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## Micro, Small and Medium Enterprises in India: The Challenges of Technology Adoption

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### **Abstract:**

*The Micro, small and medium-sized enterprises (MSME) sector in India is impressive in its sheer size and diversity of industries and services. On the basis of its characteristics the MSMEs sector is described as, “a nursery of entrepreneurship” and the “gateway to global growth”. The 26-million-strong micro, small and medium-sized enterprises (MSMEs) – comprises of one of the most critical sectors in India’s growth story and will play a pivotal role in the country’s economic future. While a portion of the MSME sector contributes to India’s technology industry, MSME manufacturing and service sectors on the whole have not adopted technology to improve their day-to-day business practices – including interactions with customers and employees, marketing and sales functions, or financial management – so that they can further grow their business and compete in an increasingly global marketplace. This paper begins by exploring the MSME landscape, with a specific focus on the technology adoption profiles across the sector. It is narrowly focused on the important topic of technology adoption and is intended to present a comprehensive look at the wide array of barriers that face the MSME sector. An attempt has been made access the profiles of the sector, and the opportunities and challenges it faces, to provide a foundation to examine the use of technology today.*

**Key words:** *Micro, Small & Medium Enterprises, R&D Intensity, Technology profile, barriers to adoption of technology*

### **1. Introduction**

The MSME sector in India is impressive in its sheer size and diversity of industries and services. The Indian Ministry of MSMEs describes it as, “a nursery of entrepreneurship” and the “gateway to global growth”. The sector makes up almost 9% of India’s GDP, 95% of its industrial units, 45% of its manufactured production and 40% of its exports. MSMEs, which are growing at a rapid rate of 9.5 million per year (13% on average compared to the national industrial rate of 8.5%), are responsible for 69 million jobs across more than 26 million businesses. This is second only to the agriculture sector. In addition, almost 50% of MSMEs are owned by disadvantaged groups, including multiple minority groups and women, underlining the inclusiveness of the sector.

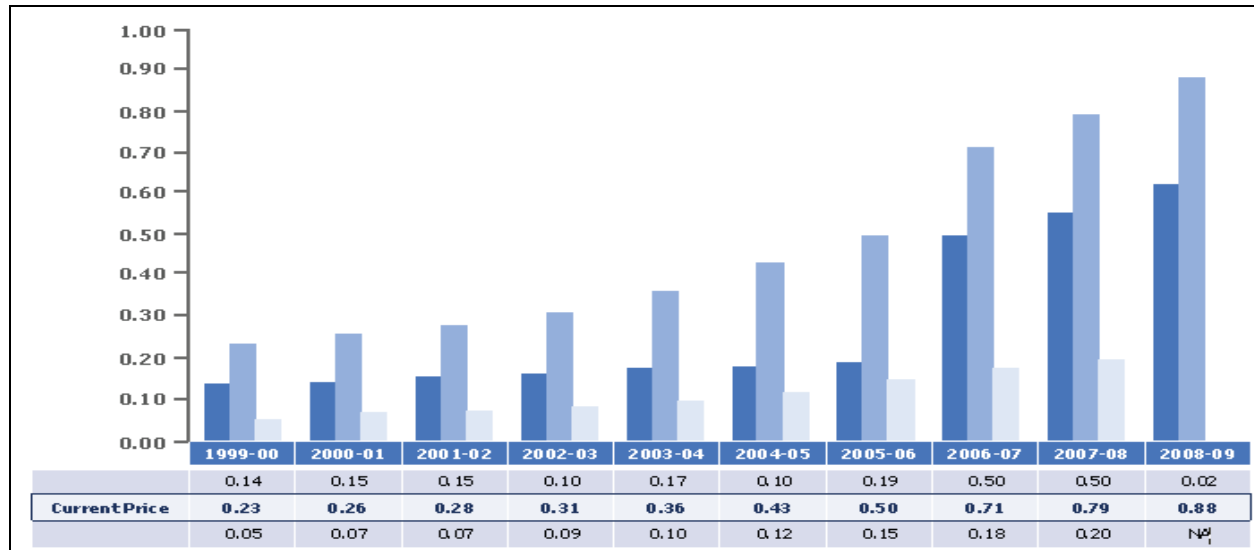


Figure 1: MSME Investment, Production and Exports In MSME Sector  
(Source: Office of the Development Commissioner, MSME, New Delhi 2011)

