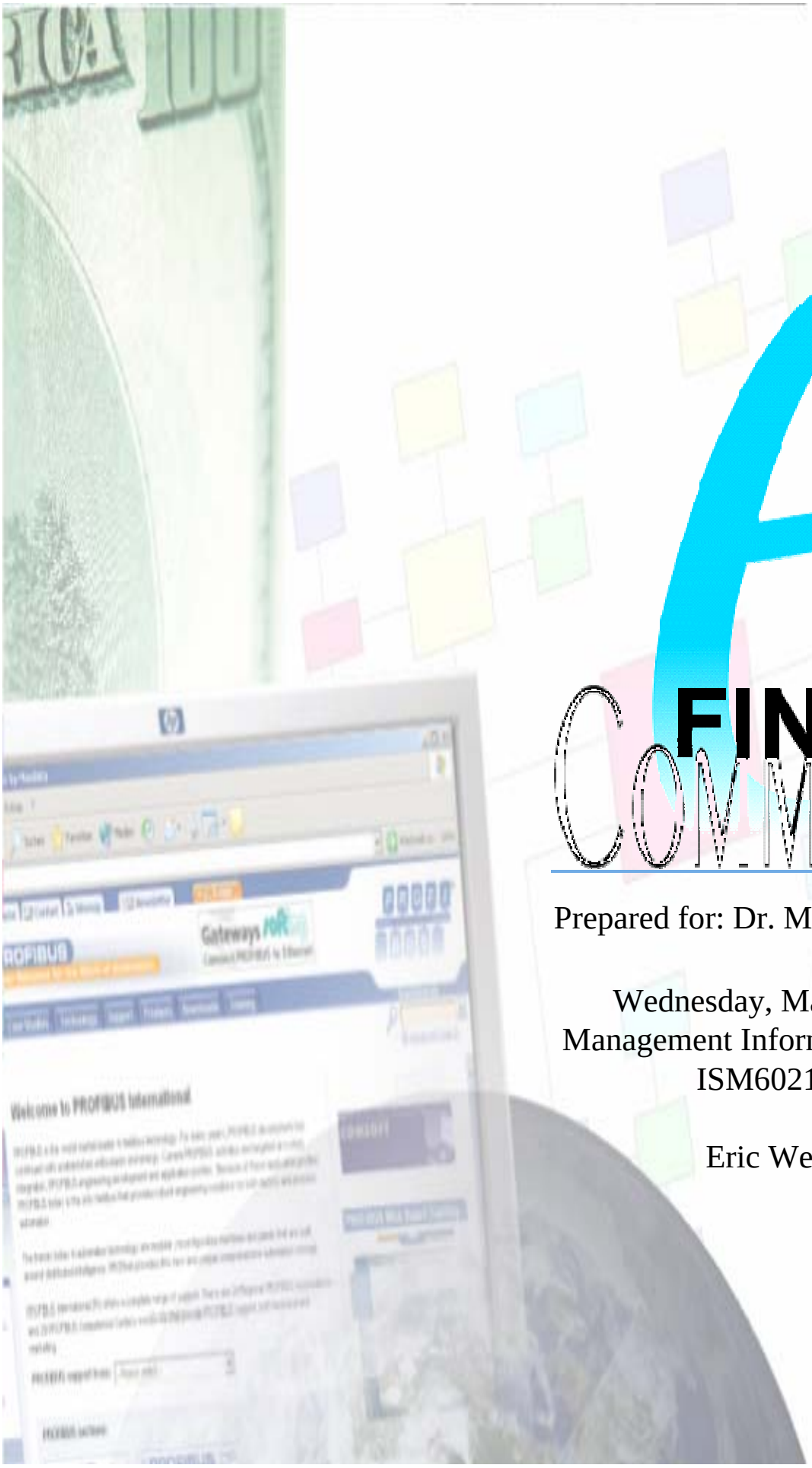

FINAL

e-COMMERCE

Prepared for: Dr. Madeline Domino

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Management Information Systems
ISM6021-001

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Management Information Systems
Course ID: ISM 6021.001 S05
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1. What is MIS and its evolution in a organizational setting?

Management Information Systems (MIS) are defined computer technologies structured in a business to facilitate data collection, information transfer, compilation and dissemination.

> MIS refers broadly to a computer-based system that provides managers with the tools for organizing, evaluating and efficiently running their departments as "a system consisting of the network of all communication channels used within an organization".[1]

Data structures have become instrumental in business operations, increasing profitability, managing cash flows, recording and studying operational effects on the entire business. The evolution has been from the "techno-centric focus" to a better balanced technology with an "organizational, management and social focus[2]"

This evolution has made MIS into a significant component of many companies. Some companies use technologies to supplement and study organization activities, while others like Amazon.com only exist because of their information technologies[3].

