

New Age Technologies for Business Development and Ease



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FOREWORD

From ancient times, technology has been impacting differently on factors of production. The adoption of new technology generally varies according to the size of enterprise. Large firms generally adopt technology faster as compared to MSMEs. These differences are visible universally. However, the state of technology adoption among MSMEs in India is far from encouraging and is one of the causal factors for various other challenges, the sector, is facing in global competitiveness.

Technology status of an MSME is essentially the firm's ability to take advantage of technology as a driver of growth and competitiveness. Technology has been a major driver of growth in the 21st century. This is because technology streamlines and optimizes the use of other complementary resources of an enterprise. At its most basic form, technology is a tool to enhance productivity. Technology enables the enterprise to manage in a structured and planned manner.

IT is a major component of the technology usage among MSMEs and helps them in making strategic decisions. A majority of the Indian MSMEs are still in the nascent stage of the technology, especially IT adoption. There is a general lack of knowledge about the business performance improvement potential of ICT. The bulk of IT usage is geared towards office automation and accounting etc., whereas ICT usage in developed economies is much higher in the maturity continuum, covering functional automation and cross functional process integration.

The following pages give an account of technology status among MSMEs and how it can impact their productivity and efficiency. This white paper is prepared by a team of the Apex Cluster Development Services Pvt Ltd. The basic objective of the paper is to identify benchmark for the technology adoption among MSMEs to make best use of “New Age Technologies for Business and Ease”.

Apex Cluster Development Services Pvt Ltd and the FICCI-CMSME hope that this document will spell out and demystify the leading issues in the subject area and will contribute to a fruitful discussion in the country.

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NEW AGE TECHNOLOGIES FOR BUSINESS DEVELOPMENT AND EASE

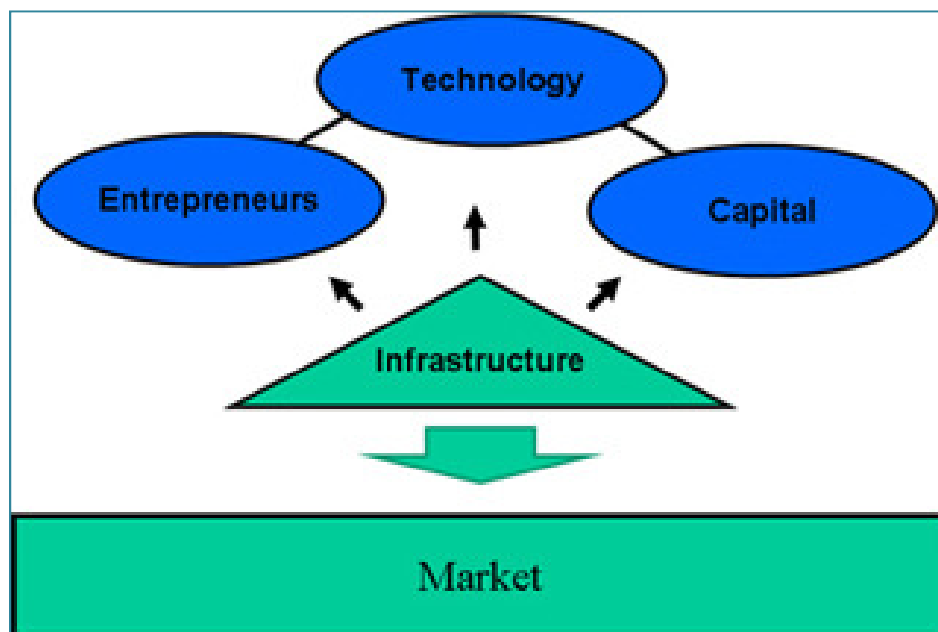
1.1 Background

Economic development in the last two decades has increasingly and critically shown dependence on technology. Most of the MSMEs are re-inventing themselves to be successful in the changed global environment. It has become very important for businesses to adopt a global outlook to grow into new development ecosystem by transformation of their business model through optimizing human factors so that the innovation can bring differentiation to catch new markets or defend their home turf from international competitors. It has been observed that in many cases technology is working as an equalizer for MSMEs to transform, innovate and ultimately capture the market. Therefore, it is very important for MSMEs to give strategic priority to technology. Technology brings innovation, cost minimization and efficiencies; have potential to do product diversification and can help in domestic and international market expansion.

