcasing products made by SHG members across India. This initiative is called Saras e-Gallery/ Saras Aajeevika. This section of GeM showcases products across the following categories: handicrafts, handloom and textiles, grocery and pantry, office accessories, personal care and hygiene products made by the SHGs operated under the various State Rural Livelihood Missions.

## How does GeM interact with the SRLM/NRLMs?

MoRD (Ministry of Rural Development) is the nodal agency for this initiative, executed through NRLM and SRLMs along with the support of GeM's team. Block officers are responsible for choosing the best products made by SHGs in their jurisdiction and suggesting it to district and state officials. The SRLMs conduct the final verification of the products and decide which SHGs can be onboarded on the Saras e-Gallery. The MoRD is primarily responsible for the promotion of this initiative and reaching out to government agencies to encourage them to procure SHG products from the Saras e-gallery.

Block Project Managers and GeM Coordinators at the block level support SHG women in the operation of their GeM accounts due to the low levels of digital literacy and poor access to digital infrastructure. SHG women are the primary users and the block officers are the secondary. There are restrictions on what a secondary user can do with the account. This has been done to protect the women's bank accounts and other important information from being misused. NRLM and GeM have instituted this structure to ensure that, with time, the Block Mission Managers will build capacity of the SHGs to operate the portal on their own and eventually exit the picture.

GeM traditionally has 4 modes of procurement of goods, they are:

- i. Direct Procurement for a consignment/ goods whose value is less than 25,000 INR.
- ii. PSE Bid for procurement of a specific product being sold by specific vendors
- iii.L1 Bids for the procurements of goods whose value is from 25,000 INR to 5,00,000 INR
- iv. Regular Bid/ Tender longer bidding process which complex and time taking

Given the technical capabilities of rural women entrepreneurs and to overcome some of the challenges posed by the government bidding/tendering processes, GeM has decided to use only the first two methods for procurement of SARAS e-gallery goods to make the public procurement process more accessible and easier to participate in. The Saras gallery has onboarded 1000 SHGs and 500+ products and the focus is onboarding office products made by SHG women.

#### **TRIFED - Tribes India**

The Tribal Cooperative Marketing Development Federation of India (TRIFED) came into existence in 1987. It functions under the administrative control of the Ministry of Tribal Affairs, Govt. of India and plays the dual role of both a market developer and a service provider.

TRIFED is involved actively in building the capacity of tribal communities to improve the quality of products such as textiles, paintings, home decor items, jewelry, metal crafts, and other heritage products handcrafted by tribals across India. TRIFED also assists the tribal communities in exploring and creating opportunities to market products in national and international markets. TRIFED began the procurement and marketing of tribal art and craft products through its retail outlet Tribes India in 1999. Tribes India has 122 brick-andmortar retail outlets across the country. Tribes India focuses on adding value to procured products, their packaging, branding and final sale by accessing larger markets. TRIFED has also launched a portal, tribesindia.com, to enable the sale of these products online. In addition to running its own e-commerce platform, TRIFED has partnered with some big private e-commerce players such as Amazon, Flipkart, SnapDeal and PayTM Mall to sell their products. TRIFED is also in conversations with the Maharashtra SRLM. Umed to onboard the products of SHG members from Maharashtra.

#### Mahila e-Haat

Mahila E-Haat is an exclusive portal, run by the Ministry of Women and Child Development (WCD), to provide a special, focused marketing platform for women entrepreneurs. This unique direct online marketing platform

supports women entrepreneurs/SHGs/ NGOs to showcase their products/services allowing interested buyers to reach out to the women and discuss orders. This portal is only for showcasing products and not a marketplace. It involves the women entrepreneurs directly in the value chain and enables the vendors and buyers to contact entrepreneurs directly.

Transactions between the buyer and the seller take place through a mobile phone or in-person meetings. Aadhaar is used to authentication and identify entrepreneurs and to enable a payment gateway. Along with products, women can also showcase the services provided by them (eg. tailoring) to expand their business. To make it more mobile friendly and easily accessible, there is also discussion to make a mobile application. Logistical support from India Post and payment process and information shared by SBI are also currently underway.

The products sold on the portal were chosen by ministry officials who collected samples on field visits to check for quality. The final decision was made in Delhi at the ministry level. This process was time consuming as the verification process depended on the availability of ministry officials to make field visits and bring samples back to the ministry.

Plans for the Mahila-e-haat website have been put on hold due to concerns about funding and sustainability of the Mahila E-Haat portal.



## State Government initiatives

Onboarding SHGs onto an e-commerce portal comes with its fair share of hurdles. SHGs and enterprises run by women face difficulty in meeting the eligibility criteria to be on boarded onto private ecommerce platforms. GST registration and Permanent Account Number (PAN) are necessary to sell products on private sector platforms. These are barriers faced by women entrepreneurs who are part of SHGs

To avoid these issues and provide SHGs and rural enterprises access to wider markets through digital sales channels, a few SRLMs have started their own digital platforms. Kerala, Bihar and Maharashtra are examples of states that have taken steps towards providing such a platform to the SHG women linked through the SRLM

Common features of these digital platforms:

- Waiver of legal compliances such as GST certification, incorporation certificate etc.
- No commission charged by the SRLM's on the sale of the products
- SRLM, district and/or block officers operate and manage all the backend work on the digital platforms
- Payment for goods sold is credited to SHGs' bank accounts

#### Bihar



#### **Initiative**

The Bihar Rural Livelihoods Promotion Society, also known as Jeevika, is the nodal organisation in Bihar.

