Critical Issues in IT - Management

"Social Implications of IT - Management"

Meta about this document:

- This document is based on the book Making IT Happen : Critical Issues in IT Management. The content of this document is to be used for educational purposes.
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Foreword

This document has been based on the textbook “Making IT Happen: Critical Issues in IT Management” by McKeen and Smith and the sessions provided at the class “Critical Issues in IT Management” at Copenhagen Business School.

I want to thank Helle Zinner Henriksen and Gregory Gimpel for their good lectures that handled the relevant situations SMEs and corporations would need to cope with in the current and in the future.

Thereto I want to thank Amira “*Shakira*” Huessain for her feedback on this compendium.

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The IT Department

The following notes are from chapter **one** in the textbook.

Short resume of this chapter

This chapter deals with how the IT – department and Information Technology has made an impact on businesses in the past, in the current and in the future (within a five year time frame).
The chapter deals with how the role of the IT – department has changed and how companies view the IT – department in the 80s, the 90s and the 2000s. One thing can be concluded from the chapter and that is the IT – department has become more business orientated and in the future many companies would take a look at the IT – department and focus on how it can contribute to the company's products and services. Thereto the chapter deals with how the future IT department will enable organizations on mobilizing their strategy instead of just being a simple support department.

Important Note Regarding the World View of the Book

In general the book only predicts the tendencies five years ahead of the time the book which was written in 2003. This will say the advice in the book refer to our time and the predictions are therefor more like the current; however this notes will be loyal to the book and therefor the advice and predictions in the book will be mentioned as being in the future.

The Role of the IT - Department

1980s

The IT – departments have been viewed by businesses as a department that stood for providing tools to the other departments. Perhaps the IT – Department would provide a help desk where the users in the organization could contact if they had any problems with using the computers.
The users where often treated as an object and evolved in the treatment and the organizations used the technology as a sort of office automation i.e., payroll systems, word processors and perhaps usage of spreadsheet to handle the basic bookkeeping.

The core mission of the IT – Department was to handle the technology management, operation management and vendor management was part of the responsibilities of the view of the organization.[1]

1990s

The IT – Departments is viewed as a form for tool for facilitating re-engineering of the

1 Ibid., 5-6.

organization. Most of the re-engineering projects where carried out as revolutions instead of evolution. The core mission of the IT – Department was corporate change[2].
Responsibilities for the IT – Department have increased to include:

- End user computing;
- education and training;
- data management;
- strategic systems;
- vendor relationships;
- system planning;
- strategic systems;
- corporate architecture;
- managing emerging technologies.

The IT staff in the 90s can be characterized as being skilled generalists.

2000s

The IT – Department will consist of so called Business Technologist that are generalist that will make use of business strategy combined with other resources. **The core mission of the IT – Department is Corporate transformation[3].** Thereto the responsibilities of the IT – Department increased to include:

- Network Management;
- E-commerce;
- Business Integration;
- Resource Management;
- Risk Management.

One of the core impacts of the IT department will be the boundary-less office, where members of the organization doesn't have to come into office to due their work; these changes have significant impact on how the members of the organization interact and thereby how information flow in the organization.

2 McKeen and Smith, Making IT Happen: Critical Issues in IT Management., p. 6.
3 Ibid (of above) .

Business Development and IT

The IT – Department is viewed as a place where business is optimized not only supporting the business needs and adapting to new market trends but will be the leading drive for new business and change in the ever change environments the organization will face. The IT will in the 2000s become more business orientated so IT can enable the organization to achieve its goals (mobilization of strategy). The staff in the IT department will transform for technological specialists to skilled generalists into business technologist in the 2000s.

The Social Impact of Technology

The following notes are from chapter **two** in the textbook.

Short resume of this chapter

This chapter deals with how the Information Technology make an impact on how the work that is done in the organization, the social structures of the organization (the formal parts i.e., hierarchy), the work life of the employees and the issues of management. According to research in the field of sociology work at home might lead to insecurity among the employees since they feel in some what that their presence at work make them noticed and the informal information will reach them easier by being at the work place. The employees aren't the only one who have to adjust to the social implications of technology, leaders do also face a challenge in informing members of the organization and making use of the right resources in the right time. The flow of formal information might thereto be complicated since the receiver might interpreter the information differently when it is in writing or come by videoconferencing instead of being face to face in reality.

Organization

The impact of Information Technology will result in a flat organization where the the middle management has been cut a way since the Information Technology has made it easier to summaries information for top leadership. The organization has also been put in to a different context where the IT department has a leading role on how the organization is formed, what tools the employees have to use etc.

The impact on organizations has resulted in the networked organization where project groups are networked with each other sometimes in an extent that the company look appear to be one company from the outside (to distribution channels and customers) but in reality consist of many loosely coupled departments and perhaps multiple companies working to getter to deliver the value proposition to its customers. Information Technology has also lead to actors in the value chain for each company are connected via interorganizational ERP systems or systems that make information interchangeable between multiple organizations.

For the internal organization structure it will also enable smaller organizations (e.g., Small - Medium Sized Businesses) to draw from the same benefits as the larger organizations with out losing its benefits of being lean, flexible or creativity[4] (the before mentioned is in relation to).

4 McKeen and Smith, Making IT Happen: Critical Issues in IT Management, p. 23-24.

Management

Leadership face the problems of how to manage the different resources / assets the company has in their sphere. The problem the focus group reports about deals with how to handle the human resources and information flow so the employees are informed about the current situations in the company:

- **Making connections.** Employees working from home might feel that they don't contribute to the business success. Therefor it is the managers duty to make connections to the tele employees and inform them by e-mail or other way about the news (development in the headquarter). Thereto the managers are in the dilemma that they might favor those workers that are placed at the office or they might favor the tele workers. The employees need to be trained in how to collaborate with tele workers so bottle necks of information doesn't occur and work can be done more effective.
- **Leading and modeling.** HR – policies must include a commitment to make alternative working arrangement successful. Because of the social implications of the technological impact the company should give the employees some time to consider the choice for being a tele worker.
- **Communicating.** Managers have a tendency to only communicating about tasks to the tele workers; however the managers should focus on how to improve the communication on all levels of the organization to cope with the needs of the environment of the organization e.g., tele workers working at different times at the day and on different locations. Thereto the managers and the organization needs to introduce to the employees that digital information is “okay” to make use of; however the organizational culture is hard to change and it is hard to implement tele working from a top – down approach.
- **Building trust.** Employees needs to build two kinds of trust. The first one is personal trust which deals with people trusting their co – workers and managers. The second one is competency trust that is build when the employees solve the problem situations together. It is the managers responsibility to make both competencies grow within the organization.
- **Relationship building.** Relationship building is best constructed via face – to – face communication and it is the responsibilities of the manager to help the employees to construct the relationship among the project teams and since the future will lead to more virtual teams then it is up to the managers to create the face – to – face relationships. The chapter refer to that some companies have a weekly meeting with the project teams where the members of the virtual teams needs to come into the organization for coordination and

socializing. Other methods such as video conferencing and tele communications such as phone calls, chat and personal websites[5] can also be made use of.

The chapter give the manager three advices

- Alternative work must be designed for each company.
- Invest in tools, training, methods and techniques to support new forms of work.
- Work from a holistic approach. It is important to focus on that the different approaches initiated by the company doesn't sub optimize.
- Expect staff members to do their parts.

Work Balance and Human Resources

Current research indicate that current employees have significant problems with dealing with how to adjust to the "physical" work force since they have a feeling that they need to be at the company's disposal 24/7 which in the end might lead to stress and other work related diseases.
The book focus on the responsibilities of the Human Recourses department that should focus on development and the well-being of the workforce. *More information can be found in the table 2.1 at page 27.*

Different forms of Work

- Telecommuting: Workers occasionally work from home.
- Hoteling: Workers who only occasionally come in to the organization and because of this they only need some free work space in the time they are at the organization. This means they need to reserve a desk or simply find some space at the organization.
- Tethering: Mobile and wireless technology enables the employees to move around at the organization; however they come to work regularly.
- Home Work: Employees work from a home office and only periodically meet their co-workers.
- Mobile Work: The employees are at out of the office most of their time and interact with people in other organizations and are located physically at the other organizations.

5 Ibid., p. 21-22.

Case: No Mails 4U

Phones 4U is a business that sells mobile phones in Britain, mostly city orientated and according to case the organization has made use of e-mails for social communication as well as communication for business. The leader of the company decides to abandon all internal e-mails since he believes that it would help the organization to increase productivity for each employee with up to four hours a day. The question then became what might be the preferable to do. Would it be a wise idea to implement the suggested ban of internal e-mail?

- First of all we should learn more about the organizational culture.
- Second of all we should learn more about the alternatives such as the usage of Intranet to replace redundant e-mails.
- Third of all we need to know what kind of knowledge strategy the organization has embraced.

In my opinion it is not a good idea to shutdown internal use of e-mails since a lot of the e-mails might include information that might help sustain the corporate organizational culture therefor a ban of such might lead to protests and sabotage of the communication lines in the organization.

I believe the information available the Phones 4U should put up an Intranet and an create the necessary motivation for the employees. In this way many of the redundant business orientated e-mails eliminated; however it needs certain process changes and certain cultural changes. Depending the need to change Kotter's eight phased plan should be put into usage.

According to Helle Zinner Henriksen, Associate Professor at CAICT, most Intranets are used to check out the daily menu in the company cafeteria. In other words an organization Intranet clearly has it's advantages but also disadvantages.

Managing External Relationships

The following notes are from chapter **three** in the book.

Short resume of this chapter

The chapter deals with that the pressure from the environment of the company and the change readiness needs to be controlled and coordinated with business strategy to avoid implications of lock in on software, redundant work and waste of resources. Management of external relationships would include control of vendors i.e., software providers such as Microsoft, Apple, Oracle and a like and hardware vendors and external consultants.

The chapter mention examples of situations where external consultants have been hired by the same company in another department after they had been fired for incompetency. Another example of waste of resources is a company that had developed a sufficient requirement specification but hadn't informed the external vendor so redundant work was created which resulted in an extra cost for the client.

The Fundamental Dilemma

Coase (1937): why is there not only one firm in the world? Make or buy? What do you make in your company and what do you buy (economies of scale; specialization; the cost of people and the 3 Cs which stands for the transaction cost: **contact, contract and control**)? The cost of the 3 Cs will lead to the fact that there are more companies in the world. When will we establish a business unit or establish an external relationship.

Example would also handle the lock in for the different suppliers.

Three things that justify core competencies

- Access to many markets.
- Uniqueness of your product.
- It can be leveraged widely to many products or markets.

And where does IT integrate and stop?

- Outsourcing is to narrow a term when it come to the term of IT. According to the book. The delivery metric is sustainable for the outsourcing argument[6].

6 McKeen and Smith, *Making IT Happen*, 35.

External Relationships

It is hard to define external relationship and according to this chapter it can be everything from end user training and computer maintenance to organizational development; however the chapter defines the external relationship as something that has been negotiated but it doesn't mean that both parts interpreter the contract the same way.

McKay believes that there are different forms of outsourcing and insourcing. According to her writings outsourcing companies normally will lower their service after five years.

According to the chapter there are three major categories of relationships and how the organizations collaborate on projects:

- Product which is a physical product.
- Service which is process orientated.
- Partnership deliverables as a result of joint venture partnership.

For examples of the different types of products and services then look up at page 35.

Thereto there is two different types of delivery mechanisms:

- Project – delivery. Those deliveries that are handled like projects.
- Time – based delivery. Relationships managed as a time service. The relationship ends at a specific date.

When the question come to if the company should choose between buying services outside the company or developing it self might be up the importance of the project and when the organization needs the result of the project.

Strategies for Managing External Relationships

1. **Learn from the business about External Relationship:**
   Since the Business has a lot of experience on outsourcing then it might be possible to make use of the same techniques and experience. To do so then the following six questions should be taken into consideration:
   - Do they understand your business?
   - Do they have the same priorities?
   - Do they understand the “non-specified” issues?
   - Do they have the urgency?
   - Do they anticipate what you need?
   - Do they care for your budget for your budgetary constraints?

2. **Make Relation Management Part of Your Strategy:**

   It is important to manage the different external relationships and to make them compatible with the IT strategy and the business strategy. To do this the chapter recommend the following three steps:

   - Make the external relationship management a recognized part of the IT strategy. This can be done by creating procedure about how the organization should deal with contracts, assumptions on how contracts should be written and creating templates for contracts.
   - Create the focus of the responsibility which means that a person within the organization should be appointed to be in charge of the external relationship so there is a centralized person who can identify the vendors and handle them properly to avoid bad vendors to come back.
   - The IT department must be educated to understand what is to be handled internally and externally. On each project the employees and middle managers must be informed on what their part of the project is so redundant work won't be created!

3. **Make Contract Management a Core Competency:**

   The chapter note that some organizations make a central unit that deals with all contract questions request and deals with all contract information requests. This should give the organization an overview of the contracts the IT department and organization has so contracts will not be discovered randomly on the desks of the employees.

   The chapter does also note that some organizations do hire contract managers from other organizations to assist them with the contract management; however this approach might lead to the organization won't learn from the experience.

4. **Consolidate Your External Relationships:**

   The chapter note that the focus group of which the book has been based on suggest that it would be beneficial to do the following:

   - Reduce the number of service providers.
   - Encourage longer term partnerships i.e., working towards time driven delivery rather than project based delivery.
   - Outsource complete projects when the organization can benefit from it.
   - Utilize the vendors staff when package software or solutions are purchased.
   - Buy package solutions or buy from vendors instead of using the resources to build your own solutions.
   - If it can pay of then outsource the entire application portfolio; however this might lead to

a vendor lock in.

5. **Establish the Terms of Reference for Consulting Partners:**
   The chapter note it would be desirable for the IT department to outline a standard template for contracts. The advantage by using such a document is that it will promise both parties a long time partnership and it will evolve to become the standard document for external relationships. The document should contain the following:
   - The principles of the relationship.
   - The external provider's role and the responsibilities.
   - The organization's role in and responsibilities.
   - The fees and expenses.
   - Mechanisms for managing the relationship.

6. **Build a Preferred List of Partners:**
   For composing your list of preferred partners then the following parameters should be included:
   - The Provider's IT skills.
   - The provider's guaranteed success rate.
   - The provider's discounts.

Besides that the willingness of the provider to sign the contracts as mentioned in #5, the more willing they are the better for the organization.

