Small and medium Enterprises

Dr. Omkar Gadre

E-Commerce Tool

for Small and Medium Enterprises

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Dr. Omkar V. Gadre

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Preface

Indian e-market service providers have to develop new cost effective business models to cater to the Small and Medium scale enterprise. As the needs of the Small and Medium scale enterprises are divers, they have to carefully select the segments they would cater to and ensure that they create value for Small and Medium enterprise to increase participation from Small and Medium scale enterprises. Government of India is taking initiatives to provide cloud based information technology services to allow Small and Medium scale enterprises to use Information technology and e-commerce and communication technology solutions on pay per use mode. The barriers to adaption can be over through policy interventions by the government and develop an eco-system conducive for small firms to adapt information technology and e-commerce tools effectively. As adaption rates may vary from one sector to another sector, one region to another region, further study can be undertaken to compare the adaption rate, the barriers in adaption and the problems faced by Small and Medium scale enterprises in different cities implementing IT and using e-commerce tools.

Dr. Omkar V. Gadre

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Dr. Omkar V. Gadre

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CHAPTER - 1

E-COMMERCE (INFORMATION TECHNOLOGY IN SMALL AND MEDIUM ENTERPRISES): THEORETICAL PERSPECTIVE

1.1 Introduction

The adaption of newly innovated information communication technology and its wide usage by the individuals, group and organisation have made changes in the way of communication as well as the processes through which human being traditionally perform their exchange functions. The increasing trend of information and communication technology usage around globe, particularly – internet, influences different individuals, groups and organisations to be connected with the recently developed and exponentially increased industrial community.

The business organisations are one of the advantageous groups, achieving their competitiveness in utilizing the interactive media to perform their promotion, communication, customer service and exchange functions. In developing countries the manufacturing services and trading functions are largely dominated by Small and Medium sized enterprises. It is popularly stated that today's multinationals were Small and Medium scale enterprises in yester year[1]. Small and Medium scale enterprises are the fountain heads of several innovations in manufacturing and service sectors, the major link in the supply chain to corporate and the public sector undertakings. By promoting Small and Medium scale enterprises the rural areas of India will be developed. Small and Medium scale enterprises are now exposed to greater opportunities than ever for expansion and diversification across the sectors. Indian market is growing rapidly and Indian entrepreneurs are making remarkable progress in various sectors like manufacturing, precision engineering design, food processing, pharmaceuticals, textile, retail, information technology, agriculture service sector etc.

It is well known that, Small and Medium enterprises provide maximum opportunities for both self employments and jobs. In the era of globalization and liberalization, Small and Medium scale enterprises are facing cut throat competition at local, national and international level. To keep their position intact and sustained in a long run, in this highly competitive market they need to implement new changes and technologies. E-commerce is one of them. Electronic commerce is affecting every aspect of every business of every country. To keep their competitive edge over others Small and Medium scale enterprises need to implement electronic commerce in their day to day work; otherwise their sustainability is a big question mark.

The use of E-commerce by Small and Medium scale enterprises may take many forms from online purchasing of products, contacting suppliers through e-mails to marketing and selling their products through their own websites to international clients which can be divided into upstream (Business to business or B2b) and downstream (Business to customers or B2c) activities. Upstream activities such as inbound logistics and operations can be organised globally to achieve economies of scale. Downstream activities such as marketing, sales and customer services must be organised on multi domestic basis. Most Small and Medium scale enterprises use internet for a very limited range of purpose eg. Email an easier and more economic way to contact suppliers or receive service as another Medium for collecting information.

In an increasingly competitive and globalized world, Small and Medium scale enterprises need to compete more effectively to boost domestic economic activities and contribute towards increasing export earnings. The E-commerce can help Small and Medium enterprises to present themselves to the world. E-commerce is emerging as a new way of helping business enterprises to compete in the marketplace and thereby contributing to their economic success. Small and Medium scale enterprises with a relatively Small investments, profits can generate good business opportunities by automating their processes using electronic means. E-commerce platforms like Business to business portal and business to customer portals are playing very good role in enhancing the reach of Small and Medium scale enterprises globally.

Small and Medium scale enterprises see the increasing benefits arising from E-commerce as expanded geographical coverage giving them a larger potential market into which they can sell their products and services. E-commerce improves Small and Medium scale enterprises need to play their business by introducing new product, communication improvement, gathering data and establishing potential business partners. The web permits Small business to enter the domain of larger business and compete with them. Moreover, the utilisation of E-commerce permits Small business to attain equivalent efficiencies as large business.

Global Developments and other competitive forces are increasingly driving firms to engage in information and communication technology based strategies. The adaption of information and communication technology by Small and Medium scale enterprises in India is largely a market driven process and eventually it is expected that competition in information and communication technology will lead to greater affordability and allow Small and Medium scale enterprises to engage more in E-commerce. Global competition is major driver in this process, particularly for export oriented business. Many buyers in developed countries, who would like to purchase agricultural goods or handicrafts from developing countries expect their suppliers to be connected to the global online supply chain.

E-commerce presents a number of opportunities for Small and Medium scale enterprises. The main reason lies in that E-commerce has the ability to become a field leveller providing as many opportunities for Small and Medium scale enterprises in India as in developed countries.

The ongoing opportunities created through the operations and usage of different connected technologies, such as computer, internet and other information and communication technology are the driving forces of the adaption and usage of the business and translations through internet i.e. the operations of electronic commerce. The business to business (B2B) operations has high potentials in developing countries particularly in the Small and Medium scale enterprises sector. Easy global reach and searching the opportunities in international market, convenient and intensively connected with the customers regardless of time and place as well as getting the opportunities to serve the customers directly with initially specialized treatments are the stimulating factors of adapting E-commerce.

Higher growth of the Small and Medium scale enterprises help eradicate poverty to a satisfactory level by removing various prejudices against labour intensive approach and creating new jobs for the skilled manpower. Thus exploring avenues and adaption of the technology dependent transactions by the business enterprises particularly by the Small and Medium scale enterprises would have been done automatically and rapidly.

In reality it has not been expanded automatically rather slow trend of Information technology and adaption is evident in the sector in both developing and developed countries. The government's incentives to boost up the technology appeared in many functions such as withdrawal of all taxes and customs duties from the computer and its peripherals; Provision of easier loan to the entrepreneur in this sector and encouraging software industry, enactment of ICT (Information & communication technology) policy and planning to utilise the ICT's potentials to its different sectors by utilizing e-governance phase by phase and finally establishments of sub marine cable network. On the above mentioned context, it is evident that Small business is slow to apply technology to improve their competitiveness, as they are affected by their sheer small and limited resources. Although the trend is analysed in developed countries perspective, the situation of the developing countries in similar sectors are not observed differently.[2]

1.2 Historical Background, Concept and Types of E-commerce

Historical background of E-commerce

Originally electronic commerce was identified as a facility of commercial transactions electronically, using technology such as electronic data interchange (EDI) and Electronic fund transfers (EFT). These were both introduced in the late 1970s, allowing business to send commercial documents like purchase orders or invoices electronically. The growth and acceptance of credit cards automated teller machines and telephone banking in the 1980s, were also forms of electronic commerce. Another form of E-commerce was the airline reservations systems. From 1990 onwards electronic commerce had additionally included Enterprises Resource Planning system (ERP), Data mining and data warehousing.

Since 1990, World Wide Web has been existed. Web browser has transformed an academic telecommunication network into a worldwide communication system called internet/www. Since then people began to associate a word "E-commerce" with the ability to purchasing various goods through the internet using secure protocols and electronic payment service.[3]

Concepts of E-commerce and Electronic Data Interchange

E-commerce stands for electronic commerce associated with buying and selling of information pertaining to trading of goods and services through electronic Medium, i.e. internet or phone. It also includes the entire online paying for products and services. E-commerce refers to the paperless exchange of business information using electronic data interchange, electronic mails, electronic bulletin boards, World Wide Web and other network based technologies. E-commerce not only automates manual process and paper transactions, but also helps organization move to fully electronic environment and change the way they operate. The Broad goal of E-commerce is to reduce costs, lower product cycle time, faster customer response, and improved service quality.

Electronic Data Interchange (EDI) is the electronic transfer from computer to computer of commercial and administrative data using an agreed standard to structure on EDI message. In electronic commerce, EDI techniques are aimed at improving the interchange of information between trading partners, suppliers and customers by bringing down the boundaries that restricts the interaction and business with each other. EDI can be used to transmit financial information and payments in electronic form.

Types of E-commerce

A business organisation can organise itself to conduct E-commerce with its trading partners, which are businesses and or with its customers. The resulting modes of doing business are referred to as –

a) Business to Business (B2B)

E-commerce, that takes place between businesses, is referred to as business to business (b2b). The exchange of products, service or information between businesses on the internet is B2b E-commerce. There are some examples of b2b websites which include company website, product supply and procurement exchange, specialized or vertical industry portals, brokering sites, information sites and banking and financial sites etc.

b) Business to Consumer (B2C)

E-commerce that takes place between business and consumers is referred to as Business to Consumer. It may be defined as, any business selling its products or services to consumers over the internet for their own use. In addition to online retailers, b2c has grown to include services, such as online banking, travel services, real estate etc.

c) Consumer to Consumer(C2C)

A virtual market place on the internet in the form of website enables sellers and buyers to meet and exchange goods, including used goods at a negotiated price in C2C. Such a site is known as an auction site.

d) Business to Government (B2G)

In dealing with government at local, state, national or multinational levels, consider the various activities can be streamlined like business to government interactions such as online procurement, accessing government business information online, accessing grant schemes online, accessing tenders online etc.

1.3 E-commerce and Information Technology in India

Electronic commerce or E-commerce implies doing business activities for products and services and other tasks electronically rather than by physical exchanges or direct physical contract. It is an internet, information and technology based process. A more appropriate definition of E-commerce which is, defined as the use of electronic communication, digital transformation and redefined relationships for value creation between or among organisations and individuals.

E-commerce not only permits but facilitates an increase in productivity enabling the creation of new relationships with customers, distributors, suppliers and other strategic partners. Various advantages relevant to Small and Medium scale enterprises are the “levelling of the playing fields” with the big business locations independence, time independence, the ease of communication and ability to achieve competitive advantages for the business. E-commerce permits organisations to access potential customers and suppliers via the web. A number of the most important advantages of E-commerce are – expanded marketplace, potential value relations, productivity enhancements, customisation of product and services 24 hour trading and knowledge exchange and management.

E-commerce is basically changing the economy and the means of business conducted these days. It forces companies to search out new ways in which to expand the markets, they have to compete in to draw in and retain customers by tailoring product and services to their wants and needs and to restructure their business processes in order to deliver prime quality product and service efficiently and effectively. The wide use of E-commerce can be seen, in the following table, indicating the worldwide spread of E-commerce.

Table-1.1: Five countries with highest number of Internet users

Sr. No	Country	Population (2012 Est)	Internet users latest data	% of internet users & population
1	China	1,343,239,923	538,000,000	40.1%
2	USA	313,847,465	245,263,319	78.1%
3	India	1,202,073,612	137,000,000	11.4%
4	Japan	127,368,088	101,228,736	79.5%
5	Brazil	193,946,886	88,494,756	45.6%

Source: online available at http://www.internetworldstats.com

The amount of trade conducted electronically has grown dramatically. Since the spread of the internet, a wide variety of commerce is conducted in this way, spurring and drawing on innovations in electronic fund transfers, supply chain management, internet marketing, online transaction processing, Electronic data interchange, automated inventory management system and automated data collection system.

The statistics and reports indicate that E-commerce is growing in India. The internet world statistics indicate that India is among the top five countries with highest number of internet users. The above table depicts the number of internet users of the country. India has relatively few internet users, just 11.4% of its population is connected to web compared to 40.1% in China & 78.1% in USA

The cutting edge for business today is E-commerce. Most people think E-commerce means online shopping, but web shopping is only a Small part of the picture. E-commerce can be defined as modern business methodology that addresses the needs of the organisation, merchants and consumers to cut costs while improving the quality of goods and service and speed of service delivery. E-commerce is associated with the buying and selling of information, products, service via computer networks. A key element of E-commerce is information processing.

Information Technology and E-commerce Scope and Expansion

Source: www.mapindia.com

The effects of E-commerce are already appearing in all areas of business from customer service to new product design. It facilitates new types of information based business processes for reaching and interacting with customer's online advertising and marketing, online order taking and online customer service etc. It can also reduce cost in managing orders and interacting with a wide range of suppliers and traders, trading partners and areas that typically add significance to the overheads and the cost of products and services. The government of India has recognised the need for developments of Information technology industry and information infrastructure as these are twin engines for the development of industrial sector in the country. Deeper penetration of Information technology applications in the economy and in the society as a whole can help boost the Small and Medium industrial organisation in every state of India. E-commerce and information technology applications can make it easier for Small and Medium scale industrialist to integrate better with the global markets, the e-marketplace. This led government over the last few years to formulate liberal policies for the development and growth of the industrial sector.

The most talked about well enclosed feature of E-commerce is its global flavour. Evidently E-commerce has also started to show its true potential in India. While on one hand, India's E-commerce solutions are becoming a sought after commodity around the world, even E-commerce based business are leaving their distinct marks of technology competitiveness, viable business model and entrepreneurship. E-business can indeed emerge as a major opportunity for India.[4]

During the last decade, two major industry associations produced separate reports on E-commerce in India. One was prepared by National committee on E-commerce setup, the confederation of Indian Industry (CII), while the other was commissioned by National Association for Software and Service Companies (NASSCOM), prepared by Boston Consulting Group. Both the reports are optimistic about the development of E-commerce in India.

1.4 Small and Medium Scale Enterprises : Indian Perceptive

In India, large scale organisations use Small and Medium scale enterprises as an important link to the supply chain because they are, heavily dependent on outsourcing. Therefore Small and Medium scale enterprises have emerged as one of the key sectors for employment generation and overall economic development of India.

Small and Medium scale enterprises are considered as growth engine of economy of developing countries. It is also true for developed countries and more applicable for under developed countries, where capital is scarce and labour are more. More than 99% enterprises in developed countries in Europe and 80% in USA were under this sector. India is not beyond this world recognised remarkable word. Its contribution towards balanced regional development, proper uses of total resources and talent is more than remarkable.[5]

India is sometimes referred to as the land of Small and Medium scale enterprises, symbolised by the proliferation of Micro, Small and Medium enterprises all over the country. In Maharashtra state Pune, Mumbai and Nagpur Districts represents the largest concentration of manufacturing units of all sites. Nashik, Aurangabad, Solapur, Kolhapur are some of the districts with significant manufacturing zones. Employment pattern also shows the dominance of these districts.

In India only 1.5 million Small and Medium scale enterprises are in registered segment while the remaining 24.5 million that contributes 94% of the units are in unregistered segment. The role of these enterprises in economic and social development of country is widely acknowledged. There are nurseries for entrepreneurship, often driven by individual creativity, innovations and make significant contribution in manufacturing output, exports and employment generation. In India, the labour capital ratio in Small and Medium scale enterprises is much higher than in larger industries. Moreover, Small and Medium enterprises are better dispersed and are important for achieving the national objective of growth with equity. In India Small and Medium enterprises are broadly classified into two sectors – manufacturing and services. Units engaged in manufacturing or producing and providing or rendering of services has been defined as Micro, Small and Medium scale enterprises under MSMED act 2006.[6]

The Micro, Small and Medium Enterprises Development (MSMED) Act, 2006 seeks to facilitate the development of these enterprises as also enhance their competitiveness. It provides the first ever legal

framework for recognition of the concept of "enterprise" which comprises both manufacturing and service entities. It defines medium enterprises for the first time and seeks to integrate the three tiers of these enterprises, namely, micro, small and medium.

The Act also provides for a statutory consultative mechanism at the national level with balanced representation of all sections of stakeholders, particularly the three classes of enterprises; and with a wide range of advisory functions.

Establishment of specific Funds for the promotion, development and enhancing competitiveness of these enterprises, notification of schemes/programmes for this purpose, progressive credit policies and practices, preference in Government procurement to products and services of the micro and small enterprises, more effective mechanisms for mitigating the problems of delayed payments to micro and small enterprises and assurance of a scheme for easing the closure of business by these enterprises are some of the other features of the Act.

Micro, Small and Medium scale enterprises can be defined from aspect of number of persons employed and amount of investment in plant and machinery. From the viewpoint of number of micro enterprises is defined as an enterprises which employs less than 10 persons, Small enterprises is defined as an enterprises which employs less than 50 persons and Medium sized enterprises defined as an enterprises which employs less than 250 persons. From the viewpoint of investment in plant and machinery in Micro, Small and Medium scale Enterprises Act of 2006 is defined Micro, Small and Medium enterprises. The act classified Micro, Small and Medium Enterprises into two categories

a) Manufacturing Enterprises

The enterprises engaged in manufacturing or production of goods pertaining of any industry specified in the first schedule of the Industries Development and Regulation Act 1951. The manufacturing enterprise is defined in terms of investment in plant and machinery.

b) Service Enterprises

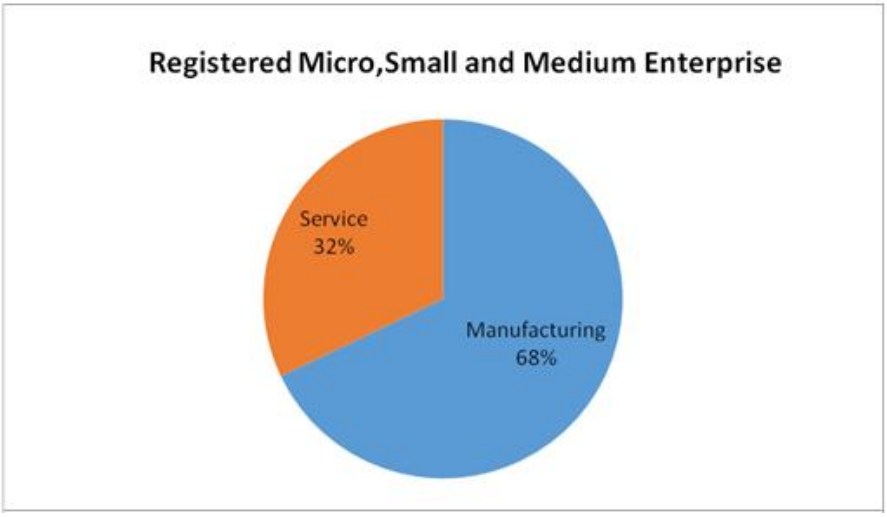
The enterprises engaged in providing or rendering of service are defined in terms of investments.[7]

1.5 Performance and growth of Small and Medium scale enterprises in India

Performance of Small and Medium enterprises is closely linked. Proper performance leads to proper development. Performance of Indian Small and Medium scale enterprise are mentionable in the world's Small and Medium enterprises. For this reason, development of Small and Medium scale enterprises has been priority of government of India and mainly due to its considerable contribution in economic development, employment generation, poverty reduction, and balanced regional development. As stated earlier, this sector contributed 8% in GDP, 45% in industrial products, 40% in export value and 15% of indirect export value. More than 26 million units under this sector and nearly about 60 million people engaged in this sector. Small and Medium scale enterprises have emerged as important vehicle for attaining growth of the economy worldwide. Small and Medium enterprises not only provide good job opportunity but are able to create more jobs with a lower capital comparing to other sectors and are in unique position to use local resources and local talents.

The adaptability, ability to make cost effective products with degree of flexibility is remarkable. There are over 6000 products, ranging from traditional to high tech items, which are being manufactured in Small and Medium scale enterprises in India. Various types of industries are growing in this sector and they include – coal mining, metal mining, crude petroleum and natural gas, food manufacturing, mineral water, beverage industries, tobacco, footwear, wearing apparels made up of textile goods, wood products and cork, printing and publishing, packaging and allied industry metal products, electrical and telecom machinery, transport equipments, information technology, agro and service sectors, food processing etc.

The size of registered Small and Medium enterprises is estimated to be 15,63,974 and of the total working enterprises, the proportion of Micro, Small and Medium enterprises were 94.94%, 4.89%, and 0.17% respectively. 67.10% are manufacturing enterprises and 32.9% are service enterprises and about 45.23% (7.07 lakhs) of the units were located in rural areas.[8]



The office of DC(Development Commissioner) (MSME) provides the various performance parameters of the Small and Medium enterprises. MSME Act introduced in 2006 and after that year's data relating to this sector are properly compiled. The following tables are showing the various performance parameters of this sector.

Table-1.2: Performance and growth trend of Small and Medium scale enterprises in India.

Financial Year	Total SMEs (in lakhs)	Fixed Investments (in crs)	Production (in Crs)	Employment (lakhs persons)	Exports (in Crs)
2000-01	101.1(4.07)	146,845(4.9)	184,401.4 (8.23)	238.73 (4.21)	69,797 (28.78)
2001-02	105.21(4.07)	154,349(5.11)	195,613 (6.06)	249.33 (4.44)	71,244 (2.04)
2002-03	109.49(4.07)	162,317(5.16)	306,771 (8.68)	260.21 (4.36)	86,013 (20.73)
2003-04	113.95(4.07)	170,219(4.87)	336,334 (9.64)	271.42 (4.31)	97,644 (13.52)
2004-05	118.59(4.07)	175,699(4.98)	372,938 (10.88)	282.57 (4.11)	124,417 (27.42)
2005-06	123.42(4.07)	188,113(5.27)	418,884 (12.32)	299.85 (4.44)	150,242 (20.76)
2006-07	128.44(4.07)	213,219(13.35)	471,663 (12.60)	312.52 (4.23)	177,600 (24.54)
2007-08	133.68(4.07)	238,975(12.08)	532,979 (13.0)	322.28 (3.21)	N/A

(Source SIDBI report in MSMEs Sector 2010)

The figure in bracket shows the percentage growth over the previous year. The following table shows comparison of the MSE's sector with overall industrial sector. The Medium and Small scale sector has maintained a high rate of growth comparing to overall industrial sector. Comparative growth rates of production for both sectors are shown in the following table.

Table-1.3: Comparative data on growth rates of SME sector

Year	Growth rates of 2001-02 base- Index of Industrial Production (%)	Overall Industrial Growth rates of sector (%)
2002-03	8.68	5.70
2003-04	9.64	7.00
2004-05	10.88	8.40
2005-06	12.32	8.20

2006-07	12.60	11.60
2007-08	13.00	8.50
2008-09	Not Available	2.80
2009-10	Not Available	10.40

(Source Ministry of MSME Govt. of India Annual Report 2010-11)

Contribution of Small and Medium scale enterprises in the Gross Domestic Products (GDP) is remarkable which is clear from the following table.

Table-1.4: Small and Medium scale enterprises contributions in GDP

Sr. No	Year	Total Industrial Production (%)	GDP (%)
1	2002-03	38.89	5.91
2	2003-04	38.74	5.79
3	2004-05	38.62	5.84
4	2005-06	38.56	5.83
5	2006-07	45.62	7.20
6	2007-08	45.24	8.00
7	2008-09	44.46	8.72

(Source Ministry of MSME Govt. of India Annual Report 2010-11)

The above table indicates that, Small and Medium scale enterprises have maintained a steady growth rate in terms of GDP compared to overall industrial sector. Export performance of this sector is very high and in few areas 100% export is only from this sector. Employment generation capacities are also remarkable in Small and Medium scale enterprises. It is also observed that variety types of products are produced by this sector. Number of Small and Medium scale enterprises, are increasing very fast. Small and Medium scale enterprises occupy strategically an important position and its performance is of high level.[9]

1.6 Small and Medium enterprises- Present Scenario in India

In India Small and Medium scale enterprises have many plus points. They are less capital intensive and absorb more labour. One million Rupees investment generates revenue that is five times the amount of capital and creates new job opportunities. Today, in India, Small and Medium enterprises content to use traditional skills and knowledge. What they need is infusion of new technology, capital, innovative marketing and scientific packaging. The government should now revive the investment caps for this sector, in line with the current cost. It will be a good idea if only a maximum cap of Rs.25 crores is set for the entire sector.

Similarly Foreign Direct Investment (FDI) is now allowed in modern retail with condition that they procure at least 30% items from local Small and Medium enterprises. The investment limit for Small and Medium enterprises is set to $1million (likely to be raised to $2million). This will create many green field opportunities.

Foreign Direct Investment (FDI) Policy With the promulgation of the MSMED Act, 2006, the restrictive 24% ceiling prescribed for equity holding by industrial undertakings, whether domestic or foreign, in the MSEs has been done away with and MSEs are defined solely on the basis of investment in plant and machinery (manufacturing enterprises) and equipment (service enterprises). Thus, the present policy on FDI in MSE permit FDI subject only to the sectoral equity caps, entry routes and other relevant sectoral regulations.

Limited Liability Partnership (LLP) Act, 2008 - The salient features of the proposed LLP Act, 2008 are as under -

I. LLP shall be a body corporate and a legal entity separate from its partners. It will have perpetual succession. Indian Partnership Act, 1932 shall not be applicable to LLPs, since LLP shall be in the form of a body corporate.

II. An LLP has to be incorporated with a minimum of two persons. The Act does not restrict the benefit of LLP structure to certain classes of professionals only and would be available for use by any enterprise which fulfills the requirements of the Act.

III. The LLP will be an alternative corporate business vehicle that would give the benefits of limited liability but would allow its members the flexibility of organizing their internal structure as a partnership based on an agreement.

IV. On registration LLP shall be capable of

- Suing and being sued; and
- Acquiring, owning, holding and developing or disposing off property.

V. A person may cease to be a partner of a LLP in accordance with an agreement with the other partners or in absence of agreement with the other partners, by giving a notice in writing of not less than 30 days of his intention to resign as partner.

VI. In the event of an act carried out by a LLP, or any of its partners, with intend to defraud creditors of the LLP or any other person or for any fraudulent purpose, the liability of the LLP and partners, who acted with intend to defraud creditors or for any fraudulent purpose shall be unlimited for all or any of the debts or other liabilities of the LLP.

VII. A contribution of a partner may consist of tangible, movable or immovable or intangible property or other benefits to the LLP including money, promissory notes, other agreements to contribute cash or property, and contracts for services performed or to be performed.

VIII. While the LLP will be a separate legal entity, liable to the full extent of its assets, the liability of the partners would be limited to their agreed contribution in the LLP. Further, no partner would be liable on account of the independent or unauthorized actions of other partners, thus allowing individual partners to be shielded from joint liability created by another partner's wrongful business decisions or misconduct.

IX. An LLP shall be under obligation to maintain annual accounts reflecting true and fair view of its state of affairs.

X. Provisions have been made in the Act for corporate actions like mergers, amalgamations etc.

XI. There is a provision of voluntary winding up as well as winding up by the Tribunal.

XII. There are provisions for inter conversion of LLP into private company etc. The LLP Act should pave the way for greater corporatisation of the Small and Medium Enterprises – thereby enhancing their access to equity and funds from the market.

On the export field also, India’s Small and Medium scale enterprises are doing very well, having 45% of the national exports. There is scope for increasing export volumes as manufacturing exports contributing 73% to 75% world exports. Direct export by Small and Medium scale enterprises are 35% of the total while 15% are indirect exports through merchant exporters, trading and export houses.

A couple of years ago, the government launched an initiative to help Small and Medium scale enterprises with business improvement and implementation of lean and six sigma methodologies. The idea behind the initiative was to support Small and Medium scale enterprises in progressive initiative with funds and resources so that Small and Medium scale enterprises can improve productivity and quality and thereby help in the country’s overall growth. The programme was rolled out countrywide for implementations.

Recognising the importance of easy and adequate availability of credit in sustainable growth of the MSE sector, the Government has announced a 'Policy Package for Stepping Up Credit to Small and Medium Enterprises (SMEs)', with the objective of doubling the flow of credit to this sector within a period of five years. To ensure better flow of credit to MSEs, the Ministry of MSME is also implementing the following major schemes –

Credit Guarantee Scheme

To ensure better flow of credit to micro and small enterprises by minimizing the risk perception of banks/financial institutions in lending without collateral security, the Government launched Credit Guarantee Fund Scheme for Micro and Small Enterprises in August 2000. The scheme covers collateral-free credit facility extended by eligible lending institutions to new and existing micro and small enterprises for loans up to Rs.100 lakh ($250,000) per borrowing unit. The guarantee cover is up to 75 per cent of the credit sanctioned [85% in respect of loans up to Rs.5 lakh ($12,500) and 80% for loans provided to MSEs owned/operated by women and all loans in the North-East Region].

Performance & Credit Rating Scheme

The Performance & Credit Rating Scheme for manufacturing MSEs was launched in April, 2005 with the objective of assisting the MSEs in obtaining performance-cum-credit rating which would help them in improving performance and also accessing bank credit on better terms if the rating is high. Under the scheme (implemented by the National Small Industries Corporation in conjunction with reputed rating agencies), 75% of the fee charged by the rating agency is reimbursed by the Government subject to a maximum of Rs.40,000 ($1,000).

Emerging Sources

Faced with increased competition on account of globalisation, MSMEs are beginning to move from an obsession with bank credit to a variety of other specialized financial services and options. In recent years, the country has witnessed increased flow of capital in the form of primary/secondary securities market, venture capital and private equity, external commercial borrowings, factoring services, etc. More advanced MSMEs have started realising the importance of these alternative sources of funding to raise resources and the need for adopting better governance norms to take advantage of these funding sources. The enactment of the Limited Liability Partnership Act, 2008 is expected to provide a thrust to the MSMEs in their move towards corporatisation.

Competitive Technology

In today's fast paced global business scenario, technology has become more vital than ever before. With a view to foster the growth of MSME sector in the country, Government has set up ten state-of-the-art Tool Rooms and Training Centres. These Tool Rooms provide invaluable service to the Indian industry by way of precision tooling and providing well trained craftsmen in the area of tool and die making. These Tool Room are highly proficient in mould and die making technology and promote precision and quality in the development and manufacture of sophisticated moulds, dies and tools. The Tool Rooms are not only equipped with the best technology but are also abreast with the latest advancements like CAD/CAM, CNC machining for tooling, Vacuum Heat Treatment, Rapid Prototyping, etc. The Tool Room & Training Centres also offer various training programmes to meet the wide spectrum of technical manpower required in the manufacturing sector. The training programmes are designed with optimum blend of theory and practice giving the trainees exposure on actual jobs and hands on working experience. The Tool Rooms have also developed special training programmes to meet the requirements at international level, which are attended by participants from all over the globe.

The Ministry of MSME implements the following schemes and programmes for the upgradation of technology of the MSMEs –

ISO 9000/14001 Certification Fee Reimbursement Scheme

To enhance the competitive strength of the MSEs, the Government introduced a scheme to incentivese technological upgradation, quality improvement and better environment management by the MSEs. The scheme reimburses 75% of the fees, subject to a maximum of Rs.75,000 ($2000), for acquiring Quality Management System (QMS)/ISO 9000 certification and/or Environment Management System (EMS)/ISO 14001 certification by the MSEs.

Micro and Small Enterprises Cluster Development Programme

The Micro and Small Enterprises Cluster Development Programme (MSECDP) is implemented for holistic development of clusters of MSEs. The programme envisages measures for capacity building, skill development, technology upgradation of the enterprises, improved credit delivery, marketing support, setting

up of common facility centres, etc., based on diagnostic studies carried out in consultation with cluster units and their collectives and management of cluster-wide facilities by the cluster collectives.

Credit Linked Capital Subsidy Scheme

The Credit Linked Capital Subsidy Scheme (CLCSS) aims at facilitating technology upgradation by providing 15% upfront capital subsidy w.e.f. 29th September, 2005 to manufacturing MSEs, on institutional finance up to Rs.1 crore ($0.25 million) availed of by them for induction of well-established and improved technologies in the specified sub-sectors/products approved under the scheme.

1.7 E-commerce and Information technology in Small and Medium Enterprises.

As stated earlier Small and Medium enterprises are playing a vital role in the national economy. Competing successfully in the current business environment involves meeting stringent customer demands within a shorter delivery period. To convert threats into competitive advantages requires extensive use of information technology. Indian Small and Medium scale enterprises find it difficult because of higher (hardware, software and operations) costs as well as the difficulty of their current workforce having to adapt to the IT equipments.

The advent of internet based electronic commerce offers considerable opportunities for firms to expand their customer base, enter new product markets and rationalise their business. Although problems of definition and measurement of electronic commerce make it difficult to gauge the phenomenon, available data indicate impressive growth in the rate of adaption of the E-commerce and IT by Small and Medium scale enterprises appear to be gradually bridging the gap in comparison with larger organisations.

However, adaption of IT is only part of the story of greater importance in its use. Although Small and Medium scale enterprises increasingly use the internet for a variety of commercial and production related purpose, on average they have a limited understanding of the full range of benefits of E-commerce. This lack of awareness of the great potential of E-commerce is one important barrier to its adaption together with inadequate investments in skill and the relatively high initial investment costs involved in developing E-commerce strategies.

E-commerce and IT have the potential to lead to significant productivity gains at firm level. Especially when applied to business to business (B2B) relations, electronic technologies can lead to rationalization of business processes and the cost savings. As an immediate impact, these technologies allow automation of common processes such as distribution, after sales service and inventory management. Internet solutions have been primarily developed for distribution of channel management, while supply chain management has typically continued to be carried out by electronic data interchange applications. However as the costs of the internet decrease, it is expected that new entrants or Small companies that are not able to afford electronic data interchange, will increasingly use the internet for the management of supply process.

E-commerce improves possibilities for production relocation. Product specifications can be developed where the company's design/ development work is carried out, while production can be undertaken at locations that offer the best framework conditions. Through E-commerce applications, firms within supply and distribution chains which were not previously connected can now establish direct contact. An important source of efficiency associated with E-commerce could come from dynamic impact. These occur when firms use E-commerce technologies effectively to create new products, adapt new business practices and change their way of interacting in the marketplace that is their relation with customer's suppliers, intermediaries and competitors. The strategic use of E-commerce and IT allows Small and Medium scale enterprises to maintain or improve their position along with the sectoral value chain.[10]

Realising these dynamic gains depends to a large extent on the way in which firms integrate E-commerce strategies into their business functions. Ideally, E-commerce and IT should be applied throughout the business value chain. One example comes from manufacturing industry where product proliferation and shorter product cycles require greater speed and flexibility. In this environment the key to success relies not only on price competition but rather on the ability to introduce sophisticated information links, forecasting capabilities and management systems. Competitive performance is driven by how it manages the organisation and logistics of its operation as a whole.

