



XAC08-6

Professional Project Management

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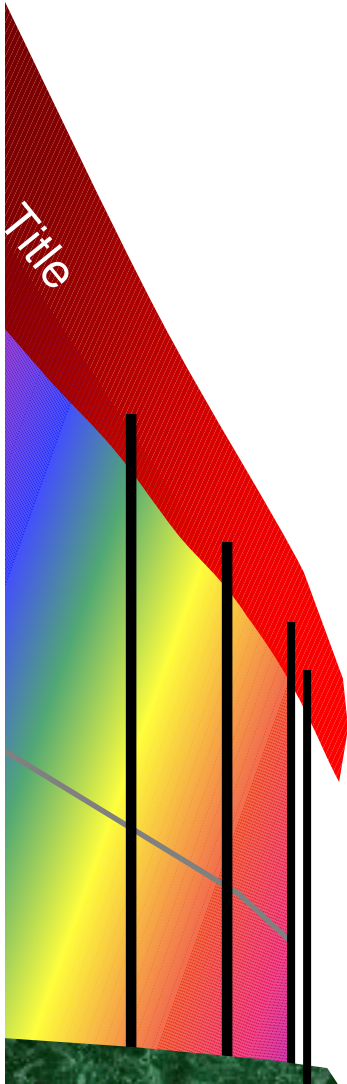
**Project Charter, Project Management Plan, Work
Breakdown Structure**

**Week 06
16 March 2006**

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Office: D104 – Park Square

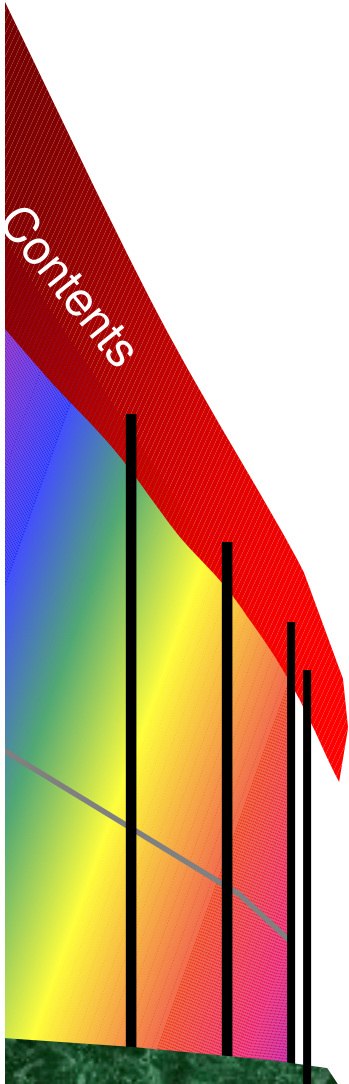
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This Week

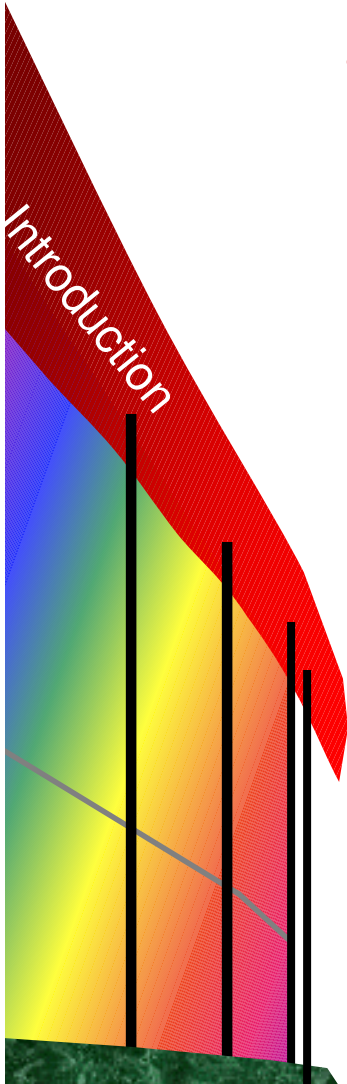
- **Introduction**
- **Project Charter**
- **(Preliminary) Project Scope Statement**
- **Project Management**
 - ◆ **With Case Study UML & Agile**
- **Work Breakdown Structure**
- **About the Assignment**





