



# IMPLEMENTATION OF TECHNOLOGY IN MSME SECTOR

White Paper

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## 1. INTRODUCTION

As the economy is developing increasingly, there is a need to differentiate the product, services, and current markets from the new emerging ones. Competition has increased on both domestic and global levels with a simultaneous need to regularly evolve the business models.

It has been observed that in many cases technology is working as an equalizer for MSMEs to transform, innovate and ultimately capture the market. Technology brings innovation, cost minimization and efficiencies; have the potential to do product diversification and can help in domestic and international market expansion.

## 2. TECHNOLOGY IN BUSINESS

In coming time, technology will drive success of smaller firms. These days, customers prefer their purchase to be fast, easy and more personalized. Moreover, they constantly need the availability of precise information.

### Personalization Is Key to Winning Business

■ Consumers ■ Business Buyers



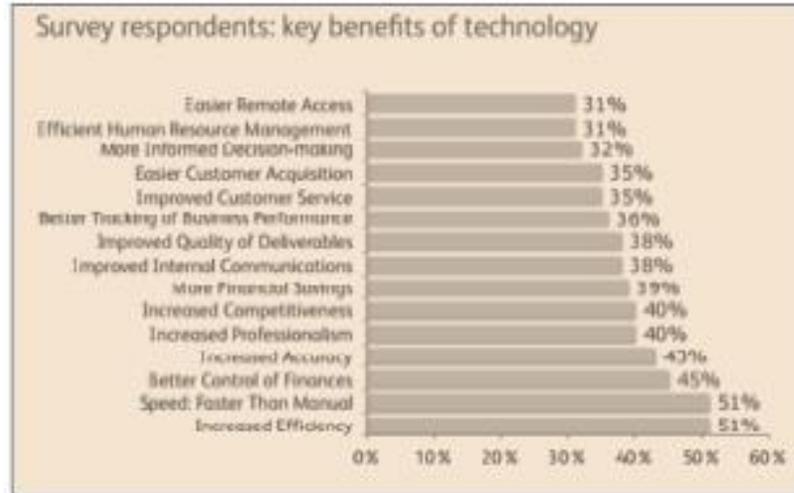
Technology needs to facilitate this process of personalization and information delivery. The primary activities of manufacturing and support activities such as administration, human resource management and design need a fast adoption of technology. Businesses have to think of this now and plan their journey into the new technology driven world, accordingly. Technological upgradation is not a choice in modern time rather it is necessity.

However, there are few challenges to conquer- 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 revolutionized the way of doing businesses and marketing the products and services.

### **3. MSMEs AND THEIR RELATIONSHIP WITH TECHNOLOGY**

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. Following key benefits were highlighted in the study.

1. Easier Remote Access
2. Efficient Human resource management
3. Informed decision making
4. Customer acquisition
5. Improved customer service
6. Tracking of business performance
7. Improved Accuracy
8. Improved quality of products and services
9. Better control over financials
10. Faster results



Technology assists in various activities of business management as follows-

1. **Supplier Management-** Use of software to receive, store and supply raw materials from different suppliers.
2. **Manufacturing Operations-** Activities like material management and production planning which are associated with the converting the material inputs into the finished product.
3. **Logistics-** Order processing and Supply Chain Management (SCM) technologies.
4. **Marketing and Sales-** Firm's website, e-commerce and Customers Relationship Management (CRM) software to support the process of sales and marketing.
5. **Customer Support/Service-** Providing support and services to the customer.
6. **Accounting/Finance-** Accounting and finance software technologies which are used quite commonly by all kind of business firms.

7. **Human Resource Management-** Human resources management software that monitors different aspects of employee related data like recruiting, hiring, training and compensation planning for the employees.
8. **Technology Development-** This activity is supported by computer-aided-design (CAD) software that assists engineers in their design and drafting activities.
9. **Procurement-** electronic procurement systems that allow catalog search and transmission of orders to suppliers.

In terms of adoption of technology, there are **two categories** of MSMEs

1. MSMEs who are empowered and have capability to have competitive edges over large firms.

This category is characterized by a very proactive nature where they invest in technology to improve efficiency and productivity. 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. This leads to greater and feasible innovation.