1.2 Technology for Business Development

Technology drives global success of smaller firms. The adoption of technologies should be across the entire value chain, including the primary activities of manufacturing and support activities such as administration, human resource management and design. Efficient and effective technology adoption has a strong link with productivity and competitiveness of MSMEs. Effective use of technological innovation is a prerequisite for small businesses' survival.

Small business should make themselves part of the innovation networks, though being part of such networks is definitely a time consuming and demanding activity particularly with resource crunch, the face. Chambers of commerce and industry associations can play an important role in sharing, learning, training and sharing of good practices. They can become the main entry point for MSMEs in becoming a part of the local innovation networks. Availability or lack of social capital among MSMEs however remains a key factor in deciding the success or failure of such network.



Technology is one of the key tools for market development

Figure adopted from: MIT Opencourseware

In a paper, MIT has identified technology as a key component for market development. Those who use leading technologies in proactive manner, get a critical market edge over technology laggards. MSMEs who are early adopter of technologies tend to have better growth strategies and become core opinion formers in their group thus getting an upper hand over their competitors.

Technology has modernized environment for smooth business development actions to happen. Information technology has made collection, analysis and dissemination of information a lot easier and inexpensive. Low cost, high-speed digital technology and data transmission hardware combined with availability of wide range of software applications have made the process of business development faster and more effective than it was earlier. Time, space, and other temporal constraints have now a dayslost their significance and in many cases, their role have been completely eliminated.

Customers/ buyerstoday prefers to have easy and fast availability of precise information for making their purchase decisions apt. There has been a clear shift in power from sellers to customers. Technology needs to facilitate this process of transition and transformation.

Technology is the future and future of technology will in turn be the future of business. We have to imagine this now and plan our journey into the new technology driven world, accordingly. We can definitely rely on new technologies for next wave of our business success. Technological upgradation is not a choice in modern time rather it is necessity. However, the key challenge remains; how to use the available new age technologies to develop our future business development strategies and embrace them to reach to new markets, new products and customers and new revenues. In brief, technology has significantly revolutionised the way of doing businesses and marketing the products and services.

1.3 Technological Innovation and MSMEs

MSMEs are better positioned in generating new and innovative ideas but larger companies are better in implementing the innovations. If we try to identify and understand the factors that influence the adoption of new and

innovative technologies by MSMEs, the degree of awareness that the MSMEs have about various available technology solutions has emerged as the key factor.

Effective government policies, institutional and technical support by the R&D institutions, fiscal incentives and design assistance programs that are tailor-made for the MSMEs play important role in the adoption of new technologies. In spite of the numerous attempts by the government, the MSME sector still has problem in accepting the offerings for technological development and upgradation. Small enterprises are inherently and excessively suspicious of all the new technology encounters. There are lot of government funded schemes and support programmes for the business for encouraging them to upgrade or adopt new technologies, however smaller firms face serious limitations in terms of manpower and finance and also in their capacity to be part of available innovation networks.

1.4 MSMEs and Demand for Technology

The ecosystem of MSMEs is different from that of larger firms. The dynamic globalized business environment with stiff competition, ever changing customer profile and availability of newer technologies has necessitated MSMEs to be sensitive on these issues and take proactive measures for growth of their business. To bring readiness in MSMEs to face new challenges and markets, MSMEs needs introspection and technology based realignment of their business strategies. This may requires complete change in their working in the new business ecosystem.

