



HY-351:

Ανάλυση και Σχεδίαση Πληροφοριακών Συστημάτων
Information Systems Analysis and Design

Πανεπιστήμιο Κρήτης, Φθινόπωρο 2005

Φροντιστήριο 2

Feasibility Analysis Case Studies

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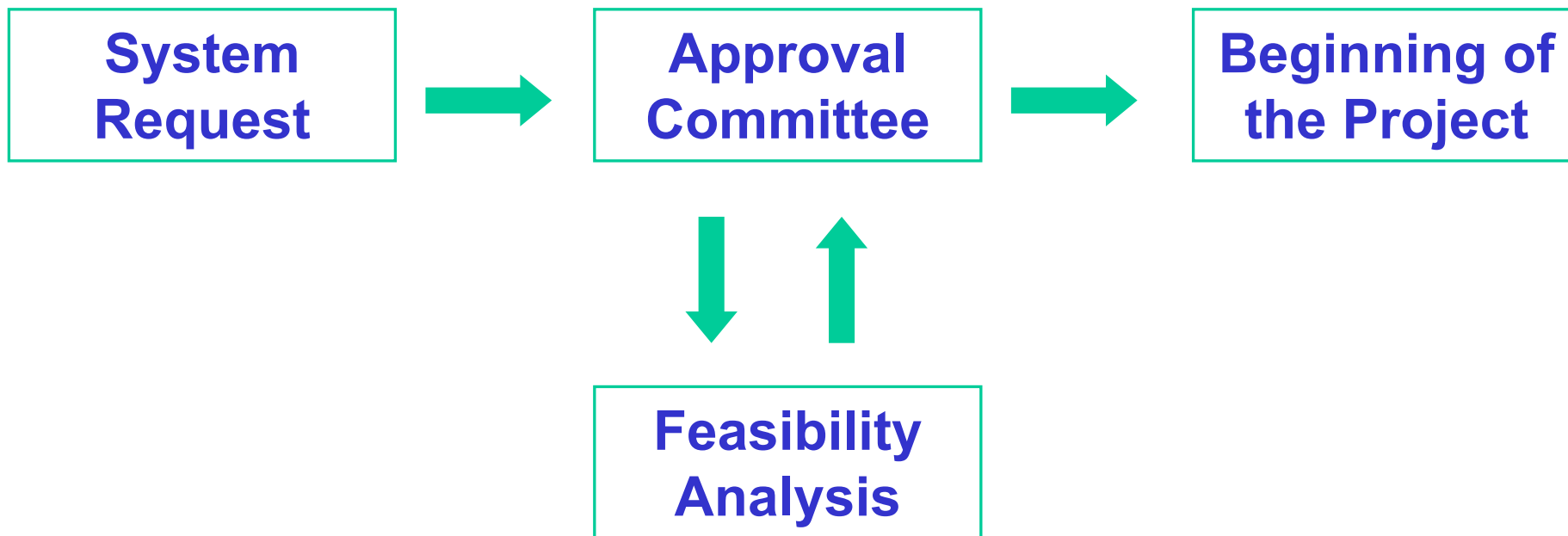


Project Identification

- A **project** is proposed when someone identifies some business value that can be gained from *using information technology* (opportunity to improve business).
- **Project sponsor**: proposes the development or adoption of the new information technology
- **Approval committee**: reviews proposals from various groups and units in the organization and decides which to commit to developing.



Project Identification-The Big Picture





System Request

- It is a document that describes the **business reasons** for building a system and the **value** that the system is expected to provide.
- It lists key elements of the project
 - **Project name**
 - **Project sponsor**
 - **Business need**
 - **Business requirements**
 - **Expected value**
 - **Special issues or constraints**



Elements of the System Request Form

<i>Element</i>	<i>Description</i>	<i>Examples</i>
<i>1)Project Sponsor</i>	<i>The person who initiates the project and proposes the development or adoption of the new information technology</i>	<i>Several members of the Finance Department IT Manager Vice President of Marketing</i>
<i>2)Business Need</i>	<i>The business-related reason for initiating the system</i>	<i>Increase Sales Improve market share Improve customer service</i>
<i>3)Business Requirements</i>	<i>The business capabilities that the system will create for the organization</i>	<i>Provide online access to information Capture customer demographic information</i>