The Prospects & the Challenges Ahead

There is huge unexpected market in India and the existing security offering are scarce and fragmented. Since the Small and Medium scale enterprises market is the largest spender on information technology, it is the right time for an entry. Small and Medium scale enterprises in India are under a great deal of pressure from the bigger customers to create a secure e-biz infrastructure. Small and Medium scale enterprises are gradually seeing the benefits arising from use of E-commerce. The expandable geographical coverage is giving them a larger potential. For the Small and Medium scale enterprises some of the concerns with E-commerce revolve around fear or eroding their existing customer base and technical issues arising out of lack of computer expertise and the cost of necessary hardware and software.[11]

The earlier expectations of value creation through pure-play dotcoms, large online market size, business reducing their procurement and inventory costs through business to business have been belied. The euphoria of internet revolution is over. But there is a deeper realisation that the opportunities and threats of internet are very real. Small and Medium scale industries have to understood the power of the internet and have to implement thought out. E-commerce has to create a significant gain in their business. Today many Small and Medium scale enterprises successfully using E-commerce deepen their brand loyalty. Likewise, corporate in the automotive sector are improving their customer relations through this Medium.

Evidence from case studies shows that Small and Medium scale enterprises carry out electronic commerce in three different ways. Internet start-ups invent new ways of creating value added, new services and new business models. While established Small firms use the internet to develop E-commerce strategies geared to expanding their businesses, often internationally and increasing their effectiveness. In addition, groups of Small firms are entering into electronic partnerships with large firms which are their customers or suppliers or industry wide associations. This works best when E-commerce is used proactively as part of a set of strategies to increase Small and Medium scale enterprises competitiveness in global markets.[12]

All the Indian state governments, including Maharashtra have realized that the advent of information and communication technology and in particular the potential of the internet for innovating reorganizing production, carrying out transactions and linking geographically dispersed operations, implies major changes in the ways in which Government of India, introduced policies to improve the climate for E-commerce and to facilitate its growth and use. However, the practical policy issues confronting Small firms are somewhat different from those confronting all firms and they can be more difficult to deal with for Small firms than for larger once. These issues relate in particular to network infrastructure access costs, dissemination of information on E-commerce, training, skill development and human resources. Also the difficulty in addressing issues of trust and confidence makes Small and Medium scale enterprises more vulnerable than large firms to problems linked to authentication/ certification, data security and confidentiality and settling of commercial disputes especially for firms targeting consumers. The changing nature of competition electronic market poses new challenges for Small firms and in (some countries) transport infrastructure and logistics problem are continuing issue. It is necessary to establish open competitive electronic exchange and market place key for Small and Medium scale enterprises.

With regards to readiness and intensity, indicators would permit each country : i) To construct a statistical picture of the state of readiness of infrastructure and ii) to identify who are the main users and which are the main sectors and applications. The following table presents subset of indicators for the analysis of Small and Medium scale enterprises who take up of E-commerce/ information technology and their use of IT. It should be noted that these indicators apply to all types of Small and Medium scale enterprises.[13]

1.8 Adaption of E-commerce: The challenge for Small and Medium scale enterprises

Overall trends suggest that over the past few years the propensity to adapt E-commerce has increased rapidly in India, although there are significant differences depending on sector and size of the firm. A number of factors can drive the adaption of E-commerce and Small and Medium scale enterprises including reductions in transaction cost and improvements in product quality / customer service. Reaching new customers and suppliers in existing markets and expanding in new markets is a defensive reaction to competitors engaging in E-commerce requirements by large business that their suppliers link into their E-commerce systems as a condition of doing business.

In general, the firms that enter e-market are either start-up firms specifically designed to operate in the internet environment or established firms that migrate to electronic commerce. The economic significance of Internet start ups is very small but is growing fast. The "Scalability" of the internet, offers the small niche player many of the advantages enjoyed by large firms in terms of expanding the range of E-commerce customers and transactions. This may be particularly important for small innovative firms entering the e-market.

In principle, the advent of the internet is helping to enlarge geographical and sectorial markets by cutting through many of the distribution and marketing barriers that prevent smaller enterprises from entering foreign markets. Small and Medium enterprises may particularly benefit from the opportunities offered by electronic commerce. They tend to be locked into legacy technology, compared to larger enterprises and they are normally unnumbered by existing relationships with traditional retail channels. Hence, they can adapt a business model that forces larger established competitors to restructure their existing relationships. The information technology should provide opportunities for business to compete in new areas by creating new products or services.

E-commerce applications push, firm to re-examine the cost structure of the value chain and their competitive strategies by redefining functions and skills. The entire cycle of business operations may be affected. Production planning and logistics and inventories and change of value added components (such as compression of business operating cycles by the replacement of traditional intermediary functions or direct integration of different activities in the value chain). The flexibility and the ability to innovate and adapt to rapid change of Small and Medium scale enterprises mean that they should be well placed to take advantage of these opportunities. The flattering of organisational structure and promotion of horizontal production and work structures can suit their less hierarchical organisation.[14] E-commerce induces Small and Medium scale enterprises to improve control of their business process organisation. Business procedures that were previously conducted informally are rationalised and institutionalised which means that the information is transmissible, including workers at different geographical locations. The incentive to achieve more structured and formal organisational models given by E-commerce could be critical for Small and Medium scale enterprises to the extent that such models are necessary for them to face increased competition in the global marketplace and for faster growth. It has been noted that similar positive effects on Small and Medium scale enterprises' organisation result from the networking and partnerships that are occurring as the natural responses to increase global competition.

The networking and sharing of functions, typical of clusters and partnerships should enable firms to amplify the gains of E-commerce. New opportunities for Small and Medium scale enterprises stem from the integrations of supply and demand chains through horizontal inter firm linkages between supplies and customers and from the creation of production clusters. The traditional forms of industrial organisation should allow Small and Medium scale enterprises to overcome their isolation by interacting and sharing information with partners. The Small and Medium scale enterprise should be helped in solving problems like lack of resources and access to technology, To promote SMEs should have transfer of knowledge through the use of integrated processes or through system wide integrations in research and development (user, producer, alliance, outsourcing and links to the scientific community).

The degree for which the use of E-commerce tools can be enhanced depends on the degree of skills, specialization and innovative skills of the firm. Since it is not only the size of the investments that counts but also the way the E-commerce applications are implemented. The development of a formal "E-commerce strategy" is essential for success. E-commerce adaption and use by Small and Medium scale enterprises show that strategies should depend on companies' behaviour in response to global competition. Small and Medium scale enterprises can develop effective E-commerce tools and can use them proactively as part of their own strategies that increase their competitiveness in global markets.

Small and Medium scale enterprises should also adapt E-commerce technologies as part of the top down strategies of large global companies. When firms only adapt to top down strategies rather than developing their own individual strategies this may not be favourable for them.

The challenge for Small and Medium scale enterprises lies in their timely adoption of E-commerce technologies but also and more importantly, in the strategic and sound logic in their adaption and in the subsequent use of such technologies. The development of effective, E-commerce strategies is of fundamental importance for success in domestic and international market.[15]

1.9 Conclusion & Suggestions

The context in which Small and Medium scale enterprises are expanding their use of electronic commerce is improving continually, aided by the government policies already in place, the adaption of existing policies to the internet environment and the introduction of policies to assist Small and Medium scale enterprises in meeting the challenges and opportunities posed by E-commerce. At the same time an increasingly vast market is developing for interest tools and services tailored specifically to Small and Medium scale enterprises with almost all operators and internet service providers present. In India, for example, telecom department has setup a turnkey internet based E-commerce unit that offers merchants secure payment, notarised digital receipts, management of order forms and customer relations and consumers database services. Many internet start-ups offer Small and Medium scale enterprises advice, hardware, software and site development and hosting services for their internet marketing business. Small and Medium scale enterprises are grouping together in specialised shopping malls, thereby gaining economies of scale by pooling their communications capability in a single web site. This is a relatively new market, which can be expected to facilitate Small and Medium scale enterprises access to web based E-commerce in future.

References

1. Arun Firodia (2013) “Making SMEs competitive” Sampada vol 69 no 7-8 oct nov 13 maratha chamber commerce industries and agriculture.
2. Sheraz Hasan (2013) “How SMEs can stay protected in the era of business internet” Sampada vol 69 no 7-8 oct nov 13 maratha chamber commerce industries and agriculture.
3. R.Rastogi (2013) “India country report on E-commerce initiatives” Department of information technology, ministry of communication and information technology.
4. CII (2008) “E-commerce in India How to make it happen?” report of the CII national committee on E-commerce, confederation of India industry
5. Indian express (Mumbai) (2001), statement of the minister of communication june 7 2001
6. M.M Marathe (2012) “ Provision of micro Small and Medium enterprises development act (MSMED) act 2006”, Sampada vol 69 no 7-8 oct nov 13 maratha chamber commerce industries and agriculture.
7. H.C. Tambe (2006) “ The mico Small and Medium enterprises development (MSMED) act 2006. Journal of Business management, vol 1.2 no.3 2006 dec
8. E-commerce (India),(oct 2009) “Redefining Business Parameters”
9. DC(MSME)(2009-10) “Performance and growth trend of Small and Medium scale enterprises”, SIDBI report on MSMEs sector 2010
10. Thakray Vinit (2007) “Development and growth of SMEs in India” journal of business management, vol 10 no 7 aug-07
11. Venugopal V.K (2011) “E-commerce: the key to competitiveness”, Journal of business management, vol 6 no.3 sept 2011
12. Mujumdar P.N. (2012) “ The role of E-commerce and IT in SMEs development”, Journal of business management vol 3 no1 july 12
13. Ministry of Trade and commerce Govt. of India report 2008
14. Mahajan V.K. (2006) “Application of E-commerce in SMEs development programme” Journal of Business management vol 4 no2 june 2006
15. Sisodiya K.K ,”Utilization of E-commerce : challenge for SMEs available at www.emarketer.com/products/reports.php/Easia/welcome.html

CHAPTER - 2

RESEARCH DESIGN AND METHODOLOGY

2.1 Introduction

Research in common parlance refers to a search for knowledge. The advanced learner's dictionary of current English lays down the meaning of research as "a careful investigation or inquiry especially through the search for new facts in any branch of knowledge". Redman and Mory define research as a "systematize effort to gain new knowledge". Some people consider knowledge as a movement from known to known. It is actually a voyage of discovery. We all possess the vital instinct of inquisitiveness that makes us probe and attain full and fuller understanding of unknown.

In this chapter the research design and overall plan for the study is explained. It is concerned with the setting of study, sampling techniques, data collections techniques, tools pilot study means to obtain the needed data and plan for data analysis.

The present research work is an empirical study of effects of e-commerce on SMEs in three major techno savy regions in Maharashtra.

2.2 Significance of the study

A developing country like India can become industrialised and modernised if it can extensively apply e-commerce and information technology to enhance productivity and international competitiveness of Small and Medium scale enterprises. For this purpose there should be a development of e-commerce and e-governance applications. An information based industrial sector or knowledge based industrial sector is composed of information technology and e-commerce products, information technology applications in industrial sector and economy as a whole. Today many developing Asian countries are taking advantage of e-commerce through opening of their economics which is essential for promoting competition and diffusion of internet technologies. The internet is boosting the efficiency and enhancing market integration in developing countries.

Due to globalisation, the international markets are rapidly changing to e-commerce. Approximately 47 million Small and Medium scale enterprises in India, only 5% have their own web portals. Half of these use their portals for advertising, while ¼ are actually engaged in e-commerce. A recent FICCI- goggle report shows that such Small and Medium enterprises are doing much better business, reporting higher revenue and profits as compared to offline business. Their customer bases have also increased by an average of 7%. It is time for Small and Medium scale enterprises to modernize their plant and machinery and their business processes too.[16]

With the globalisation many changes are taking place in the industrial sector of India. Now there is a pressure on Indian industries for quality production and providing quality of technical aided services to the customers. This involves preparation of an inventory of available hardware, software manpower training programmes, extent of use of e-commerce and information technology in production and administration activities. The present study could be helpful to understand the perception, opinions and attitudes of Small and Medium scale entrepreneurs about the use of e-commerce and information technology.

Effective communication is the hallmark of a good entrepreneur. He should be able to convey precisely what he wants to tell his customers about his product and services. The interaction between the entrepreneurs and customers should be bilateral rather than unidirectional. Whenever the entrepreneur is not up to the mark the customers inevitably are losers. Thus, deficiency can be offset to a reasonable extent with e-commerce or information technology.

This research study could be a useful addition to the literature on the topic which is particularly scarce in the Indian context. It is also significant to equally understand the impacts of e-commerce and information technology on administrative and production activities of Small and Medium scale enterprises. Based on the Small and Medium scale enterprises as an economic engine to drive global development, the present study seeks to understand the practices and activities of Small and Medium scale enterprises in terms of e-marketing (achieving marketing objectives and functions through the use of e-communication technology), marketing performance and the effectiveness of industrial and trade Small and Medium scale enterprises. In order to do this an empirical study has been made in Pune, Mumbai in west Maharashtra region and Nagpur in Vidarbha region of Maharashtra.

Such type of study would help the newly entered entrepreneurs to understand the significance of e-commerce and information technology in the administrative activities of the industrial unit. The study would be helpful to understand, how to utilize the available infrastructure of e-commerce and information technology for the betterment of Small and Medium scale enterprises. The present study could be helpful to get feedback on efforts of adopting e-commerce and information technology by entrepreneurs and to understand their perceptions and opinions regarding e-commerce and information technology in the light of the information collected by primary sources (i.e. through Questionnaire). The significance to know whether the procedure of e-commerce and information technology employed in institutions is effective and producing desired results.

In today's globalisation and economic liberalization era, the e-commerce and information technology are key to survival and success for any Small and Medium scale enterprise. It largely depends upon how much entrepreneurs understand the significance of e-commerce and information technology. This category of study becomes quite important to gauge or examine the effectiveness of e-commerce and information technology in Small and Medium scale enterprises.

2.3 Objectives & Hypothesis of the study

It is a new field of doing research Information technology and E-commerce is recent development. In the past, various studies were made on Small and Medium scale enterprises vis-a-vis performance of Small and Medium scale enterprises, its profitability, its role in economy, employment generation and its several other aspects are covered by different researchers and experts. However, less research was made in the past to study the role of e-commerce & information technology in administration and production activities of Small and Medium scale enterprises. Therefore, the present study is carried out with the following objectives-

1) To study the current applications of e-commerce and information technology by Small and Medium scale enterprises.
2) To understand the factors that lead to e-commerce and information technology adoption by Small and Medium scale enterprises.
3) To know the kinds of e-commerce & information technology that were adopted by Small and Medium scale enterprises and to find out the services provided by Small and Medium scale enterprises with the help of these techniques.
4) To identify the challenges faced by Small and Medium scale enterprises with regards to using of e-commerce & information technology in administration & production activities.

The above objectives of the present study have been evolved as a result of several rounds of discussions with some entrepreneurs and experts etc.

Research Hypothesis

The present research work is based upon the following hypotheses:

H_0: The development of E-commerce is directly proportion to development of IT in India.

H_1:E-commerce as a tool is useful for Small and Medium scale industries for their growth.

H_2: There is a significant impact of E-commerce in the functioning of SMEs.

2.4 Scope of study

Attracted by the prospective opportunities offered by the internet for market and communication diversification of Small and Medium scale enterprises adopt information and communication technologies, lead to hope for better performances. The present study accesses the adoption of e-commerce by Small and Medium scale enterprises in most developed industrial areas of Pune, Mumbai and Nagpur in Maharashtra state. Through this study it is aimed at finding out the factors that lead to e-commerce adoption, the kinds of e-commerce technologies that were adopted and used, as well as the services provided with these technologies. The study tries to identify the challenges faced by Small and Medium scale enterprises with regards to e-commerce use.

A study on the role and application of e-commerce technology and information technology in various sectors is very vast and to study its effects on various sectors is also very comprehensive and can be studied from

different angles. The present study relates only to Small and Medium scale enterprises, working in the industrial areas of Pune, Mumbai and Nagpur from Maharashtra state.

2.5 Geographical or regional scope of study

The geographical or regional limits set for the survey of industrial areas from Pune, Mumbai and Nagpur regions in Maharashtra state. Pune is known as a city of education and IT hub. It is also a cultural capital of Maharashtra, whereas Mumbai is known as a financial capital and metropolitan city of Maharashtra, whereas Nagpur is a the second capital city of Maharashtra state.

2.6 Statement of the study

"The comparative analysis of effect of information technology and e-commerce on the performance of SME's".

An empirical analysis in Maharashtra - Pune, Mumbai and Vidarbha.

2.7 Limitations of the study

The results are bound to be affected because of the following limitations. However these are marginal and do not substantially affect the analysis and suggestions.

1) The study was restricted to the selected Small and Medium scale enterprises in Pune, Mumbai & Nagpur regions of Maharashtra and therefore the results cannot be generalised to the other cities in India.
2) The present study is limited for the years 2001 to 2011 only.
3) On the basis of random sampling some biased responses may occur somewhere. However due care is taken to ensure the accuracy of data provided by the respondents.
4) Due to lack of industrialisation for some years data is not available for the comparative analysis of the research work.

2.8 Research methodology

Research is undertaken within most professions. More than a set of skills, it is a way of thinking, examining critically the various aspects of professional works. It is a habit of questioning what one do and also a systematic examination of the observed information to find answers with a view if appropriate changes can be brought for a more effective professional service. Research is a process of collecting, analysing and interpreting information to answer questions. But to quality as a research, the process should have certain characteristics that must be controlled, rigorous, systematic, valid and verifiable, empirical and critical.

A descriptive research has been designed to fulfil the objectives with data collection from different Small and Medium scale enterprises in Pune, Mumbai and Nagpur (Vidarbha) through a self-administered, structured survey instrument. The questions have been developed to get responses specific to objectives that are fulfilled.

For the purpose of analysis, primary data is collected directly from the Small and Medium scale entrepreneurs of the selected areas. The collected primary data was analysed through simple percentage method.

2.9 Details of questionnaire

A structured questionnaire was designed to extract information about the objectives of the study. A questionnaire was developed on the basis of literature review and the objectives of the study. Several factors have been brought into consideration in determining the impact of ICT tools, for the present study. The random samples was limited to only those enterprises which fall under the definition of Small and Medium scale enterprises as defined by the Industrial Policy of India.[17]

The Questionnaire for the research work consisted two parts.

Part I of the questionnaire is designed to seek information on the broad features of Small and Medium scale enterprises, such as size and type of enterprises, place of enterprises, etc. This part was intended to be filled in by respondents from SMEs.

Part II of the questionnaire was meant to collect information regarding utilisation of information technology & e-commerce technology in administrative and manufacturing activities Small and Medium scale enterprises. It included questions pertaining to website, particular IT tools used for day to day business, effects of IT and e-commerce techniques on the performance of the enterprises etc.

Some questions were asked to the entrepreneurs to know their opinions about e-commerce & information technology. In short questionnaire has contents to understand respondent's perceptions regarding utilisation of information technology and e-commerce in day-to-day business of enterprises.

In addition to the questionnaire primary information has been collected through discussions with experts, entrepreneurs and personal observations made by the researcher during the interactions with them. This information has been used in appropriate places while analysing data and for arriving at appropriate conclusions and suggestions.

2.10 Selection of sample

Given the nature of the study, sample has been selected which is beneficial for the requirement of the study. The sample selection was on the following parameters:

1) Nature of the study.

2) Possibility of accessing the data.

3) Willingness of respondents.

For the study purpose, total 300 Small and Medium scale enterprises situated in Pune, Mumbai and Nagpur (Vidarbha region) have been selected. The selected Small and Medium scale enterprises are categorised for above selected industrial cities.

To identify the perception, opinions of entrepreneurs regarding the impacts of utilizing information technology & e-commerce techniques in Small and Medium scale enterprises, a sampling frame of all selected industrial cities in various industrial areas was prepared and random sample method has been followed for selection of samples.

2.11 Sources of data collection

Broadly, two sources of information on the present topic viz. the literature on the Small and Medium scale enterprises and information technology and e-commerce are taken into consideration.

The literature on the topic is in scarcity and in the form of articles or research papers. The study is based by taking the help of research articles, published in the foreign journals and information available on the internet.

Considering the number of Small and Medium scale entrepreneurs in the sample, it was planned to collect the primary data through "mail questionnaire method". In the first instance it was done and then it was followed up with personal contacts as and when necessary. First of all questionnaire accompanied by forwarding letter explaining the genesis and significance of the study, with request to fill in the questionnaire was mailed to all the selected Small and Medium scale entrepreneurs of Pune, Mumbai and Nagpur. A great deal of efforts in the form of reminders and personal follow up was made on a continuous basis. The factual information regarding the topic had to be gathered from the relevant literature.

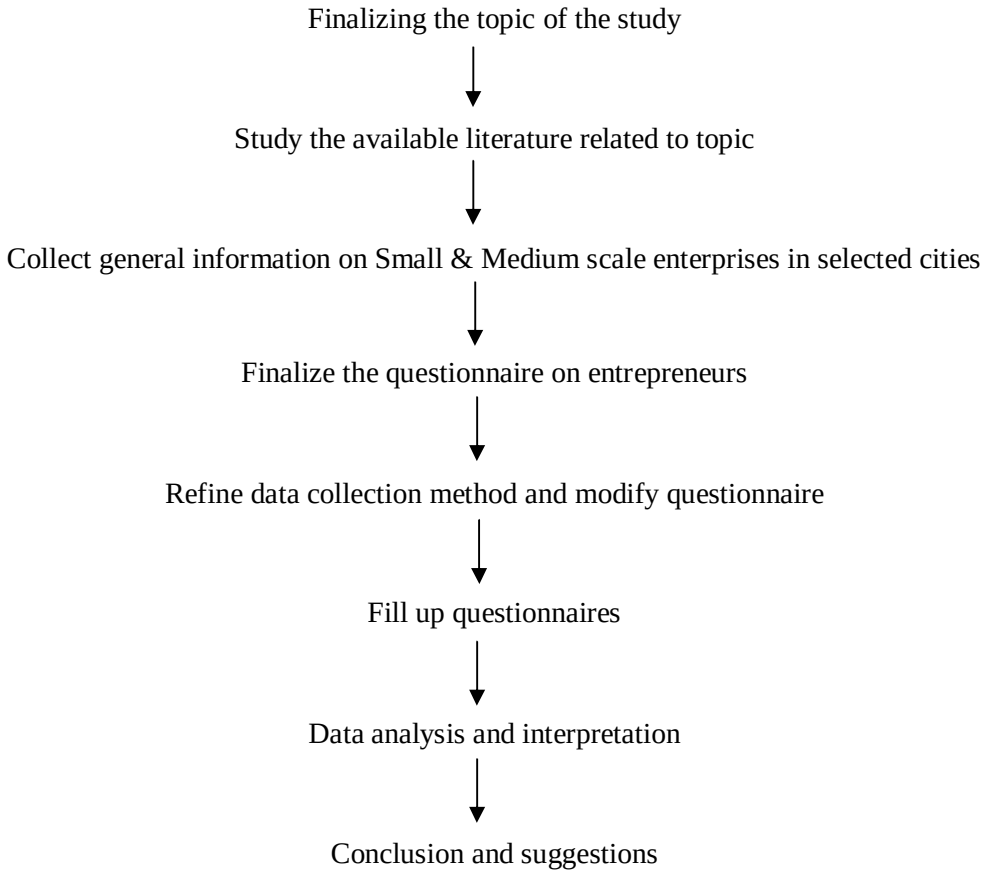
The required data (Primary & Secondary) has been collected through primary and secondary sources. The primary data has been collected with the help of structured questionnaire for the entrepreneurs. The questionnaire has been used as the main tool for collecting primary data from the respondents. The main purpose of the questionnaire was to understand the views, perceptions of respondents about utilisation of e-commerce techniques and information technology in day to day business and other activities of the enterprises.

The secondary data has been collected through various articles published in periodicals, journals, magazines etc. Information available on the internet has also been referred and considered for the purpose of the study.

In brief, for the study purpose, survey method is used for the collection of primary data with the help of a structured questionnaire. The questionnaire is administered by a responsible person from a selected sample and their responses about themselves have been recorded. The collected and recorded responses, through personal interview, with each & every selected member of the organisation.

2.12 Work plan of the study

For the purpose of the study survey method has been used. The steps are shown in the following figure:



2.13 Pilot study

The pilot study is an exploratory study done primarily to help in refining the problem, develop or refine objectives or refine the data collection methods. It is always desirable to conduct a pilot study before administering a self-completion questionnaire or structured interview schedule to the selected sample. In fact, the desirability of piloting such instruments is not solely to do with trying but to ensure that questionnaire operate well, piloting also has a role in ensuring that the research instrument as a whole function well. Pilot study may be particularly crucial in relation to research based on the self-completion questionnaire, since there will not be any interviewer present to clear up any confusion. Interviews have been carried out and then have been addressed, this fact has also been considered for a pilot study. A pilot study was conducted on 300 respondents in Pune, Mumbai and Nagpur (Vidarbha) for the feasibility of the study. The objectives of the pilot study were -

1) To access the feasibility of the tool.
2) To test the tool for content and language.
3) To access the time taken for the study.
4) To identify the problems occurred during the data collection.

The important observations during the pilot study were noted and necessary corrections were made in the questionnaire.

2.14 Conclusions

Through this chapter the detailed description of the research methodology, followed by the present study has been provided. It includes significance, objectives, work plan and scope of the study. Detailed description has also been given about the selection of sample, sources of data collection and questionnaire. Based on the conclusions drawn from the empirical research, some suggestions are made, to be useful for further study in this field.

References

1. Annual report on MSME 2012-13
2. Research Methodology By Dr.K.R. Sharma (edition 2002)
3. Research Methodology By Muibul Hasan Siddiqui (edition 2010)
4. Edutech.wiki.unige/ch/en/research_methodology_resources
5. Research Methodology – A Guide for Researchers in Management and Social Sciences By Bill Taylor, Gautam Sinha & Toposh Ghoshal (Edition 2007)
6. Resesarch Methodology for Business Students By Mark Saunders, Philip Lewis and Adrian Thornhill

CHAPTER - 3

REVIEW OF LITERATURE

3.1 Introduction

Review of Literature is broadly comprehensive in depth systematic and critical review of scholarly publications, unpublished scholarly print material etc. Review of Literature is key step in research process. It refers to an extensive, exhaustive and systematic examination of publications, relevant to the research project.

Every researcher's study is built on past knowledge. It is an outcome of constant human endeavours. No research study can progress in isolation of other studies done in similar field. Review of related literature addresses the important need to inform the researchers as to the main findings, trends, areas of debate and controversial areas of neglected and suggestions for additional research. It can help in organising thoughts, giving shape to ideas and achieving new insights. It is not enough to test one's own ideas. Therefore, given a chance to access his or her ideas in the context of others and replicate external or modify them in terms of establishing thinking.

In the subsequent paragraphs an attempt has been made to review the literature pertaining to adaption of e-commerce and information technology in Small and Medium scale organisations or enterprises.

The purpose of this chapter is to provide an overview of case studies regarding Small and Medium size firms that use e-commerce as a part of their business strategy. It also endeavours to review briefly the related literature to substantiate the views of experts. Research doesn't claim to review all related literature in the context of the topic selected for the study. It is just an attempt to take of glace at some important case studies done in the context of information and communication technology adapted by Small and Medium scale enterprises. It seems that more case studies, in Indian Context should be made.

3.2 Review of Published articles, research papers, research study reports etc published in various journals, magazines and books.

- **A research paper titled "IT adaption in SME's – An Integrated Framework". By Thuy Uyen H. Nguyen (1995) published in the International Journal of Entrepreneurial Behaviour and research March 1995.**

The aim of this research paper is to gain a clearer understanding of Information technology adaption in Small and Medium scale enterprises by analysing and contrasting the current literature. This research paper demonstrates the process of Information technology adaption in Small and Medium scale enterprises by combining perspective from the literature. The framework will help adaptors gain a practical overviews of the Information technology adaption process in Small and Medium scale enterprises. Through this paper effort has been made to highlight the enables as well as the inhibitors that influence the adaption process.

- **Poon S. and swatman PC(1997) have also conducted study survey in the Australian context under the title of "Small Business use of the internet: Finding from Australian case studies" the report of study published in the international marketing review vol.14 no.5**

Researcher has conducted 23 case studies in Australia to determine the roles played by the internet among small business drivers for internet use and benefits perceived by the firms. In the case study, firms are classified by business organisation, product services, employment, sales, years of internet use and reasons for using the internet. The case studies focus on identifying patterns among participants regarding i) Role of the internet as Medium of communication. ii) Management's enthusiasm for internet use in the business. iii) Perceived benefits from internet use. iv)Disparity in internet usage amongst industry. v) Extent of integration between internet and internal management system. vi)The need to be entrepreneurial in internet applications. He concludes that the most crucial factors affecting internet use in the business are management commitment and perceived benefits.

- **The Irish Information society commission (1999)** which is carried out research to explore the business community's attitude to new technologies and how Irish business is positioned internationally and provides evidence for the existence of skill constraints in smaller companies. With respect to the availability of IT skills, the Irish findings that most Irish business considered that it has become difficult to hire employees with the appropriate skills. The Irish findings further indicate that larger companies

have acted on their concerns about scarcity of skills by providing IT training for their employees; smaller firms do not seem to be reacting adequately to the situation.

- **A French report by UFB locabail (2000)** on Small and Medium scale enterprises' use of the internet in four European member countries based on questionnaire survey, reported that use the internet were more dynamic in terms of turnover, profitability, investment and job creation in Small and Medium scale enterprises in selected four European countries. This report also focuses on transactions (purchases of goods and services) business processes and other commercial activities occurring over open non proprietary networks, such as internet. The report presents an overview of the situation of Small and Medium scale enterprises with respect to e-commerce. The frame for the analysis is provided by three phases of e-commerce development i.e. readiness, intensity and impacts. The data included in this report come from various sources that include not only national statistical agencies but also other governmental bodies and private consulting companies. Through this study it is found that, internet use is less developed in the retail, construction, hotels and other Small and Medium scale enterprises and personal service sectors, probably due to the fact that firms are waiting for e-commerce applications to be extensively used by the public.

- **A study paper by Merez Paleu, presented in the conference for ministers of Small and Medium scale enterprises, held in 2000 Bologna, Italy.**

This paper focuses on transactions, business processes and other commercial activities occurring over open, non proprietary networks such as internet. Earlier forms of e-commerce were usually built around pre existing contractual relationships and required expensive and complex custom built software, dedicated communication links and compatible equipment thus the main users of early e-commerce technologies were large businesses and their first tier suppliers. In this study paper it is also stated that the technological innovation has enabled the expansion of e-commerce beyond the framework of transactions between known business parties to a complex network of commercial activities in which Small and Medium scale enterprises are progressively becoming involved.

- **A paper titled "The role of government in SME development in transition economies by Smallbone D and Welter F (2001) published in small business journal vol 19 no.4**

Authors have argued that direct support measures are not the main role for government. Government is expected to create the framework conditions for private sector development with a view to supporting the growth and sustainability particularly in information and communication technology adaption and development of e-business based on survey evidence from Ukraine, Belarus and Moldova. They have suggested that many enterprises could be setup, survive and even grow without direct government intervention. This could be attributed to the commitment and creativity of owner who manages in mobilising resources and flexibility in adaption to hostile external environments. However the sources argue that the number of firms could remain small in size and contribution to economic development rather limited under such inhibiting conditions.

- **An article titled, "Analysis of the state of e-commerce adaption by the SME's in northern Malaysia and factors that might hinder its adaption. An empirical study" by Liew V. Kiong (2001). Published by university of Malaga.**

The purpose of this study is to assess the state of e-commerce adaption by the Small and Medium scale enterprises in Northern Malaysia and to examine the factors that might hinder its adaption. Author has found that the general usage of e-commerce among the Small and Medium scale enterprises in Northern Malaysia is low, most firms seemed to have implemented only basic e-commerce applications and do not adapt advance e-commerce applications. The author has concluded that Small and Medium scale enterprises in Northern Malaysia, the only factor pertaining to environmental barriers has significant negative influence on its adaption.

- **A study paper titled "How a retail jewellery store earned to compete in the e-commerce market place" by cordeiro w.p (2003) published in journal of internet commerce 2-01-2003**

Author has described how a retail jewellery store in a large city transitions from a traditional marketing strategy (signs, print, and radio advertising, aggressive sales staff) to selling over the internet. He has stated that implementation of e-commerce strategy creates problems in terms of project management (deadlines, staffing and testing) and adaption to a new marketing culture. It was observed that internet customers are more knowledgeable buyers that e-sales tend to be for different merchandise than in store sales. It is stated that the net effect of adapting e-commerce is to reverse deadline in sales and improve staff morale. Firm's profits, however do not return to prior levels because the stores' high margin items are not big sellers over internet.

- **A study paper titled "ICT enabled collectively as positive rural business strategy." By Galloway L.R and D. Deakins (2004), published in the international journal of entrepreneurial behaviour and research vol 10 no.4**

It examines the development of internet based business forums and their potential for overcoming difficulties faced by rural Small and Medium scale enterprises in Scotland. The study starts with an overview of the benefits of Information and communication technologies for rural Small and Medium scale enterprise and potential reasons why e-commerce adaption among rural Small and Medium scale enterprises is relatively low. He interviewed five internet forums to assess the makeup and dynamic processes involved in rural internet forums. Four of the forums have a geographic focus and the fifth forum targets a specific industry. The study finds variable experiences for the forums and concludes the ideal forum the regional and business context. In addition, long run sustainability of the forums is problematic because the "more effective" the forum is in enabling rural business in communication technology the less the forum is needed.

- **An article titled "Factors impacting the adaption of the internet among SME's by Dholakia RR and N Kshetri (2004), published in the journal of small business economies vol 23 no.4**

Through this the author has discussed the importance of internal and external organisation factors that can impact usage of the internet among Small and Medium scale enterprises. The internal factors include firm size, self efficiency, past experiences with the related technologies and past use of marketing media. The external factors only compromise the perceived competitive pressure.

- **Adirondack North Country Association (ANCA 2005), "Final report enhanced marketing and sale of special forest products."**

ANCA maintains two regional e-commerce services for area business. Adirondack services 10 craftsmen, artisans and small manufacturers list the product and service of 163 wood product companies. The final report reviews the activities undertaken by ANCA e.g. Promote on line catalogue sales and directories and major accomplishments pertaining to online participation by area businesses, identification of new markets and building the human capital required for e-commerce activities. A major finding of the study is that owners of small business value marketing and sales assistance and a regional e-commerce service is an efficient means of providing this assistance.

- **Research by Chau S. (2005) titled "The use of e-commerce amongst 34 Australian SMEs: An experiment of a strategic business tool." published in the journal of systems and information technology, vol 7 no.1 July.**

Researcher interviewed 34 Small and Medium scale enterprises in Australia that are active users of e-commerce. The case study represents a variety of industries like manufacturing, trade, fishing, hospitality / tourism, agriculture, education and finance ages (1 to 80 yrs old) and employment (1 to 65 full time equivalents). Analysis of the study reveals a wide range of e-commerce activities that are grouped into six categories - electronic banking communication, sales and marketing, customer service, enhancing existing business process and cost reduction. Chau concludes that the benefits derived from e-commerce increase if the firm makes complementary changes in organisational structure and processes.