#### **Organisation**

Jeevika is responsible for the formation of SHGs. These SHGs have been aggregated into Producer Groups (PGs). The PGs, in turn, have been aggregated into a Producer Company named Shilpgram Mahila Producer Company (Shilpgram), which is a Section 8 company. Members of SHGs are shareholders in this company. This company has the requisite registrations (GST, PAN) to function in the formal and digital economy.

#### **Features**

The company sells farm and non-farm products, such as textiles, accessories, home décor, honey and other handicrafts.

#### **Implementation**

Shilpgram adopts an omni-channel marketing strategy that involves selling products in bulk to government agencies, taking part in fairs & exhibitions and online sales. Jeevika has contracted a software services company to build an e-commerce enabled website for the sale of Shilpgram's products online (shop.brlps. in). Shilgram also has a social media presence on Facebook, Instagram and Twitter.

Shilpgram has two warehouses, one in Patna and another in Darbhanga. Inventory is received from PGs at Darbhanga. Items are coded and labelled and sent to the warehouse at Patna. A photographer is hired to take product photos which are then uploaded to the website by Shilpgram staff. Order confirmation is received by email and orders are fulfilled from the Patna warehouse for which dedicated staff have been hired. Shilpgram has tied up with Delhivery for order fulfilment but some orders are also fulfilled through India post. The CEO of SG communicates with PGs and SHG heads using WhatsApp. Payment is made to the PGs and SHG members receive payment from the SHGs.

#### **Challenges**

SHG members and PGs lack digital skills to manage the website, undertake sales, marketing and customer service functions.

The model adopted by Shilpgram mimics models adopted by other state run organisations such as KVIC, Jharcraft, Co-optex.

Inventory and warehouse management are not digitised

#### Kerala



#### **Initiative**

Kerala's flagship program is called Kudumbashree Mission. This organisation works with women entrepreneurs to create micro-enterprises. They run a brick & mortar supermarket and a digital platform called Kudumbashree bazaar. Only women are allowed to become members of Kudumbashree.

#### **Organisation**

Their website describes Kudumbashree as "a community network" that has a three-tiered structure. Neighbourhood groups (NHGs) operate the neighbourhood level, Area development societies work at the ward level and Community Development Societies (CDS) operate at the local government level. Only one member per family is allowed to become a member of an NHG.

#### **Features**

The website features farm and non-farm products that includes processed foods, snacks and oils.

#### **Implementation**

The seller interface and backend of the website are operated by officers at the mission. The entrepreneurs are notified through messages on the application. The order confirmation has order and customer information. Orders are fulfilled by SHG members. Cataloguing and photography is managed by the SRLM.

#### **Challenges**

Cataloguing and photography for the website are not managed by the entrepreneurs but by officials at the SRLM.

Sellers on the platform do not use the seller interface and the task falls to officers of the state.

#### Maharashtra

#### Initiative



The SRLM is called UMED has been mandated to reach 45 lakh rural poor households. Their digital initiative involves an application named Mahalaxmi e-saras which supports SHGs and individuals. Their website claims that under UMED Abhiyan, a marketing outlet is set up in each taluk to sell products.

#### **Organisation**

UMED is an independent society registered under the societies act.

#### **Features**

Handloom, handicraft and food products are sold through Mahalaxmi E-saras. They also hold an annual exhibition of these products. Their website claims to have onboarded 5000 SHGs.

#### **Implementation**

They have a warehouse in Kargar and products are added to the portal by block mission managers and district mission managers.

#### **Challenges**

The backend of the website and inventory are managed by officers of the state and not by SHGs.



## Landscape of private sector initiatives for enabling market access

he private sector has played a crucial role in India's digital commerce journey. e-commerce platforms like Flipkart, Amazon, and Snapdeal have transformed India's retail landscape by creating online marketplaces. These platforms have provided a convenient and accessible way for consumers to purchase products and have helped small and mediumsized businesses reach a wider customer base. The impact of private sector players in India's digital commerce journey extends to women's collectives and women-led businesses. It has reduced barriers to entry. allowing women entrepreneurs to overcome traditional constraints and sell their products to a larger customer base beyond their immediate geographical location. Moreover, private sector players have taken dedicated efforts in ensuring the capacity and skill buildings of women-led businesses. This section details the initiatives spearheaded by private companies to encourage women-led business to enjoy greater business gains from partaking in their digital platforms.

#### Amazon Saheli

Saheli is a program under the Amazon platform which partners with organizations focused on self-employed women and women entrepreneurs to help them sell on the Amazon platform. Saheli offers support for one-month to women on enrolling and enlisting products. They claim to provide brand visibility to help launch and sustain their online presence. The program beneficiaries can also avail help from Amazon service providers, third parties, in product cataloguing, product photography etc. for free. The platform, while mainly run in English, provides detailed partner led trainings and skill development workshops to unpack nuances of online selling and growth management for their members This aggregator platform partners with NGOs, government bodies, CSR wings and charitable trusts. There are 39 partners who have been onboarded so far who have a reach of over 3 lakh women artisans. Onboarding, account handling and digital literacy, of women entrepreneurs and SHGs is done by their partner organizations.