2. Local players – This category typically comprises of small firms in a supporting role. They do not have a proactive approach in terms of adoption of technology. This could be due to lack of finance or manpower but more often it happens because of lack of awareness of the potential and benefits these technologies possess.

The second category of MSMEs are the one we have to focus most on. There is a severe need for proactive adoption of relevant technologies given the stiff competition, ever changing customer profile and availability of newer technologies. To prepare MSMEs for the upcoming challenges, there is a need for business model realignments which may result in a complete change in business strategies,

employees' roles and responsibilities, HR policies and even financials aspect of an organization.

#### **4. CURRENT SCENARIO AND BARRIERS**

It is critical to build upon the digital literacy in MSMEs to ensure that they make optimal use of the technology-enabled platforms. With their inherent capabilities to grow, digital transformation could be a suitable solution to help truly realize the potential of this sector.

##### **4.1 Results of the Survey conducted by Tally Solution and Kantar Group**

A recent survey was conducted by Tally and Kantar amongst 2250 MSMEs of different industry verticals across 34 cities in the country. The study revealed that 35% MSMEs has adopted business management software and among them more than 40% of the MSMEs already use digital banking and payment services with another 40% likely to adopt soon.

However, less than 25% business management software users have adopted business applications like financial applications, customer relationship management applications, etc., but a strong 45% looking to adopt these in the near future. While the adoption of online services is relatively on the higher side, the adoption of applications that can greatly help improve business efficiency and effectiveness has been disappointing. If technology providers recognize the reality of the MSMEs that we serve, there is a strong possibility to increase the adoption rate of these applications.

## 4.2 Barriers to Technology

Although MSMEs are better known for being flexible with playing with ideas and giving way to innovation, larger companies still end up implementing these innovations better. The key reason for this is a general lack of awareness of the new technological solutions. There are lot of government funded schemes, incentives and support programs for the business for encouraging them to upgrade or adopt new technologies, however small enterprises are inherently and excessively suspicious of all the new technology and the security related to them. Moreover, there is a limitation in terms of manpower and finance and their capacity to be part of available innovation networks.

The barriers to technology adoption on MSMEs are briefed as follows-

### 1. High Cost-

According to a study conducted by MasterCard's Merchant Scope study of small-to-mid-sized businesses, 46 percent of the survey subjects cited high cost of installing and implementing technology as a major reason for not integrating it into their business. Cost of technology affects the four basic areas of hardware, software, personnel and space.

2. **Lack of Awareness-** According to the same study, lack of know how was cited by 31 percent of the survey takers. Government and other institutional schemes are benefitting small businesses, but there is a broad lack of awareness of existing resources. Businesses who utilized the numerous government and other stakeholder schemes benefitted extremely well from them. At the same time, there appears to be a very low awareness of these programs among small businesses

3. **Poor Infrastructure-** Infrastructure includes all of the equipment necessary for data input, processing, communication and archiving, Software which are required to keep the organizations functioning including system software such as operating systems, database management systems, network operating systems, data communication software and compilers. Space is

another part of infrastructure which includes the space or real estate required to house all of the personnel and equipment associated with the IT department. Most of the MSME units have poor infrastructure to support all the IT services. Even if they think of using information technology services, inadequate infrastructure turns out to be the biggest bottleneck.

- 4. Unskilled Manpower-** Manpower represents all of the people required to keep the systems working, including management, developers, implementors, technicians and maintenance. There is a dearth of skilled manpower in the field of information technology. People are not willing to be associated with MSMEs on the aspect of use of information technology. It's hard to convince a skilled IT professional to work in MSME sector.

#### **4.3 Factors that need to be addressed-**

If we want to improve the awareness and overcome the barriers, we have to first analyze the factors which eventually drive the decision making with regards to adoption of Technology.

