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POLITECNICO MILANO

Business with ITC

For Small Medium Enterprises

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Contents

Introduction

There is a revolution is on the way which will increase with time and investment in information technology, executives are now becoming aware that technology is no longer only a part of IT or technical department but are effective in each activities of the company.

This book aims to help managers respond to the challenges of the information revolution. Some question rising with this revolution are; how advances in information technology will change the competition and competitive advantages? What strategies company have to follow to include these changes? What are the implication and how it will affect the current business process? There are too many options of technologies which is good for me and from where I can start?

In coming pages there are answers of the above questions which managers are asking from my personal experiences and observation made during working on different IT projects in my career. I started my career working on BMW and Ferrari projects as software engineer which gave me a plenty of opportunity to experience and contribute in creating new technologies with no limitation of resources where I realized that only technology is not enough to help in succeeding an individual or an organization it needs balanced management skills to convert the successful experiment into innovation. During my management program in politecnico I realized that European economy is heavily rely on SME instead of larger corporations which brings me a curiosity to know them better and hence I started working with an old and successful Italian SME as an IT consultants it gave me a chance to understand them better and also experiment IT with business and mix them together to find a balance between them to create a unique competitive advantage. European SME are doing good business from centuries in all over the world but now facing a competitive heat from the developing economies and in need to create a new unique advantage which must not be easy to replicate .Hence My book is more focus on the implementation remedies for the SME who have limited access to resources and more challenges in the new world of business.

SMEs usually feel that they are equipped with all the expertise to maintain their information and communication technology, however at the back in their mind, the thought that something is missing, always haunts them. Something that can take their business to another level, they desperately make efforts to figure that "something" out, but are unable to visualize it.
There are many organizations that have given up all hopes and consider IT as merely a support system and haven't put much thought into reorganizing their business. Perhaps some of you may have changed a few things here and there in order to improve your efficiency however you still remain unsure whether the steps taken are enough to stay ahead in competition. What is stated above happens to be true for most of the SME today. These trends and concerns should not be seen in abstract as they show how your business is shaped by the ICT.

I've observed that companies have engaged the ICT at the number of levels, and have reorganized the various components at various levels for the successful deployment of ICT .but reorganizing them or altering them technically is not going to create distinct advantage at the organizational process level. It is high time as the rising global economy and the growth of developing countries has brought up new competitors which earlier were totally out of the scenario.

In today's world investment in Information technology is very important for the business to survive.IT resources help in business transformation and creates a unique competitive advantage. Organizations are using IT –supported tools to improve the business process, adding the advantages into overall value chain system. The beginning of new technical era has made these resources very cheap to be experimented with. So Only IT resources are insufficient in providing any significant advantage as they are readily available to everyone. Organizations unique way to exploit IT –related capabilities and to leverage the IT resources in their way are hard to mimic and trade .These qualities enable these resources to create an IT related competitive advantage. Most of these capabilities are produced from the management decision of how they are planning on exploiting the IT related resources.

Past researches conceptualizes and empirically validate organization's IT related capabilities, and how these IT related capabilities leverage the IT resources (like Ray, Muhamma and Barney, 2005, Bharadwaj and Bendoly, 2007).These results also show that that the value of IT capabilities of an organization also changes with the time. This is due to the dynamic nature of the IT and the pace of technological development.

The continuous and rapid development of IT resources compels organizations to have a strategy to invest in IT to maintain their competitive advantages. While an uninterrupted investment in IT requires a carefully examined requirement understanding and capital with a huge confidence but this helps the SME s to stay abreast with the technology. To do this continuous revolutionary process organizations have to maintain their existing IT-related capabilities. To take the complete advantages of IT, it will be preferred to have sustainable IT –related infrastructure which can be integrated with the modern IT resources and this is only possible when we understand the environment that help organizations to sustain their IT capabilities. Company's human resource (HR) assets can ensure that the organizations continue to capitalize the new opportunities which come from IT development and can maintain the IT –related competitive advantage. A successful implementation of IT resources is not only done by the new piece of technologies but also with other organizational factors. Sometimes it can require you to change your organization's structure. This is something which most of the SMEs want to resist as their HR are habituated to follow a certain process and any change will bring a difficulty in beginning in their yearly routine process but these changes will add to the competitive advantages of the company and would be very difficult to imitate. Competitive advantages are gone if organizational structures can be easily imitated. An organized and coordinated organizational change is very difficult to imitate, the ad-hoc changes may be copied easily or may not give the optimal result. Understanding the requirement and re organization of resources creates a unique product of complex organizational

learning and the results are very fruitful but very difficult to imitate. And from here you will start getting the advantages of IT capabilities.

Till now the business activities best described by the Potters value chain, but now it's time that value chain feels to be incomplete and not competent enough to meet the demands of the business.IT is permeating the Value chain at every point and transforming the way values activities are performed. These basic effects explain why information technology has acquired strategic significance and is different from the many other technologies businesses use.

We will see in detail that how the organizational design related with task allocation, team work, administration and incentive system by using technology creates a higher level of resource. This structure also creates an environment to present and transfer the knowledge which also helps the organization to sustain their IT related capabilities with preparing their future. This is possible due to the dynamic nature of the environment which can be build, integrated and reconfigured with internal and external competences for the upcoming changes. We will follow the pattern how the higher level IT-usage environment and IT related management capabilities along with top management commitment towards the IT-related initiatives creates a unique advantage for the organization. The various surveys show that how it is working in synergy in bigger organization which must have to bring down to the SME and implement it based on their needs and requirements because this is an important body of knowledge as it helps us to sustain our organizations in terms of IT related capabilities and finally in terms of their core business.

In coming sections we will see the theoretical and the hypothesis of this study and how we can implement it in our organizations with some of the key technologies which must be implemented now, if you miss any one of them.

Chapter 1: What are SMEs?

SMEs are usually enterprises that employ no more than 250 employees. The technical definition varies from country to country in the world but is usually based on employment, assets, or a combination of the two. Some countries have different definitions for SMEs in the manufacturing and services sector and may exempt firms from specialized industries or firms that have shareholdings by parent companies.

The main factors determining whether a company is an SME are (Based on SBA Fact Sheet by European Commission):

1. Number of employees and

2. Either **turnover** or **balance sheet total**.

Company category	Employees	Turnover	or	Balance sheet total
Medium-sized	< 250	≤ € 50 m		≤ € 43 m
Small	< 50	≤ € 10 m		≤ € 10 m
Micro	< 10	≤ € 2 m		≤ € 2 m

Table 1.1: Company category versus turnover.

1.1 Why are SMEs important for Europe?

Since the beginning of industrial revolution SME have been a major source of employment and income which then evolve to become MNCs if time favors them .SMEs play a key role in promoting economic growth through wealth ;as they are the only way to employ major masses in sustainable ways

Big MNCs are on the news more often than usual pertaining to their multi billion euro takeovers, global expansion plans, even about their risk of high bankruptcies, this makes people like us believe that the European economy is dominated by a handful of these big corporate giants .Although these MNCs without a doubt, are very significant contributors in the economy however the fact remains that 99% of all the European business comes from the SMEs.

It is evident even from the most broadly put stats that 2/3rd of the private sector jobs and 60% contribution towards the economy is made by these SMEs and not by the so called MNCs. Henceforth, however less acknowledged; the stats prove that SMEs indeed are the back bone of the European economy, making them a major source of economic and wealth creation and not to forget their key role in research and innovation.

A simple SBA fact sheet published by the European commission every year, surprisingly reveals that 9 out of 10 SMEs are micro enterprises with less than 10 employees .the role of micro firms in the European economy in like and anonymous power which happens to employ more than 66% of the European population therefore keeping the employment rates lowers than the developing countries.

The table shows the exact figures from the European Union which clearly give all scores to the SME in terms of employment and value added to the economy.

	SME	Large	Total
Enterprises			
Number	21,571,360	43,517	21,614,908
%	99.8%	0.2%	100%
Employment			
Number	88,843,464	44,053,576	132,897,040
%	66.9%	33.1%	100%
Value added at Factors cost			
Number	3,666,779	2,643,795	6,310,557
%	58.1%	41.9%	100%

Table 1.2: European Union's score on SME's contribution to the economy.

- SMEs are integral to job growth, employing 88.8 million people in 2013 in the EU28
- €3,666 trillion in valued added generated by SMEs in 2013 in the EU28

SMEs employ 2 in every 3 employees and **produce 58 cents in every euro** of **value added**[1]

9 out of 10 of the EU SMEs are micros (less than 10 employees)

Figure 1.1: Organization of SMEs

The SME Performance Review (SPR) is the key instrument employed by the European Commission to document the important role of SMEs and to study the further development of this sector. It has two components: a European annual report and a set of country fact sheets.

The list of countries released by the European Union showing the number of SMEs operation in Europe clearly states that a huge fragment of the human resource is employed within these firms which eventually results in contributing majorly to the GDP coming from the industrial growth. Sadly though they all are under high risk and face direct competition with the developing

countries Like India, china and Brazil where the prevailing inexpensive human resource makes it easier for the companies to proliferate relatively easily.

Country	No of SME	Employees	Value Added(In Billion Euros)
Albania	77,090	233,913	1,95
Austria	307,330	1.807,556	103
Belgium	520,696	1,770,380	115
Bulgaria	302,193	1,405,481	11
Croatia	145,904	676,483	10
Cyprus	40,802	170,489	6
Czech republic	1,007,121	2,424,690	45
Denmark	212,867	1.045,071	79
Estonia	60,378	316,672	7
Finland	222,032	890,254	51
France	2,598,023	9,586,503	534
Republic of Macedonia	53,224	255,163	2,09
Germany	2,201,144	16,720,674	792
Greece	653,944	1,757,129	34
Hungary	525,917	1,719,622	25
Iceland	25,756	71,699	3,9
Ireland	144,374	762,058	43
Italy	3,718,236	11,516,365	459
Latvia	87,616	457,850	7
Lithuania	134,109	654,259	9
Luxemburg	29,392	164,796	14
Netherlands	802,087	3,561,857	189
Norway	281,777	1,037,382	156
Poland	1,474,953	5,679,112	94
Romania	426,295	2,708,806	26
Serbia	391,803	1.031,401	23
Slovak Republic	391,803	1.031,401	23
Slovenia	115,598	405,758	11
Spain	2,252,777	7,632,749	282
Sweden	665,819	2,016,909	121
Turkey	2,386,921	8,177,164	78
United Kingdom	1,724,622	9,598,435	531

(All the data are taken from European commission SBA fact Sheet 2013-2014)

Table 1.3: Employment provided by SMEs in Europe.

Considering the data provided above its comprehensible that, SMEs are often the principal drivers for any country's economic augmentation.