- **A survey undertook by Zappala S. and Gray C.W.J (2006) under the title of "Impact of E-commerce on consumers and small firms."**

Through this authors have investigated factors that distinguished small business adaptors and non adaptors of information and communication technology and also confirmed the importance of organizational support of key decision makers such as owners, managers in information and communication technology adaption process. The early adaptors also indentified as change agents or innovation champions and access to financial resources are among the key organisational characteristics that influence information technology adaption in small businesses. In addition, authors have urged that Small and Medium scale enterprises adapt ICT due to the decreasing cost and availability of software as well as the overall benefits and opportunities brought by ICT adaption.

- **A study paper titled "ICT adaption and development of e-business among SME's in South Africa published by Dr. Don Milne and Dr. Lorraine Watkins (2007)**

This paper examines ICT adaption among Small and Medium scale enterprises situated in South Africa. The author have indentified the key ICT adaption attributes and explains how these influence ICT adaption and development of e-business among the typical SME's in South Africa. It highlights ICT adaption and the distinct and behavioural characteristics of Small and Medium scale enterprises situated in South Africa. The finding of the study suggests internet, websites, fixed line and mobile phone networks as the most common technologies adapted by Small and Medium scale enterprises to support their e-business operations. The result also suggests both formal and informal networks as important for information communication technology adaption. The findings contribute to literature on Information Communication technology adaption among Small and Medium scale enterprises in general but more specifically bring new insights to this area of study in developing nations within African developing countries.

- **A article by Gibbs, Sequeira J and white M.M(2007) titled, "Social networks and technology adaption in Small Business." published in international journal of globalization and small businessm vol 2 no1.**

Authors have confirmed that the process of developing integrative theoretical framework incorporating information and communication technology attributes in Small and Medium scale enterprises is still going on. The key factors noted include government, environmental attributes and social network. This study article therefore is concerned with examining and explaining these key information and communication technology adaption attributes in the study article. They have argued that "existing models of information technology adaption need to be refined and developed if they are to be applied to ethnic minority businesses which are not necessarily different from those of other Small and Medium scale enterprises.

- **Wahid F. (2007) presented some key elements of technology acceptance model in his study article titled "Using the technology adaption model to analyze internet adaption and use among men and women in Indonesia, published in the electronic journal on Information system in developing countries vol 32 no 6.**

This study article seeks to examine and advance understanding of information and communication technology adaption among Small and Medium scale enterprises using case study evidence collected through interviews conducted in South Africa. This research mainly draws its theoretical foundation from the gibbs et.(2007) model and useful insights in other relevant studies.

- **A study article titled, "Electronic commerce applications among Indian Small and Medium scale enterprises", by A.A.Jahanshahi, M.H.Gashti and S.M.Sadeq (2007) published in the journal of trade and commerce vol.2 No 4**

The cutting edge for business today is e-commerce. The main vehicle of e-commerce unequivocally is internet. The main purpose of this study is to understand the effect of e-commerce adaption on the operational performance of Small and Medium scale enterprises. There are many different types of e-commerce usage that may influence operational performances. In this research study, authors have grouped them according to four different categories viz. electronic advertisement, electronic payment system,

marketing, customer support service etc. Data derived from questionnaire, righteousness or integrity of test and structural equation modelling was used for analysis. According to statistical analysis in this research the results indicates that e-commerce application have been influential on the operational performance in the Indian Small and Medium scale enterprises.

- **A study undertaken by B.B. Mishra(2007) under the title "Perception and adaption of e-commerce in Indian SME's; A study in the state of Orissa"**

A researcher has stated that, information and communication technology has brought about a complete change into every walk of life today, within business not being an exception to it. Organisations are increasingly embracing new generation business tools like the e-commerce and e-business for attaining their goals. Researcher has further elaborated the significance of e-commerce in Small and Medium scale enterprises. He stated that e-commerce is emerging as a new way of helping business enterprises to compete in the market place and thereby contributing to their economic success. Researcher has opined that with spread of technology and infrastructure, rural business will be the biggest beneficiaries of e-commerce. The internet can help Small and Medium scale enterprises to present themselves to the world. With this backdrop researcher of this study tries to present the e-commerce scenario in the Small and Medium scale enterprises of Orissa state, the prospect of future growth and empirical analysis of the factors influencing the adaption of e-commerce. Through a sample study of organisation it was found that although the rate of adaption is not that satisfactory, the owners of Small and Medium scale enterprises are quite optimistic regarding the e-commerce application. Through the study researcher has also tried to state an analytical view of the e-commerce adaption scenario by revealing the relationship between the factors like organisational support, managerial productivity, decision aids and organisational readiness, external pressure, compatibility, perceived ease of use and perceived usefulness with the perception of these Small and Medium scale enterprises.

- **A research study undertaken by Pankaj Chandra, Rakesh Basant and Rajdeep Saharwat on behalf of Natioanal Association of Software Service Companies in 2007.**

Through this study it seek to bring an understanding of information technology in adaption thresholds, challenges and processes in the different segments of Indian auto component sector. Researcher has opined that information technology penetration in Indian Small and Medium scale enterprises continues to lag behind contemporary industries in other countries. They further suggested that in order to increase information technology it is vitally important to understand the information technology adaption challenges faced by the manufacturing industry firms and especially the Small and Medium scale enterprises segment. Developing this understanding is crucial to ensure that information technology investments by the firms to derive positive outcomes from the information technology investments. It is with this aim this study has been undertaken.

- **A research paper by Jimmy Manchandaria (2009) titled "Factors Affecting the adaption of e-commerce in SME's in Kenya" Published in International Journal of Technology Intelligence and planning, vol 5 no.4 2009.**

This research paper has shown that Small and Medium sized enterprises are rapidly adapting the e-commerce to enable them to compete on par with their larger counterparts. The study has indicated that significant benefits have not been realised in Small and Medium scale enterprises in developing economies like Kenya owing to the slow adaption of e-commerce, implementation of information technology skills and training with e-commerce adaption by Small and Medium enterprises.

- **D.R.Shaikh article titled "Are Indian SME's ready for adapting E-commerce?" published in the Journal of Trade and commerce vol.3 Nov.7 2010**

Through the study author has investigated SME's attitude to the adaption of the Internet and for the development of e-commerce activities. The study focused on national or cross country samples of Small and Medium scale enterprises. E.g. the survey carried out by Price Waterhouse Cooper for APEC and by Spectrum / NOP Research Group. Author has stated that the issues raised are much like same in all surveys, difference emerge in the relative importance assigned to the various benefits and barriers by Small and

Medium scale enterprises in different member countries. Author has pointed out that early adaptors of e-commerce have different views compared to more recent users and same applies to the Small and Medium scale enterprises not yet using the internet compared with those using it.

- **A research study undertaken by Mohammad S.Sabouri, Tang sai hong and Norzia Zulkifi under the title of "Information Technology adaption in SME" published in interdisciplinary Journal of research in Business vol 1 issue 7 july 2011.**

The aim of the research paper is to achieve a better understanding of information technology adaption in Small and Medium scale enterprises through explicitly and understandably exploring indentifying factors influencing information technology adaption process within Small and Medium scale enterprises in both developed and developing countries existing in the literature with high concentration on certain Small and Medium scale enterprises related issue. Proposed conceptual framework demonstrates the determinants of information technology in Small and Medium scale enterprises through review of prior literature including concepts, methodology theory, empirical research and case studies relative to Information technology adaption among Small and Medium scale enterprises and by combining existing perspective. The research paper investigates and reveals a number of internal and external issues presuming and persuading Small and Medium scale enterprises to adapt information technology solutions. Likewise barriers to information technology adaption in Small and Medium scale enterprises will be addressed by reviewing and classifying information technology factors. Using the proposed conceptual framework, the researcher categorizes and elucidates the key factors that directly or indirectly as well as positively or negatively impact the process of information technology adaption in Small and Medium scale enterprises.

- **An article by Rahul raj(2013) titled "SME's Implementing E-commerce Capability analysis."**

Author has stated that firms in growth phase want to expand their customer base, enter new product markets and nationalise their business. The advent of internet based e-commerce has given them ample opportunities to do so. Author has further stated that although many Small and Medium scale enterprises have embraced information communication technology and taken up e-commerce, the adaption rate is low due to the lack of awareness of e-commerce application. The author has also explored other reasons such as i) lack of capital and skilled professional ii) the significant and often under stated cost of such e-commerce applications and solutions iii) the core structure of Small and Medium scale enterprises.

- **Kuntal Hansaria (2013) has undertaken the study under the title "Digital Marketing blog for SME's" published in the journal of trade and commerce; vol 2 no. 3 Jun-Dec 2013**

The study highlights that while large scale enterprises were among the first to adapt broadband and now lead the way in adapting more advanced web technologies to increase revenue and decrease cost. Small and Medium scale enterprises have not yet fully leveraged Information and Communication technology and web technologies. However, Small and Medium scale enterprises across countries and India too have used the Internet, that have increased revenue, reduced costs, and recorded higher productivity leading to fast growth of enterprises.

- **A study Undertook by Jamshed Siddiqui (2013) under the title of "A Frame work for ICT adaption in Indian SME : Issues and challenges" The report of study was published in journal of IT and management information system. Vol 4 issue 3, sept-dec 2013**

This study presents a frame work for information and communication technology adaption in Indian Small and Medium scale enterprises. Globalization has made huge impact in today's scenario of business organisations. Author has opined that Small and Medium scale enterprises are the most needed sector to be aware about the development and changing trends of technology. Author has further stated that, Information and communication technology plays critical role in the growth of Small and Medium scale enterprises. Various aspects of Information and communication technology adaption issues and challenges are highlighted by the author in the context with government, managers and ISP role in it.

3.3 E-commerce and Information Technology research studies conducted by Universities and Public Organisations.

This section presents an overview of case studies of Small and Medium scale enterprises that use the internet to improve sales, customer service, and production and supply chain efficiencies. The reviews of these case studies are as follows:

- **Department of Communication Business and Information Technologies, Roskilde University, Roskilde, Denmark has conducted a study research in 2000.** The research aims to provide an insight about factors affecting the business to business e-commerce adaption and implementation in Small and Medium scale enterprises, highlighting similarities and differences between Danish and Australian Small and Medium scale enterprises. The research study is based on a wide literature review focused on proposing a theoretical model of technological, environmental and organisational factors; influencing e-commerce and implementation. This study contributes to enhancing the understanding of the factors affecting to business to business e-commerce adaption and implementation in Small and Medium scale enterprises and provides some interesting perspective from Denmark and Australia.

- **Department of Trade and Industry London (DTI) (2001)** undertook a research study on information communication technology and Small and Medium scale enterprises. Through the study, it is stated in report that for small firms to adapt e-business and e-commerce strategies and tools benefits must outweigh investment and maintenance cost. Commercial consideration and potential returns drive adaption. Although a research has indicated that mostly large multinational companies have benefited the most from e-commerce, Small and Medium enterprises have been found to have the greatest potential for productivity gains through e-commerce.

- **National Association for Software and Service Companies (NASSCOM) released finding of its survey (2001)** to evaluate the e-commerce scenario in Small and Medium scale enterprises in India. As per preliminary findings of the survey the total volume of e-commerce transactions in India was about 450crs rupees in the year 1999-2000. Out of this, about 50crs rupees was contributed by retail internet business to customer transactions and about 400crs rupees was contributed by business to business transactions. According to NASSCOM survey, considering the interest the government is taking in the growth of the market, e-commerce in Indian Small and Medium scale enterprises will witness a significant jump over the next few years.

- **Institute of Information and mathematical science, massey university, Albany, New Zealand has conducted a survey in 2001, under the title "E-commerce technology adaption framework by New Zealand's Small and Medium size enterprises".** It attempts to highlight a framework for the adaption of e-commerce technologies in New Zealand with specific interest in small to Medium size enterprise sector of the economy. The main thrust of the research study was to develop a framework for e-commerce adaption, transmission theories and practicalities can be explored for developing the proposed e-commerce practicalities and adaption framework. It is argued that results from research case studies based on the framework are able to identify the factors influencing and leading to the adaption of e-commerce technologies by the New Zealand's Small and Medium scale enterprises.

- **The study conducted by university of ballarat, Australia (2003).** It is focussed on the barriers to the e-commerce adaption in relation to Small and Medium scale enterprises. The issues affecting e-commerce are discussed in great detail, focussing on technology or organisational issues and external environmental issues. This study also discusses on electronic commerce in developed and developing countries, specifically in Australia. Conclusions are made regarding the significance of the study which provides a concise summary of the study.

- **Department of information system, city university of Hong Kong has conducted a study survey in 2003.** Under the title of "SME e-procurement adaption in Hong Kong – the role of power, trust and value". The objective of this research is to test a model of e-procurement adaption behaviour by Small and Medium scale enterprises. This study investigates the phenomenon from the perspective of buyer-seller relationships and urge that value of e-procurement adaption thrust on suppliers are factors leading

to findings from the four case studies provide some evidence that the former four factors have significant effect on Small and Medium scale enterprises for e-procurement adaption behaviour when the last one does not. This study contributes to a better understanding of how and why Small and Medium scale enterprises in Hong Kong employ e-procurement using a snapshot approach, practical and theoretical implications are also provided.

- **An UNCTAD study (2004)** has shown that Small and Medium scale enterprises, while generally lagging in information and communication technology, have gained assertiveness from increase in productivity. The study also shows that, Small and Medium scale enterprises actually run the risk of missing opportunities in both-productivity and profitability by not engaging in e-business. The extent of ICT used by Small and Medium scale enterprises is dependent on both sector and size of the business.

- **A country report on E-commerce Initiatives (2004) by Ministry of Communication and information technology in India** suggested that to succeed in electronic retail requires an effective strategy for both Business to Consumer (B2C) and Business to Business (B2b) operations, seamlessly channels and whatever the future holds. Through the study of existing systems with new systems and new technologies is one of the major challenges that retailers face today in moving towards the future. It was also found that, retailers have made e-retailing a strategic priority and are pursuing Business to Customer Initiatives like never before. The retailers currently use their web sites to provide information to their business and offer online retailing.

- **Curtin University of technology, Perth, Australia, conducted a survey (2004)** about the perceptions and experiences of Australian Small and Medium scale enterprises. The survey proposes a frame work of electronic commerce adaption for Small and Medium scale enterprises. With a sample of 115 Small and Medium scale enterprises in Australia, preliminary results show that respondents' perception of internet based electronic commerce are predominantly positive. However, a further analysis was carried out vis-a-vis state of adaptability, communication channel, communication amount, customer pressure, competitive pressure and perceived governmental support make a significant contribution to the adaption of internet based electronic commerce.

- **Edith Cowan University, Australia has conducted a study survey in 2005, under the title "Electronic commerce projects adaption and evaluation in Australian Small and Medium scale enterprise. Preliminary findings".** Information technology investments in electronic commerce are used by organisations as a part of their business strategies to assist in the inter-organisational acquisition of goods into value chain and provide interfaces between customers, vendors, suppliers and sellers. Careful evaluation and adaption of e-commerce projects can assist Small and Medium scale enterprises in achieving their goals. The result of this research study shows that most Australian Small and Medium scale enterprises interviewed has carried out some sort of evaluation processes. Most users within these Small and Medium scale enterprises were not evolved in the initial phases of adapting and implementing e-commerce projects and use of these systems was generally forced upon them by senior management. Through the study it was found that the electronic commerce system adapted by the Australian Small and Medium scale enterprises were not integrated well with other systems. Furthermore, there appeared to be a lack of obvious linkage between the expected outcomes of the e-commerce project adaption and organisational goal.

- **School of Business administration, Pennsylvania state university, at harrisbury, middle town, Pennsylvania, USA has conducted study survey in 2005 under the title of "An analysis of the factors affecting the adaption of e-commerce by SME's: Evidence from emerging markets"**. This study investigates the internet based e-commerce adaption profile of Small and Medium sized enterprises in Turkey as well as the factors affecting their willingness to adapt electronic commerce usage. E-commerce adaption is measured by a composite index of the usage frequency of 14 e-commerce application tools. This study draws on the data obtained from a sample of 237 manufacturing SMEs with internet connection. It was discovered that e-commerce adaption was significantly influenced by its perceived benefits. The analysis showed that company and industry specific factors, with the exception of amount of resources allocated for export development did not appear to have any

significant impact on e-commerce adaption. The result of this study shows that the lack of legal regulation is cited as one of the most serious limitations of e-commerce and hence e-commerce is rarely used for payment purpose. One of the most vivid implications of internet based e-commerce for Small and Medium scale enterprises is the potential for external communication and information gathering for market and product research.

- **In the study survey report (2006) of Australian electronic business network** suggested that, among initiatives to stimulate the Small and Medium scale enterprises uptake of electronic commerce greater interest should be paid to small firm's needs in terms of training and skilled development strategies, as small firms tend to provide less training of shorter duration, and usually of a short term nature. The study report provides business training programmes, e-commerce information and access to web based information and training resources and demonstration and pilot e-commerce business systems and solutions.
- **Institute of Information and mathematical science massy university, Albany, New Zealand has conducted a study in 2006.** Adaption and effective use of e-commerce remains low among Small and Medium scale enterprises, despite substantial investments. This study aims to analyse the e-commerce adaption paths of Small and Medium scale enterprises to identify a specific group that would benefit the most from e-commerce initiatives. For the study purpose data were drawn from case studies of smaller business stakeholders. Through this study it was found that Small and Medium scale enterprises have significantly different attitudes to online business and cannot be regarded as a homogenous group for e-commerce initiative. Rather specific targeting would enhance participation and lead to more effective use. It is recommended that adaption initiatives should be targeted at two groups which have the need or desire to become e-enabled.
- **Cranfield school of management, UK has conducted a study under the title "Adaption of electronic commerce by Small and Medium scale enterprises in UK: Towards a stage model" which was conducted in 2006.** This research study has shown that Small and Medium scale enterprises are rapidly adapting the internet and e-commerce. However, there is little systematic research into how such companies are adapting this new technology. This study addresses the research gap by seeking to understand how Small and Medium scale enterprises in UK are adapting e-commerce through an exploration of their level and sequence of adaption. The research which was carried out by means of questionnaire, found 3 distinct cluster of adaption. Through the study it was found that the firms in the first cluster currently developing their e-commerce services. The second adaption cluster is to use of e-mails for communication with customers, suppliers and employers. Those at the third level of adaption have information based websites operating and are developing online reached by a firm with contextual variables both at an industry and an organisational are investigated and discussed.
- **University of Wollongong, Australia, conducted a study in 2007 under title "Electronic adaption barriers in small to Medium sized enterprises in developing countries: A cross country comparison".** It is stated that in the business environment e-commerce has made considerable inroads not only into large organisation but also Small and Medium scale enterprises although not adapting e-commerce with same speed as their larger counterparts. Several recent studies have begun examining the relationship between the perceptions of adaption barriers in developed economies; the relationship between the perceptions of these barriers has not been fully examined in developing economies. This study examines the correlation and underlying factors of barriers to e-commerce in a developing economy (Indonesia). It then compares these with SME owner or manager perceptions from developed economy (Sweden). This study showed that, there are differences in the groupings and priorities of barriers to e-commerce between two locations. Most importantly, the finding that while Swedish respondents were more concerned with technical issues, the Indonesian respondents were more concerned with organisational barriers.

- **A survey conducted by Salford Business School, university of Salford United kingdom under the title "Factors affecting e-commerce adaption in Small and Medium scale enterprises: an interactive study of Botswana (2007)**. This study aimed to investigate the factors that affect e-commerce adaption in Small and Medium scale enterprises in developing countries like Botswana. The survey was undertaken using an interpretive paradigm with multiple case studies in 9 Small and Medium scale enterprises. Data collection tools and techniques involved in face to face semi structured and unstructured interviews, telephone interviews, document analysis of Small and Medium scale enterprises. This study emerges with factors of e-commerce adaption that have been derived from various patterns of electronic commerce adaption as represented in the nature and characteristics of Small and Medium scale enterprises. This survey makes a theoretical contribution by proposing a conceptual framework for investigating factors affecting e-commerce. The study also adds different blend to research approach by understanding in depth studies on selected Small and Medium scale enterprises in Botswana and provides an interpretive assessment of e-commerce. Adaption in Small and Medium scale enterprises' strategies for improving e-commerce development in the selected Small and Medium scale enterprises presented; as well as implications of the research findings. This study also provides insights into understanding Small and Medium scale enterprises' e-commerce adaption factors in other context with similar characteristics.
- **The Department of applied economics and statistics, Clemson University undertook the case study in Oct 2007.** It provides the analysis of e-commerce in rural areas. The principal objective of the research is to highlight practical and successful adaption of e-commerce practices in rural areas of Australia. 22 Small and Medium scale enterprises were selected for detailed evaluation and follow ups. The report includes an extensive discussion of lessons learned from the interviewed business. E.g. the rural business use the internet for a variety of activities including communication, research, banking, product promotion, sales, documented delivery and supply chain management. The websites are established to complement existing businesses in most of the firms with only a small number of business opportunities generated by the internet. It was noted that, only a few enterprises report a significant increase in revenues attributable to on-line sales.
- **Motilal Nehru National institute of technology, Allahabad has conducted a study under title "Information technology: A growth navigator for small scale industries in India" in 2008**. This study analyses the various factors influencing the growth of Small and Medium scale enterprises in India. Information technology is one of the significant factors which in general are not used by Small and Medium scale enterprises in India for their production and business process in the growth. Further on the basis of Nolan's stages of growth model the use of information technology and e-commerce in Small and Medium scale enterprises is elaborated through this study.
- **Islamic Azan University, Iran has conducted a study survey under the title "E-commerce technology adaption in Iranian Small and Medium scale enterprises" in 2010.** This study attempts to highlight a framework for the adaption of e-commerce technologies in Iranian SMEs. The main thrust of the research was to develop the framework for e-commerce adaption by the Iranian SMEs and hence study the accelerators and impediments to the adaption and transmission of e-commerce technologies. Through this it was found that there are some barriers to SMEs developing and diffusion theories and practicalities can be explored for developing the proposed adaption in SMEs. It is argued that results from research case studies based on the framework are able to identify the factors influencing and leading to the adaption of e-commerce technologies by Iranian SMEs.
- **Elsevier, USA has conducted a study survey in 2010, by combining two independent research streams;** it examined the determinant factors of strategic value and adaption of e-commerce as perceived by top management members in Small and Medium sized enterprises in the Midwest region of USA. This study proposed a research model that suggested three factors that have been found to be influential in previous research in the perception of strategic decision aids. Inspired by the technology acceptance model and other relevant research in the area, the study also identified four factors that influence e-commerce adaption, organisational, readiness, external pressure, perceived ease of use and perceived usefulness. It hypothesizes a causal link between the perceived strategic value of e-commerce

and its adaption. To validate the research model, data was collected from top managers / owners of Small and Medium scale enterprises by using an internet survey.

- **Centre for Entrepreneurship and SME's Development (CESMED) University Kengangsaon, Malaysia has conducted survey under the title "An empirical study on factors affecting electronic commerce adaption among SME in Malaysia in 2011.** The study empirically examines determinants of e-commerce adaption by Malaysian Small and Medium sized enterprises. Research model for this study was drawn on the literature on information and communication technology, information system and electronic data interchange. This study has tested seven theories on factors that influence e-commerce adaption with empirical data from a sample of 200 Small and Medium scale enterprises in Malaysia. The findings show that relative advantage, compatibility, organisational readiness, managers' characteristic and security have significant impact on e-commerce adaption. The study provides a clear understanding of managers' perception about e-commerce adaption in their business. This is important in a global context as Small and Medium scale organisations in Malaysia are going for exporting their product in the global market place.
- **Department of industrial management Wayamba university of Srilanka, has conducted a study under the title, "A study of organisational factor affecting electronic commerce adaption in SMEs" (2011).** The use of e-commerce in Small and Medium scale enterprises has become an important topic in information system research. Despite the enormous attention given to encourage Small and Medium scale enterprises to adapt e-commerce by government research undertaken to identify strategies of e-commerce adaption for Small and Medium scale enterprises in developing countries like Srilanka is minimal. The primary objective of the study is to examine the relationship between organisational factors and e-commerce adaption to understand the factors that contributes to e-commerce adaption. Quantitative approaches were considered in this research study. This study draws on the data obtained from a sample of 200 Small and Medium scale enterprises in Colombo using postal survey. Based on correction, regression and cluster analysis the findings of this research were revealing and facilitating the understanding of certain organisational factors that influence the level of e-commerce adaption. The main factor identified was organisational culture. The result of this study shows empirical evidence that there is a positive correlation between the adhocracy cultural characteristics among the Small and Medium scale enterprises and the level of e-commerce. Also a hierarchy cultural characteristic showed a negative correlation with the level of e-commerce adaption in Small and Medium scale enterprises.
- **University of Kelaniya, Colombo, Sri Lanka, has conducted a study survey in 2012 under the title of "Adapting e-commerce based technology in Small and Medium scale enterprises of developing countries.**" The objective of this study is to present the factors that influence the decisions of adapting e-commerce for Small and Medium scale enterprises and develop a model for developing countries. A literature review was conducted using 40 research papers and model was developed by identifying widely cited factors. This model suggests the main influencing factors viz., characteristics of external environment. As this part of ongoing research at department of industrial management, University of Kelaniya, Colombo it is expected to modify and validate the model identified in Sri Lanka.
- **Smt. LRT college of Commerce Akola has also conducted a study on the barriers in the adaption of e-commerce in 2013.** The survey study was initiated to identify the experienced and expected benefits and barriers to adaption of e-business technologies from the view point of various businesses. The barriers found as a result from overview on various literature that are presented and related to previous research in this area. The main purpose of the study to investigate the barriers to e-commerce adaption in the businesses and what are the reasons for consumer adaption in the business and what are the reasons for consumer adaption / non-adaption of e-commerce? Through this study it is observed that the issue of barriers to international e-commerce include lack of trust, lack of infrastructure, language and culture. Trust is a fundamental barrier in the adaption to e-commerce in Indian Small and Medium scale enterprises.

3.4 Conclusion

In this chapter the published articles and research studies conducted by various research institutes, universities of different countries has been reviewed. To some extent the review of literature has provided current scenario of Small and Medium scale enterprises in various developed and developing countries. Chapter highlights information and communication technology adaption by Small and Medium scale enterprise and the distinctive and behavioural characteristics of Small and Medium scale enterprises operating in various developed and developing countries. Potentially, other sectors and Small and Medium scale enterprises in general may benefit from effective policy revenues, implementation and support strategies for Small and Medium scale enterprises. This chapter builds on several research studies on information and communication technology and e-commerce adaption in Small and Medium scale enterprises. The next chapter gives detailed analysis about geographical, socio- economical and industrial profile factors of Maharashtra and selected regions from Maharashtra.

CHAPTER - 4

INDUSTRIAL PROFILES OF SMES OF SELECTED AREAS FROM MAHARASHTRA

4.1 Geographical and Industrial Profile of Maharashtra

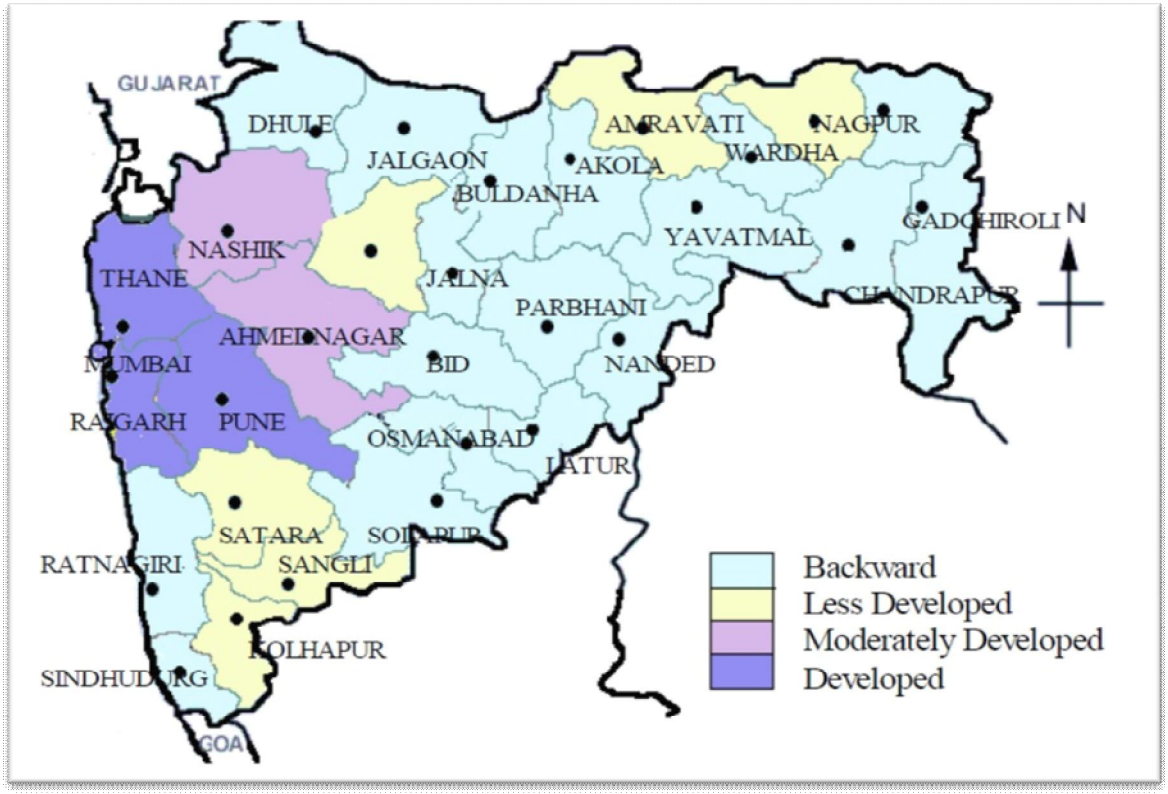
The actual survey, necessary for the research work is from Maharashtra, One of the leading states of India. Pune, Mumbai and Nagpur are individually developed regions of Maharashtra. Hence SMEs as random samples, have been taken from these regions. It becomes necessary to understand the industrial, social and geographical profile of Maharashtra.

Located in the Western region of India, Maharashtra stretches over 307,690sq.kms, with an estimated population of 109.7million as of March 2009. Maharashtra is the third-largest state in India in terms of area and the second-largest in terms of population. The state has 35 administrative districts. Mumbai is the capital city. The state shares borders with Gujarat, Madhya Pradesh, Chhattisgarh, Andhra Pradesh, Karnataka, Goa and the Union Territory of Dadra and Nagar Haveli. On its West is the Arabian Sea. The most commonly spoken language of the state is Marathi. Konkani, Hindi and English are the other prominent languages.

Mumbai in Maharashtra is known as the trade and commerce capital of India. The city is also the financial centre of the country. In recent years, Maharashtra has emerged as a key hub for IT and ITeS, electronics, and the captive business outsourcing industries. Maharashtra offers a wide range of subsidies, fiscal and policy incentives and assistance for businesses under the "Industrial, Investment and Infrastructure Policy, 2006". The state also has sector-specific policies for IT and ITeS, biotechnology and tourism. Maharashtra has a literacy rate of 76.9 per cent. The state has a large base of skilled and industrial labour, making it an ideal destination for knowledge-based and manufacturing sectors.

The state has a well-developed social, physical and industrial infrastructure. It has good road, rail, port and air connectivity. Apart from eight airports, the state has two major and 53 minor ports. It also has a well developed power supply grid. Maharashtra has had high growth in the infrastructure sector in the last decade. Recently, there has been a considerable increase in the number of industrial clusters, and public private partnerships projects in the in the infrastructure domain. The state has a stable political environment with a single party government. The State Governments is committed towards providing conducive business climate through progressive policies and incentives.

Spread of Industrialisation of Maharashtra



(Source: Maharashtra State Development report 2010)

Spread of industrialisation is divided into four major parts viz: Backward, Less Developed, Moderately Developed and Developed. It is noticed that industrialisation happed in and around Mumbai. The district Pune, Thane and Raigarh are developed districts with few less developed pockets. Nashik and Ahmednagar are moderately developed while Satara, Sangli, Kolhapur, Aurangabad, Amravati and Nagpur are less developed. The rest of Maharashtra is backward. This is the major reason to select regions like Mumbai, Pune and Nagpur for the research purpose. Although Vidarbha restrain hardly few companies compared to Nagpur regions. The chapter also explains the various factors in Pune, Mumbai and Nagpur and their environs that have facilitated the industrial growth of these regions.

4.2 Geographical, Socio–Economical and Industrial Profile of Pune

Geographical Profile

Pune is located 560m (1840ft) above sea level on the western margin of Deccan plateau. It is situated on the leeward side of the Sahyadri mountain range, which forms a barrier from the Arabian Sea. It is relatively hilly city. Central Pune is located at the confluence of the Mula and Mutha rivers. The Pavana and Indrayni rivers tributaries of the Bhima River traverse the north western outskirts of Pune.

Pune has a tropical wet and dry climate with average temperatures ranging between 20^0 to 28^0C (68^0 to 80^0F). Pune experience there distinct seasons i.e. Summer, Monsoon and a mild autumn.

Socio - Economical Profile of Pune

Pune is one of those unique cities of India with a glorious past, an innovative present and a promising future. The city houses the top IT companies of India, is an automobile industry hub and has one of the best education infrastructures in the country. Pune is known as “The Queen of Deccan” because of its own historic association, picturesque surroundings and its importance as a major cultural, social and political centre in Deccan.

Pune occupies a unique place in Maharashtra state. Tremendous achievements made in the field of industry, trade and commerce, education and cultural activities. However, the industrial area in Pune district is confined to Pune urban agglomeration covering Pune city and Haveli Tehsil. The district headquarters of Pune has diversified economy. At present Pune is hustling with economic activities.

Since years Pune has been known as a city of education. The Pune University, Tilak Maharashtra Vidyapeeth, Bharti Vidyapeeth Medical College, Engineering and Agricultural colleges, National Defence Academy are some of the renowned educational institutes situated in Pune city. Besides these, various other social and important central government offices such as Central Water and Power Research station, Akashvani, Doordarshan, Film and Television institute of India, Indian Institute of Tropical meteorology etc are also situated in Pune. Today Pune is well connected with other parts of the country with railway, air and road. Adequate transport facilities contribute to the development of industries, trade and commerce.