- 1. Infrastructure Support-** Infrastructure here mostly refers to the communication networks which ultimately support the smooth running of digital technology. There is only 52.08% of internet penetration in India. The World Bank has found that a 10% increase in internet access correlates to a 1.38% increase in GDP in developing countries. Communications networks are the highways of the future: essential to the economic development of nations, and with a critical potential to enhance quality of how we conduct a business.
- 2. Learning-** In a survey conducted by SME body-India SME Forum, key recommendations were made focusing on a Skill India program for MSMEs to improve their technology know-how, a centralized MSME support center for services such as finance, HR, marketing etc, building awareness around ICT solutions and government schemes, training programs in association with

academia over educating MSMEs to form a basic digital footprint etc. A study by Yes Bank underscores the need for Government, banks, technology providers and corporates to work together for digitally empowering MSMEs, and hence resulting in increased revenues, lower risks, reduced costs and diversified market segments in the sector.

3. **Perceived challenges-** Perceived challenges greatly affect what stops MSMEs from the adoption of new technology. According to a study by Yes Bank done on over 2700 MSMEs, 56% of respondents believe that the government is doing enough to boost technology adoption among MSMEs. However, around 60% feel that tax incentives and subsidized loans for purchasing equipment would help in better adoption of technology.
4. **Perceived benefits-** While over 60% of MSME respondents are Digital users, only 5% have fully embraced Digital technology. This could be due to lack of awareness and also what the small entrepreneurs perceive of these technologies. While 63% of the MSME surveyed said that they are going digital, only 50% perceive profitability and operational efficiency as benefits of going digital
5. **Cost: Direct and Indirect-** Cost includes cost for hardware, software, space and personnel associated with adopting new technologies. Investment in digital infrastructure is the tide that raises all boats. Governments have a responsibility to create the optimal conditions to attract a sustainable flow of private investment. Governments have to find investment from elsewhere: contributions from the private sector are critical. Investments in digital infrastructure are never one-offs. Data-driven economies demand continuous cycles of investment. Each new technology cycle brings new requirements for capital - in new infrastructure, new spectrum, and new services.
6. **Reluctance for change-** As per a study done by India SME Forum, despite 50 per cent of the respondents claimed benefits of using digital tools in terms of operational efficiency, customer engagement, and profitability, a staggering

70 per cent of the MSMEs cited lack of knowledge and guidance in using such tools, cost of investing into these technologies, and lack of skilled talent to manage them among the key challenges towards adoption of digital technologies. This results in an inherent habit of resisting any change because benefit of adoption of new technology are perceived less than the capital and time which will be “wasted”.

7. **Earlier experience with new technology-** According to the survey by Yes Bank, over 80% of all digitized MSMEs indicated overall positive digital experiences. These positive experiences will in turn motivate other MSMEs to adopt and experience these benefits themselves or maybe to maintain competition. This requires the presence of strong community network among the MSME sector.
8. **Adoption by competitors-** MSMEs in sectors including IT & ITeS, food processing, engineering, manufacturing, healthcare and pharmaceuticals have high levels of digital adoption. With adoption of technology, these industries become more competitive-given the ability to fasten the processes and serve the customers better. Getting a competitive advantage and increase in productivity are among the key reasons for the adoption among 60% of businesses using advanced technologies.

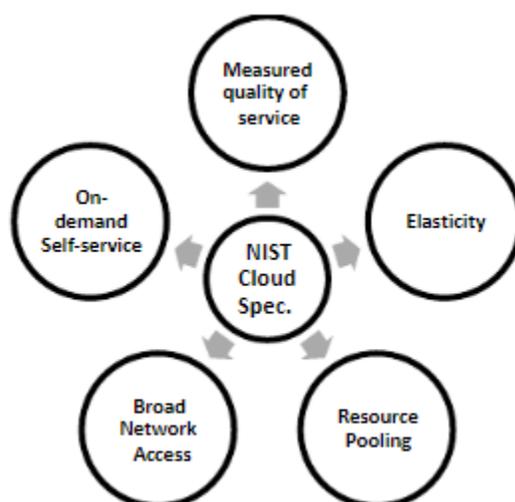
According to a study done by INTUIT, these are the key reasons which lead to increase in the adoption of technology are-

1. Easy-to-use Products
2. Reliable Internet and Mobile connectivity
3. Financial Management or accounting software
4. Clear Explanation for a product on data storage
5. Stories or Testimonials through TV, Radios etc.
6. Sharing of Good Experiences
7. SaaS
8. Native Language Software
9. Online Stories from other small business

## 5. TECHNOLOGIES FOR MSME SECTOR

Digitalization through Cloud Computing for ICT adoption, Big data, Machine Learning, Data Mining & the Internet of Things (IoT) could improve quality of products and services, standardization of their business processes, ERP, accounting, manufacturing design and regulatory compliance's including GST transition, adherence to environmental emission limits prescribed by SPCB/CPCB.