Amazon also has a partnership with Deendayal Antyodaya Yojana - National Urban Livelihoods Mission (DAY-NULM and National Rural Livelihoods Mission (DAY-NRLM)), where they work with nodal centers in each state

that is used for warehousing SHG products. These nodal centers intend to help in capacity building, seller account registration, product cataloguing and online listing of products.

#### Flipkart Samarth

Flipkart Samarth aims to support artisans and weavers who have the potential to establish a strong online presence. Unlike the other initiatives, the Samarth scheme is not solely dedicated to women entrepreneurs or SHGs led by them. The program caters to rural women, specially abled, artisans, weavers, and community level enterprises led by tribes. Under the Samarth program, sellers can launch their products on the storefront sans commission for up to 6 months, letting them be competitive with their pricing and increase their brand footprint. Samarth also provides cataloging support for up to 50 products and is looking to scale this in the future up to 200-500 products since their partnership with government entities to scale.

Flipkart also provides time-bound incubation support with dedicated account managers who advise on business improvement practices.

Flipkart also has partnered with DAY-NULM to allow small businesses and SHGs to engage in e-commerce. Flipkart aims to train women entrepreneurs in branding, digital marketing and financial management.

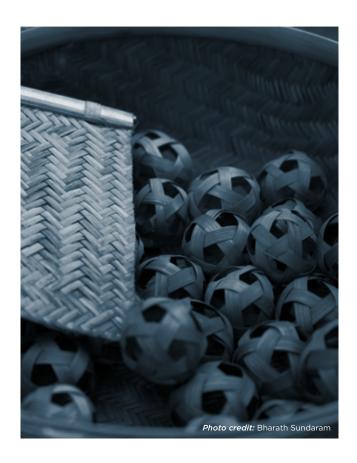


Table 2: Comparing Amazon Saheli and Flipkart Samarth

Program name	Description	Salient features	
Amazon Saheli	Focus on rural women entrepreneurs.	Charges a commission/ fee for providing access to the platform	
	Offers support for one month on enrolling and enlisting products	Logistics: Offers two services -	
	Amazon's third party service providers help these women with cataloguing, product photography etc. free of charge during this month Products are given visibility to customers	Picks up the packaged order from the seller and then delivers it to the customer	
		<ul> <li>Charges a fee and provides ware- housing as well as packaging facilities,</li> </ul>	
	Does not really assign a designated 'account manager'.	a service also known as Fulfilled by Amazon	
	The partner organization who is connected to the clusters or rural women entrepreneurs manages onboarding and digital literacy.	GST certification, Registration of seller's business entity and PAN are mandatory	
		Saheli prefers to work with SHGs or women's collectives who are supported by a partner organisation ie., SRLM, NGO or CSO.	
		Saheli products will be afforded additional visibility during sales	
Flipkart Samarth	Flipkart launched a program, Samarth, in the first quarter of 2020.	GST certification, Registration of seller's business entity and PAN are mandatory	
	The objective of the program is to facilitate the sale of products made by rural entrepreneurs, artisans and weavers.	Relaxation from commissions for 6 months; not applicable to rural women entrepre- neurs cause Flipkart is wary of their spous-	
	Flipkart has chosen to focus on government partnerships.	es misusing this privilege  Prefers to work with the government to set	
	They have a partnership with the National Urban Livelihoods Mission, aiming to onboard all the clusters.  They also engage with sellers who have the required levels of digital literacy to work on Flipkart  They do not provide any digital literacy training.	up a verification process so that SHG wom- en can also leverage this exemption	
		Flipkart has collection points in cities where sellers can drop of their packaged orders	
		No logistic services in rural areas	
		Sell packaging material to the sellers	
		Flipkart's account managers provide data driven insights and advice to the sellers	

## Public-private partnerships: caselets

Public-private partnerships offer some insights on the challenges faced, and insights on what can be improved to make this work based on specific examples.

## **Case study 1:** Bihar-Creation of a single legal entity

The Bihar SRLM, Jeevika, supports Shilpgram Mahila Producer Company, which is registered as as a seller on Amazon. Currently, they have a few products made by some producer groups on the Amazon and Flipkart platforms. Sales on these platforms are quite low. e-commerce platforms account for only about 5% of their total sales. Shilpgram has a social media presence and has been assisted by BFA Global in creating a digital marketing strategy to increase sales. Shilpgram's products are now available at shop.brlps.in which is an ecommerce enabled website supported by the Bihar Rural Livelihoods Promotion Society.

## Case study 2: TRIFED-Focus on marketing and value additions

TRIFED sells its products on e-commerce platforms such as Flipkart, Amazon, PayTM and Snapdeal under the brand name "Tribes India". The seller account is handled by officers of TRIFED. The tribal communities whose products are sold online have no role in the e-commerce processes.

