

# Towards Creating a Sustainable Design Ecosystem for MSMEs

## A Design Clinic Approach

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### *Abstract*

Generating new employment opportunities by utilising the existing skills and local resources to improve the standard of people's living will be one of the important aspects of sustainability in the Indian context. The micro, small and medium enterprises (MSME) sector in India employs over 60 million people and contributes to nearly 40% in terms of total industrial output of the country. Spread over the country, these industries provide employment opportunities locally, thus reducing migration. Serving the local needs, these industries are also the source of indigenous innovations. Thus, reviving these MSMEs would be an important step towards promoting sustainable growth and developing the country's economy. Design can play critical role in this process by improving their market competitiveness.

The Design Clinic Approach, a unique and ambitious design intervention scheme for MSMEs, financially supported by the Government of India, combines design awareness programmes and project based design assistance. Through systematic design intervention and support, this approach is expected to create a sustainable design eco system for the Indian MSME sector.

This paper discusses the issues related to the Indian MSMEs, the importance of customised design intervention efforts and the relevance of the design clinic approach in this context.

**Keywords:** MSMEs, Design, Indian Context, Design Clinics, Sustainability

### INTRODUCTION

The role of micro, small and medium enterprises (MSMEs) in the economic and social development of India is well established. World over, the MSMEs have been recognised as engines of economic growth.[1] They play a significant role in the design, development, and manufacturing of most new products. The MSME sector is the backbone of India's economy because it contributes significantly to the Gross Domestic Product (GDP) of the country. MSMEs are present as a part of the value chain in almost all distinguished industries such as the automotive industry, electronic goods, garments and textile industry, leather industry and several others. These MSMEs produce a diverse range of products—right from the simplest to the most complex ones. This sector contributes 8% of the country's GDP, 45% of the manufactured output, 40% of its exports. It manufactures over 6000 products.[2]

MSMEs generate employment opportunities at the local and regional level and thereby help tackle the problem of regional disparities. A major section of India's over one billion population comprises the rural and middle income segments.

Over 70% of them live in more than 6,38,000 villages spread across 28 states and 7 Union territories of India. [3] Indian society is thus largely labor intensive, and it is going to remain so for a long time to come. The MSMEs provide employment to about 60 million persons through 26 million enterprises.[2] It is the single largest contributor in terms of employment generation in the manufacturing sector and the second largest source of employment in India, after agriculture. The labor to capital ratio in MSMEs and the overall growth in the MSME sector is higher than the large industries.[2] By their very nature, these industries are low on investments, low on mechanisation but are labor intensive. Thus, these industries generate employment opportunities for the rural population as it mainly utilises the locally available resources and skills.

The opening up of the Indian economy, and the resultant economic development has led to rapid industrialisation and urbanisation in the Indian society. The speedy proliferation of capital intensive, automatised and centralised industries has resulted in reduced employment opportunities and induced mass migration of the labor class from rural areas to urban ones. A migration of this kind has distanced people from their traditions and roots. It has also resulted in overtly saturated cities. Lopsided development of an area/region is another outcome of this migration. On the contrary, the MSME units are spread across the country and employ a majority of the population. It is very well understood through experience that the growth of MSME sectors in the region affects the local economics in a significant way. Majority of people working in MSME units are residents from the same region and follow the same local practices. This makes the effect of training and growth percolate easily to every participant of the activity. Also with the opening up of markets at a global level, the work environment, consciousness about the quality, education, health issues and many other regional and political activities have got suitably linked with the development of MSMEs in the region.

In India, thousands of families get occupied in one product segment for their survival. Over 50,000 people, majority of them women are involved in agarbatti rolling industries in Baruipur, West Bengal.[4] And over 60,000 people are engaged directly and indirectly with the scissors manufacturing industries at Meerut. The Meerut Scissors industry is over 360 years old.[5] The Indian footwear manufacturing industries engage around 1.10 million people, with over 2000 artisans involved in ladies footwear industries in Lucknow itself.[6] Be it handicrafts, traditional products or modern products, they are all made and sold through this sector.

These MSMEs are much closer to users in terms of understanding their needs and aspirations. Being smaller in size, they are quick in adapting to new changes and providing customised solutions and services. Fierce competition among more than 3.61 million MSMEs and auxiliary units in India [7] helps in bringing about constant refinement and upgradation of the products. These industries are spread all over the country and mainly operate on a regional basis. The geographic distribution of the MSMEs is also more even. MSMEs thereby help bring equality in the society as the income generated will get distributed throughout the working class. Thus, MSMEs are important for the national objectives of attaining sustainable, equitable and inclusive growth.