[1] http://en.wikipedia.org/wiki/Management_Information_Systems
[2] Dr. Ping Zhang, Syracuse University, 3/31/03
http://melody.syr.edu/pzhang/publications/IJHCS_03_Zhang_Dillon_HCIMIS_Intro.pdf
[3] Yahoo! Finance; Quotes & Info, Amazon.com Inc (AMZN) http://finance.yahoo.com/q?s=AMZN&d=t

a. Additionally MIS provides:

- Better communication, internet, data share, distributed work, telecommuting
- Efficiency in production, manufacturing and customization
- Enhancements in customer services, security, ethics enhancements
- Marketing through database profiling
- Enterprise Resource Planning system integration
- Restructuring for quality
- Globalization with the high bandwidth
- Empowerment enabling new industries, e-commerce
- Improved employee training, cooperation, evolving and change

2. Why assimilation and understanding IT is challenging?

IT is constantly changing and evolving. New people, business and technologies are developed every day. Understanding the accelerated growth requires continual review of the trade journals and publications that completely cover the internet, software and hardware infrastructure.

a. **IT must be managed as a critical resource** – Understanding this requires that staff and management respect both the hardware and software requirements, and not simply buy a box thinking it will magically solve problems. The investment is for systems to provide basic functions to improve efficiencies. This requires support, staff training and maintenance.

b. **IT enables change in how people can work together** – People are able to get more done quicker, interactions are easier and efficient so group cooperation can become more systematic. The enhanced communication creates stronger commitment when the activity data is tied to a reward structure.

c. **IT integrates all business aspects** – This aspect has evolved into enterprise resource planning and customer relations management (ERP, CRM) among other new concepts. Integrating:

1. cash transactions
2. time clocks, accounts
3. decision support
4. process systems
5. expert systems
6. knowledge systems

d. **IT enables new business opportunities and strategies** – System development models have expanded, through a waterfall approach including prototyping, rapid application development, joint application development, systems process modeling and outsourcing. As stated previously, entire new businesses like Amazon.com have formed as a result of just the new technology development.

e. **IT can help fight competitor challenges** – IT enhances competition, but also opens a new playing field where the little guy can interact and operate with the big guys, or even "seem big" when they are not. Companies get relevant timely information about processes and activities to make clear decisions to enhance profitability.

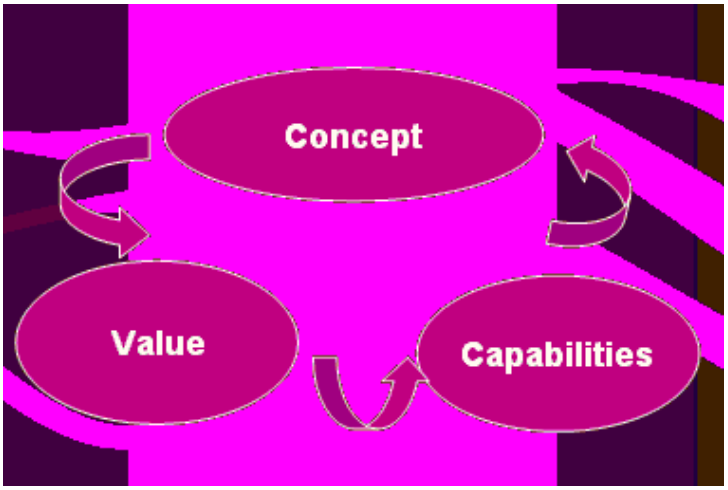
Understanding IT has become fundamental for business success. Most companies use email as their primary method of interaction. For example email provides a very detailed archive of data and decisions which can enhance operations. Email archives have been evolved in many firms. Additionally emails are also beginning to be used more and more in litigation as more firms track and retain copies of all employee emails. This one simple technology that so many take for granted now is becoming more and more powerful as both employees and corporations use it. Even the off topic of "email litigation" has evolved into a new business opportunity[4].

[4] ReSoft International LLC email litigation support tools, http://www.re-soft.com/email.litigation.support.htm

3. Discuss the following key IT themes and their relevance

a. Market Structure and Industry Dynamics Begins with defining what business we are in and flowcharting the Value-Chain. The structure and dynamics of technology infrastructure varies from one industry to another. Once the Value-Chain is understood the MIS infrastructure can be used to create business value and increased profits. Technology can reduce overhead and wasteful processes so staff time can be more productive.

