

Third Regional Consultation on Digital Green at IBS, Gurgaon August 24th, 2023 Ecosystem Enablers' Perspective

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Gurgaon Regional Consultation was held at IBS Gurgaon on August 24th, 2023. The theme of this consultation was “Ecosystem Enablers' Perspective”. Prof. Sharma, Senior Director and Campus Head, IBS Gurgaon delivered the welcome address. He started by commenting that digital technology has evolved from a time when there was a lack of metric system to the current age of Artificial Intelligence and ChatGPT. Digital Technology is being used to enhance production capacities and precision, addressing specific customer needs, improving the quality of jobs across sectors, increasing the cost competitiveness, and increasing customer satisfaction. Segmentation of customers is another area where digital technologies are useful. He emphasized that low-cost digital public infrastructure is the need of the hour. India has made great progress in digital payments/transactions. He said, “we don't need banks, we need banking”. According to him, Micro, Medium, and Small Industries have different sets of challenges and hence they need different solutions as well. Remaining profitable is the first objective of these industries. Awareness regarding digital technologies and methods to move towards sustainable processes is less amongst micro and small industry players. The benefits of both digital technologies and sustainable processes need to be explained to them in simple and understandable language.



Mandvi Kulshreshtha, Program Adviser, Friedrich-Ebert-Stiftung (FES), India Office, spoke about the transformative discourses dealing with Future of Work and Socio-Ecological Transformation that the foundation is working on.. She spoke about the various projects on

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which FEShas worked with ICFAI Foundation for Higher Education (IFHE) viz. the one-day national consultation on **Digital Transformation of Informal Sector- Challenges and Opportunities for EdTech in November 2021**, and the **Digital Street project in 2022**. She emphasized that single minded pursuit of profitability is deleterious for the environment. A top-down value based vision is required to achieve green goals. Supply chains need to be reconfigured to embed green practices in processes and products. A multi-pronged approach that addresses the intersection of economic, ecological and social paradigms would truly make for a Digital Green success.



Shri S.K. Agrawal, Chairman GNG Group could not make it to the consultation due to ill health, but he was kind enough to send his speech via email. As per him, the most critical inventions are not those that resemble inventions, but those which appear innate and natural. The most important inventions were not the capture of fire, the printing press, the discovery of electricity, exploring space, or the mapping of the genome. The most important invention was the expression of views. A new invention has emerged, the collective consciousness which requires a new way of thinking. Today it is the collective and the common mind, we all share. And the result is the computing and the Internet, the big breakthrough of Digitization.



The role of Information Technology (IT) has changed irreversibly in the last few years. Let's take Digital innovation which in fact is the integration of digital technology into all the areas of personal and professional lives. It is also a cultural change, challenging the status quo, with consistent and continued experiments without bothering even if they fail majority of the time. It's more about shedding outdated processes and legacy technologies. It is only about enabling innovation. Digital innovation and transformation is an ongoing and evolving process. Recently Google, with the help of quantum computers experimented on Wormholes, where they have successfully teleported the information in future. This is the first step towards time travel. Bold and new approaches are needed to meet the global challenge of overcoming poverty and achieving the sustainable development goals in the face of growing threats from ecosystem decline and climate change. In our country, MSMEs account for 45% of manufacturing output, 95% of industrial units and 40% of exports. Digital innovation and transformation have been playing a big role in helping these units to improve their systems for achieving sustainability financially as well as environmental.



The problems that industrialization and technology have caused and escalated are environmental, demographic, and socioeconomic. It has created a burden on the world's oceans, skies, soil and all the nonhuman life forms. Each invention relies on a subsequent invention to clean up the mess it has made.

Side by side, we need to redefine sustainability and understand its importance. There are three aspects:

1. Avoidance of new damage to the current ecosystem.
2. Removing it on a daily basis.

3. Replenishment of damages which we have already done.

We are the trustees of the earth, the environment, and the future. We owe the responsibility to work for a future that is more just, equitable, sustainable and results in the progress of all. If we can save three things with the help of Digital Innovation, which are AIR, SOIL and WATER from further deterioration, we can achieve the goal of sustainability. It cannot happen without the participation and contribution of each one of us.

