



Chapter 4: software Project Initiation and scope management



课前小案例

- 小李是国内某知名IT企业的项目经理，负责西南某省的一个企业管理信息系统建设项目的管理。在该项目合同中，简单地列出了几条项目承建方应完成的工作，据此小李自己制订了项目的范围说明书。甲方的有关工作由其信息中心组织和领导，信息中心主任兼任该项目的甲方经理。可是在项目实施过程中，有时是甲方的财务部直接向小李提出变更要求，有时是甲方的销售部直接向小李提出变更要求，而且有时这些要求是相互矛盾的。面对这些变更要求，小李试图用范围说明书来说服甲方，甲方却动辄引用合同的相应条款作为依据，而有些条款要么太粗、不够明确，要么小李跟他们有不同的理解。因此小李对这些变更要求不能简单地接受或拒绝而左右为难，他感到很沮丧。如果不改变这种状况，项目完成看来要遥遥无期。

问题：

该问题产生的原因是什么？如何解决？



Outline

- **Software project initiation**
- **Software project scope management**

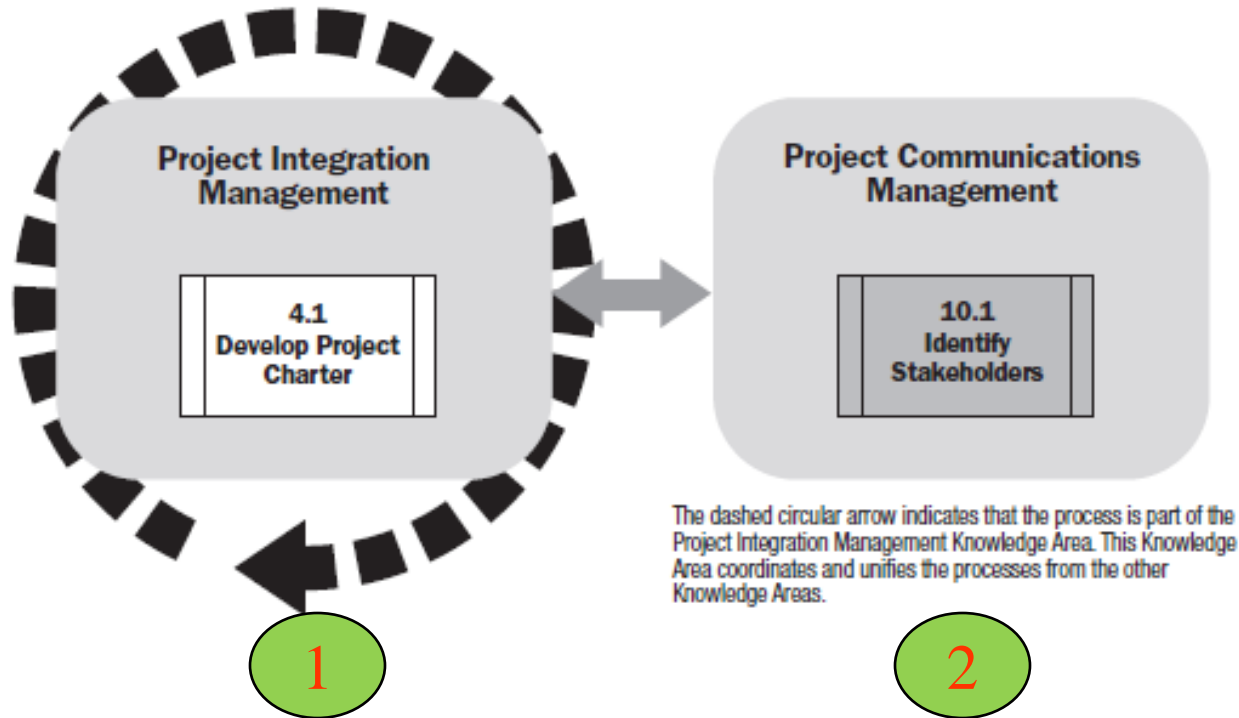


project initiation

- For a buyer and a vendor, software project begin to initiate after the signing of the contract.
- The Initiating Process Group consists of those processes performed to define a new project or a new phase of an existing project by obtaining authorization to start the project or phase. Within the initiating processes, the initial scope is defined and initial financial resources are committed. Internal and external stakeholders who will interact and influence the overall outcome of the project are identified.



project initiation



3 Kick-off meeting



Develop Project Charter

- Develop Project Charter is the process of developing a document that formally authorizes a project and documenting initial requirements that satisfy the stakeholder's needs and expectations.
- The approved project charter formally initiates the project.
- A project manager is identified and assigned as early in the project as is feasible, preferably while the project charter is being developed and always prior to the start of planning. It is recommended that the project manager participate in the development of the project charter, as the project charter provides the project manager with the authority to apply resources to project activities.



Develop Project Charter

- Projects are authorized by someone external to the project such as a sponsor, PMO, or portfolio steering committee.
- The project initiator or sponsor should be at a level that is appropriate to funding the project. They will either create the project charter or delegate that duty to the project manager.
- The initiator's signature on the charter authorizes the project.
- Sometimes, the contract played a role in the project charter



Main Contents of a Project Charter

- The project's title and date of authorization
- The project manager's name and contact information
- A brief scope statement for the project
- A summary of the planned approach for managing the project
- A roles and responsibilities matrix
- A sign-off section for signatures of key project stakeholders
- A comments section in which stakeholders can⁸ provide important comments related to the project



Characteristics of a Good Project Charter

- **Should be clear**
- **Should be concise—no more than 3 pages**
- **Should be developed by consensus**
- **Should contain realistic/achievable objectives**
- **Should contain an assessment of project risk**