Industrial Profile of Pune

The development of Small and Medium scale industries in Pune and its environs, covers a span of sixty years or so, though there had certainly been a few stray attempts to start industries in Pune and its environs earlier. The government established an Ammunition factor at Khadaki in 1869. In 1885 Deccan paper mills was founded by Sardar Dorabjee Padamjee and Sardar Nowrosjee Padamjee while Raja Bahadur Motilal mills was started in 1893. These attempts however essentially far and between and therefore, did not really inaugurate this city’s industrialisation. Pune’s industrial scene in the 1940s was marked by few large and medium scale units on the one hand existing side by side with small scale units producing a variety of consumer goods like coarse cloth, copper and brass utensils and stationary on other. The onset of the Second World War did lead to a substantial increase in the production at the ammunition factory at Khadki. Still the process of industrialisation of Pune had received little impetus until after the Second World War.

The emergence of industrial Pune began with mechanical engineering industries putting up base. Pune’s proximity to Mumbai, good climate, availability of talented human resources and information technology hub, it preferred destination to large scale industries as well as medium and small scale industries. The establishment of Kirloskar Oil Engine Limited in 1946 at Khadki, can be said to have initiated in the true sense Pune’s post war industrial expansion. Establishment of a large number of Small and Medium scale

industrial units, serving as factors, in the various large scale units around in the area followed. Subsequently, great number of large scale industries came to be established in the areas surrounding Pune, setting the region toward rapid industrialisation.[22]

Today, Pune has diverse industrial sectors. It is one of India's most important automotive hubs with some domestic and international auto giants manufacturing here. This city also has hundreds of large, medium and small IT companies. Nowadays Pune of the 1960 was transformed completely from pensioner's paradise and has become a centre for education and administrative institutions and has turned into industrial city. The support and impetus for this industrial growth came from a number of sources. One agency closely involved with it from the initial stages was the Maratha Chamber of commerce and industries. As early as 1935, it promoted the Bank of Maharashtra to finance local entrepreneurs. Today it runs useful advisory consultancy and other services. There was also the social overhead capital in the city. In order to understand the present industrial scenario in the context of Small and Medium scale enterprises, the following table focuses on the percentagewise distribution of units in major industrial areas in Pune.

Table-4.1: Percentagewise growth of SMEs in Pune.

Major Industrial Areas	% of units
Pimpri Chinchwad Industrial Area	38.4%
Talegao Industrial Area	8%
Alandi – Markar – Moshi – Chakan	13.5%
Pune – Nagpur Road – Ranjangoan - Yerawada	8%
Pune – Satara Road – Khed - Shivapur	4.5%
Pune – Solapur Road – Hadapsar – Fursungi	4%
Pirangut – Urawade Industrial Area	3%
City Industrial Estate and areas	12.2%
Baramati	1.9%

(Source: Maratha Chamber of Commerce study report 2010)

There has been sizable investment in the development of the Small and Medium scale enterprises in the above stated industrial areas of Pune. Without doubt SMEs have played huge role in enabling Pune to emerge as one of the most important industrial belts in Maharashtra. The environs come into existence in 1967. The industrial profile of these regions can be better explained with reference to the various industrial growth areas in it. The draft regional plan (1970-91) of the Pune region has identified 9 industrial growth areas. These areas are Pimri-Chinchwad, Talegaon, Chakan, Ranjangao, Khed, shivapur, Hadapsar, Pirangut etc. On the basis of geographical proximity these growth rates can be grouped into a few industrial growth areas. These areas are –

a) To the north-west of the Pune city, Chinchwad and its environs comprising of Pimri, Dapodi, Bopodi, Bhosari, Akurdi, Khadki etc.

b) The eastern part of the city comprising Hadapsar, Loni, Kolbhor and Mundhwa

c) The north eastern part of city comprising Yerawada and Nagpur Road.

d) The south western part of the city comprising Erandawana, Paud road and kothrud

Of those four areas, chinchwad and its surrounding parts occupy a pride place in the industrial history of the region. Nowadays, Pimpri-Chinchwad is recognized as a major industrial hub and hosts one of the biggest industrial zones not only in Pune but also in Asia.

The Hadapsar Industrial Estate was established to the east of Pune Cantonment by the Pune Municipal Corporation in 1956. This was obviously done to prevent the concentration of industries in any particular area and to dispense them over wider part of the city. To encourage the growth of the area new industries were exempted from paying the octroi duty for the first 10 years. This attracted a few large scale industries in the city. The area however is marked mainly by the establishment of a large number of Small and Medium industrial organisations in and around Hadapsar area.

Many Small and Medium enterprises have also sprung up in the north, eastern part of city in Yerawada and Pune–Nagpur road. There are some Small and Medium scale enterprises in the south east of the city in kothrud, pirangut and Erandawana. This part has emerged over the last 25 years as the most prominent residential areas in the Pune city.

In addition to these prominent industrial areas, industries in Pune scattered over other parts of the city as well. These include Pune-satara road, Gultekadi Industrial estate etc. Among all these industrial areas a few Small and Medium scale enterprises are selected for the study purpose.[23] The following table shows the number of registered Small and Medium scale enterprises during the years of 2007-12.

Table-4.2: Number of registered Small and Medium scale enterprise in and around Pune region during 2007-2012.

Small enterprises	Medium Enterprises	Total No. of SMEs
557	17	574
630	30	660
1016	79	1095
511	22	533
1590	60	1650

(Source: DIC database Pune 2012)

After knowing number of enterprises operating in various sectors it is relevant here to know the investment in Small and Medium scale enterprises over the last five years, which is given in following table.

Table-4.3: Investments in Small and Medium scale enterprises in Pune

Year	Rs. (In Millions)
2007-08	47957
2008-09	14741
2009-10	11051
2010-11	62791
2011-12	188903

(Source: DIC database Pune 2012)

The investment in Small and Medium scale enterprises will be representative of the development undergone by each industry and its contribution to the economy as a whole. Pune is the second fastest growing city in Maharashtra and it is in close proximity to high demand cities particularly Mumbai which is just 170kms away. Moreover it is just two hours away from Nhava–Sheva port (Jawaharlal Nehru Port). Most importantly Pune also has a large supplier base characterised by a cluster of Small and Medium scale enterprises, most of which cater specifically to the needs of manufacturers. All these favourable traits make Pune a destination that attracts an influx of investments both foreign as well as domestic.[24] The following table shows the numbers of employees in Pune's Small and Medium scale enterprise during the year 2007 to 2012

Table-4.4: Employment opportunities in numbers in small & medium scale enterprises in Pune

Year	Employment opportunities
2007-08	20490
2008-09	38833
2009-10	25685
2010-11	34916
2011-12	34916

(Source: Dic Pune 2012)

Pune has been characterised by increasing employment opportunities. Since Pune has developed industries 25kms from city centre in all directions, this has led to a tremendous need for skilled employees and thus resulted in an increase in demand for all types of employees. Most importantly Pune also has a large supplier base characterised by a cluster of Small and Medium scale enterprises most of which cater specifically to the needs of manufacturers.

The growth of industries in Pune and its surroundings can be attributed to several factors. The two most significant factors favouring the choice of Pune as a suitable site for industrial location are - firstly the restrictions imposed on the development of industries in the greater Mumbai area by the state government in the 1950s and 1960s and secondly the availability of ample land at a comparatively lower price in the vicinity of Pune during this period.

The other significant factor seems to be the ideal location of Pune from the point of view of transportation, Information and communication technology hub, easy communication with Mumbai. The rest of the country has found it of great value to Small and Medium scale enterprises which preferred Mumbai but decided to shift to Pune under government's directive or appeal. Additionally, Pune's proximity to Mumbai-Pune-Banglore highway has enabled Pune to become a suitable distribution centre for the whole southern region.

The last factor is especially important to the multinational organisations. Pune has a small but highly successful group of multinational organisations. Their Parental connection is variegated and all of them are in the manufacturing sector, with most of them producing engineering goods and vehicles.[25]

4.3 Geographical, Socio-Economic and Industrial Profile of Mumbai

Geographical Profile of Mumbai

Mumbai consists of the two distinct regions - Mumbai City and Mumbai Suburban, which form two separate revenue districts of Maharashtra. The Mumbai City is also commonly referred to as the Island city or South Mumbai. City spans 67.79 Sq. km, while the suburban part spans 370 Sq. km, together accounting for 437.71 Sq. km under the administration of Brihan Mumbai Municipal Corporation. The Mumbai lies at the mouth of the Ulhas river on western coast of India, in the coastal region known as Konkan region of Maharashtra. It sites on salsette island, partially shared with the Thane district. Mumbai is bounded by the Arabian Sea to the west. Many parts of the city lie just above sea level; with elevations ranging from 10m to 15m. The city has an average elevation of 14km. Northern part of the Mumbai city is hilly and the highest point in the city is 450m at salsette in the Powai Kanheri ranges.

The original seven islands of Mumbai consisted of 22 hills. Most of them were razed to fill in the shallows to connect the islands. Mumbai has numerous creeks with close 71 Sq. km of creeks and mangroves along its coastline.

Socio – Economic Profile of Mumbai

Mumbai is the capital city of Maharashtra and financial capital of India. It is one of the most populous city in India, and the fourth most populous city in the world with a total metropolitan area population of approximately 20.5 million. Along with the neighbouring urban areas, including the cities Navi Mumbai and Thane, it is one of the most populous regions in the world. Mumbai is also one of the world's top 10 centres of commerce in terms of global financial flow, generating 5% of India's GDP, and accounting for 25% of industrial output, 70% of maritime trade in India (Mumbai Port Trust and Jawaharlal Nehru Port Trust previously known as Nhava Sheva Port) and 70% of capital infrastructure of India's economy. The city houses important financial institutions such as the Reserve Bank of India, the SEBI and the corporate headquarters of numerous Indian companies and multinational corporations. It is also home to some of India's premier scientific and nuclear institutes like BARC, NPCL, IREL, AERB, AECI and the department of Atomic energy. The Mumbai city also houses Hindi and Marathi film and television industry.[26]

Industrial Profile of Mumbai

Between 1951-1961 the population of Mumbai rose by 50% and in next decade by 80%. This rapid growth was due to the increasing industrial and commercial importance of the Mumbai. It resulted in changing quality of life for many of the city's inhabitants. Expansion of Mumbai city was limited by the physical location of the city on a long, narrow peninsula with few mainland communications.

In 1958 the government appointed a study group under the chairmanship of S. G. Barve. The Government of Maharashtra accepted Barve's recommendation to examine metropolitan problems in a regional context. In March 1965, the government appointed another committee chaired by Prof. D. R. Gadgil, then director of Gokhale Institute of Politics and Economics Pune. This committee was asked to formulate broad principles of regional planning for the metropolitan regions in Mumbai. Gadgil committee submitted its report in

March 1966. It recommended creation of regional planning board for notified region in Mumbai. To establish such board, it also recommended a planned decentralization of industrial growth. In Mumbai as well as the development of the mainland areas as a multi nucleated settlement.

The government passed the Maharashtra Regional and Town Planning Act 1966 and brought it into effect in 1967. Subsequently, the Mumbai Metropolitan region was notified and a regional planning board was constituted in June 1967. The board recommended that the new metro centre or Navi Mumbai as it is now called be developed to accommodate a population of 21lakhs. The recommendation was accepted by the government of Maharashtra. Accordingly, the City and Industrial Development Corporation (CIDCO) of Maharashtra was incorporated in March 1970; under the Indian Companies Act 1956. In March 1971, CIDCO was named the New Town Development Authority for the project. The impact of Navi Mumbai on the growth of Mumbai was reflected in 1980s. The 1991 census recorded a 10% decrease in population growth rate for greater Mumbai; Compared to the previous decade.

The economy in Mumbai is rooted in a mixture of Small and Medium scale enterprises as compared with heavy engineering set up in other Indian metropolitan cities. Other manufacturing activities in Mumbai include oil refining and petrochemicals, pharmaceuticals etc. Today Mumbai is the commercial capital of India. It is also one of the top ten centres of commerce in terms of financial flow generating 5% of India's GDP and accounting for 25% industrial output, 70% maritime trade in India and 70% of capital transactions to India's economy. International connectivity too is attracting huge investment for the development of industries in Mumbai. Videsh Sanchar Nigam Ltd. (VSNL), a government undertaking had monopoly till recently. VSNL as well as Hindustan Telecommunication has since been privatized in March – April 2002. The private investment of about 1.4 billion dollar by Bharti Telecom, Dishnet DSL has created a bandwith of 16.08 terabits per second connecting Indian cities with the world through Singapore, Indonesia, Hawai, Japan, Portland etc. Due to this, there is a tremendous growth and development of business not only in Mumbai, but over 400 cities have at least 2000 internet connections. This number will double in the coming years. This shows that internet has penetrated well beyond the metros to smaller town across the country which led to development of Small and Medium scale enterprises.[27]

The Thane-Belapur–Kalyan industrial belt is the centre of highly sophisticated modern industries, However it done not fall under the scope of present research. The industrial growth in Mumbai however is concentrated in this industrial belt. The cluster of Small and Medium scale enterprises of point, enamel and varnish etc are established in Navi Mumbai area. This cluster is approved by the office of the Development Commissioner, Small and Medium scale enterprises, New Delhi. Soft intervention program is also completed. Land for common facility centre in Mumbai was instrumental in adequate creation of jobs. Kalyan, Thane, Ulhasnagar, Bhivandi, Vasai are industrially developed areas. In Mumbai and its environs are largely industrialised having 10 MIDC areas, 2 cooperative Industrial estates and industrial growth centres in Jawhar and Wada blocks of Thane district. As all these industrial areas are very near to Mumbai city the indigenous and international market facility is also available for Small and Medium scale enterprises.

Under Export promotional Industrial Park (EPIP) scheme of government of India, MIDC has developed a high quality Industrial estate of Ambernath 4km away from Ambernath railway station. The total area of the park is 507 hectors. With a common effluent treatment plant, training centre complex etc. Ambernath is poised to be a fully developed modern industrial estate for Small and Medium scale enterprises. Major large scale industrial units are situated at Thane, Kalwa, Belapur, Dombivali, Kalyan, shahad and Ambernath.

Marol is a part of the bigger suburb of Andheri (E) in Mumbai. Its proximity to the international airport makes it a prime business area. It is located off the Andheri-Kurla and Andheri–Ghatkopar roads and has good east west connectivity.

Table-4.5: Number of registered Small and Medium scale enterprises in Mumbai environs during 2007-2012

Year	Small Enterprises	Medium Enterprises	Total Number of SME's
2007-08	466	18	484
2008-09	1007	23	1030
2009-10	1012	09	1021

2010-11	1946	13	1959
2011-12	2943	69	3012

(Source : DIC Mumbai 2012)

The above table indicates the tremendous increase in the number of Small and Medium scale enterprises during the period of 2007-08 to 2011-12. In five years the numbers of SME's were increased to 2528(i.e. 3012 – 484). The growth trend is witnessed especially in the last five years, in terms of number of SME's established in Mumbai and its environs. In the following table it has represented the investments in SMEs during the years 2007-08 to 2011-12. As the SMEs have sizably increased, it is obvious that investments corresponding increased the investment, as is shown in the following table.

Table-4.6: Investment in Small and Medium scale enterprises of Mumbai

Years	Rupees (In millions)
2007-08	17074
2008-09	95282
2009-10	68847
2010-11	67973
2011-12	62723

(Source: Dic Mumbai 2012)

The investment in and around Mumbai clearly signifies that the city continues to reap the advantages of the availability of a ready market and a strong and consistent customers base. The presence of excellent infrastructure, communication services in Mumbai and its environs over the last many years has led to further strengthening of a huge base of SME's in Mumbai. The following table indicates the year wise employment numbers in Small and Medium scale enterprises in Mumbai its environs.

Table-4.7: Employment opportunities in numbers in Small and Medium scale enterprises in Mumbai and environs

Years	Employment opportunities
2007-08	16283
2008-09	50118
2009-10	40524
2010-11	46029
2011-12	42299

(Source: DIC Mumbai 2012)

From the above table, it is understood that Mumbai has been recognized as a centre of increasing employment opportunity. For many years there is a tremendous increase in employment opportunities in Mumbai. Like Pune, Mumbai also has a large supplier base characterised by a cluster of Small and Medium scale enterprises most of which cater specifically to the need of manufacturers.

A special economic zone is a special duty free enclave designed to promote foreign investments in a comprehensive range of economic activities from manufacturing at one end to trading and financial services on the other all operating in an unrestrained business environment. Navi Mumbai special economic zone is located in the heart of Navi Mumbai and comprises four zones i.e. Dronagiri, Kalamboli, Ulwe and JNPT (Jawaharlal Nehru Port Trust) area. The Navi Mumbai special economic zone is aimed to provide for world class infrastructure, utilities services for business Small and Medium scale enterprises. However, the present research does not highlight on these areas.

Industrial sector was the principal economic driver for Mumbai and its environs; it is first decade in the form of large petrochemical industries. Many large scale industrial organisations provided major thrust in the initial stages of development of Small and Medium scale enterprises in Mumbai as well as Navi Mumbai. A number of Small and Medium scale industries flourished along with the large plants generating large number of employments for skilled as well as unskilled workers.

The Taloja industrial area consists of 277 industrial units all large, medium and small. All types of process industries including chemical, paper and plastic etc. are located here.

Around 391 industries are located in the Thane-Belapur industrial belt of navi Mumbai. The trans Thane industrial belt developed by MIDC in mid sixties witnessed a sharp growth of industries in terms of number of units, capital deployed employment and turnover. The Thane–Belapur industrial belt had 72 industrial units in 1974. This has been increased to 533 in 1984 and 1931 in 1990. Now there are about 2300 Small and Medium industrial units with an employment of over one lakh with an annual turnover of more than 10000 crores.

Almost 87% of the office jobs of Greater Mumbai are located on Mumbai Island with 62% in south Mumbai. This type of concentration of corporate offices and industries on southern part and suburbs like Chembur and Andheri created unequal development. Keeping in mind above issues CIDCO developed central Business Districts (CBD) at Belapur on 575 hectors of land, which is 20 times longer than area of Mumbai's CBD – Nariman point. Being spread over the periphery of Belapur, Kharghar, Kamothe and Ulwe nodes, it is easily accessible from all parts of Navi Mumbai and Mumbai by road, rail and water transport facilities. It not only houses several economic and government administrative and private companies offices but also a home to save the country's most prominent IT-BPO establishments. The New Economic Policy adapted by Government of India created new opportunities for white collar jobs in form of IT and ITES. In the following table the types of exiting Small and Medium scale enterprises in Mumbai and environs are presented.

Table-4.8: Type of existing Small and Medium scale enterprises in Mumbai

Types of Enterprises	Number of units
Agro Based	95
Cotton Textile	250
Wood / Wooden based furniture	13
Paper and Paper products	69
Lather based	72
Rubber, plastic & Petro based	562
Metal Based	684
Engineering units	250
Electrical machinery & Transport	549
Repairing and servicing	68
Others	3977

(Source : DIC Mumbai 2012)

4.4 Geographical, Socio-Economic and Industrial Profile of Nagpur

It has an area of 9892 Sq. Km. Nagpur is bounded on the north by Chhindwada and Seoni districts of Madhya Pradesh, on the east by Bhandara, on the south and west by chandrapur, Wardha respectively and along a small strip on the north-west by the Amravati district. Nagpur practically is geographical centre of India, in fact the zero milestone of India is in this city. All major highways and major railway trunk route pass through the city.

The climate of the city is characterised by a hot summer, well distributed rainfall and dryness except in the rainy season. Nagpur district constitutes 3.21% of the total area of the Maharashtra state. The surrounding region is an undulating plateau rising northward to the Satpura range, from 889 to 2142 ft. high and is trained by the Konkan and Pench rivers in the Centre, the Wardha in the west and the Wainganga in the east. Both these rivers later merge as tributaries into the Godavari river. Area under urban sector in Nagpur is 364.66 Sq. Km while the area under the rural sector is 9657.93 Sq. Km.

Socio – Economic Profile of Nagpur

Nagpur is famous for Oranges and oranges orchards mostly in Narkhed, Katol and Kalmeshwar talukas. Hence Fruit based industries like juice, jam, jelly and orange powder production are in adequacy in Nagpur. For the purpose of administrative conveyance the Nagpur is divided into 14 talukas and 13 panchayat samities. Nagpur is one of the districts of ex-Madhya Pradesh till the recognization of states in 1956 when

along with the 7 districts of vidharbha region formed a part of the bilingual state of Bombay. Nagpur district is one of its 26 districts of Maharashtra.

The city of Nagpur (Vidharbha originally) and its suburban extensions which now almost reached upto the industrial nucleus of Konhan. From defence point of view the advantage was that Nagpur had grown up into an urban centre under the Maratha Confederacy with the formation of the central provinces under the British regime. The town has acquired a new importance as the administrative capital. Its growth conceded with the economic development of the surrounding region abounding in cotton corp. As is the case of large city, Nagpur developed a complete structure based on administrative, economic and social forces, which finds expression in its urban and suburban areas. It draws a greater strengths from the new industrialization and rightly competes with Mumbai and Pune in its economic and social growth.[28]

Industrial Profile of Nagpur

Availability of infrastructure facilities like power, bank and industrial accommodation in the form of plants and sheds, transport, communication and training institutions are important factors for the eventual development of Small and Medium scale enterprises in Nagpur.

Located at the centre of the country, Nagpur is natural logistics hub for the Indian sub-continent for movement of international and domestic cargo. Maharashtra Development Corporation has established its area in 1962, which is 7Kms from Nagpur city. In the industrial area several engineering industries, electrical based industries, food based industries etc. are located to facilitate the industrialist and workers amenities like post office, banks, and communication facilities etc which are available in this area.

Cotton being major crop in Nagpur, textile mills, grinning and pressing mills, spinning mills and power looms have good potential. Based on the requirement of large and medium scale enterprises few more small scale enterprises can also come up and become ancillary units to these large and medium scale enterprises. Availability of stain and raw hides of animals there is good scope for establishing unit for leather tanning, footwear and other leather products.

Most of industries existing in Nagpur are predominantly are engineering and agriculture based. The existence of fabrication workshop, rerolling mills, foundries, manufacturing of steel furniture and machinery parts amply prove this point. With so many large scale enterprises exist and a few more coming up in the district, small scale enterprises located in Nagpur has ample of scope in providing their services to these large scale enterprises. Based on the requirements of these large scale enterprises, a few more small scale enterprises can also come up and become ancillary units to these large scale units. As far as there are 37 SSE's are having ancillary states to the public sector enterprise and large scale industries. At present 513 IEM has been issued in Nagpur districts. Most of these units or industries are located in and around Nagpur City.

Today, Micro, Small and Medium scale enterprises development institute in Nagpur engaged in assistance or consultancy or prospective entrepreneurs and existing unit, preparation of district industrial potential survey report, project profiles, conducting entrepreneurship development program, provide guidance for export promotion and ancillary development. Organised programmes on energy conservation, quality control and up gradation ISO-9000 / Total quality Management and ISO-14001 and EMS. This institute is engaged in intensive technical assistance to the unit and marketing for SSI through sub-contract exchange etc. above all the institute is also working for the promotion and development of Small and Medium scale enterprise.[29]

Nagpur is moderately developed as far as industrial activities are concerned. It is not as well developed as compared to pune and Mumbai, but it is also not industrially backward as other cities in Vidarbha region of Maharashtra. But with the coming up of MIDC, Butibori and setup of a dry cargo station at Nagpur, It is expected that the pace of industrialisation will increase in the near future and hopefully Nagpur may soon become industrially developed city. In Nagpur MIDC acquires and develops industrial plots with all the basic amenities and make them available to the entrepreneurs. There are three major, four mini industrial estate and three growth centres in the Nagpur. The profiles of major industrial areas in brief are given below:

a) Software Technology park at Nagpur

Maharashtra Industrial Development Corporation is now concentrating its efforts on developing environment friendly software technology parks to cater the needs of the IT industry. It has developed more than 18 IT

parks in the state, out of which one IT park is developed at Parsodi, Nagpur City and other at Sadar, Nagpur City. The main objective for developing software technology park at Nagpur is data communication facility of computer, single window clearance for government licence i.e. Code Numbers, custom etc. and assistance for liaison with premises are readily available. In addition to this space has been provided for Nodal officer and the staff for software Technology Park. Following table represents the number of registered Small and Medium scale enterprises.

b) Butibori industrial Area

Maharashtra Industrial Development Corporation has established its area in 1992 which is 28km from Nagpur highway NH7. The total area planned for development is 2345.65 hectors which covers 16 villages having private land of 865 cultivators. To encourage the entrepreneurs, Maharashtra Industrial Development Corporation has constructed 46 worksheets. This industrial Development estate has been given five star status, IT parks (20hectors), textile park (204 hectors), apparel park (68 hectors), weavers' park (147hectors) are proposed in this area. Maharashtra Industrial Development Corporation has incurred Rs. 80crs on different infrastructural facilities to be available in the area; out of which expenditure for Rs.23crs has been incurred on water supply scheme. In this area, several industrial units have invested Rs. 2300crs upto December 2000 and employment made available to 7200 people.

c) Hingna Industrial Estate

Industrial Estate at Hingna near Nagpur has been planned with an intension to promote the growth of ancillary industries around them, eventually providing considerable employment to the rural population. The industrial estate at Hingna has already been developed with assistance of State Industrial and Investment Corporation of Maharashtra, VIDC and MFC into sizeable industrial complex with the sizable potential for further growth. Hingna Industrial area was established in 1962 and it is located 7kms from Nagpur city. In this industrial estate several engineering industries, electrical based industries, food based industries etc are located.

Table-4.9: Number of registered Small and Medium scale enterprises in and around Nagpur during 2007-2012

Year	Small Enterprises	Medium Enterprises	Total Number of SME's
2007-08	663	10	673
2008-09	685	07	692
2009-10	936	11	947
2010-11	1141	13	1154
2011-12	978	36	1014

(Source: DIC Nagpur 2012)

From the year 2007 the number of registered Small and Medium scale enterprises in Nagpur is continuously increasing to the year 2011-12. The numbers of registered Small and Medium scale enterprises are low in the year 2011-12 in Nagpur as compared with Pune and Mumbai. (Pune 1650 registered SMEs and Mumbai 3012 registered SMEs in the year 2011-12).

After knowing the number of enterprises operating in various sectors it is relevant here to know the total investment in Small and Medium scale enterprises over the last five years in Nagpur.

Table-4.10: Investments in Small and Medium scale enterprises in Nagpur

Years	Rupees (In millions)
2007-08	17372
2008-09	17252
2009-10	22559
2010-11	27729
2011-12	25611

(Source : DIC, Nagpur 2012)

As compared with Pune and Mumbai the investments in Small and Medium scale enterprises in Nagpur is also low. In the year 2011-12 there is 188,903 million rupees invested in the Small and Medium scale sector

in Pune and in Mumbai was 62,723 million. It has highest investments in SME's in these cities due to easy accessibility, good infrastructure and easy connectivity with other cities of India. Following tables shows the total employment numbers in Nagpur's Small and Medium scale enterprises.

Table-4.11: Employment opportunities in Numbers in Small and Medium scale enterprises in Nagpur

Years	Employment Opportunities
2007-08	13401
2008-09	8011
2009-10	14621
2010-11	15907
2011-12	11652

(Source : DIC Nagpur, 2012)

Today, Nagpur has also been recognized as a centre of increasing employment opportunity. From the above table it is known that there is a tremendous increase in employment opportunities in Nagpur. Like Pune and Mumbai, Nagpur also has a large supplier base characterised by a cluster of Small and Medium scale enterprises, most of which cater specifically to the needs of large scale industrial organisations situated in Nagpur industrial areas. Following table depicts the types of existing Small and Medium scale enterprises in Nagpur and its vicinity.

Table-4.12: Types of existing Small and Medium scale enterprises in Nagpur.

Types of Enterprises	Number of units
Food products & Beverages	813
Manufacturer of Tobacco products	81
Textile	608
Manufacturer of Wearing Apparel	40
Plastic & Rubber Products	725
Chemical & Chemical products	608
Paper and Paper products	178
Leather Products	87
Manufacturing of Furniture	16
Manufacturing of Wood products	422
Maintenance & Repair of Vehicles	339

(Source : DIC, Nagpur 2012)

4.5 Conclusion

Pune, Mumbai and Nagpur regions have a well developed social, physical and industrial infrastructure. Apart from international and domestic airports these cities have other infrastructural facilities which has led to proper industrialisation. These cities also have a well developed power supply grid. The infrastructure sector in Pune, Mumbai and Nagpur has significant growth over the last two decades and substantial rise in the number of industrial clusters.

The Maharashtra state has laid down several policies, to setup the right kind of business climate in these regions. These policies aim to motivate investors to invest into various sectors in Pune, Mumbai and Nagpur; thereby contributing to the overall development of the economy.

It has been seen from the data included in this chapter that facilities like transport and communication, finance and human resources are available in these regions. There are also some other vital inputs available for the development and growth of industries in these cities. These inputs are

- Consultancy and training services.
- Availability of skilled and unskilled human resource
- Marketing assistance

Through the present chapter an attempt has been made to compile all the relevant background information, regarding Small and Medium scale enterprises of the selected regions into one exhaustive report. It has been designed in such a manner that it will be easily accessible, not only to the existing and prospective entrepreneurs but also to the various institutions which are directly or indirectly connected with the growth and development of industries. The next topic deals with the actual survey of SMEs from Pune, Mumbai and Nagpur regions, conducted for the research work.

References

1) District Census Report of Maharashtra 2001
2) Maharashtra State Development Report – 2010
3) Annual MSME report of 2012-13
4) Annual MSME report of 2011-12
5) Pune Metropolitan regional board draft; regional plan (1970)
6) Maratha Chamber of Commerce and Industry (2010) study report
7) District Industrial Census Pune, Mumbai and Nagpur (2012)
8) K. Nagesh (2007) “Industrial Growth in Maharashtra”, Hansraj Publication Mumbai
9) V.S. Pagdare (2000) “Industrial Growth trends in Vidarbha” Lotus Publication, Amravati
10) Cluster profile report – pune cluster by SIDBI
11) Cluster profile report – Mumbai cluster by SIDBI
12) Cluster profile report – Nagpur cluster by SIDBI
13) www.ibef.org
14) www.midcindia.org
15) www.midcmumbai.com
16) www.mapsofindia.com/maharashtra
17) http://www.indianforging.org/members_directory.aspx.
18) http://www.dcciapune.org/membership/members-list.html
19) http://www.mcciapune.com/member-directory.aspx

CHAPTER - 5

TABULATION AND INTERPRETATION OF DATA

5.1 Introduction

On the completion of primary data collection the next logical step in the research process is data processing, tabulation and interpretation of primary data. This is one of the critical steps in the research process. After this step drawing conclusion and think over the possibility of generation of findings. In present study processing of data involves concentrating, recasting and dealing with data with the aim of making it amenable to analysis. Data analysis follows data processing and constitutes focusing on the data from perspective of the objectives. This ultimately contributes to reviewing existing theory, modifying it or proposing an entirely new theory considering this fact, it has also analysed the primary data collected from owners or managers (respondents) of small and medium scale enterprise. Simple percentage method has been used for the purpose of tabulation.

As stated earlier the primary data has been collected through structured questionnaire for the key decision makers (e.g. Directors, General Manager, Project Manager, Entrepreneurs etc) of small and medium scale enterprise in Mumbai, Pune and Nagpur(Vidarbha). The questionnaire consisted two parts. Part I of the questionnaire designed to seek information regarding broad features of small and medium scale enterprise that is size and type of enterprise, place of enterprise etc. Part II of the questionnaire was meant to collect information regarding utilisation of information technology and e-commerce technology in administrative and manufacturing activities of SMEs. The primary data collected through questionnaire highlights the perceptions of respondents regarding utilisation of IT and e-commerce, barriers in implementation of ICT and also approach of entrepreneurs towards ICT and e-commerce. There are some questions based on grading system which is 1 grade for lowest and 5 for the highest.

5.2 Tabulation and Interpretation of data

[Note: i) Figures in table represent no. of respondents

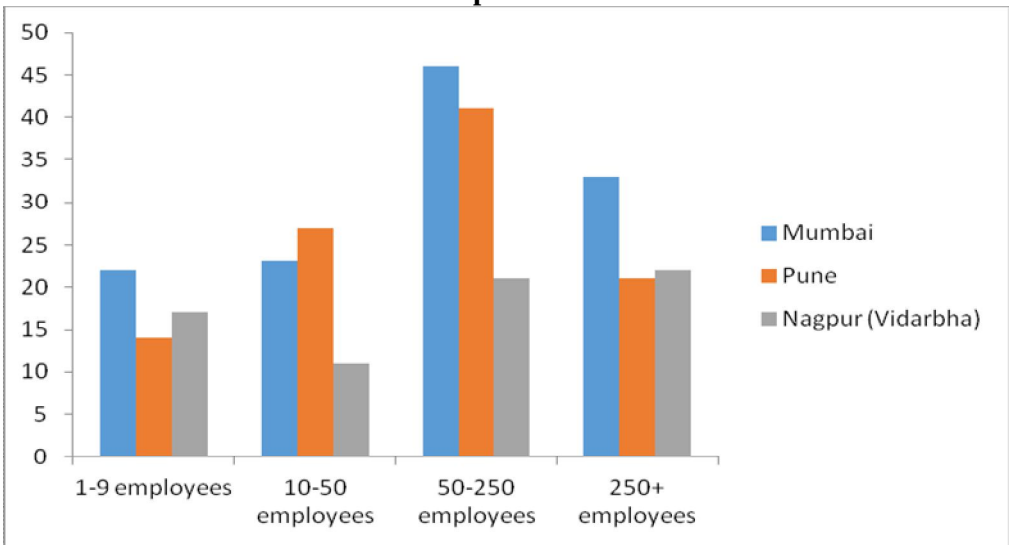
ii) Total number of respondents = 298]

Q1. Size of Enterprise you represent

Table No. 1

Particulars	Mumbai	Pune	Nagpur	Total
1-9 employees	22	14	17	53
10-50 employees	23	27	11	61
50-250 employees	46	41	21	108
250+ employees	33	21	22	76
Grand Total	**124**	**103**	**71**	**298**

Graph no.5.1



Comparative Analysis

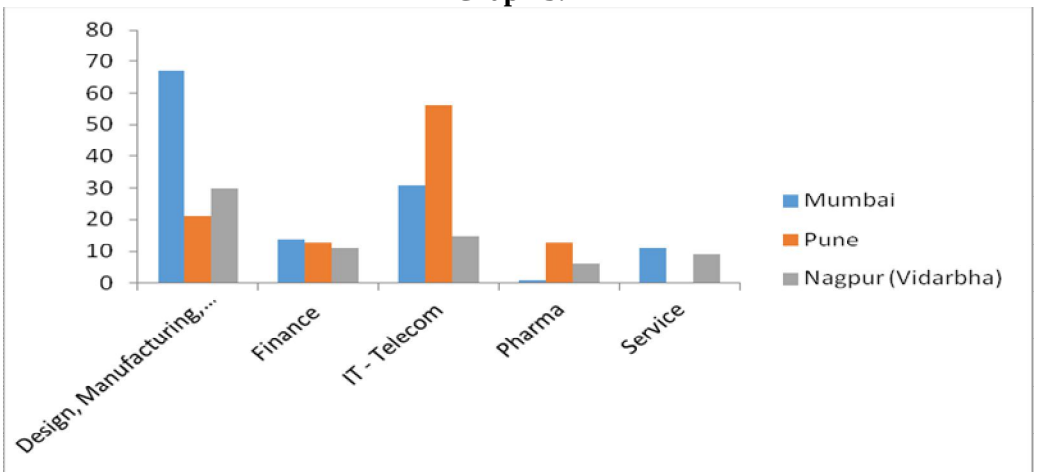
- From the above table it is revealed that there are 53 (18%) respondents who employed 1-9 employees in their enterprise.
- Out of total 18%, 7% are from Mumbai, 5% from Pune and 6% from Nagpur.
- 61 respondents (20%) who employed 10-50 employees in their enterprise, of which 9%, 8% and 4% are from Pune, Mumbai and Nagpur respectively.
- 36% i.e. 108 respondents have employed 50-250 employees in their organisation, out of which 15% are from Mumbai, 14% from Pune and 7% from Nagpur.

