



EXCELLENCE IN MSMES THROUGH ICT

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Abstract

Micro, Small and Medium Enterprises(MSMEs) are the supporting pillars of most emerging economies. In Indian context, MSMEs have a huge contribution in terms of employment, exports, and overall GDP. However, these MSMEs lack in their abilities to compete on a local and global scale.

Information and communication Technology (ICT) is playing a pivotal role in the social and economic development of the world. They have influenced each and every domain of our working area and contributed in enhancing the efficiency and effectiveness of our work.

This paper aims at enlightening the MSMEs owners and managers about the areas of their operations that can be made more efficient by the usage of ICT such as Websites, Email. Customer Relationship Management(CRM), Supply Chain Management(SCM), Cloud Computing, ERP etc .

Keywords – ICT, MSMEs, E-Commerce, CRM, SCM, Document Management, etc.

Introduction

The Indian Economy was predominantly an Agrarian Economy for a very long time. The outlook of the government and people in general was mostly focused on developing the farm sector until the 1980's. Since the 1980's it was well understood that if the country needs to develop, then the other areas of the economy need to improve. That is when the Government shifted its focus on industrialization and modern infrastructure development. Being a country of largely the middle and lower income sections, this era saw a proliferation of large number of enterprises that were small in size.

These small sized enterprises had a real big impact on shaping the economy of modern India. From a humble beginning, the MSMEs now contribute to 45% of the Manufacturing output. There are 51 million MSMEs in India which together employ 117 million people (Government of India, Ministry of Micro, Small and Medium Enterprises, 2016).

Problem Statement

MSMEs in India and around the world are subject to fierce competitive environment. Customers are becoming more and more demanding. The demand of products of world class quality is what is becoming an issue to deliver by MSMEs. While they do contribute to the overall manufacturing output, export, employment and other areas of the economy, most of these MSMEs have largely remained inefficient and one of the major reasons of this lack of efficiency is non-adoption of modern technologies such as Information and Communication Technologies (ICT).

Research Questions

The following research questions would be answered in this research paper:

1. What are the various areas of business operations in MSMEs that can be improved with the help of ICT?
2. What specific ICT applications are available for MSMEs operations?
3. What advantages do these solutions bring to the MSME operation?

Defining MSMEs

The Government of India and the Ministry of Micro, Small and Medium Enterprises has enacted the Micro, Small and Medium Enterprises Development (MSMED) Act 2006 which defines MSMEs in the following manner:

Manufacturing Sector	
Enterprises	Investment In Plant & Machinery
Micro Enterprises	Does not exceed Rs 25 Lakhs
Small Enterprises	More than Rs. 25 Lakhs but does not exceed Rs. 5 Crores
Medium Enterprises	More than Rs. 5 Crores but does not exceed Rs. 10 Crores

Service Sector	
Enterprises	Investment In Equipment's
Micro Enterprises	Does not exceed Rs. 10 Lakhs
Small Enterprises	More than Rs. 10 Lakhs but does not exceed Rs. 2 Crores
Medium Enterprises	More than Rs. 2 Crores but does not exceed Rs. 5 Crores

(Source - Government of India, Ministry of Micro, Small and Medium Enterprises)

Defining ICT

Information and Communication Technology is a broader term which is a convergence of 2 technologies. It combines the power of Communication Technologies to that of the Information Technology (AIMS). As per OECD, ICT can be defined as a set of industries that use electronic media for capturing, processing and transmitting data. (Organisation for Economic Co-operation and Development). It includes cables, software, hardware, application and other peripheral devices that support storage, transmission, retrieval and creation of data and information.

ICT has affected many spheres of human life in general. Technology is responsible for growth of revenues and overall production in the long run when it comes to industries (Susanto Basu, 2006). Investment in Information and Communication Technology leads to transformation in labour markets, and also brings about an increase in productivity leading to higher competitiveness and sustainable development, which are the preconditions for economic equality and poverty reduction (Roberts, 2008).

ICT and Developing Economies

While the developed countries were quick to embrace the Information and Communication Technologies and further their development, the Developing countries were left behind significantly. This has created a sort of digital divide. ICT has the capabilities to help developing countries in several social, economic and health issues; however, it is the lack of awareness, capacities, accessibility and affordability that often result in these technologies being out of reach of these countries (Parliament office of Science and Technology, UK, 2006).