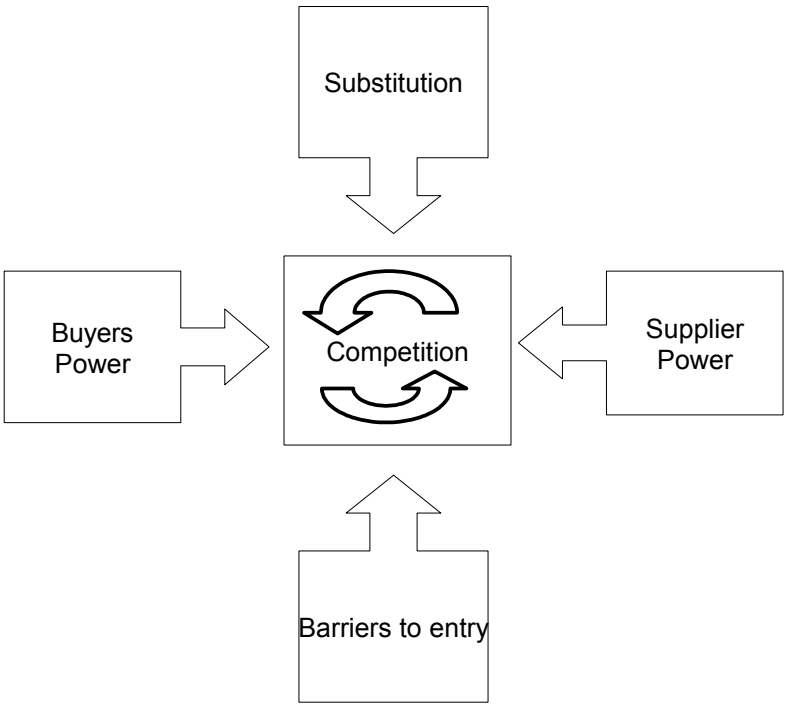
7. **Beware of Potholes:**
   - Losing staff to external providers. The external providers normally give their employees more in salary and since the employee's knowledge is the main asset of the IT department then it is a pothole if the external providers recruit the IT staff .
   - External providers are booked up. The organization might face the difficulty that the external providers aren't available they might be booked up with orders / projects from other companies and even from the organization's competitors. Since IT has become a strategical issue then it might lead to a competitive disadvantage.
   - Losing Expertise. The more systems the organization outsource the more likely it is that the IT employees will find their job boring or meaningless and therefor they want to find another more meaningful job. This means that the organization will lose expertise.
   - Losing Control. The more activities that are outsourced the higher the potential that the organization will be losing control to the vendors. It is an objective for the IT department

to stay in control of the vendors and thereby the relationships.

- Culture Collision. Since the external vendors are hired for their expertise then their way to do work and to interact with the organization might result in cultural complications. These problems are normally a result of the vendors lack of insight to the business and to goals of the business and of course the organizational culture.
- Shirking responsibility. The avoidance of responsibilities might include that the organization "forgets" that it is in control of the vital processes such as IT functions. This forgetfulness might be triggered by a high degree of outsourcing to vendors. According to the chapter the organization can outsource everything except the responsibilities of the organization.

Perspectives

The chapter largely refer to theory of Michael E. Porters five forces on how an industry develops and this should the organization develop its strategy according to that. Note the reference to supplier power and consumer power in this chapter. Besides that the chapter note that the organization should develop core competencies which is also dealt with in "Competitive Advantage".



Knowledge Management

The following notes are from chapter **four** in the textbook.

Short resume of this chapter

The Chapter deals with how knowledge, information technology and business development and competitive advantage can be combined. The chapter deals solely on how to benefit from knowledge management and by this the chapter only focus on business organizations.
The chapter builds up suggestions on how to develop, spread and standardize and embed the knowledge in an organization. *I do have some criticisms of this chapter see below*.

Criticism of chapter

This chapter tries to call for the importance of knowledge management; however it fails in its definition of the Knowledge and it fails to choose which framework it focus on. Thereto the chapter fails to explain a proper knowledge strategy i.e., what organizations should focus on if they make use of an economies of scale or advanced project orientated. This is a very important aspect of choice of technology.
The chapter refer to two kinds of organizations of which the Business organization is to be preferred working with since this kind of knowledge will lead to competitive advantage.

The knowledge Organization

The chapter claim that all organizations are knowledge organizations the question is on what degree the organization make use of knowledge. The tendency is more and more organizations will focus more and more on the knowledge they can gather.

Knowledge is a new asset for companies and knowledge is not physical and most knowledge is tacit.

Strategies for Knowledge Management

1. **Generating Knowledge.** The chapter note two different ways to generate knowledge. The first one is by hiring external from the company meaning that the company go for the brilliant people and those with extra ordinary skills that can contribute to the company's value stream. The other way would be by motivating and encouraging the employees to come up with innovative ideas.
2. **Accessing Knowledge.** Depending on the strategy the organization has chosen to share and codify knowledge has a major impact on what sort of technology the organization should

primarily focus on. If the knowledge is mainly tacit then it would focus on face to face communication i.e., tele conference technology or technology like Skype where the members can contact each other and exchange views and knowledge. Typically tacit knowledge is used when the services or products are highly complicated and differentiated. The other end of the scale is lesser complex projects that can be handled with codified knowledge such as reports and tutorials. Examples of the lesser knowledge demanding knowledge projects would be bookkeeping and business analysis.

3. **Embedding Knowledge.** Information systems can be applied to categorize, analyze and represent the knowledge to the those people in the organization who needs access to the information or knowledge. However technology isn't enough to embed knowledge in the organization. The organization needs to create a learning organization. Besides information systems and broadcasting strategies where e-mails are send to all members of a department or organizations online forums or databases are more common; however the information located at the forum or on the database would need to be quality checked by a knowledge officer.

4. **Facilitating Knowledge.** Mall (1996) suggest the following guideline to promote facilitating knowledge in the organization:
   "*First, companies should encourage constant experimentation, team-based learning, and socialization. Secondly, the leader must empower the process and serve as the driver of ongoing renewal of intellectual capital. Finally, and most most importantly, there must be a transport articulation of the value of knowledge to the firm's long-term competitive posture.*"
   The chapter refer to a method of which a company builds up the following to facilitate knowledge. 1) A well articulated execute vision and strategy. 2) A value system of knowledge sharing. 3) A management system for knowledge management.
   As mentioned in this sector it is of a great importance that the problem of knowledge sharing most be solved with organizational tools and not solely with technology.

5. **Generalizing Knowledge.** According to Mall (1996) is the only real competitive advantage a business organization can achieve is the rate of which the organization learn. It is therefor vital that the organization embed the knowledge in it's processes. This can be done by implementing the knowledge organization such as 1) No bounds on employee learning. 2) The program should focus on the whole "employee". 3) Knowledge Management is the key component. Even then the following conditions need to be fulfilled:

   - Building a knowledge culture.

- Capturing the right knowledge.
- Adopting the right technology.

Case: Mrs. Fields Cookies

- The problem is the KM systems are slow to adopt the new knowledge on how to bake cookies that are more health orientated.
    - Incompatible KM systems.
    - Shift in customer preferences.
    - No adoption to the market.
    - Had fallen into bankruptcy.
- Internalization of knowledge (according to Nonaka).
    - Generalizing knowledge and apply innovation of which is business orientated.
    - Accessing knowledge.
    - Representing knowledge and embedding knowledge.
    - Facilitating knowledge. Knowledge network and maintenance.
    - Generalization of knowledge. Perhaps there was organizational learning.
- KM system with “personality” which create trust in the same time it might create vulnerability.
- What is important in this case is the maintenance and updating and adopting.

Risk Management in IT

The following notes are from chapter **five** in the textbook.

Short resume of this chapter

The chapter deal with how to manage risks in IT management. The chapter identifies as financial risks, technology risks, security risks, information risks, people risks, business process risks, management risks, external risks, risks of success. Thereto the chapter introduce a metrics to manage risks.

Definition of a risk

Boehm's definition of risk is : “The possibility of loss or injury”; however Billington (1997) points out that risk also create potential in other words risks doesn't need to be negative but can also be positive. Billington points out that a risk can be the following for an organization:

- A hazard that must be minimized or eliminated.
- An uncertainty about which path should be taken and which must be studied to reduce the variance between anticipated outcomes and actual results.
- An opportunity for growth or improvement, which must be assessed to determine how much innovation, initiative, and entrepreneurship should be exorcized.

The major change in applications and the surroundings of the organization are the two most important risks the IT department faces today. The chapter note that IT projects are usually those considered a major risk by IT managers.

Risk Management

If companies don't make use of risk management then the company will *constantly be 'fire fighting',* meaning that without the proper management and risk identification then will the organization as well as the IT department not be able to build a platform able to handle the visions and strategy of the future management.

Risk management deals with how companies identify, evaluate and plan to handle risks. The method mentioned in the chapter is as the following[7]:

1. Identify the risks involved in a particular initiative to determine what could go wrong.
2. Evaluate the organizations exposer to the particular risk.

7 McKeen and Smith (2003), Making IT Happen: Critical Issues in IT Management, p. 62-63.

3. Dealing with the risk.

The risk management process is to deal with future problems. *Remember that risk can both be an opportunity, a risk, a hazard and uncertainty and the risk might occur simultaniously.*

Financial Risks

- Normally IT projects are evaluated wrongly. They are evaluated as operation processes i.e., via the usage of Return of Investment. Companies might need to invest and keep investing in an IT project for being able to make benefit from it later (opportunities).
- ROI is a significant factor to evaluate IT projects but shouldn't be the only factor to use to evaluate IT projects.

Technology Risks

- There are significant risks when dealing with technology. To mention a few scalability, performance, stability and lock in. If lock in occurs then the organization might face high costs since the providers might take advantage of their lock in and perhaps even their monopoly of solutions for that particular lock in.
- The focus group of which the basics of the book is based claims that organizations more and more focus on risk of operational failure since these failures might lead to loses of market shares. Since the organization has become more and more reliable of automation of the different processes in the organization.

Security Risks

- Besides direct intrusion to the information systems or data systems in during it's development and daily operations other forms for security have arisen. Focus is on the network between organizations in the supply chain. Thereto come the danger of information coming to the wrong hands in the organization i.e., sensitive information about human resources in the organization might lead to conflict with one more more groups in the organization. A good example of such a security risk is information about salary.
- Active protection is becoming more important since intrusion needs to be stopped while the processes are running.

Information Risks

- Since instant information is becoming more vital to the organization is a part of their delivery forms and the expenses of distribution it has become more vital to insure the flow of information.

- EPR systems combined with the website (e-Business) the validation of the data is important since information about the customers, suppliers and inventory is needed to handle the precise flow of goods in the deserved time. If the information turns out to be outdated un - validated then management decisions might be based on wrongful data.

People Risks

- Since people react differently on the implementation of information systems they need to be considered a risk as well. Managers have a tendency to exclude the employees (humans) as a risk.
- The way to handle "people" as a security risk is to involve them in the decision making and of course to focus on building the right condition for need for change i.e., the usage of Kotter's eight step plan.

Business Process Risks

- Risks of that mismanagement will lead to lack of flow in the company might lead to the shutdown of the company. This insecurity normally occur if the top management of the company is out of touch with the daily operations. The before mentioned is according to Yetton et al (1994) an increasing risk for businesses.

Management Risks

- Weak or incompetent leadership has it impacts on the business and thereby it is a security risk for all organizations that weak management might overlook business opportunities or underestimate the value of technology combined with business process.

External Risks

- The providers might be a risk since they might not be aware of care about the organizations resources, organizational culture and or other problems and situations. If the company decides to outsource a solution to an outsourcing company then it will result to into lesser control with the software and system portfolio.
- The risks deals with that the organization might face with expensive contracts and a deteriorating service and then the risk of lock-in to the outsourcing partner and their system portfolio.

Risks of Success

- If a company has to much success then it is in the danger zone of expanded beyond capabilities. Because of the success the organization is not able to re-organize the resources

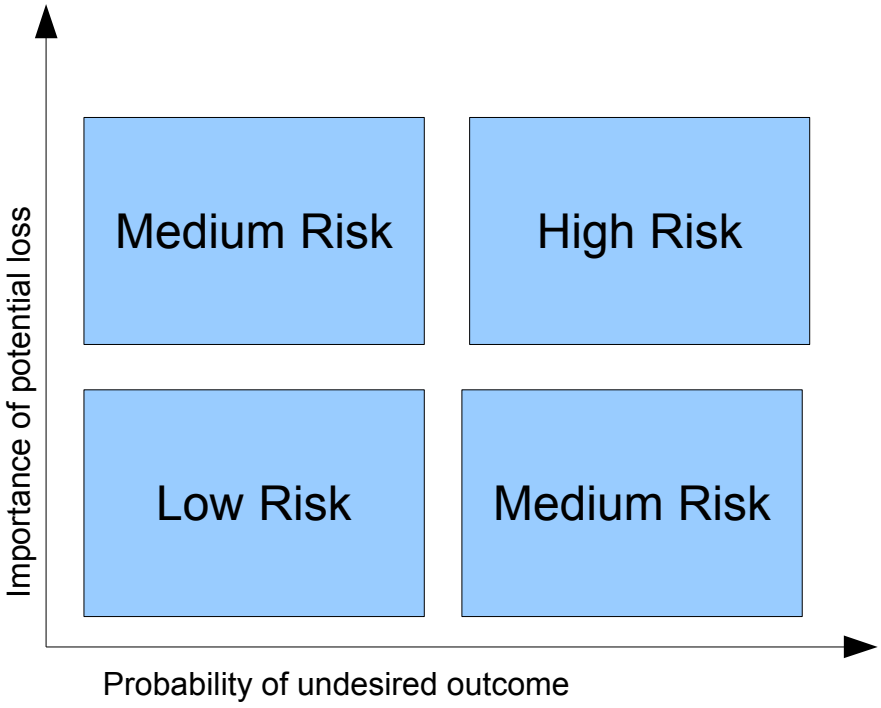
and therefor the organization will run out of resources.

- In case of the operation succeed beyond the expectations. Do the organization has the capacity to handle the success?
- Greg's example of the music videostream company which went out of business because ten times as many users made use of the service compared to the initial expectation.

Risk Metrics for Analyzing Risks

The chapter introduce the risk metrics to analyze the potential likelihood of risks and how to plan around them. To calculate the potential for each risk then you have to time the likelihood of occurrence of potential impact.

Risk Factor	Likelihood of occurrence	Potential impact
#1		
#2		
#3		
#4		
#5		



Important

Remember to use a holistic approach to the risk management. Identify the risk but remember you do also need to assign responsibility to those persons who is in charge to handle the risk management to avoid centralization and bureaucracy. Remember to make use of retrospective. Impact and likelihood is an important approach.