Q2. Type of your Firm

Table No. 5.2

Company Sector	Mumbai	Pune	Nagpur	Total
Design, Manufacturing, Production	67	21	30	118
Finance	14	13	11	38
IT - Telecom	31	56	15	102
Pharma	1	13	6	20
Service	11	0	9	20
Grand Total	**124**	**103**	**71**	**298**

Graph 5.2



Comparative Analysis

- The above table indicates the sector wise classification of small and medium scale enterprises of Mumbai, Pune and Nagpur.
- In total there are 118(39%) SMEs in Design, Manufacturing or production industry out of which 67(22%) from Mumbai, 21(7%) from Pune and 30(10%) are from Nagpur.
- As compared to Mumbai and Nagpur the percentage of SMEs belonged to this sector, in Pune, is very low.
- In case of finance 38(13%), there are only 14(5%) enterprises situated in Mumbai and 13 and 11 (4%) in Nagpur and Pune are situated respectively.
- But in case of IT and telecom sector the SMEs in Pune 56(19%) are higher as compared with Mumbai 31(10%) and Nagpur 15(5%).
- In case of pharma sector there are total 20(7%) SMEs in three regions, out of 1(1%) from Mumbai, 13(4%) from Pune and 2(6%) are from Nagpur.

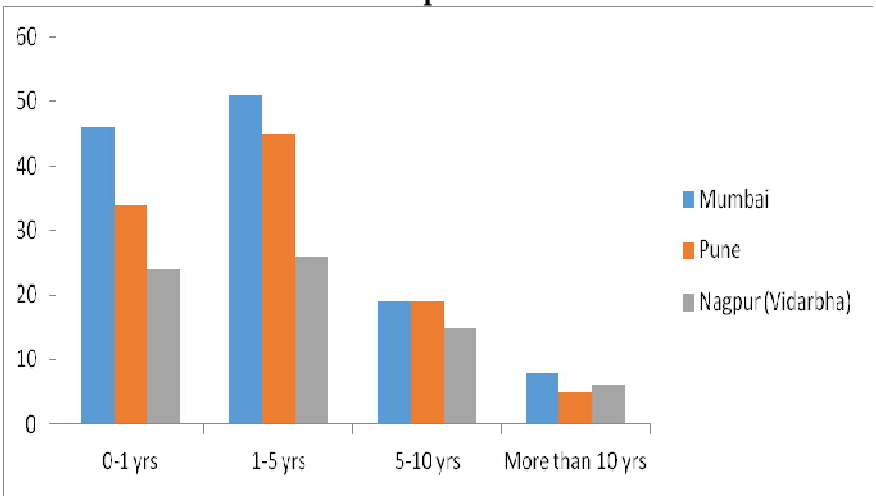
- In Pune the percentage of SMEs of this sector is higher than other two cities. There are 11(4%) SMEs in Mumbai 9(3%) in Nagpur which belongs to service sector.
- From the above table, it is understood that, the number of SMEs related to IT and telecom sector are very high in Pune and No of SMEs related to Design, Manufacturing and production sector are high in Mumbai as compared to Pune and Nagpur.

Q3. Use of company website by the organisation

Table No 5.3

Use of Website (since)	Mumbai	Pune	Nagpur	Total
0-1 yrs	46	34	24	104
1-5 yrs	51	45	26	122
5-10 yrs	19	19	15	53
More than 10 yrs	8	5	6	19
Grand Total	**124**	**103**	**71**	**298**

Graph 5.3



Comparative Analysis

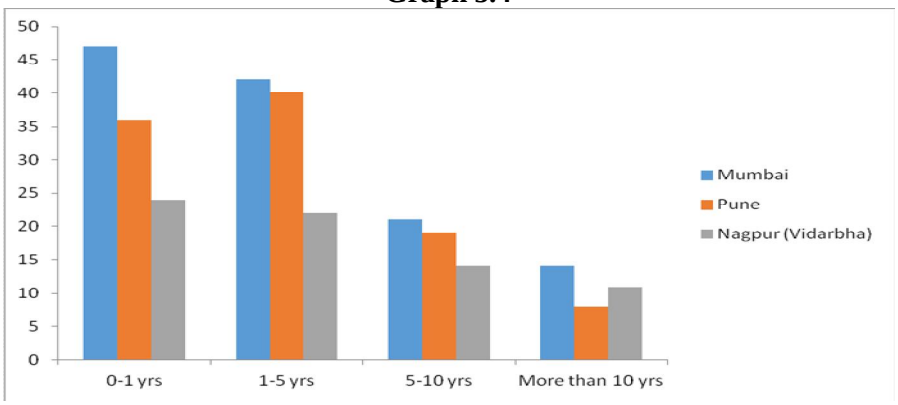
- The above table indicates year wise classification of enterprises which are using own company website. In total 104(35%) respondents, out of which 47(16%) are from Mumbai, 34(11%) from Pune and 24(8%) from Nagpur, using company website from 1year or less than 1year.
- 51(17%) respondents from Mumbai, 45(15%) are from Pune and 26(9%) from Nagpur, are using company website from 1 to 5 years.
- In total 53(18%) respondents out of which 19(6%) from Mumbai, 19(6%) from Pune and 15(5%) from Nagpur, have stated that they are using company website from 5 to 10years.
- There are very few respondents 19(7%) out of which 8(3%) are from Mumbai, 5(2%) from Pune and 6(2%) from Nagpur, who are using company website from more than 10years.

Q.4 Use of E-commerce and Information Technology by your Organisation

Table No. 5.4

Use of E-commerce & IT (Since)	Mumbai	Pune	Nagpur	Total
0-1 yrs	47	36	24	107
1-5 yrs	42	40	22	104
5-10 yrs	21	19	14	54
More than 10 yrs	14	8	11	33
Grand Total	**124**	**103**	**71**	**298**

Graph 5.4



Comparative Analysis

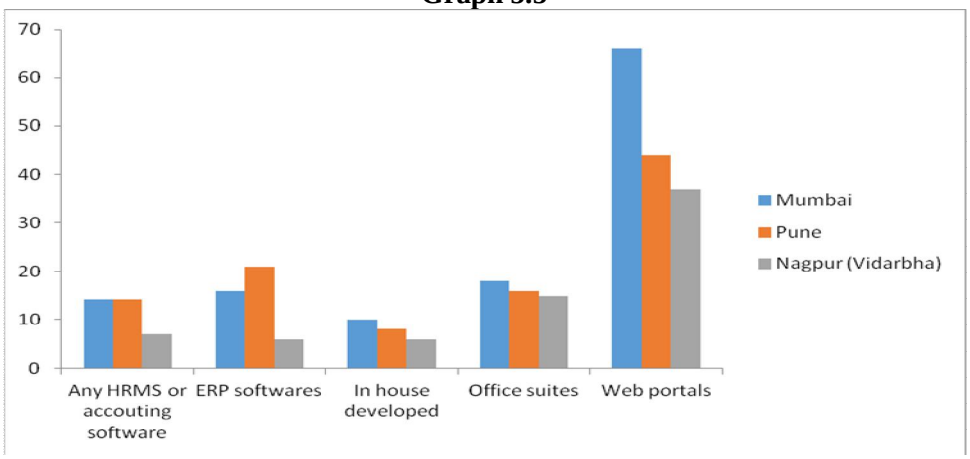
- The above table indicates year wise classification of respondents who are using e-commerce and IT in their enterprises
- In total 107(35%) of respondents, of which 47(16%) are from Mumbai, 36(12%) from Pune and 8% from Nagpur, are using e-commerce and IT in their enterprise from less than year duration.
- 42(14%) of respondents are from Mumbai, 40(13%) from Pune and 22(7%) from Nagpur, are using e-commerce and IT from 1 to 5 years. In total 54(18%) respondents, of which 21(7%) are from Mumbai, 19(6%) from Pune and 14(5%) from Nagpur, who have stated that they are using electronic technology for the business purpose from 5 to 10yrs.
- Only 14(5%) from Mumbai, 8(3%) from Pune, and 11(4%) from Nagpur are using e-technology from more than 10 yrs.

Q.5 Use of IT tools in day to day business activity

Table No 5.5

It Tools	Mumbai	Pune	Nagpur	Total
Any HRMS or accounting software	14	14	7	35
ERP software	16	21	6	43
In house developed	10	8	6	24
Office suites	18	16	15	49
Web portals	66	44	37	147
Grand Total	**124**	**103**	**71**	**298**

Graph 5.5



Comparative Analysis

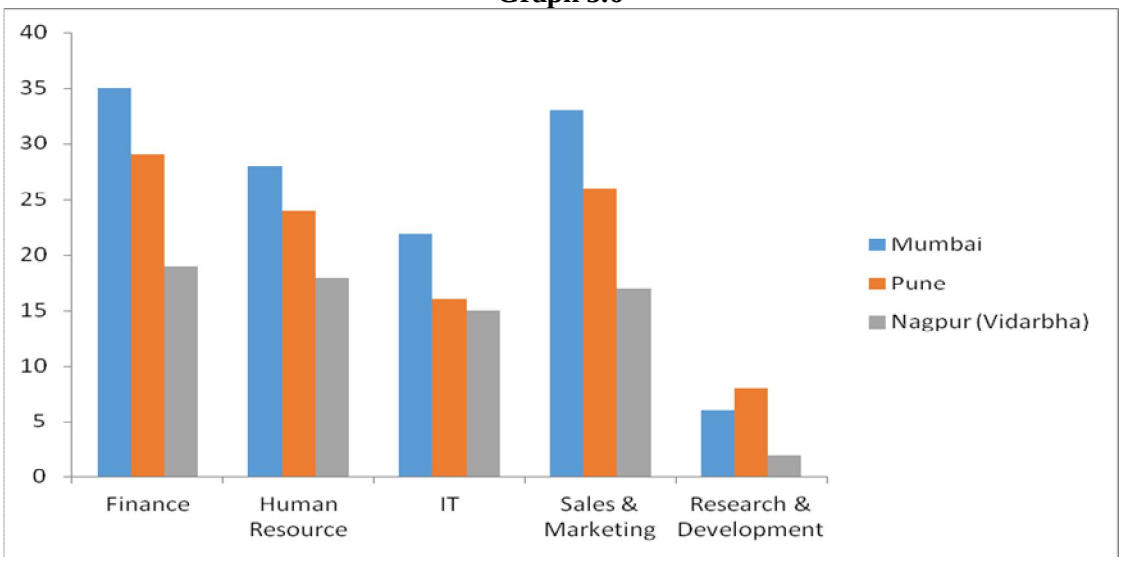
- Out of total 35(12%) respondents, of which 14(5%) from Mumbai, 14(5%) from Pune and 7(2%) respondents from Nagpur have stated that they are using any type of HRMS or any accounting software in their daily business activity.
- 16(5%) from Mumbai, 21(7%) from Pune and 6(2%) from Nagpur have stated that they are using ERP software in their business.
- Only 24(8%) respondents are using in-house developed software for their business activities.
- 18(6%) from Mumbai, 16(5%) from Pune and 15(5%) from Nagpur have stated that they are using office suites, tally etc. for the business purpose.
- Around 147(49%) respondents are using websites in their day to day business activities.

Q.6 The Department/ Section making more use of ICT

Table No. 5.6

Departments	Mumbai	Pune	Nagpur	Total
Finance	35	29	19	83
Human Resource	28	24	18	70
IT	22	16	15	53
Sales & Marketing	33	26	17	76
Research & Development	6	8	2	16
Grand Total	**124**	**103**	**71**	**298**

Graph 5.6



Comparative Analysis

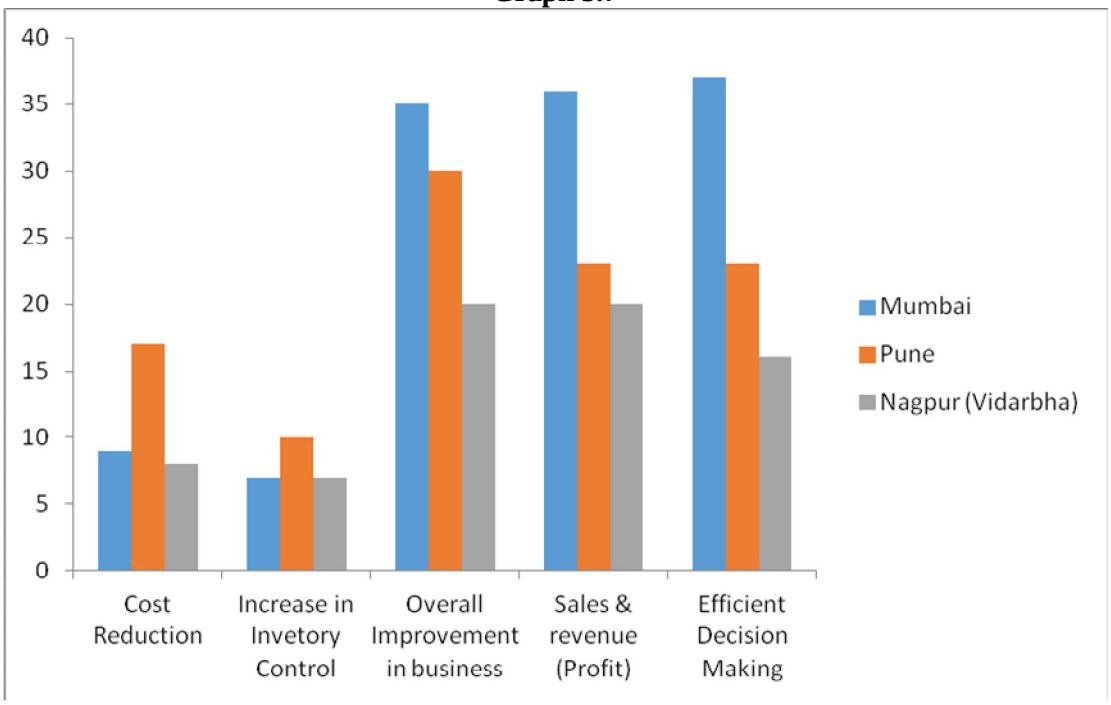
- The above table shows the responses of department or sections of selected SMEs of Mumbai, Pune and Nagpur. In total 83(27%) enterprises are using ICT tools mostly in Finance department.
- Out of 70(23%), 28(9%) from Mumbai, 24(8%) from Pune and 15(5%) from Nagpur are using for HR department.
- The usage in IT department is 22(7%) from Mumbai, 16(5%) from Pune and 17(6%) from Nagpur respectively.
- Usage in Sales and Marketing section is around 76(26%) of respondents. Only 6% i.e. 16 respondents are using IT tools for research and development purpose.
- Majority of enterprises are using ICT in Finance, HR and Sales department.

Q.7 The result / effect in business performance after the use of IT

Table No. 5.7

Indicators of Performance	Mumbai	Pune	Nagpur	Total
Cost Reduction	9	17	8	34
Increase in Inventory Control	7	10	7	24
Overall Improvement in business	35	30	20	85
Sales & revenue (Profit)	36	23	20	79
Efficient Decision Making	37	23	16	76
Grand Total	**124**	**103**	**71**	**298**

Graph 5.7



Comparative Analysis

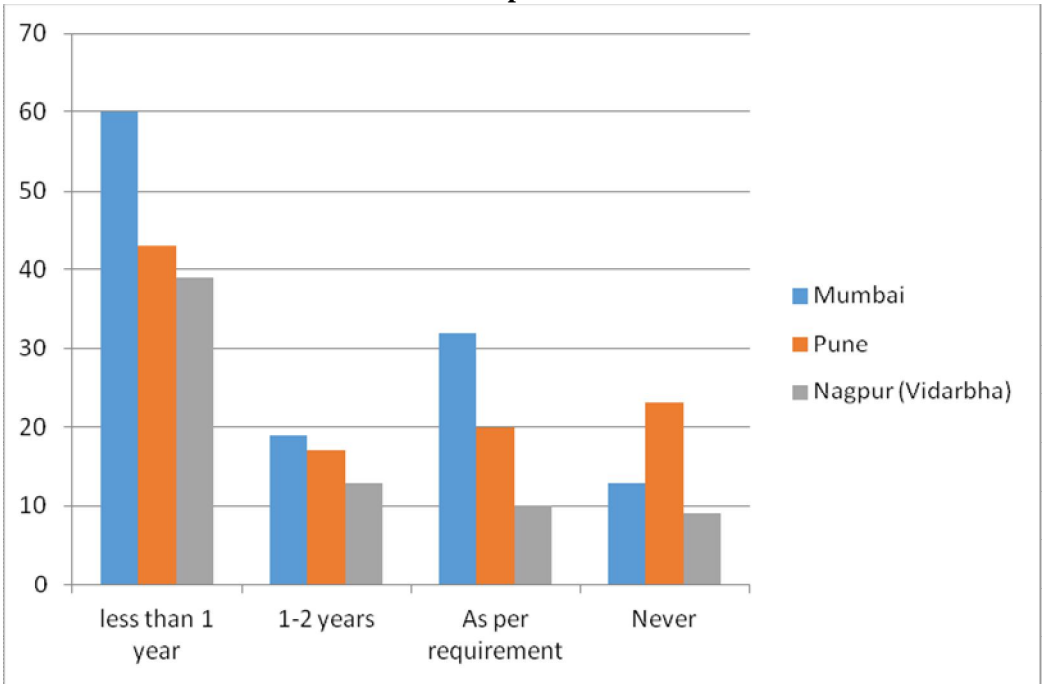
- The present study becomes quite important to gauge or examine the effectiveness of IT in SMEs. To understand the effectiveness of ICT in business improvement, a question was asked to respondents.
- Out of 34(11%) respondents, 9(3%) from Mumbai, 17(6%) from Pune and 8(3%) from Nagpur have opined that there is cost reduction due to utilisation of IT tools.
- Out of 24(7%) respondents, 7(2%) from Mumbai, 10(3%) from Pune and 7(2%) from Nagpur are using it for total increase in inventory control.
- For overall business improvement, 35(12%) from Mumbai, 30(10%) from Pune and 20(7%) from Nagpur have agreed that business improvement has taken place because of e-commerce.
- Out of 79(27%) respondent, 36(12%) from Mumbai, 23(8%) from Pune and 20(7%) from Nagpur, have stated that due to implementation of information technology and e-commerce in their business there is increase in sales and profit margin.
- Due to utilisation of Information technology and e-commerce efficiency is increased in decision making process, 37(12%) from Mumbai, 23(8%) from Pune and 16(5%) respondents from Nagpur,hsvr responded positively.

Q.8 Frequents Technology upgradation

Table No. 5.8

Change in Technology	Mumbai	Pune	Nagpur	Total
less than 1 year	60	43	39	142
1-2 years	19	17	13	49
As per requirement	32	20	10	62
Never	13	23	9	45
Total	**124**	**103**	**71**	**298**

Graph 5.8



Comparative Analysis

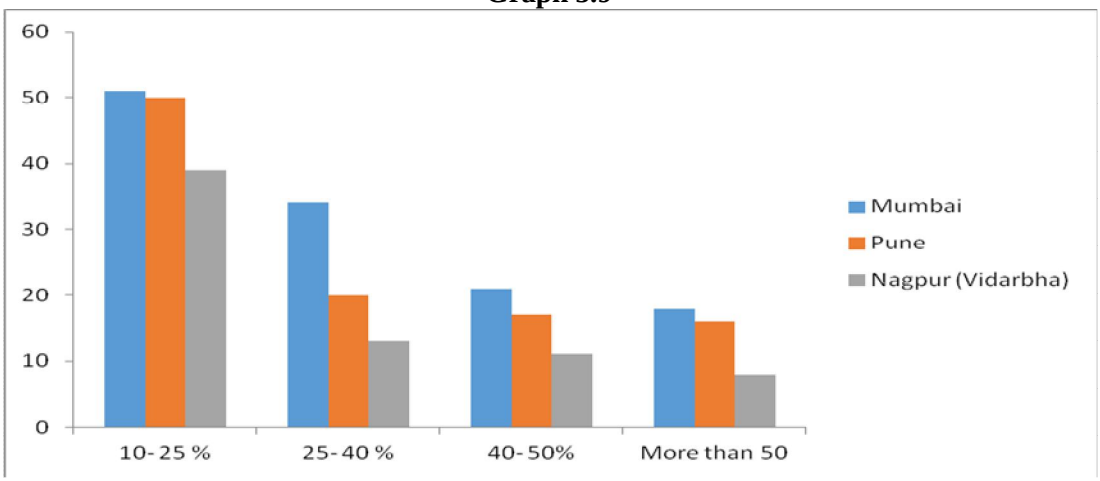
- The above table indicates the frequency of updating technology in SMEs. Out of which 6% from Mumbai, 6% from Pune and 4% resondents from Nagpur have stated that they update ICT after 1 to 2 years.
- Out of 44% respondents out 17% respondents from Pune and 13% respondents stated that they update their technology in less than year.
- Out of 21% respondents, 10% respondents from Mumbai, 7% from Pune and 3% from Nagpur have responded that they are changing their technology as per requirements.
- 18% respondent, out of which 8% from Mumbai, 8% from Pune and 3% from Nagpur have responded that they have never changed the technology, so far, in their enterprise.

Q.9 Capital Investment to improve efficiency of ICT

Table No 5.9

Capital Investment	Mumbai	Pune	Nagpur	Total
10- 25 %	51	50	39	140
25- 40 %	34	20	13	67
40- 50%	21	17	11	49
More than 50	18	16	8	42
Grand Total	**124**	**103**	**71**	**298**

Graph 5.9



Comparative Analysis

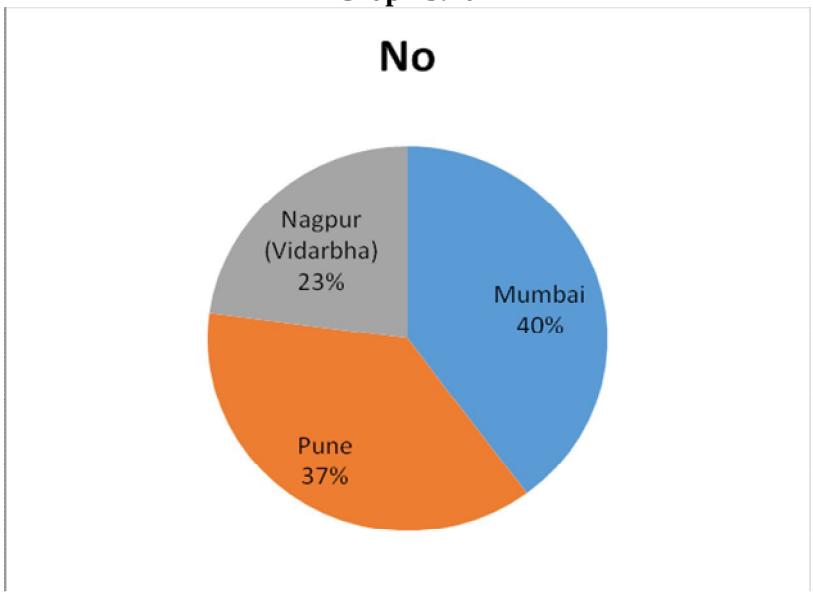
- The above table shows the capital investments by enterprise for improving efficiency of IT in their enterprise. Out of 140(47%) respondents, 51(17%) from Mumbai, 50(17%) from Pune and 39(13%) from Nagpur have invested 10-25% capital investment for improvement.
- 34(11%) from Mumbai, 20(7%) from Pune and 13(4%) from Nagpur have responded that they invest 25-40% capital in ICT.
- Out of 49(17%) respondents, 21(7%) respondents from Mumbai, 17(6%) respondents from Pune and 11(4%) from Nagpur have stated that they have invested 40 to 50% capital in technology.
- It is observed that in total 42(14%) respondents from all regions invest more than 50% of their capital in improvement of technology.

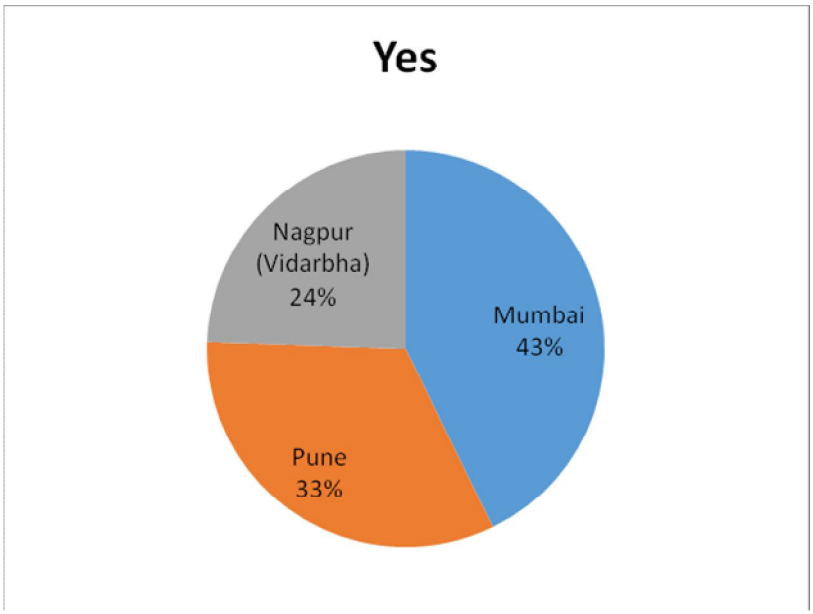
Q.10 Special IT skill required working on it

Table No. 5.10

Skills Required	Mumbai	Pune	Nagpur	Total
Yes	77	59	44	180
No	47	44	27	118
Grand Total	**124**	**103**	**71**	**298**

Graph 5.10





Comparative Analysis

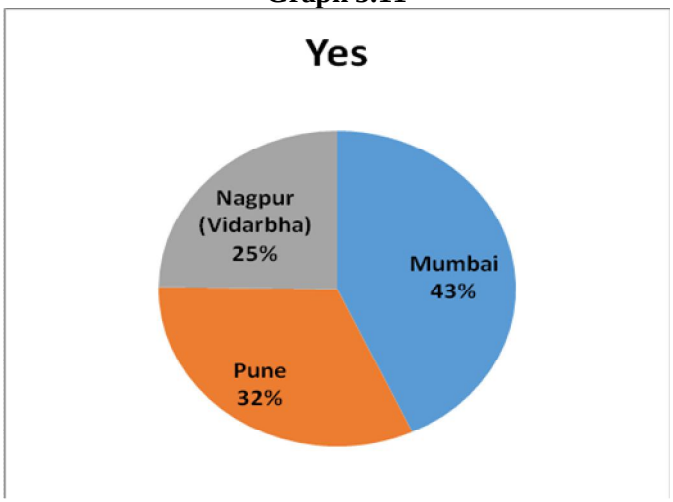
- The above table indicates the opinions of respondents regarding special skills requirement for implementation of Information technology and E-commerce in their enterprise.
- Out of 180(60%) total respondents, 77(26%) from Mumbai, 59(20%) from Pune and 44(15%) from Nagpur are in favour of having special ICT skills.
- Out of 118(40%) respondents, 47(15%) from Mumbai, 44(15%) from Pune and 27(9%) from Nagpur have opined negatively in this regard.
- Overall respondents have positive opinion for implementation of Information technology and e-commerce.

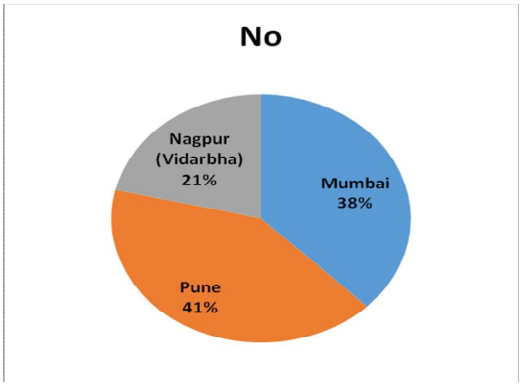
Q.11 Awareness about advanced technology (E.g. ERP, Cloud Computing etc)

Table No. 5.11

Awareness about current trends	Mumbai	Pune	Nagpur	Total
Yes	94	70	54	218
No	30	33	17	80
Grand Total	**124**	**103**	**71**	**298**

Graph 5.11





Comparative Analysis

- The above table represents the percentage of respondents who are aware about the advanced technological trends.
- Out of 218(73%) respondents, 94(31%) from Mumbai, 70(24%) from Pune and 54(19%) from Nagpur have opined positively in installing advanced technology.
- 82(27%) respondents, have stated negatively - i.e. 30(10%) from Mumbai, 33(11%) from Pune and 17(6%) from Nagpur
- The positive responses from Mumbai and Pune are comparatively higher than Nagpur.