Mr. Ashish Agrawal, Head of Sustainability at Nagarro spoke about three lenses through which the use of digital technologies for sustainability practices should be looked at:

1. Business Alignment.
2. Human Alignment.
3. Visual Alignment.

Integrating business objectives with sustainability is the starting point, as per Mr. Ashish. He provided the example of Hewlett Packard (HP) that foresaw the demand for sustainable products. They manufactured laptops that could be recycled by incurring a huge expense. This move of theirs saw an impact of almost \$1 billion on their revenues. This led them to an additional 5% revenue. He spoke about how only 2% of the global carbon emission is by airlines. The IT industry invisibly emits a lot of carbon through their cloud storage servers. They need fresh water to cool them. So, one objective of businesses should be to reduce the cloud impact. Utilizing renewable energy such as solar, wind, or hydroelectric power can significantly decrease the carbon emissions of data centers and servers. Major cloud providers can invest in or purchase renewable energy credits to offset their consumption of traditional, carbon-intensive energy sources.

Implementing more energy-efficient hardware, cooling systems, and optimizing software can substantially lower energy consumption. This can utilize advanced technologies like AI-driven energy management systems. Cloud providers can invest in carbon offset projects that aim to reduce or capture the equivalent amount of carbon dioxide emitted from their operations. By optimizing the utilization of existing hardware through virtualization, providers can reduce the need for additional physical servers, thus conserving energy. Building data centers in locations with naturally cool climates can reduce the need for energy-intensive cooling systems. Also, implementing cutting-edge data center designs that optimize cooling and airflow can significantly reduce energy consumption. Clients should be pushed to believe that sustainable practices could lead to savings through more efficient operations.

Getting employees along is very important for organizations and that is why human alignment is an issue. When the values and goals of individuals within an organization align with its sustainability objectives, it fosters a culture of commitment, innovation, and shared responsibility. This can enhance the effectiveness of sustainability initiatives. When employees feel that their personal values align with the organization's sustainability practices, it can lead to higher engagement, motivation, and job satisfaction. This, in turn, can contribute to better performance in sustainability initiatives. When employees feel that their personal values align with the organization's sustainability practices, it can lead to higher engagement, motivation, and job satisfaction. This, in turn, can contribute to better

performance in sustainability initiatives. When there is alignment between different departments, suppliers, and partners on sustainability goals, it facilitates cooperation, innovation, and the implementation of more comprehensive sustainability strategies. Alignment ensures that the organization's sustainability practices are not just superficial but rooted in a genuine sense of ethics and social responsibility, enhancing credibility and effectiveness. Aligning with consumer values and expectations related to sustainability can lead to more robust market positioning and responsiveness, potentially increasing customer loyalty and market share.

Visual alignment, according to Mr. Ashish is about gathering data as the highest priority to find out where the maximum inefficiencies in the system are. Gathering data on emissions, waste, energy usage, and more enables organizations to fully understand their environmental footprint. This foundational understanding is key to setting realistic and impactful sustainability goals. Regular data collection allows for the continuous monitoring of sustainability initiatives, ensuring that they are on track to meet the targeted goals and allowing for timely adjustments. Transparent sharing of sustainability data can build trust and engage stakeholders, including employees, customers, investors, and regulators, all of whom have vested interests in an organization's sustainability performance. Shared data can facilitate collaboration and partnerships between different organizations, governments, and NGOs, fostering a more holistic approach to sustainability. Data-driven insights can lead to innovation and the development of new technologies or practices that further sustainability goals.

The Chief Guest Dr. S. Chakravarthy, IAS (Retired), Former Chief Secretary Telangana spoke about the need for developing a professional digital economy. He started his address by saying that technology should not remove competitors from a market. Technology should lead to a sense of paranoia amongst competitors so that they innovate and raise their game. He spoke about the three fundamentals that are required for a sustainable digital economy:

1. Rule of law.
2. Strong State.
3. Credible Governance.

According to him, standalone digitization is not enough. Without concerted efforts to bridge the gap, digitization can exacerbate inequalities, leaving those without access to digital technologies behind. Automation and digitization can lead to job displacement, particularly affecting low-skilled workers, leading to economic disparities. The increased digitization of personal and sensitive information raises significant concerns about privacy and cybersecurity. Standalone digitization may overlook vital human, ethical, and cultural considerations, leading to solutions that may be technologically sound but socially or morally problematic. The energy consumption of digital infrastructure can be significant, leading to negative environmental impacts. Over-reliance on digital interfaces might lead to social isolation and other mental health challenges.