生产执行系统开发项目章程

基础信息

1. 项目名称：XX 企业生产执行系统（MES）开发项目
2. 项目时间：2011 年 3 月 1 日 到 2011 年 9 月 30 日
3. 项目经理：张三；联系电话：139XXXXXXXX；
4. 项目目标：经过和 XX 企业的洽谈，7 个月内完成 XX 企业的 MES 系统开发，包含生产调度、计划下达和分解、生产设备管理、生产质量统计、综合报表 5 大功能。
预算 7 个月投入为 80 万人民币。
5. 项目管理方法：采用公司标准的项目管理和 CMMI 规程。
6. 角色和职责
张林：项目高层管理者，负责监督项目
张三：项目经理，负责计划，监控项目，对项目质量负责
李四：IT 部门经理，负责为项目提供适当资源和培训
王五：业务接口人，负责为项目提供业务需求
7. 签名：（以上所有干系人签名）



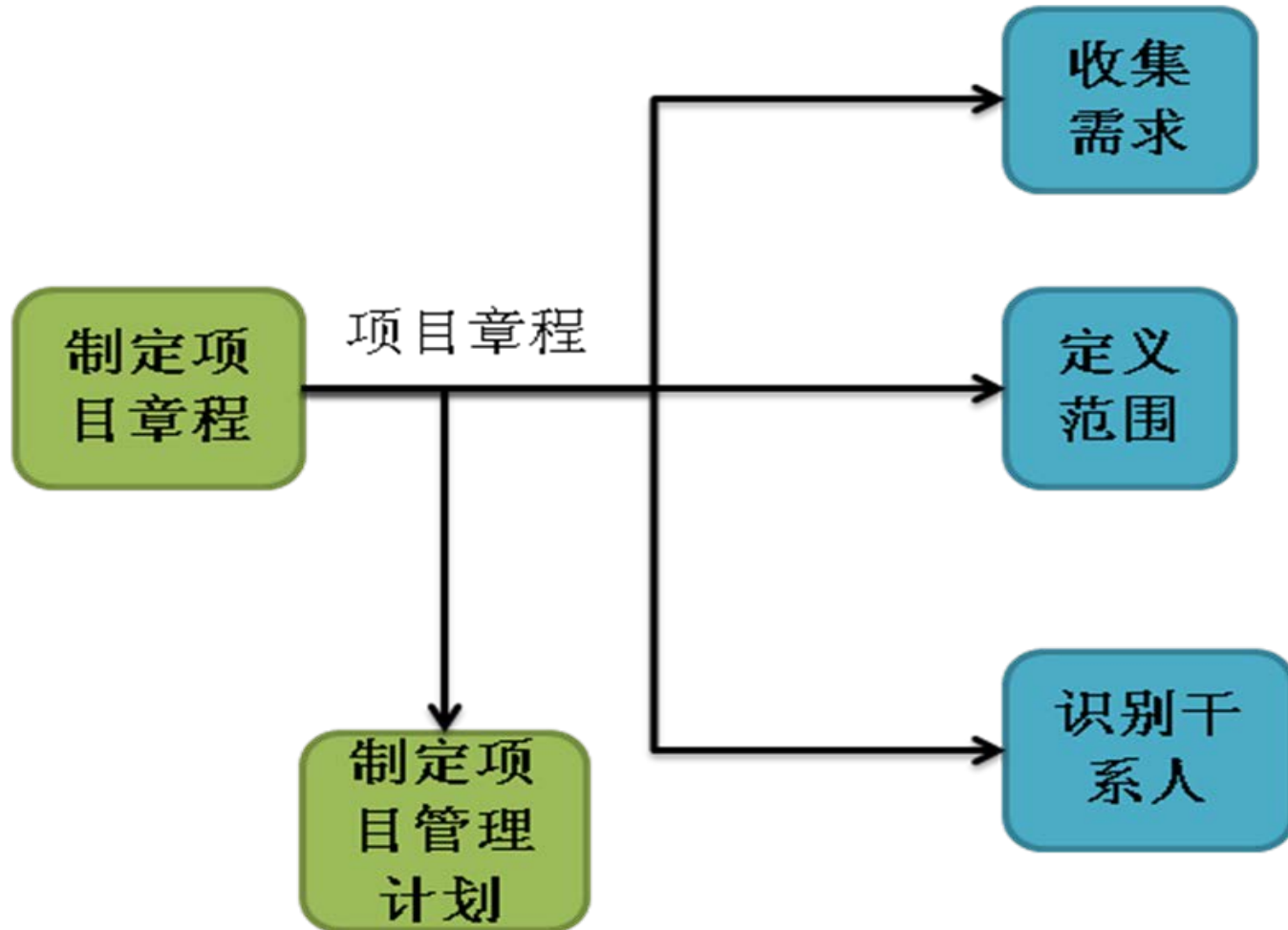
准项目经理和项目章程

● 准项目经理工作

- 明晰项目目标
- 明确项目经理得权利、责任和义务
- 得到一个正式的任命



Related areas with the project charter





Identify Stakeholders

- Identify Stakeholders is the process of identifying all people or organizations impacted by the project, and documenting relevant information regarding their interests, involvement, and impact on project success.



stakeholders

- Project stakeholders are persons and organizations such as customers, sponsors, the performing organization, and the public that are actively involved in the project, or whose interests may be positively or negatively affected by the execution or completion of the project.
- They may also exert influence over the project and its deliverables.
- Stakeholders may be at different levels within the organization and may possess different authority levels, or may be external to the performing organization for the project.



Stakeholder Analysis

- Stakeholder analysis is a technique of systematically gathering and analyzing quantitative and qualitative information to determine whose interests should be taken into account throughout the project.
- It identifies the interests, expectations, and influence of the stakeholders and relates them to the purpose of the project. It also helps identify stakeholder relationships that can be leveraged to build coalitions and potential partnerships to enhance the project's chance of success.
- Stakeholder analysis generally follows three steps.