Achieving Effective Change with IT

This chapter is based on chapter **six** in the textbook.

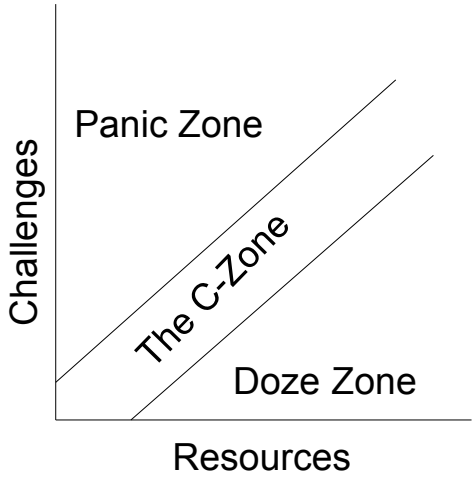
Short resume of chapter

This chapter deals with how to change the organization in to the desired from the IT organizations point of view. The chapter make use of Kotter's eight phase strategy to change an organization; however the focus group do prefer evolutionary change in the organization compared to revolutionary change. The chapter introduce the change model where the organization can be judged and later developed by. The chapter note that a long range of parameters needs to be fulfilled before change can be implemented successfully.

The Change Ready Organization

The organization might be in the right state of metabolism which might indicate it is ready for change. When an organization is ready for change then it see change as a positive and look forward to the benefits that might come from the change and assume the changes will make the organization more able to cope with the changes.
In the other end if the changes require greater knowledge, effort, skills or speed that the employees can cope with, then it will lead to chaos and panic.

The chapter introduce the following model for change:



Challenges of Change

1. **Vision.** Every change need a vision. The first thing that needs to be done is to identify the things that needs to be done differently; however simple vision statement and a simple silver bullet agenda is not preferable in change management according to the focus group. The focus group members did agree on that it would be preferable that the need for change come

button up and not top down. *Lewin* note in his theory on group decision that every change needs that culture most be unfrezed, moved and then freezed; however these solutions can only be provided in organizations that have close connections inwards and not loosely coupled organizations that are desirable in these situations.

2. **Mode.** Mode is the way the organization handle the change. Does the organization believe the best way to implement change is by a revolutionary approach or would it be by an evolutionary approach. This is a context framework.
    1. Revolution. Sudden change.
    2. Evolution. Step wise change.
3. **Type.** There are two different modes to implement change. The first one is an evolutionary approach and then the revolutionary approach. According to the focus group they would prefer an evolutionary approach.
    1. Case would be the IBM first major firing which resulted in loss of loyalty.
4. **Impact.** The social impacts of IT might first lead to superficial change i.e., structure in the organization but it might in the long run lead to deeper change where psychological and social dimension.

Major resources of change

- Technology which consist of the tools i.e., ERP systems, computers and the office suits.
- People which focus on corporate. i.e., the HP example where the CIO was fired because she initiated a process that transformed the company to the better.
    - Culture. Corporate culture as well as subcultures in the organization.
    - Skills: People got skills and you need to keep in mind that most knowledge is tacit.
    - Communication: communicate the vision out to the members of the organization.
- Processes.
    - Change management.
    - Analytical processes. How to find the cause that might influence the problem.
    - Personal Compact Analysis different agreements with employees and between the departments and division in the organization. What does people expect from each other.

Steps for change

- Go on a journey. Change is stressful and you make people believe that they have to go on this journey (a kind like the burning platform).
- Build relationship. Build the comradeship to make people to get results.
- Get results. Small but continual results to convince the opposition in the organization to feel that there are no way back.
- Assign responsibilities. You need to find some sort of a liaison officer between the opposition and the change willing part.
- Supply leadership to assist the change, show the employees that they have a leader that support their efforts!
- Use setback. Use the setbacks. You need to find a way to work around the setback but do learn from it.

Case : Era Aviation

- An oil company owned an airline because it could gain access to it's helicopters.
- Not used to make money since the oil company pumped it up with it.
- The Era company is based in Alaska where it transport people between villages and cities due to poor infrastructure.
- The economic cost structure was addressed as a drilling platform in the ERP system.
- The oil company would only give access to the servers and software for 18 to 24 months.
- Fragmented organization where the different departments didn't communication and the information systems didn't interact.
- No information or knowledge sharing infrastructure.
- Duplication of labour.
- Consultants needed to reconstruct their entire organization.
- Top management was passive on the change and therefor not embracing it. They didn't feel that there was a need to change. Which lead delay for about a year before implementation.
- The consultants made use of facilitating approach.

Aligning Business with IT

These notes are based on chapter **seven** in the textbook.

Short resume of this chapter

This chapter deals with how to align IT strategy with business strategy. The chapter introduces three approaches on how IT strategy can achieve alignment to an organization strategy. The first of these approaches is of course the strategic alignment of IT with business strategy, the second is structural alignment with business strategy, the third and the last one is cultural alignment with IT and business strategy.

Strategical Alignment

According to the chapter it is preferable if an organization is able to align its IT strategy with its business strategy. To create the alignment with in the organization the CIO needs to make the senior management aware of the potential of Information Communication Technology and how it can enhance the competitive situation for the organization. After this process and the senior management understand the purpose of involving the CIO and the IT department in the strategy for the organization then it is time to start formulating the strategy. To do this the CIO and the rest of the senior management need to understand the business processes.

According to the chapter then each company can make use of these four types of strategy:

- Strategy execution: Where the business strategy is developed first and then direct the development of the IT strategy.
- Competitive potential: Managers first consider how how to take advantage of IT to achieve major business changes and then use the consideration to direct business strategic direction.
- Service level: IT and business strategy are developed in different processes and then inspected to and modified to fit each other.
- Technology potential: The IT strategy is developed first and then the business strategy is designed to support the IT strategy and there by will business maxims be based around the IT potential.

Structural Alignment

The employees and the management of all levels interact with technology somehow every day in the organization and for many different activities and processes. IT will there affect close to all levels in the organization; however it cannot predicted as something a single handed impact on the

organization.

It typically have an impact on centralization and decentralization where the management layer and the employee 'liberty' are two parameters that are influenced by the impact of IT.

The impact on structure has an embedded paradox since there is a tendency on recentralization of IT functions to achieve economies of scale but this leads to lesser creativity and lesser self initiative in the organization.

- Centralization is good for organizations that operates in stabile environments. Where the organization would be able to handle faster to tasks that might be alike and that aren't complex of nature. **Thereto centralization is good for alignment with corporate strategy.**
- Decentralization is good for organization that operates in changing environments . Where the organization would be able to handle more complex assignments better! **Thereto decentralization is good for building relationships, trust and accountability and it is easier this way to spread this to the entire organization not just management levels.**

Cultural Alignment

The culture is a stabilizing factor in the organization. It make the members of the organization believe in a specific view (indoctrination). This includes norms and values and the organizational culture is a psychological protection mechanism against the surroundings of the organization. Thereto subcultures might exist within the organization which can have conflicting world views. A subculture is generated people who have the same educational, demographic and social background not to mention social activities. Subcultures can especially be dangerous for IT implementation. To cope with this the textbook refer to employee (user involvement).

Forces Inhibiting Alignment

The chapter refer to organizational forces that might be the main problem when IT strategy is supposed to be alignment with business strategy. The chapter claim that these organizational challenges might lead to derail of the alignment. Thereto the management of the organization must be clear in its IT projects to focus on those projects that might have some influence.
If the organization view the IT department as a support function then it might negatively influence the partnership with the IT department.

Achieving Alignment

- Place a strong emphasis on planning and modeling at all levels. A business plan for the IT department and thereto an IT architecture plan must be developed. The chapter refer to four

different types of plans that can be developed:

- Enterprise Business plan. This plan include a marketing strategy, business technology plan and a future mode of business operation.
- Specific business unit plans. Include business unit strategies and business transformation projects.
- Information Systems plan. This includes business processes architecture, an IT architecture and projects.
- Enterprise technology plan. Which include the technology architecture, standard products, design principles, and a data model.

- Focus on the business's bottom line. Every IT project should be associated with a strong business case so the projects can be arranged according to it priorities.
- Move up the value chain. The CIO and the IT department must focus on the value creating part of IT organization, i.e., higher end services that enable the organizations to reach its goals. Of course ordinary maintenance of systems.
- Standardize. Where possible standards should be developed and applied since it would minimize the future problems with integration and development of systems not to mention ease administration and maintenance of the system.
- Insist on business accountability. The CIO and the IT department must insist that the business part of the organization takes accountability on the technology side of the organization and the IT department should be hold accountable for delivering the IT to the business side of the organization[8].
- Adopt a consulting model for IT. The IT department must adopt consulting skills and knowledge on how business is done in the organization and in the industry the organization operates. Thereto the CIO must build good relationships with the COO, the CFO and the CEO to achieve influence on how the business is operated and how IT can assist the business.
- Measure alignment. It is important to keep track of the alignment but how it can be done is by using techniques such as customer surveys on how contempt they are with the service provided.
- Promote success. To make the change in the organization permanent then victories needs to be shown to the employees and to the managers so opponents against the alignment are

8 Ibid., pp. 101.

swiped over to the alignment side.

Mergers and IT

These notes are based on chapter **seven** in the textbook.

Short resume of this chapter

This chapter deals with methods and issues that might occur when the organization plan to merge two organizations and most likely two departments. The host organization needs to handle the structure of the department and thereby needs to handle organizational power, organizational politics and differences in culture between the two departments. It is vital that the employees in IT departments are involved in the process on how the organizations will be merged (at least that is what the expert group believe is the right way):

- IT departments aren't involved in the merge process before the leadership in the organization believes it is time to involve them.
- Staff are most likely to have different approaches to the organization and different cultures and power.
- The two departments and organizations have different applications and IT architectures which needs to be handled.

Reasons for mergers and acquisitions

There are to major concepts that dominates the chapter about how the corporations within an industry needs to be merged. The chapter claim these two theories are the dominant:

- The boom – and – bust syndrome.
- The seismic-shift syndrome.

The Impact of Merger Strategy on IT

- The degree of integration of IT desired. The lower end of the scale you will find companies that are of the opinion that IT should be kept separated from the business. In the other end of the scale you will find companies where IT influence all parts of the organization and all processes.
- The degree of redundancy created. In some situations there will be a great deal of redundancy in the form of positions and systems created in the two companies. This means rationalization where some system portfolios and position in the united company.

The before mentioned are qualified as two axis on a model presented on page 107 that deals with different types of corporate merger.

The model presents four strategies to handle the a merge:

- **Vertical Integration:** When companies play a different role in the industry. Business processes will become linked. Redundancy will occur in administrative financial and HR areas.
- **Acquisition:** When a larger company purchase a smaller one in the same industry performing the same a similar role. The predator company will most likely make sure that the predator IT department will take over the vital parts of the slain IT department.
- **Conglomerate:** Companies are in different industries. The acquired company become a division of the predator. Some different elements (besides top management) will share resources to obtain economies of scale.
- **Marriage:** Companies of similar size, playing similar roles in the same industry, decide to merge to build market share and take advantage of economies of scale. Although IT must merge work forces, infrastructures, and application portfolios, there is no significant redundancy created.

The Process to Handle the Merge of the IT department

First the two organizations IT departments should evaluate the risk of merging the organization. The chapter recommends the following:

Planning the transition

- Establish a transition team. Establish a team that can handle the general concepts of the transition planning and employee and management involving.
    - General integration planning. The team has to handle concepts of culture, business priorities, and decision making processes. The team has to formulate a vision for the transformation.
    - Business integration planning. The transformation group need to handle the business processes in the organization and design the IT architecture and the IT strategy to meet the vision of the business unit.
- Planning IT integration. The IT task force has to plan how the two IT departments can be integrated.
    - Setting priorities for the transition. Most likely the top priority is to handle the current service level in the organization so it appears to be the business as usual situation.
    - Establishing communication procedures. To avoid conflict in the organization it might

be a good idea to setup ways of communication e.g., phone lines or comities where questions can be asked.

- Assessing assets. Find the important assets in the organization e.g., the different IT projects. Thereto inventory as servers and other similar systems should be listed at this state of the project.
- Establishing and managing the critical path. Time is a critical factor in this game and it needs be critical to handle this in relation to the merge process.

A New IT Organization

- The New IT Organization Structure.
- HR Integration.
- Technology Integration.
- Cultural Integration.

CASE : Hershey

Situation	Company & Industries	Project	Impact	Discussion

• Logistics.
• Y2K
	• Low IT use compared
	• Seasonal Sales.
	• Halloween - Christmas and Valentine's – Easter.
	• Competition / Easy substitution of product.
	• Shelf space.
	• Direct Sales.
	• Distributors.
	• Six factories in the U.S. And the supply chain.
		• Direct cut / over
		• ERP from SAP.
		• CRM from Siebel.
		• Optimization software for projecting orders and figuring out batch production.
		• All in all they implemented three major system all in once.
		• Barcode implementation at the six factories.
			• Loss of money.
			  ○ Distributors.
			  ○ Hershey.
			  ○ Stores.
			  ○ Share holders.
			• Loss of market share.
			• Loss of loyalty.
			• Orders stopped.
			• Pissed off customers.
			• Late go live.
			• Pressure on the delivery system.
			• Revenue vent down and the cost vent op.
			• Storage inventory raised.
				• Training of staff was to minimized.
				  ○ Included customers and every one else.
				• Wrong people making the decision – where was the IT department.
				• Multiple systems and compatibility.
				• Stakeholder and SCM perspective missed in the implementation process lacked.
				• Create best practice method for the larger divisions and factories.
				• Too little time for too much.
				• The CIO would be able to make use of the burning platform to influence the company in the future.
				• Potential loss of people (employees).
				• It should have been a parallel system strategy.
				  ○ Avoid cut over strategy.
				  ○ WTF? Why wouldn't it work?!
				• System Incompatibility.
				• Higher training costs.
				• Aversion to downtime.
				• A la carte implementation creates a need for middleweare.
				• Non – packet solutions.
				• “Not our fault” mentality among suppliers.
				• Too much change in the IT. Too specific goals. Technological determinism.

Risks in the projects

- Financial Risks:
  - Major risks since it influenced all major parts of the company at the same time.
- Technology Risks:
  - May not work if the middleware is not at place.
  - Rapid obsolescence.