The Chief Guest spoke against having a fixed mindset. Instead, people should possess a growth mindset. As people move up the corporate ladder, they should have good people

skills. He spoke about two critical skills/attitudes for success in life - rising every time one falls and realizing that one's potential is beyond what one knows about himself or herself.

After the inaugural session, the first panel discussed "Regulatory Frameworks for Digital Technologies-led Sustainability Initiatives in MSEs. The panel members were Mr. Arun Jha, Former Chairman, KVIC, Ministry of Industry and Ms. Ambika, Owner, Hydra by Ambika. The discussion was moderated by Prof. Sanjay Fuloria. Mr. Jha pointed out that regulations always follow technology, and it is difficult for the policy makers to make comprehensive regulations. It must be a dynamic process which shifts with modifications in technologies.

Ms. Ambika spoke about the Marketing Assistance Scheme that is provided by the Government of India to the MSMEs for organizing exhibitions. The Space Rent for such exhibitions is reimbursed to the tune of 75% for Micro Enterprises and 60% for the Small Enterprises. For women entrepreneurs 95% is reimbursed for Micro Enterprises and 85% for the Small Enterprises. Freight charges for the goods transported to the event are reimbursed to the tune of Rs. 25,000. Air Fare reimbursement for one representative from one firm is also done up to 85% of the Economy Class Fare for Micro Enterprises and 75% for Small Enterprises⁴. Ms. Ambika spoke about the fact that it is very difficult to get these reimbursements. The processing of documents takes a long time and is still paper based. There is a need to shift this process online and make it less cumbersome. Digital technologies helped Ms. Ambika conduct her entire business online during COVID as she had no brick-and-mortar presence during that time. She emphasized that if the Government wants to promote green initiatives, removing paperwork from the entire process would be a great start. As regards her business, her company procures material from women entrepreneurs who make the product by hand. This promotes sustainability.



⁴ <https://msme.gov.in/sites/default/files/MAScheme-New-18112014.pdf>

Mr. Arun Jha spoke about using the digital payments systems as a template for implementing the marketing assistance scheme for the MSMEs. He also said that the creamy layer of MSMEs is taking advantage of all Government schemes. Rural areas should be the focus for the Government. Providing platforms to buyers and sellers will also help. Earlier Governments used to have buildings where buyers and sellers met and transacted and now there is a need to have virtual platforms for such transactions.

The second panel discussion was on Empowering MSEs through Digital Green Solutions. The panelists were Mr. Nitin Singhal from Ericsson and Mr. Pawan Jain. The session was moderated by Mr. Savitir Prasad, Former Secretary to the Government of India. Mr. Nitin Singhal started by saying that when he joined the industry there were few computers, handwritten purchase orders were the norm, and everything was paper based. Now, all transactions are paperless. The procurement process has moved online with e-auctions and e-RFPs. All contracts are digital too.



Mr. Pawan Jain spoke about frauds and mistakes that are possible in digital technologies. He stressed the need to be careful in adopting new technologies. The safety and security aspects need to be taken care of. On the emergence of digital green service providers and their significance the following points are important:

1. Facilitation of Green Choices: Such platforms make it easier for consumers to make eco-friendly choices. They can serve as repositories of sustainable goods and services, thus simplifying the decision-making process for those seeking to reduce their carbon footprint.
2. Public Awareness and Education: These platforms can act as powerful mediums for raising awareness about the importance of sustainability. The informative content can equip users with the knowledge they need to take actionable steps towards a sustainable lifestyle.