## Case study 3: Kerala-Creation of eligible smaller entities

Kudumbashree Mission supports rural women entrepreneurs to get the requisite documentation and certifications for their enterprises thereby enabling each entity to qualify as a seller on Amazon. The Mission has a centralised warehousing facility to support their Amazon operations. The enterprises from Kerala have onboarded 654 products on Amazon and have received and fulfilled 361 orders worth INR 1,32,886. The platform charges the women a commission of three to twelve percent depending on the product category.

#### Case study 4: Maharashtra -Leveraging a Retail Outlet for e-commerce

In addition to Amazon, Maharashtra's SRLM, Umed, has a partnership with Saheli and Karigar through which it has facilitated sale of products. The SRLM on-boards only individual and group enterprises that have a GST registration. Given that many SHGs do not have GST registration, they cannot be onboarded as sellers on the e-commerce platform.

Wardha district came up with an innovative solution to this problem. It has a district brick and mortar store known as 'Wardhini', where all district's SHGs products are sold. Since the store has the requisite legal registration, GST certification and PAN, Wardha district sells select products of SHGs under the brand name, Wardhini.

## Case study 5: Chattisgarh-A series of failed engagements

The Chattisgarh SRLM initative, called Bihaan, had onboarded products from 6/7 rural enterprises run by SHG women in 2018 but have receive few orders. 'Bihaan' did not put any effort on promoting or marketing their products on Flipkart. According to Bihaan, the products did not sell because of inadequate promotion on Flipkart's part on their platform. Flipkart had initially promised to promote and give these products visibility during sales which did not happen leading to negligible orders.

According to the Bihaan representative, the receiving hubs in the districts are 20-40km away from the villages. Since orders received were of low value, it did not make financial sense to incur high shipping and travelling costs along with the production costs. As is the nature of e-commerce, orders were received at all times of day and in small quantities, making it difficult for women to carve out time from their routine work to fulfil these orders. Chhattisgarh also engaged with Amazon and their third party vendors trained the women entrepreneurs. Due to the lack of quality photographers at the village level, sellers were unable to meet Amazon's photography standards and specifications.

## On-going challenges with private sector initiatives

While there is a constant effort to engage with the private sector to scale market access initiatives, the current models followed create several challenges that prevent the poorest and most vulnerable women's collectives from benefiting. These challenges are outlined in this section and create a case for on-going engagement by the state if we are to ensure that all women's collectives can benefit.

### Private platforms and marketplaces in India are not 'seller-centric'

Online marketplaces have multiple revenue sources. They may charge a subscription from buyers & sellers, charge a commission on transactions, charge for delivery, shipping and advertising. Unlike their offline counterparts, online marketplaces are open 24 x 7, can accommodate infinite sellers and are not constrained by location.

Private sector marketplaces are 'buyer-centric' and their focus has been to attract buyers. Choice, discounts, price comparison, free shipping, same day delivery, cash-on-delivery, loyalty programs, flexible payment options, user-friendly return policies all contribute to their success in attracting buyers. The platforms afford the customers the ability to search for specific products and find several competing sellers offering the best prices.

Online marketplaces are geared towards meeting customer needs. The customer being defined as the person who spends money to buy goods and services on the platform. This customer centric approach is backed by investments in warehouses and fulfilment centres with sophisticated digitised inventory management and logistics support.

While consumers are spoilt for choice on these marketplaces, sellers on these platforms face several problems. First, the online marketplace is dominated by a few large players, and the sellers on these platforms face increased price competition. Second, platforms have superior bargaining power and there is an information asymmetry between platforms and sellers. Finally, platforms focus on increasing the number of sellers on the platform, and increasing the number and value of transactions per seller; sellers are unable to sell profitably.

#### Private platforms lack platform neutrality and information symmetry exists between platform operators and sellers

Sellers allege that platforms are not neutral. Sellers also allege that platforms compete in the marketplace by a) having their own label or b) having 'preferred sellers". Market study of e-commerce in India(2020) by the Competition Commission of India states that "Platforms, when they serve as both a marketplace and a competitor, have the incentive to leverage their control over the platform in favour of their own or preferred vendors". Platforms have greater access to transaction and customer data than sellers. They can utilize this information asymmetry to introduce new products or rival products at lower prices.

## Private platforms can misuse search ranking

Sellers' access to customers on these platforms depends on search rankings. Search results on a platform include organic listings (algorithmically generated) and paid listings. There is a lack of clarity on search ranking criteria and the mechanism behind search rankings is opaque.

The platform's ability to control the display of search rankings to buyers gives them an unfair advantage in promoting their own or preferred sellers on the platform.

## Private platforms use differential discounting

Offering discounts is a strategy adopted by platforms to attract and retain customers.

Sellers allege that differential discounting structures offered by platforms affects competition. Sellers also claim that they lose control over the final price offered to the customer. Customers accustomed to discounts offered by platforms expect the same from sellers outside of the platform, leading to greater dependence of sellers on the platforms.

Even when platforms fund the discounts, the scheme and structure are decided by the platform. Sellers who do not participate in the scheme feature lower in the search ranking affecting their ability to access customers. The discounts offered by platforms push prices to below-cost levels affecting the profitability of sellers. The burden of the discount has also been shifted to the sellers.