Based on the adoption of new technology, there are two types of MSMEs:

1. MSMEs who think that they have competitive edges over large firms-
Global Competitors

2. Local players – mostly sub contractors for the larger firms

The first categories of MSMEs are empowered and have capability to compete with the large firms. The second category is typically small firms in a supporting role.

The first category is very proactive in investing in technology to improve efficiency and productivity. Most such firms are confident in their technology capabilities and directed towards information technology/software helping them in integrating the whole firm. Such firms use business management or analytic software for decision making. They use mobile technology to transform their businesses, and are also investing in social and cloud platforms. Therefore, around the world such firms are responsible for higher job growth and innovations.

The second categories of firm are those MSMEs who are not that proactive in their technology adoption. They generally fail to visualize the potential benefits of the technology, consider ROI on technology un-favourable or have serious resources crunch both financial or manpower.

1.5 Factors Impacting on Technology Adoption

The use of technology among MSMEs is mainly governed by the following factors:

1. Change in Business environment
2. Customer Demand
3. Availability of Labour
4. Perception on global competition and growth opportunities
5. Supply chain issues
6. Policy environment

Investment in technology by MSMEs is done when there is clear visible case for ROI. However, among MSMEs, it is larger MSMEs who are early adopter of technology and assume that technology helps them achieve longevity and sustainable growth. Such MSMEs believe that they can compete with large firms.

1.6 Technology Adoption in Small Business Value Chain¹

A study of MSMEs in collaboration with Government of India, NIESBUD and NSIC clearly supports the case for technology adoption by MSMEs for their global competitiveness. Efficiently adopted, technology can help small businesses become more efficient and competitive, leveraging on the benefits like saving time and streamlining various business processes. The catalytic role of new technology adoption in every aspect of the business operations is quite visible for MSMEs. Following key benefits were highlighted in the study.

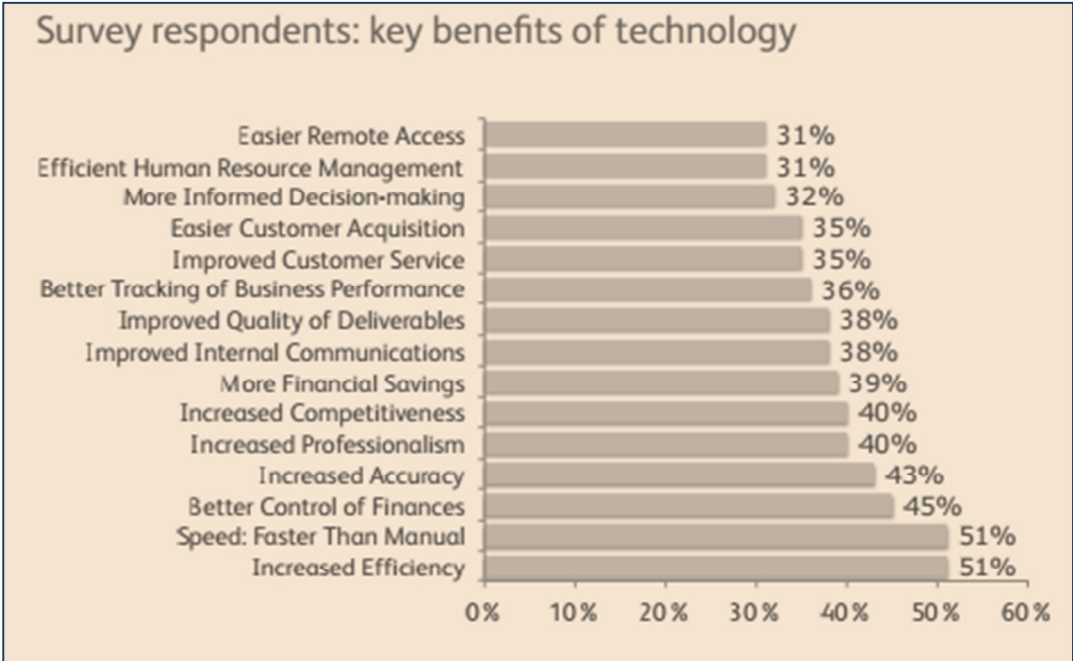


Figure source: INTUIT Report

¹ Source: “Study on Understanding and Overcoming Barriers to Technology Adoption Among India’s Micro, Small and Medium Enterprises: Building a Roadmap to Bridge the Digital Divide” by INTUIT