Q.12 Main objectives for engagement in the IT and e-commerce

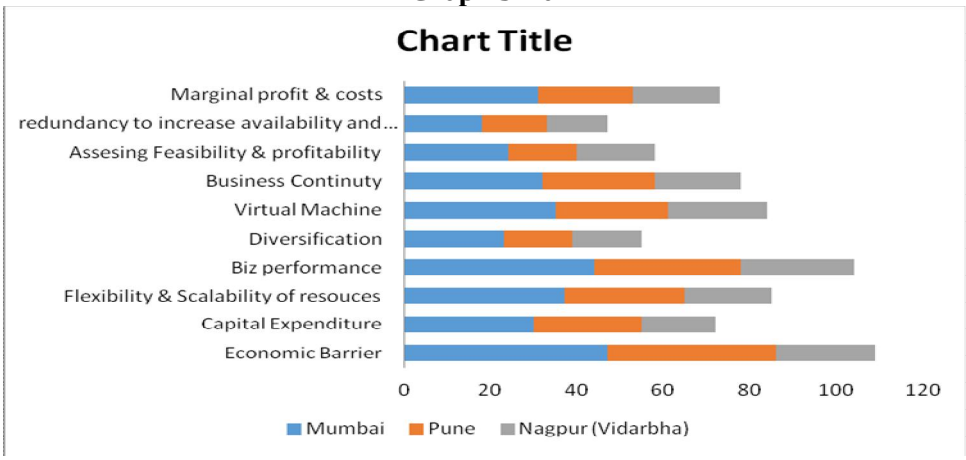
(1 lowest – 5 highest)

a) Highest (5Ranking) Responses

Table No.5.12 a

Particulars	Mumbai	Pune	Nagpur
Economic Barrier	47	39	23
Capital Expenditure	30	25	17
Flexibility & Scalability of resources	37	28	20
Biz performance	44	34	26
Diversification	23	16	16
Virtual Machine	35	26	23
Business Continuity	32	26	20
Assessing Feasibility & profitability	24	16	18
redundancy to increase availability and resilience	18	15	14
Marginal profit & costs	31	22	20

Graph 512a



Comparative Analysis

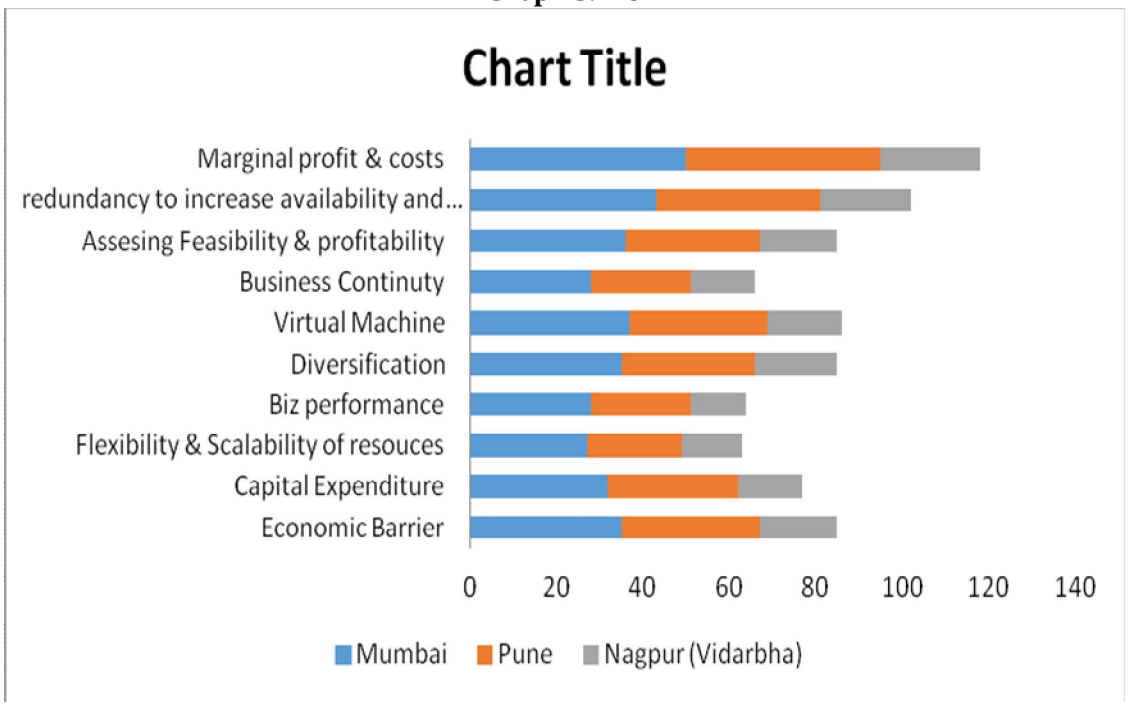
- The above table indicates the highest responses of respondent regarding their engagement in the information technology and e-commerce. Around 109(37%) respondents stated that they engaged in IT and e-commerce for the removal of economic barriers impeding to modernize business process by the introduction of information technology, Out of 37%, 47(16%) from Mumbai, 39(13%) from Pune and 23(8%) from Nagpur.
- 30(10%) from Mumbai, 25(8%) and 17(6%) from Nagpur have been stated that they engaged in IT and e-commerce for the purpose of avoiding capital expenditure in manual work.
- In total 85(29%) respondents out of which 37(12%) from Mumbai, 28(9%) from Pune and 20(7%) from Nagpur opined that for keeping flexibility and scalability of IT resources, they engaged in IT and e-commerce.
- Engagement in IT and e-commerce for increasing computing capacity and business performance stated 44(15%) from Mumbai, 34(11%) from Pune and 26(9%) from Nagpur.
- In total 55(18%) of respondents out of which 23(8%) from Mumbai, 16(5%) from Pune and 16(5%) from Nagpur engaged for diversification of IT systems.
- 35(12%) from Mumbai, 26(9%) from Pune and 20(8%) from Nagpur have been stated that they engaged in IT and e-commerce to local and global optimization of IT infrastructure through automated management of virtual machine.
- 32(11%) from Mumbai, 26(9%) from Pune and 20(6%) from Nagpur responded about engagement in ICT for business continuity and disaster recovery capabilities of the business.
- Out of 58(19%) respondents 24(8%) from Mumbai, 16(5%) from Pune and 18(6%) from Nagpur are engaged in IT for assessing feasibility and profitability of new services.
- Out of 47(16%) respondents 18(6%) from Mumbai, 15(5%) from Pune and 14(5%) from Nagpur are engaged in IT for adding redundancy to increase availability and resilience in the business. 31(10%) from Mumbai, 22(7%) from Pune and 20(7%) from Nagpur are engaged in IT for controlling marginal profit and marginal costs.

b) Higher (4 Ranking) Responses

Table No.5.12 b

Particulars	Mumbai	Pune	Nagpur
Economic Barrier	30	21	17
Capital Expenditure	50	37	26
Flexibility & Scalability of resources	45	37	23
Biz performance	43	37	21
Diversification	46	40	21
Virtual Machine	40	34	19
Business Continuity	52	43	24
Assessing Feasibility & profitability	57	48	25
redundancy to increase availability and resilience	50	38	24
Marginal profit & costs	36	30	18

Graph 5.12b



Comparative Analysis

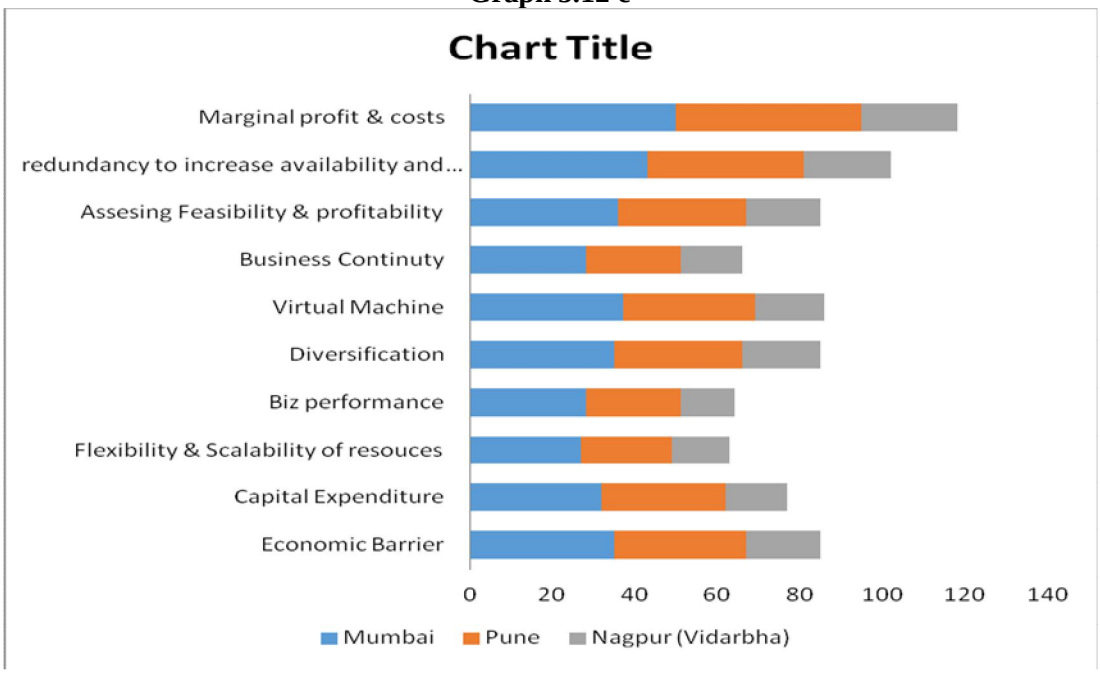
- The above table indicates the higher responses of respondent regarding their engagement in the information technology and e-commerce. Around 68(23%) respondents stated that they engaged in IT and e-commerce for the removal of economic barriers impeding to modernize business process by the introduction of information technology, Out of 23%, 30(10%) from Mumbai, 21(7%) from Pune and 17(7%) from Nagpur.
- 50(17%) from Mumbai, 37(12%) and 26(8%) from Nagpur have been stated that they engaged in IT and e-commerce for the purpose of avoiding capital expenditure in manual work.
- In total 105(35%) respondents out of which 45(15%) from Mumbai, 37(12%) from Pune and 23(8%) from Nagpur opined that for keeping flexibility and scalability of IT resources, they engaged in IT and e-commerce.
- Engagement in IT and e-commerce for increasing computing capacity and business performance stated 43(14%) from Mumbai, 37(12%) from Pune and 21(7%) from Nagpur.
- In total 107(35%) of respondents out of which 46(15%) from Mumbai, 40(13%) from Pune and 21(7%) from Nagpur engaged for diversification of IT systems.
- 40(13%) from Mumbai, 34(11%) from Pune and 19(6%) from Nagpur have been stated that they engaged in IT and e-commerce to local and global optimization of IT infrastructure through automated management of virtual machine.
- 52(17%) from Mumbai, 43(14%) from Pune and 24(8%) from Nagpur responded about engagement in ICT for business continuity and disaster recovery capabilities of the business.
- Out of 130(43%) respondents 57(19%) from Mumbai, 48(16%) from Pune and 25(8%) from Nagpur are engaged in IT for assessing feasibility and profitability of new services.
- Out of 112(37%) respondents 50(17%) from Mumbai, 38(12%) from Pune and 24(8%) from Nagpur are engaged in IT for adding redundancy to increase availability and resilience in the business.
- 36(12%) from Mumbai, 30(10%) from Pune and 18(6%) from Nagpur are engaged in IT for controlling marginal profit and marginal costs.

c) Average (3 ranking) Responses

Table No.512 c

Particulars	Mumbai	Pune	Nagpur
Economic Barrier	35	32	18
Capital Expenditure	32	30	15
Flexibility & Scalability of resources	27	22	14
Biz performance	28	23	13
Diversification	35	31	19
Virtual Machine	37	32	17
Business Continuity	28	23	15
Assessing Feasibility & profitability	36	31	18
redundancy to increase availability and resilience	43	38	21
Marginal profit & costs	50	45	23

Graph 5.12 c



Comparative Analysis

- The above table indicates the average responses of respondent regarding their engagement in the information technology and e-commerce. Around 85(29%) respondents stated that they engaged in IT and e-commerce for the removal of economic barriers impeding to modernize business process by the introduction of information technology, Out of 29%, 35(12%) from Mumbai, 32(11%) from Pune and 18(6%) from Nagpur.
- 32(11%) from Mumbai, 30(10%) and 15(5%) from Nagpur have been stated that they engaged in IT and e-commerce for the purpose of avoiding capital expenditure in manual work.
- In total 63(21%) respondents out of which 27(9%) from Mumbai, 22(7%) from Pune and 14(5%) from Nagpur opined that for keeping flexibility and scalability of IT resources, they engaged in IT and e-commerce.
- Engagement in IT and e-commerce for increasing computing capacity and business performance stated 28(9%) from Mumbai, 23(8%) from Pune and 13(4%) from Nagpur.
- In total 85(28%) of respondents out of which 35(12%) from Mumbai, 31(10%) from Pune and 19(6%) from Nagpur engaged for diversification of IT systems.

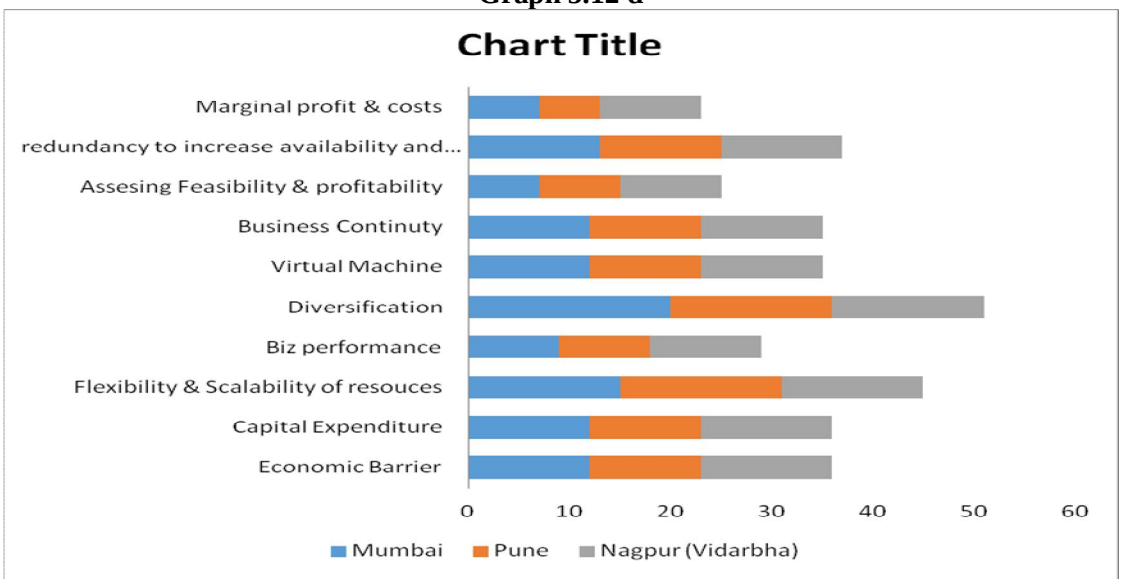
- 37(12%) from Mumbai, 32(11%) from Pune and 17(6%) from Nagpur have been stated that they engaged in IT and e-commerce to local and global optimization of IT infrastructure through automated management of virtual machine.
- 28(9%) from Mumbai, 23(8%) from Pune and 18(5%) from Nagpur responded about engagement in ICT for business continuity and disaster recovery capabilities of the business.
- Out of 85(28%) respondents 36(12%) from Mumbai, 31(10%) from Pune and 18(6%) from Nagpur are engaged in IT for assessing feasibility and profitability of new services.
- Out of 102(34%) respondents 43(14%) from Mumbai, 38(13%) from Pune and 21(7%) from Nagpur are engaged in IT for adding redundancy to increase availability and resilience in the business.
- 50(17%) from Mumbai, 45(15%) from Pune and 23(8%) from Nagpur are engaged in IT for controlling marginal profit and marginal costs.

d) Lower (2 ranking) responses

Table No.512.d

Particulars	Mumbai	Pune	Nagpur
Economic Barrier	12	11	13
Capital Expenditure	12	11	13
Flexibility & Scalability of resources	15	16	14
Biz performance	9	9	11
Diversification	20	16	15
Virtual Machine	12	11	12
Business Continuity	12	11	12
Assessing Feasibility & profitability	7	8	10
redundancy to increase availability and resilience	13	12	12
Marginal profit & costs	7	6	10

Graph 5.12 d



Comparative Analysis

- The above table indicates the lower responses of respondent regarding their engagement in the information technology and e-commerce. Around 36(12%) respondents stated that they engaged in IT and e-commerce for the removal of economic barriers impeding to modernize business process by the introduction of information technology, Out of 12%, 12(4%) from Mumbai, 11(4%) from Pune and 13(4%) from Nagpur.

- 12(4%) from Mumbai, 11(4%) and 13(4%) from Nagpur have been stated that they engaged in IT and e-commerce for the purpose of avoiding capital expenditure in manual work.
- In total 45(15%) respondents out of which 15(5%) from Mumbai, 16(5%) from Pune and 14(5%) from Nagpur opined that for keeping flexibility and scalability of IT resources, they engaged in IT and e-commerce.
- Engagement in IT and e-commerce for increasing computing capacity and business performance stated 9(3%) from Mumbai, 9(3%) from Pune and 11(4%) from Nagpur.
- In total 51(17%) of respondents out of which 20(7%) from Mumbai, 16(5%) from Pune and 15(5%) from Nagpur engaged for diversification of IT systems.
- 12(4%) from Mumbai, 11(3%) from Pune and 12(4%) from Nagpur have been stated that they engaged in IT and e-commerce to local and global optimization of IT infrastructure through automated management of virtual machine.
- 12(4%) from Mumbai, 11(3%) from Pune and 12(4%) from Nagpur responded about engagement in ICT for business continuity and disaster recovery capabilities of the business.
- Out of 25(8%) respondents 7(2%) from Mumbai, 8(3%) from Pune and 10(3%) from Nagpur are engaged in IT for assessing feasibility and profitability of new services.
- Out of 37(12%) respondents 13(4%) from Mumbai, 12(4%) from Pune and 12(4%) from Nagpur are engaged in IT for adding redundancy to increase availability and resilience in the business.
- 7(2%) from Mumbai, 6(2%) from Pune and 10(3%) from Nagpur are engaged in IT for controlling marginal profit and marginal costs. There are no responses with lowest grading / ranking.

Q.13 Barriers faced while implementing new system

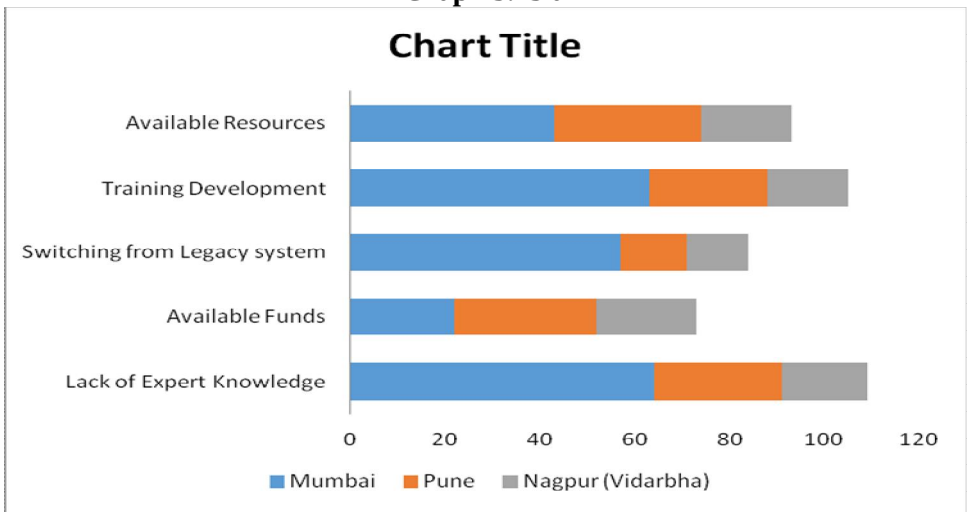
(1 lowest – 5 highest)

a) highest (5 ranking) responses

Table No 5.13.a

Particulars	Mumbai	Pune	Nagpur
Lack of Expert Knowledge	15	12	10
Available Funds	50	11	11
Switching from Legacy system	19	22	19
Training Development	13	12	15
Available Resources	33	8	11

Graph 5.13 a



Comparative Analysis

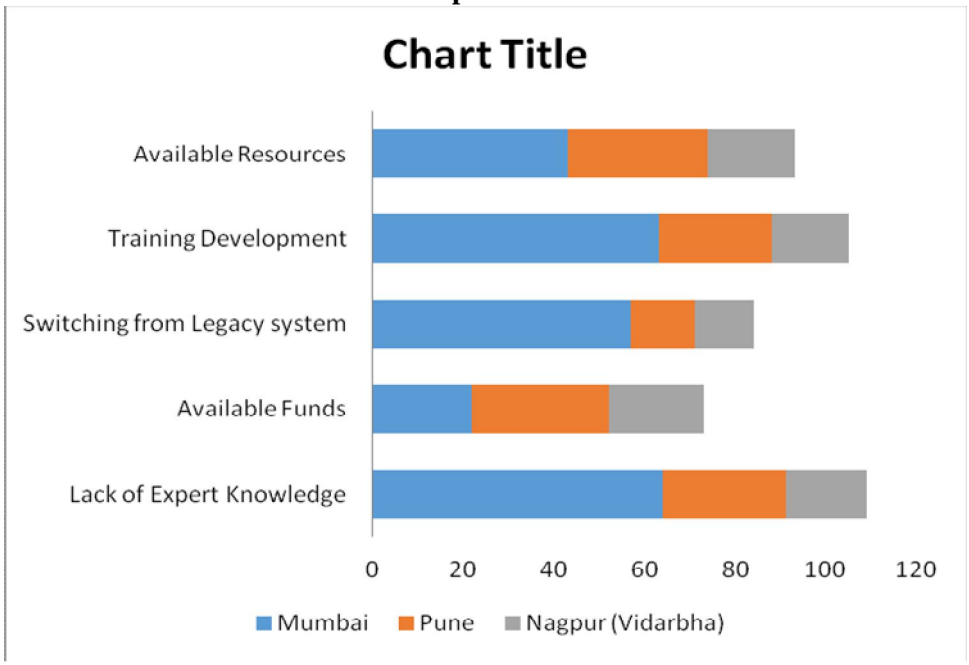
- The above table indicates the highest responses of respondents regarding barriers facing by them while implanting the IT and e-commerce system. In total 37(12%) respondents out of which 15(5%) from Mumbai, 12(4%) from Pune and 10(3%) from Nagpur have stated that they are facing barrier like lack of expert knowledge while implementing IT and e-commerce technology in business.
- Unavailability of funds is a great barrier facing by total 72(24%) respondents out of which 50(16%) from Mumbai, 11(4%) from Pune and 11(4%) from Nagpur.
- Switching from old legacy system to new system is very difficult and crucial task while implementing the IT and e-commerce in their enterprises opined that 19(6%) from Mumbai, 22(6%) from Pune and 19(6%) from Nagpur.
- Lack of training and development is also a barrier in implementing ICT in business opined in total 40(13%) respondents out of which 13(4%) from Mumbai, 12(4%) from Pune and 15(5%) from Nagpur.
- Limited availability of resources is also adversely affected on the implementation of IT and e-commerce technology in day to day activities of the business opined 33(11%) from Mumbai, 8(3%) from Pune and 11(3%) from Nagpur.

b) Higher (4 ranking) responses

Table No.513 b

Particulars	Mumbai	Pune	Nagpur
Lack of Expert Knowledge	64	27	18
Available Funds	22	30	21
Switching from Legacy system	57	14	13
Training Development	63	25	17
Available Resources	43	31	19

Graph 5.13 b



Comparative Analysis

- The above table indicates the higher responses of respondents regarding barriers facing by them while implanting the IT and e-commerce system. In total 109(36%) respondents out of which 64(21%) from Mumbai, 30(10%) from Pune and 18(6%) from Nagpur have stated that they are facing barrier like lack of expert knowledge while implementing IT and e-commerce technology in business.

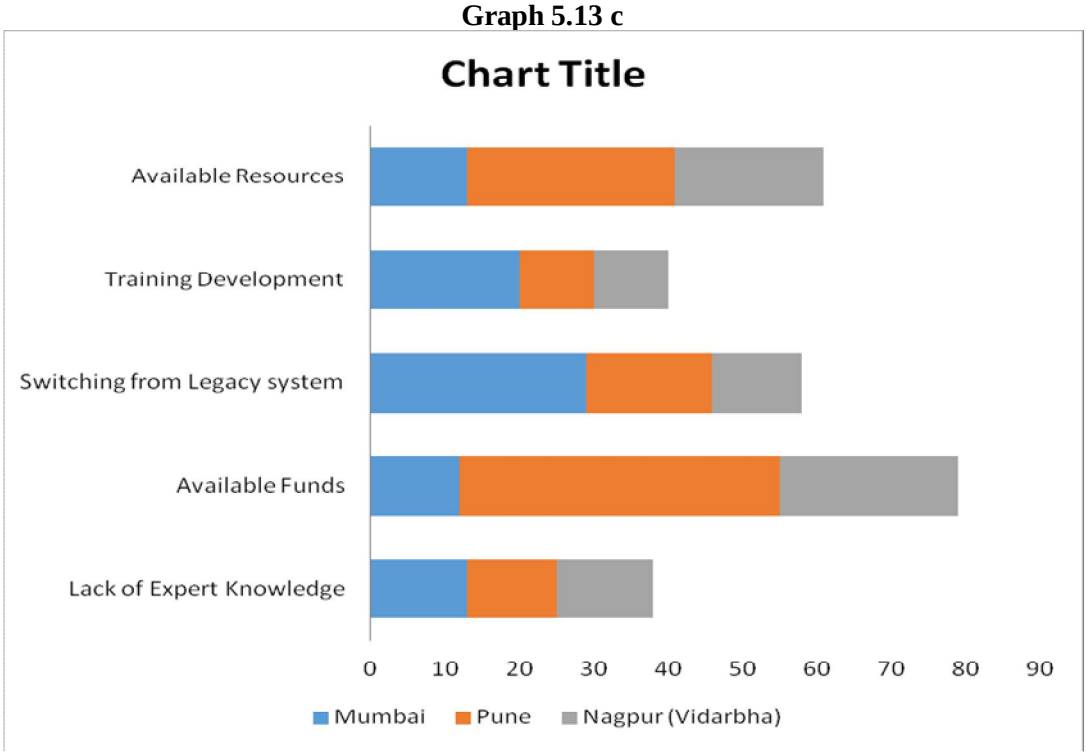
- Unavailability of funds is a great barrier facing by total 73(24%) respondents out of which 22(7%) from Mumbai, 30(10%) from Pune and 21(7%) from Nagpur.
- Switching from old legacy system to new system is very difficult and crucial task while implementing the IT and e-commerce in their enterprises opined that 57(19%) from Mumbai, 14(5%) from Pune and 13(4%) from Nagpur.
- Lack of training and development is also a barrier in implementing ICT in business opined in total 105(35%) respondents out of which 63(21%) from Mumbai, 25(8%) from Pune and 17(6%) from Nagpur.
- Limited availability of resources is also adversely affected on the implementation of IT and e-commerce technology in day to day activities of the business opined 43(14%) from Mumbai, 31(10%) from Pune and 19(6%) from Nagpur.

c) Average (3 ranking) Responses

Table No.513 c

Particulars	Mumbai	Pune	Nagpur
Lack of Expert Knowledge	32	52	30
Available Funds	40	19	15
Switching from Legacy system	19	50	27
Training Development	28	56	29
Available Resources	35	36	21

Graph 5.13 c



Comparative Analysis

- The above table indicates the average responses of respondents regarding barriers facing by them while implanting the IT and e-commerce system. In total 114(38%) respondents out of which 32(11%) from Mumbai, 52(17%) from Pune and 30(10%) from Nagpur have stated that they are facing barrier like lack of expert knowledge while implementing IT and e-commerce technology in business.
- Unavailability of funds is a great barrier facing by total 74(24%) respondents out of which 40(13%) from Mumbai, 19(6%) from Pune and 15(5%) from Nagpur.

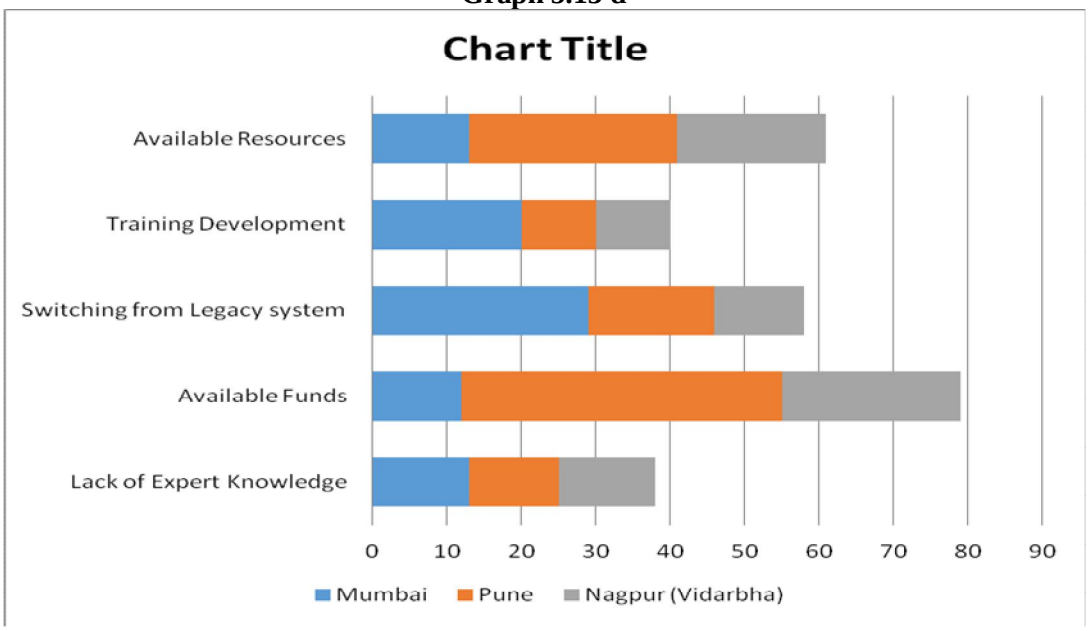
- Switching from old legacy system to new system is very difficult and crucial task while implementing the IT and e-commerce in their enterprises opined that 19(6%) from Mumbai, 50(17%) from Pune and 27(9%) from Nagpur.
- Lack of training and development is also a barrier in implementing ICT in business opined in total 113(38%) respondents out of which 28(9%) from Mumbai, 56(19%) from Pune and 29(10%) from Nagpur.
- Limited availability of resources is also adversely affected on the implementation of IT and e-commerce technology in day to day activities of the business opined 35(12%) from Mumbai, 36(12%) from Pune and 21(7%) from Nagpur.

d) Lower (2 ranking) Responses

Table No 5.13 d

Particulars	Mumbai	Pune	Nagpur
Lack of Expert Knowledge	13	12	13
Available Funds	12	43	24
Switching from Legacy system	29	17	12
Training Development	20	10	10
Available Resources	13	28	20

Graph 5.13 d



Comparative Analysis

- The above table indicates the lower responses of respondents regarding barriers facing by them while implanting the IT and e-commerce system. In total 38(12%) respondents out of which 13(4%) from Mumbai, 12(4%) from Pune and 13(4%) from Nagpur have stated that they are facing barrier like lack of expert knowledge while implementing IT and e-commerce technology in business.
- Unavailability of funds is a great barrier facing by total 79(26%) respondents out of which 12(4%) from Mumbai, 43(14%) from Pune and 24(8%) from Nagpur.
- Switching from old legacy system to new system is very difficult and crucial task while implementing the IT and e-commerce in their enterprises opined that 29(9%) from Mumbai, 17(6%) from Pune and 12(4%) from Nagpur.

- Lack of training and development is also a barrier in implementing ICT in business opined in total 40(13%) respondents out of which 20(7%) from Mumbai, 10(3%) from Pune and 10(3%) from Nagpur.
- Limited availability of resources is also adversely affected on the implementation of IT and e-commerce technology in day to day activities of the business opined 13(4%) from Mumbai, 28(9%) from Pune and 20(7%) from Nagpur.
- There is no lowest response for any above mention factor.

Q.14 Main concerns in approaching towards ICT

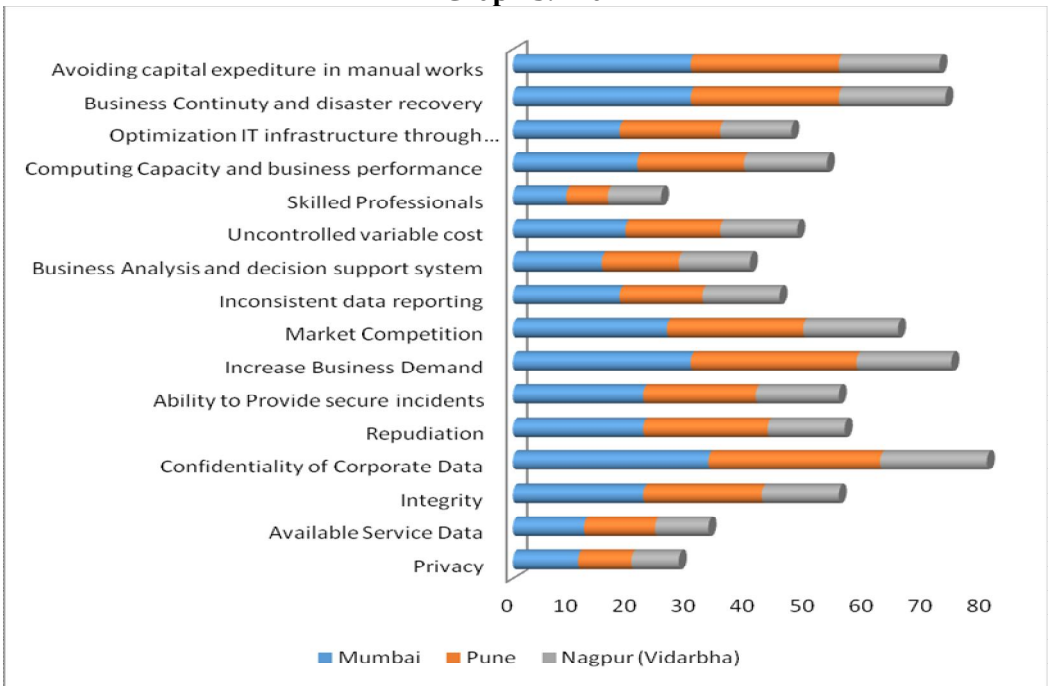
(1 Lowest – 5 Highest)

a) Highest (5 ranking) Responses

Table No 5.14 a

Particulars	Mumbai	Pune	Nagpur
Privacy	56	45	29
Available Service Data	31	24	17
Integrity	30	24	17
Confidentiality of Corporate Data	24	16	15
Repudiation	21	16	14
Ability to Provide secure incidents	23	20	14
Increase Business Demand	29	22	19
Market Competition	37	26	22
Inconsistent data reporting	26	19	17
Business Analysis and decision support system	35	27	22
Uncontrolled variable cost	13	9	12
Skilled Professionals	38	31	22
Computing Capacity and business performance	44	35	25
Optimization IT infrastructure through automation	27	21	16
Business Continuity and disaster recovery	27	23	15
Avoiding capital expenditure in manual works	29	24	18

Graph 5.14 a



Comparative Analysis

- The above table indicates the highest responses of respondents regarding their approach to Information Technology and E-Commerce. In total 130(44%) respondents out of which 56(19%) respondents are from Mumbai, 45(15%) respondents are from Pune and 29(10%) respondents are from Nagpur.
- They have stated that maintaining privacy is the main approach to Information Technology and E-Commerce. In total 72(24%) respondents out of which 31(10%) respondents are from Mumbai, 24(8%) respondents are from Pune and 17(6%) respondents are from Nagpur.
- They have stated that easy availability of data as per the requirement is their main concern, in their main approach to Information Technology and E-Commerce. In total 71(24%) respondents out of which 30(10%) respondents are from Mumbai, 24(8%) respondents are from Pune and 17(6%) respondents are from Nagpur.
- They have stated that maintaining the integrity of service and data is the main concern of respondents approach to Information Technology and E-Commerce.
- In total 55(18%) respondents out of which 24(8%) respondents are from Mumbai, 16(5%) respondents are from Pune and 15(5%) respondents are from Nagpur.
- They have stated that maintaining the confidentiality of corporate data is the main concern of respondents approach to Information Technology and E-Commerce.
- In total 51(17%) respondents out of which 21(7%) respondents are from Mumbai, 16(5%) respondents are from Pune and 14(5%) respondents are from Nagpur have a repudiation approach to Information Technology and E-commerce.
- In total 57(19%) respondents out of which 23(7%) respondents are from Mumbai, 20(7%) respondents are from Pune and 14(5%) respondents are from Nagpur have stated that their main approach to Information Technology and E-Commerce is the ability to provide secure incidents.
- Increase in business demand is the main approach of total 70(23%) respondents out of which 29(10%) respondents are from Mumbai, 22(7%) respondents are from Pune and 19(6%) respondents are from Nagpur.
- Facing the market competition is the main approach of total 85(28%) respondents out of which 37(12%) respondents are from Mumbai, 26(9%) respondents are from Pune and 22(7%) respondents are from Nagpur.
- Inconsistent data reporting is the main approach of total 62(21%) respondents out of which 26(19%) respondents are from Mumbai, 19(6%) respondents are from Pune and 17(6%) respondents are from Nagpur.
- In total 84(28%) respondents out of which 35(12%) respondents are from Mumbai, 27(9%) respondents are from Pune and 22(7%) respondents are from Nagpur have stated that business analysis and decision support system is the main concern to Information Technology and E-Commerce.
- In total 34(11%) respondents out of which 13(4%) respondents are from Mumbai, 9(3%) respondents are from Pune and 12(4%) respondents are from Nagpur have stated that uncontrolled variable cost is their main concern to Information Technology and E-Commerce.
- Availability of skilled professionals is the main concern of total 91(30%) respondents out of which 38(13%) respondents are from Mumbai, 31(10%) respondents are from Pune and 22(7%) respondents are from Nagpur.
- Increasing computing capacity and business performance is the main concern of total 104(35%) respondents out of which 44(15%) respondents are from Mumbai, 35(12%) respondents are from Pune and 25(8%) respondents are from Nagpur.
- In total 64(21%) respondents out of which 27(9%) respondents are from Mumbai, 21(7%) respondents are from Pune and 16(5%) respondents are from Nagpur have stated that local and global optimization of IT infrastructure through automated management is their main concern to Information Technology and E-Commerce.