One major challenge that the SMEs face is the ever growing competition as they are small and relatively less complex, so setting up as SME is no rocket science. Therefore more SMEs have sprung up leading to a greater and tougher competition .So in order to stay in business these SMEs have to compromise either the product prices or the customer base or both .Reducing the product prices in turn results in lower profits which eventually yields to low or no incentives for the working class., and to add the competitive procession developing countries have huge workforces which are willing to work at negligible pay .So there the SMEs can actually afford to lower down the product prices and yet manage to make profits. It is indeed a closed loop for the SMEs.

So in order to combat with the growing competition, firms have taken refuge in the strategies like advertising ,lowering the product prices, using brand names as leverage and more innovative ways like incorporating technology to compete with the contemporary trends and designing hard to imitate products.

As of now, business for SMEs has turned into a survival race. Although EU has introduced various programs aiding SMEs and helping them to keep up their pace with the ever changing environment, But its high time for the SMEs to be vigilant enough to look around and grab opportunities which can be converted into a competitive advantage to counter fight the situation.

1.2 What is ICT?

ICT is the acronym for business information and communication technology .A while back, the usage of this term was only limited to the company's IT department. However now the scenarios have changed drastically and the ICT now includes processes, data, software and hardware and most importantly the human resource involved in the overall business process.

1.2.1 Characteristics of a good ICT process:

1. Increases productivity ad it completes the same amount of work in comparatively lesser time.
2. Speeds up the information transfer, enabling faster access to information which leads to quick and enhanced decision making processes.
3. Boosts up the information processing capacity

Successful implementation of an ICT needs a clear strategic objective which differs from business to business and as a manager you must be able to understand your goals precisely and know what you wish to achieve from the system.

After scrutinizing the systems, the inference drawn was that ICT systems weren't always the cause of a failure or loss. It was basically the inadequate implantation of the system .Implying that a properly working ICTS system when implanted in the wrong place will most likely generate wrong data and inconsistent processes. It's like sitting under a mulberry bush and expecting apples to fall out of it.

As a consequence we receive inaccurate or inappropriate data, erroneous reports which result in unpredictable losses. A properly analyzed and balanced ICT make more efficient business decisions as well as improve inter and intra relationships among the team, customers and suppliers.

However owing to the competitive environment, most SMEs are struggling hard enough to deal with their core business needs and generally lack resources and the experience in reviewing the current ICT system. These SMEs are actually in dire need of ICT consultants to fully revise the persisting ICT system ,identify the problems ,offer suggestions for improvement or if need be, start using an entirely new system altogether .All this ensures that the new ICT system so implanted is apt for the environment and generates correct results and works efficiently.

Chapter 2: Why

2.1 WHY do SMEs need to invest in IT field?

A very simple and effective answer to this very frequently asked question is that .You don't really have a choice IF you wish to stay in business and want to advance in it . It is imperative to optimize your business in every possible direction .And believe me in times of such fierce competition an unbalanced IT solution is the last thing you want to deteriorate your revenue especially when you know that a well-balanced IT solution can lend you a strong hand in your business.

It is surprising that in this competitive, globally exposed and tougher scenario IT still hasn't been given its share of attention especially in small companies. Not realizing its importance and still considering it as a secondary aid. But consider if your secretary's PC went out of order and you miss out on important quotations or even worse the server went down and there is no back up and no one is accountable for it and feuds crop up among employees. It's unfortunate that in today's internet age most people still perceive IT as something related to fixing the PCs and making sure that the server is up and running; There is a lot more to IT than that.IT can be indispensable in taking a local business to a national or even global level through e commerce or better yet help reduce the expenses in processes by its virtualization. A correct, fully analyzed and optimized solution can enhances your marketing and sales which in turn increase your revenue or even have some extra bucks saved in your company's account through helping in administrative processes and internal departments.

It is high time that we stopped considering IT as just a department and take firm initiatives and ensure that IT is incorporated in every organizational unit after careful evaluation and planning. We must realize that we a stepping into an era which would witness a complete revolution of the cyber world; with the escalated cyber-crime instances we must ensure that our companies are prepared for it. As the negligence of SME towards IT and cyber security would most likely lead them towards an unseen danger which can potentially destroy their carefully maintained business in just few hours.

In this book I am going to address some of the important issues and optimized solution which can help SMEs to maintain their IT department and help them evaluate where they currently are and what they can do in order to improve.

P.S.: I know for most organizations anything and everything becomes as issue when the bucks are involved. Incorporating IT sounds a good idea until the IT department's overhead cost messed with your company's budget. So I've tried to keep it real; and only after considering your main budget fears. I've put forth a few cost effective strategies. So I urge you to try and take a dig into this book, perhaps you may end up fixing your company's issues with the solutions that I have.

"A couple of months back, I visited a manufacturing firm to provide consultancy for their email and communication solutions, the company has been in business form 60 years and doing great however the communication system precisely the email was actually primitive; I was awestruck when I found what server they were using was Lotus Notes 7. Later that day over coffee one of their managers from the administration's department complained about their technician's unreasonably high mobile phone bills. The only good thing was the discounts the telecom company was providing on bills. I grew curious and started to play detective to find the real problem and a permanent solution for it. Most probable and possible cause was business variability or some detail that I might had missed out from the management. I dug deeper, pulled past 6 month's mobile phone records and after scrutiny inferred that the plans used by the company were totally irrelevant with respect to the current needs which was resulting in unnecessary bills, also some significant requirements were completely overlooked .there was a lot of scope for optimization. We found the countries which the company frequently communicating and divided the company's usage into 3 segments and subsequently resolved to use the calling plans for each individual based on his requirements. During that company also added 3 more countries in their business profile but still the results were positive and able to cut down the bills by 60% resulting savings between 24000-30000 Euros."

However the problem in this case was not only the irrelevant calling plans, but the ignorance about the advancements in new technologies and lack of appropriate IT policies.

Year old contracts are like shackles that weigh down your business, that's the reason most of the technology giants like Google and Microsoft are now offering their solution with no predefined contract per se or monthly pay pricing model. Off course it's a revenue and business enhancement model for them but also a very good option which helps business organizations in focusing their core opportunities with updated systems and software instead of getting stuck with the old system which are outdated and of little use after a while.

The continuous evolution of technology is changing the way we do business, the dynamics of the workplace and what we perceive is possible. Some parts in this book will throw light on which technology is transforming the environment. Over the last two decades, technology has drastically changed the attitude and processes of the workplace, the continued evolution of telecoms and IT technology is continuously fuelling the on-going transformation of the business environment which can take advantage of available tools and opportunities.

In Italy, as in many developed countries which are aiming at creating a balance between environment, society and business, tension still prevails between the traditional age old practices and the improvements that can be brought about through technology. One of the reasons for this standoff might be that decision makers still have not fully warmly welcomed the immense changes that technology had brought along with it to the workplace ;especially in Italy ,what I have observed is that most business decisions are driven by various social factors ,which is one factor that aggravates resistance to such changes ,The point that I'm to put across is that ,gone are the times when a company was a mere group of people working for an employer; now it's been transformed into teams where everyone contributes to achieve greater success. Now Businesses exist for one simple reason: to solve a big problem. The simple reason behind every great and successful product or service is an unfulfilled need with a huge market. Now behind every successful company there is not only a great idea which can work to solve this big problem; but there are flexible teams that bring the vision which converts an idea into successful innovation.

Any kind of organizational structure are proven to be lacking when it comes to bring out the best out of the human resource, but when we have to align our organization with respect to the market ,in such cases, flattened organizational structure increases the efficiency ,decreases rather eliminates conflicts and issues, removes the gridlocks and speeds up the decision–making process that consequently makes the overall process fast which is very important now, as we are constantly racing against the clock. Generally decisions are moved up in hierarchy to the management chain to the people who have very limited information and knowledge to make the best decision about the issue. It is nowhere stated that only the management teams can come up with the best decisions. If we have a smart team with multi-disciplinary talents then each person of the team can practically be a part of the decision making process in their own group and roles. Other than speeding up the decision making process it will also shape the current team members into future mangers, by bringing a sense of ownership throughout the entire team and results in better performances.

I am classifying the business needs into 5 segments where the SMEs can get an insight about the current business trends and methods to introduce it in their business without compromising with their social responsibility and yet boost their business and understand why they need to invest in IT:

2.1.1 Productivity

 Since the beginning one of the main reasons behind using computers is that they exponentially increase the productivity, which can be observed in the extent to which computers are used in simple everyday activities which thus allow us to multitask and make our days relatively more productive. Everyone, without a doubt, has accepted that computers have majorly transformed the work environment and that IT has significantly reduced the cost of data processing and made it very easy to manipulate, share and transfer data between various inter, intra, external organization unit. The changes in technology has resulted in the growing expectation of the

employers, partners and clients regarding the work quality and these expectation will only grow higher with time thus the company must implement new technologies to keep up with these expectations.

2.1.1.1 Productivity is when you stay ahead from your competitors

Mere implementation of technology is not going to work wonders if it is not adding any value to our organization. Increase productivity is only good when it supports the market demand, and now with the intensification in global and local completion it is not that easy to stay in business until its distinguishable and ahead of the competitors. But for the organization that aim to grow higher and increase their market share; improve the visibility; wish to become the preferred vendor or service provider, technology can help them to achieve these goals in following ways:

- Automating, optimizing and synchronizing the internal processes, which can reduce human errors, cut the red tape and decrease complexity of certain processes.
- Introducing more efficient operational measures which can reduce cost and improve the limits.
- Implementing new measures that can ultimately add value to the customer and ease the customer journey or make their experience better.

2.1.1.2 Productivity, when it improves service delivery to customers

Another chief parameter in today's world is to measure the improved productivity and an increase in customer engagement and delivery. Business firms take pride on themselves for being customer focused and invest a dedicated budget in their frontline staff for customer engagement and service. However this is a continuous process and must be carried out by engaging more and more technology as customer attitude and level of engagement is changing with time.

From private sectors to government organization, there is always a possibility to improve the customer experiences and this is where technology can be a major contributor to that transformation. Depending on the type of organization product and services there is likely that a detailed list of improvements can be identified .Providing certain services online and introducing e-services for support can make some enrichments in these experiences.

2.2 Collaboration and Interaction

In today's dynamic working environment there are a lot of situations where teams are working onsite, offsite, even working from home, due to offsite work assignments, to meet the clients, therefore, now the technology is offering a number of connectivity options that allows continuous collaboration, interaction and discussion among team members. There are options for real time and non –real time interaction which can be incorporated into specific workspaces

to integrate and allow various features and tools. Now we are taking another step ahead in using such facilities more and more in order to stay connected, cloud is one among the common ones. The extensive proliferation of social media has given a new ways to interact both personally and officially. It has become a powerful tool for marketing and promotion as well as for collecting information. Social media is now a powerful voice of the consumers and the public in general. Hence it is an apt platform to start capitalizing on the opportunities to secure feedbacks and to use for the collaborative environment that technology now fosters for crowdsourcing initiatives such as crowd creation. This kind of technology can add a completely new process in the product development lifecycle for the product which needs a high user feedback and eliminate the chances of product failure.

