CPET 581 Smart Grid & Energy Management

Project Management

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A Specialty Course for Purdue University's M.S. in Technology Graduate Program: IT/Advanced Computer App Track

Paul I-Hai Lin, Professor

Dept. of Computer, Electrical and Information Technology

Purdue University Fort Wayne Campus

References

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3. Project Management: A Systems Approach to Planning, Scheduling, and Controlling, Harold Kerzner
4. Project Management: Strategic Design and Implementation, 4th Ed, by David L. Cleland and Lewis R. Ireland, McGrawHill.

Project Management

- Project Management
  - Planning, scheduling and controlling project activities to meet project objectives
  - Objectives include budgets/costs, performance and time goals
  - Measuring Progress/Controlling Cost
  - Risk Management
    - Risk Evaluation
    - Risk Mitigation
- Resources
  - Equipment, manpower, money, facilities, materials, and information/technology required to execute a project

Nine Knowledge Area [1]

- Core Knowledge Area
  - Project Scope Management
  - Project Time Management
  - Project Cost Management
  - Project Quality Management
- Facilitating Knowledge Area
  - Project Human Resource Management
  - Project Communication Management
  - Project Risk Management
  - Project Procurement Management
  - Project Integration Management

Project Management Job Functions [2]

- Define scope of project
- Identify stakeholders, decision makers, and escalation procedures
- Develop detail task list (work breakdown structure: WBS)
- Estimate time requirements
- Develop initial project management flowchart
- Identify required resources and budget
- Evaluate project requirements
- Identify and evaluate risks
- Prepare contingency plan
- Identify interdependencies
- Identify and track critical milestones
- Participate in project phase review
- Secure needed resources
- Manage and change control process
- Report project status

IT Project Lifecycle [2]

- Traditional IT Project Life Cycle
- Project Feasibility
  - First Phase: Concept (deliverables)
    - Management Plan
    - Preliminary Cost Estimate
    - 2-Level WBS
  - Second Phase: Development (deliverables)
    - Project Plans
    - 3+ level WBS
- Project Acquisition
  - Third Phase: Implementation (deliverables)
  - Fourth Phase: Clos-out

IT Project Lifecycle [2]

- Traditional IT Project Life Cycle
- Project Feasibility
  - First Phase: Concept (deliverables)
  - Second Phase: Development (deliverables)
- Project Acquisition
  - Third Phase: Implementation (deliverables)
    - Last Work Package
    - Definitive Cost Estimate
    - Performance Reports
  - Fourth Phase: Clos-out (deliverables)
    - Completed Work
    - Lessons Learned
    - Customer Acceptance

System Development Life Cycle (SDLC): Some Popular Models

- **The Waterfall Life Cycle Model**
  - Assume that requirements will remain stable after being defined
- **The Spiral Life Cycle Model**
  - Iterative with various refinements
- **The Incremental Build Life Cycle Model**
  - Progressive development, with each release providing added capabilities
- **The Prototyping Life Cycle Model**
  - Require heavy user involvement
  - Generate functional requirements and physical design specifications simultaneously
- **The Rapid Application Development Life Cycle Model**
  - Require heavy user involvement
  - Use CASE (Computer Aided Software Engineering), JRP (Joint Requirements Planning), and JAD (Joint Application Design) to facilitate RAP and code generation

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