

DIGITAL GREEN
MSE's Adoption of Digital Technologies for Environmental Sustainability
NATIONAL CONSULTATION
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The National Consultation on “**DIGITAL GREEN - MSE's Adoption of Digital Technologies for Environmental Sustainability**”, was held at the ICFAI Business School, Hyderabad campus on November 3rd, 2023. The day-long consultation saw a series of panels to address the issue:

1. Inaugural Session - Digital Green- Current State and Best Practices
2. Panel Discussion 1- Digital Transformation: A Catalyst for Sustainability in MSMEs
3. Panel Discussion 2 - Policy and Ecosystem Support for Digital Green MSMEs
4. Panel Discussion 3 - Future Trends: Innovations in Digital Green Practices
5. Valedictory Session - Charting the Digital Green Path Forward: Role of Educational and Research Institutions

The inaugural session was kicked off by the Vice Chancellor of ICFAI Foundation for Higher Education, Dr. L.S. Ganesh.



Dr. Ganesh spoke about the importance of sustainability initiatives. He emphasized on habits to reduce the use of technology wherever feasible. "Technology should be used optimally for the greater good. India is a champion in repairs and repairing devices is important". According to him, in the contemporary discourse on sustainability, the mantra of "Reduce, Reuse, Recycle" has gained significant traction, emerging as a cornerstone of environmental stewardship. This triadic approach encapsulates a strategy for managing resources and waste, aiming to curtail environmental degradation and foster a more sustainable interaction with our planet's finite resources.

The reduction of consumption stands as the most impactful of the three practices. By decreasing the amount of waste generated, we not only conserve valuable resources but also mitigate the environmental harm caused by the production, transportation, and disposal of goods. For instance, the energy required to manufacture a single plastic bottle embodies the extraction of oil, refinement into plastic, molding, and distribution, all of which contribute to carbon emissions and ecological disturbance. Curtailing consumption, hence, has a domino effect, reducing the overall environmental footprint. India has had good ancient practices to demonstrate this.

Reusing material is an ancient practice, driven by necessity, which modern societies have somewhat neglected. The virtue of reuse lies in its capacity to extend the lifecycle of products, thereby diminishing the need for new resources and energy to create replacement goods. Reusing items – whether it's repurposing glass jars as food storage or donating clothes – helps in lowering demand for new products and the consequent strain on natural resources.

Recycling serves as the process of converting waste materials into new products, thus preventing the wastage of potentially useful materials, reducing the consumption of fresh raw materials, energy usage, air pollution (from incineration), and water pollution (from landfilling). Recycling is a complex process, involving collection, sorting, cleaning, and processing materials to produce new goods. For example, recycling paper conserves trees and water, and results in less air pollution than making paper from virgin timber.

Referring to the theme of the consultation, he underlined the fact that 99% of the businesses in India fall under the Micro, Small and Medium Enterprises. Therefore, it is important to focus on this sector and try to understand the challenges they face and the solutions they are looking for.

Christoph P. Mohr, Country Director, Friedrich-Ebert-Stiftung (FES) India Office, welcomed the guests and started off by introducing FES which is a non-profit German Foundation committed to the values of democracy and social justice. Peace, justice, and social security are very important principles for FES. It was founded in 1925 and is named after Germany's first democratically elected President, Friedrich Ebert. FES India is committed to building platforms of mutual trust for open debate and exchange of new ideas. Following on from the Vice Chancellor's speech, he said that unlike India, Germany does not have the culture of reuse and recycle and it is time the country started looking at these practices. Germans buy new articles very frequently and if something is broken, it is thrown away. He spoke about the dire straits we find ourselves in due

to climate change. Every step we take plays a vital role in sustainable and green growth. By leveraging technology, we can reduce wastage. We have the necessary knowledge, and the knowledge gaps can be filled to facilitate sustainable development. A big share of wealth in Germany is produced by medium and small companies. They are the real drivers of economic growth in the country. Resource efficiency needs to be improved using technology. Economic growth collides with climate change. The manufacturing processes should be people centric. Given the impact digital technologies have played, like the Unified Payment Interface (UPI), there is no reason why the same technologies or something innovative should not be used for sustainable and equitable growth.