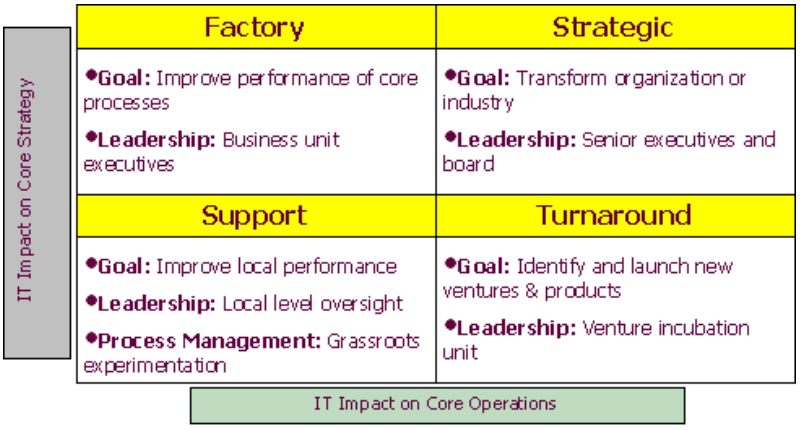
b. Evolving Business Models These develop from an initial "concept" to the specific "value added" with new technologies to create new "capabilities" as depicted in the graphic[5]. Technologies increase capabilities. Increased automation of processes is fundamental for business success to increase the profit margin. Technology is constantly changing. For example; Dell has developed fully automatic



[5] "Themes 2 – Evolving Business Models" ITThemes.ppt Course ID: ISM 6021.001 S05 SP05 by Madeline Domino

customization processes for ordering new computers[6]. Customers can visit a DELL website and select the customization option on any computer to modify the base model for any number of improvements common in the industry. This evolving technology is constantly changing and affecting everything in the industry, and many companies have begun to copy DELL who is effectively exploiting the new tehnology.

c. IT impact Through the internal analysis of factory processes, HR processes, and support mechanisms major changes can occur in these core business strategies and operations by introducing new technologies. This chart was provided in class to represent these changes.[7] A few short years ago the data transfer rates required to customize a computer from a website were not available. Today the interface developed by DELL includes full color pictures, help screens and animations of product use and operation. These enhance the performance of their customization processes and transform their entire organization. Originally you had to call DELL on the phone to



[6] http://configure.us.dell.com/dellstore/config.aspx?c=us&cs=04&kc=6W300&l=en&oc=d610sapp&s=bsd
[7] "3 Themes IT Impact" ITStragegy.ppt Course ID: ISM 6021.001 S05 SP05 by Madeline Domino

order a PC. Their sales staff used a program similar to the customization systems available online now. They discovered that customers could do this directly online, reducing their sales staff while improving performance. Similarly when used intelligently, IT transforms organizations and improves performance.

d. **Prioritizing IT investments** IT investments include two primary types. Type 1 is investing in technical infrastructure including hardware and software to increase business functionality and flexibility. This can be internal to improve functionality or a range of options like when a business develops flex-time options where employees track work hours electronically remotely to increase efficiency. Or it can be external changes like when DELL ported it's computer customization program to the internet to expand their business. Type 2 investments involve developing the technical applications for expanding into the use of internet commerce, content and the community using the systems.

Internal investments would improve quality by possibly decreasing cycle time; improve performance of knowledge workers to increase speed and effectiveness of decision making. Or it could attract top talent and improve employee retention. External investments could streamline and integrate channels to improve marketing to create "just in time ordering," add "information Value" to existing products and

services and charge "price premium" for information value services. Additionally external investments could seek to retain high–worth customers increase customers satisfaction scores & retention.

e. **Assimilation and Organizational Learning** This involves 4 phases which brings the new technology from initial introduction to full organizational use and adaptation. Selecting a new technology is only the very beginning of the process for enhancing MIS use in a business. Once the new technology is selected it must be learned and understood throughout the organization.

1. ID technology for investment, design application;
2. Provide technology learning and adaptation, setup and construction;
3. Rationalization ensures people understand and use the new technology after implementation, provide support;
4. Maturity is when the new technology is fully up and running, established, used and customized. This will include operation and maintenance.