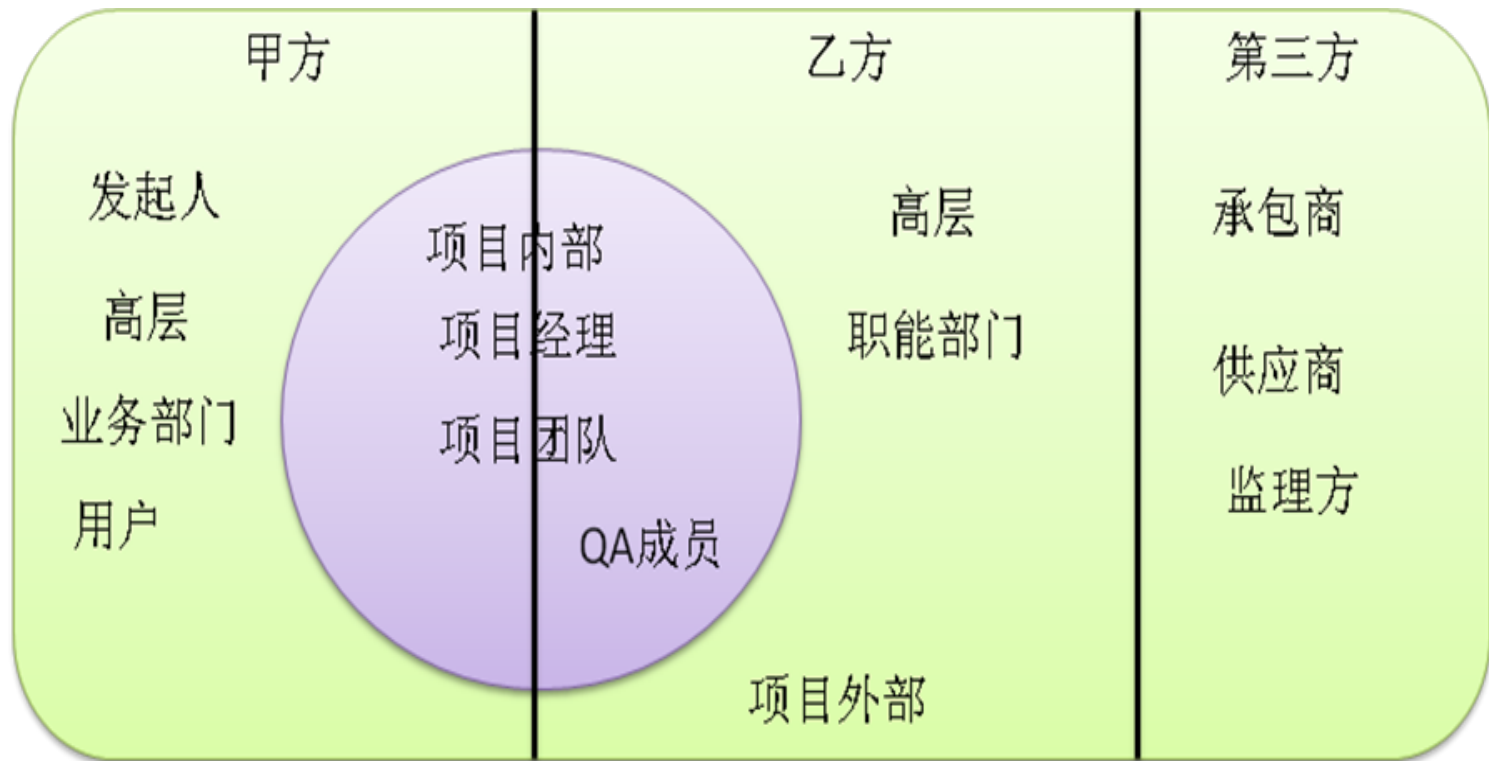


1) Identify potential stakeholders

- Identify all potential project stakeholders and relevant information, such as their roles, departments, interests, knowledge levels, expectations, and influence levels.
- Key stakeholders are usually easy to identify. They include anyone in a decision-making or management role who is impacted by the project outcome, such as the sponsor, the project manager, and the primary customer.
- Identifying other stakeholders is usually done by interviewing identified stakeholders and expanding¹⁶ the list until all potential stakeholders are included.