The next speaker, R.D. Chandrashekhar from Indian National Trade Union Congress (INTUC) started by thanking everyone for the opportunity and thanked FES for their contribution in building his career as a leader. He mentioned that people working in the micro and small-scale sector are the unsung heroes of our country. They have been able to provide employability to a lot of people and some of them are entrepreneurs themselves. Most of them do not have access to technology. He exhorted the Indian government to provide training and access to innovative technologies so that they can also benefit. The micro and small enterprises try to provide the best products at a low price. Climate change is affecting such workers the most. Though the government is talking about sustainable development goals at the world level, it has come up with

labor codes which are detrimental to the welfare of people who work in the micro and small enterprises.

In an effort to streamline and modernize labor regulations, the Government of India has consolidated 29 existing labor laws into four broad codes. These are the Code on Wages, the Industrial Relations Code, the Social Security Code, and the Occupational Safety, Health, and Working Conditions Code. The new Industrial Relations Code makes it difficult for workers to strike, thus weakening the bargaining power of labor unions and employees. It also allows companies employing up to 300 workers to lay off staff without government permission, which was previously capped at 100 workers, potentially making workers more vulnerable to job insecurity. Some clauses, such as the fixed-term employment, could lead to a preference for contract labor, thereby reducing job security for the workforce and potentially leading to exploitation. Small and medium-sized enterprises (SMEs) may find the increased formalization and compliance requirements financially burdensome, potentially impacting their economic viability.



The government should promote MSEs by giving them access to new and innovative technology that is affordable as MSEs are the biggest contributors to India's GDP. To have sustainable business practices, MSEs and their employees need to be provided training and financial support/resources.

The next speaker, Vikram Prabhakar, Founder Recykal said that MSEs are the backbone of the Indian economy. They create a lot of employment opportunities both in the organized and unorganized sectors. With the ambitions that India has for growth, it is important that apart from

the big enterprises, micro and small enterprises also get incentivized to make a meaningful contribution.



The problem that Indian MSEs face is that they are not able to scale. In other markets, especially in the western markets, digitizing the processes has enabled MSEs to provide consistent value to the supply chain. They also delink ownership from execution. This helps them in growing or diversifying their business without ownership being a roadblock at every stage. In India, the only process that is digitized is book-keeping. They fail to realize that they also have the same tools available as the big enterprises. Tools are available for digital marketing, analytics, etc. Lack of awareness and willingness to use such tools could be one of the reasons why this is not happening or happening at a small scale. On sustainability, MSEs are mostly in survival mode so it is difficult to expect them to be very conscious about it and invest heavily. If the MSEs are suppliers to big corporations abroad, they don't have a choice but to adopt sustainability practices. These big corporations are mandated through regulations like Business Responsibility and Sustainability Reporting (BRSR) to use and report sustainability practices throughout their supply chain. Suppliers adhering to BRSR norms often see an improved market reputation. This positive image helps them attract more business opportunities, especially from large corporations that are keen on associating with environmentally conscious partners. By adopting sustainability practices, suppliers can ensure long-term viability. These practices often lead to more efficient use of resources and can help in reducing costs in the long run. BRSR covers social and governance angles as well. There are approximately 200 parameters that companies have to follow and report.

Vikram provided an example of IKEA where they require suppliers to provide documentation that no child labor was used anywhere across their supply chains. The digital tools must be created for specific use cases.



The first panel discussion centered around the topic **Digital Transformation: A Catalyst for Sustainability in MSMEs**. This panel was moderated by Prof. Muralidhara. The panelists included Vinod Achanta, Lakshmi Moorthy, Kannada Rao, and Dr. Bharathi Gopal. As per this panel, MSMEs (Micro, Small, and Medium Enterprises) form the backbone of the Indian economy, contributing significantly to employment, manufacturing output, and exports. However, they often face challenges in scalability, efficiency, and sustainability. Digital transformation offers a potential solution, enabling these enterprises to thrive in a rapidly evolving global marketplace.

Vinod Achanta described an app that coordinates the cleaning of public toilets across the state of Telangana. This is the use of digital technology, which is accessible and affordable, costing only 5000 INR per toilet per month. Another technology that uses litmus paper to test urine samples quickly at the source. He also spoke about ONDC (Open Network for Digital Commerce) as a new initiative by the Government of India as an example of good use of technology. While the primary focus of ONDC is to democratize digital commerce and reduce monopolistic tendencies in the market, it can indirectly contribute to sustainability in several ways. By democratizing the e-commerce space, ONDC can empower local businesses and small-scale producers. This can reduce the carbon footprint associated with long-distance transportation of goods, as consumers can access products from local sources more easily. The platform can potentially streamline supply chains by connecting buyers directly with sellers.