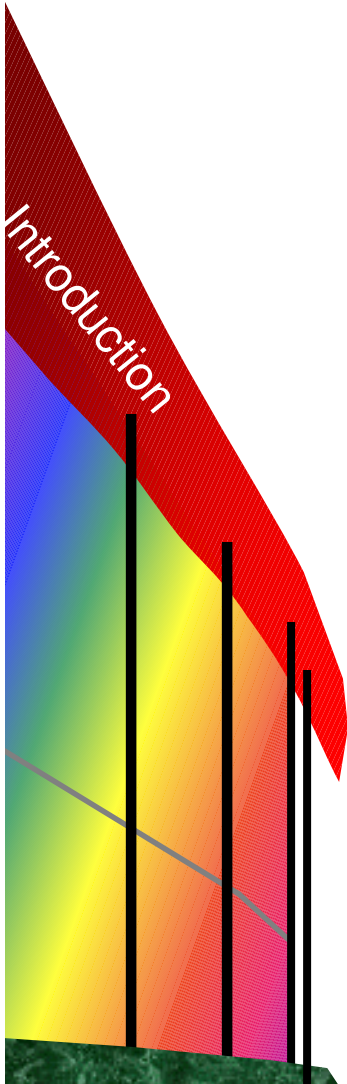
Project Charter and Project Management Plan Terminology

- Terminology comes from the PMBOK® but similar documents exist in any project. Other terms used:
 - ◆ Project Initiation Document, Project Mandate, Project Brief, Letter of Agreement, Statement of Work (~ Project Charter)
 - ◆ Strategy Plan, Project Execution Plan, Project Plan (~ Project Management Plan)



Project Charter and Project Management Plan Main Concept

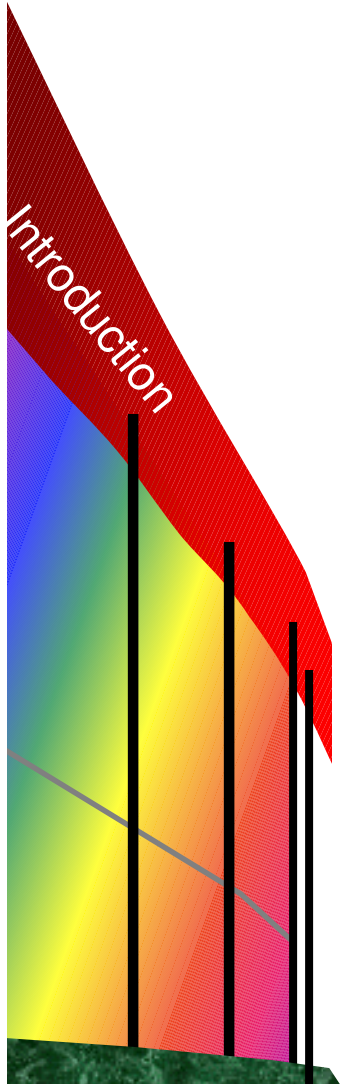
- **Project Charter:**
 - ◆ Comes from “outside” the project and defines the project.
 - ◆ Unchanged during the project.
- **Project Management Plan:**
 - ◆ Owned by the project team.
 - ◆ Constantly updated during the course of the project.





Project Charter and Project Management Plan in the PMBOK®

- **1st Process in the PMBOK®:**
 - ◆ **Develop Project Charter**
- **2nd Process:**
 - ◆ **Develop Project Scope Statement (preliminary). The definitive Scope Statement will be part of the Project Management Plan**
- **3rd Process:**
 - ◆ **Develop Project Management Plan**
 - ◆ **One of the inputs is the preliminary Project Scope Statement.**
- **Many processes have “xyz Management Plan (updates)” as output (with xyz = Project, Time, Staffing, etc.)**

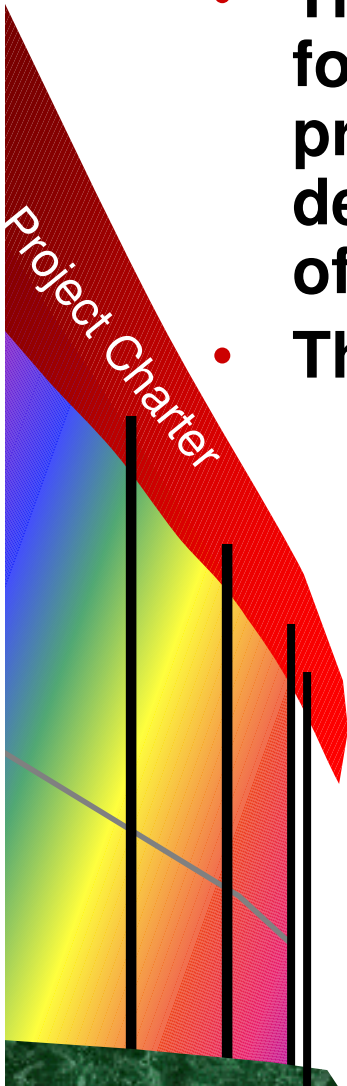




The Project Charter

- The project charter is a document that formally recognizes the existence of a project. It describes the product to be delivered and addresses the business need of the project.
- The charter should be SMART:
 - ◆ Specific
 - ◆ Measurable
 - ◆ Achievable
 - ◆ Realistic
 - ◆ Time-specific