3. **Promotion of Sustainable Business Practices:** Businesses featured on these platforms often undergo a vetting process to assess their sustainability credentials. This promotes responsible business conduct and can have a trickle-down effect on the broader industry.
4. **Global Reach:** Digital platforms have the capacity to reach a global audience. This makes it easier to propagate sustainable practices and products beyond geographical boundaries.
5. **Data Analytics for Continuous Improvement:** Digital platforms can collect significant amounts of data on user behavior, preferences, and interactions. This data can be analyzed to continually refine the services, and even to measure the real-world impact of sustainable choices.
6. **Incentivization:** Through features like loyalty programs and partnerships, these platforms can incentivize both consumers and suppliers to make greener choices, further accelerating the adoption of sustainable practices.



The following digital tools and technologies could empower digital green service providers:

1. **Cloud Computing:** One of the cornerstone technologies, cloud computing offers scalability, efficiency, and agility. It allows for the quick deployment and management of green services, as well as for real-time data analytics.
2. **Artificial Intelligence (AI) and Machine Learning (ML):** AI algorithms can analyze extensive datasets to optimize energy use, reduce waste, and suggest sustainable alternatives. For instance, machine learning can predict energy consumption patterns and provide recommendations for energy savings.
3. **Blockchain:** This technology offers transparent and immutable record-keeping, which can be crucial for tracking the lifecycle of products and verifying the authenticity of eco-friendly products and services.
4. **Internet of Things (IoT):** IoT sensors can monitor real-time environmental conditions, energy consumption, and waste production, providing actionable insights for both consumers and businesses.
5. **Data Analytics:** Sophisticated data analysis tools can scrutinize large sets of data to identify trends, assess impact, and provide targeted solutions for sustainability challenges.

6. **Mobile Applications:** User-friendly mobile apps make it easier for consumers to access and utilize green services, be it for ridesharing, monitoring energy usage, or ordering sustainably sourced goods.
7. **Geospatial Technologies:** Tools like Geographic Information Systems (GIS) can be used for land use planning, monitoring deforestation, and assessing the environmental impact of various human activities.
8. **Virtual Reality (VR) and Augmented Reality (AR):** These can be used for educational purposes to simulate the effects of climate change or to visualize sustainable architectural designs.
9. **Automated Chatbots:** Customer service chatbots can answer queries, suggest eco-friendly products, and even help users calculate their carbon footprint, thereby promoting sustainable behavior.
10. **Cybersecurity Technologies:** These ensure the secure and ethical handling of data, which is particularly important given the sensitive nature of environmental data and user information.

As far as the opportunities are concerned, as awareness about environmental issues spreads, the demand for sustainable products and services is on the rise. Digital green service providers can leverage this trend to attract a dedicated customer base. The rapid evolution of digital technologies such as cloud computing, AI, and IoT offers service providers new tools to enhance efficiency, automate operations, and better serve their customers. The ability to capture and analyze big data provides insights into consumer behavior, enabling providers to adapt their offerings more precisely to market demands. Digital platforms inherently have the capability to transcend geographical boundaries, allowing providers to tap into international markets with relative ease. Governments and international bodies are increasingly pushing for sustainable practices, providing incentives such as tax breaks or grants for businesses contributing to sustainability goals. Partnerships with other businesses, NGOs, and governmental bodies can enhance service offerings and provide avenues for growth and scale. The digital nature of these services allows for disruptive business models, such as the sharing economy, which can facilitate resource optimization and waste reduction.



Every coin has two sides and so is with the digital green service providers. As more players enter the space, competition intensifies, potentially leading to market saturation. This could make differentiation increasingly difficult. The risk of 'greenwashing' or false sustainability claims may breed consumer skepticism, making it harder for genuinely sustainable businesses to gain trust. While technology provides opportunities, it also presents challenges in terms of implementation costs, maintenance, and the necessary expertise required for optimal utilization. While some regulations can aid green service providers, others can be restrictive. Navigating this intricate legal landscape can be daunting. The collection and analysis of large data sets expose providers to the risk of data breaches, which could erode customer trust and result in legal repercussions. The services may not be equally accessible to all demographic groups, particularly those without digital access or the financial means to afford premium sustainable services. Many green technologies are relatively new and may face issues related to reliability, operational efficiency, and lifecycle assessment.

The panel discussion ended with a vocal support for the use of digital technologies for implementing sustainable practices across the MSE sector.