- People Risk:
  - Lack of knowledge.
  - Resist to change since they feel that the IT department get to much power over their work.
  - Employees quit since they feel their work is altered against their will.
- Security risks:
  - Introducers since they would be linked cross the factories in the U.S.
  - Corporate Espionage .
  - Sabotage when angry employees want to get back at the company.
- Information risk:
  - Communication between the systems and the users.
  - Accuracy of the information.
- Business process risk:
  - Significant change to processes.
- Management risk:
  - The wrong people to the job.
  - Lack of IT know how.
  - Outsiders running the show.
- External risks:
  - ????
- Risk of success:
  - Manage demand? It might go up since people can order online or the distributers assume they can send in an order and get the articles the next day.
  - Lack of scalability.
  - Imitated by competitors.

Customer Relationship Management

Short resume of this chapter

The chapter introduce the concepts on how important it is to understand your customers and the products you sell them. The chapter claim that a company loose about 50% of the customers if the company could hold on to just 5% extra of the customers in the five year period then they would be able to accelerate sales with 100% (Reichheld 1996).

Company innovation and efficiency should be based around the CRM system so knowledge about the customers can be applied. The chapter support the issues of an enterprise wide approach to this so as many as possible will be involved in the customer data.

Benefits of the CRM

The focus group defines CRM as:

- CRM focuses on a customer relationships from an enterprise – wide perspective;
- CRM consists of systems and strategies that enable relevant communications at the right time and through the right channel;
- CRM's goal is to optimize long – term profitable relationships.

Most companies are unaware of how many customers they have and how profitable they are. King suggested this in the year 2000:

- 12% of companies are unable to how man customers they have.
- 15% of companies are able to exploit customer data to its full potential.
- 89% of the companies consider customer vital for their survival.

Manasco (2000) suggested that it cost 10 times as much to acquire new customers than it is to maintain the customer portfolio.

The benefits of CRM is described in the table 9.1 pp. 122.:

- Increase sales effectiveness.
- Off self -service websites.
- Reduce your sales cycle.
- Increase the accuracy of sales forecasting and reporting.
- Reduce total sales costs.

- Integrate legacy and IT systems.
- Decrease time – to – market.
- Increase marketing effectiveness.
- Consolidate customer information.
- Improve customer service / support.
- Facilitate one – to – one marketing.

Reichheld (1996) claim that the organization needs to make use of radical thinking to achieve the a customer centric – business.

Keen (2000) claim that the customer defines the value chain and decides the relationship based on the quality between of interaction, responsiveness, reliability and personalization.

Strategies on how to manage CRM

1. Clarify the value of CRM: The need for CRM and the signal of change must come from the top management meaning because they have all to gain.
2. Create a Single High-level position: A top leader needs to be appointed to take care of the CRM implementation and development. This person needs to be accountable for “silo busting”.
3. Make CRM Part of Everyone's Job: The concept is a universal as the technology. It can be used in many different ways and it can be applied to monitor many different aspects of interaction with customers.
4. Access Customer Satisfaction: When the CRM has been implemented then it might become a problem on how to make use of it practically. How do the company make use of a metrix to measure customers interaction and satisfaction.
5. Establish a CRM architecture: Webb (2000) claim that there are three approaches to develop a CRM architecture. 1) Buying CRM companies. 2) Partnering with CRM companies. 3) Building their own CRM system.
6. Plan adoption: The chapter introduce how to consider implementation of the CRM:
    1. Organize different sources of customer data and start producing metrics and analysis.
    2. Prioritize new application opportunities.
    3. Integrate the strategy for customers and integrate the CRM with all other applications.

4. Make use of the CRM to implement a push strategy.

7. Tie Data-mining to CRM: Make use of the data located in the CRM system to find patterns in that enable the organization.

Fundamentals of CRM

A: Acquire – Value proposition – quality service – price.

R: Retain – it is cheaper to keep customers (as mentioned in the resume) then it is to get new ones.

E: Expand / extend – be able to give to the customer in a marginal price.

How to do CRM

- Data mining on where to find patterns on purchasing.
- Data mining will be focusing on the existing customer database.
- Create the value of achieving the process overview: What do we have on stock, who wants to buy them?

Case Study: New Piper Aircraft

- New Piper Aircraft had lots of costs but only marginal profit and manufactured only 50 aircraft (1992).
- In 2001 the company delivered 441 and had 243 million dollar in revenue. This was enabled by the use of CRM.
    - Sibel Systems MidMarket which the company called PULSE.
    - It became easier to contact the customers from the call center.
    - The call center handles 70.000 customers with just 17 dealers and information is available in just a minute.
- 25% reduction in lost sales opportunities.
- New ownership of the company.
- CRM system was implemented in phases.
    - Loading the current aircraft owners, dealers, fleet customers' aircrafts and new service customers into the system to enable development of the customer rework.
    - Enabling the customer service center to process activities.
    - Enabling dealers to access to sales opportunities in their territory.
    - Opening of the dealer web portal.
    - Streamline the warranty claims.
    - Enabling key suppliers to communicate with other suppliers via the Partner Web Portal.
    - Ordering parts online.
    - Enabling the customers to come with service requests, logbooks and product information and survey information.
- PRM : Partner Resource Management.
- The company implemented a call centre that contacted their customers and suppliers to Acquire and extend their business.

Enterprise Resource Planning systems

Short resume of this chapter

The chapter introduces fundamental ideas on how ERP systems influence organizations and they way people interact with each other. The chapter introduces ideas on how the organization and the persons in charge needs to look out for problems when the ERP system is implemented. The chapter do also introduce observations on how the ERP system can assist the organizations with growth potentials and how it can assist the organization with creating an overview of the processes in the organization. The last part of the chapter deals with the failures of ERP systems and why organizations should pay close attention on not to acquire ERP systems of the wrong reasons.

Definition of ERP systems

- "A package of software which that provide a tactical integrated solution to the company's information processing needs" - Markus and Tanis (2000).
- Greenfield development has been the development of "home grown" solutions for the businesses:
    - Normally in house development has been initiated since the systems might have satisfied special needs in the organization. Thereto special developed systems or "home grown" systems will lead to problems with organizational structure or with organizational power since the employees have learned how the old system worked then they will feel and become unproductive with the implementation of the new system.
    - "Finally, because of these two factors, ERPs represent a commitment by the whole organization for fundamental and continuing transformation. They are more than just another system, they are a way of life." - Davenport (1998).
- ERP systems are not silver bullets for the company, since they don't change the organizations situation as a single parameter.

Common factors of ERP systems

The following factors have been summarized below:

1. Integrated information.
2. Purchase or lease from a software vendor and requiring a long – term relationship between the two companies;
3. Generic best practices;

4. Continual change both for architecture and functionality;
5. Configuration and integration required with a company's existing systems.

The ERP systems manufactures focus on four main purposes and there are made to enable organizations within their different industries to deploy the system as fast as possible:

1. Discrete part manufacturing (E.g., PCs).
2. Process (E.g., chemicals, petroleum, paper and food).
3. Project (E.g., Aerospace, software, construction).
4. Service (E.g., Banking, insurance, healthcare and retail).

"Today, ERPs are expanding from their largely traditional back – office domains into other areas of the company. ERP add-ons to improve sales, customer satisfaction, and business decision – making are going to be available in the very near future." - McKeen and Smith (2003) p. 135.

Another aspect of the matter is presented by McKeen and Smith claims that the applications will integrate with ERP systems to enable more productive work with the employees. However this has become a problem for most IT managers:

"Keeping up with the ERP evolution as well as application integration promises to be major job for IT managers in the near future. " - McKeen and Smith (2003) p. 135.

Costs of ERP systems

The chapter introduces a claim made by the Meta group. The claim deals with an average implementation of an ERP system costs about $15 million or $53,320 per frequent. This includes hardware, software, professional services, and internal staff costs for full implementation plus two years' – cost. *The claim was made by Koch (1999)*.

The chapter thereto introduces the idea that all organizations should expect costs will exceed 10% over the budget. Thereto is the entire implementation cost will be 4.5 time the budget of the implementation.

Thereto should the organization prepare for that everyone who is affected by the system should training and they have to re-learn ow to do their jobs and they need to have a clear picture of the greater context of how the system operates and to understand their work after the implementation of the ERP.

Effort involved in the ERP implementation

"*Most companies are still treating their ERP implementation as they would any other software*

project! ... [What they don't realize] is that ERP project teams are just installing software; they are reinventing how the company does businesses" - Koch (1999).

The chapter thereto focus on how the differences between what they assume they will get by purchasing the an ERP system and what happens after the purchase has been made:

> "*The vendors are good at selling 'features' but once the deal is closed, they don't really support the implementation*."
>
> - McKeen and Smith (2003), p. 139.

When the company want to deploy the ERP system, then the organization normally hire consultants if the organization hasn't the proper people with the proper knowledge in house. By hiring consultants then the organization enter a more complex management form and therefor they need to be carefully managed[9].

"*Selection of ERP packages is more complex than many business assume! According to the focus group the CIO or person in charge has to do research with in this field before purchasing the ERP system."* - McKeen and Smith (2003) p. 139.

As before mentioned an ERP system is not a silver bullet for the organization but many organization suffer from the below mentioned problems:

- Overblown expectations. The company simply thinks that the ERP system is enough to change the entire market situation for them.
- System complexity. An ERP system is per definition a complex system. The complexity of th system often lead to a very steep learning curve which might lead to delays, errors and failure of implementation of the ERP system.
- Process for customization. Problems occurs when the business processes might be different from the processes implemented in the ERP system.
- Integration challenges. Since not all systems in the organization will be replaced by the ERP system leads to difficulties with the integration of the ERP systems and some APIs needs to be developed to bridge the gap between the ERP system and the data silos in the specialized systems.
- Poor problem resolution. Organizations that finds out that the vendor of the ERP system isn't that flexible to manage problems with the software or customization of the software to the business processes in the company.
- Not enough training. Training of the employees and other persons affected by the system

9 Please read the chapter dealing with the external relationships.

take much more time than first expected.

- Poor usability. The ERP user interfaces are rarely user friendly which leads to user dissatisfaction and a lack of productivity.
- User resistance. The users can feel the attempt to implement the ERP software is a take over of their work processes (how they do their job) and will therefor try to go around the system.

Common problems

- Mapping processes of the entire firm. Will you be able to map the entire processes of the firm.
- Corporate resistance to change.
- Lock in to the system or vendor.
- Complexity will lead to errors.
- Unrealistic expectations.
- Inadequate training.
- Vendor problem resolution. Cause of this problem would be you as a consultant since the final problems are the hardest ones to fix and then the consultant move on to another company.
- Compatibility and customization / compatibility.
- User resistance.

Costs

- System costs.
- Deployment.
- Hardware.
- Productivity slump. According to the book the learning curve break – even might be up to five years.
- Employee Attrition.
- Reputation.
- Time (as in time is money).

Benefits

- Data quality.
- Operational efficiency.
- Reliability.
- Payroll savings.
- Cash management.
- Order management.
- Inventory control.
- IT department costs.

Faster decisions added to better decisions make better management.

Impact on business

- Organizational structure.
- Data / process standardization.
- Growth potential.
- Decision – making.
- Perspective / transparency?
- Gross – enterprise potential. Supply chain integration if the software hasn't been altered to much.
- Job changes.

Home grown ERP systems are more risky than on the shelf packets.

Critical success factors

- Realistic goals.
- Business – wide effort.
- Careful planning.
- Management attention.
- Effective execution.
- Problem resolution

- Evaluation – metrics & measurement.

Case study: Western Petroleum

- Western Petroleum make use of an ERP system to buy oil (petroleum).
- They handled 5000 barrels to customers.
- 62 billion dollar. For very few employees.
- Small margins.
- Macro economic market exposure.
- Trade contracts too smaller customers.
- Their ERP system is hooked up to the Rotterdam Oil exchange.
- Logistics. Coordinates when its goods are delivered to its customers.
- They are the middleman that doesn't take physical position of anything.
- The ERP system:
    - High automation.
    - Coordination. Might be considered pipeline.
    - Accounting.
    - Sell products at the commodity exchange.
    - Integration with the financial system.
- Conceptual a simple company make the case not useful.

Estimating the benefits of IT

These notes have been based on chapter **eleven** in textbook.

Short resume of this chapter

This chapter deals with how to estimate benefits of IT and the chapter is closely related to the idea of working with IT project prioritizing. The chapter introduces aspects on how to measure the benefits of IT and claim that it is not productive to measure benefits of IT and IT projects solely on the NPV, ROI and TCO. The chapter introduces a few strategies on how to manage and measure IT / IS (Information Systems) benefits.

Estimating benefits

Ryan and Harrison (2000) claim that they found out that the way businesses normally estimate the benefits of IT only consisted of quantitative measures and therefor you could easily improve the methodology used. Quantitative measurement normally consist of NPV, ROI and IRR.

However it is a great deal harder to achieve access to the IT benefits:

> "*... the difficulties in identifying impacts from technology has been the isolation of benefits of IT from other factors that may also contribute to organizational performance. Furthermore, benefits from technology investments may be realized over an extended period of time. Finally, IT benefits may accrue when they are don in concert with other organizational initiatives such as business process re-engineering.* "
>
> – Devaraj and Kohli (2000) p. 41.

IT Risks

As before mentioned Risks are also present in the discussion of implementation of IT. Risks are normally considered as a negative but risks can also mean great potential by implementation. Therefor should IT risks be viewed as both a gain and a consequence for the host organization.

McKeen and Smith use a model on page 153 describing the relation between IT and the benefits it creates for the organization within a five year timeframe (illustration can be found on the next page).