1) Identify potential stakeholders



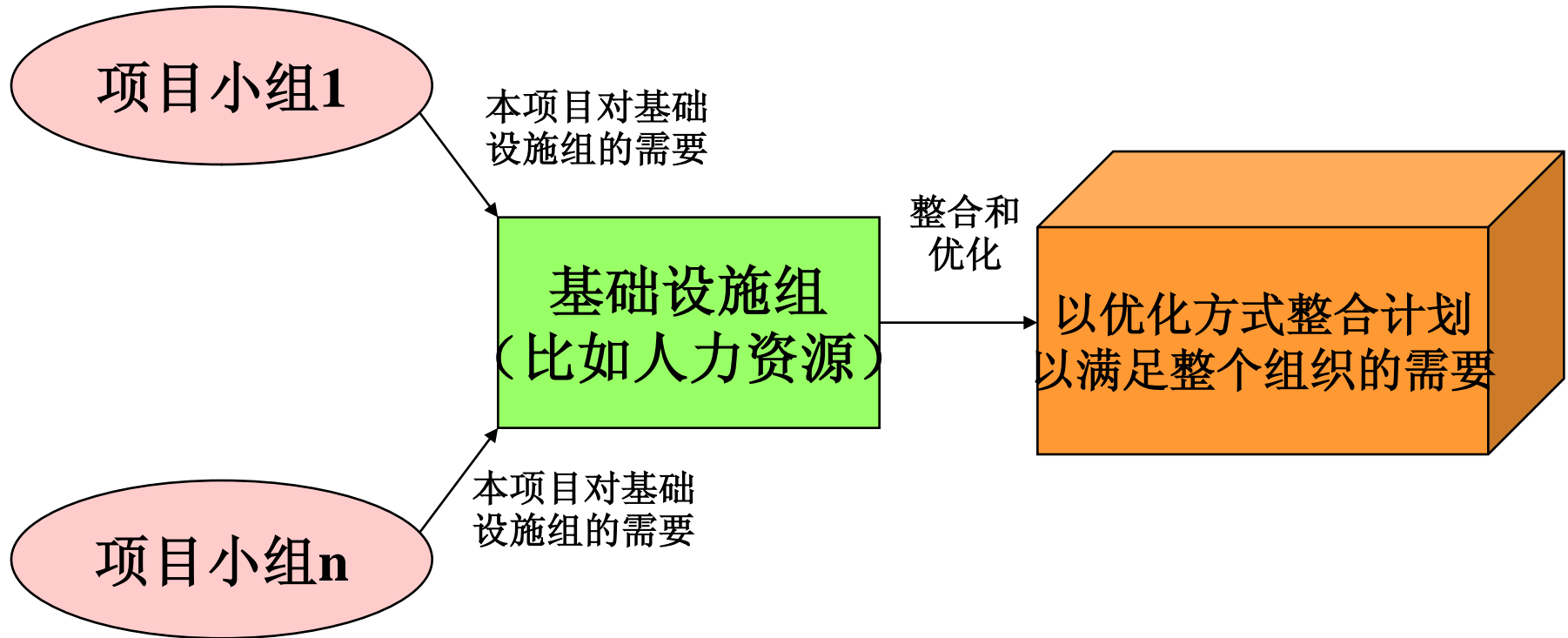


所涉及的基础设施和支持小组

- 人力资源组
- 设施管理组
- 行政组
- 硬件设施组
- 财务
- 公司质量组
- 高层经理



基础设施组的运作



项目和基础设施组之间协作内容表



2) Stakeholders prioritization

- Identify the potential impact or support each stakeholder could generate, and classify them so as to define an approach strategy. In large stakeholder communities, it is important to prioritize the key stakeholders to ensure the efficient use of effort to communicate and manage their expectations. There are multiple classification models available

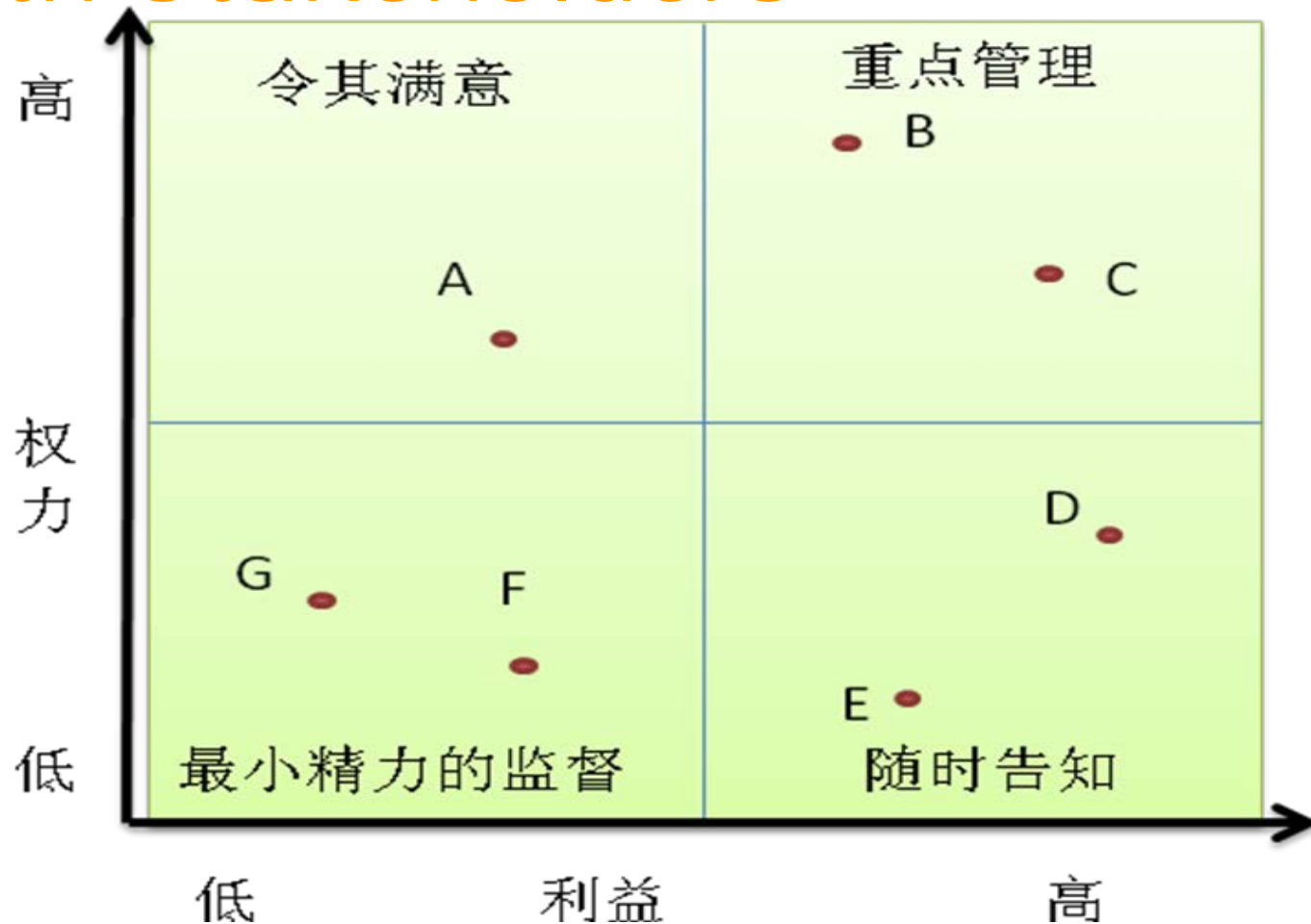


2) Stakeholders prioritization

- Power/interest grid, grouping the stakeholders based on their level of authority (“power”) and their level or concern (“interest”) regarding the project outcomes;
- Power/influence grid, grouping the stakeholders based on their level of authority (“power”) and their active involvement (“influence”) in the project;
- Influence/impact grid, grouping the stakeholders based on their active involvement (“influence”) in the project and their ability to effect changes to the project’s planning or execution (“impact”);
- Salience model, describing classes of stakeholders based on their power (ability to impose their will), urgency (need for immediate attention), and legitimacy (their involvement is appropriate).



Example Power/Interest grid with Stakeholders





3) Assess stakeholders

- Assess how key stakeholders are likely to react or respond in various situations, in order to plan how to influence them to enhance their support and mitigate potential negative impacts.