- The project charter defines:
 - ◆ Objective
 - ◆ The end result
 - ◆ The customer
 - ◆ Delivery dates
 - ◆ Costs

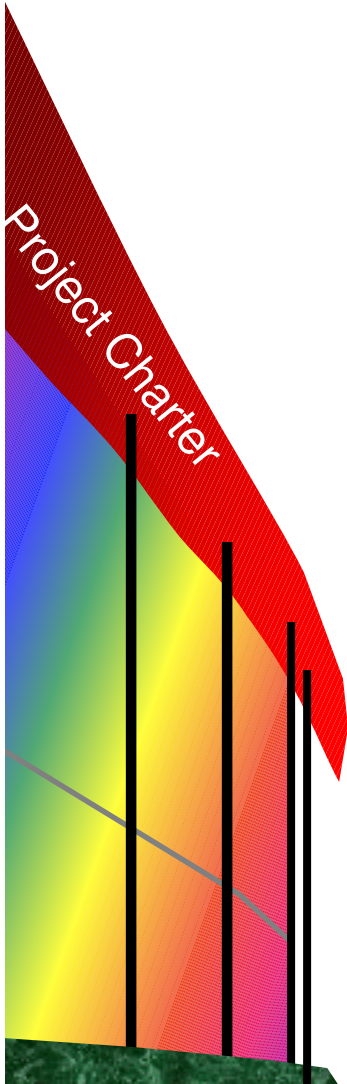




Project Charter – Key Contents

- Project Title, Start & Finish Date
- Budget Information
- Project Manager (contact address)
- Project Objectives
- Approach
- Roles and Responsibilities (Sign off)
- Comments (from stakeholders)

- *Examples on the Internet:*
- Project Charter with “smartdraw” software:
http://www.smartdraw.com/examples/form-bpm/project_charter.htm
- Six Sigma Project Charter with template:
<http://www.isixsigma.com/library/content/c010218a.asp>
- Project Charter in South Carolina:
<http://www.cio.sc.gov/PMDT/>



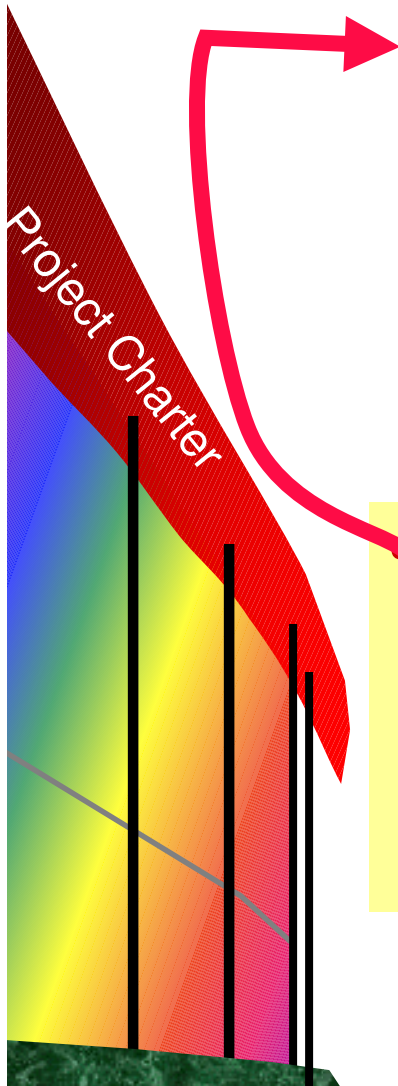


Inputs to the PMBOK® Process “Develop Project Charter”

- Contract and/or Project statement of work.
- Environmental and organizational factors
- Organizational process assets

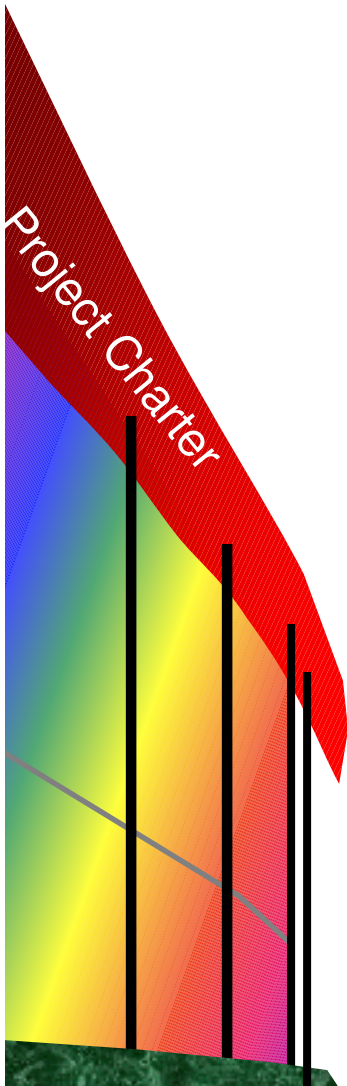
Reasons for projects:

