

ICT Diffusion: A Value-Up-Chain for MSMEs in India

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Introduction

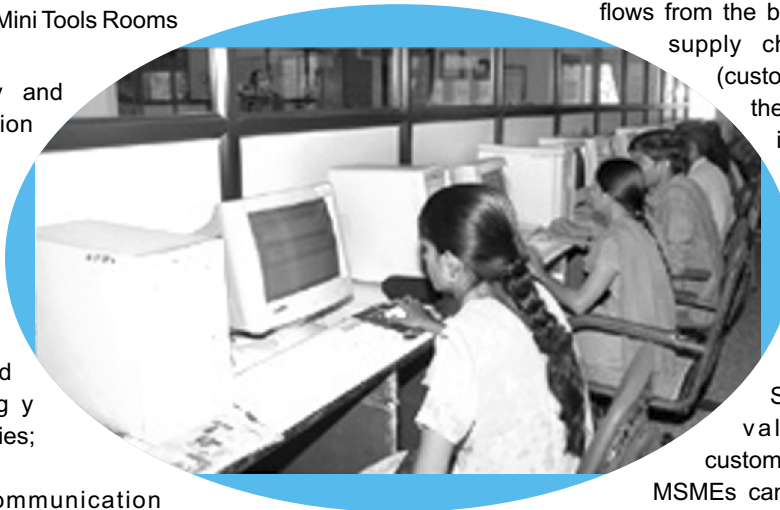
Clusters of Micro, Small and Medium enterprises (MSMEs) are found in abundance in India and around the globe. It is estimated that there are around 350 SME urban clusters and approximately 2000 rural and artisan based clusters in India. This sector comprises 50 per cent of India's total manufactured exports, 45 per cent of India's industrial employment and, 95 per cent of all industrial units in the country. MSMEs are the second biggest employment generators after agriculture. MSMEs are proven Innovators and the driving force behind a number of technological breakthroughs throughout the world. The process of globalization as well as the global meltdown has impacted this sector, much more than larger business enterprises. The MSMEs sector has always been the engine of growth in developing as well as in transition economies.

Despite its importance, the MSME sector in India has long faced extreme obstacles: (a) inability to access finance and working capital loans from banks, (b) inability to access capital from other sources, (c) mistreatment by larger procurement companies, (d) difficult bureaucratic procedures for registration, (e) lack of management skills and, (f) increasing availability of cheap foreign imports (<http://www.ifmr.ac.in>). In rural India, agricultural development, along with rural enterprise, is the cornerstone for promoting sustainable rural livelihoods. Rural cooperatives are, once again, emerging as alternatives for making rural economy vibrant through agro and rural based industries. The rural economy can be vibrant if agro and rural industries are positioned and integrated with the national and global economy.

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The Micro, Small & Medium Enterprises Development (MSMEDA) Act, 2006 heralded the commencement of renewed efforts for facilitating promotion and development and enhancing their competitiveness. The Government of India has planned to implement the following ten components of National Manufacturing Competitiveness Programme (NMCP) for MSMEs, during the 11th Plan:-

- Support for entrepreneurial and managerial development of MSMEs through “business incubators”
- Quality Management System (QMS) / Quality Technology Tools (QTT)
- National campaign for investment in IPRs
- Marketing support / assistance for adoption of “Barcodes”
- Lean manufacturing
- Setting up of New Mini Tools Rooms (MTR)
- Energy efficiency and quality upgradation support
- Design Clinics
- Promotion of ICTs in MSMEs and
- Marketing Assistance and technology upgradation activities;



Information and Communication Technologies (ICT) is a major driver of the economy and its development stimulates economic growth across all sectors of the economy. India is effectively leveraging the benefits of ICT for widespread and sustained economic development. The Ministry of Micro, Small and Medium Enterprises, as a part of the National Manufacturing Competitiveness Programme, has earmarked about Rs. 160 crore to promote ICT use among MSMEs. There is a need for the MSME segment in India to improve efficiency in order to be more competitive in the international and domestic markets.