Employee training has often been overlooked, but now is recognized as a fundamental component in getting any new program or technology accepted and used throughout the organization.

f. **Buy vs. Make** IT buying or making criteria is a significant question for any organization. Investing in specialized technologies will involve

some significant risks and benefits. Fundamentally a firm should buy technologies for processes that are routine and common. Where there are a lot of available software packages obtainable and the data is not significant. New technologies require significant investments and should be carefully considered for example will the new technologies:

a. Provide foundational operations
b. Meet competitive niche, copyrightable
c. Provide a specialized service or benefit
d. Exploit significant knowledge or tools explicit to the firm

g. **Partnership and Key Constituents** should be evaluated for improving management operations including IT managers, user managers, general managers and IT vendors. Often business operations can be supplemented through partnerships with specific vendors and technology providers. This should be evaluated for the management of Information technologies, internal and external users, general operations and vendors, supplier and servicing firms. For example, Amazon.com has created partnerships with other online vendors so they could share their client base[8]. This is occurring more and more as IT technologies get more diversified and easily available.

h. **Protecting IT Assets and Managing Risk** When firms make such considerable investments into software and technology these IT assets

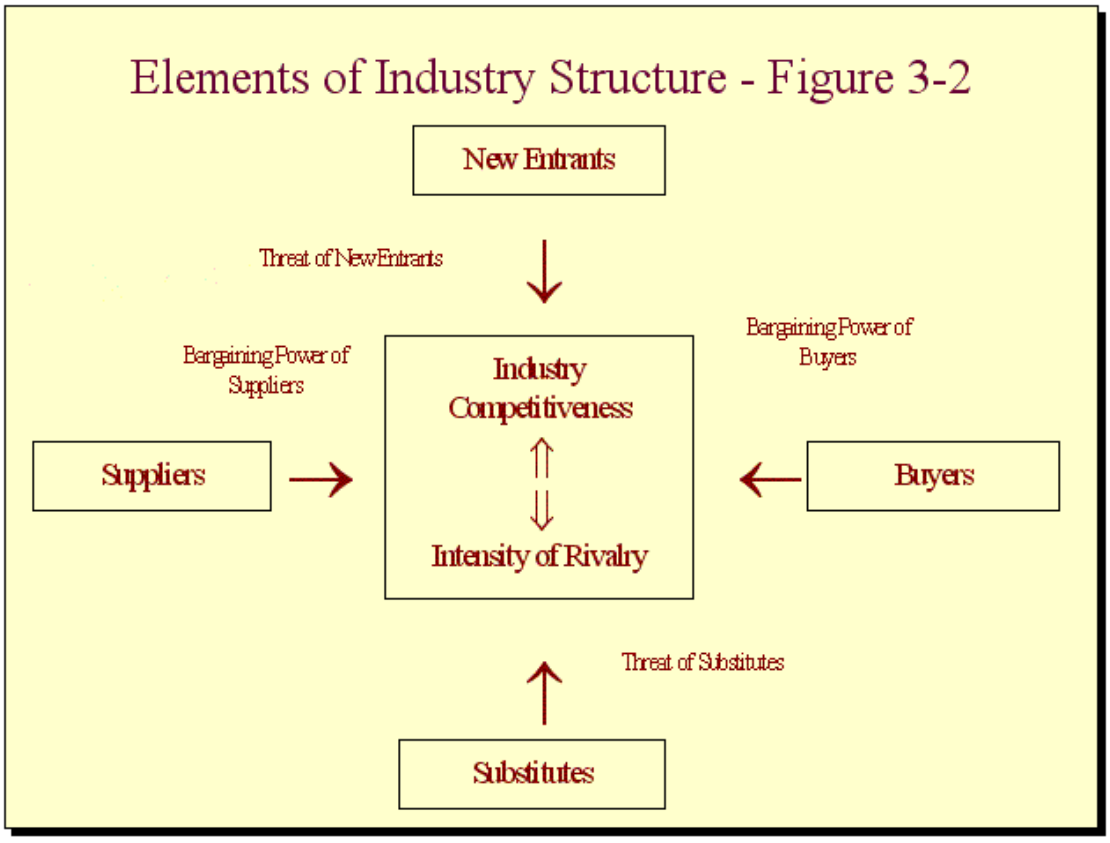
[8] Flowersales.com Books - in Partnership with Amazon.com
http://www.flowersales.com/flowerbooks/faqbooks.htm

have to be protected to manage any risks associated with them. This includes the hardware and software risks. Hardware protective accessories include surge protectors and battery packs which are essential to keep an adequate power supply for the critical equipment. Software security includes firewalls, virus and spam software, backup and disaster recovery programs. Many firms with multi-millions invested in technologies need to have complete systems replicated offsite so that business operations can continue when the main office is shut down. The advent of new advanced technologies has created whole new business and corporate divisions specifically designed to address these types of issues with new concepts such as such as Real Time Network Routing (RTNR), FASTAR® (FAST Automatic Restoration) and FASTAR® II, and the highly-skilled Teams with patented mobile disaster recovery equipment. [9]

i. **Pervasive computing; Opportunities and Risk** These bring up some important considerations to evaluate before making an investment. Does your firm want to be the very first in the industry? Would being the very first provide a strategic advantage or provide additional burdens through support requirements. Is there significant change anticipated? Would the new investment become useless because the technology is changing so quickly that it would make it

