



Course Title :

**Software Development Management**  
(WXGC6106)

**Week 2**

**The project management and information technology context**  
(Information Technology Project Management )  
Chapter 1

Instructor:

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*A system view of project management*

Projects must operate in a broad organizational environment, and project managers need to consider projects within the greater organizational context.  
Project managers need to take a holistic view of project.

System thinking describes this holistic view of carrying out projects within the context of the organization.

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**What is System Approach?**

The term System Approach emerged in the 1950s to describe a holistic and analytical approach to solving complex problems that includes using a **Systems Philosophy, System Analysis, and Systems Management**.

|                          |   |
|--------------------------|---|
| <b>System Philosophy</b> | Is an overall model for thinking about things as systems  |
| <b>Systems Analysis</b>  | Is a problem-solving approach that requires defining the scope of the system, dividing it into its components, and then identifying and evaluating its problems, opportunities, constraints, and needs. |
| <b>System Management</b> | Addresses the business, technological, and organizational issues associated with creating, maintaining, and making a change to a system.  |

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- What will the laptop project cost the college?
- What will it cost students?
- What will support costs be?
- What will the impact be on enrollments?

The diagram consists of three overlapping circles: a red circle at the top labeled 'Business', a blue circle at the bottom left labeled 'Organization', and a pink circle at the bottom right labeled 'Technology'. Each circle is connected to a corresponding text box containing project-related questions.

- Should the laptops use Macintosh, Windows, or both types of operating systems?
- What applications software will be loaded?
- What will the hardware specifications be ?
- How will the hardware impact LAN and internet access ?

- Will the laptop project affect all students, just traditional students, or only certain majors?
- How will the project effect students who already have PCs or laptops?
- Who will train students, faculty, and staff ?

**Three-Sphere Model for systems management**

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### The Four Frames of Organization :

**Structural Frame :**  
Deals with how the organization is structured and focuses on different groups' roles and responsibilities in order to meet the goals and policies set by top management.

**Human Resources Frame :**  
Focuses on producing harmony between the needs of the organization and needs of the people. Some important issues are the shortage of skilled IT workers within the organization and unrealistic schedules imposed on many projects.

**Political Frame :**  
Addresses organizational and personal politics. Politics in organizations take the form of competition among groups or individuals for power and leadership.

**Symbolic Frame :**  
Focuses on symbols and meanings. It also relates to the company's culture. How the people dress? How many hours do they work? In many of the IT projects which have international stakeholders, it is important to understand the different cultures.

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### Organizational Structures

Three general classifications of organizational structures are :

- **Functional**
- **Project**
- **Matrix**

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Organizational Structures *(continue ...)*

Functional Organizational Structure :

(Black boxes represent staff engaged in project activities.)

Project Coordination

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Organizational Structures *(continue ...)*


Project Organizational Structure :

Yellow boxes show team members

Blue boxes show project coordination

**Functional Organization**

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### Organizational Structures *(continue ...)*

**Matrix Organizational Structure :**

(Gray boxes represent staff engaged in project activities.)

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### Organizational Structures *(continue ...)*

**organizational structure influences on project :**

| Organization Type   | Functional                             | Matrix                                 |                                     |                                     | Projectized                         |
|---|--|--|-------------------------------------|-------------------------------------|-------------------------------------|
|   |  | Weak Matrix                            | Balanced Matrix                     | Strong Matrix                       |                                     |
| Project Characteristics   | Little or None                         | Limited                                | Low to Moderate                     | Moderate to High                    | High to Almost Total                |
| Project Manager's Authority   | Little or None                         | Limited                                | Low to Moderate                     | Moderate to High                    | High to Almost Total                |
| Percent of Performing Organization's Personnel Assigned Full-time to Project Work | Virtually None                         | 0-25%                                  | 15-60%                              | 50-95%                              | 85-100%                             |
| Project Manager's Role  | Part-time                              | Part-time                              | Full-time                           | Full-time                           | Full-time                           |
| Common Titles for Project Manager's Role  | Project Coordinator/<br>Project Leader | Project Coordinator/<br>Project Leader | Project Manager/<br>Project Officer | Project Manager/<br>Program Manager | Project Manager/<br>Program Manager |
| Project Management Administrative Staff   | Part-time                              | Part-time                              | Part-time                           | Full-time                           | Full-time                           |

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## Organizational Culture

According to Stephen P. Robbins, there are ten characteristics of organizational culture :

1. Member identity
2. Group emphasis
3. People focus
4. Unit integration
5. Control
6. Risk tolerance
7. Reward criteria
8. Conflict tolerance
9. Means-ends orientation
10. Open-system focus

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## The importance of Top Management Commitment

A very important factor in helping project managers successfully lead projects is the level of commitment and support they receive from **top management**.

**Top management commitment is crucial to project managers for the following reasons :**

- Project managers need adequate resources .
- Project managers often require approval for unique project needs in a timely manner.
- Project managers must have cooperation from people in other parts of the organization.
- Project managers often need someone to mentor and coach them on leadership issues.

**IT project managers work best in an environment in which top management values Information Technology !!!!**

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## Project phases and project life cycle

A project life cycle is a collection of project phases.

**Project life cycle defines :**

- What work will be performed in each phase
- What deliverables will be produced and when
- Who is involved in each phase
- How management will control and approve work product in each phase

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## Project phases and project life cycle *(continue ...)*

**In early phases**, resource needs are usually lowest and the level of uncertainty is highest .

**During the middle phases**, the certainty of completing a project improves as a project continues, and more resources are usually needed.

**The final phase of project**, focuses on ensuring that project requirements were met and that the project the project sponsor approves completion of the project

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**Project phases and project life cycle (continue...)**

|                                    | Project Feasibility   |   | Project Acquisition  |  |
|------------------------------------|---|---|--|--|
|                                    | Concept   | Development   | Implementation   | Close-out  |
| Sample deliverables for each phase | Management plan<br>Preliminary cost estimate<br>2-level WBS | Project management plans<br>Budgetary cost estimate<br>3+-level WBS | Last work package<br>Definitive cost estimate<br>Performance reports | Completed work<br>Lessons learned<br>Customer acceptance |

Phases of the traditional project life cycle

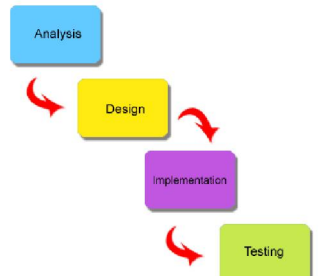
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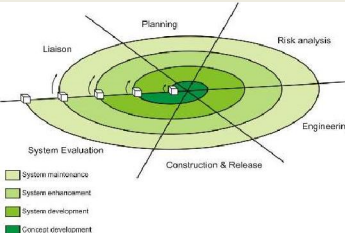
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**System development life cycle (SDLC)**

waterfall



spiral



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### System development life cycle (SDLC) (continue ...)

**incremental**

**prototyping**

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### System development life cycle (SDLC) (continue ...)

**RAD**

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**HW2: Applying the three-sphere model to an IT project**

Apply the tree-sphere model of systems management to an information technology project with which you are familiar.

Write a one- to two-page single-spaced paper summarizing your opinion and comments about each section of this model.


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Any questions?



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