- ◆ *Business need*
- ◆ *Product scope description*
- ◆ *Strategic plan*



Typical Environmental and Organizational Factors

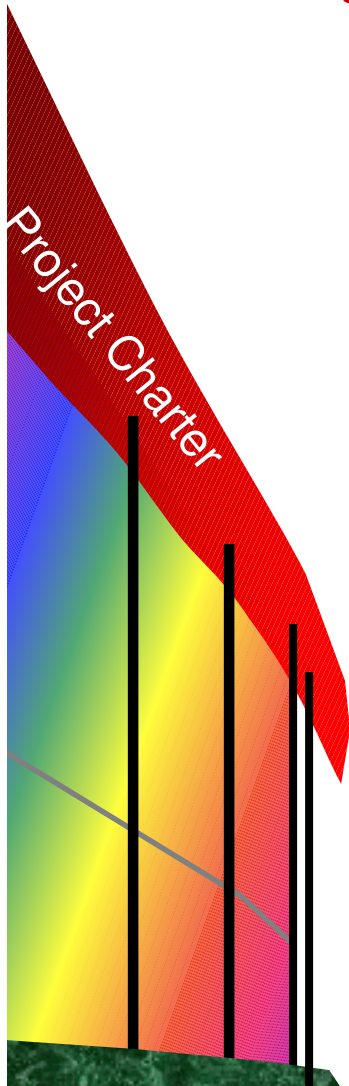
- Organizational or company culture and structure
- Infrastructure, for example, existing facilities and capital equipment
- Existing human resources
- Personnel administration (e.g. hiring and firing guidelines, employee performance reviews)
- Marketplace conditions
- Stakeholder risk tolerances
- Industry risk study information and risk databases





Organizational Process Assets

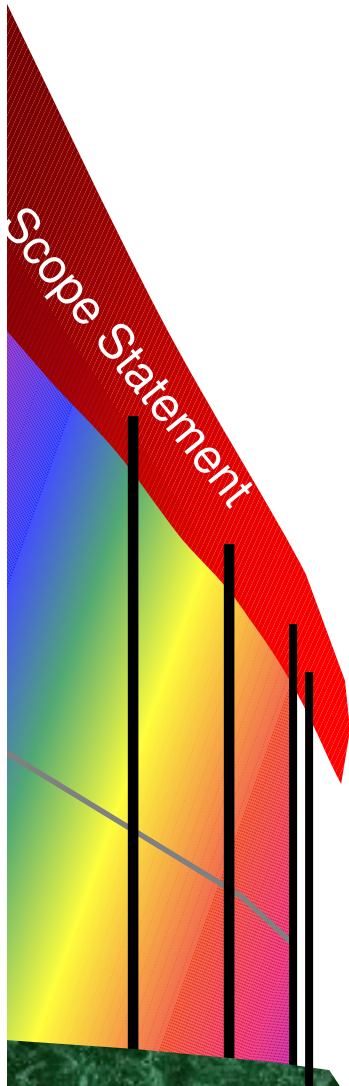
- Represents the organization's processes and procedures and the organization's learning and knowledge ("Lessons learned"), e.g.
 - ◆ **Organizational standard processes**
 - ◆ **Standardized guidelines, templates, work instructions, evaluation criteria**
 - ◆ **Project closure guidelines or requirements (e.g. audits)**
 - ◆ **Financial control procedures**
 - ◆ **Information about previous projects (and why they failed)**
 - ◆ **Historical information (e.g. identified risk events)**
 - ◆ ...





Between Project Charter and Project Management Plan: The Preliminary Project Scope Statement

- The **project scope statement** is the definition of the project – what needs to be done.
- A **preliminary** project scope statement may be produced between Project Charter and Project Management Plan.
- The initial project scope statement is developed from information provided by the initiator or sponsor. The project scope statement is **further refined** by the project management team in the scope definition process.