2.2.1 Collaboration and Interaction: Leads to improved organization's responsiveness to new developments

This feature may seem to be most relevant for only complex, product oriented businesses that operate in dynamic environments ,but it is also very much required by the small service oriented firms. ICT can be a major aid in the regards of organizational responsiveness for new product or service development:

- ICT can be engaged in high level to process the data generated from the diverse range of channels (such as Web analytics, Sales, Customer feedback, Inventory data etc.), which if analyzed correctly can be helpful in making important decisions.
- Clear data analysis Enable the management to make decisions that have been made through innovative and cost effective options. Sometimes it may foster to bring up ideas which can be built in house.

2.3 Resourcing

Other than direct impact of technology on productivity it's also changing the way the businesses are resourced. The technological solutions are changing the way operating resources are deployed and managed; in fact it's also changing the location of such activities for example online or offline. Even if we don't consider the big technical giants like Google, Amazon etc. There are new startups which are coming up with innovative solutions which need no physical presence to start the business and are completely based on an idea which is intelligently detailed with the technical solutions. Companies like Airbnb, Uber are now worth more than big MNCs in market valuations and revenue, with a simple solution offered by the existing technology. In the past, organizations hesitated to start something due to cost for facilities and services for which now cheaper and reliable alternatives exists. These developments are changing the business models and supplying many of the needs which are computable whenever they are required based on the need.

2.4 Cost management

Everyday increasing competition is directly affecting the cost and making it very important for the organizations to streamline their operations. Management is also asking for inexpensive and reliable solution and wants every penny to be spent in the most proficient way to regulate expenses and increase savings. Once again, here we can take the advantage of technology which can provide cost effective alternatives such as specific skills and computing resources: Now most of the MNC have their development and operational centers completely separated and located in strategic location and enabled by technology to sync them, also productivity and performance of individual employees are improved with such solutions.

2.5 Efficiency and optimization

This is something very natural to come and is one of the very important consequence of many of the above advantages, the more the organizations move toward the gravity of being more streamlined it becomes more acquainted to achieve it. One of the greatest challenges which the organizations had faced was that even in cases when they had clear objective and considerable attention for human resources, financing and management they didn't have much options and alternatives to choose from .Thankfully now ITC has enabled and provided more options through which companies can relocate their efforts toward more critical process in more organized and analyzed way which can increase their productivity and outputs.

IT is an investment which will exhaust swiftly with time and we will be left with zero value with no direct profit with an added burden to remove the IT junk, which makes it very important and critical to understand that before investing we need to carefully choose from among the balanced and correct type of resources to implement during the initial stages. Decision made only on financial basis or under estimate requirement by overlooking the upcoming requirements will come up with an additional hardware cost and hidden maintenance costs which will consume your financial resources soundlessly. But if your IT department is able to optimize the requirement carefully then it can help your administration to save several costs like maintenance and other indirect costs like electricity, insurance, human resource.

"For example a single physical hardware server adds an average of 1000-1200 Euros in your electricity bills. So if you have 4 running servers it implies that the company is paying 4000 Euros yearly just to keep those servers up, which isn't the best practice, you can rather merge them together in a single or double physical hardware with a more powerful system. These kinds of costs can easily be minimized up to 40 % by studying and evaluating your needs and requirements" (Hardware leasing and virtualization in next chapters of "how and what" to elaborate how and what to do to achieve this)

If you haven't got it done initially then don't delay it anymore, evaluate your requirements now and check if there is anything that can be done to get the benefits of IT in your business and also save your silent cost by making your IT infrastructure best and updated to reap the ripest fruits

of technology available for SME or if you are considering to change it is the best time to implement this kind of structure which will help you get back your IT investment over time and make your investment almost free or negligible amount with a relaxation on your other bills for upcoming golden years of your business.

Conclusively, ICT can introduce a major shift in the organizations by helping them to re-organize and re –configure various things. They can certainly help in raising the bars and cutting the red tapes and help in increasing the performances not only in technical terms but also in terms of operations, quality and management .These are equally important for the micro, small and medium sized businesses as they have limited resources and more growing competition and might be looking forward to take their operations to the next level.

Chapter 3: HOW

Till now the business activities best described by the Potters value chain, but now it's time that this value chain feels to be incomplete and not competent enough to meet the demands of the business.IT is permeating the Value chain at every point and transforming the way values activities are performed. These basic effects explain why information technology has acquired strategic significance and is different from the many other technologies businesses use.

Information technology can change the rules of competition in three ways.
1. Changing the industry structure
2. Information Technology can create a unique competitive advantages
3. Information revolution is giving birth to completely new businesses.

While Most of these organizations have a fairly impressive range of ICT devices and the corresponding equipment's still in most cases it was observed that they aren't being used to their full potential, as far as the performance and customer satisfaction is concerned. And for some instances it was found that it was not required by the organization. Irrespective of their size, ICT exist today in all the organization in the form of telephones, cellular networks, IT networks, laptops, workstations RP, CRM etc. Although they are considered as an integral part of the firm owing to the ease they offer while communicating with customers, partners and vendors, in files and data transfer, browsing the internet, but as a matter of fact, not much effort is being put into using these systems to their fullest in order to improve performance.

Figure 3.1. Information Technology Spreads in Value Chain System

3.1 Engaging with ICT

People concerned with the acquisition, implementation and deployment of ICT know that whatever the technology vendors promise to deliver or companies selling the technology claim while advertising, that it is improbable that you can get anyone to plug in these technologies and expect them to work perfectly well right away. To get the optimized outputs from the ICT investment a dedicated personnel is required to implement and deploy it.it should be kept in mind that the deployment plan are highly company specific and would be shaped according to issues the company is facing and results which SME wants to achieve.

Most of the SME having employee's strength greater than 50, have a dedicated IT department. A recent survey conducted by Computer Weekly indicates that on an average seven people are in this department while detailed analysis reveals that 2/3 of the organizations astoundingly have one or two members of staff in IT department and 60% have five or less. However the dedicated It staff tries to do the job as best as they can , but still half of the companies with up to 500 employees do not have any formal IT strategy or policy .And the ones which do, either have it at a very basic level or are lagging behind with respect to time.

Although these figures are astonishing ,this is not uncommon within SME and the industry experts in IT have familiarized with this situation .Alan MacNeela ,vice president of research at Analyst firm Garter recently comment on this topic for SME" These finding are no surprise. SME

are much less structured and formalized in their thinking about IT. Most of the SME have opportunistic approach for the IT investment." He also says: "many SME have older infrastructure and want to sweat these assets. This focus makes any new implementation of IT that would affect significant business change almost untenable."

If your company also falls in this category please consider that there is something needs to be changed.

With few exceptions, none of other ICT leading business products can be compared as commodity products. Success of an ICT implementation depends on how well it is being aligned and structured around the business plans. Most of the preexisting companies have no such plans in place during the implementation phase, however their newly sprawling competitors may have, and this will give a vital competitive advantage to the firm on daily basis.

There is also an interesting revelation that 60% of the companies possessing a dedicated IT department facilitate their IT managers to make the strategic decisions regarding the ICT while still 40% companies do not empower their It managers to comprehend there strategy and surprisingly in 10-15% of the company's financial mangers make the strategic decisions regarding ICT implantation.

Various audits have revealed that in SMEs even now ICT isn't regarded as a business enabler by the management. Most of these companies do not have a strategy about IT but the major concern is that they still don't have any plan for using ICT to change the business they do now.

It is quite understandable that determining an effective ICT solution may involve a little more effort and one may have to deal with a lot of issues .Thankfully a number of solutions are already available to address those issues which would help you in the transition process. A motivated mind set and general awareness and effective strategy plan is all that's needed for successful implantation of ICT.

3.2 Resource Centric View for Sustainability and maintainability

An organization can be viewed as a bundle of resources and these resources have to develop there competencies and consequently generate new resources with distinct capabilities. These resources enable organizations to achieve competitive advantages and lead to long term capitalization of benefits from them. Undoubtedly unique organizational resources are a source of survival in today's world and this philosophy applies very closely to the IT resources as well. IT resources do not have a direct influence on your business performances; which makes it difficult to understand it from a strategic point of view and hence a well-defined strategy becomes difficult to imitate and becomes a valuable source.

It is very difficult to trade IT related capabilities which are embedded within the various business process of an organization. Values generated through these capabilities differ across organizations and they are long lasting. Capabilities which have attributes of value and rareness can constitute in achieving competitive advantages. Once organizations have the IT competitive

advantage factors like non-substitutability, inimitability can help to maintain the gained advantages. The resource based view emphasizes that organizational resources must possess differentiating resource capabilities which constitutes firm and specific capability. However, what will be the nature of isolation and differentiating mechanisms that allow for these capabilities to be developed and sustained, is not described by resource based views.

3.3 Dynamic capability framework in IT Management

Dynamic capability framework by Teece, 2007 gives detailed explanation on how organizations can develop and maintain their competencies. Organizations need to create a through reorganization in their resources that helps the in maintaining their superior position. Reorganization creates a dynamic set of resources that develop and enhance the organizational capabilities. Dynamic capabilities which are developed by the combination of organizational, functional and technological skills are very distinctive and it is difficult to imitate the advantages achieved by them. The organization's capacity to develop or maintain their competencies depends on their innovative response and time to time re-configuration and integration of new systems into their process. If these efforts are done in a right direction can ensure that organization's sustained performance advantages (Teece et al., 1997).

An organization can align the IT system in certain trajectory of competence development; it can help in organizing certain economic activities inside the firm in the way that is not being used by others in the market. Competencies and capabilities are the key ingredients in sustaining performance advantages. While implementing new technologies for your organizations must not focus on devices .We have to start it from setting the goals and outputs which we wish to achieve and then examining the prevailing processes and cycles in the system to determine how can they be utilized optimally by the new technologies in order to achieve the set goals.

Process, Path and positions are the three dimensions that help to determine distinctive competence and dynamic capability of an organization (Teece et al., 1997).The organization's process keeps the secret of the competencies and capabilities which an organization has ,and through evolutionary and co-revolutionary path it maintains a form of dynamic capabilities and competitive advantage's advantage (Teece et al., 1997).There is a coherence in all the organizations process and this feature helps them to develop and sustain their capabilities. It is difficult to copy the cohesive set of inter-organizational links. Slowly this cohesion between the related factors creates a unique high level resource that can establish an environment to develop the pre-existing IT related capabilities. This happens due to the existence of synergy between related resources where general and broad capabilities are formed from the integration of more specialized capabilities (Grant 2008).Based on the resource and dynamic capabilities theoretical perspective we will derive the solutions in next chapter.