### Private platforms offer unfair contract terms

Platforms enforce contracts that do not allow sellers to sell at lower prices on their own websites. Platforms have superior bargaining power and impose 'unfair' contract terms and these terms are changed unilaterally. The contractual framework between platforms and sellers needs scrutiny.

## Insights from examining private platforms

A common assumption is that markets exist or evolve organically. However, online marketplaces have shown that they need to be created and managed. Just like physical markets, online markets have entry barriers. Business practices and strategies of private platforms are barriers for small businesses, producers and sellers. The underlying assumption with online markets is that they will magically match a buyer to a seller, and every seller will be matched with a buyer. However, search functions on platforms tend to favour some sellers over others.

The state has tried to bridge structural holes through state run organisations like KVIC, and through institutions like SRLMS. These institutions have been successful at aggregating sellers on one side but have not yet been able to attract a large number of buyers on the other side to enjoy the network effects that private sector platforms enjoy.

Experience with private platforms has shown that they are essential infrastructure like bridges. The state can 'be' the bridge (KVIC,

GeM), build a bridge (SRLMs) or provide the blueprints for bridges to be built by individuals and small enterprises. The Open Network for Digital Commerce (ONDC) framework allows the formation of a network of bridges but the bridges themselves need to be built at micro and meso levels. The state could consider partnering with private sector actors or providing incentives to small businesses to go digital or alter company structures to empower employees, vendors and civil society organisations in decision-making.

#### Need for continued state intervention

Within the set of women interviewed, some have benefited more from participating in the digital economy than others who are yet to access the digital economy. Residents in rural India have poorer infrastructure than those living in urban locations. There is a gender gap in the access to education and technology. Women have lower access to smartphones and ICTs than men. Older women are more disadvantaged than younger women. Older women entrepreneurs in rural India who cannot read and write English, or know how to use a smartphone are at a disadvantage when compared to their younger, educated urban counterparts. Some groups have distinct advantages over others. The digital economy appears to be a level playing field and failure on this field is usually attributed to the individual. However, this is not the case. Most players in this field are already disadvantaged by the persistence of old issues. Unless these old issues are addressed, the vision of 'digital india' may remain a dream.



#### 

# Seamless commerce: open networks reshaping the digital commerce landscape

The traditional digital commerce landscape in India has often been dominated by a few large players, resulting in limited access, lack of competition, and reduced opportunities for smaller businesses. This concentration of power has hindered innovation, stifled market growth, and limited consumer choice. Even among smaller businesses that have been successful at registering on the platform, the inability to attract customers, competition from larger players coupled with the transaction fees, and the constantly changing regulations have made it harder for them to continue business online.

This has created a need for a robust and inclusive ecosystem that can support seamless transactions, foster innovation, and empower businesses of all sizes. In that regard, the Open Network for Digital Commerce emerges as a transformative solution to address these challenges and revolutionize the Indian market.

Open Network for Digital Commerce (ONDC) is an initiative currently being piloted and launched by the Government of India to establish a standardized and interoperable digital commerce ecosystem. While other digital commerce channels may vary in their features and functionalities, ONDC provides a common framework for various stakeholders, including consumers, merchants, and service providers, to interact seamlessly within the digital commerce space.

#### What is ONDC and how does it work?

ONDC is an open-source platform designed to provide a seamless transition from a platform-centric model to a network-centric model. In this network, anyone can participate as a buyer or a seller, regardless of their affiliation with any particular e-commerce platform. Sellers can list their products or services, set their prices, and provide information about what they are offering. Buyers can browse through the listings, compare prices, read reviews, and make purchases.

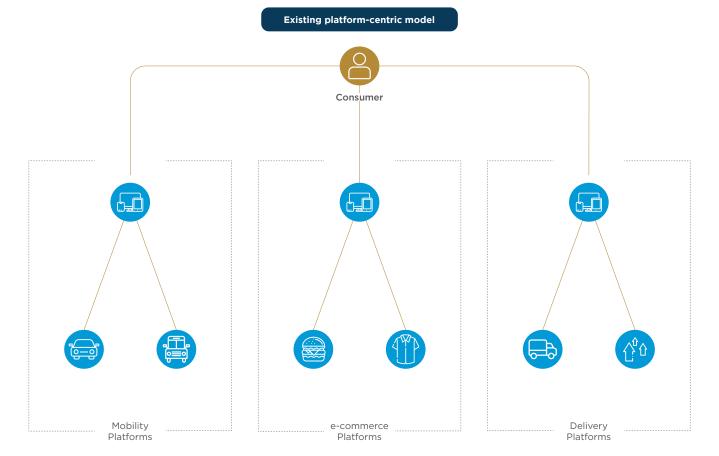
For example, a self-help group of seven women, Bunaai Mahila Mandal, in Sanganer, Rajasthan wants to produce and sell block-printed fabrics but does not have knowledge of where to sell and lacks the technical wherewithal to onboard and monitor multiple e-commerce platforms. On their seller app, which is the seller-side interface under ONDC, they can,

