

Digital Green
MSEs' Adoption of Digital Technologies for Environmental Sustainability
Regional Consultation at IBS Bangalore
September 8th and 9th, 2023

A Report prepared by Prof. Sanjay Fuloria¹, Prof. Shailendra Singh Bisht²
with inputs from
Prof. [Bharathi S Gopal](#)³ and Prof. Anand Srinivasan⁴

Digital Green Regional Consultation at Bangalore was conducted on September 8th and 9th, 2023. Prof. G.V. Muralidhara, Director, ICFAI Business School, Bangalore started the proceedings with his opening remarks. He emphasized the importance of discussions around sustainability. He quoted the former U.S. President Barack Obama, saying “We are the first generation to feel the effect of climate change and the last generation who can do something about it.” This encapsulates a dual reality—a grim acknowledgement of past failures and a clarion call to action. The above statement captures the accountability that rests on the current generation's shoulders. Being the first to confront the tangible repercussions of climate change—ranging from extreme weather events to loss of biodiversity—indicates a heightened level of awareness and responsibility.



¹ Professor of Operations Management and IT at IBS Hyderabad

² Associate Professor of Marketing at IBS Hyderabad

³ Professor of Marketing at IBS Bangalore

⁴ Professor of Operations and IT at IBS Bangalore

The sentiment that this generation is the last with the opportunity to affect change underscores the time-sensitive nature of the problem. With climate models projecting severe impacts within this century, immediate action becomes imperative. One could argue that the statement unduly places the onus of responsibility on a single generation, which might not be fair. Climate change is the result of decades, if not centuries, of industrialization and unsustainable practices. Thus, it is a shared, trans-generational burden. The claim that "ours is the last generation" to act may underestimate future scientific and technological innovations that could offer new solutions. Whether it's carbon capture technology or more efficient renewable energy systems, future generations may possess tools that are unimaginable today.

There are differences in opinion about how to handle sustainability issues and the use of digital technologies could be one of the ways to move forward. We haven't recovered from the negative consequences of the pandemic and the whole sustainability issue is an additional burden. A shift in mindset is the need of the hour as organizations did during the pandemic with work from home options for employees and taking the entire business online wherever possible. He concluded by saying that the focus on sustainability for Micro and Small Enterprises, that form almost 99% of the businesses in India, using digital technologies can not be over emphasized.

Dr. [Bharathi S Gopal](#) and Prof. Anand Srinivasan from IBS Bangalore had completed the pre-consultation work along with their MBA students. They outlined the process they followed for this exercise. They conducted interviews with around 11 MSEs. Some of the responses are reproduced below:

Vee Plazer (Wholesaler) - Readymade Garments Industry
Gaurav and Harsh: "We don't use single-use plastic. There is no wastage here. The product comes in lots. It is opened as such and sold without removing any packaging or replacing it. Since we are into trading, very little waste is generated here. Whatever packaging comes from the manufacturer, it is passed on to the customers without any change. Even if some waste is there in terms of cartons or anything, it is sold. We don't recycle."
On sustainability: "Some people have initiated sustainable practices but there needs to be more awareness about the environment. At our end there is not much waste generated. Even though we have separate wet and dry waste bins, we are not contributing much to sustainability because of our limited scope. Someone selling groceries or vegetables will use that cheap plastic because they are more focused on sales. They think in monetary terms. They are concerned about saving money. Using plastic is economical for them. The government needs to take action in manufacturing plastic because it comes from the root- The Manufacturers, not the traders using it. The traders will sell whatever is cheap, which the retailer wants, to save on cost."
Change depends on customer demand; "It is a push market. It depends on public demand. We will follow the established route until there is demand for a specific change from our retailers and customers. Whatever our supplier makes or produces is what we will sell. We might give them some ideas and influence a little, but it is not possible to get all our demands met."

Nitin Garments (Wholesaler) - Readymade Garments Industry

Nirmal: “We don’t supply products with single-use plastic. The customer himself deals with it. There is no wastage here. The product that does not get sold is not disposed off. We wait for a period of 6 months and then sell it for a lower price. The plastic covers are dumped in the garbage bags and the ragpicker collects it every few hours.”