Technology increases the ease of doing business in every type of enterprise; be it a manufacturing enterprise or a service enterprise. Let us see how technology assists in various activities of business management.²

Supplier Management

Use of IT, in supplier management, is the use of software, to store and process supplier-related data. It involves receiving, storing and supplying of raw materials from different suppliers.

Manufacturing Operations

This involves actions and processes and activities associated with the converting the material inputs into the finished product. Its sub-activities include materials management; production planning, computer numerical control (CNC), and computer aided manufacturing (CAM) technologies.

Logistics

Logistics is supported by order-processing and Supply Chain Management (SCM) technologies. It also involves storage and physical distribution of physical goods to buyers.

Marketing and Sales

Firm's website, e-commerce or otherwise and Customers Relationship Management (CRM) software supports the process of sales and marketing.

²Adopted from "Current Status of Technology Adoption: Micro, Small and Medium Manufacturing Firms in Boston" by Pratyush Bharati and Abhijit Chaudhury, 2006

Customer Support/Service

Customer Support/Service involves actions associated with providing support and services to the customer. This activity is supported by CRM technology.

Accounting/Finance

This activity is supported by accounting and finance software technologies and used quite commonly by all kind of business firms.

Human Resource Management

Human Resource Management (HRM) activities involve recruiting, hiring, training and compensation planning for the employees. This activity is supported by human resources management software that monitors different aspects of employee related data.

Technology Development

This activity is supported by computer-aided-design (CAD) software that assists engineers in their design and drafting activities.

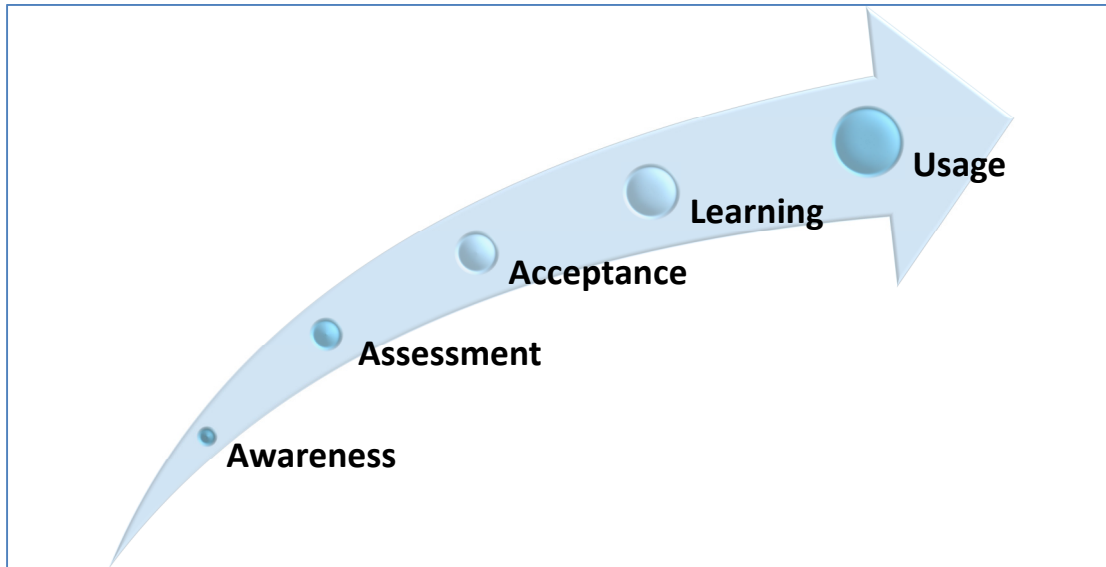
Procurement

Procurement involves activities associated with purchasing of raw materials and inputs for the firm. This activity is supported by electronic procurement systems that allow catalog search and transmission of orders to suppliers.