Figure 1 – Reasons of Lack of Adoption of ICT in Developing Countries

MSMEs and ICT

In order to achieve organizations objectives, most large corporates have an ICT or IT Organization or function composed of Hardware, Software and People mostly headed by a Chief Technology Officer (CTO).

MSMEs do not have such luxuries. Their very nature of being short of capital makes them spend on only vital resources to support operations. MSMEs have a very low IT budget and often their executives are forced to explain their spending on IT infrastructure and the benefits that would arise out of this investment. They may not even have a professional IT person to



look after whatever minimal ICT infrastructure available. The owner or the manager would be somewhat skilled to manage the basic operations.

This suggests that the IT footprint in MSME is minimal and the deployment, maintenance and upgradation of this infrastructure is highly difficult for MSME which have concerns of maintaining their working capital with minimal workforce and knowledge.

Application of ICT In Msmes Business Environment

ICT can truly unleash the power of MSMEs operation. The following are the areas and ICT tools that can be applied in the MSME environment.

1. Basic ICT hardware

In its most nascent form, ICT starts with a simple fixed line phone. This enables external communication. This could be further enhanced with the presence of a Mobile phone. These are basically the communication part of ICT. The organization can have a basic computer system, with minimal hardware and software specification that can support the routine work in the organization. The true capacity of Internet can be availed with the availability of broadband services which can be connected to the computer system via a Modem.

Depending on the needs, some organizations can move for larger, powerful and more sophisticated systems and servers.

2. Operating System

MSMEs have a choice in terms of Operating system to have on the computer system. They could go for the most popular operating system from the house of Microsoft, which is Windows which powers almost 82.56% of all computers (Desktop Operating System Market Share Worldwide). Windows is easy to use and has a very pleasing user interface. It has a lot of applications available for almost every use. Most of the professional applications are paid versions and attract a lot of investment. There are various versions of windows available depending upon the need and capability of the computer system. This popular operating system however comes with a huge cost (ranges between Rs. 5000 to 15000) based on the version of Windows.

The substitute of the popular Windows operating system is the open source LINUX operating system which powers 1.46% of devices (Desktop Operating System Market Share Worldwide). Most versions of LINUX are available free of cost. There was a time when the LINUX was perceived to be less user friendly due to the requirement of working on command prompt to launch applications. However, with several versions and ability to truly configure as per our requirements, being an Open Source System, LINUX has evolved over a period of time. The most popular version of LINUX is UBUNTU, which is very user friendly and had a plethora of applications available (Linux vs Windows).

3. Productivity Suite

Windows operating system can be loaded with its in-house productivity solution suite called Microsoft Office. This is a very powerful suite which has a range of tools that could be utilized by MSME for maintaining all kinds of records. It is supported on all versions of Windows operating systems. The major drawback is that it has a lot of tools that are hardly used and comes at a cost of Rs. 6000 to Rs. 20000.

Linux has 2 options when it comes to productivity tools. The UBUNTU LINUX comes inbuilt with LibreOffice suite which is a very powerful substitute of Microsoft office with full range of capabilities. The other option is WPS Office Suite which offers basic functions. Both these are available free of cost.

4. Website

Having an operational website is the need of the hour for any business that has an objective of gaining market share and customer base. It provides a competitive advantage to the business and serves as a powerful tool for marketing (18 Benefits of a Website for Small Businesses). It also helps in building brand image. It allows the firm to provide information to suppliers, customers and any other stakeholders interested in their business.

Websites can be created by purchasing a domain name from an internet service provider that has hosting capabilities. The server used to host the website can be on the company's premise or can be located on the ISP's premise. The company can then develop content to populate the website or take help from professional consultants to create one.



5. E-Mails

Emails have become an integral part of most business communication. However, many MSMEs still do not have professional Email. Email service helps an organization cut costs of communication. It also increases the speed of communication (The Email Marketing Advantage for Small Businesses). It helps businesses to reach more number of customers and also helps in creating a brand value.

There are a number of Free Email service providers such as Google (Gmail), Yahoo, Microsoft etc. However, as a professional business, it is always good to have own email address that uses the website domain name.

In order to do this, a firm needs to domain name from a internet service provider or web hosting service provider that provides a website with email facility or email forwarding facility. With email facility, one can access email using own website. However, with email forwarding facility, one can access and send emails using the domain name address, but the email is forwarded to the linked google or other account (Jain). The customer does not notice the difference.