1. **Cloud Computing-** Cloud Computing introduces a range of benefits such as Scalability via on-demand resources along with consumption billing and without capital expenditure on hardware and software and minimal upfront costs. There is also access to a huge range of ready to work resources such as applications and IT infrastructures which can be accessed anywhere anytime. Integrated solutions help MSMEs avoid undesired complexities and improve the resources' manageability, company's flexibility, responsibility and controlling which in turn leads to better and more effective services to customers.



2. **Big Data-** According to a report distributed by Research and Markets, SMEs will proceed with the energy of putting resources into big data and business investigation. This dive will enable them to enhance client understanding, enter new markets, and dispense with overhead costs continuously. Big Data

Analytics (BDA) renders different open doors for SMEs to make an aggressive key effect on basic leadership. Advanced data management and analytics drives development for ventures and companies. SMEs are situated well to catch the durable advantages of enormous information. Given their size and adaptability to adjust, even a minor change can encourage a substantial scale effectively. BDA adoption can prepare SMEs to beat their friends and rivals. Cutting crosswise over industry lines, both built up and new players are presently utilizing data analytics for driving methodologies and advancement. Right now, is an ideal opportunity to change to BDA and associations ought to do this before it's too late and the opportunity has passed!

3. **Machine Learning and Artificial Intelligence-** These technologies can help MSMEs through predictive searches, maps, e-mail filters and smart replies in Gmail etc. Its relevance to the MSME sector cannot be undermined. In fact, AI can be the catalyst that empowers MSMEs to scale up and grow their business faster. It can save vital resources—time and effort, and get insights through AI capabilities that process large data, tools such as predictive analytics coupled with AI can identify trends and assist in making informed decisions and devise winning strategies faster. Streamlining material sale and delivery processes and chatbots are some other examples.
4. **Internet of Things-** MSMEs can manage their resources efficiently and effectively, create smarter products and build smarter services using the power of the IoT and associated technologies. The challenge of scalability and replicability of the owner's experience and personal skills which are perhaps the biggest concerns among MSMEs can be dealt with quite effectively by IoT. IoT itself is a great opportunity for innovation and new product, service or business models. A proactive move in this direction would ensure that MSMEs find the path to growing into a dominant component of the emerging 'Smart' economy.

## 6. CONCLUSIONS

A structural change in the technology ownership of MSME is a must. 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.

Information requirement, intensity of competition, and support and incentives, size and age influence the information technology adoption. Highly competitive environments drive enterprises to adopt the IT to acquire first mover advantages or to avoid being driven out of markets. MSMEs in highly competitive industries have no choice but to follow their competitors in adopting information technology.

Barriers to adoption of Technology by MSME sector in India includes the high costs associated with it and the lack of awareness regarding benefits, implementation and maintenance of the adopted technology. There is also a huge deficiency of skilled manpower to work with these technologies. More importantly, MSMEs in India tend to give more weightage to present as compared to the future. They form short term strategies to meet the liquidity needs. Generally, they don't invest in technology. They have shortage of fund and limited access to information. They try to reduce cost by reducing capital expenditure. This has made the Indian MSME sector a bit dormant when it comes to the use of latest technology and knowledge of the global markets.

Infrastructure support, spread of awareness regarding benefits and challenges, help with handling costs, increasing competition and maintaining a healthy competition is important to drive the MSMEs to go digital. Technologies like big data, cloud, IoT, Artificial Intelligence and Machine learning are the key to break through the stiff competition at domestic and global level.

In order to enable MSMEs tide over the problems of technological backwardness and enhance their access to new technologies, it is imperative to offer them a conducive environment which calls for approach with knowledge playing a predominant role. They need today is to leverage on modern technologies to harness human capabilities through the process of increased communication,

cooperation and linkages, both within the enterprise as well as across enterprises and knowledge producing organizations.

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