3.4 How I do Effective ICT IMPLEMENTATION?

Due to business pressure and lack of information about ICT makes it very hard for SMEs like yours to investigate and understand how to use information and communications technology and make it work according to your business needs. In this day and age when ICT has become imperative when it comes to creating competitive advantages, it is becoming very challenging to understand how your competitors are responding and adapting to the new technologies.

From this theory we concluded that the dynamic capabilities and framework reorganization of certain path, process and position in the organization can lead to development of competence and maintain their sustainability. The high level resources created due to these re-organizations are unique and dynamic. It is also evident that organizations can maintain their preexisting competency and develop new ones. Henceforth we can draw the inference that if reorganizations of paths, process and positions can be done in IT related capabilities it will create an environment within which organizations can sustain their existing IT related capabilities as well as develop them too.

Figure 3.2: Effective ICT implementation

3.5 Collaboration between Business and IT Managers

In a firm, Business managers often have fewer clues about what is required out of them to solve their problems and even if they do the solutions which they provide might not necessarily be effective .This can be solved by mutual understanding and sharing of information between IT managers and business managers. An organization's use of IT is influenced by understanding between the Business and IT managers and their shared knowledge. It will develop a unique competency that an organization can develop which will be difficult to imitate by the competitors.

Understanding the nature of business process and the features of the IT resources required by the business managers can bridge the gap between the requirement and delivery. The shared knowledge between business and IT manager determines the strategic use of IT resources and helps in maximizing their effect on the organization. The IT related management capability enhances the operational and service performances and also influences the IT assimilation.

This capability will ensure that these managers will find the best fit for their business process from the existing modern IT resources. This understanding is very significant for the continuation of modernization of business process and vital for the current business environment.

Implementation of dynamic IT usage will create this understanding between the business unit managers and IT implementers. This in turn will claim appreciation by the end users for the introduced technology .and this appreciation will act as an aid to the higher management in understanding the potential of IT initiatives in their organizations and fuel the upcoming IT initiatives. Gradually as more organizational IT efforts would align with the business more will it become an in house developed, sophisticated tool and advantage for the organization.

This approach will also bring visibility of the initiatives starting from the initiation by the planners till appreciation by the end users. This visibility will eliminate the individual unit based value and promote the firm based values with the common goal being development of organization. It will help to understand and sustain the benefits from the amalgamation of the ideas between the two departments and prepare the road map for the future.

3.6 IT for Decentralized Organizational Design

Human resource is one of the most critical and important resource in the organization, so it's effective management will undeniably benefit most to the organization. Also it will create a unique set of capabilities if technologies are combined with the Human resource to create other high level resources. An Effective HR management system can exploit the potentials of the current system and bring synergies between other processes. Technologies applied to enhance the employee's skills and motivate them, could be clubbed in the organizational structures and designs to enable employees to control the way they perform their job. Appropriate organizational design, which involves the specification of decision rights, performance evaluation and compensation systems are important elements that establishes the complementary factors (Jensen and Meckling, 1992).

Commonly SME have general and some very specific knowledge. Specific knowledge becomes difficult to convey and it's expensive to transfer knowledge. This is due to the reason that it is not possible to convey everything at once and an individual knows more than that he/she can convey, moreover people have a very limited capacity to process information and of course the fears of losing control by sharing company's important information prevents employees to share information unless governed by fixed policies. Here the organization can use its IT resources and can club all the necessary information from different individuals and make it together to generate a new and more complete set of information.

As the work environment is changing, more and more employees want to be a part of something important and want to contribute in different kind of jobs to develop their skills and break the monotony of the job. This is relevant and can be achieved by using IT on the pertaining business environment. Off course the job rotation must be within certain boundaries and must have synergy with the old skills of the employees to get the best out of this structure without affecting the production process or the output of the system. It can bring up some of the good resources which are more efficient in a specific IT tool than others and can contribute better in the problem solving process .A decentralized organization design can achieve these benefits with the help of IT and creates a dynamic IT environment mixed with HR.

3.7 IT in Teamwork Oriented Organizational Design

Organizations have now come to realize the importance and power of team oriented structure. This structure can be enhanced by the IT resources by allowing them to collaborate, meet, and discuss everything in an easy and efficient way. IT can facilitate the redesigning process of the traditional hierarchy into an open organization that promotes teams-based structure.IT can allow the individuals to break the hierarchy to collaborate and communicate freely in lateral or horizontal axis. These kinds of services are promoting and encouraging employees to easily adopt the team based approach. HRM practices that encourage participation of employees and allowing them to improve their work performance can be easily achieved by the correct IT system on the place. Initiatives like cross –functional teams, job rotation and quality circles are promoted more and are able to bring motivations to the employees.

It will be very fruitful now to have a decentralized form of organizational design associated with task allocation and team based organization enabled by the IT infrastructure. Based on your industry you can decide where you can put the IT resources in order to use it to its full potential. Such designs will allow employees to have greater autonomy with their task and nurture an environment which allow the feeling of ownership of the task, mutual participation amongst the employees, equality at the work place.

3.8 For Automated value based Incentive System

Operational knowledge of each employee is better used by a Decentralized organizational design associated with the team based task allocation. Perhaps sometimes they also create the agency problem (Jensen and Meckling, 1992).Good Incentive system is one of the very influential mechanism to bring out the best of the employees, and it becomes more important in such structure to enhance the workers decision making capacity in interest of the company. Appropriate incentive system aligns the employee goal with the company goals. It is very important that employees get the appropriate compensation for their work and are willing to share their knowledge. Organization's incentive policies must be a part of coherent incentive system (Baker, Gibbons and Murphy, 2002).the coherent system must be effective enough to recognize the efforts of each employee and ensure and distribute correct incentives and rewards. An incorrect or partial system can bring disrespect, lack of confidence and disturb the work culture and employee's efforts. Hence it is very important that a proper Dynamic IT usage is aligned towards this process.

A proper balance between organizational design and reward system is important for the organization's efficient use of its IT resources. A well designed IT-usage system can recognize the importance of the users of technology and reward them for their learning, sharing and development. It can recreate a recursive process, resulting in a rich set current and specific Knowledge database.

3.9 Development of Dynamic IT usage Environment

The development of the Dynamic IT usage requires the commitment for IT from the tactical and strategic management. The operational level of the management is the main guardian of the implementation of any new process including IT environment. They must ensure that users are following the proper path and not bypassing the system .They have to forward the response of the user and effect of the implementation to the decision makers to acquire better understanding of the fit of the IT resource with the business process. End users must be continuously motivated to use the IT system. Repetitive process will help in the refinement of the IT environment with the company process and remove the defects, hurdles and constitute an effective IT usage environment.

In conclusion we have to start implementing the IT usage in a decentralized organizational design with a team based work environment supported with a congruent reward system. At the end it will result into a unique dynamic capability and competitive advantage for the firm.

3.10 Most importantly how to Sustain Top Management Commitment

Top management commitment is very important in making IT related initiatives a success; this can only be brought about when IT related initiatives are communicated within the organizational strategy, structure and system. Motivation from the top management can optimize the success of IT resources by making these resources available ,strategy information system ,integrate IT with business strategies and processes ,ensures the continuity of renewing and investing in the IT resources. In case of lack of these supports IT resources will have little effect on performance. The lack of support will increase the gap between expected result and the actual result obtained .This will be caused due to the fact that more time is invested in acquiring the resources and then putting them to work together, it will generate results however non-optimized as it lacks the sync with the current

IT trends henceforth time required to implement this system will cause more financial loss by maintaining the old systems. Due to dynamic and ever evolving nature of IT the decision makers and the teams responsible for this must be aware of latest development to maintain the IT-related competencies.

The suggested dynamic IT design with regular feedback mechanism to the top management will assure that IT initiative are beneficial for the whole organization and keep them motivated to invest in it. This means that the dynamic IT –usage environment will act as a knowledge base for the decision makers. Effective IT management system requires planning, organizing, controlling and directing the deployment of IT within the organization (Karimi et al., 2000).The role of top management is very crucial in promoting this coordination. Having a consistent IT related vision will act as a catalyst for sophisticating and reaffirming the IT management role. This will help top management to have overreaching vision of the potential of IT related resources. This vision will enable top management to ensure their interest and enrichment   in the IT investment. Thus a smarter and effective IT usage environment would act as a catalyst to sustain the top management commitment towards IT related initiatives.

Tasks

- Undestand business requirenent
- Evaluate the current system
- Design a Dynamic IT business process
- IT management set the pace of the work.
- Business Mangement schdule the work
- Operational level management distributes work among the workers.
- Operational level management decides how the tasks should be accomplished.
- Operational level management deals with difficult situations in their work environment.

Environment

- Problems and complains are solved by the Operational Level.
- Business Units are self managed teams
- Business units use "employee involvement groups"
- IT and Business Teams Work Together