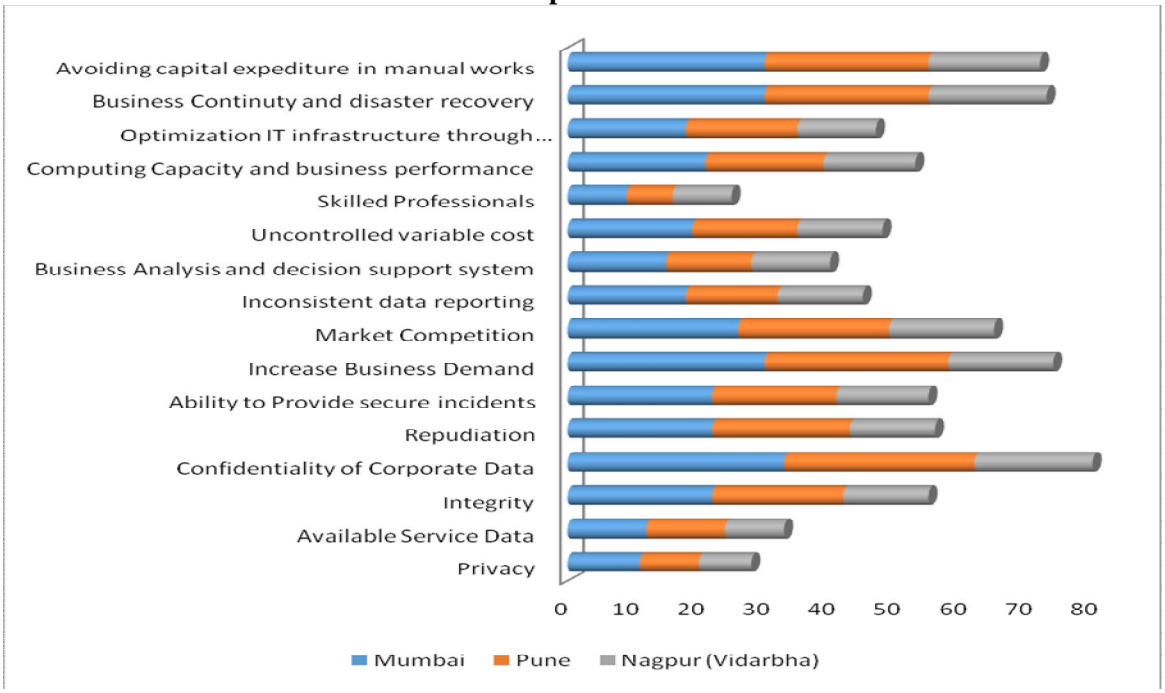
- In total 65(22%) respondents out of which 27(9%) respondents are from Mumbai, 23(8%) respondents are from Pune and 15(5%) respondents are from Nagpur have stated that their main concern is their approach to Information Technology and E-Commerce is business continuity and disaster recovery.
- Avoiding capital expenditure in manual work is the main concern of total 71(24%) respondents out of which 29(10%) respondents are from Mumbai, 24(8%) respondents are from Pune and 18(6%) respondents are from Nagpur to Information Technology and E-Commerce.
- The above data shows that Privacy, Business Analysis, Decision Support System, Skilled Professionals, Computing capacity and Business performance are the main concerns of the respondents in the highest responses category of respondents.

b) Higher (4 ranking) Responses

Table No. 5.14 b

Particulars	Mumbai	Pune	Nagpur
Privacy	38	16	12
Available Service Data	29	44	26
Integrity	22	41	26
Confidentiality of Corporate Data	27	36	22
Repudiation	52	23	16
Ability to Provide secure incidents	39	31	23
Increase Business Demand	26	30	21
Market Competition	23	34	19
Inconsistent data reporting	40	35	20
Business Analysis and decision support system	45	24	17
Uncontrolled variable cost	42	41	25
Skilled Professionals	54	19	14
Computing Capacity and business performance	23	31	18
Optimization IT infrastructure through automation	45	28	18
Business Continuity and disaster recovery	28	31	22
Avoiding capital expenditure in manual works	35	23	18

Graph 5.14 b



Comparative Analysis

- The above table indicates the higher responses of respondents regarding their approach to Information Technology and E-Commerce. In total 66(22%) respondents out of which 38(13%) respondents are from Mumbai, 16(5%) respondents are from Pune and 12(4%) respondents are from Nagpur.
- They have stated that maintaining privacy is the main approach to Information Technology and E-Commerce. In total 99(33%) respondents out of which 29(9%) respondents are from Mumbai, 44(15%) respondents are from Pune and 26(9%) respondents are from Nagpur.
- They have stated that easy availability of data as per the requirement is their main concern, in their main approach to Information Technology and E-Commerce. In total 89(29%) respondents out of which 22(7%) respondents are from Mumbai, 41(13%) respondents are from Pune and 26(9%) respondents are from Nagpur.
- They have stated that maintaining the integrity of service and data is the main concern of respondents approach to Information Technology and E-Commerce. In total 85(28%) respondents out of which 27(9%) respondents are from Mumbai, 36(12%) respondents are from Pune and 22(7%) respondents are from Nagpur.
- They have stated that maintaining the confidentiality of corporate data is the main concern of respondents approach to Information Technology and E-Commerce. In total 91(30%) respondents out of which 52(17%) respondents are from Mumbai, 23(8%) respondents are from Pune and 16(5%) respondents are from Nagpur have a repudiation approach to Information Technology and E-Commerce.
- In total 93(31%) respondents out of which 39(13%) respondents are from Mumbai, 31(10%) respondents are from Pune and 23(8%) respondents are from Nagpur have stated that their main approach to Information Technology and E-Commerce is the ability to provide secure incidents.
- Increase in business demand is the main approach of total 77(26%) respondents out of which 26(9%) respondents are from Mumbai, 30(10%) respondents are from Pune and 21(7%) respondents are from Nagpur.
- Facing the market competition is the main approach of total 76(25%) respondents out of which 23(8%) respondents are from Mumbai, 34(11%) respondents are from Pune and 19(6%) respondents are from Nagpur.
- Inconsistent data reporting is the main approach of total 95(32%) respondents out of which 40(13%) respondents are from Mumbai, 35(12%) respondents are from Pune and 20(7%) respondents are from Nagpur.
- In total 86(29%) respondents out of which 45(15%) respondents are from Mumbai, 24(8%) respondents are from Pune and 17(6%) respondents are from Nagpur have stated that business analysis and decision support system is the main concern to Information Technology and E-Commerce.
- In total 108(36%) respondents out of which 42(14%) respondents are from Mumbai, 41(14%) respondents are from Pune and 25(8%) respondents are from Nagpur have stated that uncontrolled variable cost is their main concern to Information Technology and E-Commerce.
- Availability of skilled professionals is the main concern of total 87(29%) respondents out of which 54(18%) respondents are from Mumbai, 19(6%) respondents are from Pune and 14(5%) respondents are from Nagpur.
- Increasing computing capacity and business performance is the main concern of total 62(21%) respondents out of which 23(8%) respondents are from Mumbai, 31(10%) respondents are from Pune and 18(6%) respondents are from Nagpur.
- In total 91(30%) respondents out of which 45(15%) respondents are from Mumbai, 28(9%) respondents are from Pune and 18(6%) respondents are from Nagpur have stated that local and global optimization of IT infrastructure through automated management is their main concern to Information Technology and E-Commerce.

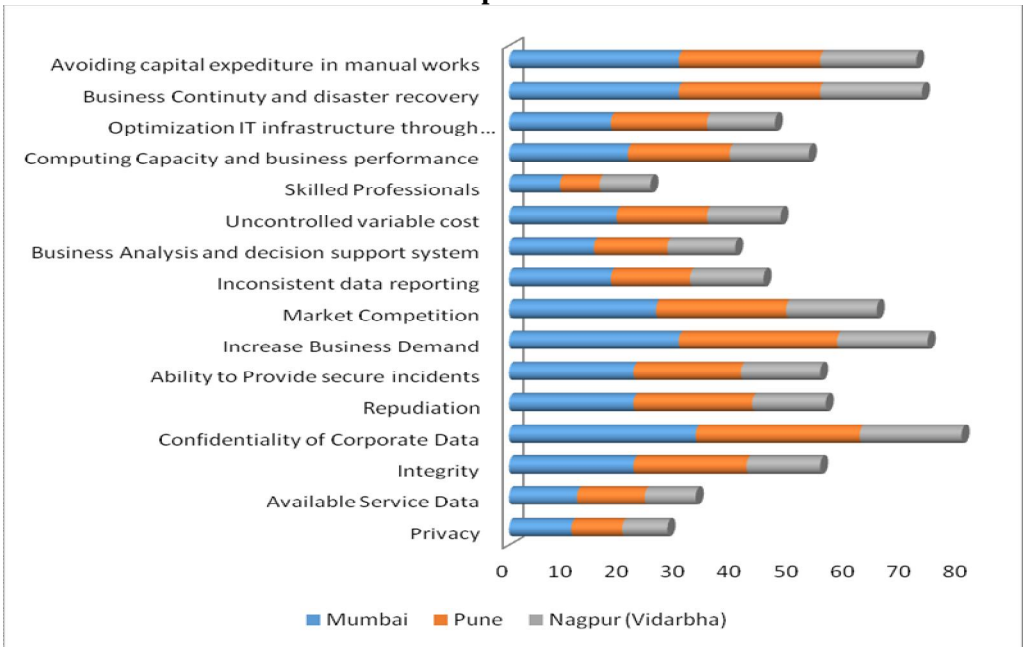
- In total 81(27%) respondents out of which 28(9%) respondents are from Mumbai, 31(10%) respondents are from Pune and 22(7%) respondents are from Nagpur have stated that their main concern is their approach to Information Technology and E-Commerce is business continuity and disaster recovery.
- Avoiding capital expenditure in manual work is the main concern of total 76(25%) respondents out of which 35(12%) respondents are from Mumbai, 23(7%) respondents are from Pune and 18(6%) respondents are from Nagpur to Information Technology and E-Commerce.
- The data presented in the above table shows Availability of service/data, Confidentiality of corporate data, Repudiation, Inconsistency of data reporting; uncontrolled variable cost, Business continuity and disaster recovery are the major concerns in the higher responses category of respondents.

c) Average (3 ranking) Responses

Table No. 5.14 c

Particulars	Mumbai	Pune	Nagpur
Privacy	19	33	22
Available Service Data	52	23	19
Integrity	50	18	15
Confidentiality of Corporate Data	40	22	16
Repudiation	29	43	28
Ability to Provide secure incidents	40	33	20
Increase Business Demand	39	23	15
Market Competition	38	20	14
Inconsistent data reporting	40	35	21
Business Analysis and decision support system	29	39	20
Uncontrolled variable cost	50	37	21
Skilled Professionals	23	46	26
Computing Capacity and business performance	36	19	14
Optimization IT infrastructure through automation	34	37	25
Business Continuity and disaster recovery	39	24	16
Avoiding capital expenditure in manual works	30	31	18

Graph 5.14 c



Comparative Analysis

- The above table indicates the average responses of respondents regarding their approach to Information Technology and E-Commerce. In total 74(24%) respondents out of which 19(6%) respondents are from Mumbai, 33(11%) respondents are from Pune and 22(7%) respondents are from Nagpur.
- They have stated that maintaining privacy is the main approach to Information Technology and E-Commerce. In total 94(31%) respondents out of which 52(17%) respondents are from Mumbai, 23(8%) respondents are from Pune and 19(6%) respondents are from Nagpur.
- They have stated that easy availability of data as per the requirement is their main concern, in their main approach to Information Technology and E-Commerce. In total 83(28%) respondents out of which 50(17%) respondents are from Mumbai, 18(6%) respondents are from Pune and 15(5%) respondents are from Nagpur.
- They have stated that maintaining the integrity of service and data is the main concern of respondents approach to Information Technology and E-Commerce. In total 78(25%) respondents out of which 40(13%) respondents are from Mumbai, 22(7%) respondents are from Pune and 16(5%) respondents are from Nagpur.
- They have stated that maintaining the confidentiality of corporate data is the main concern of respondents approach to Information Technology and E-Commerce. In total 100(33%) respondents out of which 29(10%) respondents are from Mumbai, 43(14%) respondents are from Pune and 28(9%) respondents are from Nagpur have a repudiation approach to Information Technology and E-Commerce.
- In total 93(31%) respondents out of which 40(13%) respondents are from Mumbai, 33(11%) respondents are from Pune and 20(7%) respondents are from Nagpur have stated that their main approach to Information Technology and E-Commerce is the ability to provide secure incidents.
- Increase in business demand is the main approach of total 77(26%) respondents out of which 39(13%) respondents are from Mumbai, 23(8%) respondents are from Pune and 15(5%) respondents are from Nagpur.
- Facing the market competition is the main approach of total 72(24%) respondents out of which 38(12%) respondents are from Mumbai, 20(7%) respondents are from Pune and 14(5%) respondents are from Nagpur.
- Inconsistent data reporting is the main approach of total 96(32%) respondents out of which 40(13%) respondents are from Mumbai, 35(12%) respondents are from Pune and 21(7%) respondents are from Nagpur.
- In total 88(30%) respondents out of which 29(10%) respondents are from Mumbai, 39(13%) respondents are from Pune and 20(7%) respondents are from Nagpur have stated that business analysis and decision support system is the main concern to Information Technology and E-Commerce.
- In total 108(36%) respondents out of which 50(17%) respondents are from Mumbai, 37(12%) respondents are from Pune and 21(7%) respondents are from Nagpur have stated that uncontrolled variable cost is their main concern to Information Technology and E-Commerce.
- Availability of skilled professionals is the main concern of total 95(32%) respondents out of which 23(8%) respondents are from Mumbai, 46(15%) respondents are from Pune and 26(9%) respondents are from Nagpur.
- Increasing computing capacity and business performance is the main concern of total 69(23%) respondents out of which 36(12%) respondents are from Mumbai, 19(6%) respondents are from Pune and 14(5%) respondents are from Nagpur.
- In total 96(31%) respondents out of which 34(11%) respondents are from Mumbai, 37(12%) respondents are from Pune and 25(8%) respondents are from Nagpur have stated that local and global optimization of IT infrastructure through automated management is their main concern to Information Technology and E-Commerce.

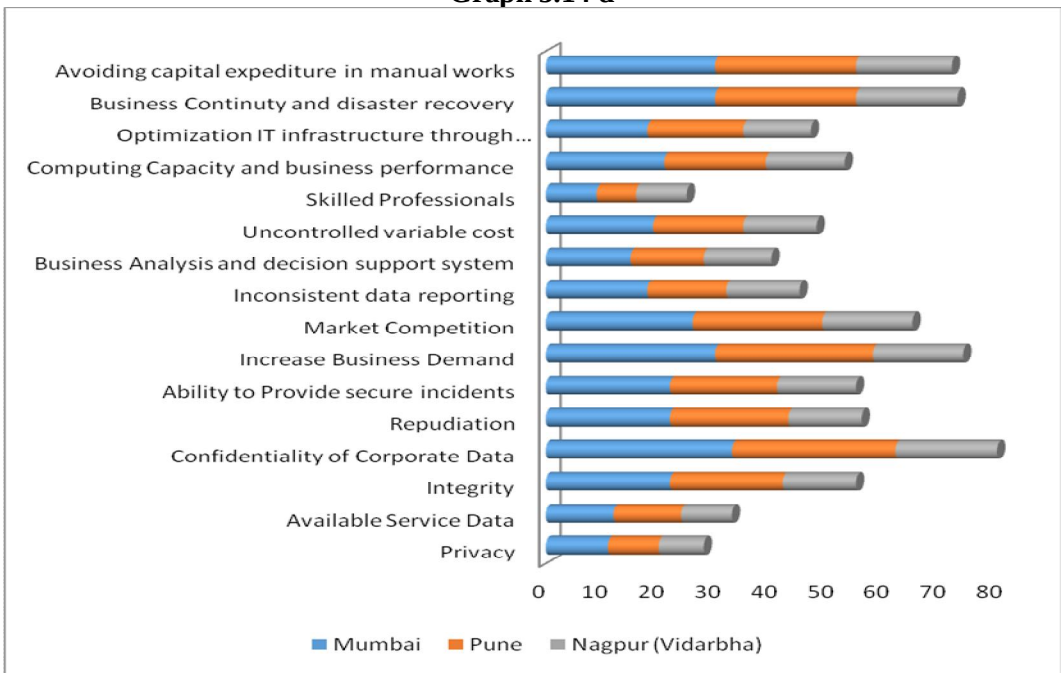
- In total 79(26%) respondents out of which 39(13%) respondents are from Mumbai, 24(8%) respondents are from Pune and 16(5%) respondents are from Nagpur have stated that their main concern is their approach to Information Technology and E-Commerce is business continuity and disaster recovery.
- Avoiding capital expenditure in manual work is the main concern of total 79(26%) respondents out of which 30(10%) respondents are from Mumbai, 31(10%) respondents are from Pune and 18(6%) respondents are from Nagpur to Information Technology and E-Commerce.
- The data presented in the above table shows Availability of service/data, Repudiation, Inconsistency of data reporting; uncontrolled variable cost, Business continuity and disaster recovery are some of major concerns in the average responses category of respondents.

d) Lower (2 ranking) Responses

Table No. 5.14 d

Particulars	Mumbai	Pune	Nagpur
Privacy	11	9	8
Available Service Data	12	12	9
Integrity	22	20	13
Confidentiality of Corporate Data	33	29	18
Repudiation	22	21	13
Ability to Provide secure incidents	22	19	14
Increase Business Demand	30	28	16
Market Competition	26	23	16
Inconsistent data reporting	18	14	13
Business Analysis and decision support system	15	13	12
Uncontrolled variable cost	19	16	13
Skilled Professionals	9	7	9
Computing Capacity and business performance	21	18	14
Optimization IT infrastructure through automation	18	17	12
Business Continuity and disaster recovery	30	25	18
Avoiding capital expenditure in manual works	30	25	17

Graph 5.14 d



Comparative Analysis

- The above table indicates the lower responses of respondents regarding their approach to Information Technology and E-Commerce. In total 28(9%) respondents out of which 11(4%) respondents are from Mumbai, 9(3%) respondents are from Pune and 8(2%) respondents are from Nagpur.
- They have stated that maintaining privacy is the main approach to Information Technology and E-Commerce. In total 33(11%) respondents out of which 12(4%) respondents are from Mumbai, 12(4%) respondents are from Pune and 9(3%) respondents are from Nagpur.
- They have stated that easy availability of data as per the requirement is their main concern, in their main approach to Information Technology and E-Commerce. In total 55(18%) respondents out of which 22(7%) respondents are from Mumbai, 20(7%) respondents are from Pune and 13(4%) respondents are from Nagpur.
- They have stated that maintaining the integrity of service and data is the main concern of respondents approach to Information Technology and E-Commerce. In total 80(27%) respondents out of which 33(11%) respondents are from Mumbai, 29(10%) respondents are from Pune and 18(6%) respondents are from Nagpur.
- They have stated that maintaining the confidentiality of corporate data is the main concern of respondents approach to Information Technology and E-Commerce. In total 56(18%) respondents out of which 22(7%) respondents are from Mumbai, 21(7%) respondents are from Pune and 13(4%) respondents are from Nagpur have a repudiation approach to Information Technology and E-Commerce.
- In total 55(18%) respondents out of which 22(7%) respondents are from Mumbai, 19(6%) respondents are from Pune and 14(5%) respondents are from Nagpur have stated that their main approach to Information Technology and E-Commerce is the ability to provide secure incidents.
- Increase in business demand is the main approach of total 74(24%) respondents out of which 30(10%) respondents are from Mumbai, 28(9%) respondents are from Pune and 16(5%) respondents are from Nagpur.
- Facing the market competition is the main approach of total 65(22%) respondents out of which 26(9%) respondents are from Mumbai, 23(8%) respondents are from Pune and 16(5%) respondents are from Nagpur.
- Inconsistent data reporting is the main approach of total 45(15%) respondents out of which 18(6%) respondents are from Mumbai, 14(5%) respondents are from Pune and 13(4%) respondents are from Nagpur.
- In total 40(13%) respondents out of which 15(5%) respondents are from Mumbai, 13(4%) respondents are from Pune and 12(4%) respondents are from Nagpur have stated that business analysis and decision support system is the main concern to Information Technology and E-Commerce.
- In total 48(15%) respondents out of which 19(6%) respondents are from Mumbai, 16(5%) respondents are from Pune and 13(4%) respondents are from Nagpur have stated that uncontrolled variable cost is their main concern to Information Technology and E-Commerce.
- Availability of skilled professionals is the main concern of total 25(8%) respondents out of which 9(3%) respondents are from Mumbai, 7(2%) respondents are from Pune and 9(3%) respondents are from Nagpur.
- Increasing computing capacity and business performance is the main concern of total 53(18%) respondents out of which 21(7%) respondents are from Mumbai, 18(6%) respondents are from Pune and 14(5%) respondents are from Nagpur.
- In total 47(16%) respondents out of which 18(6%) respondents are from Mumbai, 17(6%) respondents are from Pune and 12(4%) respondents are from Nagpur have stated that local and global optimization

of IT infrastructure through automated management is their main concern to Information Technology and E-Commerce.

- In total 73(24%) respondents out of which 30(10%) respondents are from Mumbai, 25(8%) respondents are from Pune and 18(6%) respondents are from Nagpur have stated that their main concern is their approach to Information Technology and E-Commerce is business continuity and disaster recovery.
- Avoiding capital expenditure in manual work is the main concern of total 72(24%) respondents out of which 30(10%) respondents are from Mumbai, 25(8%) respondents are from Pune and 17(6%) respondents are from Nagpur to Information Technology and E-Commerce.
- The data presented in the above table shows Maintaining confidentiality of corporate data, increasing business demand and coping with market competition are some of major concerns in the lower responses category of respondents.
- There is no response for lowest ranking.

5.3 Hypothesis Testing

This testing can be utilized as effective means of mechanism to conduct an investigative research. In particular, the area of the research is clear; the analysis draws a common point. Findings from the hypothesis study clearly show that IT & E-Commerce plays an important role in the increase of productivity and economic activities. Generally firms enter into business to make profit and IT & E-Commerce does not only help in increasing productivity but also quality and make the way business operate less complicated, time saving, and disclose the new trends of business and how business are supposed to address such change.

To assess the developed hypothesis, certain relations were selected with various levels of incorporated E-commerce and IT systems with three different hypothetical statements. As the above data is independent from each other and the n>30 Z test is more preferred and so used for all three hypothetical statements.

Hypothesis 1: Development of Ecommerce directly proportional to IT in Maharashtra (Mumbai,Pune,Nagpur)

H_0: Development of Ecommerce directly proportional to IT in Maharashtra (Mumbai,Pune,Nagpur)

H_1: Development of Ecommerce inversely proportional to IT in Maharashtra (Mumbai,Pune,Nagpur)

The result and analysis of hypothesis is mentioned in below table:

Table 5.15

S/N	Relationship	Z test	P (Value)	Remark
1	Q2 Vs Q7	3.031	0.0024	Significant
2	Q2 Vs Q8	-7.168	0.0001	Significant
3	Q2 Vs Q9	-31.336	0.0001	Significant
4	Q7 Vs Q13	-2.376	0.0175	Significant
5	Q8 Vs Q9	-24.167	0.0001	Significant
6	Q8 Vs Q20	-12.370	0.0001	Significant
7	Q9 Vs Q11	5.530	0.0001	Significant
8	Q13 Vs Q9	31.991	0.0001	Significant
9	Q18Vs Q20	3.154	0.0016	Significant

H_0: Accepted

From the above table, as the results are significant we accept the H_0 ie Development of Ecommerce directly proportional to IT in Maharashtra (Mumbai,Pune,Nagpur). So we reject H_1.

This thesis aims to study the development of e-commerce and IT its effects on different levels of organization culture. The fast growth of Internet users has converted the Internet an increasingly significant and attractive platform for business transactions. E-commerce is advantageous to both organizations and customers by eliminating time and distance barriers. Therefore, it is fascinating to examine why electronic commerce profits some industries more than others, and what factors affect the impact of using it on

performance in different industries. This research aims to identify the significant development and effects of both e-commerce and Information Technology on the firm (SME's) performance in Maharashtra (Mumbai,Pune,Nagpur).

The research aims at developing the role of e-commerce and IT in the firm performance and growth utilizing effective information systems. The research will describe the comparative analysis between the firm performance and e-commerce using effective information systems. This will also try to describe the challenges posed by e-commerce and information technology in the companies and management solutions. IT derives the relationship between e-commerce and processes of IT by SME's. The reason for this was analysed and how the organization develop the effective e-commerce and IT for firm performance is evaluated. For this Z-test (Two Sample Test) is used. After evaluating the data and with comparative analysis the values obtained are significant so the result is acceptance ie we accept the null hypothesis H0. As the hypothesis is true and accepted it shows that the firms/organisations performance and development of ecommerce is directly proportional to IT in Maharashtra (Mumbai,Pune,Nagpur).

Hypothesis 2: E-Commerce as a tool is useful for Small and Medium scale industries for their growth.

H_0: E-Commerce as a tool is useful for Small and Medium scale industries for their growth.

H_1: E-Commerce as a tool is not useful for Small and Medium scale industries for their growth.

The result and analysis of hypothesis is mentioned in below table:

Table 5.17

S/N	Relationship	Z test	P (Value)	Remark
1	Q1 Vs Q2	7.53693	0.0001	Significant
2	Q8 Vs Q10	-2.62154	0.0088	Significant
3	Q8 Vs Q11	-18.63752	0.0001	Significant
4	Q10 Vs Q13	10.4452	0.0001	Significant
5	Q11 Vs Q14	32.48254	0.0001	Significant
6	Q14 Vs Q18	-25.92869	0.0001	Significant
7	Q14 Vs Q19	-17.77732	0.0001	Significant
8	Q18 Vs Q19	3.27692	0.001	Significant
9	Q19 Vs Q20	-4.874422	0.0001	Significant

H_0: Accepted

From the above table, as the results are significant we accept the H_0 ie E-Commerce as a tool is useful for Small and Medium scale industries for their growth. So we reject H_1.

Utilisation of e-commerce among small and medium enterprises in Maharashtra (Mumbai,Pune,Nagpur) is an effective tool as it increases the growth of the organisation which is satisfied with the testing of hypothesis. The major purpose of this hypothesis was to explore the use of E-Commerce as a tool by Small and Medium scale industries for their growth. Testing of hypothesis was done using Z-test (Two Sample Test). As the condition of null hypothesis is satisfied and significant we can accept the above hypothesis.

Hypothesis 3: There is a significant impact of E-Commerce in the functioning of SME's.

H_0: There is a significant impact of E-Commerce in the functioning of SME's.

H_1: There is no significant impact of E-Commerce in the functioning of SME's.

The result and analysis of hypothesis is mentioned in below table:

Table 5.18

S/N	Relationship	Z test	P (Value)	Remark
1	Q1 Vs Q2	7.53693	0.0001	Significant
2	Q2 Vs Q14	6.67674	0.0001	Significant
3	Q8 Vs Q11	-18.63752	0.0001	Significant

4	Q11 Vs Q14	32.48254	0.0001	Significant
5	Q14 Vs Q18	-25.92869	0.0001	Significant
6	Q18 Vs Q20	3.154	0.0016	Significant

H_0: Accepted

From the above table, as the results are significant we accept the H_0 ie There is a significant impact of E-Commerce in the functioning of SME's. So we reject H_1.

The study and hypothesis determines that E-Commerce positively impact on the performance of SMEs operation in Maharashtra (Mumbai,Pune,Nagpur), also the result of hypothesis tested showed that information technology & E-Commerce has a significant Impact on performance of SMEs operation and influence the level of economic activities in Maharashtra (Mumbai,Pune,Nagpur) as a whole. Testing of hypothesis was done using Z-test (Two Sample Test). After evaluating the data and with comparative analysis the values obtained are significant so the result is acceptance ie we accept the null hypothesis H_0. As the hypothesis is true and accepted it shows that E-Commerce has a significant impact in functioning of SME's in Maharashtra (Mumbai,Pune,Nagpur).

5.4 Conclusion

The main objective of the present study is to study the current applications and to understand the factors that lead to Information technology and E-Commerce in Indian Small and Medium scale enterprises etc. Through the present chapter, it has been attempted to make a significant contribution, by studying various kinds of Information technology and E-Commerce and various challenges faced by Small and Medium scale enterprises with regards to use of Information technology and E-Commerce in administrative and productive activities.

The primary information collected through the structured questionnaire has been presented in the table form in this chapter. These tables indicate the adaption level of Information technology and E-Commerce in Small and Medium scale enterprises situated in Mumbai, Pune and Nagpur. This chapter also highlights the current applications of Information technology and E-Commerce and the factors that lead to adapt E-Commerce and Information technology.

Some of the Major Interpretations are

- As far as Number Of employees in SMEs are concerned Mumbai has the major share in all types of SMEs viz. Industries with 1-9 employees, 10-50 employees, 50-250 employees and 250+ employees, followed by Pune and Nagpur.
- Mumbai has maximum SMEs in Design, Production and Manufacturing. Pune has maximum SMEs in IT-Telecom and Pharma, but has no SMEs in Service Sector. Nagpur lags way behind in these sectors but is on par with Mumbai in Pharma. Number of SMEs in Finance are nearly same in Mumbai, Pune and Nagpur.
- There are very few SMEs using company website for more than 10 years and 5-10 years. There is good response from SMEs using company website for 0-1 year and 1-5 years. This clearly shows that awareness in using company website is increasing.
- The same applies to SMEs using e-commerce and IT technology. There are few SMEs in the categories of SMEs using e-commerce and IT Technology for more than 10 years and between 5-10 years as compared to less than 1 year and 1-5 years.
- Maximum SMEs use Web Portals as an IT Tool for day to day business. The SMEs have less awareness in using other tools viz. HRMS or Accounting Software, ERP Software, In House Developed Software and Office Suits for their day to day business.
- Most of the SMEs use IT Tool in Finance, Human Resource, IT and Sales & Marketing. But there are alarmingly low usage of IT Tool in the most important sector viz. Research and Development.
- The use of IT Tool has positive effect on business performance viz. efficient decision making, increase in inventory control, Cost reduction, increase in sales and revenue and overall improvement in business.

- Most of the SMEs in Mumbai, Pune and Nagpur update technology within one year. There are also many SMEs who update technology according to their requirements. There are very few SMEs who never update technology or update technology after one year.
- Most of the SMEs in Mumbai, Pune and Nagpur use less than 25% capital for improving efficiency of ICT. Only a handful of SMEs use more than 50% capital to improve efficiency of ICT in their enterprise.
- More than 60% entrepreneurs feel that it requires special skill to use ICT in SMEs. Nearly 70% entrepreneurs are aware of current technological trend viz. ERP, Cloud Computing.
- The reasons behind engagement in IT and e-commerce by SMEs are Economic Barrier, Capital Expenditure, Flexibility and Scalability Resources, Biz Performance, Diversification of Funds, Virtual Machine, Business Continuity, Assessing Feasibility and Profitability, Redundancy to increase availability and resilience, Marginal Profit and Costs.
- SMEs have to take into consideration the following barriers while implementing new IT System in their enterprises viz. Lack of Expert Knowledge, Availability of Funds, Switching from Legacy System, Training Development and Available Resources.
- While approaching to IT and E-commerce, the main concerns of SMEs are – Privacy, Availability of Service Data, Integrity, Confidentiality of Corporate Data, Repudiation, Ability to Provide Secure Incidents, Increase in Business Demand, Market Competition, Inconsistent Data Reporting, Business Analysis and Decision Support System, Uncontrolled Variable Cost, Availability of Skilled Professionals, Computing Capacity and Business Performance, Optimization of IT Infrastructure, Business Continuity and Disaster Recovery and Avoiding or Reducing Capital Expenditure in Manual work.
- Next chapter will explain major observations and suggestion of this research work.

CHAPTER - 6

MAJOR OBSERVATIONS, SUGGESTIONS AND CONCLUSION

6.1 Introduction

This chapter includes major findings, observations and suggestions. This chapter presents a theoretical model to understand, interpret and adapt the information technology and e-commerce by Small and Medium scale enterprises. Apart from this it has presented the major findings of the study which are based on the data analysis and interpretations. However major findings are drawn from the analysis of the primary data – more particularly derived from the responses of entrepreneurs. Oral discussions with concerned persons and general observations which included in this chapter have also helped to arrive at a certain important conclusions.

Finally some suggestions are made with a view to understand the adaption level of Information Technology and e-commerce in Small and Medium scale enterprises in Mumbai, Pune and Nagpur.

6.2 Major Observations

- As far as the size of distribution of Small and Medium scale enterprises is concerned, sample is dominated by those enterprises which employed 50 to 250 employees in Pune, Mumbai and Nagpur. The percentage of entrepreneurs of Mumbai and Pune who have employed more than 50 employees is higher than the percentage of such entrepreneurs of Nagpur.
- As far as the distribution type of Small and Medium scale enterprises is concerned, sample is dominated by manufacturing and information technology and telecom (39% and 34%) related enterprises situated in Mumbai and Pune. Very less number of enterprises concerned with Manufacturing and Information technology and telecom sectors are situated in Nagpur. In Nagpur, there are only 10% enterprises which are related to manufacturing and 5% enterprises concerned with telecom and Information technology sector. The number of enterprises concerned with IT and telecom sector are very less as compared with the number of enterprises situated in Pune and Mumbai.
- It is observed that majority of SME's of Pune, Mumbai and Nagpur are using company website from 1-5 yrs is 41% and 35% enterprises using their company website from 0-1 yrs. The number of users who are using company websites from 1–5yrs are higher in Mumbai and Pune compared to Nagpur. It is also observed that, very few enterprises of the selected cities are using company website for more than 10 yrs.
- It is observed that majority of SME's are using IT and e-commerce from 1-5 years is 35%. In this context it is observed that most of the SME's of Mumbai, Pune and Nagpur have adapted some form of IT and e-commerce applications. However, most have only implemented basic e-commerce applications such as e-mails and simple websites. In this project it is informed that most of the websites do not provide online order processing and payment facilities. Moreover not many SME's seemed to have the capabilities to perform online procurement and order tracking. The findings show that the adaption of e-commerce and IT is still low in SME's of Nagpur as compared with other cities.
- The various IT and e-commerce tools adapted by SME's mainly on the basis of their perceived benefits in improving their business efficiency, competitiveness, planning, management, communication, emailing, security, cash handling, billing purpose as well as online advertising and market sourcing. As a result software related to Human resource management and accounting software, ERP software, In-house developed software, web portals, mobile phone networks etc. are highly adapted by the enterprises situated in Mumbai and Pune than in Nagpur.
- It is observed that majority of enterprises are using ICT and e-commerce tools in financial, human resources and sales and marketing issues. It is observed that Small and Medium Scale enterprises situated in Nagpur lag behind in this context as compared with Pune's and Mumbai's SMEs.
- It is observed that due to utilization of IT and e-commerce efficiency is increased in decision making process, control is also achieved in inventory etc. Project analysed that there is overall improvement in the business of the Small and Medium scale enterprises of selected cities. Due to utilisation of IT and e-commerce tools in day to day business activities overall sales and profit margin have also increased. As far as cost reduction issue is concerned the sample is dominated by those enterprises which are situated

in Pune as compared with enterprises situated in Mumbai and Nagpur and in case of overall improvement in business the sample is dominated by those enterprises situated in Nagpur.