Mr. Suraj Bhan, Chairman, National Pension Scheme Trust, Government of India, delivered the valedictory address. He spoke about MSEs having a digital presence with a green focus. In Gujarat, MSEs are using novel methods for waste management. These methods could be replicated elsewhere. In addition, MSEs can establish a strong digital presence to market their sustainable products or services. By aligning their brand messaging around sustainability, they can attract a niche yet dedicated customer base. Collaborative consumption or sharing models facilitated through digital platforms can help MSEs to optimize resources, thereby reducing both costs and environmental impact. Digitizing the local supply chain allows for real-time tracking and optimization, cutting down waste and energy use, and promoting local sourcing to reduce transportation emissions.



The Framework- ENABLE NET ZERO

ENABLE (Empowering MSEs through Digital Green Solutions) is a comprehensive framework aiming to help Micro and Small Enterprises (MSEs) by providing access to digital tools, networking opportunities, financial resources, digital literacy programs, and advanced technologies, fostering a sustainable ecosystem for their growth and development.

1. Empowering MSEs: MSEs are usually not able to access affordable digital tools, hindering their capacity to streamline operations and embrace sustainability practices. However, our regional consultation highlights success stories like Ms. Ambika, who adeptly steered her business into the digital realm during the COVID-19 pandemic. Her success demonstrates how MSEs can use digital tools and practices to empower themselves. This addresses the challenge of limited access and showcases the transformative potential of digital technologies for MSEs in their quest for a sustainable future.

2. Networking and Collaboration for MSEs: Connecting with local communities, partners, and customers can be challenging for MSEs. Participants in our consultations have acknowledged the power of digital networking through platforms like social media. MSEs can actively engage with communities, share their sustainability initiatives online, and overcome isolation. This fosters collaboration and garners support, enabling growth.

3. Access to Capital for MSEs: Access to financial resources is a significant hurdle for MSEs seeking to invest in digital green solutions. Various stakeholders have highlighted solutions such as crowdfunding platforms and digital payment systems. These mechanisms enable MSEs to raise funds for sustainable projects. Partnerships with sustainability-focused investors and organizations also offer vital financial support.

4. Bridging Skill Gaps for MSEs: Tailored digital literacy programs address resource gaps concerning digital skills and expertise. MSEs' owners have emphasized the importance of these initiatives, as they equip MSEs with the necessary knowledge and capabilities to harness digital tools effectively for sustainability.

5. Leveraging Technology for MSEs: Our consultations have underscored that integrating technology, particularly AI and ML algorithms, can optimize energy use and resource consumption in MSEs. These technologies enable MSEs to achieve resource efficiency and promote sustainability by effectively managing their operations.

6. Ecosystem Development for MSEs: MSEs often operate in isolation, needing access to a supportive sustainability ecosystem. Participants have shared anecdotal evidence regarding the pivotal role of digital green and transformation service providers in bridging this gap. These providers promote green digital choices for consumers, raise sustainability awareness, and encourage responsible business practices, fostering a sustainable ecosystem for MSEs.

The MSEs adopting digital technologies for environmental sustainability could be seen through the lens of **NET ZERO**. Of course, the phrase is well known in the sustainability world as the goal is to ensure that we do not take anything extra from the environment and that our non-renewable inputs are matched through recycling and/or using renewable energy sources.

Our NET ZERO framework looks at two parts of the phenomenon- Tools and Impact. In Gandhian traditions, the means are as necessary as the ends. The three tools relate to digital transformation initiatives, assessing environmental impact, and using digital technologies to mitigate any adverse impact of the MSEs' production process. The NET for us also implies a

NETWORK of Digital Technology service providers, Sustainability experts, and Enablers, including governmental and non-governmental organizations. ZERO implies ZERO impact of our production processes on the environment through a focus on workforce, machines, material, and waste management.

N - Digital Transformation: Promoting adopting and integrating digital technologies within micro and small enterprises to enhance operational efficiency, productivity, and sustainability. This involves leveraging technologies such as cloud computing, data analytics, artificial intelligence, and automation to drive digital transformation in various aspects of business operations, including the following-

Enhanced Market Access: Platforms provide wider market reach and connect food processors with consumers and businesses.

Streamlined Supply Chain: Platforms optimize the supply chain, reducing inefficiencies and improving logistics for food processors.