Elements of the System Request Form

<i>Element</i>	<i>Description</i>	<i>Examples</i>
<i>4)Business Value</i>	<i>The benefits that the system will create for the organization (tangible-intangible value)</i>	<i>3 percent increase in sales \$200.000 cost savings from decreased supply costs</i>
<i>5)Special Issues or Constraints</i>	<i>Issues that are revelant to the implementation of the system and committee this decisions about the project</i>	<i>System needed in time for the Christmas holiday season Government-mandated deadline for May 30</i>



CD Selections Company Case Study

- CD Selections is a chain of fifty music stores
- Annual sales last year were \$50 million
- They want to expand into e-commerce with respect to the existing brick-and-mortar stores.
- CD Selections currently has a Web site that provides basic information about the company and about each of its stores.
- The page was developed by an Internet consulting firm and is hosted by a local ISP.
- The IS department is working with the ISP to maintain the site but it has a lot to learn when it comes to conduct business over the Web



System Request for CD Selections

System Request - Internet order project

Project Sponsor: Vice President of Marketing

Business Need: This project has been initiated to reach new Internet customers and to better serve existing customers using Internet sales support

Business Requirements:

Using the Web customers should be able to search for products and identify the brick and mortar stores that have them in stock. They should be able to put items on hold or place orders. The functionality of the system is listed below:

- Search through the CD Selection's inventory of products
- Identify the retail stores that have the product in stock
- Put a product on hold at a retail store and schedule a time to pick up the product
- Place an order for products not currently in stock or not carried by CD Selections
- Receive confirmation that an order can be placed and when it will be in stock



System Request for CD Selections (con't)

System Request - Internet order project

Business Value:

- Increase sales by reducing lost sales due to out-of-stock or nonstocked items
- New customers through company's Internet presence
- Improved services will reduce customer complaints
- Improved customer satisfaction
- Increased brand recognition

- *Conservative estimates* of tangible value to the company includes:
 - \$750.000 in sales from new customers (As a new store)
 - \$1.875.000 in sales from existing customers (Stores lose approximately 5% of total sales from out-of-stock)
 - \$50.000 yearly reduction in customer service calls (50% of customer complaints stem from out-of-stock items)



System Request for CD Selections (con't)

System Request - Internet order project

Special Issues or Constraints:

- The Marketing Department views this as a strategic system.
- In the future CD Selections may want to sell products directly over the internet
- The system should be in place for the holiday shopping season next year



Feasibility Study

- Once the need for the system and business requirements have been defined, it is time to create a more detailed business case to better understand the opportunities and limitations associated with the proposed project.
- **Feasibility analysis** guides the organization in determining *whether to proceed* with a project. It also identifies the important risks associated with the project that must be addressed if the project is approved.



Dimensions of Feasibility

- **Technical:**
 - Can we build it?
- **Economic:**
 - Should we build it?
- **Operational (organizational):**
 - If we build the system will it be used?



Technical Feasibility-Can We Build It?

- **Familiarity with Application**
 - Less familiarity generates more risk
- **Familiarity with Technology**
 - Less familiarity generates more risk
- **Project Size (time, number of people)**
 - Larger projects have more risk
- **Compatibility**
 - The harder it is to integrate the system with the company's existing technology, the higher the risk



Case Study

- The Lucky Star Co. is a chain of 12 retail stores that sell a variety of gift items, chocolates, cheese and wines.
- The company has an IS team of 3 people
- They have created a simple information system of networked point-of-sale registers at the stores.
- The boss wants to develop an Internet on line sales system that:
 - allows customers to browse through products on-line
 - allows customers to find store locations nearest them
 - allows customers to place orders for products with credit card payments
- Is this system technically feasible?



Technical Feasibility

- This business application is new to the organization
- No one has experience on Internet-based commerce
- Technically, the current staff is probably incapable of developing this system
- Very small IS staff who are currently kept busy maintaining their existing systems

Very high technical risk for this project!



Economical Feasibility – Should We Build It?

- Identify Costs and Benefits
- Assign Values to Costs and Benefits
- Determine Cash Flow
- Determine Net Present Value
- Determine Return on Investment
- Calculate Break – Even Point
- Graph Break – Even Point



Operational Feasibility- Will It Be Used?

- Stakeholder analysis considers:
 - Project champion(s) or sponsor
 - Senior Management
 - End Users
- Is the project strategically aligned with the business?
 - *Strategic alignment* is the fit between the project and business strategy. The greater the alignment the less risky the project.



Case Study

- The director of Marketing at Ho-Ho Department Store, requested the development of a new system to assist his sales staff in managing their customer contacts.
- As a side benefit of this system, the director will receive detailed information about each salesperson's daily productivity.
- The sales staff has enjoyed considerable autonomy in the way they conduct their daily work.
- Recently much managerial attention has been focused on the implementation of another major new computer-based system, which has been far behind schedule and plagued with problems
- What's the Organizational Feasibility of this system?