Challenges and Opportunities

The Indian MSME sector faces information asymmetries in two ways: (i) in their own access to market and business-related information, and (ii) as providers of services to poor people. Finding ways to leverage technology and services to

be more efficient, reduce costs, and develop flexibility to respond rapidly to the changing market is critical for survival. Value chain (VC) is a high-level model of how businesses (production and services) receive raw materials as input, add value to the raw materials through various processes, and sell finished products to customers; and span vertical and horizontal relationships within and across industries: Production Exchange Distribution Consumption. This is expected to increase Return-On-Investment (ROI) in terms of: Return-On-Process, Return-On-Knowledge, and Return-On-People. Integrating disparate applications on the “Process and Data” level is one of the greatest challenges in value chain integration.

Supply chain management (SCM) is important for MSMEs, as the supplier, the customer, the logistics partner and the manufacturer, together involve in the material flow, the information flow and the fund flow. While the material flows from the back end (supplier) of the supply chain to the front end (customer), the money flows in the reverse direction. The information flows on both directions. Collaborative planning and information sharing practices will streamline the information flow in the supply chain. A good SCM will provide superior value to the ultimate customer (Mahadevan, 2001).

MSMEs can greatly exploit the web technology to streamline the information flow. Improved communication will benefit all the supply chain partners in the long run.

While vendors are gearing up with process integration capabilities, harnessing the tools’ capabilities is tied to the ability to design efficient business processes. Informational costs of isolation and low volume can be reduced through formation of groups, associations, business clusters, and franchising. An effective strategy to overcome this inherent weakness of MSMEs is to network enterprises with institutions and organisations active in the area of MSME development, information networks, and data banks as well as with technology generators.

According to the study conducted by Soumya Roy and Shantanu Biswas (2007), ICT adoption by the Indian MSME clusters is extremely low. The survey, released in April 2009

by the Internet and Mobile Association of India (IAMAI) in association with eStatsIndia.com, however, concludes that Return on Investment (ROI) is the sole determinant of ICT use among MSMEs in India. The findings of this survey, conducted in a few selected clusters, are as follows:-

- a. In terms of average number of units per MSME, PC/Laptops had the highest penetration, followed by printers and accounting software such as Tally;
- b. The use of server software was found to be particularly low with an average use of 1 server software per 20 MSME units;
- c. The use of internet was widely prevalent amongst the surveyed companies.
- d. Besides e-mail and communications, almost 99 per cent of the units surveyed used directly or indirectly some form of B2B suppliers' e-market places. These are market places, which lists suppliers for domestic and global market
- e. IndiaMART.com is the most preferred choice amongst the MSMEs amongst the B2B e-marketplaces with over 85 per cent of the suppliers preferring it as their first choice, followed by Tradeindia.com;
- f. Amongst the global marketplaces operating in India, Alibaba.com is the most preferred.
- g. Seventy-three per cent of the surveyed companies also had their own independent web presence.

According to a CII Study, the ICT penetration is between 17-20 per cent in the MSME segment, the total size of which is estimated to be 35 million units spread across the country (CII, 2008). Major players of the ICT Industry are adopting various manufacturing clusters and are providing consultancy on connectivity and technology upgradation (<http://www.cii.in>).

The portal (www.nmcc-vikas.gov.in or www.nmcc-vikas.in) has been created by the National Manufacturing Competitiveness Council (NMCC), with active support from the Microsoft Corporation (India) Pvt Limited as a part of the "Project Vikas", which is aimed at making the Indian MSME sector competitive and to help establish "Made in India" as a global brand. This portal is the major new initiative to enhance the competitiveness of India's manufacturing sector, especially the MSMEs through the use of information technology and enable them to compete more effectively in today's globalised environment.