1.7 Technology Adoption Path – Factors, Stages, Barriers

Innovation is common in technology and business. All new technologies may not be acceptable and adoptable. Moreover technology adoption process

may not be spontaneous. Technology adoption is a consistent process starting from the stage to enable hesitant user to experiment and adopt new technologies. Technology adoption passes through the following five stages



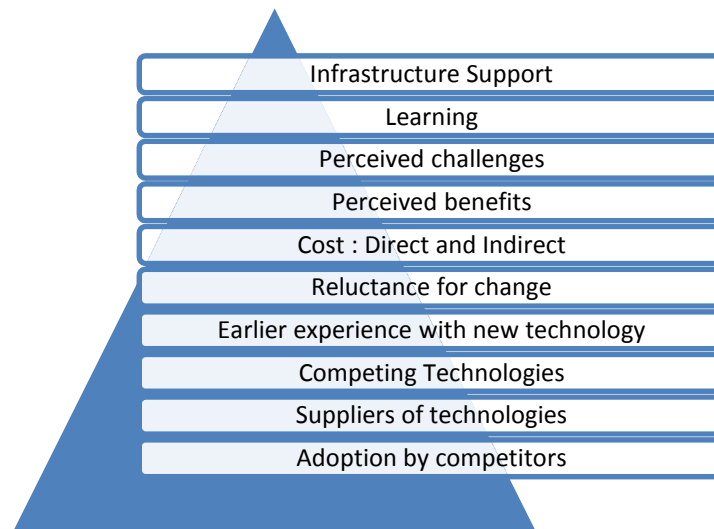
Technology Adoption Path

Source: Adopted from <http://www.bridges-to-technology.com/>

Two key parameter while going for new technology adoption

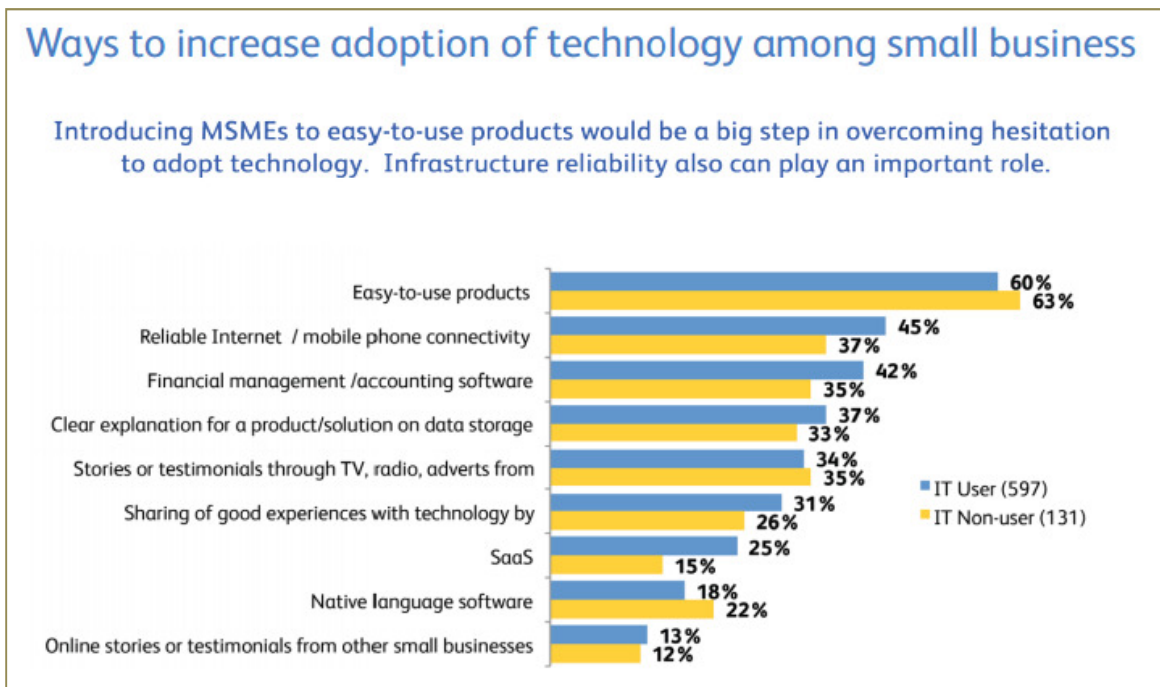
1. Perceived Usefulness of the technology and
2. Ease of Use of the technology