[9] Network Disaster Recovery The AT&T Web Site © 2005 AT&T. http://www.att.com/ndr/index.html

ineffective, outdated or unnecessary? What other risks are involved? Is there intrinsic value associated with the new opportunity? If it will not bring direct profits, does it open other things that will make the investment profitable? All these issues must be reviewed and studied before making any decisions about a new IT investment including



buyers .suppliers, new players and old competitors.[10]

[10] "Elements of Industry Structure" ITStragegy.ppt Course ID: ISM 6021.001 S05 SP05 by Madeline Domino

4. Discus Porters Model and the relevant factors of industry competitiveness.

Information technologies can make your business more competitive so it is worth the investment for the advantage. IT in a principal driver of competition[11]. Ongoing scientific research brings new technologies to industry everyday.[12] Corporate Value-Chains are always evolving more and more technology in all aspects. If technology isn't fundamental to the activity, then it is used in connecting to other aspects.

a. The five forces for technology evolution include

1. scale changes – total new concept becomes feasible;
2. learning – new skills bring use of new technologies;
3. uncertainty reduction – imitation brings standardization;
4. diffusion – technology disperse through the business;
5. diminishing returns – limits reached where new architectures are needed to progress.

b. Two examples

1. scale changes – occurred with the advent of wireless technologies which opened complexly new markets. This totally new concept has made outdoor internet café's feasible.

[11]"Technology and competitive advantage" Journal of Busness Strategy; Winter85, Vol. 5 Issue 3, ABI/INFORM Global pg 60
[12] Tampa Bay Technology Forum professional association of technology and business http://www.tbtf.org/

2. diminishing returns – occurred with the creation of faster dual processor pc's. The necessity for large mainframe systems for advanced CAD (Computer Aided Design) packages. These cheaper computers brought a flood of new programs that were capable of doing the high end 3D animation graphics that larger computers could only do a short time ago. Now the technology is only being upgraded on the PC versions where there is a lot greater market share. Large mainframe owners have to purchase PC's to use the latest technologies, or customize their arcane programs.

Porter work continues on the edge of IT, he debunks such Internet myths as first-mover advantage, the power of virtual companies, and the multiplying rewards of network effects.[13]

> Many of the pioneers of Internet business, both dot-coms and established companies, have competed in ways that violate nearly every precept of good strategy. Rather than focus on profits, they have chased customers indiscriminately through discounting, channel incentives, and advertising. Rather than concentrate on delivering value that earns an attractive price from customers, they have pursued indirect revenues such as advertising and click-through fees. Rather than make trade-offs, they have rushed to offer every conceivable product or service.[14]

[13] "Strategy and the Internet" Michael E. Porter; Harvard Business Review, March 2001 http://www.isc.hbs.edu/Strategy_and_the_Internet.htm
[14] ibid.

5. ID strategic information systems and how is it different from others.

Strategy Information Plans provide guidance for information systems development.[15] Many companies have developed Information Strategy Plans which have Critical Success Factor (CSF) Processes included. CSFs provide those things which must go right to reach the goal of guiding information technology investments. Fundamental to success of these strategy plans are managing project investments so that the projects are completed and implemented as intended.

> "Nearly one-third of information technology (computer and software) projects were canceled before completion. Over half of the project budgets exceeded 189 percent of the original estimate. The average schedule overrun for projects that were in difficulty was 222 percent. And, on average, the delivered product contained only 61 percent of the originally specified features."[16]

Reaching these goals is determined by management priorities. A strategic system can increase direct access to key customers, contribute significantly to the business operation and impact competition.

[15] "CRITICAL SUCCESS FACTORS IN INFORMATION ENGINEERING" As provided in class by Madeline Domino Course ID: ISM 6021.001 S05
[16] "Identifying and Analyzing Critical Success Factors: Let's Not Overlook an Acquisition Strategy That Would Promote Program Management Stability " Program Manager, Sept-Oct, 2001 by James H. Dobbins http://www.findarticles.com/p/articles/mi_m0KAA/is_5_30/ai_80747118

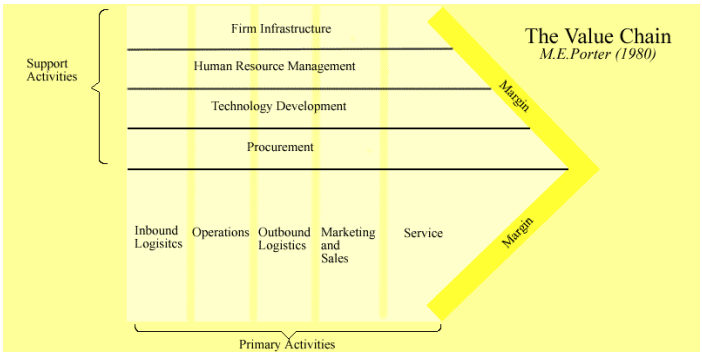
a. **Discus four strategic relevance categories and give 2 examples.**