On sustainability: “There is no demand for organic cotton. There is a reduced demand for synthetic fabrics and increased demand for pure cotton. The manufacturers use chemical dyes. In places where these chemical dyes are used, there is a huge impact in the neighborhood because they discharge waste into channels. Organic products are expensive to make and can only be seen in high end products. Customers here are price sensitive. They prefer low cost and only some people are ready to pay a lot for organic clothing.”

Change: “People will only think about change if and when it starts affecting them.”

Desi Store (Handloom Garments)

Mymoona: “Charaka is the production unit. The products that get manufactured at Charaka get marketed and sold here at Desi. All the profits generated here go to Charaka. Charaka was started in Heggodu, a small town in Shivamoga district. Apart from getting yarn from the mill, every other process, from weaving to finishing the final product happens in one place. We do not have skilled weavers there. The majority of the weavers are spread across North Karnataka. When I joined Desi, there were about 56 handlooms, which has reduced drastically. Every product sold here is a handloom product from North Karnataka. Ramchandruppa, who was working with KMGDC, is handling the testing of the authenticity of handlooms. If we divert or use powerloom, that will adversely affect us. We shifted to natural dyes in 2003. We decided to go for 100% natural dyes after 2015.”

On Digital Initiatives: “We are very active on Instagram and Facebook. Apart from that, we take pictures and upload the status of a new product requisition. We share information with our customers through WhatsApp groups. We also use UPI payments like GooglePay and PhonePe for transactions. Earlier we were using the pen and paper method for billing. After 2008, we shifted to the computerized billing method. We also adopted bar coding of the products to generate the bills.”

On Sustainability and Change: “Our choice of natural dyes was a deliberately considered decision. Many customers questioned us about it. Their point was that they were using a lot of other clothes with chemical dyes that weren’t affecting them so why did we have to use natural dyes. The most important fact is that it doesn’t affect customers directly. It affects those who handle the chemicals to apply color to the clothes. It is harmful for the workers and adversely affects the manufacturing site. We don’t have any waste. Every waste product is put to use and converted into a different product. We prepare quilts or patchwork bags. Not even a single piece of cloth goes into the trash.”

Ecentric (A Hemp based clothing brand)

“The name of the brand is E Centric, which means environment centric. The idea was to create a sustainable fashion brand. While doing research I came across this hemp fabric and I was very impressed by the properties of hemp fabric. So, I thought, let’s start with hemp fabric. There were very limited players in the market; hardly one or two. We are the biggest in the country. Currently, we are doing only hemp based clothing but we are exploring some other sustainable fabrics like bamboo.”

On Digital Initiatives: “We are an online brand. So, we have a website and our inventory management is also digital. I will not say the complete value chain or supply chain is digital but there are areas in our supply chain/ value chain where we use digital technologies. As we are digital natives, we understand digital technologies a lot. Our marketing is also done digitally. We are even using ChatGPT for digital marketing.”

On Sustainability and Change: “Textile industry is the second most polluting industry in the world after the oil and gas sector. Almost 10% of the global water consumption is done by the textile industry. There are so many chemicals used for dyeing. A lot of toxic material is produced by the textile industry. Companies like H & M and Zara are targeting to use 100% sustainable fabrics in the upcoming decade. When you see bigger brands doing it, everyone will do it with time. MSEs have to see what type of digital tools they can use and when is it better for them to incorporate digital tools to manage their operations. If you want to grow fast, you may have to make some compromises but that is not the core of my company. My company’s core is sustainability. I could have made a brand using polyester fabric but I am making a hemp based fabric because sustainability is central to my company. ”

Topex Enterprises (Clothes Manufacturer)

“We primarily engage in manufacturing readymade garments. The operations in the organization include collecting the designs of all leading and popular clothes, procuring raw materials and accessories, designing the sample, cutting based on size and design, sewing the dress, washing if required, fitting with accessories (printing patch, net, extra patches) based on the requirement of a piece, and then finally ironing and packing with the barcode, tags, sample pictures, and putting it into packages before it is ready to be dispatched.”

On Digital Initiatives: “Our business has grown effectively through WhatsApp. Whatever photos we take are put on WhatsApp groups or shared individually with traders and then the traders pass it onto retailers. The retailers give their feedback and it is through this chain that we get bulk orders.”