#### GOVERNMENT INITIATIVES TO ENCOURAGE THE GROWTH OF MSMEs IN THE COUNTRY

In the Indian scenario, a job/ proper employment is associated with the social status of a person. Therefore, generating new entrepreneurial and employment opportunities along with improving people's standard of living, are some of the major issues that come within the ambit of sustainable economic and social development of the country. [8] This has to be done by utilising the existing skills and strengths of the people; while, at the same time taking steps to preserve the values of traditional society. What will be more relevant in the Indian context is what Gandhi said, "Production by masses and for masses, rather than mass production", [9] coupled with a global outlook in terms of the quality of production and performance. Opportunities for employment and more importantly for self-employment would empower every individual by instilling confidence, self-respect and entrepreneurial spirit in him/her. Empowerment through employment and skill development are crucial for the sustainable growth of people. The MSMEs in India provide one such opportunity at a grass root level and at an affordable price.

Over 60% of India's population is today, in the working age group. And over 220 million people are estimated to join the work force in the next decade. A major section of the Indian population, by the year 2020, would thus be in the working-age group, thereby forming one of the largest highly qualified workforces, looking for suitable job/employment opportunities.[10] The MSME sector, with its multiplier effect on creation of jobs, has to play significant role to create gainful employment for majority of this population.

Realizing the significance of this sector in overall growth and progress of the country, the government has taken several initiatives over the years towards strengthening this vital sector. The MSME development organization was set up in 1954 as an apex body for sustained and organized growth of MSMEs in the country.[11] In the year 1991 the government announced a separate policy for the small scale sector that focuses on further promotion of the sector.[12] The MSME development Act 2006 came in effect from 2nd October 2006.[11] With the objective to ensure healthy growth of this sector and to increase its competitive edge, the Government of India announced the National Manufacturing Competitiveness Programme (NMCP) in the year 2005.[13] Through the amendment of the Government of India (Allocation of Business) Rules, 1961,

through Presidential notification dated 9th may 2007, Ministry of Agro and Rural Industries and the Ministry of Small Scale Industries were merged into the single ministry - Ministry of Micro, Small and Medium Enterprises, MSMEs.[14] And in the year 2011, Government of India announced National Manufacturing Policy, with the objective to enhance the share of manufacturing in GDP to 25% and creating 100 million jobs within the next decade.[10]

In the past, this major sector existed in a relatively sheltered environment, with special government incentives, support programmes and levels of protections. However, in the post-reform era, starting from 1991, the situation especially for the manufacturing sector has undergone a dramatic change. As India integrates with the world economy, its industries have to adjust to this new situation. This critical sector now needs to continuously enhance its competitiveness to benchmark against the best in the world. Liberalisation and globalisation of its economy, while offers tremendous challenge of survival for its industries, also offers opportunities for its growth and expansion.

Worldwide, it is manufacturing that has driven growth.[13] While the share in many of the comparable economies in Asia is now much higher, at 25 to 34%, the share of manufacturing in India's GDP has stagnated at 15 - 16% since 1980.[15] In order to revive the MSMEs and with a view to accelerating the growth of the manufacturing sector in the country, the NMC programme proposes to create an enabling environment suitable for the sector to strengthen their operations and sharpen their competitiveness, to thereby flourish in India.

National Manufacturing Competitiveness Programme (NMCP), conceptualised by the National Manufacturing Competitiveness Council, NMCC, is the nodal programme of the Government of India, to be implemented through Public Private Partnership mode with close physical and financial participation of the MSME sector. There are ten components under the NMCP targeted at enhancing the entire value chain of the MSME sector. It includes programmes like establishment of new Tool Rooms, benchmarking of the global competitors, enhancing of product and process quality, cost reduction through lean manufacturing techniques, etc.[16] Design Clinic Scheme is one of these ten components of the NMC programme.

#### NEED FOR DESIGN INTERVENTIONS IN MSMEs

The manufacturing competitiveness of MSMEs is facing a major challenge of change. This is the change from traditional methodology to an innovative product development process and the ability to remain in the business with competitive advantage.

The change is also precipitated by the customer centric approach which is necessary today to win markets. Therefore, the challenge is to understand the customer's needs and aspirations, create value for money, and develop strategies for value addition. The domestic market is no more an insulated zone in a controlled economy. The competitive pressures of a free market economy are catching up in India. With the opening up of the economy, the MSMEs have to catch up with global standards of excellence to remain competitive and

profitable. Therefore, MSMEs have to adapt to new standards in technology, quality, and pricing to be able to survive in the market place. MSMEs face several barriers in their attempts to grow. The most critical among these are market-related barriers. The future of the MSMEs will depend on overcoming these barriers and challenges of the liberalised world by enhancing their competitiveness in an increasingly global economy.