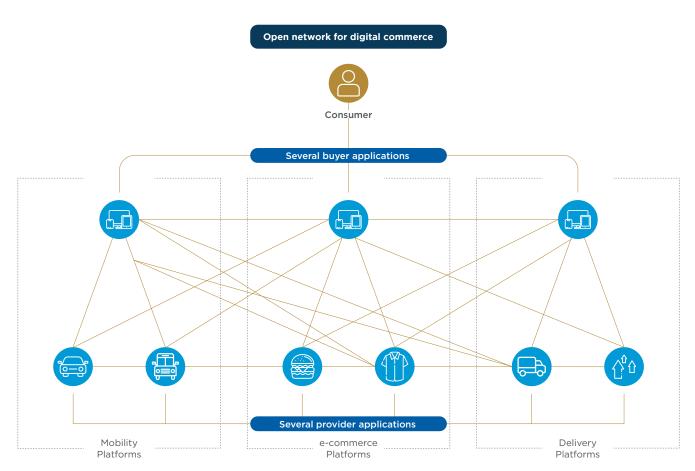
- 1. Access different financing options for the purchase of raw materials, equipment, packaging products
- 2. Browse through the e-B2B marketplace to find a well-reviewed seller, providing raw materials at affordable prices
- 3. Hire more temporary artisans on the platform to help complete a bulk order
- 4. Identify sellers offering other services like packaging, brand design, promotion materials production
- 5. Place the finished product for sale on ONDC
- Continue building soft skills and technical know-how through services offered in the skill portal on ONDC

A buyer in Tinsukia, Assam is looking for an authentic block-print fabric on a buyer app (say Meesho, Flipkart, GoCoop etc) that is already onboarded on ONDC. They find various options and based on price, product features and the seller's ONDC reputation score they select and pay for the product uploaded by *Bunaai Mahila Mandal*. The product is then shipped by the seller through a logistics partner of their choice from the seller app.



Figure 4: ONDC Framework





Source: ONDC

This network model is designed to be a win-win for buyers and sellers. ONDC-affiliated sellers do not have to face challenges that they have to face with privately-owned companies such as transaction fees, contractual lock-in periods, preferential algorithms that deprioritse their offerings, and limited market access. On the other hand, buyers are not limited to choices offered by a particular platform and can enjoy breadth and depth in product choice.

Several use cases are currently being piloted and some sector-specific applications are already showing success. One such example is the open mobility auto-booking app, Namma Yatri which has completed almost 20 lakh auto rides since it's launch, and is generating a value of INR 38 Lakhs each day.

## Open network solutions for enhanced mobility: Namma Yatri

Several use cases are currently being piloted and some sector-specific applications are already showing success. One such example is the open mobility auto-booking app, Namma Yatri which has completed almost 20 lakh auto rides since it's launch, and is generating a value of INR 38 Lakhs each day (Namma Yatri, 2023).

Namma Yatri, developed in collaboration with the Bengaluru auto driver union, is a pioneering open network mobility application that enables the provision of transportation services without the need for intermediaries.

Namma Yatri does not involve any commission calculations and eliminates the need for customers to negotiate drop locations and prices over phone calls. According to it's open access product map, Namma Yatri has a larger vision of achieving multi-modal transport by integrating various modes of transportation, such as buses and cabs, into a single app.

In order to establish a substantial presence in an industry that is largely controlled by major players such as Ola, Uber, and Rapido, Namma Yatri is currently working on prioritizing app development, map optimisation, improve user experience, and minimize cancellation rates. To enhance its technological prowess, the platform is exploring incentives for drivers, and affordable alternatives in cases where opensource maps are not viable.

#### **How does Namma Yatri work?**



#### **Unique characteristics of ONDC**

ONDC is designed on the principles of:

- 1. Interoperability: One of the key characteristics of an open network is interoperability, which enables seamless integration among various stakeholders. It allows different platforms, systems, and technologies to communicate and exchange information efficiently, eliminating the silos that exist in the current digital commerce ecosystem.
- 2. Standardization: An open network promotes the development and adoption of standardized protocols, APIs

- (Application Programming Interfaces), and data formats. This standardization streamlines communication and data exchange between different entities, facilitating smooth transactions and information flow.
- 3. Discoverability: An open network is designed to be decentralized, reducing dependence on a single authority or intermediary. It empowers buyers and sellers to participate, collaborate, and contribute to the network's growth, thereby fostering innovation and competition.

Table 3: Key differences between ONDC and other traditional digital commerce initiatives

	Open Network for Digital Commerce	Traditional Digital Commerce
Model	Network-centric model - buyer and seller can interact in a platformagnostic manner.	Closed-loop, platform-centric model - buyer and seller can only interact within dedicated platforms
Scope and Coverage	Wide range of digital commerce activities, including e-commerce, online services, logistics, and digital payments	Narrower scopes, focusing on specific sectors or services
Ownership	Neither private, nor government owned - it is a network	Mostly private, although there are state-run initiatives like GeM, e-Saras etc.
Compatibility	Interoperability ensures that different digital commerce platforms, payment systems, and service providers can seamlessly connect and communicate with each other.	Low interoperability as services are limited to the scope of each platform and the functionalityof each platform also varies.
Standardisation	Common standards and protocols for data exchange, security, and authentication, reducing fragmentation across different platforms.	Low standardisation, protocols are established at the platform level.
Institutional Involvement	ONDC is a government-led initiative that intends to create a level playing field and promote fair competition in the digital commerce sector.	Operated by private entities or third-party platforms, which have their own business models and objectives.
Regulatory Oversight	ONDC operates within a regulatory framework established by the government, ensuring compliance with relevant laws and regulations.	Consumer protection mechanisms in place, however the safeguard measures are not consistent across the ecosystem.
Consumer Protection	ONDC emphasizes consumer protection by implementing measures to address issues such as fraud, privacy, and dispute resolution.	Narrower scopes, focusing on specific sectors or services
Power Dynamics	Buyer and seller have a fairly equal footing. Promotes competition, choice, and convenience for users, as they can access multiple services through a single platform.	Seller and platform dominant as the offerings for buyers in limited to what is available on a specific platformand the platform funcationality is controlled by private entities/third-party.