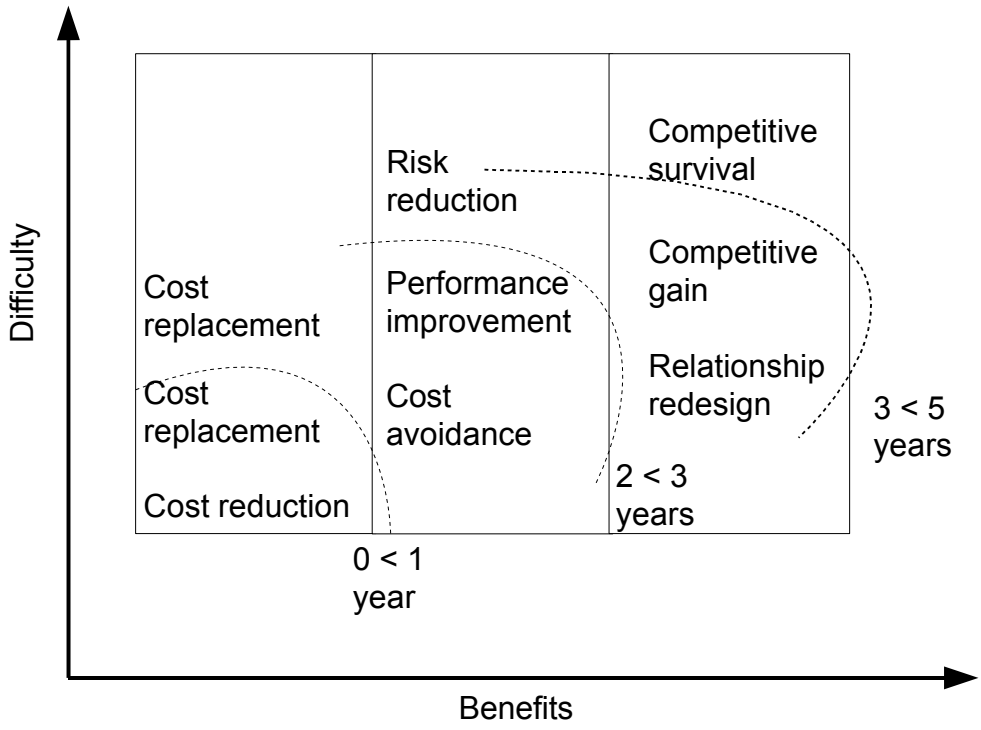


Illustration 1: Types of IT benefits

Benefits IT bring the Organization

Information Technology bring the organization a wide range of positive impacts which can assist the company by enabling some competitive advantage to the organization. Remember that Michael E. Porter point outs that technology never will give an organization a competitive advantage since technology is easily imitated by competitors, processes however aren't easily imitated.

Advantages the Information Technology bring to the organization:

- Data consistency. Since the system will demand a specific input or input method, then it the data will show how be standardized which can lead to data consistency.
- Automation of processes. Information Technology will assist in automation of business processes since the proper information will be send to the persons within the organization.
- Data availability. Information Technology or Digital Information Systems will assisting the organization with making the data available for the users all times and instantly.
- Improves the ability to deliver. Information Technology enable the employees to view data about the customer instantly which will assist improving the customer service.
- Improve access to services. Increase the number of people who can be reached by the information system and the customers are provided with multiple points of access to the organization.
- Improves security. An Information System will prevent fraud, protection of confidential information etc.

- Reduce risk. Backup systems reduce the risk of data loss or applications that improve timely delivery of critical information.
- Improves reliability. System has a better record and less down time.
- Reduces manual operations. Manual operations will be replaced with automation. In this way a great deal of the problems with the human mistakes and lack of precision will be minimized.
- Improves response rate. Since the Information System will enable the employees to respond to the customer quires then it would reduce stress.

The full list can be read at page 155.

Strategies for estimating IT benefits

Strategy alignment can be handled in various ways but in general the top management should consult the different parts of management and especially should the COO and the CIO talk about the strategy and then align the business and IT strategy.

The chapter introduces six different strategies which could be applied to an organization to maximize the benefits of IT:

Establish IT's Role in Creating in Benefits

- "What you find is what you look for".
- There are four different focuses which the chapter introduces.
  - **Operations focus:** Current goals for IT focus on cost reduction, improving quality and speed, and enhancing overall firm effectiveness .
  - **Dual focus:** Current goals for IT are a combination of both operations and market focus.
  - **Unfocused:** It is not critical to any aspect of the business strategy; current goals for IT lack focus and direction.
  - **Market focus:** Current goals for IT focus on extending market/geographic reach and changing industry and market practices.

The four focus model is represented at p. 156.

"Argue that there are a number of differences between the way organizations to the role of cast for IT"

– Tallon et al (2000)

Classify Benefits within Your Portfolio

- Strategic – alter the basis of competition.
- Informational – increases control, provides better information and better integration.
- Transactional – cut costs, increases throughput of business transactions.
- Infrastructure – enables business integration, flexibility, and reduces IT costs.
- Research and design (R&D) – explores emerging technologies for potential value to the business.

The above mentioned categories where introduced by Weil and Broadbent (1996)

McKeen and Smith claim that organization shouldn't estimate of all projects on a strict ROI basis or other economic key number. Since many organizations use the economic drivers to estimate their IT projects then some of the strategical projects need to be done "below" the radar. Thereto R&D projects might be considered a called "Skunk" cost which is not lead to any work in particular.

In general the organization should focus on that investment in IT is valid and should therefor focus IT projects and IT management as a valid rational pursuit and not something which should be hidden.

Map the Benefits onto Business Strategy

The chapter introduce a template which is constructed around these maxims:

1. Maximize the utilization of company assets and resources;
2. Improve information management;
3. Retain and attract customers;
4. Improve relationship with business partners;
5. Attract, develop, motivate, and retain high-performing employees;
6. Grow the distribution business;
7. Optimize the technical infrastructure investment;
8. Accommodate the regulatory requirement;
9. Add financial value.

It is possible to determine how IT has an impact on the value chain. This is done by identifying the six steps of the value chain[10] and then by re-thinking it from an IT perspective; However it should also be included in the internal value chain[11] as illustrated below:

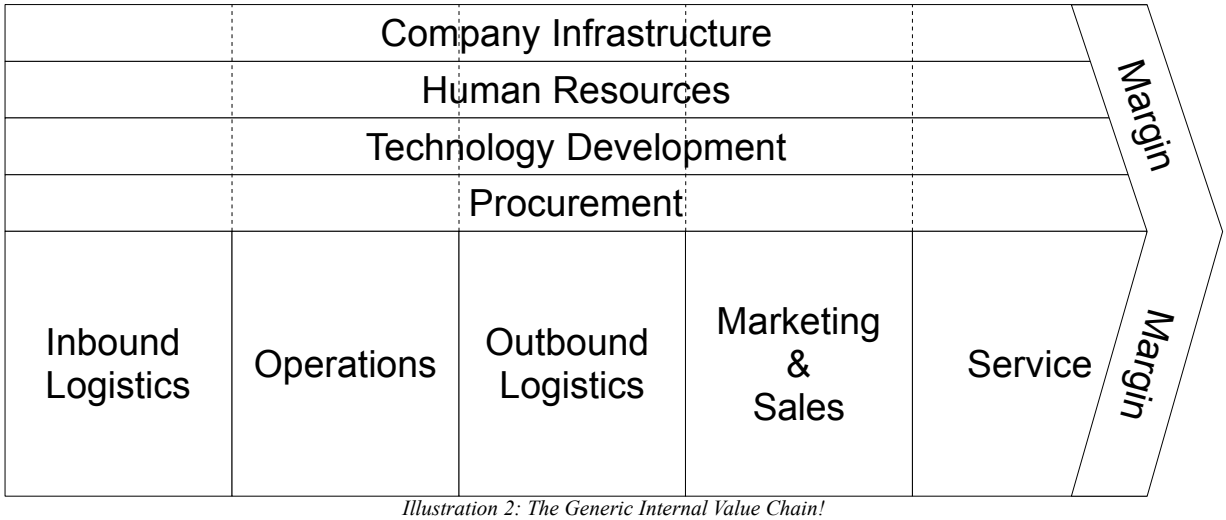


Illustration 2: The Generic Internal Value Chain!

Remember there is a great template for the maxims at pp. 158 – 161.

Build IT Benefits into Project Development

- You will find some interesting points in the table called 11.3 "Mapping IT benefits onto the value chain". The table can be found at page 162.
- A system needs to to be both useful and usable otherwise the system shouldn't be developed.

McKeen and Smith claim:

> *"Armed with these new estimates, every project must pass through a "go /no-go" test. Failure to kill projects at these gates due to organizational inertia or personal attachment is injurious to the health of the organization."*[12]

This is backed up by the following statement:

> "Thereto does the IT brings discipline to projects … this allows benefits to the realized".

Thereto do the focus group McKeen and Smith make use of claim that holding IT accountable for costs (cost center) and business accountable for the benefits (investment center or revenue center) is to simplistic. Shared responsibility would be the best approach according to the members of Mckeen and Smith focus group (p. 163).

10 Value Chain as the one Michael E. Porter described it.
11 M.E Porter: Competitive Advantage.
12 McKeen and Smith (2003), Making IT Happen: Critical Issues in IT Management, p. 163.

Use Risk to Discount IT Benefits

- Remember risk also include risk of growth and risk of reward.

According to Kulatilaka and Venktam (1999, p. 7) claim that to strict a risk management policy would lead to “restriction of bandwidth of possibility of the organization” and thereby lead to the limitation of the range of possible options the organization can exercise.

The chapter introduces these three steps to articulate and estimate benefits of IT:

- Measure of risk;
- Discount IT benefits based on risks;
- Select your comfort zone for risk.

Firstly when it come to the risk measurement then it is central that poor risk estimation is better than none.

Secondly the benefits of the firms can gain by investment in IT can be analyzed and accomplished equally simple. The chapter introduces a technique where all potential IT projects where mapped on to a 2 x 2 grid grid with ROI on the horizontal axis and risk potential on the vertical axes.

Thirdly the businesses needs to select their “risk comfort zone”. Remember that if a company assume risk wrongly then it might lead to the company's viability is compromised.

Remember it is of great importance to involve senior management or the board in the strategy and risk management.

Put Post-implementation Reviews (PIRs) to Work

Since IT projects when delivered or failed then the project team is dissolved which lead to the organization will forget the details of the project and the experience gained via the project period. This will lead to failure in the future since the organization will repeat the same mistakes they did once. It is vital that the organization to obtain a “retrospective analysis” so the reasons for success or for failure will be articulated and the implicated persons can learn from the project period. Thereto this wisdom the project members have can be transferred to the organization.

The chapter introduces the following research conducted by Tallon:

> “Firms that use post implementation reviews (PIR) are in an ideal position to bring 'best practice' or lessons learned from these reviews to bear future IT investment decisions”.
>
> - Tallon et al (2000, pp. 165 – 166).

Case study: Iowa state

- Expensive Y2K[13] request which forced the state of Iowa to implement a new information system.
- Not need / merit based decisions.
- No incentives to save money since the state would cover the costs by taxation.
- Measure of success. How are the criteria of success measured?
- Different places (departments) founded the project.
- Performance based ERP system was the result of the effort.
- General IT act the greater result of the effort.
    - Avoid duplication.
    - Increase the accountability with the use of reimbursement.
    - Standardization of cost – benefits.
- This lead to fewer project which saved money and no duplication.
- However this could easily become a dangerous initiative for Iowa state since creativity within the sector might lead to lesser potential.

13 Year 2000 problem.

IT Project Priorities

These notes are based on chapter **twelve** in the textbook.

Short resume of the chapter

This chapter deals with how to prioritize IT projects. The chapter introduces way to handle and put the different perspectives into a framework. The chapter is build up on those chapters we have already discussed in the book. Common strategies to handle how the IT projects are to prioritized.

Good methods to prioritize projects

- Focus on long term relationships with the vendors of the software and since SaaS[14] are lesser risky for the company then it would be preferable.
- The vendor relationships would be a part of the prioritizing since it would assist us and understanding the project so they will deliver the right service at the right time in the right way. Time based relationships are normally focused around partnerships.
- Knowledge management would be implemented in the flow of the information and how people interact. However it depends on the knowledge strategy of the organization on how they will accumulate the conditions for knowledge.
- Risk management will be used on how to validate the initiation of projects. Remember risk might also be interpreted as something to gain and not just a negatively assumed thing.
- Business and IT strategy alignment should be aligned to support the goals of the business operations.
- Mergers and acquisitions will be a strong part of what you are going to do. The airline case. There where so many gaps to bridge but they where priorities within the contracts but also initiatives beyond the company.
- CRM perspective would be enterprise wide involvement to enable the company to develop products that would create the right value for the customers, but as mentioned this would be enterprise wide and this mean a lot of people needs to be consultant and a lot of changes within the business processes needs to be changed.
- ERP perspective would have some of the same arguments since it needs to be enterprise wide and it will affect all processes in the company.

14 Software as a Service.

Project Prioritization

- Project Identification:
- Project Prioritization:
- Resource Allocation:

Project life cycle needs to be considered since it deals with how the project will project.

- Kill points: Points where to project can be terminated so the project doesn't end up failing and consuming a lot of resources.
- Example was the implementation of a mainframe.

Samples of prioritizing

- Net Present Value (NPV)
- Checklists.
- Scoring Models.

Portfolio Management Perspective

Goals of project prioritization:

- Value Maximization.
- Balance.
- Strategic direction.

Strategies to prioritization

- Improve Project Identification Process.
- Don't consider cost.
- Use Portfolio Management Approach.
- Business and IT prioritize Together. (this is a continues precess)

Remember

The 80/20 relationship. 80 percent of the revenue is generated by 20 percent of the customers. Greg Gimpel made a private observation that showed that it was more like a 70 / 30 ratio.

Notes for the Sun Burst Hotels International

- Spin off from another hotel chain called Choice Hotels international.
- The SBHI operates 87 hotels and stakes and a USD 114 million revenue.
- Main problem was the lock in to the ERP system of which Sun Burst Hotels International (SBHI) needed to implement so they could keep track of customers.
- According to the case CIO Charles Warczak he had to create the IS and IT systems which indicates we are talking about a *greenfield development*[15].
- The CIO realized it would become a hard task to hire the right people since they had to be experts in People Soft ERP. Thereto when the experts had been hired it would become much harder to keep them in the company since such people normally find other work opportunities very quickly.
- The CIO realized from his former experience that the implementation most likely would fail in the short run and in the long run it would prove to be very expensive (budget). Therefor he turned to an Application Service Provider (ASP) to rent the People Soft system from.
    - SBHI could in this way save money on purchase of front end computer to handle the entries and save the cost of purchasing the back end servers.
    - SBHI would thereto not be responsible for the development and maintenance of the system since they ASP would handle that part.
    - However it create a lock in for the SBHI.
    - Security is handled by the professional ASP.
    - The cost of the Software as a Service solution would be USD 50,000 to USD 200,000 pr. Month.
        - Assumable that the cost will be USD 100,000 then it will become USD 1,200,000 pr . year which will be the used number for the comparison.
        - You have to make use of TCO for the entire contract of the SaaS solution and the in house solution. Thereto you should include the opportunity cost of the two solution.
- The alternative would have been buying the system which would include purchase of USD 1,000,000 million purchase the front end and the back end features thereto USD 500,000 for staff. Thereto come the cost of training which is not included in the case and thereto the former chapters claim we should claim that we had to go over budget 4½ times.

15 No former systems to take care of.

Managing the Technology Portfolio

These notes have been based on chapter **thirteen** in the textbook.

Resume of the chapter

This chapter introduces different models on how to manage the technology portfolio. They need to make sure of that they can eliminate outdated technology. The chapter deal with the basic strategies.

Outdated technology

Technologies got life cycles and stages of usefulness.