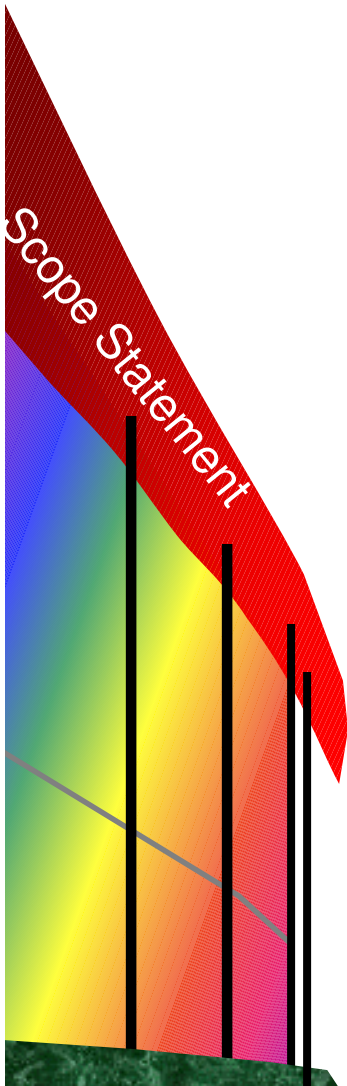
Possible Components of the Project Scope Statement

- Project and scope **objectives**.
- Product or service **requirements** and **characteristics**.
- Project **boundaries**.
- Project **deliverables**.
- Product acceptance **criteria**.
- Project **constraints**.
- Project **assumptions**.
- Initial **project organization**.
- Initial defined **risks**.
- Schedule **milestones**
- Order of magnitude **cost estimate**.
- Project **configuration management requirements**.
- **Approval requirements**.



Example: Project Constraints

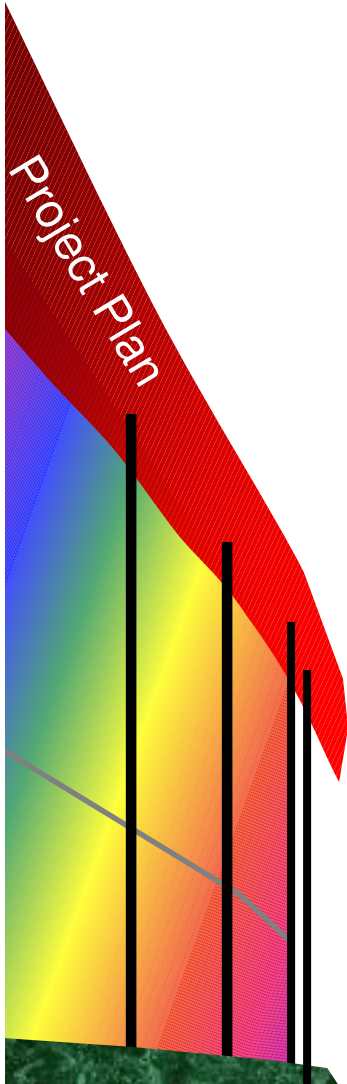
- **Budget constraints (financial limitations)**
- **Target-date constraints (e.g. Y2K projects, display of the product at a trade show)**
- **Resource-availability constraint (people, materials, or equipment)**
- **Duration constraint (the length of the project, e.g. road construction where a major road needs to be closed overnight)**
- **Task-predecessor constraint. (The task “put shoes on” requires the task “put socks on” to be completed first)**





The Project Management Plan

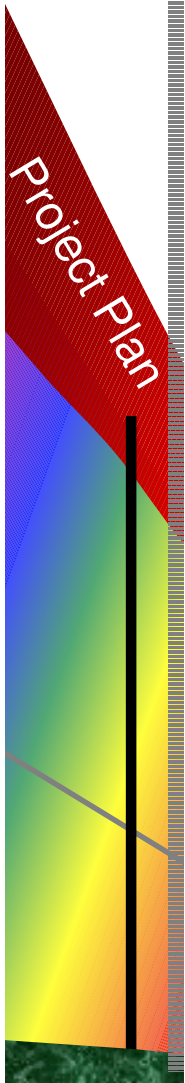
- The ***Project Management Plan*** integrates subsidiary plans relating to the knowledge areas into one document.
- The Project Management Plan is a reference for managing the project. It should be “owned” by the project manager and the team.
- The Project Management Plan is updated and revised throughout the project.





Contents of the Project Management Plan

- The Project Management Plan documents:
 - ◆ The **processes** selected by the *project management team*.
 - ◆ The **tools** and **techniques** to be used.
 - ◆ The selected *project life cycle* and project phases.
 - ◆ How work will be **executed** and changes will be monitored/controlled
 - ◆ **Communication** techniques used (team + stakeholders)
- Exercise: Discuss the **differences** of tools & techniques, life cycle, execution and communication between a software project based on the **UML** and an **agile** software project (next slides).