Effects

- Organization will have sustain IT development
- Technology will directly effect the end user
- Organization will have a balanced incentive system
- Organization will promotes team building.
- Organization promotes teamwork.
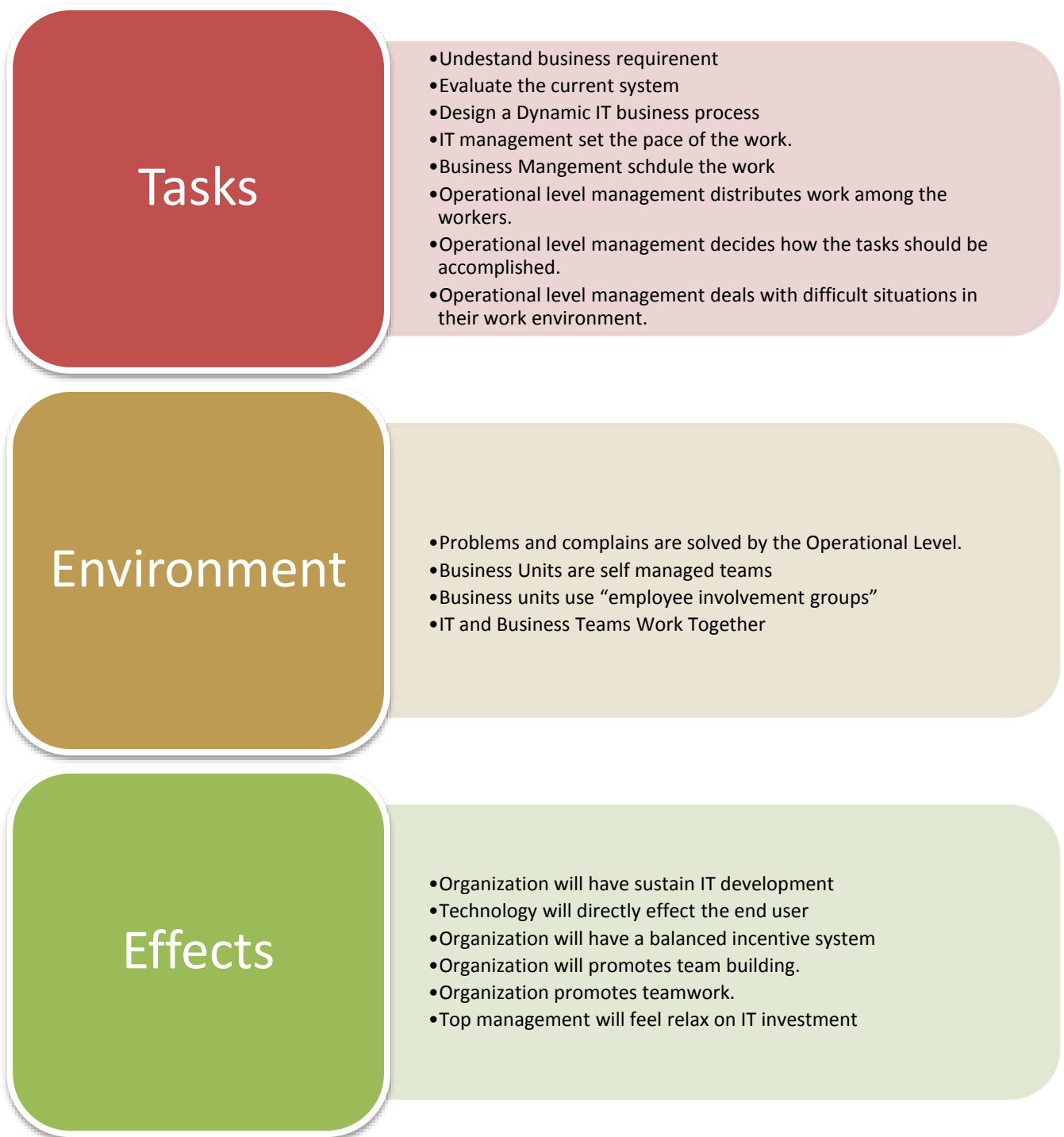- Top management will feel relax on IT investment

Figure 3.3: Tasks environment and its effects on IT.

Chapter 4: What can be done???

Establishing a successful organizational design is a complex process. But now is a good time as any to include IT in this process which can help derive value from the individual level as well as by creating higher levels however in order to derive value from the higher levels we must have an understanding of the organization's processes, design and the capability of individual resources. I have given one of the implementation strategies which can be followed during the design process of the business. The idea of this implementation lays between the coordination between the business and IT managers and their individual and group capabilities to implement resource centric approach to inject dynamic capability into company business process with extensive use of the available IT technologies.

Acquiring and managing IT resources will always require financial resources, but the same holds true for any other skills in the organization. It will always remain in question about their worth and how much they matter. But now organizations have to think radically and need to ride the horse in this race to stay ahead in the competitive business world. ICT has long been touted as being able to introduce efficiencies into businesses, but too often the organizations themselves do not actively introduce such measures. But this approach will develop a unique IT related capability and will bring synergy in the organization's business process and a radical change in the way they are done till now. Depending on the expertise level of the firm, it's good to take some external assistance to get the most outcomes of the investments. However the corporate world is becoming more fixated on profits and savings and increasing in the competition across various sectors. A successful implementation of this concept can bring a heavy return on investment with a unique competitive advantage for the organization; makes this investment worthy for both short and long term.

I am describing some new ideologies, technologies, tips tricks with security measures which is very important for the organizations:

4.1 Free WIFI Trick for the Retail Segment SME

In the era of world wide web, since information can be transferred very easily ,protecting information has become almost impossible, people are communicating across borders and time zone and sharing their experiences and needs , all owing to the internet. Development of smart phones and portable devices has brought the entire world's information to every pocket. The article describes some of the features and advantages that business can have by giving free WIFI internet to their customers

1. **Client Relations and customer loyalty:** Nobody wants to wait ,but ironically from Parlors to Hospitals ,every place has appointments and sometimes we even have to wait for our turn.BY Providing Free WIFI they can engage the customer and make them productive while waiting and people don't bother waiting a bit longer.

2. Catching Competitive advantage: Customer always crave for FREE stuff .So why not give them a "Free-Wi-Fi" .Now even the big brands may it be bars or restaurants chains have started applying this new trick of the trade ,we find "Free-Wi-Fi" signs more often than usual luring customers to grab a coffee or burger along with a free Wi-Fi. Certainly it's creating a competitive advantage and people are getting drawn towards the big bars overlooking the smaller ones.

3. Marketing opportunity: The internet network can also be used to do short terms promotions and to showcase your product's features, or can even show how your products are comparatively better and effective than your competitor's Another strategy is registering with the location based networking sites, such as Four Square so that people can easily update their status when they connect thus providing free publicity and recommendation to their friends and followers.

4. Increase direct sales: People don't buy things until they are completely sure and aware about their options which motivates them to analyze the goods or services comparatively, this is not only to choose the less expensive among the products but also people like to take informed decisions. Retails having WI fi connectivity can give their customers the advantage of comparing the goods and get more information about them, without having them to leave and go to the next shop for comparison. The secret is not letting your customer move out from your store. It may/can happen that your competitors price is a bit higher than yours however once customer moves out and heads towards the competitor's store, he might feel lazy to come back to save some bucks.

5. Provide valuable customer information: Businesses offering free Wi-Fi can monitor the online activities of their customers and can track what they are looking for, which in turn helps them making more target oriented promotions and offers to increase their sales. Intelligent software which can decide the incentives based on customer behavior can gear up in tempting more and more customers. People might be uncomfortable with this so business must notify the users of their right to monitor their traffic to avoid any illegal activities.

Business which is undertaking to offer free Wi-Fi must ensure that the setup is made in such a way that they do not disturb or interfere their internal network; best practice is to keep two separate network domains for internal and external network, and not granting outsiders the access to your internal network. Providing a free Wi-Fi can give a lot of opportunities to engage with their users and gain benefits.

4.2 Knowledge Management

In each organization people develop some knowledge, and this must be fostered and shared throughout the organizations to maintain the continuity and success of the business. SMEs in Europe are extremely specialized in their work, at the beginning everything runs smooth but as times passes by, the business starts losing it charm due to insufficient and improper transfer of knowledge from one generation to another. Founder members, key people or critical human resources start to retire and the successors are entitled to only the partial knowledge that they leave behind. However, this can be solved by incorporating a knowledge database where every

significant event and information can be stored; this kind of information systems also help us keep track of the problems faced in the past and help combating with them in case they occur henceforth.

4.2.1 Challenges in Sharing Knowledge:

1. Knowledge is power and people are very possessive and secretive about what they know and this poses a great problem in getting the knowledge out of their guardians. Also the fear of losing control also prevents them from easily parting from the piece of information they possess.

2. It is difficult to make an easy and uniform structure to share knowledge and even more difficult to follow it. Organizations are too busy dealing with their present issues that they are not in a position to realize the value of the information until they need it or lose it.

Key Questions to be asked before implanting any knowledge management solution:

- ✓ Where does the knowledge lie in your business or organization?
- ✓ How well do you share knowledge? - "It's not what you know but what you share that matters!"
- ✓ If you do share knowledge, how do you organize it, store it and make it accessible?
- ✓ How vulnerable are you to losing knowledge when people leave?
- ✓ Are you using techniques to spot trends ahead of your competition?
- ✓ Does your organization have a platform to share new ideas and embrace them?

I am listing a few software which can be used based on your needs, budget and capability to implement and configure them.

Confluence, by Atlassian: It is wiki software for teams of all sizes and focus areas - from product development to marketing & support. Give your team a common place to share, find, and collaborate on information they need to get work done.

EXo Platform, by eXo: It is an open-source social-collaboration software designed for enterprises. It is fully featured, based on standards, is extensible and has an amazing design. eXo helps companies connect their employees, customers and developers through social, collaborative and content-driven intranets, websites and dashboards.

Freshdesk, by Freshdesk: It is a SaaS based customer support software that comes with an in-built knowledge base. This product can be used by the SMEs where products and services are provided by professionals and it is imperative for them to share their specific knowledge internally and also with their customers to make them self-capable and decrease service load. Support teams can create knowledge based articles to share step-by-step instructions and guidelines, along walkthroughs and solutions to common problems. You can use Google Analytics integration to get a peek at what people are looking for in your support portal. You can share certain solution articles within your team, with customers from certain companies, log in as different roles etc.

4.3 CRM & ERP

Word processors, Spreadsheets, email clients, browsers are some of the command apps used at the work place. But other than that now there is a whole new category of apps which can boost the business flow and increase the productivity. You might have come across some names like ERP, CRM, SCM, ERM, and CMS which left you wondering. Let's try to understand them one at a time, we start with one of the most important three letter abbreviation CRM, which is said to be the most expensive, confusing and time consuming owing to the different design views from different views.

4.3.1 Advantages of a CRM solution:

1. Generally front end employees are always overloaded with their emails ,A CRM which is designed for emails can group all the emails based on the contacts ,convert them into a conversation and help you to see exactly you want to see and help you to decide when and to whom you have to reply.

2. Help Sales, Sales is the first entry point from where your business starts, A CRM solution puts the leads and deals in the front so that you can track your potential customer and clients. CRM will log each steps of converting a lead into deal. It also becomes very crucial to understand from where and how the deal stood first time.

3. Contacts management, Helps you to organize and keep important details like client's birthday, their current portfolio, position, eating habits etc. These human touch point which counts the most in making a lasting relation. CRM are designed to take notes of the interactions which might prove helpful in the subsequent meetings.

4.3.2 Which is a good CRM solution?

From a dozen of apps available in the market, it becomes difficult to choose the one for the business. Based on user requirements following parameters are important for a CRM solution.

1. Little configuration and easy to set up
2. Easy to understand, neat and clean interface
3. Have unique features which make it worth while
4. Works with VoIP to make it seamless and integrated with communication system

4.3.3 How much Will a CRM Cost?

CRM solutions are for professional businesses and have vast variety of features hence it'll most likely cost more than a normal app. Now most of the CRM are web based solution and provide free account to test all the functionality, once you are sure with the features and bring your team you can pay as per user. It would roughly cost between 15 $ -30 $ / user / month.