The India Global Summit on MSMEs, which was held in New Delhi during November 22 and 23, 2006, on "Demand, Growth & Development (DGD) Approach for MSMEs",



emphasized that (i) the challenges and opportunities in applying ICT to MSMEs are lack of knowledge, lack of resources and no ecosystem linkages, (ii) competitiveness is increasingly being based on ability to constantly keep up with rapidly changing technological and organizational advances, (iii) traditional enterprises can benefit tremendously from ICT, through savings in communications costs, increased availability of information, affordable global reach, reduced transaction costs, lowered barriers to entry, and new sources of revenue and, (iv) the costs of patenting are generally perceived as one of the greatest barriers for MSMEs. Mechanisms to promote ICT & IPR are connectivity, affordability and reliability of network access.

The MSMEs use their customers as a key source of information for innovation, but in future, their customers may instead expect technological innovation from the MSMEs. There is a risk that technology foresight will be thought of as "someone's job", and may not be adequately addressed within the value chain (Reed and Walsh, 2000). In this context, innovation, i.e. the capacity to assimilate and convert new knowledge to improve productivity and to create new products and services, is of critical importance and plays a central role as an engine of growth in providing employment and competitiveness, and as a cornerstone of enterprise policy. This necessitates a National Policy to ICT-enable MSMEs.

Digital Opportunities

Indian MSMEs have realized the importance of product specialization to survive in an ever-changing market. Digital

opportunities help realize the concept of “sustainable communities”, which is one where all stakeholders are partners in progress on the road to economic development.

Doing business on the internet is not about creating good-looking websites but about re-engineering the entire business process into a robust system that harnesses the enormous opportunities that the connected market place will present. Informational costs of isolation and low volume can be reduced through formation of groups, associations, business clusters, and franchising. Innovative use of ICT and Telecentres can cut down transaction costs, and enable MSMEs to connect to information about markets more effectively. Areas of business that are targeted for improvement of MSMEs are: (a) user profiling, (b) supply chain, (c) value chain, (d) customer relation management (CRM), (e) SME networks, and (f) supplier cooperation.

Internet commerce (e-Commerce) is growing fastest among businesses and four types of economic activities drive its growth i.e. formation of free trade zone on internet. They are: building up the internet, e-Commerce among businesses, digital delivery of goods and services, and retail sale of tangible goods. The Information Technology Act, 2000 facilitates digital signatures for document exchange. This has led to a growth of supply capacity through capital-augmenting technological change, which, in turn changed the capital and labour markets, and has generated greatest demand in the following areas:

A digital MSME is an MSME that exploits ICT to its full potential in a holistic manner, e.g. changing products and services, changing markets, changing relationships with customers, new types of value chain and forms of cooperation and alliance, new organizational and management configurations, new ways to manage knowledge, etc. There are three sub-categories of digital MSMEs, as given below:-

- a. MSMEs whose products and services are predominantly digital;
- b. MSMEs which use digital methods as the primary means of carrying out core operations - marketing, sales, service, etc.;
- c. MSMEs that exploit the benefits of digital methods to a significant extent.

The focus is on MSMEs’ best practices in exploiting the opportunities provided by ICT to improve performance. Attention is devoted to their evolution and to the “external” factors, related to “digital economy” that directly affects their

success and development. This focus will result in addressing:

- Structural changes in organization and management
- Impact of digital economy;
- Changes in the competitive scenario that may affect the evolution;
- Interventions and policy instruments that have contributed to foster adaptation to digital economy.

The analysis shall consider both single business units and networks of MSMEs. In fact, the networks, both informally and formally defined, are important organizations for the small companies and several experiences (such as the industrial clusters) show that networking is a successful way to improve MSMEs’ competitiveness. However, it is essential to have an “Integrated Policy Framework for MSME Development in Digital Economy”.