- Old Technology is superseded by a newer version.
- Obsolete technology is when the vendor no longer supported by vendor.
- Technology atrophy which deal with physical wearing out of hardware.

Software doesn't wear out as long as it is secure and as long the software get the job done.

Challenges of the technology portfolio

- User resistance.
- Prioritazation and resource allocation to maintenance and development.
- M&A if companies make use of the different software and packets.

It needs to be the head of the company who support the decision of the implementation of the software / systems in the company. If the legacy of the system is good in the company then they will try to bridge the gap in using the technology which leads to an dangerously outdated technology portfolio.

Strategies for Managing the Technology Portfolio

1. Inventory your technology portfolio.
2. Adopt a technology life cycle model.
3. Create usage policies. What type of technology do you make use of for specific processes? This should be to avoid “technology islands”.
4. Appoint technology stewards.
5. Evolve skills to match technology. Remember to train people in advance so they are able to adopt and adapt to the technology while it has been implemented (e.g., Rogers “chapter 10” diffusion model).

6. Develop funding model for tech renewal.

Case study: Failures at Nike and AT&T

The case deals with the shoe manufacture Nike and the tele provider / ISP AT&T phone. The case deals with implementation of ERP system (Nike) focusing on demand estimation or CRM (AT&T). In the two cases it goes horribly wrong of these reasons:

- Customized software.
- Hurried implementation.
- No bug testing which could indicate first mover mentality.
- No parallel systems to take over otherwise the errors wouldn't have occurred.

The errors lead to loss of 100 million dollar (USD) for Nike since they had to ship shoes and supplies via Air logistics instead of using Sea logistics which was 6.66 times as expensive.

For AT&T their CRM system crashed during an upgrade which lead to they couldn't handle new accounts or maintain them. This resulted in the customers fleet to competitors which resulted in a 100 million dollar (USD) cost in lost revenue.

Discussion of the case

The company

- The company has a Japanese styled management like the employees got a life long commitment to the company. The company develop its employees and the employees are supposed to be creative and have some motivation to self improvement.
- One of the 3 biggest sporting goods in the world.
- Sweatshop problems since the production has been closely to 100% outsourced.
- Logistics / design marking and so forth.
- Nike is a part of the fashion product.

The situation

- They will try to estimate demands.
- Demand forecasting:
  - Style.
  - Color.
  - Size.

- Fast response to consumer market changes. Change in consumer preference.
- Logistics is a central part of what Nike wants to achieve. Meaning they want to handle their Supply Chain Management.
    - Complicates things since they are involved in coordination with companies they don't own and don't run.
    - Supply chain management is a hugh deal of the Nike corporation.

Solution

- ERP system a so called “i2 SCM software”.
- Debugging since the software was customization.
- Fast Implementation, they should have made use of a parallel implementation.

Impact

- Poor forecasting.
- Discount pricing.
- Excess and shortfall inventory,
- Lost revenue $ 100,000,000.
- Shipping vent up with 6.66 times.

Emerging Technologies

These notes have been based on chapter **fourteen** in the text book.

Resume of this chapter

The chapter introduce the “Surfer Syndrome” and how to cope with it. Thereto the chapter introduces a couple of strategies to managing “Emerging Technologies”.

Surfer Syndrome

We can call it the the Dilbert syndrome as well. This happens when the CEO or other powerful person read some business magazines about how the “new technology” will give them access to the new markets and give them a competitive advantage in the industry. The CEO go back to the company and are of the impression that the IT department doesn't know what it is doing and therefor they should drop the current projects and focusing on the particular technology project.

Other factors might be consultants and vendors who try to convince the management to go into the project.

Advice would be

Stay on top of technology e.g., management demands a SOA project and if you don't know about the technology then you would be considered a fool.

Thereto the following would be interesting:

- Listen to what the users thinks should be done about the system.
- Listen to the customers of the company.
- Listen to the suppliers of what might be improved in the architecture.
- Networking with the people in the organization and with external organizations e.g., universities (Archeological and Visionary – fiction and fantasy), go to trade shows and conferences.
- Scanning: look all over the industry and look beyond your own industry.
- Researching: Read blogs, tech news and systems.

Disruptive technology

- Hard to calculate cost.
- Hard to calculate benefits.

- Hard to measure risk.

To cope with it

- Experimentation. Remember killing point of project.
- Business Opportunity Proposals.
- Step Implementation.

Pitfalls to New Technology Integration

- Unidimensional evaluation. You fail to get the greater context of the impact.
- Failure to get line – level input. Those who do the work needs to be consulted.
- Lack of vision. They need to see outside the box and you need to have some vision on emerging technologies.
- Investing for the present. They need to invest in future systems instead of long term investments which make change a lot harder.
- Sticking with the familiar. “If it ain't broke, then don't fix it”.

Build, Buy or Market

These notes have been based on chapter **fifteen** in the textbook.

Resume of the chapter

The chapter deals with if organizations should focus on to build the applications for themselves or to buy "off the shelf" packets from a vendor. The chapter introduces some aspects to strategical level e.g., who would own the data and the software code if they buy the package from a vendor or build in in house or if they rent the software from an ASP (defined as something else in the book) who might have the rights to the data. McKeen and Smith introduces definitions of different supplier types e.g., ASP, BSP and ISP which handle different types of services for the companies.

IT sourcing

Information Technology is changing where different types of technology and where different solutions are available which has an impact on the organization.

There are a lot of different approaches to handle the sourcing of technology e.g., would it give the company a competitive advantage.

- ASP (Application Service Providers):
  Defined as "*... a third party service firm, which deploys, manages and remotely hosts a prepackaged software application through centrally located servers in a rental or lease arrangement*" - Weller (1999)
  - Company that make the software available online. Offer services and deliveries available online. It is based on simplified pricing and billing on limited customization of applications.
  - Company that stands for the development of the software and maintenance of the system.
  - There are two dominant models for these companies. The first one is fixed pricing for each user pr. Month and the other one is usage pricing where the customer pays for the actual time or amount of resources used.
- ISP (Integrated Service Provider):
  - Telecommunications connections.
  - Software needs are covered by the ISP (xPS) since it is covered by the lease.
  - Hardware needs are covered by the ISP provider in terms of servers, but the clients are

still needed by the organization.

- A sort of outsourcing, but you keep it close to the company.

- BSP (Business Systems Provider):
  - Provides some kind of architecture where other services can be offered.
  - Common platform and it is service based.
  - The BSP is the gateway to it.
  - The BSP is called the **xPS** in the "Making IT Happen: Critical Issues in IT Management". The X stands for generic.
  - The xPS framework is based around the idea that the flow of information is based around standards all the actors in the industry commit themselves to and this should make the roles between supplier and the customer blurred.

In general the xPS' enabled the "market sourcing" strategy which is described below.

Note on the model on how to manage the technology. You can make use of the model on when to enable and disable the technology in the organizations. This model can be found on p. 193.

Market Based Sourcing

The use of a common platform that enables a company that make use of the source different. It focus on software modules e.g., CRM, Logistics and Processes.

Instead of "off the shelf" packages this might become a more suitable solution to the company so the company don't make use of features that doesn't work for the organization.
These modules can communicate and are interoperable so the usage is functional. The systems are normally based on a industry wide platform like Microsoft's .Net or Sun Microsystems JAVA 2 EE.

The advantages of Market Based Sourcing

- Greater choice of software and solutions.
- Funding flexibility since you can focus on the models you want to be sophisticated and those that only needs to be average.
- Quick implementation since the systems will be activated by the supplier.
- Access to non – customized applications since you can gain access to modules that are build for your industry (the so called "LEGO ™ modules where the different systems can be clicked).

- Sell in house – developed systems (via the xPS common platforms e.g., SUN JAVA2 or Microsoft's .Net framework).
- Facility out rolled upgrades. The provider can upgrade the system at the servers in their control which is easier and more secure than making use of variated systems in house for the customer.

The disadvantage of Market Based Sourcing

- Data ownership issues. Do you have access to your data if you cancel your deal?
- Service delivery and quality control e.g, low quality connections where the software is not able to get connection to the provider or the communication between the customer and the provider might be very slow leading to long reaction time.
- Security and Privacy since the data flow isn't just in house then there are multiple security issues of which the customer needs to take care of e.g., firewall settings and back ups. The company (customer) got lesser control of how the service process is managed.
- Lack of customization. Since the ASP create solutions based on the principle that one model fits them all then it will lead to complications with organizations that make use of non-standard processes in their organizations. The greatest challenge for organizations are to alter the processes in the organization to fit with the solution they rent from the ISPs (xPS).
- Lack of business-specific expertise. An accounting company has made this software so how much do they know about your specific business? Probably not at all. There two all organizations are unique and they got their own set of processes of which the standard solution is not able to fully adapt with out modification.

Implications for the IT Management

The IT department would need to embrace other qualities than they had before they leased the solution from the provider. Primarily the IT department would need to focus on vendor relationships and environmental scanning. The downside of this would be that the IT department might develop a feeling of “not developed” here and therefor they will take responsibility for the solution.

McKeen and Smith identify five different aspects the organization needs:

1. Identifying candidate capabilities.
2. The evaluation of service providers.
3. Crafting service level agreements and other contractual terms (SLAs).

4. Contract monitoring and management (the three Cs).
5. Environmental scanning (as scanning the environment of which the organization operates within).

Case study: Cirque du Soleil

The case deals with the Canadian based traveling Circus “Cirque du Soleil” that experienced rapid growth in the years 2000 to 2005 which lead to problems with logistics and accommodation. Cirque du Soleil consist of 20.000 performers and 3.500 managers. Thereto the company needed to keep track of 250 tractor – trailers.

The CdS experienced that their in house developed systems couldn't wasn't interoperable and therefore their data was barricaded into silos.

CdS implemented IBM WebSphere which enabled their applications to become interoperable and therefor busted the data silos. Thereto the WebSphere platform made it possible for CdS to speed up the development circle and it lead to better business integration.

Company

- Entertainment Company.
- 3500 Employees in management.
- 20000 performers.
- 11 shows they travel around with (very elaborate and very complex).
- Logistics to move the 11 shows around Canada and the U.S needs 250 tractor trailers.

Situation

- Logistics problems are intensive.
- 200 specialized but incompatible systems. Some of these 200 systems needs to be seperated since they have nothing to do with the rest of the system.
- Complex Human Resources.
    - Specific skills for the performers.
    - Salary complexity?
    - Special costumes per person (or at least almost per person).
    - Track employee location.
    - Understudies? (back up persons if somebody become sick or similar).
    - Training.
    - Medical Tracking since they need to know everything about the health of all their

employees and managers but there are some privacy issues.

Enterprise Architecture

These notes have been based on chapter **sixteen** in the textbook.

Short resume of chapter

This chapter deals with ideas and concepts on how organizations should manage their IT architecture to achieve flexibility. McKeen and Smith introduces the concept for why IT architecture matters for organizations (incompatibility with software and systems which lead to a rigid IT architecture) and since the new systems has been added during the years combined new layers of technology which has made the IT architecture intolerant to change.

Views of the Architecture

The Enterprise Architecture deals with creating six views of the architecture that have significant influence on how flexibility of the IT architecture and the organization:

- The technical view consist of three sublevels that together is vital for the Enterprise Architecture:
  - Application environment is where the business is done and is considered to be a layer within the technical layer and this layer consist of so called procedure groups to which IT can be applied. The procedure groups are naturally linked and they are common over several parts of the organization.
  - Technology environment is one of the layers within the technical aspect of the Enterprise Architecture. These environments need certain technological services to support them e.g., user interface management, information management, desktop management, transaction management, operating systems and communication management.
    There are several different sourcing strategies and software that can be made use of (McKeen et al, 2002).
  - Technical platform which deals with hardware. To make software working then you need hardware. Hardware might be local hardware (in the computer) and network based hardware like switches and servers etc.
- The business view deals with a model of the future enterprise showing it has a series of services that is linking internal and external clients (Herman, 2001).
- The work view deals with how will do what where and when and what tools they might make use of.

- The information view deals with what information needs the of the future organization (White, 2002).
- The application view deals with what applications that support the work of the organization.
- The external view deals with what technology, applications and information which is needed to support the external interactions with customers, suppliers and partners (MacSweeney, 2001).

The chapter introduces the point that the flexibility and agility in organizations and it is important to enforce change in the organization. The question is where does change come from? We argue for the Porter's five forces (Dynamics) as being the good answer.

Faces of innovation is very complicated and it is a matter of fashion:

- Change might be sold by Business Schools to MBAs who are executives in companies.
- It is not a given law that there have to be change in an industry; but if an industry is profitable then other companies will try to imitate the processes.

Flexibility is faced by modularity in product or service development. However standards needs to be developed to enhance flexibility and enhance modularity; but then the standards will eventually eliminate the need for flexibility.

The IT architecture should be the holistic view of IT and processes and the overall strategy of the organization.

Definition of Flexibility

Flexibility is considered as how good (efficient) and how fast the organization is able to adopt or to change. Upton (1995) claim there are at least three things are involved in flexibility:

- "The ability to respond to customers (users) quickly;
- The ability to introduce new products or services quickly;
- The ability to provide a broad range of existing products and services."[16]

Baldwin and Clark (1997) claim that complex products, services and processes are being developed in a "modular fashion" drives a lot of changes in the organization:

1. "Innovation is increasing;
2. The rate of change is increasing;
3. Complexity is increasing and so is the organization's ability to deal with complex products

16 McKeen and Smith, *Making IT Happen*, p. 236.

and services.

4. Relationships between companies are changing as individual companies become responsible for designing products or producing individual modules;
5. Flexibility increasing".[17]

Architecture Principles

A flexible architecture needs three elements to be considered flexible:

- Principles deals with basic rules that must be agreed on to assure the development of the architecture to be effective.
- Practices deals with actions that should be followed to establish the architecture.
- Implementation guidelines which deals with ideas to make the establishment of the architecture easier.

According to DeBoever and Buchanan (1997)[18] companies must realize that they have to focus on adaptability as the primary goal all other goals in relation to the Enterprise Architecture can only be assumed as secondary. This is the consequence of short cycle times driving the competitive advantage.

According to McKeen and Smith the Architecture principles are like the following:

- "Flexibility must be a primary goal.
- People must be integral to its development.
- Each enterprise architecture is unique.
- An enterprise architecture is never finished.
- Knowledge is critical to both flexibility and an effective architecture.
- Standardization is essential.
- A flexible architecture takes effort and investment."[19]

In general it is very important to get people from the IT department and the users to understand the need for the architecture and the issues related to how to make use of it. Perhaps Kotter's Eight Phased plan might be useful for this?!