On Sustainability and Change: “Lack of awareness is one major factor. After COVID-19, people have become more conscious about their food habits; what they eat is healthy or not. For some, it is organic or not. They are more conscious about what they eat than they are about what they wear. I understand that changes like reducing the use of chemicals and recycling will not make

a big difference overnight, but I believe these are steps in the right direction.”



The next session was a fishbowl conversation with the MSME participants and IBS Bangalore MBA students. The two main components of these conversations were:

- a) Experiences from the leadership/entrepreneurs in MSEs.
- b) Solutions from digital transformation and climate change imperative.

This session was moderated by Prof. [Shailendra Singh Bisht](#) and Prof. Sanjay Fuloria from IBS Hyderabad. The discussions ranged from cost and complexity of the digital initiatives to mindset of entrepreneurs to localized strategies that could work. The twin imperatives of digital transformation and sustainability are difficult to grapple with for Micro and Small Enterprises. Navigating this journey successfully often determines the long-term viability and competitiveness of these enterprises. Digital transformation serves as a lever for growth, but its application is seldom straightforward, especially in the context of micro and small enterprises. Entrepreneurs from urban regions often exhibit greater enthusiasm for digital adoption, citing the convenience and efficiency of digital tools. In contrast, rural entrepreneurs commonly report apprehension, driven by gaps in digital literacy and infrastructure. While some entrepreneurs find the initial

investment in digital technology to be well worth the subsequent operational efficiencies, others consider it a financial burden too heavy to bear.

Similarly, as the global clarion call for sustainability grows louder, entrepreneurs in the MSE sector can neither ignore it nor proceed without reservations. Entrepreneurs from traditional industries, like handicrafts, sometimes perceive sustainability initiatives as disruptive to their established workflows. Many report that initial investments in sustainable practices, like waste management or energy-efficient machinery, lead to cost reductions and enhanced brand value over time.



Entrepreneurs who have adopted digital tools to track and enhance sustainability metrics find the intersection of the two not just feasible but advantageous. For example, using data analytics to optimize energy consumption. On the downside, the simultaneous pursuit of these goals can strain limited resources. However, some entrepreneurs solve this through collaborative partnerships or government grants aimed at fostering both digital and sustainable growth. Entrepreneurs who adopted digital and sustainable practices early on typically find the transition smoother and the benefits more immediate. Customized solutions that consider local conditions, both socio-cultural and environmental, tend to yield better results. Balancing the fiscal aspects of transformation and sustainability is crucial. Entrepreneurs who planned well in advance, either through internal budgeting or external financing, report a more successful transition.

The journey towards digital transformation and sustainability in India's Micro and Small Industries sector is strewn with both hurdles and triumphs. Yet, the collective experience of entrepreneurs

reveals an underlying optimism. Challenges, while daunting, are not insurmountable, and the confluence of digital and green practices offers a potent recipe for long-term success and resilience.

This was followed by two panel discussions; One Planet, Many Perspectives: Marching to many Drumbeats and Going Green - The new Success Mantra in a changing World Order or an Inevitable Course.



The first panel consisted of Mr. Mitesh Khandelwal, National Vice President (Chapters and Membership Development - MSME and Startups Forum - Bharath, Ms. Balvinder Kaur, Founder & Director, IMAadhyam, Aishwarya representing Desi Trust and Mr. Siddharaju, Secretary, Sabala Foundation, Ramanagara. This panel was moderated by Prof. Anand Srinivasan, Professor, IBS Bangalore. They discussed the importance of the focus on sustainability initiatives using digital technologies for the Indian MSEs. As per the panel, India, a land of burgeoning opportunities and immense diversity, is home to a vibrant ecosystem of micro and small enterprises (MSEs). These enterprises form the backbone of the Indian economy, contributing significantly to employment and GDP. In an era marked by rapid digital transformation and mounting concerns over sustainability, MSEs in India face unique challenges and opportunities.

There has to be a synchronized approach that acknowledges the varying drumbeats that guide different enterprises.

The Indian MSE sector is highly fragmented, representing an assortment of industries from handicrafts to high-tech. Often rooted in local communities, these enterprises must balance traditional practices with the imperatives of modernization and scalability. The diversity in scale, geography, and business models adds a layer of complexity when considering a uniform approach to digital transformation and sustainability. In fact, a uniform approach is simply impossible. For Indian MSEs, digital transformation is no longer optional; it is a strategic imperative. From supply chain optimization to customer engagement, digital tools offer an opportunity for these enterprises to leapfrog traditional barriers. However, the adoption rate of digital technologies varies widely.