Stakeholders Reaching ICT to MSMEs

Dinesh Rai (2009)⁸ asserted that MSMEs would be the largest job creators in the current economic scenario and it was, therefore, in the interest of all the stakeholders including ICT service providers, to reach out to these enterprises and make them ICT enabled. To improve IT consumption in the MSMEs, Confederation of Indian Industries (CII) has recommended that the Government consider according 100 per cent depreciation, once in a block of three financial years, for an annual investment in IT equipment and software up to a limit of Rs 25 lakh to the MSMEs. This would significantly lower the tax burden on high-tech investment, induce large scale corporate buying of computers, which would raise labour productivity, increase economic growth and give a big boost to the MSMEs and thus the whole economy (CII, 2009)⁹ CII (2009).

Fruits and Vegetable Processing Cluster, Pune (<http://www.punebds.com>) has analyzed the cluster level needs for MSMEs to have successful ICT adoption, viz. (a) no single point of failure and control, (b) sufficient trust and identity management and data security, (c) allowing open entry to new territorial markets, (d) firm level need analysis. This cluster has further analyzed the firm-level-needs as follows:

- Providing cost and time savings in the daily operations, with the recognition of the need to change their way of working to take full advantage of the new management systems;
- Improving customer relationship management services that will make sales, marketing and customer

care processes and interaction with customers more effective;

- Improving internal communication: services such as intranet, collaborative team work, remote work and project management;
- Exchange of information between companies: services such as electronic invoices, technical and sales documents;
- Easy to use and maintain ICT-infrastructure .
- Local IT-caretaker services that would provide services such as installation, upgrading and troubleshooting for MSMEs;
- Seamless cooperation between large and small operators, governments and businesses, allowing full interoperability.

The ICT model, as adopted by the Fruits and Vegetable Processing Cluster Pune, is worth trying by other clusters too.

Recommendation: ICT Diffusion

Innovation is one of the keys to success in a knowledge-economy (k-economy) and it is R&D that determines innovation. ICT diffusion derives economic force from the complementary development of a knowledge-intensive society. The diffusion of ICT throughout all sectors (primary sector, secondary sector and tertiary sector) is, therefore, far more important than the production of ICT industries per se, to usher in economic growth and development based on “digital technologies”. Indian ICT Industry has tremendous potential to become an engine of growth and productivity improvement for all sectors of the economy and for the country as a whole, with special emphasis on multi-lingual technologies.

To facilitate “Digital MSME” in the Country, it is essential to have (i) ICT Park in every cluster (i.e. to establish about 2400 ICT parks), (ii) Hub and Spokes Model for MSMEs to use, (iii) National Policy to ICT- enable MSMEs and (iv) Automation of all primary agricultural cooperative societies (numbering about one lakh) under “e-Cooperative” project and networking them under the “CoopNet” Programme.

Footnotes :

¹ Mahadevan.B (2001): Why Supply Chain Management is important for SMEs? The Author is with Indian Institute of Management, Bangalore (India). eMail: mahadev@iimb.ernet.in.

² Soumya Roy and Shantanu Biswas (2007): “Collaborative ICT for Indian Business Clusters” in WWW 2007, May 8–12, 2007, Banff, Alberta, Canada. The Authors are with Motorola India Research Labs, Bangalore, India; emails : roysoumya@gmail.com & shantanu.biswas@gmail.com

³ CII (2008): MSMEs become more competitive with CII's new technology in Economic Times, dated 28th July 2008.

⁴ F M Reed and K Walsh (2000): “Technology acquisition and the changing face of manufacturing Industry “ , Proceedings of the 3rd International Conference on Stimulating Manufacturing Excellence in Small & Medium Sized Enterprises (SME-SME 2000), PP.128-139, 17-19 APRIL 2000, COVENTRY UNIVERSITY, U.K. (ISBN 0905949862)

⁵ Dinesh Rai (2009): While releasing a survey conducted by the Internet and Mobile Association of India (IAMI) in association with eStatsIndia.com and also see <http://www.efytimes.com> dated 24th April 2009). Shri Dinesh Rai is the Secretary, ministry of micro, small and medium enterprises, Government of India, New Delhi.