6. E-Commerce

Organization for Economic Co-operation and Development (OECD) defines e-commerce as “An e-commerce transaction is the sale or purchase of goods or services, conducted over computer networks by methods specifically designed for the purpose of receiving or placing of orders” (ELECTRONIC COMMERCE, 2002).

E-Commerce has been hailed as one of the most revolutionary idea in recent times. It has transformed the way in most organizations conduct their businesses. E-Commerce has allowed firms to reach markets that were not accessible previously (A. Gunasekaran, 2002). It helps companies to cut costs by applying lean practices with the help of E-Commerce by buying just when components are required. It also reduces the cost of communication and increases its speed.

It also helps in maintaining better relations with customers. It helps in promoting products to the customers anytime and anywhere.

An organization can take up E-Commerce by creating their own website. This website could be hosted on a server in the premise of the organization or the premise of the internet service provider. It can then be linked with payment gateways and banks to send and receive payments.

7. Cloud Computing

Cloud Computing has become an increasingly talked about topic in recent times. It is a culmination of developments taking place in the world of Information and Communication Technology.

Let us understand the term cloud computing in the manner explained by Rama Ramaswami, Dian Schaffhauser in an article “What is Cloud?” (Rama Ramaswami, 2011).

Cloud computing can be understood with an analogy to utility services such as Electric Service provisioned by your local service provider. The service provider takes care of all the requirements to make electricity reach the consumers home. The consumer can just plug devices into the outlets and start using the power supply. The consumer may have no idea where the power was generated, and is only concerned with the working of his device that uses power.

Cloud computing makes applications, files, data, or computing power accessible ubiquitously, using an internet connection. The consumer does not need to be concerned with the actual location of the infrastructure.

Cloud Computing has made it quite simpler for MSMEs to deploy ICT in their premises. They can make use of several applications necessary for their business on a pay as you use model.

Cloud Computing offers the following benefits to the MSMEs.



Figure 2 – Benefits of Cloud Computing

(Source – Cloud Computing - Opportunities and Challenges in MSMEs (Mutha, 2014))

The following are the areas where Cloud Computing can be employed in a MSME (BABU & MAJ.P.S.CHAKRAVARTY, January 2014)

1. **Web Hosting** – Cloud computing can help a business to host their own websites without having to undertake huge capital investments in purchasing IT infrastructure. The company can then pay as per the usage and can scale up or down based on the requirements.
2. **Web Analytics** – Using Web Analytics on the cloud, a business can track the number of people visiting their website and make concentrated marketing strategies.
3. **Document Management** – Businesses can securely store their essential documents on the cloud without having to invest in costly storage. The cloud storage offers the advantage of accessibility clubbed with additional security.
4. **Collaboration** – Cloud computing can be used to create documents or files using collaboration. People sitting in physically distant location can share, edit and work together using these solutions. (Judith Hurwitz)
5. **Applications** - Most traditional applications have now moved to cloud platform owing to the benefits provided by Cloud Computing. Productivity suites such as Office 365 and Google Docs allow users to use office suites anywhere and anytime, without having to spend much.

Accounting and Billing

With the rapid growth of MSMEs, there is an increased demand in solutions that help in accurate management of invoices, payments and expenses. Most of this work is done manually in most traditional MSMEs. However, the manual work often leads to delays and errors and may also require lot of paper work.

In order to get the tasks done faster, a computer based accounting and billing solution would serve rightly for the benefit of MSMEs.

There are many Accounting and Billing solutions available in the market. Amongst the best is TallyERP Solution. It provides the organization the capability to record its accounts, purchase, sales, invoice, and inventory. It is available as a licensed version standalone solution or Cloud based solution (Tally Solutions).

Zohobooks is another popular accounting solution available for small business. It also allows customers to generate invoices, manage inventory, reconcile bank statements, create customized reports and also help in GST filing (Zoho). Since both these solutions are available on the cloud, the total cost of ownership is very low.

Customer Relationship Management (CRM) Solutions

CRM is a data driven solution used to streamline the customer interactions and data so as to serve the customer more efficiently throughout their lifecycles. They are useful in managing the customer engagements, various projects, sales, and provide data that can be used to plan actionable. (What is CRM?).



Figure 3 – Advantages of CRM (Source - CRM tools for business owners in the meetings industry Show 254).