MSMEs are diverse in terms of size, products and services offered, turnover and technology adoption. The spectrum is broad. On one end are high-growth enterprises in developed sectors, such as textiles and garments, auto components, health care, education and telecom equipment. At the other end are sub-contractors and the more slow-growing informal, small retail and unorganized sector, such as village and cottage industrial units. Remarkably, more than 24.5 million (94%) of MSMEs are unregistered. Thus many of the facts we know about the sector come from a small number of the players, and the true effect of efforts to increase the competitiveness of the sector are much more far reaching than what is “on the record”. In spite of this, many MSMEs act as suppliers to larger enterprises; they contribute to the greater Indian growth story. This situation will only become more entrenched as India increasingly opens its borders and big business, especially foreign enterprises, look for ways to partner with small local businesses in the supply chain. As the Indian economy opens to global competition, MSMEs must find ways to innovate to succeed in this business environment. To remain profitable, it is therefore imperative that MSMEs use economic, government and private sector support to take advantage of trainings and resources to modernise their technology. Nurturing competitiveness among MSMEs by helping them to adopt new technologies will improve productivity, particularly across manufacturing, up and down the value chain (thus resulting in multiplier benefits) and create a more forward-thinking sector capable of sustaining government’s growth projections. If the MSME sector grows as predicted, the manufacturing MSME sector’s share of GDP should increase to 25% over the next 10 years, adding 100 million jobs to the Indian economy.

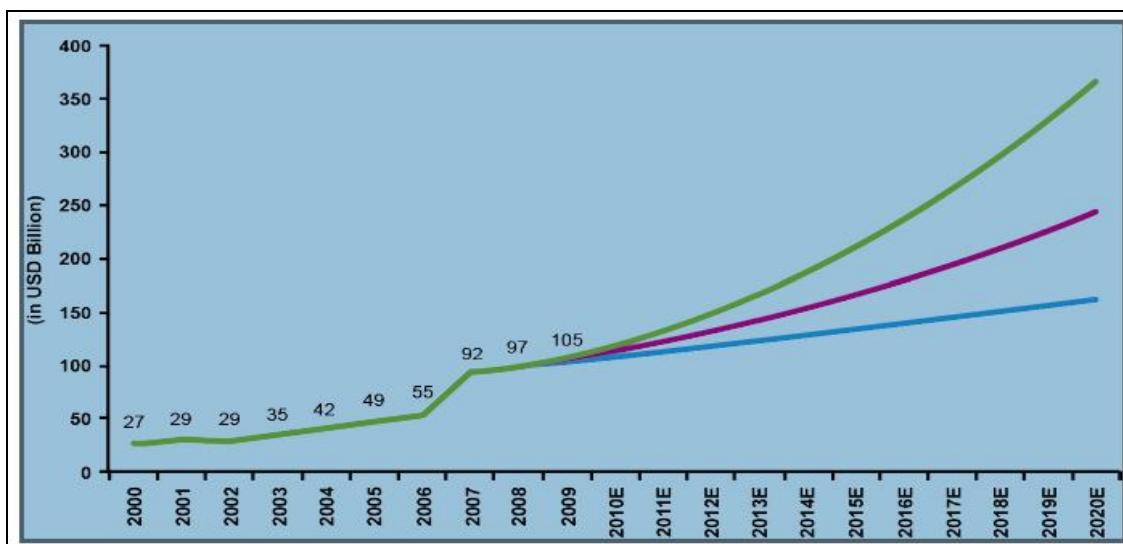


Figure 2: MSME Output Forecast Scenario  
(Source: Grant Thornton. Vision 2020: Implications for MSME, 2011)