Industry competitiveness is impacted by four main areas, creating new market entrants, creating market substitutes, improving bargaining with supplies and buyers. All these components increase industry rivalry. For example when Amazon came online the existing book stores like Barnes and Nobles got hit really hard. People would check out a book in the store, but then buy it online from Amazon. Barnes and Noble soon learned the advantage of the online stores and built their own. This cannibalized their sales, where customers still could come into their stores to find and see a good book, but then buy it online at a cheaper price. Critical elements include:

1. industry understanding
2. different approach
3. unique to firm
4. fit strategic circumstances

When structured correctly with the proper strategic thrust of differentiation, costs, innovation, growth and alliances unknown Amazon internet store was able to rival the industry giants.

6. Discus the Value-Chain[17]



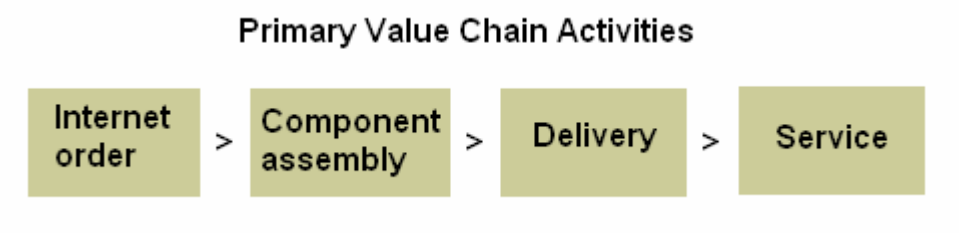
a. **What is the Value-Chain**? The concept of a Value-Chain for IT systems is to recognize that a firm is trying to make a profit by providing value to a customer. To earn a profit the company has created a method of adding or creating value for the customer, for example, by combining raw materials together for meeting a customer need. Its Value-Chain would be the layout of the operations to complete this including all the processes that add value to create a product. The IT aspect of this Value-Chain is those elements that IT provides to add value to the company, usually significant aspects of this chain. Technology can save time, account resources, plan process and time processes, all significant elements for the company's Value-Chain. DELL combines technology components into computers that are very valuable to customers. DELL uses technology in many aspects of their Value-Chain to enhance this production and make a profit as has been defined here.

b. **Why is it important?** When a firm understands the elements of their Value-Chain they can automate or simplify components to

[17] Value Chain Analysis, Marketing Teacher is for marketing learners. http://www.marketingteacher.com/Lessons/lesson_value_chain.htm

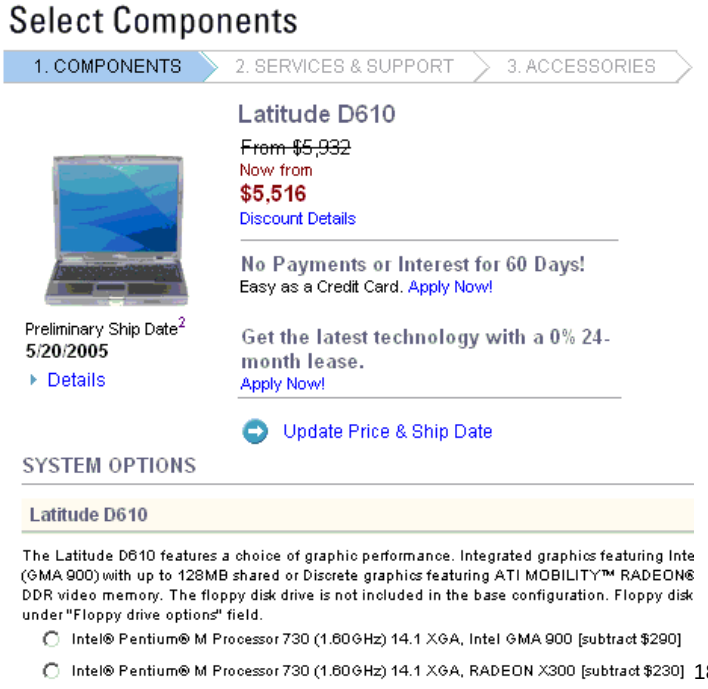
increase profit. Defining the primary activities and processes the firm completes for creating customer value enhances the ability of management to simplify these and develop a competitive advantage. The "Jobless Recovery" experienced in the USA is the result of this increased productivity with automation instead of new jobs.