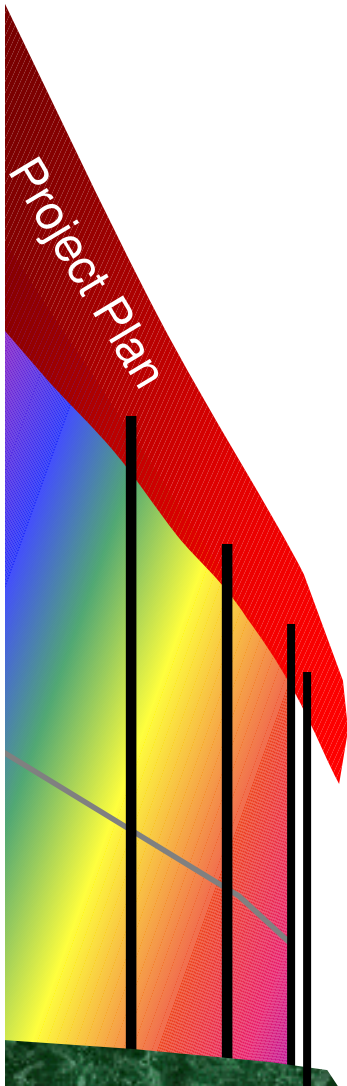




Case Study – UML & Agile

The UML - Process (according to Larman)

1. Use Cases
2. Conceptual Model
3. System Sequence Diagram
4. System Contracts
5. Collaboration Diagram
6. Class Diagram
7. Code



http://www.objectsbydesign.com/books/larman_process.html



Case Study – UML & Agile

The Agile Manifesto

- **Individuals and interactions over processes and tools**
- **Working software over comprehensive documentation**
- **Customer collaboration over contract negotiation**
- **Responding to change over following a plan**

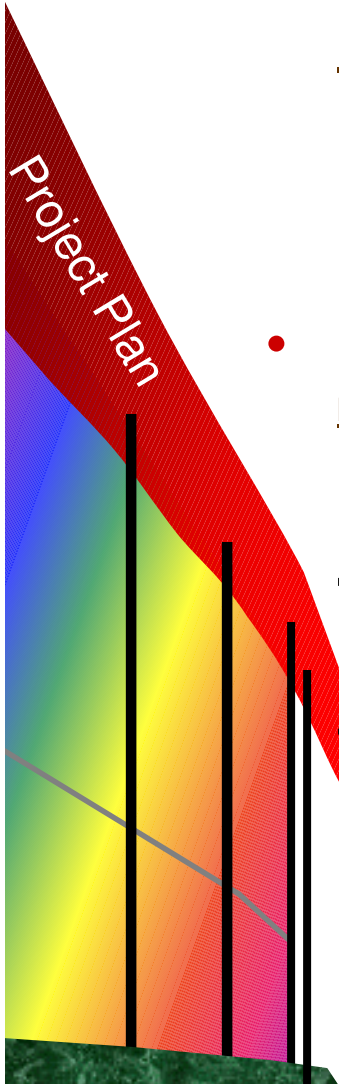
<http://agilemanifesto.org>



Case Study – UML & Agile

Agile UML – Best of Both Worlds

- **Ideogramic UML,**
<http://www.ideogramic.com/products/uml/agile-uml.html>
 - ◆ Use UML for communication between developers in the context of an agile methodology.
- **Bernhard Rumpe: Agile Modeling with the UML,**
http://www.bretagne.ens-cachan.fr/DIT/People/Claude.Jard/sem_06_05_2003_rumpe_trans.pdf
Proposes a pragmatic approach to link agile methods to model-based software development. The UML has here supporting role in requirements and design documentation, code generation and test case development.





Subsidiary Plans of the Project Management Plan

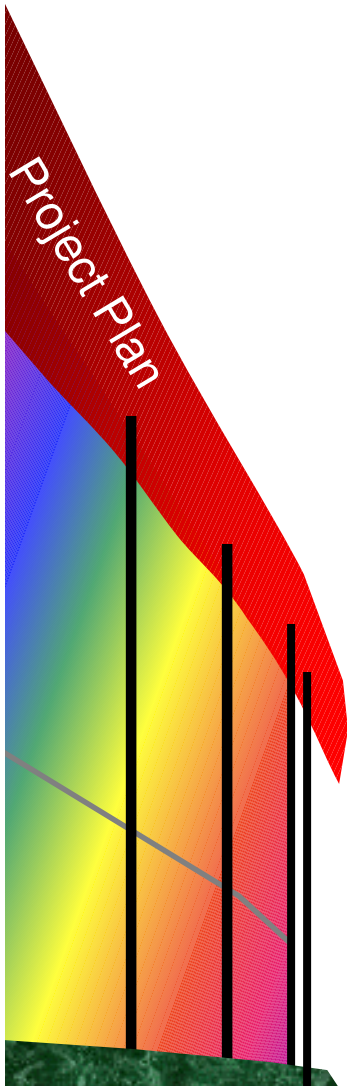
- The Project Management Plan **may** be composed of one or more subsidiary plans,
 - ◆ Scope management plan
 - ◆ Schedule management plan
 - ◆ Cost management plan
 - ◆ Quality management plan
 - ◆ Process improvement plan
 - ◆ Staffing management plan
 - ◆ Communication management plan
 - ◆ Risk management plan
 - ◆ Procurement management plan