Stakeholder Analysis Matrix

Stakeholder	Stakeholder Interest(s) in the Project	Assessment of Impact	Potential Strategies for Gaining Support or Reducing Obstacles



Kick-off meeting

- External kick-off meeting
- Internal kick-off meeting



External kick-off meeting

- 项目主要干系人参加的项目启动会议。
- 项目启动会之前均属于项目的商务操作部分，涉及的人员不是很多。在项目正式启动后，通常项目双方主要参与者不再是原先洽谈商务的人员，甲乙双方企业中很多给项目提供支持的角色成了项目成员，而他们并不十分了解项目。因此有必要召集项目双方的主要干系人一起开会，明确项目实施周期、范围和各自职责。



External kick-off meeting

- 在项目启动之前，甲乙双方由于商务价格等方面的原因，往往处于对立面。在项目正式启动后，双方的关系转变为合作关系，此时双方最大的利益点在于把整个项目实施成功，所以通过外部启动会要让参与的所有人员认识到这一点，这也是尤为重要的。
- 外部启动会一般选择在乙方或用户方现场召开，视项目的性质，有时是单独开一个酒会向媒体发布。



External kick-off meeting

- 主要内容包括：项目的建设背景、项目主要干系方领导和项目负责人、项目的基本需求、项目的总体规划、项目各主要干系方的责任和义务、项目存在的风险及其应对策略和在项目的建设过程中项目建设方、用户方所需要给予的支持和配合等。其中，“项目总体规划”、“项目各主要干系方的责任和义务”和“项目建设过程中项目建设方、用户方所需要给予的支持和配合”是会上需要重点介绍的内容。
- 会议需要做好会议记录，如果有条件，会议记录应当当场整理好，打印出来，会议各方代表签字保存。



Internal kick-off meeting

- 内部项目启动会议是给团队鼓舞士气、建立以完成任务为共同目标的最佳时机。
- 主要人员：包括项目团队全体成员、乙方相关领导等。
- 内部项目启动会是整个项目的第一次会议，旨在使全体成员了解项目情况并达成一致目标，并不需要对每个条目进行详细讨论，所以具体细节问题不能在此详细展开讨论。项目经理要控制会议进度。内部启动会议的形式可以是正式的会议形式，也可以用非正式的形式，比如把项目组的成员叫到一起，饭桌上讨论完成。
- 项目启动会可以被视作项目签字会，要形成会议备忘录并分发给所有相关人员。



● Internal kick-off meeting

● 主要内容:

- 介绍项目总体情况：包括介绍项目目标及其重要意义，项目主要干系人信息、项目的基本需求、并阐明项目目标及可交付成果。
- 介绍项目团队成员及其分工。
- 制定项目计划
- 确定取得成功的关键要素
- 解释沟通计划：每周项目进展会议；子项目计划会议；项目计划更新状态；公司局域网及其他沟通工具的利用。向团队成员强调：一旦发现任何可能对项目构成影响的问题，都应及时进行沟通。