c. **What are some components?** The Value-Chain must be defined for each company individually. Typical components include ordering materials or inbound logistics, operations, outbound logistics, marketing, and service. For DELL their primary Value-Chain may be:



d. **What relevance does it have on business organization and IT?** The biggest advantage derived from developing a Value-Chain is after the company specific activities are all defined. Process flow diagrams can be made to define specific details of all operations. This can be used to isolate individual value creating activities for optimization. For DELL they might have determined that they were spending too much on returns and service where customers were receiving PC's that were not exactly the specifications they anticipated. In reviewing this in detail DELL created the website application for

customers to create the detailed computer specification directly which eliminated the human error of taking orders over the phone. The business process automation increased quality, productivity, and accuracy to increase company profits.



[18]

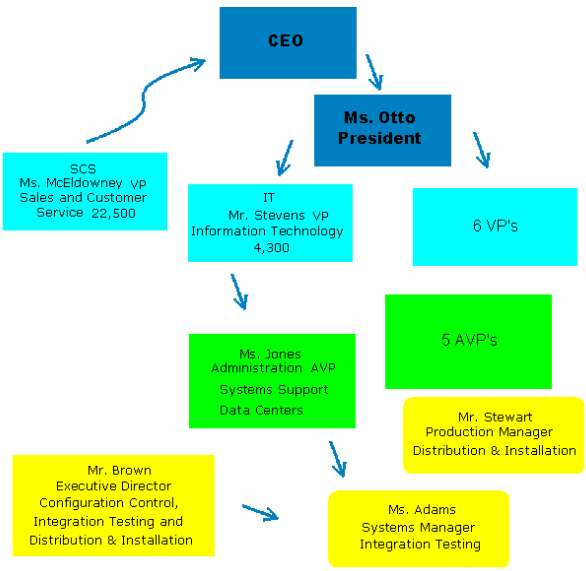
e. **How does this relate to the Heineken case business outcome?** Heineken reworked their distribution process to simplify it and eliminate time delays. They created an internet based ordering, planning and forecasting system, called HOPS (Heineken Operational Planning System). This resulted in reduced lead time for orders, reduced inventory, increased sales, reduced errors in orders and improved relationships with customers.

[18] http://configure.us.dell.com/dellstore/config.aspx?c=us&cs=04&kc=6W300&l=en&oc=d610sapp&s=bsd

7. Discus lessons learned for SuperNet.

a. Specify Various Risks The primary risk for SuperNet Inc was the continued dissatisfaction from customers. As the telecommunications industry continues to grow, more competitors are entering the market. If SuperNet continues to have infighting and conflicts with their own staff the competitors will take over their market completely.

b. Key Management Issues (examples) If the CEO simply responds to the manager with the biggest mouth instead of flowing his own chain of command, he is setting the company up for greater strife in the future. When Ms. McEldowney stopped in to see him, he should have told her to report to Ms Otto or to discuss her issues with the IT staff herself. Mr. Stevens also could have resolved the customer service problem better by mandating that Ms. McEldowney's staff all complete significant amounts of training. The technology was their but was not to be consistently utilized throughout the company. Mandated classes could have made staff more accountable and responsive to the customers to improve services.

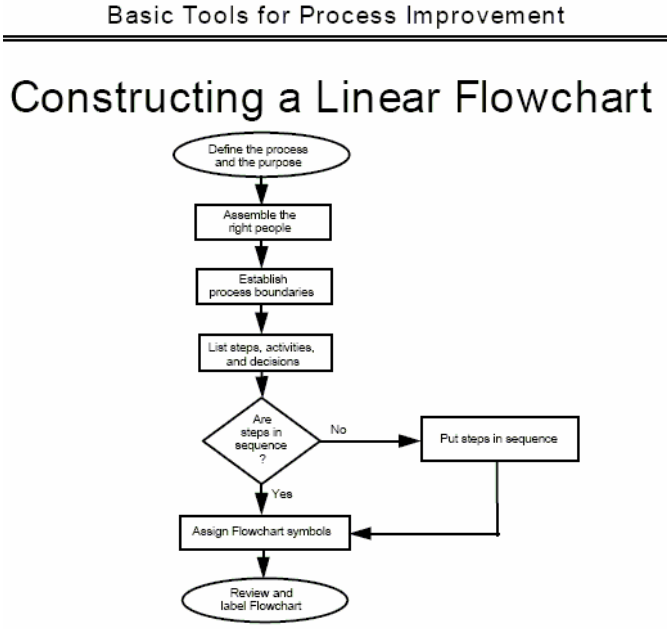


8. Discus Six Sigma initiatives and why they are relevant to IT.

Six Sigma and Balanced Scorecard are business management tools for trimming the fat in organization structures and operations. The data driven decision making methodology includes eight phase[19]