Input of the “Develop Project Management Plan” PMBOK® Process

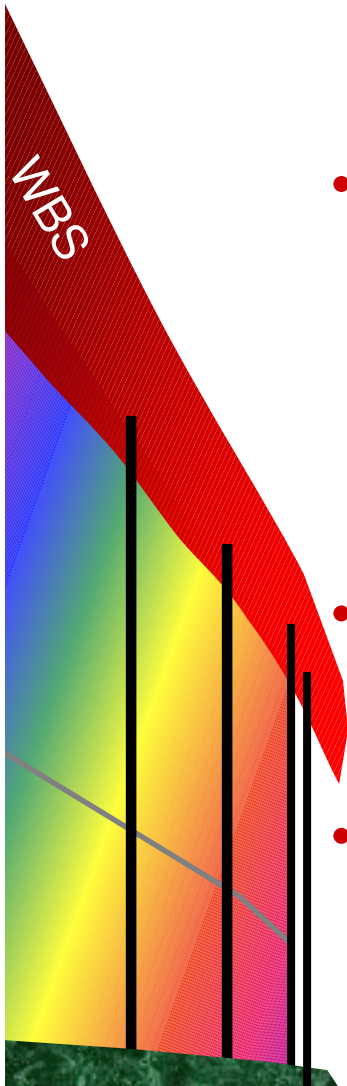
- **Project Charter**
- **Project scope statement (preliminary)**
- **Project management processes**
- **Forecasts**
- **Environmental and organizational factors**
- **Organizational process assets**
- **Work performance information**





The Work Breakdown Structure (WBS)

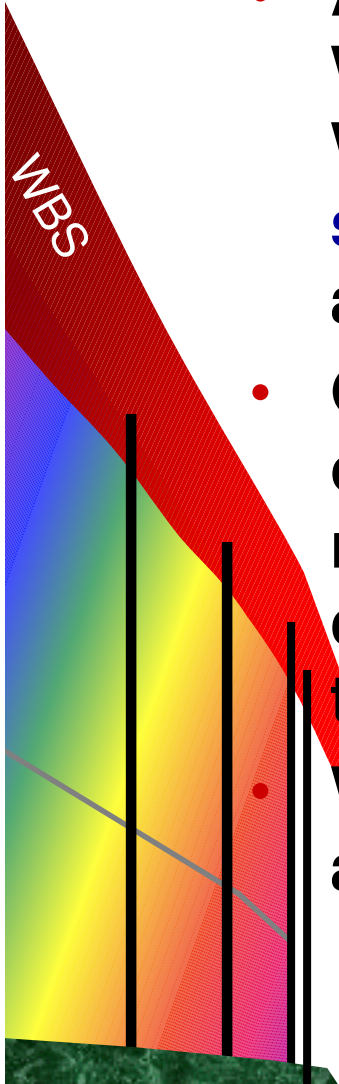
- Used as a basis for a number of processes in particular to produce the subsidiary plans of the Project Management Plan.
- The WBS is a **deliverable-oriented hierarchy** of decomposed project components that organises and defines the total scope of the project. The WBS is a representation of the detailed project scope statement that specifies the work to be accomplished by the project.
- The elements comprising the WBS assist the stakeholders in viewing the end product of the project.
- The work at the lowest-level WBS component is estimated, scheduled, and tracked.