Outline

- **Software project initiation**
- **Software project scope management**



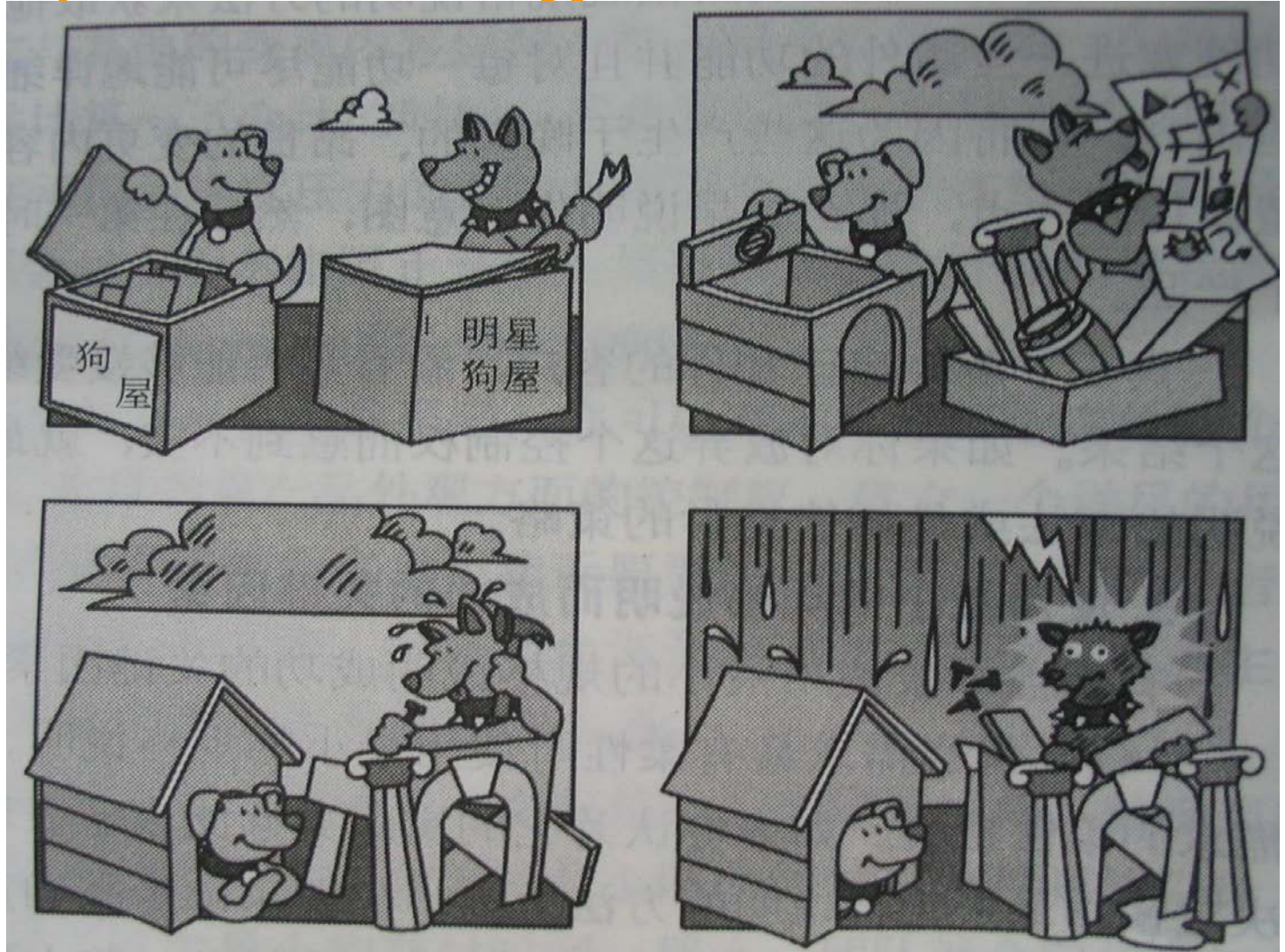
The Project Constraint





Scope management

Scope
creep





Project Scope Management

- Project Scope Management includes the processes required to ensure that the project includes all the work required, and only the work required, to complete the project successfully.
- Managing the project scope is primarily concerned with defining and controlling what is and is not included in the project.



Project Scope

- **Product scope—The features and functions that characterize a product, service, or result;**
- **Project scope. The work that needs to be accomplished to deliver a product, service, or result with the specified features and functions. 。**



Software project Scope

- 软件项目范围：从管理级和技术级均是无二义性的和可理解的，描述了将被处理的数据和控制、功能、性能、约束、接口以及可靠性。在范围陈述中给出的功能，再一定情况下要进一步细化以为估算提供条件。性能方面要考虑处理以及响应时间的要求。约束标识了外部硬件、可用内存或其他已有系统对软件的限制。



Steps in Scope Management

- **Collect Requirements**—The process of defining and documenting stakeholders' needs to meet the project objectives.
- **Define Scope**—The process of developing a detailed description of the project and product.
- **Create WBS**—The process of subdividing project deliverables and project work into smaller, more manageable components.
- **Verify Scope**—The process of formalizing acceptance of the completed project deliverables.
- **Control Scope**—The process of monitoring the status of the project and product scope and managing changes to the scope baseline.



Collect Requirements

- Collect Requirements is the process of defining and documenting stakeholders' needs to meet the project objectives.
- Requirements include the quantified and documented needs and expectations of the sponsor, customer, and other stakeholders. These requirements need to be elicited, analyzed, and recorded in enough detail to be measured once project execution begins. Collecting requirements is defining and managing customer expectations.
- Requirements become the foundation of the WBS. Cost, schedule, and quality planning are all built upon these requirements. The development of requirements begins with an analysis of the information contained in the project charter and the stakeholder register



Project Requirements

- Many organizations categorize requirements into project requirements and product requirements.
- Project requirements can include business requirements, project management requirements, delivery requirements, etc.
- Product requirements can include information on technical requirements, security requirements, performance requirements etc.



Techniques of Collecting Requirements

- Interviews
- Focus groups
- Facilitated Workshops
- group Creativity Techniques
- group Decision Making Techniques
- Questionnaires and Surveys
- Observations
- Prototypes



Outputs of collecting Requirements

- **Requirements Documentation**
- **Requirements Management Plan**
- **Requirements Traceability Matrix**



Define Scope

- Define Scope is the process of developing a detailed description of the project and product.
- Project Scope Statement is developed. The project scope statement describes, in detail, the project's deliverables and the work required to create those deliverables. The project scope statement also provides a common understanding of the project scope among project stakeholders.



Project Scope Statement

- **Product scope description: Progressively elaborates the characteristics of the product, service, or result described in the project charter and requirements documentation.**
- **Product acceptance criteria.**
- **Project deliverables.**
- **Project exclusions. Generally identifies what is excluded as from the project. Explicitly stating what is out of scope for the project helps to manage stakeholders' expectations.**
- **Project constraints.**
- **Project assumptions: Lists and describes the specific project assumptions associated with the project scope and the potential impact of those assumptions if they prove to be false.**