Data-driven Insights: Platforms leverage data analytics to provide valuable insights to food processors, enabling informed decision-making and product innovation.

Collaborative Ecosystem: Platforms facilitate collaborative ecosystems while facilitating partnerships and knowledge sharing within the food processing industry.

E - Environmental Impact Assessment: Many participants expressed the need for utilizing digital tools and data analytics to assess and quantify the environmental impact of processes within micro and small enterprises. This involves conducting life cycle assessments, carbon footprint calculations, and other environmental impact assessments to identify areas for improvement and develop sustainable strategies. Micro and small enterprises in India can leverage digital technologies to drive environmental impact assessment.

T - Technology-enabled Sustainability Solutions: Finally, we recommend leveraging digital technologies to develop innovative solutions that address environmental sustainability challenges faced by micro and small enterprises. This can include developing mobile applications, online platforms, and software tools specifically designed to support sustainable practices, resource management, and environmental monitoring.

The impact could be seen in four crucial areas: Human Resources, Plant and machinery, Raw material, and waste management.

Z - Zero Carbon Workforce: Promoting sustainable commuting practices, telecommuting, and digital collaboration tools to minimize the carbon footprint associated with the transportation of employees. Digital technologies can facilitate remote work and virtual meetings, reducing the need for travel.

E - Efficient Machine Utilization: Utilizing digital technologies for machine monitoring, predictive maintenance, and optimization of machine usage. This helps ensure machines operate at their peak efficiency, reducing energy consumption and extending their lifespan. Using smart meters for energy usage can also help efficiently use the plant and machinery.

R - Resource-efficient Material Sourcing: Leveraging digital platforms and data analytics to source materials sustainably, considering factors such as carbon footprint, eco-friendliness, and responsible sourcing. This encourages the use of renewable and recycled materials while minimizing waste generation.

O - Optimal Waste Management: Implementing digital waste tracking, sorting, and recycling solutions within micro and small enterprises. This involves using digital platforms to monitor waste generation, optimize waste management processes, and promote recycling and upcycling initiatives.

Personal interviews were conducted by the organizing team. The common themes that emerged from those interviews as far as opportunities are concerned are as follows:

1. Virtual Operations: Leveraging cloud computing and other digital tools to manage virtual operations can help MSEs significantly cut down on utilities and other overheads associated with physical spaces.
2. Crowdsourcing for Sustainability: Utilizing digital platforms to crowdsource sustainable ideas and even funding can empower MSEs to undertake green projects that may otherwise be financially unfeasible.
3. Digital Payment Systems: Implementing cashless, digital payment systems can contribute to paperless operations, reducing the need for printed invoices and thereby contributing to resource conservation.
4. AI-Enabled Energy Efficiency: Even simple AI algorithms can help MSEs manage their energy use more efficiently, by automating heating, cooling, and lighting based on usage data.
5. Online Sustainability Education: MSEs can offer educational content on sustainability through digital channels like social media or newsletters, enhancing customer engagement and loyalty.
6. Transparency through Blockchain: While it may be a significant investment, blockchain can provide much-needed transparency for MSEs in confirming the sustainability credentials of their offerings, thus building consumer trust.
7. Community Engagement: Digital platforms offer a unique space for engaging with local communities around sustainability initiatives, allowing MSEs to serve as community leaders in sustainability.

The following challenges need to be handled:

1. Financial Constraints: MSEs often operate on tight budgets, making the upfront costs of some digital technologies prohibitive.
2. Digital Literacy: Limited digital skills can be a barrier to successfully implementing and managing digital strategies.
3. Regulatory Compliance: Compliance with sustainability regulations and digital data protection laws can be challenging due to the lack of dedicated legal expertise.
4. Market Differentiation: The crowded digital space can make it difficult for MSEs to stand out, even with a strong focus on sustainability.

5. Scalability: While digital tools offer opportunities for growth, scaling sustainably without compromising ethical or environmental standards is a challenge.
6. Gender Inclusivity: Given the socio-economic conditions, it is difficult for women to run successful green businesses, without incentives and subsidies.

The event concluded with a vote of thanks to all the stakeholders.