The MSMEs need to be vitalized for competitiveness and sustainable growth in a globalized environment. Due to their small size and investment capacity, these industries need to be highly agile to adapt to the latest approaches in design and development in order to maintain their competitive advantage in an increasingly harsh international markets of today. For the MSMEs, innovation is the key aspect that will help them compete and sustain in the market. These MSMEs have a potential for innovation and new technological developments. However, due to their limited resource base, they may not be able to afford a full-fledged R&D and design department. These MSMEs need to rely upon outside support to assist them in identifying and then deploying these new approaches.

Design is recognized as an innovative discipline that can help MSMEs to survive and sustain in these increasingly complicated and saturated markets. Wider application of design by the MSMEs would help increase the value and competitiveness of their products and services. Consequently, the idea of providing such support via some form of central design support agency or organization has taken root in a number of countries.

The approach of design is strategic due to its futuristic, contextual, and purposeful nature. Creativity and innovation helps the process, along with developing context driven breakthrough outcomes that ensure the holistic solution with positive impact. The design thinking helps MSMEs through various stages involving activities at grass root level. Opportunity identification within the capacity of MSMEs units, contextual prototypes and manufacturing capacity development could be understood very well with the help of design process. Also design helps improve product functionality with in-depth analysis, product aesthetics, communication and branding for better positioning and to the possibility of reaching maximum users and markets. Design as a general discipline helps make product simpler, smarter and sustainable in manufacturing, packaging and distribution through its unique and futuristic solutions.

Design process evokes the creative thought process, which would help MSMEs cross the limitations and boundaries of existing product and process lineup. As creative initiatives, MSMEs could work on areas where product quality improvement, process innovation, service innovation and communication related issues could be taken up to generate out of the box solutions. A well organized design approach would also lead the way for identifying opportunity areas within the reach of MSMEs for creation of value for its customers and clients.

Established as an autonomous multidisciplinary institute in the year 1961, the first design institute of India, National Institute of Design (NID) offers educational programmes, both at the undergraduate and postgraduate level and across 17 different disciplines. Business Week USA has listed NID among one of the top 25 European and Asian programmes in the world.[17] Besides education, the Institute is actively involved in design research, training and design awareness through its consultancy wing. NID's consultancy wing helps the Institute and its faculty members maintain closer and regular contacts with various industries and social sectors. Over the last five decades the Institute and its alumni have worked extensively with the country's variegated industrial and social sectors, primarily the country's large MSMEs, craft sectors and also at the grassroots level, and with government and non-government organisations.

Due to this, the Institute has gained valuable experience to solve typical problems that arise in these MSMEs, the crafts sectors and at the grassroots levels. Design here means, developing the product/solution together with the client, who may be the self-made entrepreneur/craftsperson, with the workers at the shop floor, besides the vendors, and users. Designers' wide exposure to the way the industry functions, their experience in the field, and their ability to take a holistic view of things make it possible for them to act as catalysts who can introduce a new vision and change into the industry. A small saving either in terms of materials, reduction or elimination of a process, reduction in the assembly and/or production time of a worker, reduction of inventory, small improvement in packaging that results in lower breakage and wastage or the ability to transport more products, can provide a vital breakthrough for the success of the industry. The Designers' problem solving ability, and their ability to effectively communicate at various levels help convert constraints into unique opportunities.

These experiences have led to unique design intervention methodologies that are most appropriate to these sectors. These design methodologies defer from the ones prevalent and practiced elsewhere, particularly in the western world, wherein more emphasis is laid upon economic issues and profitability of the industry. These design intervention methodologies, center around the primary objective of improving the quality of life of all the stake holders involved.