Various CRM solutions are available in the market place. One of the popular CRM tool is Salesforce.com. It offers everything a salesperson looks for in a CRM solution. It has a great user interface and comes with a host of analytical tools (CRM).

Another popular CRM solution is Microsoft Dynamics (What is CRM?). It comes from the house of Microsoft which already has a huge market share in terms of operating system. This CRM solution has improved over a course of time. It has made customer service as a point of differentiation.

Both these CRM solutions come in 2 major variants, i.e., On Premise and Cloud. In On premise CRM, the organization has to buy the physical infrastructure and application for CRM deployment. This requires additional investment upfront. The simpler option is to use Cloud based CRM which is now offered by most application providers, including Salesforce and Microsoft Dynamics.

SuiteCRM is an Open source version of CRM. It offers almost all capabilities of the other CRM solutions. It is the world’s most popular open source CRM (SuiteCRM, Open Source CRM for the world) .

Supply Chain Management and Inventory Management

Supply chain management is the activity in an organization that enables the firm to source components and raw material to produce final products and then make these products reach the final consumer. It includes the function of logistics, inventory and warehousing. The goal of Supply Chain is to increase efficiency by producing only that much which can be sold or is demanded. It helps in decreasing the overall cost when done effectively.

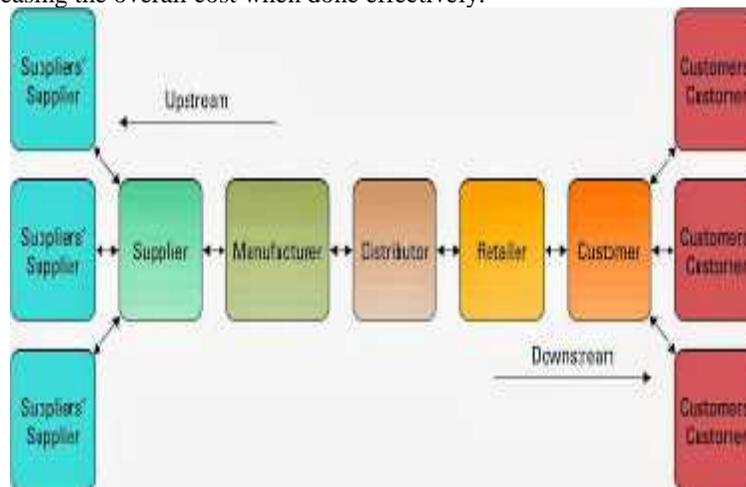


Figure 4 – A typical Supply Chain (Source - Chapter 10 : Extending the Organization – Supply Chain Management)

Major activities in a supply chain can be summarized in the following figure

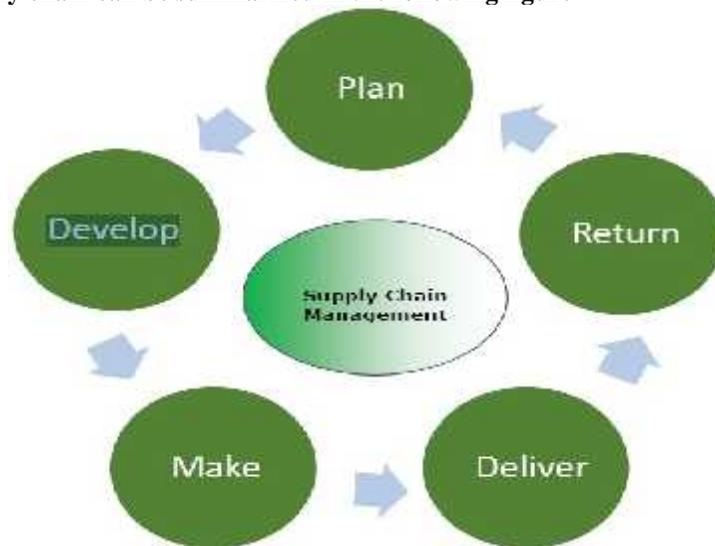


Figure 5 - Activities in a Supply chain (Supply Chain Management - Process).

(Source - https://www.tutorialspoint.com/supply_chain_management/supply_chain_management_process.htm)

In order to increase visibility and create efficiency in their supply chains, MSMEs can make use of supply chain applications.

There is a range of SCM tools that are available. One of the most powerful and sophisticated application is SAP SCM. It can help a business manage almost everything in a supply chain (Supply Chain). However, it comes with a huge cost.