### 1.1 The Challenge

Report of the Working Group on MSME Growth for the 12th Five Year Plan (2012–2017) focuses on the importance of information communication technology (ICT) penetration “to enhance the overall competitiveness of the sector as well as the quality of governance” and recognizes the pivotal role of innovation in growth creation. Specifically, the document focuses on using the technology platform to drive good governance, manufacturing competitiveness, public health, universal education, right to food, and right to information amongst others. Yet, as the country raises the bar of industrial sophistication, it is clear that large parts of this sector have not quite made the grade in terms of participating in the India development story. Bluntly put: a majority of micro and small businesses do not reflect The 21st-Century India, in a digital age with its high-tech needs. There are reasons for this. Most MSMEs have a low capital base and management functions often rest with only one or two people. In most cases, they remain rooted to more traditional approaches to business with little to no exposure to the state-of-the art in Indian or international business. MSMEs are generally marked by low to zero R&D, and there are inconsistent levels of professionalism across the sector. This reduces their ability to adapt to changing trends and take risks. In addition to the overall lack of modern management practices, these firms have poor access to a trained workforce, technological information or support. Therefore, they concentrate on reducing costs within existing business systems and structures without benefiting from cutting-edge tools to help even the smallest of businesses. The fact that they are spread throughout the country with little or no access to centers of excellence.

## 2. Technology Profile of Small Business

In collaboration with the Government of India’s Ministry of Micro, Small and Medium Enterprises (MSMEs), the National Institute of Entrepreneurship and Small Business Development (NIESBUD), and the National Small Industries Corporation (NSIC), Intuit, a technology company serving small businesses around the world, wanted to gain a comprehensive understanding of the barriers to technology adoption among micro and small business in India. The findings resulted from an extensive, primary research methodology that included interviews with 748 micro and small businesses across 12 cities in India. The first phase of the research was a qualitative analysis in four cities of 20 micro and small businesses with 50 employees or less to assess how technology is used and outline some possible barriers to technology adoption. This was followed by a quantitative survey in eight cities among 728 micro and small businesses with less than 100 employees to test these barriers and explore existing and future solutions. All participating businesses had a turnover of no more than Rs. 2-5 crores. Medium-sized businesses were not part of the survey pool as the focus of this study was focused specifically on micro and small businesses. The findings revealed that the majority of micro and small businesses had a low awareness of and engagement with technology. Three business types emerged during the qualitative sessions: “tech non-adopters”, “tech aspirers”, and “moderate tech adopters”.