A majority of the industrial units in India operate on a small scale and they employ people from different backgrounds. Therefore, before embarking upon any design intervention, it becomes important to gain a holistic understanding of the context, the need, strengths and weaknesses in terms of resources and levels of skills, training and experience available, socio-cultural issues involved and market demands. A detailed Design Assessment Survey or Feasibility Study is carried out to develop a comprehensive road map and future direction for various interventions in terms of infrastructure, skill and resource up-gradation and appropriate training schemes. Such measures also help to determine the scope and direction for design interventions. Skill up-gradation and training programmes and design awareness seminars help sensitise the

participants and the industries to newer design requirements, besides informing them about contemporary market demands. Design clinics based mainly on a participatory approach, help MSMEs and craft industries arrive at practical and implementable solutions to improve their existing products and also guide in developing new designs. Besides these, the design intervention projects provide enough opportunities for the designers to remain involved for a longer duration and encourage these industries to carry out extensive explorations of new materials and techniques, new designs, new markets and innovative applications. Though it still has a long way to go, design interventions have the potential to improve the quality of life of the people engaged in a particular industry. Such interventions also have a strong impact on the sustainable development of the Indian economy.

NID has successfully tested the Design Clinic Model with various MSME industries. Design clinic workshops were arranged for the textile machinery manufacturing sector, for the furniture manufacturing sector, for the ceramics industries among several others. These workshops were supported by the Department of Scientific and Industrial Research, Ministry of Science and Technology, Government of India. The feasibility surveys were carried out for various industry and craft clusters in the country. With nearly five decades of experience in similar models of design interventions and its various activities like Outreach Programmes, Industry Programmes and Design Consultancy Services, NID helped develop and refine this unique and ambitious design intervention model for the country's large MSME sector.

NID has drawn inspiration from models of Designing Demand by the Design Council, UK and also the Design for District model practiced in Italy, where design schools have adopted districts for such type of specific design interventions. The toy industry in China is a source of inspiration where designers could add value addition to the clusters and make them face the competition.

#### DESIGN CLINICS: A DESIGN INTERVENTION APPROACH FOR MSMEs IN INDIA

Design Clinic is a tested strategic model of design intervention, where a solution to an existing design problem is diagnosed and remedial steps suggested by a multidisciplinary team of design experts. In this model, the value additions to an idea or a concept are imparted through interaction and at a lesser cost to a specific industry/sector. It applies to sectors such as Micro and Small Scale Manufacturing, where a conventional model of design consultancy and training is not often affordable.[18] This model brings design exposure to the doorstep of industry clusters and helps in design improvement, evaluation and analysis and adopting long term consultancy/design related interventions.

Thus, a design clinic can be defined as a mechanism where design solutions are made available to the design problems of products/services, and for concepts and ideas that are brought in for design analysis and scrutiny. Here, flexible and strategic solutions are made available to provide value addition through synergies and matured options as solution to design problems. Replicating this model on a national scale will bring in

appropriate solutions to the MSME sector, throughout the nation.

The main objective of the design clinic is to bring the MSME sector and design expertise on a common platform and to provide expert advice and solutions on real time design problems, resulting in continuous improvement and value addition for existing products.[18] It also aims at value added cost effective solutions. These design clinics at various states and clusters of the country is expected to usher in a continuous competitive advantage to the MSMEs.

With the focus on building the design capability of MSMEs, the scheme enables these MSMEs to improve their business performance as well as compete in the global market. It will help enhance industry understanding and application of design and innovation, and integrate design into the mainstream business and industrial processes of MSMEs. Through the process of constant and continuous design intervention, design learning will be established in MSMEs. The scheme will help increase competitiveness of MSME products and their services. The goal is to help MSMEs move up the value chain by switching the production mode from original equipment manufacturing to original design manufacturing, ultimately leading to original brand manufacturing. The scheme will thereby help create a sustainable design ecosystem for the MSME sector through continuous learning and skill development.

The design clinic scheme helps MSMEs to avail independent advice on all aspects of design. It will help MSMEs realize and achieve their design-related objectives. Practical support is provided to MSMEs via one-to-one advice, seminars, and workshops. This specialist advice is provided by experienced designers for new product development as well as by enhancing existing product portfolio.

#### IMPLEMENTATION OF THE SCHEME

The office of the Development Commissioner (MSME), Ministry of Micro, Small and Medium Enterprises, Government of India launched this unique and ambitious design intervention scheme for the country's large MSME sector on 17th February, 2010. The National Institute of Design (NID), Ahmedabad appointed as its nodal agency responsible for delivering the scheme, is coordinating the implementation, planning, monitoring and validation of the Design Clinic Scheme across the country as per the approved guidelines of the DC (MSME). The total budget allotted during the 11th five year plan (year 2007 to 2012) for the implementation of the scheme is INR (Indian Rs.) 735.8 million, out of which INR 490.8 million will be Government of India assistance and the balance amount will be contributed by the beneficiary MSMEs.[19] The scheme targets to reach out to about 200 MSME clusters, through organization of 200 Design Awareness Seminars, 200 Design Awareness Programmes (Design Clinic Workshops) and 400 Design Projects including 100 student design projects (final year thesis projects). The scheme provides a great opportunity to the Indian design community that comprises design consulting firms, independent designers, various design institutes of the country, and design students to actively assist the country's large

MSME sector to move up the value chain by increasing the value and competitiveness of their products and services.