- It is observed that majority of the entrepreneurs update their information technology and e-commerce tools within one year (44%) and 21% update as per their requirements. Many of entrepreneurs never update their IT and e-commerce tools frequently.
- Slow internet diffusion in the SMEs in Nagpur can be attributed to market and infrastructural factors controlling the availability of IT and e-commerce tools. In Nagpur, electrical supply, low density and lack of purchasing power resulted in low rural internet usage. The cost of IT equipment can also discourage SMEs in Nagpur to take up e-commerce. The cost of computers, server parts etc can be prohibitive for SMEs particularly in Nagpur subject to high tariff or inconsistent tariff regimes. Therefore very few IT enterprises in Nagpur have invested 40%-50% capital in IT and e-commerce tools with a view to improve efficiency of IT applications in their enterprises. It is observed that majority have made capital investment only upto 10%-25%
- Majority of respondents have opined that for proper implementation of IT – e-commerce tools in day to day activities of the enterprise there is requirement of special skills in this regard. It is observed that respondents are having positive attitude towards achieving special skills for implementation of ICT in enterprises.
- Research shows that many respondents (73%) are having awareness about current technological trends. In this context it is also observed that some are engaged in more innovative activities that include IT and e-commerce adaption and development in their enterprises. Such respondents are oriented towards competition and growth, this is because of entrepreneurs with appropriate qualifications and IT skills are more growth oriented.
- It is observed that the preparedness for IT and e-commerce update appeared to be mostly driven by financial and entrepreneurs support of the selected cities. Therefore financial constraints, in case of Mumbai and Pune's SMEs are highest compare with Nagpur's. This is the reason for which majority of entrepreneurs of Pune and Mumbai are engaged in the ICT for removing the financial barrier / constraints.
- There are highest responses from the respondents to the reasons behind their possible engagement in the information technology and e-commerce. The highest responses are for removing economic barrier, increasing computing capacity and business performances and keeping the flexibility and scalability of IT resources.
- The reason of higher responses are for avoiding capital expenditure in manual work, keeping flexibility and scalability of IT resources, increasing computing capacity and business performance, diversification of IT systems, local and global optimisation of information technology infrastructure through automated management of virtual machines; and most significant reason is that the business continuity and disaster recovery capabilities, assessing the feasibility and profitability of new business and also, adding redundancy to increase availability and resilience.
- The reasons for average responses are – adding redundancy to increase availability and resilience controlling marginal profit and marginal costs, remove economic / expertise barriers impeding to modernise business process by introduction of IT, local and global optimisation of IT infrastructure through automated management of virtual machines and accessing the feasibility and profitability of new services.
- Flexibility and scalability of IT resources, diversification of IT systems, remove economic / expertise barriers impeding to modernise business process by the introduction of IT are reasons for lower responses.
- While implementing the new system of IT in the enterprises, entrepreneurs are facing some barriers which received highest responses such as unavailability of funds for implementing new system of IT

and e-commerce, limited available resources, switching from old legacy system to new system. The barriers like lack of training and development is higher responded by respondents from selected cities.

- Today's SMEs situated in Mumbai, Pune and Nagpur are taking steps towards the creation of IT skilled workforce, but several hurdles need to be overcome before they can catch up with the large organisations in this respect. The important barriers faced by the IT and e-commerce solutions are lack to customised solutions to suit specific needs of the business, limited capability to invest in high end IT infrastructure as well as inadequate skilled workforce, inadequate in-house management capacities.
- It is observed that there is a wide range of reasons why SMEs do not make more active use of IT and e-commerce reasons such as lack of applicability to the business preferences for established business models and kinds of electronic transactions SMEs are involved in or wish to introduce business to business or business to consumer. Apart from this, common barriers include unsuitability for the type of business, enabling factors (Availability of work infrastructure), cost factors i.e. cost of ICT equipment's and networks, software and reorganisation and on-going costs and security and trust factors, reliability of e-commerce systems, uncertainly of payment methods and legal framework.
- It is found that there are quite good responses by respondents to the concerns in their approach to Information Technology and e-commerce. Main concerns towards their approaches were availability of skilled professionals, increasing computing capacity and business performance, business analysis and decision support system, uncontrollable variable cost, local and global optimisation of information technology infrastructure through automated management, ability to provide secure incidents, repudiation, inconsistent data reporting are some of the concerns which found in higher response category.
- It is found that the rapid growth of information technology and e-commerce in Pune and Mumbai can be attributed to infrastructure already in place and an easy availability of a physical delivery system. Such systems are rare in some parts of Nagpur. Apart from this in Nagpur logistics challenges are among major barriers to e-commerce diffusion. Bandwidth availability is low in Nagpur as compared with Pune and Mumbai. A lower bandwidth means that a longer time is needed to transfer data and hence a lower relative advantage of the internet.
- During research it has come to notice that entrepreneurs play an important role in the adaption and utilisation of the information technology and e-commerce in the enterprise. The study shows that entrepreneur's characteristics indicating that who posses' computer skills have adapted the web at faster rate. This shows that entrepreneurs with hands and experience are able to influence the adaption rate of the web.
- The purpose of the present study is to find out the factors affecting intention to adapt e-commerce and information technology in the Small and Medium scale enterprises in Pune, Mumbai and Nagpur. The study also contributes to and extends researchers' understanding of the internet and e-commerce as a medium for commercial use in the Small and Medium scale enterprises identifying the rational for adapting or rejecting the information technology, information based e-commerce by the Small and Medium scale enterprises of Pune, Mumbai and Nagpur. From respondents' point of view the findings provide support for investment decisions and for decisions relating to the development of IT services that address and take the concerns and need of enterprises into consideration.
- One important characteristic of Small and Medium scale enterprises situated in Pune and Mumbai as compared with SMEs in Nagpur is that they are strong in employment creation.
- Limited intensity provided by the government to acquire technology in Small and Medium scale enterprises is a disadvantage. Further, governmental support in the technology transfer process is inadequate. Government approvals and certifications are impeded by long delays and excessive interference by the government often adds to the existing problems. Some respondents are also unaware of the regulatory norms.
- It is generally observed that one of the key problems facing the Indian region has been the fact that many entrepreneurs are not aware of the benefits and the direct financial gains to be attained by

adapting Information technology and e-commerce. A weak understanding of potential integration of Information technology and e-commerce solutions within business model also leads to a great degree of inefficiency. This scenario is compounded by the fact that there are a large number of competitive Information Technology and e-commerce products and services available in the market, which causes a great deal of confusion to companies with limited IT and e-commerce literacy and capacities.

- It is observed that the high cost of acquiring and maintaining information technology and e-commerce solutions further creates barriers to their adaption. Information technology personnel are in high demand and often attracted to large scale organisations or multinational organisations. Therefore it is very difficult for Small and Medium scale enterprises to attract good personnel. It is even more difficult to retain them in the enterprises. Moreover, good IT personnel are expensive and not affordable by most of entrepreneurs.
- There are number of Small and Medium scale enterprises in and around Pune mainly across the auto and auto component and engineering sector. But as far as Information Technology adaption is concerned it is still a thorny issue among these Small and Medium scale enterprises. The rate of IT adaption among the SMEs in Pune and Mumbai increased over the years although it has been more or less limited to the big players. The IT adaption among SME though on rise, remains sub optional in case of Nagpur.

6.3 E-commerce Adaption model for Small and Medium scale enterprises

As stated earlier that e-commerce and Information technology plays an important role in growth of Small and Medium scale enterprises as it allow them to compete efficiently in both domestic and international markets. Through the present study, a conceptual model developed based on factors that affect the business to consumer, e-commerce success. This model will help Small and Medium scale enterprise which are currently considering or conducting business using information technology and e-commerce. The following suggestive e-commerce and information technology adaption model consists of six significant factors which are related to internal and external business environment affecting on e-commerce and IT success in SMEs. The research examines each factor in detail and explains how it will help to entrepreneurs to integrate e-commerce and IT in their business.

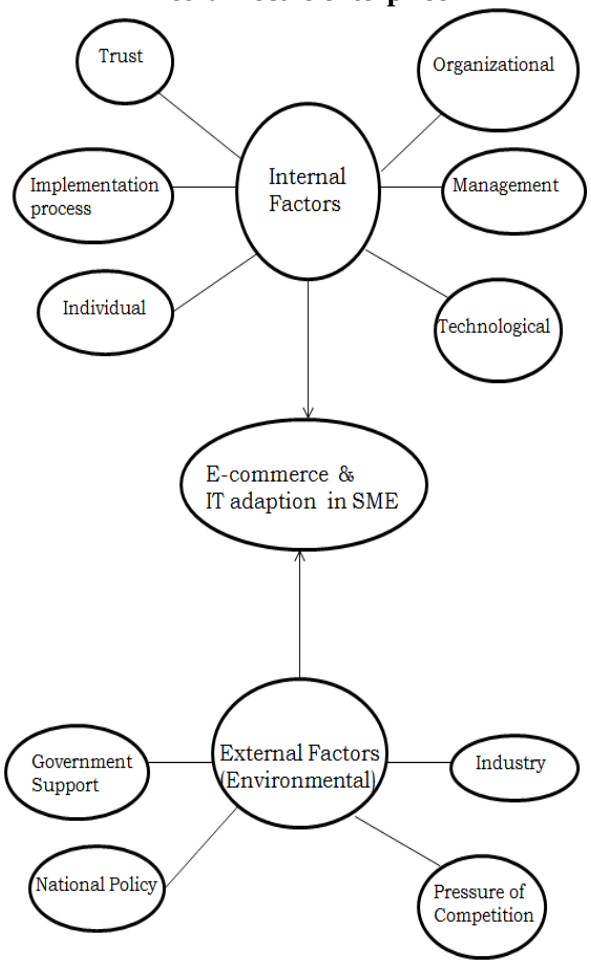
A comprehensive review of literature has done to develop the proposed model of e-commerce and Information technology adaption in Small and Medium scale enterprises. This adaption model consists of factors from relevant researches / studies that divided into internal and external factors affecting on the success of e-commerce and information technology implemented in SMEs. In the following figure the affecting factors are broadly divided into two categories that are Internal and external. Internal factors are i) Organisational ii) Management iii) Technology iv) Individual v) Implementation vi) Trust. These factors are independent factors. Under each independent factor consisting of variables or dependent (contributing) factors are shown in the following table.

Table No 6 : Success factors for Small and Medium scale enterprises.

Organisational	Management	Technological	Individual
Enterprise resources, Size of organisation	Resource Commitment, Project management team	Technological Infrastructure, Business infrastructure, Communication	Expertise and IT skills, Academic qualification and awareness.

Implementation	Trust	Environmental External factors
Product and services, Delivery and payment, Usefulness, Easy utilisation, Customer Service or client interface	Security, Privacy, Loyalty	Government Support, Industry, National Policy, pressure of competition

Figure-1: Proposed model for assessing E-commerce and Information Technology in Small and Medium scale enterprise



6.3.1 Internal Factors

1. Organisation Factors

Organisational factors are also known as internal factors of enterprise. It is generally represented by size, quality of Information system, Management support and resources of enterprise. The size of firm greatly influences the entrepreneurs' decision toward adaption of e-commerce and information technology and some thinks that they are too small to adapt e-commerce and IT in their business units. The same goes for enterprise resources as a small business tend to believe that they do not have enough resources to support the implementation of IT and e-commerce in their business unit. Enterprise resources consist of human resources, financial resources and technological resources. The entrepreneurs sometimes feel that it will be irrelevant for their business and will cost too much to implement and the cost will increase with time to maintain the system. Therefore, size of the firm, nature of business, financial resources and human resources available must be taken into account by the entrepreneurs while adapting the e-commerce and IT in enterprise.

2. Management Factors

The support and enthusiasm of management personnel are important for Small and Medium scale enterprises in successful adaption of e-commerce and IT. Innovativeness of management personnel and their knowledge of information technology have created positive impact on the adaption of e-commerce and IT. Individual characteristics like age, education, work experience and physiological traits of management personnel are very significant in the adaption process of e-commerce and IT in SMEs. International web use should consist of language and feature that follow according to rules, regulations and culture that cannot be offensive to any web server.

3. Technological Factors

Technological factors involve various internet technologies like COBRA, Software agents, mobile agents and mark-up languages such as HTML, XML and programming languages like Java, PHP, ASP and web development tools such as Dreamweaver, Photoshop and Multimedia. Network technology at a lower level includes TCP/IP that is a protocol used to create and transfer information packet across the internet; HTTP is a set of rules for transferring files over the internet and POP, SMTP, IMAP manages emails and network management issues like quality of service. Support systems include decision support system and distributed application and algorithm / methodology that assist enhance or improve the IT and e-commerce applications in the business unit.

4. Industrial Factors

The people concerned with business of SME are most important part in the process of adoption of e-commerce and IT. This factor consists of customer, staff, management of business as they are greatly affected by the adaption of IT and e-commerce. Educational background and awareness of these people being considered most important pre and post implementation of e-commerce and information technology. Many entrepreneurs avoiding to adapt information technology and e-commerce due to lack of internal expertise, therefore consideration of educational background, awareness and skills of individuals about e-commerce and IT and implementation of new techniques may need to change employees' work attitude, qualification, performance, knowledge regarding e-commerce and IT. If employees already have knowledge about e-commerce and IT the respondents will be more willing to adapt this in their enterprises.

5. Implementation Process

While adapting ICT applications in the enterprise, there is a need of good functioning website. For achieving success there must be a professional website that can target a niche market and attract the right customers to company products and services. There are many things that are required to be considered while developing website. Website should be attractive with easy to use features, with the right amount of graphic and text and also have aptly clear information on product and services can pay from a credit card or other payment system all from a website. There also is required to have forms on a website that can be filled-up by customers to perform these functions or can be able to send e-mails.

6. Trust

Apart from quality of the site and its contents, e-commerce and IT use and satisfaction could be affected by customer disposition toward security and privacy issue. Customer trust on website use and its products and services is important for successful e-commerce system. E-loyalty is an economic and competitive necessity as acquiring new customers is extremely expensive and unless those customers sticks around and make a lot of purchases over the year, profit will remain elusive.

6.3.2 External Factors

External factors are generally called as environmental factors. It is generally represented by government support, industry, national policy and pressure of market competition. This pressure of market competition has positive influence towards adaption of IT and e-commerce. As more and more entrepreneurs using the internet for marketing and customer service will impact on the competitiveness and accelerate the SMEs towards adaption of e-commerce and IT for the business purpose.

Government support is also important and necessary for adaption of e-commerce as government can simplify rules and regulations, implement policies, provide technical infrastructure towards adaption of IT and e-commerce in SMEs. Level of government support and infrastructure vary from city to city and state to state together with the culture. The cultural difference that exists between various regions may affect the organisation's ability to utilize and adapt IT and e-commerce. To promote and develop the SME the government has implemented several scheme programmes to cater the needs of the sector. Respondent should take the benefits of these programmes or schemes.

6.4 Other Suggestions

I. To encourage SMEs to adapt IT and e-commerce efforts need to concentrate on convincing management staff, implementing the information technology and e-commerce can improve their business whether through cost savings or enabling expansion to new markets. This is because these managers determine

the overall strategy of the firm and they make decision whether or not adopt IT and e-commerce. Management personnel are usually the once to implement IT and e-commerce project and thus need to have a deeper knowledge of how to implement it. So their training should include a mix of strategy and implementation skills. Front line employees are the once who will use IT and e-commerce on a daily basis. It is therefore more important to concentrate their training on the actual skills required than on the strategic benefits of IT and e-commerce

II. SMEs of Mumbai, Pune and Nagpur should fully integrate e-commerce resources into their marketing strategy in marketing of industrial products through the utilisation of other e-commerce resources other than the e-mail and World Wide Web (www). This could be achieved by designing and hosting a comprehensive website that incorporate order processing e-procurement and e-payment among others.

III. SMEs in selected cities should embark on e-commerce capacity building to ensure better understanding of e-commerce and the operations in marketing industrial products. This could be achieved by collaborative efforts with the relevant educational institutions, government agencies and consultants through the organisation of seminars, workshops, conferences and training programmes for both the management and the staff of the concerns.

IV. SMEs in these cities should exploit the full benefits of e-commerce and information technology by establishing enterprise portals for Small and Medium scale enterprises to serve their e-commerce marketing demands. This would reduce the cost of establishing portals on individual basis. SMEs in Pune, Nagpur and Mumbai that have not yet adapted any form of e-commerce and IT resources as a Marketing Strategy should make immediate efforts to begin the adaption of some in order to satisfy the demands of their customers and to keep pace with the current global market place.

V. SMEs in Mumbai, Pune and Nagpur should consider their current status of business partnership or alliances to support the development and on-going maintenance of web based applications and e-commerce initiatives besides enhancing other business activities. This means that they are in better financial position to resort to e-commerce. SMEs need to examine all applications of e-commerce by adding value to their individual business. The programmes should be initiated by themselves with the assistance or arrangement by government or private institutions.

VI. It is observed that SMEs in Pune, Mumbai and Nagpur increasingly use the IT and e-commerce tools for a variety of commercial and manufacturing related purpose. Entrepreneurs of these cities have a great understanding of the full range of benefits of information technology and e-commerce. This understanding and awareness about IT and e-commerce is one of the more important reasons for its adoption, together with adequate investment except Nagpur industrial area because the investment is very low as compared with Pune and Mumbai in skills and the relatively high initial investment costs involved in developing e-commerce strategies.

VII. In case of SMEs in Pune and Mumbai as compared with Nagpur, the advent of internet based e-commerce offers considerable opportunities for SME to expand their customer base, enter new product market and rationalise their business. Although problems of definition and measurement of e-commerce make it difficult to gauge the phenomenon available primary data indicate impressive growth in the rate of adapting IT and e-commerce by SMEs in these cities.

VIII. E-government service to enterprise should be used as a tool to improve efficiency of government interactions and operations with Small and Medium scale enterprises. Also intellectual property protection of IT and e-commerce innovations and digital products are necessary to build the confidence among Small and Medium scale enterprise that is essential if such firms are to take full advantage of the potential of domestic and cross border online activities.

IX. For encourage rollout of affordable quality broadband networks to underpin the competitiveness and growth of SMEs, it is necessary to liberalize network infrastructure and promote broadband competition and liberalization in network service and applications. Where the needs exist and without pre-empting private initiative or inhibiting competition, complement private investment with public financial assistance to expand coverage for underserved groups and remote areas.

X. The importance of entrepreneurship and management support as the way in which sustainable advantage can be obtained. As the small scale enterprise moves from traditional business to e-business. This must be accompanied by the development of appropriate knowledge and competence among the employees, e-business competitive advantage can be achieved through the exploitation of relevant hard and soft competencies. It can be achieved by thinking entrepreneurially about the business issues. The internal competencies of the organisations are central to the efficient production of products and service through the construction of profitable relationships with customers. The Small and Medium scale enterprises grow through its ability to exploit its internal knowledge competencies and the entrepreneurial small firm is best placed to do so with its higher levels of creative thinking. Thus, there is a need to view Small and Medium scale enterprise in Pune and Mumbai and specifically in Nagpur, e-business development terms of how well the entrepreneurs, management personnel and related key decision makers can develop and exploit an appropriately built competency portfolio.

XI. The competitiveness of Small and Medium scale enterprise in the emergent business environment may be increased by price restructuring customised services to IT product / Service user cultural and intellectual shifts among other measures. Entrepreneurs need to align IT and E-commerce adaption and strategic focus to the enterprise more consistently.

XII. Government could assist in creating awareness and reducing the psychological barriers to IT and e-commerce acquisition by showcasing Small and Medium scale enterprises' success stories, best practices and benefits gained through Information Technology and e-commerce adaption. Ministry of Small and Medium scale Industries is primarily responsible for promotion and development of Small and Medium scale enterprises in India and has evolved several policies, institutional and support measures, spread all over the country in order to enable Small and Medium scale enterprises to meet their changing needs.

XIII. The first and foremost issue is the spread of awareness among SMEs about the importance of technology development and up gradation in the current economic environment. Government should take the lead, as is being done, involving industry associations at the district level TDIA (In Pune, there is one industry association known as "Talegaon Dabhade Industrialists Association") should carry the message further. The need and urgency for technology development must be emphasized.

XIV. IT needs of SMEs vary according to their IT and e-commerce awareness and scale of operations. Hence Small and Medium scale enterprises in the selected cities need to be treated a little differently than large organisations. IT solution providers need to understand that Small and Medium scale enterprises' resources are limited and manpower including management of time and financial means are both constraints for them particularly this is true in case of entrepreneurs of Nagpur. IT solution providers therefore need to develop their core business and its daily operations and also need to help Small and Medium scale enterprises focus their resources on their core business.

XV. Many entrepreneurs in Nagpur have a real possibility to benefit from IT and e-commerce in their day to day business activities. This has already resulted in gains in enhanced productivity be in area of business to business, business to customers or business to e-commerce. However as this study shows Small and Medium scale enterprise in Nagpur are not always maximizing the use of the internet, e-commerce and information technology. In this regard the role of government and its various partners including the private sector need to take more advantage of the opportunities that are emerging in the new information technology and e-commerce landscape and government need to ensure that users benefit not only from being connected to the internet but also from any technological evolutions which can increase the speed of data flows and which can help reduce cost to consumers.

6.5 Conclusion

Indian e-market service providers have to develop new cost effective business models to cater to the Small and Medium scale enterprise. As the needs of the Small and Medium scale enterprises are divers, they have to carefully select the segments they would cater to and ensure that they create value for Small and Medium enterprise to increase participation from Small and Medium scale enterprises. Government of India is taking initiatives to provide cloud based information technology services to allow Small and Medium scale

enterprises to use Information technology and e-commerce and communication technology solutions on pay per use mode. The barriers to adaption can be over through policy interventions by the government and develop an eco-system conducive for small firms to adapt information technology and e-commerce tools effectively. As adaption rates may vary from one sector to another sector, one region to another region, further study can be undertaken to compare the adaption rate, the barriers in adaption and the problems faced by Small and Medium scale enterprises in different cities implementing IT and using e-commerce tools.

REFERENCES

1. Akkeren J & Cavaye, A.L.M. "Factors affecting entry level internet technology adoption by small business in Australia: An Empirical Study", proceedings of the 10th Australian conference on Information System, Wellington, New Zealand, 1-3 Dec 99.
2. Gilaninia, Seyed Danesh, S.Y; Amiri, M; Mousavian, S.J, "Effective factors on adoption of E-commerce in SME co-operative" Interdisciplinary journal of contemporary research in business, Vol no.6, pp13-21, 2011.
3. Micro, Small and Medium Enterprises development (MSMED) act, 2006 of Government of India (GOI) available at www.dcmsme.gov.in/MSMED2006.pdf
4. Government of India, Ministry of MSMED annual report 2011-12 and 2012-2013 available online at http://msme.gov.in/
5. Government of India, Department of Industrial Policy and Promotion of Ministry of Commerce and Industry, "National Manufacturing Policy 2011", available online at http://dipp.nic.in/
6. Government of India, report of planning commission's working group on "Micro, small and Medium enterprises (MSME) growth" for the 12th five year plan (2012-2017) New Delhi, Planning commission's office available at http://msme.gov.in/
7. Agarwar S.P report on "Strategy for enhancing comprehensive of SMEs based on Technology capacity Building". UN Economic and Social Commission for Asia and Pacific (ESCAP), Bangkok 2005
8. Kalakota R and whinston A "Electronic Commerce : A Managers Guide", Addition – Wesley Longman, 1997
9. Schmid B.K. Stanovska-Slabeva and V. Tschammer, "Towards E-society : E-commerce, E-business, E-Government" Zurich, Switzerland, 2001
10. Longeneeker J. Moore, C and petty, J "Small Business management: An Entrepreneurial Emphasis", SWC publishing 10th Edition, 1997
11. Puroa S. and Campbell S, "Critical concerns for small business electronic commerce, some reflections based on interviews of small business owners", AIS conference proceedings Baltimore, Maryland 1998
12. Iacovou C. Benbasat I and Dexter A "Electronic data Interchange and small organisations: adoption and impact of technology", MIS quarterly 19(4) pp 465-485, 1995
13. Mclvor R and Humphreys P, "The Implications of Electronic B2B Intermediaries for the Buyer-Supplier Interface" International Journal of Operations & Productions Management, Vol 24 Nos 3 pp241-269 2004
14. Raisinghani M S, Melemez T, Zlou L, Paslowski C, Kikvidze I, Taha S and Simons K, "E-Business Models in B2B processed based catergorization and analysis of B2B model, International Journal of E-business Research, Vol 1 No 1 pp 16-36, 2005
15. Al-Mashari, M 2001, 'eTransformation - Are we ready for the change?' Business Process Management Journal, vol. 74, pp. 302
16. Anigan, G 1999, 'Views on electronic commerce', International Trade Forum, vol. 2, pp. 23-27
17. Auger, P & Gallaugher, JM 1997, 'Factors affecting the adoption of an Internet-based sales presence for small businesses', The Information Society, vol. 13, pp. 55-74.

18. Barney, SS 2000, Distributed Applications and E-Commerce: An Introduction to Ecommerce and distributed applications. Issues and problems. Retrieved 25 November 2008

19. http://www.open.ac.uk/StudentWeb/m879/Public_part/Samples/C1/Issues%20and%20 problems%204.htm

20. Bellaaj, M, Bernard, P, Pecquet, P & Plaisent, M 2008, 'Organisational, environmental, and technological factors relating to benefits of website adoption', International Journal of Global Business, vol. 1, no. 1, pp. 44-64.

21. Bingi, P, Mir, A & Khamalah, J 2000, 'The challenges facing global e-commerce', Information Systems Management, vol. 17, no. 4, pp. 26

22. Brakel, P & Mutula, MS 2006, 'E-readiness of SMEs in the ICT sector in Botswana with respect to information access', The Electronic Library Journal, vol. 24, no. 3, pp. 402- 417.

23. Chen, TJ 2003, 'The diffusion and impacts of the Internet and e-commerce in Taiwan', IWays, vol. 26, no. 4, pp. 185-193

24. Corbitt, B, Behrendorf, G & Brown-Parker, J 1997, 'Small- and medium-sized enterprises and electronic commerce', The Australian Institute of Management, vol. 14, pp. 204-222.

25. Courtney, S, Cloete, E & Fintz, J 2002, 'Small business acceptance and adoption of ecommerce in the Western-Cape Province of South-Africa', Electronic Journal of Information Systems in Developing Countries, vol. 10, no. 4, pp. 1-13.

26. El-Nawawy, MA & Ismail, MM 1999, Overcoming Deterrents and Impediments to Electronic Commerce in Light of Globalisation: The Case of Egypt. Paper presented at the 9th Annual Conference of the Internet Society, INET 99, San Jose, USA.

27. e-Sri Lanka (2003) Transforming Government, Business and Society for Peace, Poverty Reduction and Growth, Interview with Dr. Nagy Hanna, Senior Advisor on e- Development, World Bank Retrieved 28 November 2008

28. Eyitayo, AO & Molefe, C 2000, Botswana: Rapid Internet Growth Over last four years. Retrieved 02 December 2008 from http://www.balancingact-africa.com/news/back/balancing-act30.html

29. Filiatrault, P & Huy, L 2006, The Adoption of E-commerce in SMEs in Vietnam: A Study of Users and Prospectors. Retrieved 28 November 2008 from http://info.hktdc.com /alert/eu0013b.htm

30. Huff, S & Yoong, P 2000, SMEs and E-commerce: Current Issues and Concerns. A Preliminary Report. Paper presented at the International Conference on E-commerce, Kuala Lumpur, Malaysia.

31. Jacovou, CL, Benbasat, I & Dexter, AS 1995, 'Electronic Data Interchange and Small organizations: Adoption and impact of technology', MIS Quarterly, vol. 19, no. 4, pp. 465-485.

32. Kapurubandara, M 2009, 'A framework to e-transform SMEs in Developing Countries', Electronic Journal of Information Systems in Developing Countries, vol. 39, no. 3, pp. 1- 24

33. Kurnia, S 2006, E-Commerce Adoption in Developing Countries: an Indonesia Study. The University of Melbourne. 111 Barry St, Carlton, VIC 3010, Australia.

34. Lane, MS, Van Der Vyver, G, Delpachitra, S & Howard, S 2004, An Electronic Commerce Initiative in Regional Sri Lanka: The Vision for the Central Province Electronic Commerce Portal. University of Southern Queensland. Australia

35. Lertwongsatien, C, & Wongpinunwatana, N 2003, 'E-commerce adoption in Thailand: An empirical study of small and medium enterprises (SMEs)', Journal of Global Technology Management, vol. 6, no. 3, pp. 67-83.

36. Ling, CY 2001, Model of factor influences on electronic commerce adoption and diffusion in small and medium sized enterprises. ECIS Doctoral Consortium, 24-26 June, AIS Region 2 (Europe, Africa, Middle-East).

37. Marshall, P, Sor, R & McKay, J 2000, 'An Industry case study of the impacts of electronic commerce on car dealership in Western Australia', Journal of Electronic Commerce Research vol. 1, no. 1, pp.

38. Mehrtens, J, Cragg, PB & Mills, A 2001, 'A model for Internet adoption by SMEs', Information and Management, vol. 39, pp. 165-176. Moodley, S 2001, 'Impact of electronic commerce and small exporting firms in the South African wooden furniture manufacturing sector', Journal of Information Technology Impact, vol. 2, no. 3

39. Annual report on MSME 2012-13

40. Research Methodology By Dr.K.R. Sharma (edition 2002)

41. Research Methodology By Muibul Hasan Siddiqui (edition 2010)

42. Edutech.wiki.unige/ch/en/research_methodology_resources

43. Research Methodology – A Guide for Researchers in Management and Social Sciences By Bill Taylor, Gautam Sinha & Toposh Ghoshal (Edition 2007)

44. Research Methodology for Business Students By Mark Saunders, Philip Lewis and Adrian Thornhill

45. K. Nagesh (2007) "Industrial Growth in Maharashtra", Hansraj Publication Mumbai

46. V.S. Pagdare (2000) "Industrial Growth trends in Vidarbha" Lotus Publication, Amravati

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APPENDIX I – ABBREVIATIONS

Abbreviation	Full Forms
ARI	Agro-Rural Industries
CCEA	Cabinet Committee on Economic Affairs
CCRI	Central Coir Research Institute
CFTI	Central Footwear Training Institute
CICT	Central Institute of Coir Technology
CGTMSE	Credit Guarantee Trust for Micro and Small Enterprises
CLCSS	Credit Linked Capital Subsidy Scheme
CPIO	Central Public Information Officer
DC(MSME)	Development Commissioner (Micro, Small and Medium Enterprises)
Dls	Development Institutes
EDP	Entrepreneurship Development Programme
ESDP	Entrepreneurship-cum-Skill Development Programme
FFDC	Fragrance and Flavour Development Centre
FTS	Field Testing Station
ICT	Information and Communication Technology
liE	Indian Institute of Entrepreneurship
IPFC	Intellectual Property Facilitation Centre
IPR	Intellectual Property Rights
KVI	Khadi and Village Industries
KVIC	Khadi and Village Industries Commission
MGIRI	Mahatma Gandhi Institute for Rural Industrialisation
MSE	Micro and Small Enterprises
MSE-CDP	Micro and Small Enterprises - Cluster Development Programme
MSME	Micro, Small and Medium Enterprises
MSMED Act	Micro, Small and Medium Enterprises Development Act
NBMSME	National Board for Micro, Small and Medium Enterprises
NER	North-Eastern Region
NIESBUD	National Institute for Entrepreneurship and Small Business Development
NIMSME	National Institute for Micro, Small and Medium Enterprises
NMCP	National Manufacturing Competitiveness Programmeme
NSIC	National Small Industries Corporation Limited
NTSC	NSIC Technical Service Centre
O/o DC MSME	Office of Development Commissioner, Ministry of MSME
QMS	Quality Management System

QTT	Quality Technology Tools
R&D	Research & Development
REGP	Rural Employment Generation Programmeme
RGUMY	Rajiv Gandhi Udyami Mitra Yojana
RTI	Right to Information
SDP	Skill Development Programmeme
SME	Small & Medium Enterprises
SSI	Small Scale Industries
TDC	Technology Development Centres

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Dr. Omkar V. Gadre holds a Ph. D. from Nagpur University and Masters degree in Management Studies from Mumbai University. He is having experience of more than 12 years in Industry as well as Education Field. Worked in IT-Industry on Oracle Financials & various ERP systems and handled various key positions in both the industries.

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ABOUT THE BOOK

The adaption of newly innovated information communication technology and its wide usage by the individuals, group and organization have made changes in the way of communication as well as the processes through which human being traditionally perform their exchange functions. The increasing trend of information and communication technology usage around globe, particularly – internet influences different individuals, groups and organizations to be connected with the recently developed and exponentially increased community.

It is well known that, Small and Medium enterprises provide maximum opportunities for both self employments and jobs. In the era of globalization and liberalization, Small and Medium scale enterprises are facing cut throat competition at local, national and international level. To keep their position intact and sustained in a long run, in this highly competitive market they need to implement new changes and technologies. E-commerce is one of them. Electronic commerce is affecting every aspect of every business of every country. To keep their competitive edge over others Small and Medium scale enterprises need to implement electronic commerce in their day to day work; otherwise their sustainability is a big question mark.

The use of E-commerce by Small and Medium scale enterprises may take many forms from online purchasing of products, contacting suppliers through e-mails to marketing and selling their products through their own websites to international clients which can be divided into upstream (Business to business or B2b) and downstream (Business to customers or B2c) activities. Upstream activities such as inbound logistics and operations can be organized globally to achieve economies of scale. Downstream activities such as marketing, sales and customer services must be organized on multi domestic basis. Most Small and Medium scale enterprises use internet for a very limited range of purpose eg. Email an easier and more economic way to contact suppliers or receive service as another Medium for collecting information.

However, adaption of IT is only part of the story of greater importance in its use. Although Small and Medium scale enterprises increasingly use the internet for a variety of commercial and production related purpose, on average they have a limited understanding of the full range of benefits of E-commerce. This lack of awareness of the great potential of E-commerce is one important barrier to its adaption together with inadequate investments in skill and the relatively high initial investment costs involved in developing E-commerce strategies.

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