While ONDC offers a fresh approach to advancing India's digital commerce journey, current users have identified some emerging challenges. One such challenge is that ONDC requires suppliers who join the network to meet the same regulatory requirements as e-commerce platforms, including GST registration and obtaining necessary licenses based on the product category. This can be particularly burdensome for small-scale enterprises and home-based businesses, many of which operate informally. Moreover, there are concerns regarding the frequency of transaction failures on the ONDC networks due to the involvement of multiple parties in each transaction. This issue could significantly impact user trust in the ONDC network. Additionally, there is a lack of clear regulations regarding customer liability in ONDC-related e-commerce transactions. It remains uncertain how issues such as order complaints, fraud, and payment problems will be resolved. Resolving these issues is crucial for maximizing the benefits of the ONDC network, ensuring consumer protection, fostering innovation, and driving inclusive economic growth.

Benefits of ONDC and implications for womenled enterprises and women's collectives

The biggest benefit of an initiative like the ONDC is its ability to remove all entry barriers, fostering fair competition and delivering better consumer experiences. Any small business or business venture across different geographies and socio-economic backgrounds can now compete on equal footing with large players, who have previously monopolized the digital commerce landscape. Moreover, with interoperability as a core feature, the improved choice for buyers, simplified processes, and reduced costs will without doubt make the digital commerce ecosystem more vibrant.

In addition to empowering Small and Medium Enterprises (SMEs), and delivering enhanced consumer experiences, ONDC will also encourage collaboration and innovation. Third-party entities and sellers will be able to leverage the existing infrastructure to offer new services, and business models and drive digital commerce forward.

Given its nascency, while it is difficult to know the impact ONDC can have on women's collectives and women-led businesses in India, there are still notable benefits which can further their economic journey. Firstly, ONDC interoperability can help women's collectives and businesses overcome traditional barriers and reach a broader customer base across India and even globally. Moreover, bypassing the intermediaries, reduce costs and improve profit margins for women-led businesses and

collectives providing them with the opportunity to offer competitive prices and attract customers.

Secondly, by participating in the digital commerce platform, women entrepreneurs can showcase their growth potential and establish a digital trail of their business transactions. This is especially useful in attracting investment from venture capitalists, angel investors, or financial institutions to support their business expansion plans and foster further growth.

Furthermore, ONDC's capacity-building and skill development programmes can equip women's collectives and businesses with the required soft skills, technical skills and digital commerce tools such as online marketing, inventory management, logistics, and customer relationship management to effectively navigate the digital commerce landscape.

Lastly, ONDC facilitates networking and collaboration among women entrepreneurs, connecting them with like-minded peers, mentors, experts, and potential partners. This fosters knowledge sharing, mutual support, and the formation of partnerships that contribute to the growth and success of women-led businesses.

Although the benefit of ONDC for women entrepreneurs depends on the platform's ability to attract and onboard women-led businesses and build trust when it comes to data privacy and consumer protection, the establishment of this digital public infrastructure in itself holds promise for women-led businesses and collectives' financial future.



## Recommendations

## Address inventory management by state-run organisations

Insights from Kerala's Kudumbashree, Bihar's Jeevika and Maharashtra's Umed programme shows that inventory management can be a pain point even when digital skills and market access challenges are addressed. It is crucial for state run organizations to address this at the start, and train women's collectives using digitalized inventory management systems.

#### Support supply chain needs

In addition to inventory management, states like Bihar, Maharashtra, Kerala have all provided rural enterprises some form of warehousing facility. Before expanding these facilities, all SRLMs who are supporting rural enterprises with such facilities should consider conducting a needs and cost analysis to ensure that there is a clear benefit of having them and at the same time to ensure that they aren't burdening the enterprises with more overheads. Perhaps warehouses can be owned and operated by SHGs as a business.

## Facilitate authentication and verification of claims made by sellers

Private platforms do not care to verify claims made by sellers, instead preferring to use search rankings which bring their own biases to the market access process. One of the concerns around organic search ranking is the ability of the algorithm to distinguish between hand-made and machine made products. Rural producers mostly produce hand-made items (farm and non-farm). These products must compete in the market with products produced by machines. Many machine-made products masquerade as hand-made products to the detriment of rural producers. If a seller on a platform claims to sell hand-made products. then this claim must be authenticated and verified.

Search engines rely on user-provided data to list and rank products. The data underlying the search engines and algorithms is insufficient to verify the claims. Search engines rely on user-provided data to list and rank products.