1. recognize
2. define
3. measure
4. analyze
5. improve
6. control
7. standardize
8. integrate

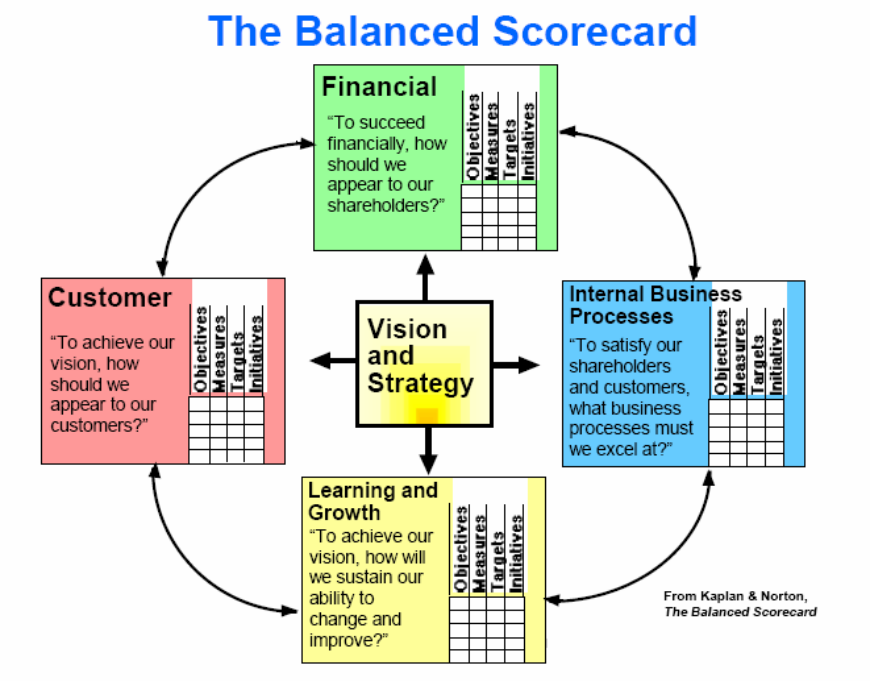
These phases are used with detailed questions to collect relevant company and operation data for making decisions to solve business problems. Automation technologies make it easy to collect data. So business analysis has been simplified with new technology tools and data warehouses. Understanding how data is collected and interfaced is fundamental, and then measurement techniques are used to determine places for improvements.



[19] "Six sigma, e-commerce pose new challenges" Kenny Kendall; Donna Fulenwider; Quality Progress; July 2000; 33, 7; ABI/INFORM Global pg. 31

The entire system is designed as a process workflow. The technical services are developed to provide the infrastructure to enhance decision support. This must include the three activities of Data Access, Statistical Analysis and Results Dissemination. The data is collected and compiled in a data warehouse to organize and manage.

b. Modern Day Issues (2 examples) issues continue today as Balanced Score Card techniques are used in governments. Once again they seek to enhance customer satisfaction, improve weak processes by empowering the skilled workforce. Each model has found the knowledge and skills of the employees is the foundation for all innovation and improvements [20]



[20] "A Balanced Scorecard For City & County Services" Paul Arveson © 2003 Balanced Scorecard Institute http://www.balancedscorecard.org/

9. Discus changing impact, driving forces and challenges ahead of CIO.

a. **Changing Impacts** The Technology issues ahead that seem most critical are the current expansion of internet risks, pirates, viruses and industrial spying. The new frontier of high technology and 100MB bandwidth are opening the desktop PC and the 56 story corporate monolith to increased security risks. It's the latest area to be colonized and already identity thieves are making regular citizens into purchasing slaves. The slam of SPAM which increases the expansion of all these negative features is only starting to be regulated and limited. The CIO must be sure his technicians keep up with all the cracks and hackers.

b. **Driving Forces** for this new industry is the same forces that killed the Native American Indians in the westward expansion and the Gold Rush => GREED. As long as people see the fast buck new technologies will be exploited for the wrong reasons. CIO's must keep MIS staff focused and dedicated. The smallest conflict and issues easily escalate into hardware and software failres.

c. **Challenges** the CIO must address are changing every day with the continued growth of technology. Ideally he must keep competent skilled staff learning and growing reading trade journals and watching the road map ahead. The Internet Superhighway is just starting to

expand. Every aspect of the business Value-Chain and infrastructure are impacted. If the CIO wants to be successful in business he much be very educated about e-mail, e-commerce, and e-employees. He must support e-staff that manage and supervise to all technology and infrastructure together to make a success E-Business in the 3 millieniium.