Oracle Cloud SCM is another application which provides supply chain capabilities with the backing of cloud computing (SCM Cloud). This makes it more feasible as the user can pay as per use.

There is a free and open source supply chain management solution called OpenBoxes (OpenBoxes). The current application is mainly created for healthcare industry but can be configured as per the needs being an Open Source application.

Enterprise Resource Planning

Enterprise Resource planning is an application which is used by most large companies and is now in huge demand by MSMEs. It is an integrated tool that manages different functions of the organization. A comprehensive definition of ERP adopted from Klaus, Roseman and Gable ((Klaus, 2000), “comprehensive, packaged software solutions seek to integrate the complete range of a business’s processes and functions in order to present a holistic view of the business from a single information and IT architecture.” It has been in widespread use since the 1970s and has evolved from Materials Resource Planning(MRP), MRP-II, etc.

ERP has several benefits to business. These benefits differ as per the business and its requirements; however there are some common benefits to all businesses. ERP integrates the functions of the entire business. This eliminates the need to enter data into multiple sources by multiple departments, thereby eliminating redundancies and improving accuracy. (Beheshti, 2006) ERP also facilitates process improvement by reengineering the process and workflows to eliminate wastages. This leads to improved quality and reduced costs.

It allows central storage of Databases, which eliminates multiple sources and thereby leads to common visibility in the entire organization.

There are a number of ERP solutions available to cater to the needs of MSMEs. One of the best is SAP ERP which is a very mature ERP application and mostly used in large enterprises. However, they have created application to suit the needs of MSMEs too. SAP ERP for SMEs is used by over 55000 companies in 150 countries (SAP Business One). The good thing is, it is also available on Cloud.

JD Edwards EnterpriseOne is another popular choice of ERP Application. This is specifically sold by Oracle for SMEs (JD Edwards EnterpriseOne).

The third in line is ofcourse from the house of Microsoft. It has a special offering for MSMEs called Microsoft Dynamics GP. It also offers a lot of flexibility and can be configured easily. The business can add more features as it grows.

Among the Open source solutions, there are 2 prominent ERP applications. The first one is ERPNext. It is a specialized application made for MSMEs and is very simple in its user interface, keeping in mind its end customer. It is backed by expert support and a huge community of developers to support the application (erpnext).

Dolibarr is another Free and Open Source solution. It also provides a full fledged ERP solution and is also backed by regular updates and support team (dolibarr). If a business wants to add more functionality, they can buy it from Dolistore.

Business Benefits of ICT to MSMEs

ICT has numerous benefits for MSMEs that embraces its power. It has changed the way most organization communicates and transacts with each other in today's world. The following are the benefits of ICT:

1. **Increased Productivity:** ICT has made data and information available to MSMEs which helps them to increase their efficiency by producing only those things that are required in adequate numbers. The ability to create, store, manipulate and transfer data makes life easier for managers and helps them focus on core activities (Linton, 2017).
2. **Better Decision Making:** Since the data is available anytime using some form of ICT, business managers in MSMEs are able to make sound decisions. They are also in a better position to respond to changes in the internal and external environment.
3. **Improved customer satisfaction:** ICT also helps in improving the services rendered to the customer. Specialized tools such as CRM and ERP help to track each and every requirement of customer and helps in managing the priorities, thereby resulting in satisfies customers.
4. **Collaboration:** MSMEs can work closely with both customers and supplier to provide the best solutions, using collaboration tools. ICT enables sharing of documents and also allows virtual meetings thereby increasing the sharing of ideas.
5. **Financial Profitability:** The implementation of one or more ICT tools in the business leads to greater visibility of Business processes. This results in greater avenues for cost cutting and streamlining the business processes. Since a lot of redundant and rudimentary work is eliminated, it results in enhanced profitability.

Conclusion

The study leads to the sound conclusion that ICT has a great number of avenues and application in the MSMEs. ICT has the ability to change business landscape in MSMEs and help them becoming more competitive, both locally and globally. They can also gain by getting access to wider markets and customer base. Lack of awareness about ICT among owners and managers is often cited as one of the major reasons of non-adoption of ICT.

Existing literature seems to concentrate more on the enablers and barriers to ICT adoption in MSMEs. However, literature regarding areas of MSMEs operations that can benefit from ICT adoption and tools available in marketplace is lacking. Use of ICT tools in MSMEs can lead them to achieving business excellence and transform the organization.

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