### Optimise existing state infrastructure and resources

The ONDC tools can be applied to state run institutions like Khadi and Village Industries Commission (KVIC), TRIFED, Mahila-e-haat,

and state run cooperatives like Cooptex,
Mrignaynee, Cauvery and Lepakshi. The ONDC
framework can be used to connect data
contained within each of these organisations.
Digital tools can be developed that allows
buyers to search for items held in warehouses
of several such institutions using one interface
rather than having to navigate different
websites and apps. A common protocol can
be adopted by each of these institutions for
managing inventory. The ONDC tools can also
be used to communicate with the logistics
systems of India Post to enable low cost
shipping and ensure tracking and tracing of
goods shipped using the postal system.

## Explore the performance of ONDC across platforms and sectors

The Open Network for Digital Commerce (ONDC) has emerged as a transformative initiative in India's digital ecosystem and holds immense potential to revolutionize the way businesses operate and consumers engage in online transactions. To fully realize the benefits of this innovative platform, it is crucial to pilot more use cases and thoroughly evaluate its capabilities in real-world scenarios. Extensive pilot testing will enable stakeholders to assess the scalability and reliability of ONDC. Additionally, pilot testing will facilitate the identification of regulatory, legal, and compliance requirements specific to ONDC implementation. By involving a diverse set of users, the rigorous piloting will allow for comprehensive user feedback and adoption analysis.

### Clarify the roles of state-run institutions

State run institutions have to stop competing with the private sector. Their role is different and extends to providing public goods and addressing challenges of market failure. This requires clarifying the role of the state and state supported organizations, and redefining success metrics. State supported institutions also have to play a core role in reducing information asymmetry by creating searchable directories, creating verifiable identities and establishing authenticity.

State supported organizations have a role to play in helping rural makers and groups offer services to different enterprises in the value and supply chain. Currently organizations like KVIC, Tribes India, and other compete with private sector organizations for market share and consumers. Instead they need to be re-purposed to cater to different consumer

segments and bridge gaps in the information network. For instance, private sector platforms and businesses are good at aggregating buyers and catering to their needs. Public sector platforms are good at aggregating producers. Tools provided by ONDC can be used to bridge the two distinct groups. As different pieces of the technology infrastructure are created in India, state supported institutions must review their roles.

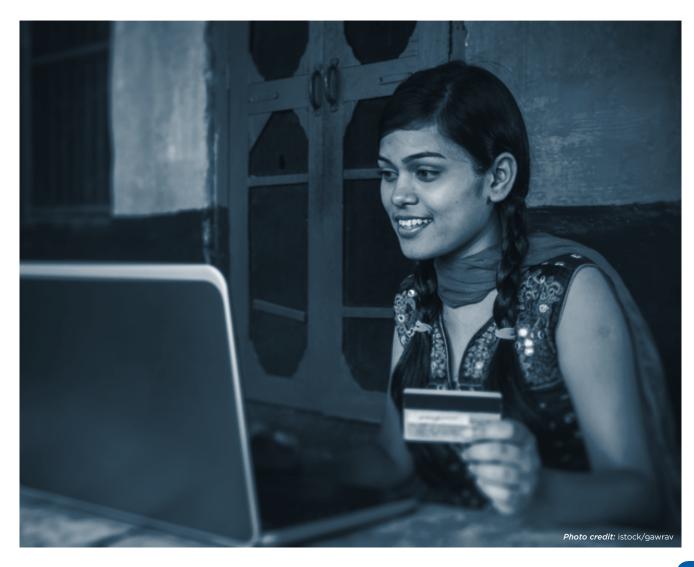
## Assess digital readiness of SHG members; curate digital readiness training modules

While several interventions like the Internet Sakhi, the Bank Sakhi and other banking partnerships have helped raise awareness about leveraging the internet to supplement their business and financial, data about the use / ground reality in terms of digital tools is rarely recorded. While internet connectivity, smartphone and laptop penetration is easier to track, the capacity of women to actually leverage this technology hasn't been assessed with due diligence. Such an exercise could greatly inform the design e-commerce portals,

curation of training sessions to enhance use by rural women, and building sustainable business models for women entrepreneurs to act without assistance.

### **Enable ownership of e-commerce activities by SHG members**

This involves changing the onus from State facilitated presence on ecommerce to giving SHG women the direct responsibility to lead their e-commerce operations. The current e-commerce penetration for products made by rural women entrepreneurs has been heavily supported by SRLM, district and/or block officials who operate the seller accounts for women entrepreneurs. While it is imperative for the state to lay the foundations and build robust systems to enable e-commerce transition, it is also important to think of building the capacity of rural and womenled enterprises to ensure sustainability of their e-commerce activities. The lacuna to fill therefore is to build more context driven platforms and processes that are technology enabled instead of technology led, which can aid the SHG women instead of challenging their business.





LEAD is a part of IFMR Society with strategic oversight from Krea University.

LEAD at Krea University

7th Floor, B Block, IIT-Madras Research Park, Kanagam Road, Taramani, Chennai – 600113, Tamil Nadu



www.ifmrlead.org



communications-lead@ifmr.ac.in



**f** LEAD at Krea University



@leadatkrea



in LEAD at Krea University



IWWAGE - an initiative of LEAD at Krea University



www.iwwage.org