More efficient supply chains can lead to reduced waste and energy consumption, contributing to environmental sustainability. ONDC's potential to gather and analyze large amounts of data could help in identifying sustainable consumption and production patterns. Businesses can leverage these insights to make more environmentally friendly decisions. According to Lakshmi Moorthy, the existence of MSEs depends on large corporations who they supply to. Unless these companies, especially MSEs, solve a business problem, they will not survive. The way the problems are solved also evolves and digital technology is one such factor that makes it easier to solve problems. With the advent of digital technologies, customers preferences have changed and MSEs need to adapt. Otherwise, MSEs will become obsolete. There is a problem though. If MSEs adopt technologies just for the sake of adopting without realizing their core principles, they will become exponentially expensive organizations. This will challenge their existence. MSEs need to embrace both old methods and new technologies, digital or otherwise, to succeed. He believed many MSEs are adopting green processes as a response to customer/consumer requirements. Kannada Rao spoke about identifying one's purpose in the context of MSEs. For that purpose, environment, social, and governance issues will come up. In his view, COVID has forced many of us to think about sustainability issues and we, as consumers, look at buying products and services from organizations that follow sustainability principles. Organizations need to become accountable for the carbon emissions. Access to capital is a big issue for MSEs when it comes to sustainability practices.

With over 500 million internet users, India is one of the largest digital consumer markets. Government initiatives like "Digital India" aim to transform the country into a digitally empowered society, ensuring government services are made available to citizens electronically.

Adoption of E-commerce Platforms: MSMEs are increasingly leveraging online platforms to reach a broader customer base. Websites, social media channels, and e-commerce marketplaces have become critical tools for business expansion. With the push towards a cashless economy, MSMEs are integrating digital payment gateways, UPI, and mobile wallets.

MSMEs are adopting cloud services for data storage, customer relationship management, and enterprise resource planning, ensuring efficiency, and reducing costs. Advanced Technologies from IoT (Internet of Things) to AI (Artificial Intelligence), are being explored. MSMEs are also thinking about innovative solutions to optimize operations and enhance customer experiences.

Digital tools streamline operations, reduce waste, and optimize resource utilization. Digital banking and lending platforms have democratized access to finance for MSMEs. Digital platforms break geographical barriers, allowing MSMEs to tap into global markets. Digital training platforms provide MSME employees with the skills needed in a digital economy.

Government Initiatives for Digital MSMEs:

MSME Sampark: A digital platform connecting MSME job seekers and recruiters.

Udyam Registration: An online portal simplifying the registration process for MSMEs.

E-Marketplace: Government's e-commerce portal enabling MSMEs to sell products/services to various government departments and organizations.

The second panel discussed **Policy and Ecosystem Support for Digital Green MSMEs**. This panel was moderated by Dr. Sainath. The panelists included Ashish Agrawal, Dr. Sanjay Fuloria, Rohit Pawar, and Dr. Nishant Mukesh Agrawal.

As per Dr. Sainath, the contribution of MSEs to Indian exports has been decreasing over the years from around 49% in 2021 to around 42%. Although locally the MSEs are doing well, their contribution to the exports needs to be encouraged. The Government of India has launched many policies to encourage MSEs. One of the schemes "SPHOORTI", initiated by the Government of India, stands for "Scheme of Promoting innovation, Rural Industry & Entrepreneurship". It is a comprehensive program designed to bolster micro and small enterprises (MSEs), particularly in the rural and semi-urban areas of India. The scheme aims to encourage innovation among micro and small enterprises. By supporting innovative ideas and business models, the scheme seeks to boost the competitive edge of these businesses. The scheme also focuses on developing entrepreneurship skills among the youth, especially in rural areas. This includes training, mentorship programs, and providing access to resources and networks. While the intent of these schemes is positive, the challenges are in their implementation. Getting the correct data to identify the right MSEs for benefit is a big challenge. Rohit Pawar observed that a lot of MSEs are still using old machines in the manufacturing sector. They are not inclined to buy new machines as they are afraid of job losses. Some advanced MSEs have installed robots resulting in job losses

to the tune of almost 50%. Now, the question is what the redundant workers would do. He is of the opinion that all workers should learn to handle new technologies as it is an imperative. Workers with experience can contribute immensely to the companies if they can be trained on new technology. Skill development for workers is a key focus area now. One example of various challenges was provided by Sanjay. According to him, there is a government scheme through which the government provides money to MSEs to participate in conferences and workshops. In one case, the MSE participant had to wait one year to get reimbursement. This will not be viable for a majority of MSEs.