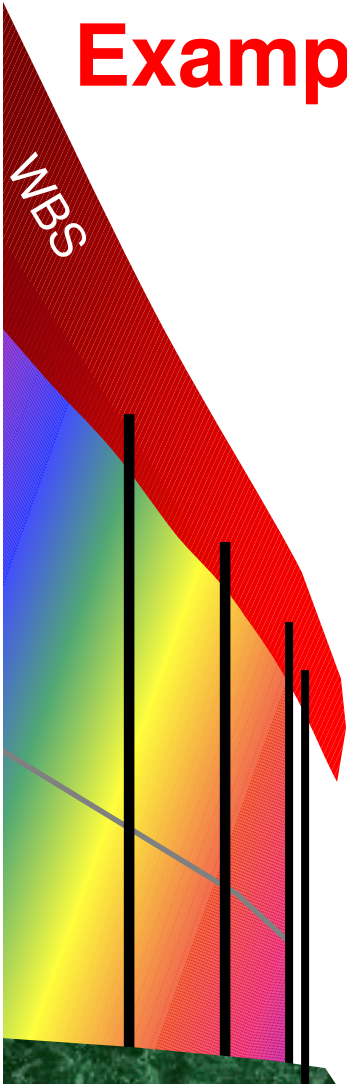
The Dictionary of the WBS

- A WBS dictionary is a companion document to the WBS that describes each WBS element. For each WBS element, the WBS dictionary includes a **statement of work**, a **list of associated activities**, and a **list of milestones**.
- Other information can include the responsible organisation, start and end dates, resources required, an estimate of cost, charge number, contract information, quality requirements, and technical references.
- WBS elements should be cross-referenced as appropriate.





Example WBS

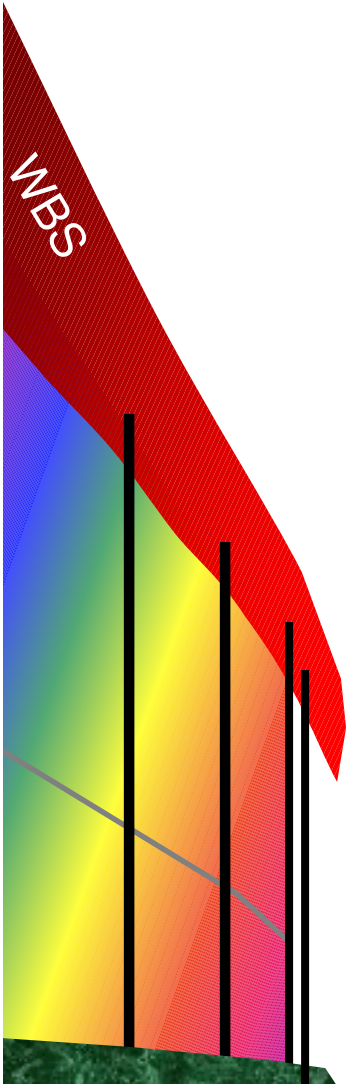


- **Prepare materials**
 - ◆ Buy paint
 - ◆ Buy a ladder
 - ◆ Buy brushes/rollers
 - ◆ Buy wallpaper remover
- **Prepare room**
 - ◆ Remove old wallpaper
 - ◆ Remove detachable decorations
 - ◆ Cover floor with old newspapers
 - ◆ Cover electrical outlets/switches with tape
 - ◆ Cover furniture with sheets
- **Paint the room**
- **Clean up the room**
 - ◆ Dispose or store left over paint
 - ◆ Clean brushes/rollers
 - ◆ Dispose of old newspapers
 - ◆ Remove covers



Developing the WBS

- **Divide the total work of the project into major groups...**
- **...then subdivide these groups into tasks...**
- **...then divide these tasks into sub-tasks**
- **Subtasks should be small enough to permit adequate control and visibility**
- **But avoid excess bureaucracy!**

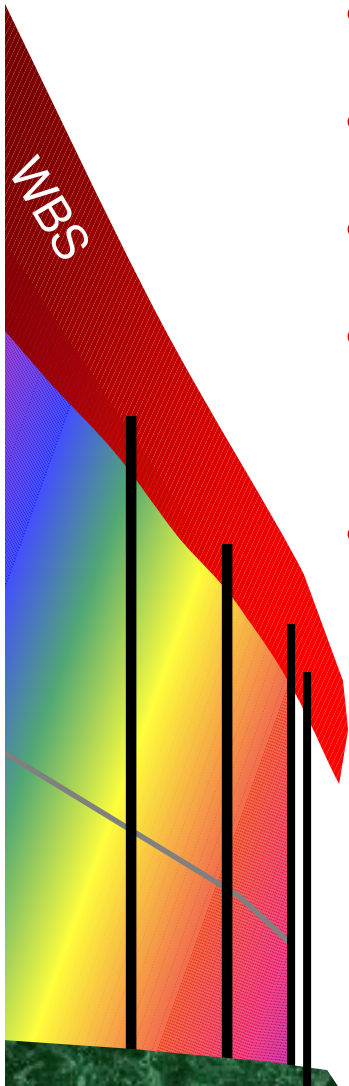




An approach to WBS

- Geographically discrete components
- Time based phases and stages
- Intermediate or final major deliverables
- Discrete structural, process, system or device components
- Deliverable elements that can be associated with distinctive types of people-skills or resources

<http://www.maxwideman.com/musings/wbswar.htm>





Summary

- **The following documents have been discussed:**
 - ◆ **Project Charter**
 - ◆ **Project Management Plan**
 - ◆ **Work Breakdown Structure**
- **Projects can come in a variety of flavours, see example Agile and UML**