Other factors affecting the adoption of technology are shown below



INTUIT study on MSMEs in India say that larger section of businesses in India, adopt a new technology by seeing other businesses benefitting. The second important reason is government subsidy program and third being change in government regulations which necessitates the change of technology. Training and awareness generation about the technology is the fourth most important reason resulting in embracing the new technologies.

Key reasons suggested in the same study for increasing the adoption of technology include as depicted in the figure given below.



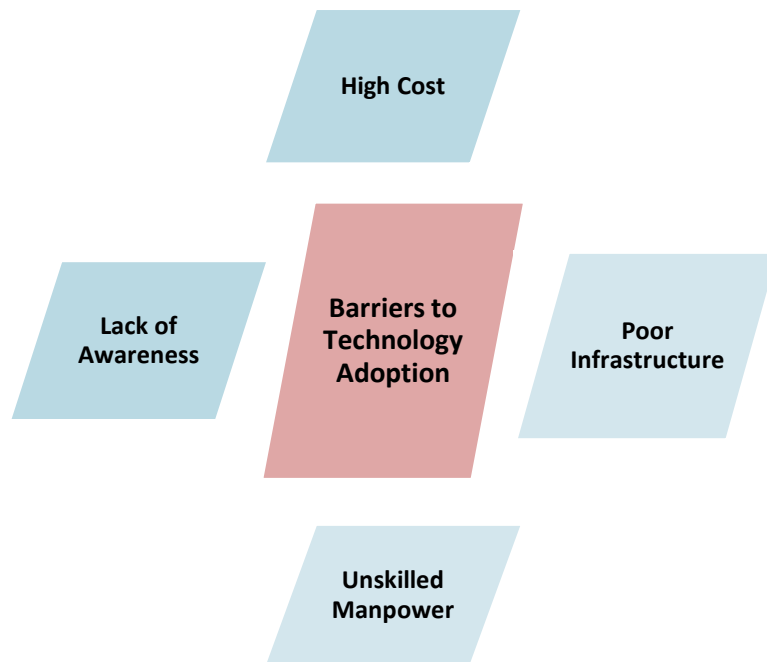
Increasing adoption of Technology among small business
Source: INTUIT Study

1.8 Information Technologies as the Key

The emerging key technology areas for businesses are mobile technology to help customer base, supply chain; business management software to catch up and compete with big companies and e-commerce. Smaller businesses can derive their services and product with the support from social media which will help in building and strengthening of an ecosystem of innovation.

Smaller businesses can enjoy benefits of latest technology. E-commerce can help them to reach out directly to the customers.

We are experiencing technology driven transition of every economy. The innovative use of emerging technologies has resulted in a paradigm



shift. Making effective use of information technology to address the ever changing need of the industry and the customers is the real challenge as well as the real opportunity. Businesses need to examine emerging information technologies and see how to transform IT implementation challenges into growth opportunities for them.

MSMEs should use their flexibility, anticipation, agility, and adaptability strategies to better implement emerging technology innovations even better than the larger enterprises. Businesses should decide what IT applications they need and determine how best to deploy them. They should create an information technology implementation framework that can be used to guide them during different stages of critical decision making.