Ashish spoke about policy making. The objective and the problem that needs to be solved through a policy should be articulated and be made available in a timely manner. The requirement of policies should be assessed frequently. Redundant policies should be discarded. Technology should be used to develop platforms that are open source and usable to everyone who wants to use it. Policies should be socialized so that the awareness levels go up and should be provided in easy-to-understand language. When making policies, feedback from the ground level people who are facing challenges should be sought. Policies should be able to address sector-specific challenges.

Understanding the pivotal role of MSEs in the nation's socio-economic fabric, the Indian government has been proactive in framing policies that not only support the growth of these enterprises but also guide them towards sustainability. The introduction of schemes that provide financial incentives for the adoption of green technologies, subsidies for waste management systems, and tax breaks for sustainable practices are testaments to the government's commitment. Special emphasis has been placed on sectors like textiles, handicrafts, and agro-based industries, where the potential for sustainable innovation is immense.

Policy support is just one side of the coin. A holistic approach to sustainability requires a robust ecosystem that can nurture, guide, and support MSEs in their sustainability journey. Recognizing this, various stakeholders, including financial institutions, non-governmental organizations, and industry bodies, have come forward to play their part. Financial institutions have introduced green financing options tailored for MSEs, providing them with the necessary capital to invest in sustainable infrastructure. On the other hand, NGOs and industry associations have been pivotal in organizing training programs, workshops, and awareness campaigns, ensuring that MSEs are well-equipped with the knowledge and skills required for sustainable operations.



Furthermore, innovation hubs and research institutions have been collaborating to develop affordable and scalable green technologies that are suited for the unique challenges and needs of Indian MSEs. These range from energy-efficient machinery, water conservation techniques, to sustainable raw material sourcing methods. The aim is to ensure that sustainability is not a burdensome cost but an investment that yields long-term benefits.

The synergy between policy initiatives and ecosystem support has already started showing promising results. Across the country, MSEs are gradually shifting towards sustainable practices, realizing not only the environmental benefits but also the economic advantages in terms of cost savings, enhanced brand value, and access to new markets.

In conclusion, the journey of Indian MSEs towards sustainability is an ongoing process, one that is fueled by the combined efforts of the government, industry stakeholders, and the enterprises themselves. While challenges remain, the path forward is clear and promising, with the vision of creating an MSE sector that is not only economically vibrant but also environmentally responsible and socially inclusive.

The third panel discussed **Future trends: Innovations in Digital Green Practices**. This panel was moderated by Dr. Sourabh Bhattacharya. The panelists included Prerna Seth, Dr. Sanjay Fuloria, and Dr. Sudeepta Pradhan. According to Prerna, justice in employment is very important, especially in the Indian context, where workers are without contracts and one illness away from poverty. Justice in employment fits right in with the social issues related to sustainability. As per her experience and research, technology is leading to more inequality. Since the majority of MSEs are not registered, data about them is not available. Construction sector is the second most important as far as employment generation is concerned. It is also the most polluting sector. The working conditions of brick kiln workers are bad. The kind of jump required for such brick kilns to

adopt greener practices is huge. They must become visible and enter the formal sector before they start their journey towards a digitally green future. According to Dr. Sourabh, when organizations focus on the economic side of things, social and governance issues take a back seat. While using technology for efficiency, organizations make the environment less green. Some sectors are at an advanced stage whereas there are others that are lagging. As per Dr. Sudepta, a company called SWEL (Sea Wave Energy Limited) uses magnetic plates on ocean waves to generate energy. Their innovation is known as the "Waveline Magnet", a system designed to harness the power of sea waves. The Waveline Magnet is essentially a floating structure that sits on the surface of the ocean. It is designed to move with the natural motion of the waves. As waves pass under this structure, its various sections move up and down independently. This up-and-down movement is then converted into electrical energy. Inside the Waveline Magnet, there are mechanisms (likely involving magnets and coils, as the name suggests) that convert the mechanical movement caused by the waves into electrical energy. Companies are creating innovative ways to make the whole planet more sustainable, but the challenge is making it affordable and widely available.