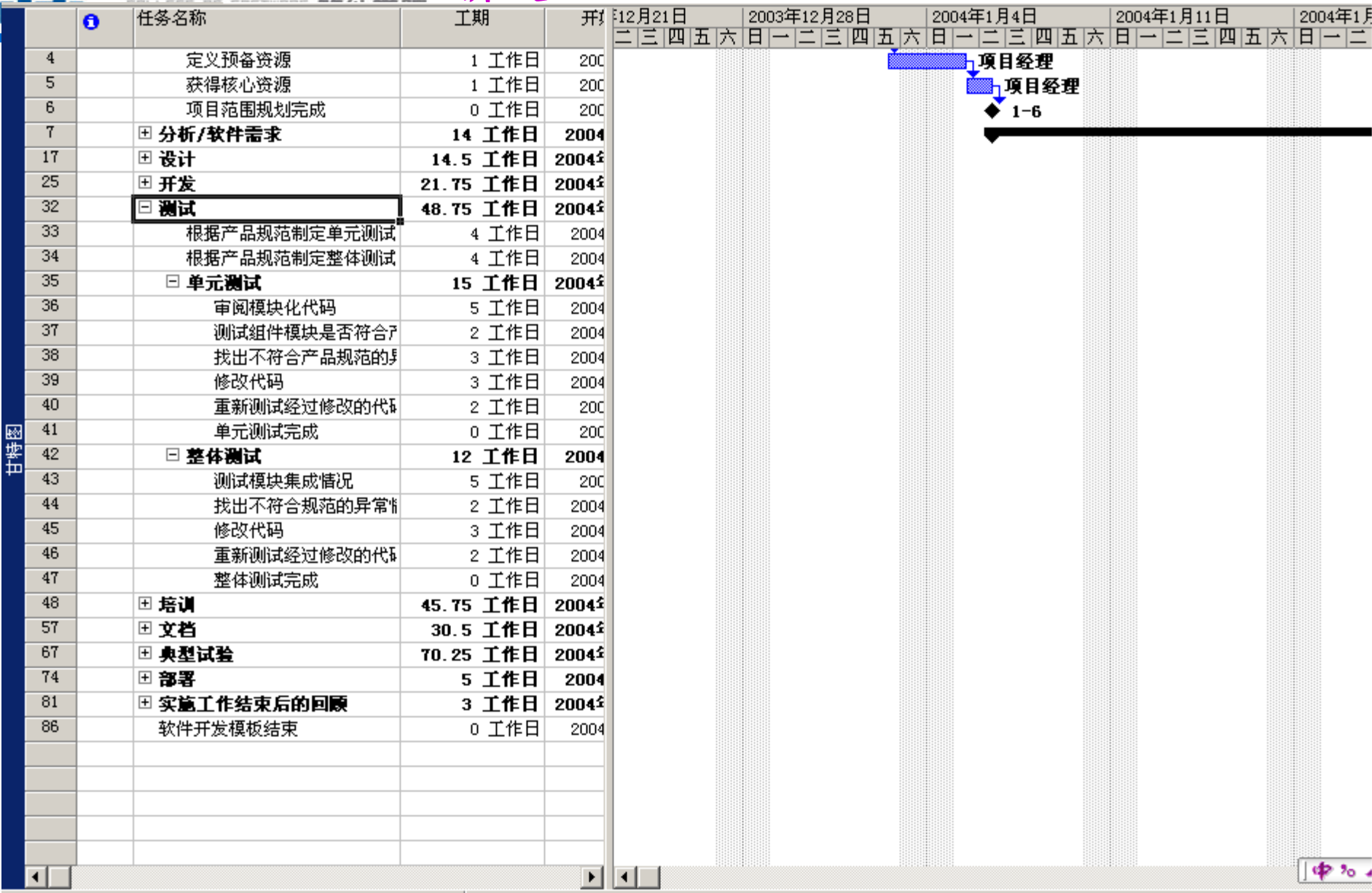
软件项目范围说明书

- 1. 文档说明
- 2. 术语和缩写定义
- 3. 背景简述
- 4. 项目目标简述
- 5. 项目解决方案概述
- 6. 项目工作范围详细描述
- 7. 系统功能需求及非功能技术要求
- 8. 环境定义
- 9. 项目总体验收标准及验收流程
- 10. 项目总体假设条件
- 11. 客户方总体责任
- 12. 相关项目文档及参考资料



Create WBS

- Create WBS is the process of subdividing project deliverables and project work into smaller, more manageable components.





Purpose of a WBS

- **A WBS helps to define the work required for the project and to break it into manageable pieces called work packages**
- **A good WBS can help in the development of schedules, budgets, and resource requirements**
- **The WBS is a useful tool for identification of activities and assignment of responsibilities**



What is a WBS?

- **WBS: Work Breakdown Structure**
- **A WBS is a logical hierarchy of work packages involved in a project**
- **A WBS is an essential tool in the project planning process**
- **A WBS is an **outcome-oriented** analysis of the work involved in a project that defines the total scope of the project**
- **Once the project charter has been created, the project must be scoped out in more detail**
- **对应WBS，项目团队必须 “达成共识”**






Work Packages

- A work package is a deliverable or product at the lowest level of the WBS
- As a general rule, each work package should represent 80 hours (or less) of effort
- Each work package should have a clearly identified person who is responsible for it
- This individual should . . .
 - Be a member of the project team
 - Be responsible for the successful completion of the work package



创建WBS的步骤

- 按照项目实施管理的方法分解，即选择分解标准，标准应该是唯一的 
- 识别并分解项目的组成要素，以图形表示出来。 
- 评估和验证**WBS**是否正确 
- 验证分解正确后，建立一套编号系统，确定任务关系，并以其为基础，确定资源，分配任务，估算工作量