Design Awareness Seminars form the first stage of the scheme, where the participants are exposed to creative problem solving methods and are sensitized to design and quality aspects. This stage helps the participant understand the user-oriented and functional aspects of the product so that they could come up with solutions. The above process involves discussion, presentation and brainstorming. As part of the second stage of the scheme, the Design Awareness Programme (design workshop), a team of skilled designers undertakes a feasibility study to understand the design issues of the selected MSME cluster. This helps in identifying appropriate design intervention methods. Through clinical approach, designers provide solutions to the problems with one to one discussion with the client/participants and enable them to innovatively come up with ideas and discuss its implications. At the third stage of the scheme detailed design intervention projects are undertaken by the designers.

As part of the scheme, a Design Clinic Centre and five regional centers have been set up to reach out to all parts of the country. A dedicated website [www.designclinicsmsme.org](http://www.designclinicsmsme.org) is developed to constantly interact with all the stakeholders of the scheme that is the MSME units, MSME associations and the design fraternity. Detailed design guidelines, formats and templates for each of the three components of the scheme—one of the crucial aspects of the entire scheme have been developed for its effective and efficient implementation.

200 Design Awareness Seminars have been organised during the last three years of the scheme implementation, covering 23 different MSME industry sectors of the country. 8751 participants from 7124 MSME units participated in these seminars and attended 411 design-based presentations. These seminars were organized in 123 cities/towns/villages from 25 states of the country. Over and above these, 1380 MSME members participated in 18 orientation programmes organized in various cities/state capitals of the country. Through the organization of Design Awareness Programmes (workshops), 114 designers interacted with 1844 MSME units at their locations to identify different opportunities from their individual units and provided remedial solutions, wherever possible. These interactions at individual level, helped better explain and convince the industry members the benefits of design. Over 90 professional design projects and over 50 student design projects for individual and group/ cluster of MSME units have been financially supported till now through the scheme. Over 1000 design consultants/ design firms/ students designers/ design institutes, 190 MSME associations and over 900 MSME units have registered with the scheme. (data as on March 2013)

#### CONCLUSION

Micro, Small and Medium enterprises, MSMEs, are one of the major contributors to the overall economic growth of the Indian economy. The MSME sector is amongst the largest contributor in terms of employment generation in the manufacturing sector in the country. While generating employment opportunities at the local and regional level, MSMEs also help tackle the problems of regional disparities.

In the context of India, the growth of the MSME sector is thus vital for its sustainable and equitable social and economic development.

However, these MSMEs need to be vitalised for competitiveness and sustainable growth in today's globalised environment. Design can help MSMEs increase the value and competitiveness of their products and services. However, due to their limited resources these industries may not be able to afford full-fledged R&D and/or design interventions.

Design Clinic Scheme is one such unique and ambitious design intervention scheme developed for the country's large micro, small and medium enterprises sector, where the conventional model of design consultancy and training is not often affordable. This model helps to bring design solutions directly to industrial clusters, thus facilitating design improvement, evaluation, analysis, and opportunities for consultancy and design intervention. The value addition and product up gradation thus created through such design intervention will help MSMEs compete and survive in today's global markets. Such design interventions will also help design and create products as per local needs and aspirations.

Over the last three years, the scheme has succeeded in creating the much-needed platform for continuous interaction amongst the MSMEs and the design community of the country, and increased industry academia linkages. It has helped create awareness of design among more than 10,000 MSMEs in the country. The scheme has helped bring the designers to the doorsteps of the MSMEs to interact, explore the benefits of design and through the process improve its products and processes. These have certainly created the much-needed positive and catalyzing effects, for the MSMEs to move up the value chain. Scheme's different components, its web based platform, e-news letter etc., have initiated the process for continuous interactions and learning to build design capabilities among the MSMEs. This process, thus initiated through the design clinic schemes, is sure to create a sustainable design ecosystem for the country's large MSME sector. This will eventually help increase employment opportunities leading to sustainable economic growth of the sector.

Looking at the success achieved so far, the Government of India has approved the continuation of the scheme in its 12th five year plan (year 2012 - 2017) with increased budget allocation and expansion plan.

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