The transportation sector is undergoing a green metamorphosis with the advent of electric vehicles (EVs). India's push towards EVs is complemented by digital innovations like smart charging stations, which use AI to optimize charging schedules, reducing grid congestion. Digital platforms also facilitate ridesharing, reducing the carbon footprint and decongesting urban areas.

Urban India generates a staggering amount of waste daily. Start-ups are leveraging digital platforms to connect waste generators with recyclers. These platforms promote segregation at source, ensure efficient collection, and facilitate the recycling of materials, promoting a circular economy.

India's urban landscapes are now dotted with green buildings that prioritize sustainability. Digital tools, such as Building Management Systems (BMS), monitor and control a building's energy consumption, ensuring optimal usage and minimizing environmental impact.

The confluence of digitalization and green practices is shaping India's future. As the country embarks on this exciting journey, it is poised to set benchmarks for the world, showcasing how technological innovations can be harnessed to create a sustainable and prosperous future.

The key takeaways from the DGNC (Digital Green National Consultation) could be explained through the acronym **HUMAN**- Harmonious integration of digital technologies and sustainability practices in the work which Unleashes the full potential of workforce, fosters Mindful work environments, advances innovation, and creates Nurturing ecosystems for a sustainable future.

Harmonious Integration (H): Platforms act as the bridge between digital technologies and sustainability practices, enabling MSEs to seamlessly integrate these two crucial aspects of their operations. This harmonious integration is essential for achieving long-term success, as it ensures that environmental considerations are not sidelined in the pursuit of digital advancement. The Indian government's MSME Sustainable Manufacturing Initiative (SAMARTH) provides financial and technical support to MSEs for adopting cleaner technologies and improving resource efficiency. Tata Power has implemented a comprehensive sustainability strategy that includes using renewable energy sources, reducing waste, and promoting energy conservation among its customers.

Unleashing Potential (U): Platforms empower MSEs to tap into their full potential by providing access to advanced digital tools, sustainability resources, and knowledge-sharing opportunities. This unlocking of potential drives growth, productivity, and competitiveness, enabling MSEs to thrive in a dynamic and ever-evolving market. Reliance Industries, an Indian multinational conglomerate, has established a dedicated Sustainability Innovation Lab to develop and deploy innovative solutions for addressing environmental and social challenges. The Indian government's Startup India program provides a comprehensive ecosystem of support for startups, including access to funding, mentorship, and market opportunities.

Mindful Work Environments (M): Many digital platforms facilitate the creation of mindful work environments, fostering a culture of employee well-being, ecological responsibility, and social equity. This mindful approach attracts and retains top talent, enhances employee engagement, and contributes to a more sustainable future. At the national policy level, the Indian government's National Policy on Skill Development and Entrepreneurship emphasizes the importance of creating a safe and healthy work environment for all employees. Many corporate like Infosys, have implemented a comprehensive sustainability strategy that includes initiatives to reduce its carbon footprint, promote diversity and inclusion, and support local communities.

Advancing Innovation (A): Platforms serve as catalysts for advancing innovation among MSEs by providing access to cutting-edge digital technologies and sustainable practices. This

innovation-driven approach enables MSEs to not only address societal and environmental challenges but also to develop disruptive solutions that contribute to a more sustainable and equitable world. The Indian government's Innovation Fund for MSMEs provides financial support to MSEs for developing and commercializing innovative products and services.

Nurturing Ecosystems (N): Digital platforms extend their impact beyond individual businesses to nurture broader ecosystems. They facilitate collaboration, knowledge sharing, and the development of industry-wide sustainable initiatives. This ecosystem-building approach fosters a collective movement towards sustainability, creating a network of interconnected businesses that can collectively address shared challenges and achieve greater impact. Many panelists spoke about Indian government's MSME Cluster Development Program which provides support to MSE clusters for upgrading their technology, improving their competitiveness, and adopting sustainable practices. Many automobiles manufacturers like Mahindra & Mahindra have established a supplier development program that helps its suppliers adopt sustainable practices and improve their environmental performance.

“HUMANizing the future digital and sustainable workplace isn't just a matter of policy; it's about creating a culture where employees/workers are valued, their well-being is a priority, and their work is meaningful.