4.3.4 CRM and ERP Integration

We are convinced that CRM and ERP are very important for us, did it cross your mind that how beneficial it could be to integrate both of them. ERP systems provide the needed internal

information which we can share with the stake holder while CRM provides the entry point for stake holders to engage them in the organization Sounds something related and cannot make much sense without each other in a competitive and ever-growing business environment. Optimizing the business process as a whole is obviously more beneficial than powering just a single process. CRM and ERP integration projects have been proven that they can provide clear business benefits by reducing the delays which happen in various processes for different department and ensures improved cash flow and agility.

4.3.5. Benefits of the CRM and ERP Integration

1. A 360 degree view of your customer: Know your customer better, this integration allows you to get a complete view of your customer which helps to convert leads into deals .The knowledge also helps you to maintain the customer relationship much stronger and last longer; you will get insights about possible prospects of business and anticipate your customer needs before customer arrives.

2. Better access to critical information: Well integrated system allows you to access information in real time and empower your employees better to solve customer problems without going through different departments. With the touch of a button, they can retrieve inventory levels, shipments, customer financials, order history, returns, payments, pricing, etc.

3. Streamline business processes: The key befits of merging your ERP and CRM software is that it decrease the processing time by streamlining and automates the workflow ,an integrated solution also cut downs the data redundancy and minimizes your bid data problem.

But this integration process is not so easy, as we think for the companies due to the various reasons. Companies have purchased and deployed these solutions from different vendors and created a workaround and customized it for specific applications. Traditional ERP ad CRM solutions have been deployed as patch work of different application.

The reason behind this integration is that there must be some measurable benefit which the organization can attain; it may be in the form of fastening up the order process or offloading some process from the other departments. Here are few tips which can help in making this integration successful and smooth.

1. Understanding the business process view of ERP and CRM integration : The first and foremost step before starting this integration is that we have to think, how our organization can benefit by this integration and improve our whole business rather than just a department.

2. Determine how ERP-CRM integration can benefit end users: It sometimes may be obvious from my experience that what is good for the company as a whole may not be necessarily good for individual employees. We need to put more thought into creating a balance and evaluating the processes and convey the message how employees are getting benefit from this integration.

3. Controlled access: Improved integration indicates better availability of the financial data to the sales representatives or for commercial department, but it's important to understand who can access what and how this data can be manipulated. Companies can reduce this risk by doing

one –way integration where CRM can query data, but cannot change until approved by business process.

4. Build a right CRM-ERP integration team: This is a business process problem that requires both Business and IT to integrate process and technology. Choose a right and balanced set of people who can be the part of this integration; this could be a challenge to decide who will be the part of this process. Having too much and too less people have their own advantages and disadvantages of endless debates or sabotage by department. Also you need some technical capabilities and off course like any other projects it require a strong team leader for governance. Important question needed to be answered during integration is how these system will work, does the ERP system will define how the CRM will work or vice versa. There could be also an issue of single versus multiple instances. In my opinion it's better to have a unique CRM solution that creates a consistent experience for customers that does business around the world.

4.4 Visualization tools:

Big data is becoming a big problem for the companies, but we already discussed about how to properly handle it. However the truth remains that the way data is presented to us heavily affects the ability to process it and derive conclusions.

A good visualization tool can help in following

- It can help the finance professionals to maximize profits.
- Analyze their investments
- Finding new opportunities for the business
- Correct analysis of procurement
- In setting up clear road map for the organization

 Data visualization can provide information from sales, operations, manufacturing, finance and other departments to determine your plan of action for the next level. Key performance indicators (KPI) can easily be observed by the concerned departments. Good and automated visualizations can help operations to identify the bottle necks quickly and find a solution to fix them before it starts affecting your business process. It can help to understand your manufacturing unit efficiently and observe defect rates and variance in products.

There are products available in the market, which provide access to self-service and customizations tools. It is a fact, that employees using visualization tools are able to make more business decisions by using IT resources more efficiently. Complex financial information can be accessed at a go to help management understand the data thus speeding up the process of advancing towards the correct goal. Powerful BI tools can decentralize the organization, optimize workflow and provide CFOs with real-time data access and data analytics. CFOs can get the insights for all the business processes going on and can troubleshoot complex and difficult to understand issues .Companies need powerful financial management system that allow them to accurately budget, plan and forecast and this is only possible when they have such systems in place.

4.4.1 My Data looks Beautiful! Now what?

Regardless of the presentation of data and insightfulness, it's entirely up to us to use the data in whichever optimal manner possible .It is not enough to only make the information presentable, the company must think about it ,take action and repeat the process over and over again.

This is only by undertaking an iterative process. Provided that the analysis is done appropriately, it can surely make a difference and enable us to find clues to improve the operations and processes and gain competitive advantages. Some of my favorite and widely used software by professionals who manage and manipulate data are listed below however there is a wide range of options in the market to choose from with respect to your needs and type of data you need to process.

Excel: It is a very good entry level tool, and can be used to quickly explore data. Most widely used tools and always been the favorite of the accounts and finance professionals. With the new editions of excel -you can do pretty cools and complex things which weren't available in the older versions or needed a lot of intermediate steps to achieve the results back then. It comes as a part of Microsoft Office suite; it can also be directly used from you Microsoft email account and always works pretty well online.

Google Spreadsheets: Google Docs and Google Drive can also be a good alternative to MS excel and serve pretty much the same purpose. Google docs uses the Google chart API to generate charts, so if you become familiar with the Google charts you can directly use them into any application and create striking data visualizations. The best part which I use the most that multiple people can view it and edit it together which makes things easy to explain.

You get register for these products for free when you sign up for the Microsoft or Gmail mails and use them directly from your email accounts and save the data on cloud or on your PC. You can also purchase the office suite to install on you PC and for Google you can register for Google App for the business which gives an option to customize who can use what in your organization.

Fusion Charts Suits XT: It is a huge collection of charts and gauges, data driven maps and well-designed ready to used dashboard to show your data. The components are highly interactive and customizable based on your data .The software comes with easy to use JavaScript API which allows it to integrate with wide variety of your application platform. The best thing about it is the charts, maps and the dashboard works on almost all the devices and platforms.

Wolfram Alpha: It is a powerful computational knowledge engine and one of the hefty competitors of Google for data processing. It specializes in displaying intelligent charts in response to simple data queries without any complex configuration. If you are processing publically available data it provides a simple widget builder to make visualization for you website or reports.

4.5 Cloud

Cloud facilitates one of the greatest outcome due to the SAAS (software as a service).And when you are planning to start a business or wish to upgrade or enhance your IT services there are a lot of important decisions to be taken about where and how your business applications are going to live and run .There are some basic guidelines that can help you to understand these services better. In general SME mangers are still reluctant about believing in something as intangible as the "cloud". And they often ask "why cloud?" My suggestion is "why not?" let us see two main aspects and what they can do for you and then we will decide together what we have to do with these service.

4.5.1 Flexibility:
Procurement of items has always been an issue and requires very careful evaluation of your prerequisites. But how do you deal with the procurement of those resources which are difficult to estimate. Huge investments are made towards hardware and maintenance which makes puts the decision makers into a deeper dilemma, as they are dealing with enormous investments. Thankfully businesses have the facility to procure their IT resources on the cloud which can meet their immediate as well as seasonally varying needs, all they required to do is to make a call and use their credit card.

Cloud is a gigantic pool of these resources from where business firms can take whatever resources they wish to exploit at any given time of the day. We always hear about scaling up, buying and adding more hardware and software resources in order to expand the business but the cloud amazingly has a unique benefit of scaling down. Usually businesses have to experiment which necessitates an expansion in infrastructure and license cost, and in case of any unfavorable event it becomes hard to recover the investment cost in infrastructure, this applies specially to SME which don't usually have other units to cover the cost or reuse the infrastructure. However with cloud you can use the resources on a pay for use basis and can cancel your subscription any time. Undoubtedly cloud motivates SME and startups to try new things.

4.5.2 Security:
Business managers are always anxious about the safety of the content that they put on the cloud, especially the fear of sensitive data getting into wrong hands and their accounts being hacked especially with intellectual properties, so they are adamant about keeping such information within the premises.

Before the banks came into existence, people used to keep their money hidden under the mattress or perhaps in a locker. Initially people were skeptic about the banking system's ability to safeguard our money, but now we transfer huge amounts without even giving it a second thought. We trust them blindly for we know that they have made more investments in security than any other typical organization can do Cloud services can be taken as a technical equivalent of bank for our valuable data. Companies like Amazon, Google, HP, and Microsoft have cloud

infrastructure and can provide the best security available on the planet which you and I cannot afford. Small companies may take months or years to recover from their vulnerability by trying to fix it by themselves. Cloud monitoring services provide faster, value for money services and a secure place to keep you data regardless of company size and demand.

Cloud is a game changer; it isn't just a fad or a buzz word. For any startup, cloud makes resources that were once limited to major enterprises not only accessible, but also affordable. So take a long look at your business plan requirements and analyze potential problems and obstacles - they can almost certainly be solved with the cloud Instead of making huge infrastructure cost.

4.6 Server Virtualization

Virtualization of technology is one of best advancements of IT industry and is attracting every part of the organizational function. It provides economic advantages, easy to manage and relaxed government regulations.

Virtualization is used by a huge number of the organizations and almost all data centers to reduce power consumption, culling expenses, reduce the physical space and land requirements, reduce IT junk. Other than the economic advantages virtualization provides high availability for critical applications, and easy application deployment. It reduces the failure chances and comparatively simplifies critical jobs like migration which are the nightmares in the IT operations. Virtualization abridges the IT operations and allowed IT department to respond faster on the changing Business requirement. It also contributes towards the greenhouse gas reduction and makes corporate a more responsible social entity and combats with the socio-political ramifications of global warming.

4.6.1 What is Virtualization?

Virtualization is a combination of software and hardware engineering that creates Virtual Machines (VMs) an abstraction of the computer hardware that allows a single machine to act as if it where many machines.

Without Virtualization a single operating system or server uses all the hardware, but with virtualization multiple operating systems can use the same hardware and still work as separate server. Server virtualization provides efficiencies and capabilities that just aren't possible when constrained within a physical world. There are many benefits to a business when choosing to implement a server virtualization strategy. The technology available in the market there is no reason to not implement it today; here there are a few major benefits for you if you still haven't implanted it yet.

1. Increases uptime: Most virtualization platforms offers quite advanced features for better uptime and business continuity. Depending on the vendor's requirements they have capabilities like live migration, storage migration, fault tolerance, high availability and much more. These features give virtual activeness, ability to quickly recover from unplanned outrage. With virtualization it's now possible to easily migrate you datacenter to any location in the world.

