Large Scale Systems Design  
G52LSS

Lecture 4 – Project Initiation

- Opportunity Identification
- System Request
- Feasibility Analysis
- Project Management

Learning outcomes: describe the purpose and deliverables of project planning; describe project initiation; identify components of a systems request; understand aspects to consider in feasibility analysis; understand the purpose of project management.

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In the Planning Phase of SDLC the aim is to answer the question: why to build the system?

- Identify business need, business value and risks
- Establish project scope
- Determine alternatives
- Assess feasibility
- Split project into manageable tasks
- Estimate and plan resources
- Develop preliminary schedule
- Develop preliminary staffing plan
- Define standards and procedures
- Create preliminary budget

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Opportunity Identification

Someone (manager, staff member, sales representative, consultant, systems analyst, etc.) finds a business need, i.e. an opportunity to improve the business.

Business needs arise because of different reasons

- Problems are identified
- Organisations keep an eye on emerging technology
- Organisations adapt to change

Crucial to identify: Business Value and Associated Risks
Exercise 4.1 Problem 1 from Chapter 3 of (Kendall&Kendall, 2005).

Dressman’s Chocolates of St. Louis makes an assortment of chocolate sweet and sweet novelties. The company has six in-city stores, five stores in major metropolitan airports, and a small mail-order branch. Dressman’s has a small computerised information system that tracks inventory in its plant, helps schedule production, and so on, but this system is not tied directly into any of its retail outlets. The mail order system is handled manually. Recently, several Dressman’s stores experiences a rash of complaints from mail order customers that the candy was spoiled upon arrival, that it did not come when promised, or that it never arrived: the company also received several letters complaining that candy in various airports tasted stale. Finally, a few sales clerks in company stores reported being asked whether the firm would be willing to market a new, dietetic form of chocolate made with sugar-free, artificial sweetener. List the possible opportunities for improving the business and suggested information system projects.

Exercise 4.1 (cont.)

Some of the opportunities for improving the business through an information system are:

1. **Identify Opportunity**: Compare output against performance criteria. Observe behaviour of employees. Listen to feedback from vendors, customers and suppliers.

   - **Business Need**: Recognises assesses. Drives to create a system that adds Business Value.

   - **Project Sponsor**: Business Value (Tangible and Intangible). Functionalities (High Level Requirements).

   - **Business Personnel**: IT Personnel, Business Personnel.

   - **Opportunity Problem**: Identify Opportunity.

   - **Project** to create a systems that adds Business Value.

   - **Project Sponsor Business Need**: Recognises assesses. Drives to create a system that adds Business Value.

   - **Business Value**: Functionality (Tangible and Intangible). (High Level Requirements).
System Request

This document describes the business reasons for building the system and the business value that the system is expected to provide. Usually, it includes the following elements:

- Project sponsor
- Business need
- Business requirements
- Business value
- Special issues and constraints

Examples of System Request

Feasibility Analysis

Identify important benefits, risks and limitations in order to decide whether to proceed or not developing the proposed system.

- Technical Feasibility
- Economic Feasibility
- Organisational Feasibility

Assessing Technical Feasibility

Revise at various stages during the SDLC in order to compare benefits against risks
· Assessing Economic Feasibility

· Assessing Organisational Feasibility

An adequate feasibility analysis:
· Gives enough information (not too detailed)
· Contains accurate and appropriate information
· Is presented in an effective way

Common criteria for project selection:
· Real business need and added business value
· Support from management
· Appropriate timing of project commitment
· Possibility of improving organisation performance
· Practical in terms of required resources
· Value of the project compared with alternative solutions

Project Management

Project management is a difficult process that:
· Requires of professional skills
· Must be done effectively to ensure its successful completion
· Includes two important aspects:
  - Planning
  - Control
· The goal is to ensure: prompt completion times, minimum costs, and required functionality
Common tools for project management are:

**GANTT charts.** Useful tool to aid project management. They are simple, very informative and easy to construct. Gantt charts are a graphical representation of the project work-plan.

**PERT (Project Evaluation and Review Technique) diagrams.** Useful tool to identify critical tasks. They serve to indicate precedence between tasks, find the critical path and are applicable only when tasks can be performed in parallel.

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**Example of Gantt chart**

<table>
<thead>
<tr>
<th>Tasks Information</th>
<th>Name</th>
<th>Precedence</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>B</td>
<td>1.5</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td></td>
<td>3.0</td>
</tr>
<tr>
<td></td>
<td>E</td>
<td>A, C</td>
<td>1.3</td>
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<tr>
<td></td>
<td>F</td>
<td>D</td>
<td>0.7</td>
</tr>
<tr>
<td></td>
<td>G</td>
<td>C, F</td>
<td>2.0</td>
</tr>
</tbody>
</table>

**Example of (AoN) PERT diagram**

- Task A: Duration 2.0
  - Additional Information

- Task B: Duration 1.0
  - Additional Information

- Task C: Duration 1.5
  - Additional Information

- Task D: Duration 3.0
  - Additional Information

- Task E: Duration 1.3
  - Additional Information

- Task F: Duration 0.7
  - Additional Information

- Task G: Duration 2.0
  - Additional Information

**Exercise 4.2** Read “The Challenges of Complex IT Projects” (a report by the Royal British Academy of Engineering and the British Computer Society) to find the answers to the following:

- What is the rate of successful completion of complex IT projects?
- What are the characteristics of complex IT projects?
- What is said about the key players and their role?
- What is evolutionary project management?
- What are the main conclusions from that report?
Additional Reading

The Challenges of Complex IT Projects, report by the Royal British Academy of Engineering and the British Computer Society, 2004

Why are Complex IT Projects Different?, report by the British Computer Society, 2005

Chapter 2 of (Dennis et al., 2006)

Chapters 3 and 10 of (Kendall and Kendall, 2005)