Automation and data analytics can drive efficiency, allowing MSEs to compete effectively with larger enterprises. E-commerce platforms and digital marketing can expand the customer base, transcending geographical limitations. On the other hand the initial investment required for digital transformation may be prohibitive for some MSEs. A lack of digital literacy can impede the successful implementation of digital tools.

India's unique socio-economic landscape makes sustainability a complex but crucial task. The rising pressure from both governmental regulations and consumer demand for sustainable practices requires MSEs to adapt. Sustainable practices often lead to long-term cost savings through efficient use of resources. In a market increasingly driven by conscious consumerism, sustainability can be a significant differentiator. Sustainable technologies often require a significant initial investment which could be a big impediment to adoption. The upfront investment needs to be justified by return on investment. Traditional businesses may be resistant to change, viewing sustainability as incompatible with established practices.

To march to the varying drumbeats of different enterprises, a flexible, adaptive approach is needed. Digital transformation and sustainability are not mutually exclusive but are, in fact, complementary. Collaborations can offer subsidized digital solutions and training programs, thus bridging the resource gap. Understanding the local context is key. Tailoring sustainability initiatives to local needs can yield more effective outcomes.

The theme "One Planet, Many Perspectives: Marching to Many Drum Beats" resonates strongly with the multi-dimensional challenges and opportunities that Indian MSEs face in the realms of digital transformation and sustainability. As India progresses, these enterprises will play a pivotal role in shaping a future that is both digitally advanced and sustainable. A nuanced, multi-pronged approach that respects the diverse perspectives of this vital sector is not just preferable but essential.



The second panel comprised of Varsha Pillai, Associate Director, Communications, Dream A Dream, Sreenidhi Vasanthamurali, Research Analyst, Grand View Research, Kasturi Pathak, Student Intern, Enviu, Anitha Shankar, Founder, Astu Eco, Pratheek Abraham, Venture Builder, Enviu, and Sonal Choudhary, Design Manager at Ecentric. This panel discussion was moderated by Professor Bharathi S. Gopal from IBS Bangalore. The panel discussed whether adopting a "green" strategy is an innovative formula for success or an unavoidable course mandated by the emerging global norms. As the world grapples with unprecedented challenges, micro and small enterprises in India find themselves at an intersection of technological evolution and environmental consciousness. The need for both digital transformation and sustainability is pressing. Micro and small enterprises constitute the economic bedrock of India, contributing significantly to the GDP and employment. A sector characterized by immense diversity, MSEs range from rural artisans to tech startups, often acting as hubs of innovation and tradition alike. The digital age offers MSEs powerful tools to overcome operational constraints, expand market reach, and improve efficiency. Digital tools provide access to larger markets and a more streamlined operation. In an increasingly volatile global economy, digital readiness acts as a bulwark against disruptions. As the world pivots towards sustainability, MSEs in India cannot afford to be left behind. The shift towards green practices is motivated both by regulatory pressures and a change in consumer sentiment. Green practices enhance brand reputation and customer loyalty. In the long term, sustainable practices often result in cost savings through efficient resource utilization. Sustainable technologies often entail high upfront costs. The transition to sustainable practices

may require a complete overhaul of existing operations, a daunting task for small enterprises. In a marketplace where differentiation is key, a strong commitment to sustainable practices can serve as a unique selling proposition. With mounting global pressures and regulatory frameworks leaning towards sustainability, adoption of green practices is increasingly non-negotiable.



Building local partnerships can help pool resources for shared digital and sustainable infrastructures. Harnessing digital tools to improve sustainable practices can create a synergy where both objectives are met more efficiently. So, as per the panel the question of whether "Going Green" is a new success mantra or an inevitable course is, in essence, a false dichotomy. In today's rapidly evolving landscape, it serves as both. The future success of India's MSEs will likely hinge on their ability to successfully integrate digital transformation with sustainable practices, thereby aligning themselves with both market demands and planetary needs.

The Bangalore Regional Consultation ended with thanking all the participants for their valuable time and insights. Next, we move on to the National Consultation to be held at Hyderabad on November 3rd, 2023.