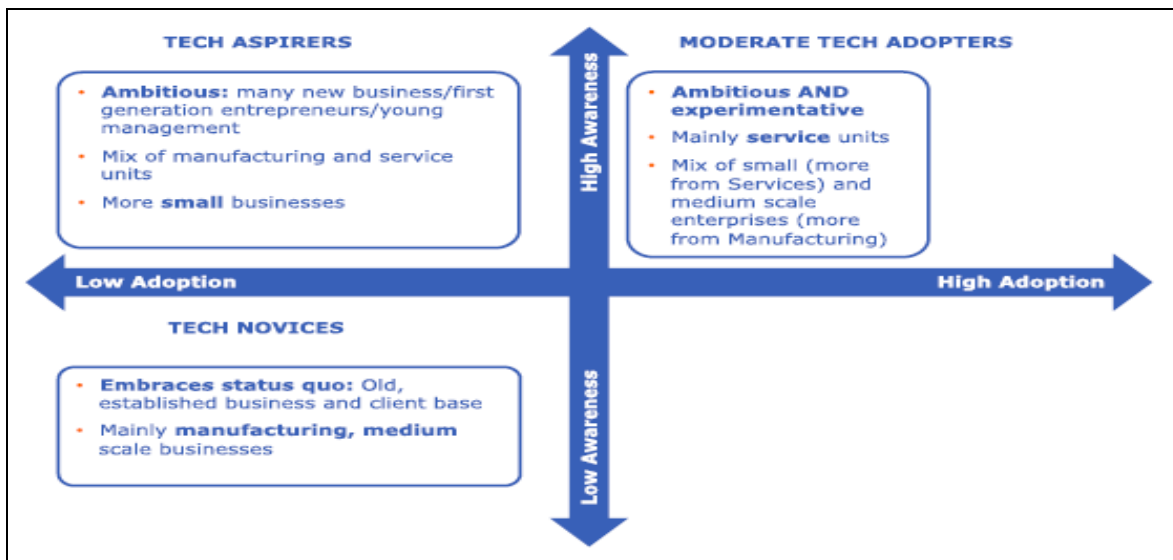


Figure 3: Technology Adoption and Awareness

Tech non-adopters – or “technology laggards” – do not employ technology to any great extent and rely mostly on manual methods. They tend to be older manufacturing, established businesses who practice “old school” business development and management. Tech aspirers represent a mix of service and manufacturing units but tend to be on the smaller size. The business attitude among this group is “ambitious but cautious”, as this group is usually comprised of new entrepreneurs with younger, more inexperienced management. While tech aspirers have a much higher awareness of the benefits of technology than non-adopters, they also exhibit low engagement and only adopt technology solutions when they are tried and tested by others. The final group – moderate tech adopters – is the most technology-savvy of the sampling and uses technology to keep ahead of trends and interact with clients in various aspects of their business, although not always consistently and without struggle. These businesses are mostly found in the services sector. Moderate tech adopters have an evolved understanding and use of technology but this clearly remains at the nascent stage. Although all three

types acknowledge the benefits of using technology, most businesses appear to be applying technology to a limited extent in business operations. Free and guided associations of technology remain in the “functional realm” where technology is viewed as a means to save time and effort. Software usage is basic and dependent on popular products and established brands. Internet and mobile telephone solutions, while used for personal purposes, are surprisingly not employed equally across the business as they are in business owners’ personal lives. Moreover, there is little customization of solutions to meet specific business needs.

### 2.1. The Economic Dimension

The Businesses pay a price for low levels of technology engagement – more labour-intensive work, resulting in greater inefficiencies and higher costs. A market analysis by management consulting and market research firm Zinnov, commissioned by Intuit, shows that disorganized businesses work hard to make ends meet, but manage mostly with pen and paper, outsourcing the more complex tasks. Technology can change this giving management more effective and efficient control over key aspects of the business. According to a World Bank study, firms that effectively use ICT improve sales growth and profitability by 3.4 and 5.1 percent, respectively.

	Enterprise		Difference
	Non IT Users	IT Users	
Sales Growth	0.4%	3.8%	+750%
Employment Growth	4.5%	5.6	+24%
Profitability	4.2%	9.3%	+113%
Labour productivity (value added per worker)	\$5,288	\$8,712	+65%

Figure 4: Effect of ICT Use on Firm Performance in Developing Countries  
(Source: World Bank, 2006)

### 2.2. Barriers to Technology Adoption

Applying the findings from the qualitative stage of the research, the research’s quantitative assessment into the reluctance to invest in and adopt technology uncovered five top barriers: (i) cost, (ii) lack of skilled manpower, (iii) low awareness of the benefits of technology, (iv) security and privacy, and (v) poor infrastructure.