17 McKeen and Smith, *Making IT Happen*, p. 236.
18 McKeen and Smith, *Making IT Happen*, p. 237.
19 McKeen and Smith, *Making IT Happen*, p. 238.

Practices

The practices needs to be handled to make sure the architecture is to be implemented:

1. Destination where are you going? What goals are identified to be achieved?
2. What is the current IT architecture? According to McKeen and Smith very few companies have the pleasure of the “green field” approach and they have to take note of legacy systems.
3. Identify gaps and develop standards, guidelines and interfaces.
4. Develop a migration plan for how to gap the differences between the targeted architecture.
5. Manage the evolution of architecture. You will constantly face changes for the architecture during the implementation and after the implementation. Therefor you need to focus on how to handle develop the architecture to cope with the needed changes.

Implementation Guidelines

1. Do communicate. If those who will approve the investment in the architecture do not understand how it will improve the organization then it will most likely never been approved. Thereto if neither business or IT understand the purpose of the open architecture then it is most likely that the architecture will not give the bring the expected result.
2. Do build trust. If the users do not understand how or why they should make use of the architecture then they will not make use of it or approve the architecture (embrace the technology). Therefor it is vital that the CIO create the proper communications and involve the end users so they do understand what the architecture will do for them,
3. Do focus on coordination. This deals with how the individual teams stays on track in the development of the architecture. Thereto the procedure might identify requirements.
4. Do learn carefully and systematically. Be experimental, learn how the stuff works and what doesn't work, and this should handled from both the business side and the IT side. This can be done by prototyping and simulations or from experience other organizations that are in the same situation.
5. Do change attitudes about how technology should be controlled. The IT department must change their attitude towards ownership and development of the applications since user made applications are important since they might assist the organization with crystallization and gaining a competitive advantage.
6. Do seek continuous input. Monitor what happens with the architecture. This process needs

to be done continuously but they do not have to be formal since you have to cope with change.

7. Do deliver what you have promised, this is a key issue in building trust and credibility therefor should you focus at this. According to McKeen and Smith have many smaller organization hard times with implementing EAs and therefor would small functional solutions be worth demonstrating.
8. Don't attach architecture to a single project. Architecture based on a single project normally lead to a inadequate and inappropriate architecture.
9. Don't forget about legacy systems. Legacy systems might be a vital part of the IT architecture of the company and therefor must a migration plan / path be articulated.
10. Don't turn architecture into a list of approved products. Development teams might make use of products very differently and therefor can the architecture not able to be build on the "list of approved products".
11. Don't fail to ongoing planning. A flexible architecture will always be changing and therefor will a company need mechanisms to detect and capture ideas.

The Role of the Architect

- The person could be both the catalyst and a facilitator.
- The person needs to have a good overview of the business processes and the IT architecture.
- The architecture needs to understand "form and function" and have a great knowledge of how the system works (both business processes and IT / Technical processes).

Enterprise Application Integration

Short resume of the chapter

Many organizations have so called “data silos” in the organization which mean that the organizations have software that are not able to share data or collaborate. McKeen and Smith introduces different strategies to achieve the Enterprise Application Integration.

What is EAI

EAI deals with how to integrate, modernize, consolidating the computer application within in an organization (enterprise).

It is important to make sure that the information flow in the organization and the data silos needs to bridged. Data islands and data isolation would lead to data inconsistency and redundant work.

In inter-organizational systems are more likely to get compensated than with end user issues.

Levels of EAI

This section deals with targets the architect should focus at:

- “Data level integration deals with databases, objects and distributed objects (The combination of data, logic, communications within a single entity. Which can achieve competitive advantage). Data level integration has formerly been made to bridge between databases that normally has been incompatible to make a single functional database.
- Application level integration deals with to handle communication between different business applications e.g., ERP systems, CRM systems and BPR systems. In the old days organizations needed to hardcode their applications. Today they do this via middleware.
- Process level integration deals with how to get the integrated processes to collaborate this is a so called enterprise wide by transaction processes. This process deals with 'Business Logic' and how to make use of the business logic the system is able to handle.
- Inter – organizational level deals with how to find the organizational processes and how to enable this to make value for the supply chain. Linthicum (2001) defines this as '*the ultimate goal is to bind all trading community systems together in such a way that any application can access any method or any piece of data without delay to support any business process'*.” [20]

It is not only inside of the organization. This will deal about supply chains for the organization.

20 McKeen and Smith (2003) p. 250 and Linthicum (2001)

Thereto the standard organizations do have vital power to cope with in this relation.

The EAI Toolkit

- Asynchronous event / message. The EAI has to be loosely coupled to engage the issues of how to handle the data flow among the different applications.
- Transformation engines which is a piece of software which is needed for to convert data from e.g., ERP systems to applications that might have been build in the organization.
- Integration brokers is the so called link between databases and the applications which enable the system to send handle and receive data e.g., this could be a web application which is able to communicate with a company database.
- Business process management frameworks deals with managing the software components in an integrated process flow.

Management strategies for EAI

1. Craft a corporate integration strategy. This involve the identifications of the strategic applications. This involves interviews with the IT leaders to and to develop a plan for integration. According to McKeen and Smith the lesser important strategic applications will benefit from the integration. Remember such things as a business case and include costs of the keeping the system as it is or developing the new system.
2. Assemble an EAI toolkit that focus on *'internal and / or external integration, Business Process Management, Security, Ease of use, Technology management functionality'*.
3. Deploy “hub and spoke” design which deals with the that applications shouldn't be connected directly to anything, 'design applications have to be autonomous and do not let them share databases directly', knowledge of the interconnections have to be removed from the source and target and these should be placed within the *hub*.
4. Create integration core competency team that deals with managing the group of developers to think as integrators and then to handle maintenance of integration documents, performing the detailed designs of each interface, constructing the middle pieces of the interface, establishing best practices, performing broker market places and to administrate all middleware software products.
5. Reintegrate your legacy applications:
    1. Refacing which means that a new graphical user interface needs to be standardized (common front-ends).

2. Repurposing deals with the need to be able to alter the flow of the business logic in the business applications; however it doesn't mean that the application it self is altered. This is a need to enable the flexibility of the architecture, these tools needs to be graphical.
3. Restructuring deals with the issues of separating the applications and classes so they are object orientated. This is the only way to ensure data validity and easy application shifts.
4. Re-engineering deals with rebuilding the entire application to enable it to meet the needs of the application.
5. Replacing deals with the application sometimes could be replaced with off – the – shelf software which give the organization the choice of what environment the application should be able to operate at.

6. The collaborative enterprise deals with how to make the organization able to communicate with information systems in its value chain and other organization in general. It is the ability to communicate "business logic" that is the interesting part of developing the organization.
    1. Develop an EAI strategy that embrace the "collaborative enterprise" e.g., making use of web services.
    2. Join industry association.
    3. Access your key business processes which might make value to other firms in the same industry or in other industries. Try to investigate if the development of these processes might give either a competitive advantage or be leased out to other organizations (making profit).

Remember it is hard to avoid the inter-organizational perspective.

Thereto remember that the standardization of the architecture applications e.g., development of the the interfaces might kill creativity in the IT department and this might lead to lower productivity.

Case study: Citibank Asia Pacific

- Within the change management section they would try to change the focus on how standardization of the IT infrastructure. Which also handles the It architecture and EAI. Standardization could also lead to knowledge management by innovation. Social implications would be how people interact with one each other and how the layout of the organization would change. In the ERP system standardization lead to a more consistent system.
- They focused on emerging technologies which could enable the organization to do better e.g, the world wide web.
- From a CRM perspective it was to gain the goal of the business customers. Complexity could also be a key word. Look at the customer from cradle to grave.
- From a M&R perspective it proved to be different core competencies and different IT architecture.
- From a BIZ – IT alignment lead to a shift from local strategy to a global strategy.
- From an architecture flexibility perspective it became a flatter organization and it became a global organization and and focused shift to global management.
- From the risk management perspective we talked about it would be two different organizations with two different IT architectures. Financial differences and technical differences where the two main risks. Thereto came the risk of success (they had to eliminate think risk).
- From a KM perspective then it could result into innovation.
- Estimation of the project benefits was done by developing by building a case for action.
- Project prioritization where they implemented VISA cards (this also served as a test).
- From the build, buy or market perspective it showed to be a decision factor was a new product offering and they made use of the systematics package and they build a system as well since they saw it as a very strategic project. This was also a global system.
- From the external relationships perspetive then they made use of the cirrus ATM.
- From the MTP perspective then they choose to centralize which eliminated a lot of old smaller servers around the countries.

Recruiting and Retaining People in IT

These notes have been based on **chapter eighteen** in the text book.

Short Resume of the Chapter

The chapter deals with strategies on how to attract and retain the best people in IT in the industry. McKeen and Smith introduces basic organizational theory about culture and how to potentially manipulate it to improve the situation for the company.

Why it is Important

According to McKeen and Smith project leaders, leaders and programmers who are the leading with in the industry are most likely eight to ten times better than the mediocre in their industry. Therefor it can become a *competitive advantage* for the organization to attract and retain the best in the industry[21].

The Market's Effects

McKeen and Smith conclude that since close to all organizations in industrialized and the productive development countries have discovered that value of IT then the different organizations have started to compete for the best IT persons in the industry.

Established IT companies such as IBM, SUN Microsystems and Microsoft have started to see the downside of manufacturing and started to see the positive side of servicing. This means that they need the intelligent employees who are able to think independently and develop new services which might be profitable.

Thereto are the organizations facing with issues that knowledge of “old technology and environments” is about to 'die out' since those people who have any knowledge about it have retired form the work force and no one are educated in the languages of environments any more.

McKeen and Smith's five factors

These factors have a great effect on the situation to get IT people and why it is the “Supplier's Market”[22]:

- Every organization and companies have discovered that IT can create value.
- Shift towards service market compared to the manufacturing market.
- Changing technologies and customer expectation have demanded flexibility in the

21 McKeen and Smith (2003), Making IT Happen: Critical Issues in IT Management, p. 268
22 McKeen and Smith (2003), Making IT Happen: Critical Issues in IT Management, pp. 268 – 269.

organizations.

- "Old skills are dieing out" (as above mentioned).
- Universities, academies and other institutions have no been able to provide the market with enough candidates with in IT.

Organizational Factors

McKeen and Smith mention the fact of prestige that might be influential on what IT professionals might prefer to join. Organizations that seem modern, popular and prestige orientated to work with. McKeen and Smith mentioned two examples a logistics organization and an investment company in both organizations IT is vital but only to many the investment company would be preferable.

Thereto Human Resources needs to develop policies that sustain retaining of the IT professionals e.g., investment offers, services like free cantina, free qualifications upgrade like certifications etc.

Personal Factors

Since the demographic and cultural changes have lead to that organizations no longer provide life long employment then employee moral has changed from being loyal towards the company to be loyal to themselves. They focus on personal goals and how to achieve them e.g., how to spent time with their families and how to develop their spare time interests.

Successful Strategies to Attract and Retain IT professionals

The below mentioned strategies are to be made use of to analyze develop at strategy to attract and retain IT professionals:

1. Identify critical skills. Both the technical and business environments have to be analyzed and estimates on what the business would need technically and economically is vital to specify what people the organization would be hiring. Thereto the work environment is an asset that needs to be analyzed e.g., the gaps between what is already provided by the organization and what the organization lacks. For this part the organization can make use of the same tools they make use of for their budget analysis for the different departments.
2. Make developing skills within the organization a top priority. According to Gaylen Duncan CEO of ITAC then the IT industry is lacking behind the fact that they have to upgrade their employees with new knowledge (certifications etc.). The organizations should focus on what skills they might lack in the future and by that they should develop a plan for each employee to make them develop these skills. Since the individual is about to take ownership then the organization must be the facilitator where the employee have the tools to develop their

skills.

3. Be creative in your approach to hiring deals with that the organization should focus on new ways to expose it self to potential employees e.g., make the organization more visible to candidates from universities by exposing it self there or have trainee programs that hire students right out of college. Other methods could be maximize focus at hiring channels e.g., exposure in television, Internet and paper adds. Or attract the temporary help the organization gets in form of temporary employed personnel as consultants to get permanent positions in the company. Another approach could be to make use of the employee referrals to persons who might have the skills the organization are looking for.
4. Manage the acclimatization process for new recruits carefully since first impressions can last for the entire period for the employee or employer e.g, the employee might take the experience he or she get in his or her started period for granted true his or her employment at the organization.
5. Create an exciting work environment deals how to make the fundament for a good organization culture. It is this element that keep people in the job, money (as a way of compensation) is not enough to keep people at work. McKeen and Smith mention these initiatives organizations can make use of:
    - Develop recognition programs make sure to award your employees for their work this can be done in a lot of ways e.g., incentives like money, education, promotion or simply just a handshake in front of the co-workers.
    - Showcase the technology initiatives deals with the organizations show their “new technology” which include software and hardware.
    - Offer challenges: IT professionals seems to want challenges during their time at the job and therefor do the organization need to give the IT professionals challenges.
    - Link training, challenges and performance deals with how to make the IT professionals bid for courses in e.g., the legacy system.
    - Provide opportunities for learning deals with offering the opportunities for learning to the IT professionals e.g., Excellence, excitement and empathy.
6. Develop retention program deals with different enticement the organization could offer its employees to make the stay in the organization. McKeen and Smith mention these ideas:
    - Special awards.
    - Service awards e.g., stocks or “overhead” pay.

- Bonuses.
- Increased salaries.
- Promotions.

7. Revist your compensation package deals with that the employees do know how much they are worth in the sense that they know what benefits, goods, education or rewards their co-workers get. It is therefor a need for the employers to combine a packet that suite the individual employees so they feel attracted to the stay in the company.

Developing IT Project Managers

These notes have been based on chapter **nineteen** in the textbook.

Short Resume of the Chapter

This chapter deals with that IT project managers in many organization faces challenges with management since the management do not value their work by providing them with the proper certifications. Thereto organizations might face problems with defining what their IT project managers should do and how to keep them in the organization. McKeen and Smith introduces practical strategies to handle the problems they might have with project leaders and how to retain them.

Differences in IT projects and Ordinary Projects

Ordinary projects like bridge building are formed due to natural laws and it is an art which is thousands of years old, compared to software project that is relatively and isn't based on natural laws leads to that IT projects often are delayed. The project owners are often lead down the wrong path delaying projects.

IT Projects and the Risk of Failure

Most IT projects fail since many organizations prefer to focus at large “strategically” projects and that increase the risk of failure.
The organizations might be not equip with the right project managers to handle the strategical projects and therefor they will be more likely to fail.