Organizational Feasibility

- The director strongly supports the system
- Much attention is given on another project that has not gone well (low support from senior management)
- The end user support is very questionable

The organizational feasibility risk of this system is quite high at this time!



Applying The Concepts At CD Selections



Internet Order Feasibility Analysis Executive Summary

Technical Feasibility

The Internet Order System is feasible technically although there is some risk.

CD Selections risk regarding familiarity with Internet order applications is high

- The Marketing Department has little experience with Internet based marketing and sales
- The IS Department has not worked with Web-enabled order systems

CD Selections risk regarding familiarity with technology is medium

- The IS Department has gradually learned about Web Systems by maintaining the current Web site.
- Development tools for commercial Web applications are available ,although the IS department has little experience with them.
- Consultants are available to provide help in this area



Technical Feasibility

The project size is considered medium risk

- The project team likely will include less than ten people
- The project timeframe cannot exceed a year because of the Christmas holiday season implementation deadline.

The compatibility with CD Selection's existing technical infrastructure is good

- The current Order System is a client-server system built using open standards.
- Retail stores already place and maintain orders electronically
- An Internet infrastructure already is in place at retail stores and at the corporate headquarters.



Internet Order Feasibility Analysis Executive Summary

Economic Feasibility

A cost-benefit analysis was performed; see attached spreadsheet for details. A conservative approach shows that the Internet Order System can add significant business value

- ROI over 3 years : 229 percent
- Total benefit after three years: \$3.5 million (adjusted for present value)
- Break-even occurs : after 1.7 years
- Intangible Costs and Benefits
 - Improved customer satisfaction
 - Greater brand recognition



Internet Order Feasibility Analysis Executive Summary

Operational Feasibility

From an organizational perspective this project has low risk.

- **Project champion (Vice President of Marketing)**
 - He is well positioned to sponsor the project
- **Senior Management**
 - Is aware of and supports the project
- **End users**
 - Internet consumers: are expected to appreciate the benefits of CD Selections Web presence
 - Management in the retail stores: should be willing to accept the system, given the possibility of increased sales at the store level
- **Strategic Alignment**
 - The objective of the system (increase sales) is aligned well with the senior management's goal of increasing sales.
 - The move to the Internet also aligns with Marketing's goal to become savvy in Internet marketing and sales



Internet Order Feasibility Analysis Executive Summary

Additional Comments

- We should consider hiring a consultant with expertise in similar applications to assist with the project
- We will need to hire new staff to operate the new system



Economic Feasibility Analysis for CD Selections

	2003	2004	2005
Increased sales from new customers	0	750.000	772.500
Increased sales from existing customers	0	1.875.00	1.931.250
Reduction in customer complaint calls	0	50.000	50.000
Total Benefits	<u>0</u>	<u>2.675.000</u>	<u>2.735.750</u>
PV of Benefits	<u>0</u>	<u>2.521.444</u>	<u>2.520.071</u>
PV of All Benefits	<u>0</u>	<u>2.521.444</u>	<u>5.041.515</u>



Economic Feasibility Analysis for CD Selections

	2003	2004	2005
*Total Development Costs	254.000	0	0
*Total Operational Costs	446.000	452.700	464.751
Total Costs	<u>700.000</u>	<u>452.700</u>	<u>464.751</u>
PV of Costs	<u>679.612</u>	<u>426.713</u>	<u>425.313</u>
PV of All Costs	<u>679.612</u>	<u>1.106.325</u>	<u>1.531.638</u>

*** With full details in your project**



Economic Feasibility Analysis for CD Selections

	2003	2004	2005
Total Project Costs Less Benefits	<u>-679.612</u>	<u>1.415.119</u>	<u>3.509.878</u>
Return on Investment	229.16%	(3.509.878 / 1.531.638)	
Break even Point	<u>1.7 years</u>		
Intangible Benefits		Greater brand recognition Improved customer satisfaction	



References

- **Systems Analysis and Design with UML Version 2.0** (2nd edition) by A. Dennis, B.Haley Wixom, D. Tegarden, Wiley, 2005. CHAPTER 3
- **Object-Oriented Systems Analysis and Design Using UML** (2nd edition) by S.Bennett, S. McRobb, R. Farmer, McGraw Hil, 2002, CHAPTER 1
- *CIO Magazine, "Meter Readers," January 15, 2001, by Debby Young*