The two-phased research among 748 micro and small businesses across 12 cities in India led to the following key conclusions:

- Cost is the top barrier**  
 Micro and small businesses are not yet convinced about the return on investment in technology adoption. Forty-five percent of respondents highlighted cost as the biggest obstacle. Demonstrating the value add for the business is critical and should be done using cost–benefit analyses and simple comparisons of growth between traditional operations versus IT-based approaches.
- Government and other institutional schemes are benefitting small businesses, but there is a broad lack of awareness of existing resources**  
 Businesses who utilised the numerous government and other stakeholder schemes benefited extremely well from them. At the same time, there appears to be a very low awareness of these programmes among small businesses. Recognition of specific programmes was as low as 1–4 % among the sample interviewed and only as high as 32%. All stakeholders, including the Government of India, training institutions and the private sector, must work together to assess why existing communications about available resources are not reaching the end-user and develop new ways to promote the existing programmes among small business owners.
- Case studies and testimonials are incredibly important in communicating the benefit of technology adoption**  
 Other small businesses have tremendous influence in helping reluctant business owners “get over the hump” and invest in technology. Specifically, 68% say they adopted technology solutions only after seeing other businesses using it to their benefit. Furthermore, 36% of all survey respondents said that hearing from other small businesses about their experiences with technology would be helpful. Government, small business organizations and even private sector communities need to roll out engaging case studies and tap into relevant “influencers” when communicating the value of technology adoption. One way to do this is to generate real small business “success stories” to communicate in local communities.
- Share best practices and engage the community**  
 Small business kiosks, incubators, hubs, clusters, business associations, and support centres, such as the country-wide network of Development Institutes, established by the Ministry of Micro, Small and Medium Enterprises, could be more

active in bringing small business together to leverage skills, ensure resources are user-friendly and help answer IT questions throughout the growth cycle of micro and small businesses.

- **Timing is important**

Moderate tech adopters tended to embrace technology either in beginning stages of forming a company (60%) or when starting to expand (20%). Supporting organizations must “meet the business at its comfort level” – that is, when and where they are mentally and financially open to adopting and investing in technology. Intuit has some additional ideas on specific solutions for both government and private sector that could leverage the open “entry points” for small businesses.

- **Technology adoption must be easier, more affordable, and implemented from a local perspective**

Just less than 40% of moderate tech adopters went forward with IT plans because a credit or upgrade made the implementation affordable. Affordable solutions such as easy installments, credit options, and pay-as-you-go options can provide sustainable solutions toward addressing cost concerns. Additionally, software should be easy to use and offered in local languages to breakdown the perceived complexity of IT.

- **Provide long-term support**

It is essential to offer sustained IT support that meets the needs of the end-user, from a variety of sources including in-person support. Coupling these with user-friendly solutions and baseline IT training will go a long way in helping small business overcome the hurdles to technology adoption.

- **The cloud’s potential is tremendous but customers are not yet convinced of its benefits – and that may be because it is not well-defined among India’s micro and small businesses or those who are providing the solutions**

While many businesses are aware of the benefits of cloud computing – almost 80% of IT users would consider embracing “software as a service” (SaaS) – they are hesitant to do so until issues relating to security and reliability are addressed and communicated. Concerns today may outweigh benefits if those benefits are not well-defined by providers and policymakers, or experienced first-hand by the end user.

- **The case for technology is clear – the reasons to adopt technology are consistent with MSMEs’ top challenges**

All businesses aim to be more efficient, more responsive, have better control over finances, better access to accurate data, and better ways to acquire customers. Technology can facilitate these outcomes, thus underscoring the importance of communicating – and demonstrating – how technology provides MSMEs with better control over their financial future.

### 3. Conclusion

Ultimately, together a set of collaborative stakeholders must better demonstrate the benefits of technology to India’s micro and small businesses so they can succeed in today’s ever-changing business environment. Furthermore, together we must increase micro and small businesses’ access to technology by making it affordable, easy-to-use and ensuring there is the core infrastructure (both physical and skills-based) to facilitate its use. Through innovative programmes, better communication around those technology solutions that work today and a willingness to solve the most challenging problems facing micro and small businesses every day, together we can transform India’s MSME sector.

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