Elusive Business Requirements

Since business managers rarely are educated to understand their business needs then they will not be able to create a clear understand of what they want and want they need.

Since IT managers might not understand the business processes or the perspective from the business side then requirements might be elusive.

Organizations are faced with the enormous pressure to achieve flexibility and therefor are a lot of the projects forced down the IT staff which might lead to failure since they do not have the proper training or the proper materials.

The IT Project Managers

There is an ongoing discussion in the environment of IT project management that deals with if an

organization should buy or build an IT project manager to do the project. Thereto are there natural (genetic) leadership in projects or is project leadership thought over a class. The second major topic is the issue of certification. Do the certification of the project manager lead to better / more successful IT projects and do it really professionalize the IT project team? Is the price for certification worth the price for it? The certification might be a part of the benefits package.

McKeen and Smith do also indicate that many organizations have doubts about how define what an IT project manager should do in the company and therefor they might leave doubt to the IT project managers what they are supposed to do.

McKeen and Smith define a project manager as:

"A project manager is responsible for the coordination of the development, delivery, and implementation of customer – focused new products and services requiring technology support. This encompasses the coordination of business case preparation, negotiation and issuing project plans which specify the product, schedules, budgets, control, resources, accountabilities, and the resolution of issues"[23].

The evaluation of IT project managers should be based on the ideas mentioned at page 287 – 291 which include their core competencies:

1. Integrity and trust.
2. Interpersonal savvy.
3. Organizational abilities.
4. Sizing up people.
5. Negotiation.
6. Priority settings.
7. Process management.
8. Total quality management.
9. Customer focus.
10. Building team spirit.
11. Learning on the fly meaning that the manager will learn easily.
12. Managerial courage to stand up to the management and team members.
13. Dealing with ambiguity deals with the project manager would be able to cope with change

23 McKeen and Smith, Making IT Happen : Critical Issues in IT management, p. 286.

in the project environment.

14. Innovation management deals with the project leader needs to have a good feeling about what might be a good idea and what might be able to pursue.
15. Business knowledge.
16. Technical knowledge.

Establishing an IT Project Managers Program

Since IT project managers play vital role in the organizations they can lead to problems since the organization might not recover from the loss.

To avoid "manager loss" then the organization need to formalize their their IT project management program:

- Assessments skills or methods that might assist the organization with measuring the value, train and certify project managers.
- Tools that enable the organization to plan, facilitate planning, risk management, communication management, people management, quality management, scope management and time management.
- Methods deals with a collection for project management methodology that enable the organization to complete the projects.
- Guidance deals with functions that should guide junior or potential project managers.
- Direction that deals with guidelines to the processes of the IT projects.
- Compensation this deals with the documented approach on how to compensate and reward project leaders.

McKeen and Smith claim that the above mentioned approach to a program has lead to a professionalized culture in the host organization and increased the amount of IT project managers.

Professionalize IT Project Management

Organizations need to professionalize their IT project management. This can be done by creating layers in the project management teams e.g., incentives as salary and educations. McKeen and Smith mention a three layer division e.g, project managers, junior project managers and senior project managers.

Developing IT leadership

These notes have been based on chapter **twenty** in the textbook.

Short Resume of the chapter

This chapter deals with how to promote leadership in the organizations and what qualities needed in IT to enable functional leadership. Thereto do McKeen and Smith put in models that handle ideas on how how to define a good IT leader.

Leadership

Leadership is defined by Yukl (1998) as this:

- "Leadership is "the behavior of an individual … directing the activities of a group toward a shared goals.
- Leadership is 'influential increment over and above mechanical compliance wit the routine directives of the organization'.
- Leadership is the 'process of influencing activities of an organized group towards goal achievement'.
- Leaders are those who consistently make effective contributions to social order and who are expected and perceived to do so.
- Leadership is a process of giving purpose (meaningful direction) to collective effort, and causing willing effort to be expanded to achieve purpose.
- Leadership … is the ability to step outside the culture … to start evolutionary processes that are more adaptive (Schien, 1992, p.2).
- Leadership is the process of making sense of what people are doing together so that people will understand and be committed (Drath and Palus, 1994, p.4).
- Leadership is about articulating visions, embodying values, and creating the environment within which thins can be accomplished (Richards and Engle, 1986, p. 206)."[24]

Nobody knows what leadership is but we know it when we see it.

In general leadership can be divided into to two different categories:

- Transactional leadership who exert their goals, clarifying desired outcomes, providing feedback and exchange rewards and recognition for accomplishments.

24 McKeen and Smith, Making IT Happen : Critical Issues in IT Management, p. 296.

- Transformational leadership make use of four behaviors (a) individualized considerations where the understanding of the different needs within the group, (b) intellectual stimulation , reframing problems out from novel paradigms, (c) inspirational motivation, energizing group members' desire to work co-operatively to work towards collective goals, (d) idealized influence, broader issues and moral issues.

Studies of Leadership

Yukl (1998) define leadership as being in four levels:

1. Intra individual.
2. Dyadic.
3. Group.
4. Organizational.

Need for Leadership

The leadership is needed to bring en rich the organization with visions on how to lead the IT department to provide value to the organization.

Efficient leaders do also need to be managers otherwise they would not be able to function as leaders. In the same way will administrators in some way need to be leaders to be able to operate efficiently. The leaders must be able to understand and analyze processes in the IT department and the business, they would need to lead change which is a demanding task. The abilities of the leader and the manager are illustrated below[25]:

Manager	Leader
• Administers. • A copy. • Maintains. • Focuses on systems and structure. • Relies on control. • Short-range view. • Asks “how” and “when”. • Has an eye on the bottom line. • Imitates. • Accepts the status quo. • A classic good soldier. • Does things right.	• Innovates. • An original. • Develops. • Focuses on people. • Inspires trust. • Long – range perspective. • Asks “what” and “why”. • Has an eye on the horizon. • Originates. • Challenges the statues quo. • His or her own person. • Does the right things.

25 McKeen and Smith, Making IT Happen: Critical Issues in IT Management, p. 303.

Strategies for Achieving IT Leadership

1. Define the role of leadership with in IT as mentioned before this part varies between the manager and the leader, but in general it is hard to differ between the two sets of people.
2. Make Leadership a priority within IT make the IT professionals understand that it is important that they show leadership and they will be able to get certification and education within this field. But needs articulating:
    - The need for leadership within IT.
    - The requisite leadership skills.
    - The process for attaining these skills.
    - The personal rewards to be realized through mastery of these new skills.
    - The measurable benefits to the organization that result from enhanced leadership.
3. Define key competencies within IT and then design a functional profile for the an effective IT leader to cope with the changes.
4. Establish a program to develop IT leaders.

Best Practices in IT

These notes have been based on chapter **twenty one** in the textbook.

Short resume of this chapter

Deals with best practices in IT and how they are defined and how they can be used. McKeen and Smith introduce best practices as having different meanings but all relate to doing different things the best way.

Best practice

McKeen and Smith introduce the best practice as:

"Effectively integrate people, processes, and technology to do something for the organization"[26], thereto can best (as in best practice) mean two different things. It could men it is the best in the entire world (Kanter, 1995) or the best within a given time or location (Freeman, 1998).

There to best practice deals with:

- Refer to the best practice within in an industry.
- Best practice is effectively to integrate processes, technology and organization (people).
    - Practice : What organizational members do and what actually happens.
    - Best : Varies from the world, industry, similar business, objective standards.
    - Technological organizational change is called the technical – rational this is where the architect believes that the technical change (department restructuring and workflows) of the organization will lead the employees to adopt to it.
    - The opposite of the technological – rational approach is called the social – technical approach. This approach claims that people have to be compensated to change to the desired outcome.
    - The third way would be the interaction model.
- The core issue with best practice is to find the right practices to achieve the defined results.

The Process for Achieving Best Practices

Best strategic practices do also lead to potential problems like "blurring the strategic environment" with tactical initiatives which in the long run can have a negative effect for the company. Thereto

26 McKeen and Smith (2003), Making IT Happen: Critical Issues in IT Management, p. 309.

might multiple organizations apply the same best practices which will lead to the organizations will compete on the same parameters (competitive convergence[27]).

- Best strategic practices leads to best processes which leads to best work improvement practices.
- Best processes level:
  - Infrastructure Management deals with that the technology has to be up to date and the entire IT architecture should be working and the components of the architecture i.e., the network, front-end PCs etc. works and are up to date.
  - Service delivery deals with that IT needs to prove that it is able to satisfy its customers e.g., end users and its internal customers e.g., other departments technological platforms.
  - Management of development processes e.g, engineering. However McKeen and Smith do introduce issues like management of software development, managing risks, formal use of development processes, usability engineering processes etc.
  - People Management deals with keeping the IT professionals content and develop them.
  - Knowledge Management deals with providing the facilities for collaboration and sharing knowledge among employees and managers.
    - Usability engineering deals with that the CIO/CTO should know his users, know what they work with, setting the goals of usability and the outcome should be used to guide and design the processes, design multiple interfaces. Thereto should the interfaces be evaluated thereto would iterations of the prototyping be preferable.
  - Relationship Management deals with the idea that change happens through relationships (Markus an Benjamin 1997).
- Scandinavian Tradition deals with how to include in the distributors and customers in how to design a specific product.
- Best work improvement practices:
  - Focus.
  - Analysis.
  - Determine possible sources of best practice.

27 McKeen and Smith (2003), Making IT Happen: Critical Issues in IT Management, p. 309.

- Continual improvement (Kaizen). The opposite would be BPR[28] however this is in contrast to knowledge management at least historically.

Implementing Best Practices

- Practice developed in one context may not be applicable to another!
  The reason for this might be triggered by standards, it might organizational culture and it could be technological.
- Motivation to adopt is necessary for successful outcome!
  There are many different approaches on how to motivate people but there will always be problems by using economy to trigger change.

28 Business Process Re-eginering.

Managing the Virtual Workforce

Short resume of the chapter

This chapter deals with how to manage a virtual workforce. The chapter introduces some of the same principles as discussed in chapter two that deals with the social impacts of Information Technology.

What is a Virtual Workforce

- The workforce is available where and when they are needed, gone when they are done. - Laudon and Laudon.
- Your employees work at customers locations e.g. your suppliers and distributers where your employees are located there working for your interests and insuring that you as employer get the maximum benefit of it, but they also might be aiding your suppliers and distributors.
- The workforce is working from home or from “satellite office”. According to the book this is considered telecommuters, however there are many different forms of this which is presented in chapter two.
- Full time internal consultants. You got a bunch of people who are experts in something.

Preparing for the Virtual Workforce

- Technical infrastructure.
    - Setting standards and addressing technological concerns.
      When a company become larger than two to three persons then standards would be needed to be sure that things are done.
    - Creating a strong communications infrastructure.
    - Implementing groupware.
      Software solution that make people able to communicate.
- Organizational practices.
    - Develop more working options.
    - Experimentation.
    - Involving senior management.
    - Developing consulting skills. The employees needs to be able to work different places and work with different people.

Recommendations for Management

- Separate task management from resource management.
- Develop integration functions.
- View sourcing as a strategic business processes.
- Limit the number of sourcing partners. Know people very well and create a strong relationship.
- Be careful how you measure success. Since success might lead be interrelated between projects needs to be handled by the organization.
- Don't give up on virtual team work.
- Use virtual work to achieve flexibility, bot competitiveness. To get people in and make them do something and then make them go away is where virtual flexibility is the excelling. Remember not to outsource your core competencies.
- Communicate. IT might enable the employees to communicate.

IT Measurement

Resume of this chapter

The chapter introduce methods on how to measure the value of Information Technology for organizations.

“You can see the computer age everywhere but in the productivity statistics” - Robert Solow (1987).

The IT Measurement matrix

- IT investments are often unrelated to business strategy. Many organizations do not have an IT strategy.
- Payoff from the IT investments is inadequate. Since the above mentioned might be the case then the low payoff is determined.
- Relations between users and IT specialists are poor; therefore there is little trust between the groups.

The purpose of measurement of IT

- Investigate if IT investment is worthwhile. e.g., making use of Return of Investment.
    - Measurement problems with investments since it might lead to that the organization will not be able to gain access to competitive advantages since they do not have the proper technology. Remember the critical mass in network externalities which can be related to business opportunities.
    - IT work is often knowledge work which is often related to innovation.
    - Not only related to what has been delivered in the past bu also what it contributes to the future. Which might lead to improved capabilities.

The IT measurement Matrix

You have to include the hard measures and soft measure to create a useful IT matrix since they have influence on how to handle IT investments.

What happens if you find out that IT doesn't payoff at all? What would you need to do then?

Developing a Better Measurement Infrastructures

- The environment and processes that support of IT measurement.

- Think through the consequence of measurement e.g. What happens if you find out that IT doesn't payoff at all? What would you need to do then?.
- Make sure the CIO know his / her responsibilities.
- Establish and follow the best principles.
- Assign accountabilities to make sure ti be able to deal with the findings.
- Identify measures and their users.
- Use Business language.
- Recognize that measurement is an ongoing process.
- Avoid complexity.
- Experiment with metrics.

IT doesn't Matter

This was the title by Nicolas Carr who claims that technology is not matter in competitive advantage. We take IT for granted like electricity and it therefor it doesn't become a parameter for competition.

Porter mention in his book “Competitive Advantage” that technology is easily imitated by competitors and is therefor not a competitive advantage for the organization if it isn't adopted by the individual organization.

General Criticism of the Book

This book has its focus on how to change the company from within. The book indirectly claim that the CIO is the primary change agent and his work is probably the most important in the organization besides the COO. The book fails to deliver the ideas and inputs on how to make use of personal relationships or strategy examples on how to change the organization from with- in and therefor it create a pitfall for itself.

In my opinion the book fail to focus on the market dominant factors i.e., the five forces where the different strategies introduced with the five forces analysis promote behavior of the company to excel.

The book fail to explain the political approaches to organizational management and it fail to promote the ideas on how to deal with management and political fractions in the organization. You need to have a good insight to organizational theory to fully understand and make use of the advice as McKeen and Smith introduce in their book.

The book introduces a variety of topics but do only handle them in a superficial matter which in it self can lead to the so called “Surfer Syndrome” that will lead the organization on to a disastrous path where the different approaches fail simply management don't understand the processes in depth.

Based on the above mentioned criticism the book is only useable as an introduction to how a CIO or CTO should do his or her job but not a magic bullet that will save the organization from the challenges in the modern world.

Literature List

Books

- McKeen, James D., and Heather A. Smith. *Making IT Happen: Critical Issues in Managing Information Technology*. John Wiley & Sons, 2003.