2. Save energy, go green: Today most of us are worried about the environment and voluntarily participate in events which promote the idea of saving the environment and going green, however as far as the organizations are concerned ,going green isn't a choice ,they actually have government norms along social responsibility to pertain to protecting the environment. Migrating physical server into virtual machines and consolidating them into few physical server will cut off your power usage and cooling cost. Now if we keep "saving the environment" out of the picture for a while, still virtualization has its perks, imagine the amount of money that we'd save. And, I guess there is no harm in getting extra credits for saving the planets.

3. Reduce the data center footprint: In addition to the energy footprint, less the hardware usage, lesser are the networking devices and smaller number of racks needed, which means less data center floor space and smaller land requirements to fit your datacenters.

4. Server Provisioning: Data Migration or server changes can be just a day's work provided that we are already prepared for undesirable conditions like sudden hardware failure of hardware recovery which have the capability of affecting the business unit for days altogether. Appreciatively virtualization enables system provisioning and deployment within minutes, once the new hardware is in place ,the only thing you are required to do with the virtual systems is to copy the files from one location to the other, instead of installing and setting everything anew.

5. Extends the life of older applications: Most of the organizations have old applications running and due to various constraints it is impossible to migrate them to new servers mainly because they are too outdated to be supported by the new OS or hardware or the company or people who created it have gone out of business or ceased to exist therefore makes it even difficult to upgrade these old applications. In such cases virtualization steps in as a savior enabling encapsulation of these application and environment and helps in getting rid of the outdated and relatively less efficient and power consuming servers without losing the applications.

6. Help move things to the cloud: Cloud is going to be one of the most sought after IT solutions sooner than anticipated. Largely, most of us may not see it coming, in order to stay ahead of our time we must be prepared about a change like this and virtualization yet again is a helpful tool in dealing with it. Virtualizing your servers and abstracting away the underlying hardware, you are preparing yourself for a move into the cloud, which will bring along with it innumerable benefits which we can only imagine today because it isn't possible to implement them due to the money involved. Today starting from Specialized Virtual machine manufactures like VMware, Citrus to operating system Linux to Windows companies like Red hat, Google, Oracle, Microsoft every giant has their own product to promote this remarkable technology to help business gain advantages.

7. Reduces hardware vendor lock-in: Virtualization replaces the physical hardware with virtual environments and runs you application on it implying you have an array of vendors to choose from making it easier to switch between models and brands and eliminating the portability issue. You even have the liberty to negotiate with the vendors when it comes to renewal and purchase of the hardware.

8. QA/lab environments : Now if you have implanted the virtualization ,you can use or move that hardware to the QA team for researching on security and quality assurance and have you own set of virtual QA labs.

4.7 SAAS (Software as a Service)

SAAS is Business model of renting /leasing an IT service, it enables you to pay making purchases on the cloud which in turn allows you to use varied services as per your need and exposes you to an unlimited room for scalability. Thus making it one of the best outcome of the cloud technology as we are all aware that the one among the many advantages of implanting cloud technology in our architecture is the amount of money we save. A study by IBM has shown that the companies who implanted the cloud technology in beginning to decrease the cost have also achieved a competitive advantage at greater scale.

1. Cost: SaaS can ensure savings due to various reasons. It eliminates the cost of purchase and installation along with the maintenance and upgrade cost. No huge upfront hardware and software cost to start a new project; SaaS can be downloaded as an application to start managing whatever IT you needs have. SaaS's "pay as you go" model allows business to pay for what they use and eliminates the financial risk of expensive IT resources. SaaS is very much advantageous for SME because it provides access to all high power software and hardware resources that might be not so easy to buy and maintain for a SME.

2. Time: Time is money for people and organization in business and SaaS saves both. Installation and deployment of IT resources through SaaS is very easy compared to traditional model of installation. SaaS software solutions can be implemented in a matter of weeks rather than months. Adrian McDonald, EMEA president of EMC, claims, "The average time for new application deployments will be reduced by more than 20 per cent through the use of cloud technology. While Maintenance responsibilities are shifted from your IT department to the vendor itself."

3. Scalability & Accessibility: Subscription based and "pay as you go" are great features of the SaaS model, it provide huge flexibility to the business .Cloud technology can be scaled up or down to meet your business needs. You only pay for what you use, thus starting up costs are substantially lower when compared to an on premise solution. As your company grows the software is fully scalable. SaaS software also allows more flexibility to integrate with existing software interfaces. No advance notice and waste of time in paper work and using your pc to upgrade/downgrade/cancel your subscription. Additionally, web-based use allows subscribers to access the software easily from any location with internet capabilities.

4. Compatibility: upgrading in conventional systems is a mess due to a number of compatibility reasons. To worsen the situation, version discrepancies between members of your workforce can lead to compatibility issues and wasted time .So you face a tough choice of changing everything or nothing at all. With SaaS however, subscribers can simply log-on to already upgraded services.

Few things which you need to take care while following the SaaS model:

Security concerns: One of the main concerns business is have storing there sensitive data outside premises and accessing them over internet. But as the technology is growing, this concern is becoming less significant, and also availability of top technology companies like Google, Microsoft, Oracle, HP, and Amazon etc. into this service makes it convenient to decide as they can have access to recent technology which the SMEs can't possibly afford.

Performance: SaaS Application is opened on browser which means it's heavily use your internet, which require to have an high speed internet to access these services.

Compliance: Certain countries and industries have regulation relating to where data is stored. Businesses need to ensure they comply with this and implement a SaaS model that satisfies these requirements.

That why it is very important to understand what services can be used from SaaS to minimize its shortcomings. Some of such solutions which are really doing well and can be used to increase the productivity are:

1. Zoho mail: Zoho is a well-known for its CRM service and forms in corporate world. It offers 10 free custom domain email hosting and no credit card is needed to sign up. I particularly the email interface as it has the chat facility like Gmail and Microsoft. The best thing about Zoho mail is the absence of ads everywhere, email and dashboard even in the free service. Anti-Spam protection for email is average.

2. Rackspace Email hosting: Rackspace email hosting solution is another reliable and premium email host allowing users at $2/month. At this price users get 25 GB storage per mailbox and can make up to 50MB of attachment. Users may also buy email archiving at $3/mailbox to keep the automatic backups of all the mails, anti-spam capability is satisfactory, but the service is worth the price.

3. Yandex Mail for Domains: Yandex is most the popular portal with reliable servers in terms of uptime and dashboard features for email solutions. Currently they offer 1000 free email accounts for your domain. The signup process is easy but available only in Russian. However, Chrome's translations will become in handy while using Yandex.

4. Microsoft Outlook for domains: One of the best solutions in the market for email solution with integrated Microsoft world and cloud storage ,automatic sync with your pc which make an email account a complete safe vault for your all your files. They offer good service and an elegant dashboard. No ad like Hotmail and outlook and has a better interface.

5. Google Apps: Of course Gmail is the best free mail service. The business upgrade of Gmail is ad free and has 2.5 times more storage than a normal Gmail account and Google Apps for free. It costs $5/month/user and a good alternative to Microsoft outlook with similar feature.

4.8 Cyber Security:

Everything comes at a price and IT is no exception, therefore we must be prepared to deal with the risks that come along with the benefits of IT. Cyber Security is one of the major concerns of our times and the ones which will be strong and protected will survive, rest will vanish.

The statistics on the cyber-attacks shows that SME businesses have been under frequent attacks due to their easy and simple network and security structure. As IT is becoming more and more prevalent in the business, it is no longer an add-on to the IT budget, rather it has becomes a necessity without which the system is incomplete and exposed.

The loss of corporate data, privacy laws violation are capable of causing total shutdown of a well-established business and this type of instances are not uncommon these days. And this puts the entire organization and executives at risk. Implying that the need of the hour is to arm every member on the team with a prerequisite knowledge about cyber security to take informed decision. Executives, Managers and Team Leaders have to understand more in-depth technological concepts and it's very important for the Senior Executives, IT business manager's innovators to be able to solve the IT security problems and perform following tasks:

1. Able to understand the Cyber security risk with their business project
2. Able to explore new technologies to increase business competitiveness which minimize the risk.
3. Understand the benefits and cost of cyber security programs
4. Updated about the changing information system and treats

4.8.1 Some major Steps for Incorporating the Cyber Security in our company culture:

- ✓ Train your entire staff about safe computer practices
- ✓ Give same concern to cyber security activities for your employee like you give to your surrounding and premises.
- ✓ Train your employee on Good cyber practices (Like not to click links in email or download files from unknown sender, not keep the passwords in there system)
- ✓ Do not provide administrative privilege to regular user, not even to their own system. If you do grant then do a regular check on such specific systems.

These steps do not require any significant amount of change management or employee training but a strong management policy. This also does not means that organization can just rely on this by ignoring their network architecture and security patches, disaster recovery policies and threat management system deployment. These things will always remain crucial, but implanting security measures only through IT department and failing to understand the overall need for cyber security as a core security component of a company is like locking a door in your house by missing the key in the hole.

4.9. Disaster recovery

An efficient disaster recovery system has a realistic and well understood set of goals that are rely on business requirements. A good disaster recovery system spans all the areas from planning to preparation, quantifying risks, business impact analysis, prioritizing and categorizing application and backing up data.

It is very important to consider the disaster recovery system as a necessity and update it on a regular basis owing to the ever changing IT dynamics. And investments should be carefully made ensuring that the organization leverages newer technology which ensures better performance at relatively lower prices.

1. Linking business and IT: Anything becomes an issue of money is involved; however it should be ensured that cost does not lead to compromising the expectations that a disaster recovery system has to meet. Disaster Recovery needs to be treated as an investment. It is an insurance policy.

2. Set up a disaster recovery plan: The plan needs to represent all functional areas within IT prior to, during, and after a disaster. It needs to include applications, networks, servers & storage. The what-if scenarios should also be considered and provisions should me made about dealing with them in case of their occurrence.

3. Updating the disaster recovery plan: Efforts should be made in keeping the plan up to date and necessary changes should be incorporated and it should be made sure that everyone is well aware of the plan .because it is a possibility a perfect plan today may fail badly an year from now because of the dynamic nature of IT.

4. Test the recovery Plan: Disaster Recovery testing is a major issue for most IT departments, but if recovery has not been tested all the way to the application level, most probably problems will occur. The philosophy for Disaster Recovery testing needs to change. Basically the approach used for software quality testing should be adopted, where finding bugs is a positive thing. Finding problems in Disaster Recovery is equally positive as long as these issues are resolved to eliminate problems during a real disaster.

5. Disaster recovery Responsibilities and setting realistic objectives: Clearly defining roles and responsibilities is very crucial as we are talking about disaster recovery; we must consider that most likely the situations would be unfavorable. Any Disaster Recovery planning scenario must consider redundancy of roles to ensure that people are available to cover various responsibilities in the process. Upon an objective examination of Disaster Recovery capabilities and resources, it turns out that the goals are not attainable. Thus it is important to set realistic Recovery Point Objectives (RPO) and Recovery Time Objectives (RTO).