The scenario is changing rapidly. Earlier, where only large companies were taking advantage of the new age emerging technologies, now even smaller businesses are taking similar benefits of new technologies in an ever increasing way. Actually, smaller businesses are adopting these new

technologies and using them in more innovative ways and much quickly than larger firms. Now a day most of the technologies are offered as service e.g.

- Software-as-a-Service (SaaS)
- Infrastructure-as-a-Service (IaaS)
- Platform-as-a-Service

These new models of technology delivery can go a long way in increasing the technology absorption by the businesses.

Businesses are becoming more and more agile and technologies such as social media, mobility, analytics and cloud computing are coming together to unleash unlimited opportunities for everyone.³

Social Media

A social media strategy has become a must for all types and all sizes of enterprises. Over one billion individuals logged on to various social networks, people are now using social media for advice on what products to buy, where to shop and even regarding what firms they want to work with.

Mobility

Mobile devices have changed the way people access digital content. Smartphones and tablets have brought rich, digital content to the fingertips of consumers. Mobile banking has emerged as one of the most innovative products in the financial services industry. Shoppers are increasingly using their mobile devices for everything from browsing to comparing to buying products. Governments are also reaching out to their citizens, using mobile

³Adopted from the Paper titled “The SMAC Code - Embracing new technologies for future business “by KPMG as reported at <http://www.kpmg.com/IN/en/IssuesAndInsights/ArticlesPublications/Documents/The-SMAC-code-Embracing-new-technologies-for-future-business.pdf>

devices as an efficient channel. MSMEs must also jump on to the mobility bandwagon.

Analytics

Every year, companies and individuals generate billions of gigabytes of data. Data, which properly analyzed and used in time, can emerge as an unbeatable competitive advantage. Enterprises need to recognize the prospect analytics represents and should adapt their IT strategy to capture such opportunities.

Cloud computing

The undeniable power of cloud computing to foster innovations and improve productivity is now accepted by both IT vendors and the IT users.

1.9 Conclusions and Recommendations

To be successful in business, it is imperative for the MSMEs that they should be suitably equipped with the latest technologies. A structural change in the technology ownership of MSME is a must. To face global challenges and to enter into new markets, the latest technology is utmost necessary for the MSMEs. For sustainability and survival, technology can play an important role. It helps in efficiently integrate with international markets and optimize the production process. Therefore, the key to success for MSMEs is technology driven innovation and differentiation.

According to The Boston Consulting Group (BCG),⁴ Tech-savvy small and medium-sized enterprises (SMEs) created more new jobs and drove more revenue gains over the past three years than SMEs using little technology.

⁴Ahead of the Curve: Lessons on Technology and Growth as reported @ http://firstbiz.firstpost.com/biztech/indian-smes-can-create-1-1-mn-jobs-if-they-adopt-it-18738.html?utm_source=fb_more_stories

If, more SMEs in India adopted the latest IT tools, there is potential for SME revenue to grow by \$56 billion and create 1.1 million new jobs. The report has come out with the following major outcomes:

- Technology leaders”, grew revenues 15 percentage points faster and created twice as many jobs as SMEs that use less technology.
- The latest wave of technological advancement, such as cloud services, brings potential for the most far-reaching innovation and business growth ever, creating an opportunity for more SMEs to achieve the growth rates of technology leaders by leveraging technology to fuel productivity and growth.
- The high-performing SMEs stayed ahead of mainstream IT adoption, riding new waves of advancement to improve productivity, connect with new customers and markets, particularly outside their own region or country, and compete with much larger players.
- The high-performing SMEs employ the full range of available tools — from productivity software to Internet connectivity and cloud-based services.
- About 90 percent of SMEs in India have no access to the Internet, compared with only 22 percent of SMEs in China and 5 percent of SMEs in the US.

The technology divide is visible in productivity levels, therefore it is an opportunity for policymakers and the IT industry to implement strategies to remove barriers to IT adoption by addressing small businesses’ top concerns about using more technology.



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