6. Disaster Recovery Risks: Disaster recovery is basically an insurance policy. How much and what kind of insurance is needed? What sort of risks is the organization willing to take? The definition of what constitutes a disaster that is covered by the plan has to be considered. Many recent disasters were floods but various kinds of other weather activity and fires need to be considered as well.

7. Creating backups: Largely for businesses tape backup is still the main medium for disaster recovery, certainly for off-site disaster recovery. Although WAN is a growing popular new alternative, but it might be out of budget for some businesses.

8. Alternative recovery Options: It needs to be clearly defined who - in the case of a disaster - will be there to recover operations and initiate the Disaster Recovery plan. While this is an uncomfortable consideration it needs to be considered nonetheless Even in situations where tragedy is not the issue, it might simply be a case of not being able to physically reach Disaster Recovery sites.

4.10 IT Hardware Leasing

Technology changes, and the burden on companies to keep up with the competition and have the most efficient IT infrastructure, leasing is becoming increasingly attractive. Companies use leasing as a means of acquiring business items for everything from photocopiers to cars. Some firms remain skeptical, however, about the benefits of leasing their PCs. Now the options are even greater - you can lease not only your desktop machines and servers, but your entire technology solution.

Recent researches show that replacement time for PC and IT equipment are becoming shorter and it's a fact that under investment in the IT can pose to be a competitive disadvantage. But the technology comes with the price .Companies having a steady cash flow have no problem with this but SME face major disadvantage here with limited cash flow. Now speaking about the traditional banks they are restrictive about what can be financed or not.

While many companies want the latest technology, it is clear it comes at a price. Traditional bank loans or finance agreements can prove restrictive, with limitations on what can be financed, and a tendency to attempt to treat IT equipment like any other company asset. This has brought up a whole new system which specializes in financing the IT equipment and has overtaken the bank's borrowing business in this field.

Depending on the type of lease, it is possible for leasing payments to be offset against taxable profits or counted as an operating expense. It helps in spreading the cost of the equipment over time to reduce the financial pressure. These flexibilities in payment help to maintain the expenses versus cash flow. The flexibility allows the business to change and upgrade the hardware before the end of its natural lifecycle to maintain their competitive advantages.

At the end of the lease agreement unwanted equipment are returned to the finance company, which can ease the burden of disposal costs and also the issues that IT departments face in disposing off old computer equipment. Of course, there are companies that would prefer to own the items, and gain from any residual worth they may have. Alternatively, companies may wish to keep certain items of equipment for a nominal cost. If you choose a leasing plan that gives you some ownership of the assets at the end of the term, it can be less costly. Here you need to take care that you must have to return all the items and peripherals that comes with the products to

return back ,but few companies also have a new policy for like to like ,where you can return the item of same specification if you are unable to trace the real item leased to you.

In simple words when we hire an accountant we do not pay him 3 month's salary all at once, rather we pay every month .Similarly why should we pay for software in advance ;wouldn't it be wise to pay for the IT resource in the time frame when they are being actually used.

Hardware manufacturers like Dell, Fujitsu ,HP ,IBM and many more are now offering direct leasing to the clients .Same is the case with the Software industry where SAAS model allow the companies to "pay per use" plan instead of buying a complete package. Now leasing has grown to become an expert area of finance, and there are specialist IT finance companies such as Siemens and Syscap which are providing companies entire technology through leasing contracts. Leasing from specialist IT finance companies that covers the entire technology has additional benefits. These companies also have dedicated hardware consultants which can guide you through the entire process and prove helpful in choosing the accurate plan based on your requirements.

There are a lot of benefits of leasing IT equipment's, but few things which must be taken care during this process are listed below

- ✓ Evaluate the installments and negotiate to get a suitable premium amount
- ✓ Ensure that the premiums are made on a fair market value of current equipment, check the price with vendors on cash payment
- ✓ Be clear in what condition equipment must be returned and fair return policy
- ✓ Be clear on who is responsible for the transportation cost for the return of equipment.
- ✓ Get a clear understanding of upgrade terms.
- ✓ Ensure you are clear with the costs and terms of continuing to hold equipment after the end of the lease date, whether you intend to continue leasing the equipment, or due to unforeseen circumstances cannot return items on the stated date.
- ✓ Ensure you must get an advance notification of return date to plan ahead.
- ✓ Make a file /procedure to trace all the equipment in the company
- ✓ Make a procedure for storing all the licenses and manuals and the small peripherals which may or may not are in use but comes with the equipment
- ✓ Policy for who is responsible for removal and clearance of data at the end of term period

Conclusion

I would like to conclude that although SMEs do not get their share of limelight but the fact remains that they employ more than 66% of the European population therefore it becomes a matter of great importance what SMEs need to do in order to stay ahead in the competition; especially when the Developing countries are catching up in the race with cheaper and greater amount of workforce and resources.

ICT i.e. Information and communication technology which earlier was merely an acronym is become the most vital necessity for everything .An layer of IT has been made over the value chain system and redefining each process. Now IT is permeating the Value chain at every point and transforming the way values activities are performed. These basic effects explain why information technology has acquired strategic significance and is different from the many other technologies businesses use. In today's cyber era ICT plays a key role in increasing the productivity by speeding up the information transfer. However, successful implementation of ICT needs a clear understanding of the company's goals and target. Because in most cases it wasn't the lack of an ICT but the absence of the correct ICT at the correct place create the underperforming result.

After going through the contents of the book I'm sure "why do SMEs need to invest in IT" is no longer an unanswered question; in today's scenario it isn't really a choice it's a necessity, IT provides the much needed scalability to the business and not to forget its cost effectiveness. Thus it is high time that companies have to realize, IT is no longer related only to fixing the PC or maintaining a server, it is a whole new dimension altogether. So efforts should be made by all means to incorporate IT in the business and at the same time be prepared for the dangers that come along with the array of advantages. By building a complex IT system by integrating it with the Business Process companies can enjoy the benefit of scale and specialization while making the system slow to be replicated.

Even after realizing the importance of ICT, it is a rare scenario in SME that the decision making power rests in the hands of an IT manager. It is still seen that the IT decisions were made by the finance managers. I understand that while visualizing everything is a good idea, but as soon as the money is involved everything becomes a distant dream. But as I quoted earlier looking closely into the situation can prove to be a great help in solving prevailing issues ,like we did by digging deeper and analyzing the past data and requirements related to the company's humongous communication bills ,and saves *24000-30000* thousand euros yearly. While in the other cases thousands of euros have been saved by identifying and implementing new technologies and renewing the contracts on the right time. These were a huge price paid for the technical and business lag. It is vital to update the contract and keep up with the changing technology and innovations.

Moreover, breaking free from the traditional employer and employee pattern and working as a dynamic team where everyone contributes and proposes new ideas is the need of the hour. Productivity, collaboration and interaction, resourcing, cost management and efficiency and optimization and the 5 main segments which need to be handled with great care in order to excel in business and how IT can improve these areas to create unique advantage for the companies is described in details in the paper .

We are living in times where cheaper replicas of everything from computers to flasks are easily available. So to create designs and products which can't be imitated is a challenge and that's where the resource centric organization of the company pays off; because greater number of ideas would generate better products which are less likely to be imitated. Process, Path and positions are the three dimensions that help to determine distinctive competence and dynamic capability of an organization Collaboration of the IT and business managers can lead to better decisions and learning the importance of interaction within teams and incorporation the feedback mechanism in the companies is quintessential. Answer to the question what we can do, is reorganization and deciding how IT can be included in the processes to achieve the long and short term goals.

It's about having WIFI at your business place increase your sales or Solving Knowledge management is explained and looked into the paper. As employees are hesitant to share information and eventually the information is lost which otherwise could perhaps prove helpful, so storing of information and ensuring availability of the relevant information to the employees has become necessary to take informed decisions; looking at the past present and the future perspectives .IT systems can be installed to store the company's knowledge; at the same time care should be taken about what information is accessible to which employee. Customer relationship management i.e. CRM and ERP can prove very helpful in enhancing the productivity but Integration of CRM and ERP can lead to greater benefits like providing a 360 degree view of the customer and better analysis of the critical information after integrating the data the processing of data needs to be done; for which Google spreadsheets and Excel etc. are available.

Cloud is a recent and very fast spreading innovation; which enables to store company's information virtually therefore saves cost and time and maintenance, owing to its flexibility and security. Technologies like Server virtualization are providing efficiencies and capabilities that just aren't possible when constrained within a physical world. There are many benefits to a business when choosing to implement a server virtualization strategy like saving energy, server positioning, increasing the uptime, reducing hardware vendor lock in and many more .Another feature of the cloud is the SAAS business model which enables you to make purchases on the clouds and avail services saving money and time and ensuring scalability and compatibility. These technical advancements are providing us unlimited room for growth without worrying about the bottleneck of the IT resources. However security and compliance should be carefully considers while opting for this model. A study by IBM has shown that the companies who implanted the cloud technology in beginning to decrease the cost have also achieved a competitive advantage at greater scale.

More the IT is getting incorporated into the businesses, greater are the threats are being reported, It is now not enough that cyber security initiatives are only taken by the IT department it's something which every employee of this century have to work on and to fight back as much as they can. We are stepping to the era where the world wars can won by Cyber-attacks not by

bombs; so the need is to get into but with caution and making sure that the company's data and information are backed up properly and a cyber-security mechanism is in place and properly updated; all this now becomes the responsibility of the IT as well as business managers.

Prevention is truly better than cure; but sometimes situations go out of hand; like in case of a disaster, this can be anything from a man made to a natural disaster. The companies must be well prepared for it, Disaster recovery plans should be properly laid ,alternate recovery plans should also be made ,then each individual should be assigned responsibility and how and what should be done and by whom should very precisely mentioned if a disaster strikes. Investments sometime become a bottle neck for the companies which stops them to upgrade their technology on time and they become prey of the cyber attackers or loses there productivity due to inefficient systems , but now IT Leasing is a relatively new technique in the IT field, where rather than purchasing new IT supplies from computers to keyboards ;companies can lease them hence reducing the cost considerably and there is flexibility of how and what kind of a lease company choses to follow.

In the end I would like to say that each company is different and specializes in different products or services irrespective of that, each company needs IT to sustain its business and most companies have started paying attention to it as well; but the main challenge is to identify the specific requirements of the company and make a customized strategy which works best for the company.

This paper is the result of my analysis with realistic approach for the best practices focusing primarily for SME, and It aims to serve as an initial guide book for the Business as well as IT managers to incorporate the IT infrastructure in more involved, cleaner and cheaper way .It can introduce new and easy to incorporate methods, business models and technologies which can make business more profitable, efficient and ahead of its times.