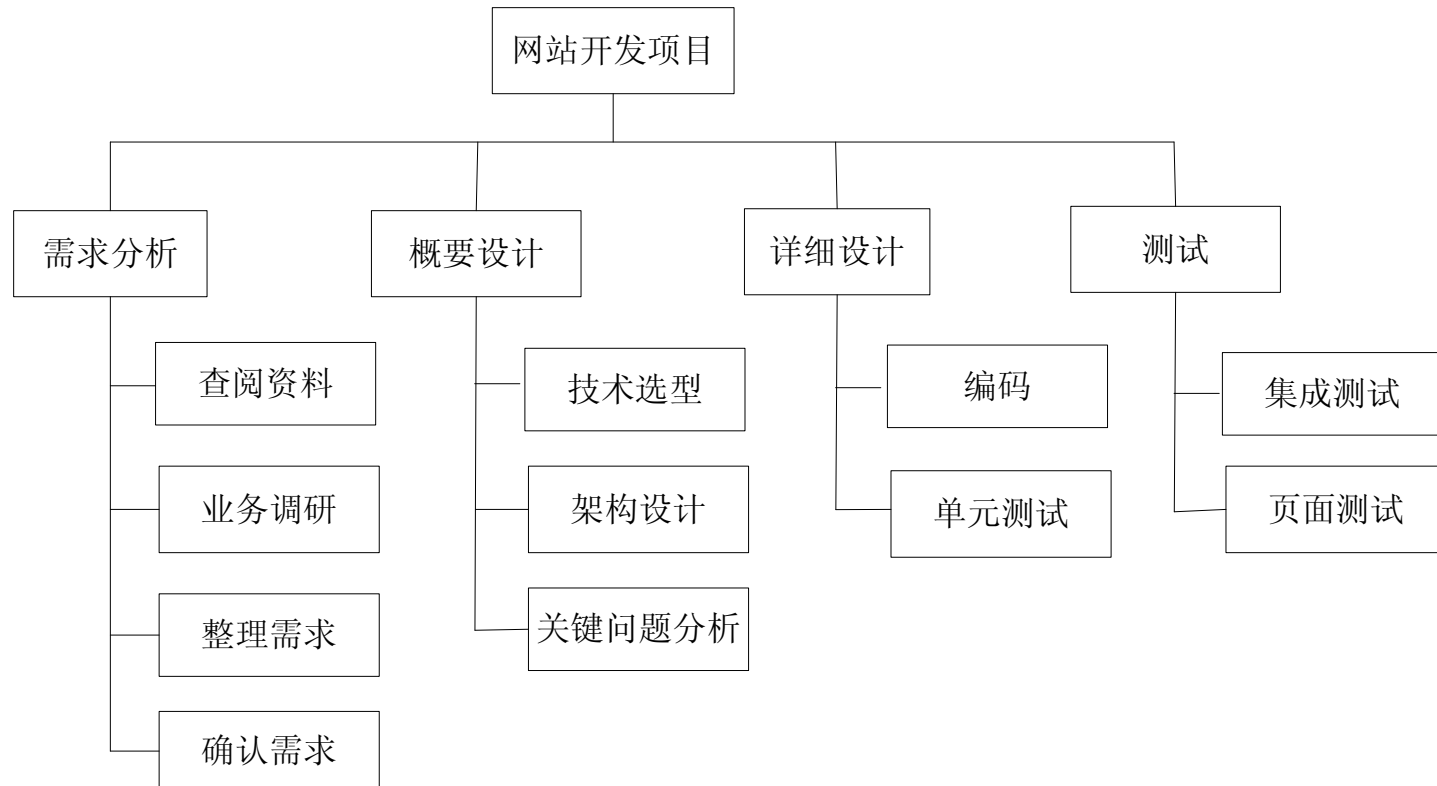


Possible Ways to Organize WBS

- **By project phases**
- **By product components(Define scope though defining functionality and data)**

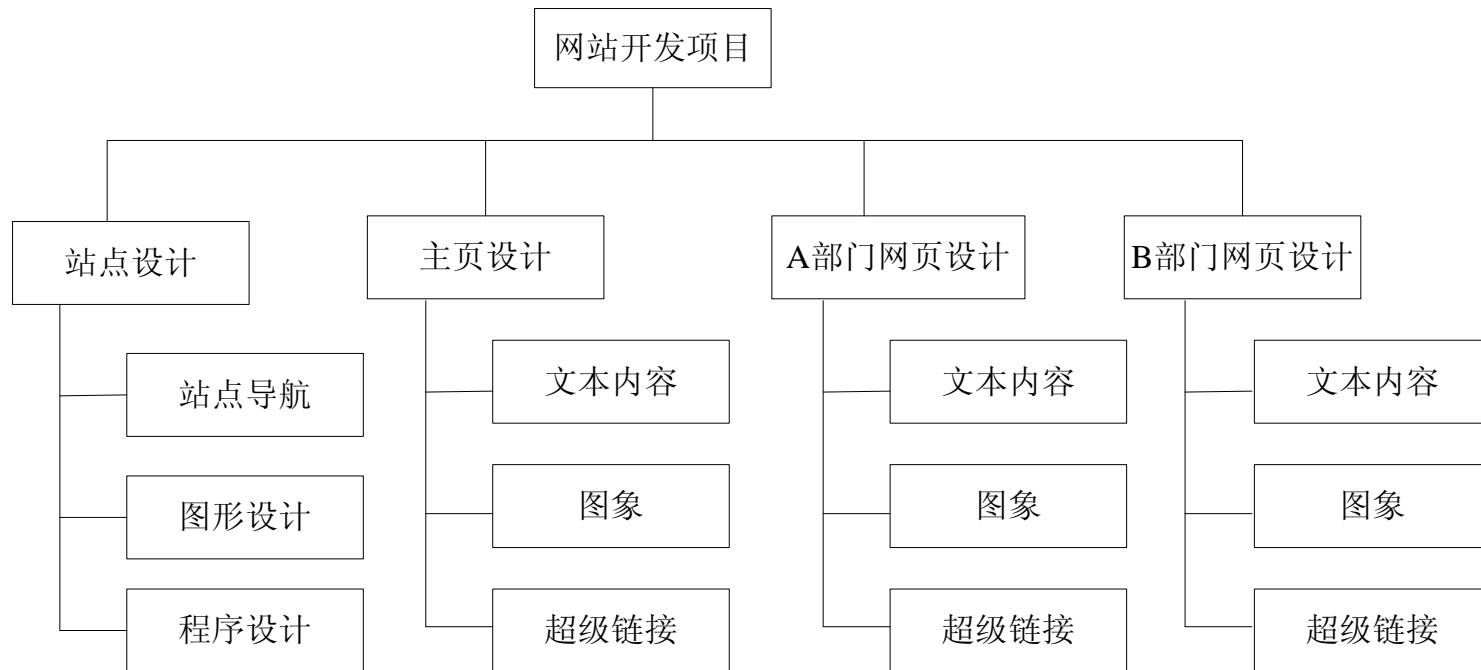


By project phases





By product components





Approaches to developing a WBS

- The Analogy Approach(类比法)
- The Top-Down approach (自顶向下)
- The Bottom-Up approach (自底向上)



Types of WBS

- 树型
- 清单类型



清单类型

Table 4-3: Intranet WBS in Tabular Form

1.0 Concept
1.1 Evaluate current systems
1.2 Define Requirements
1.2.1 Define user requirements
1.2.2 Define content requirements
1.2.3 Define system requirements
1.2.4 Define server owner requirements
1.3 Define specific functionality
1.4 Define risks and risk management approach
1.5 Develop project plan
1.6 Brief Web development team
2.0 Web Site Design
3.0 Web Site Development
4.0 Roll Out
5.0 Support





分解结果的检验

- 最底层要素是否有重复，如果存在重复就应该重新分解
- 最底层要素是否是实现目标的充分必要条件，如果不是就应该进行修正
- 每个要素是否清晰完整定义，否则需要进行补充
- 最底层要素是否有定义清晰的责任人，是否可以估算成本和进度安排





Guidelines for Developing a WBS

- **WBS结构不要超过5/7层**
- 一个单位工作任务只能在**WBS**中出现在一个地方
- 一个 **WBS**项的内容是其下一级各项工作之和
- **WBS**中的每一项工作都只由一个人负责，即使这个工作需要多个人来做



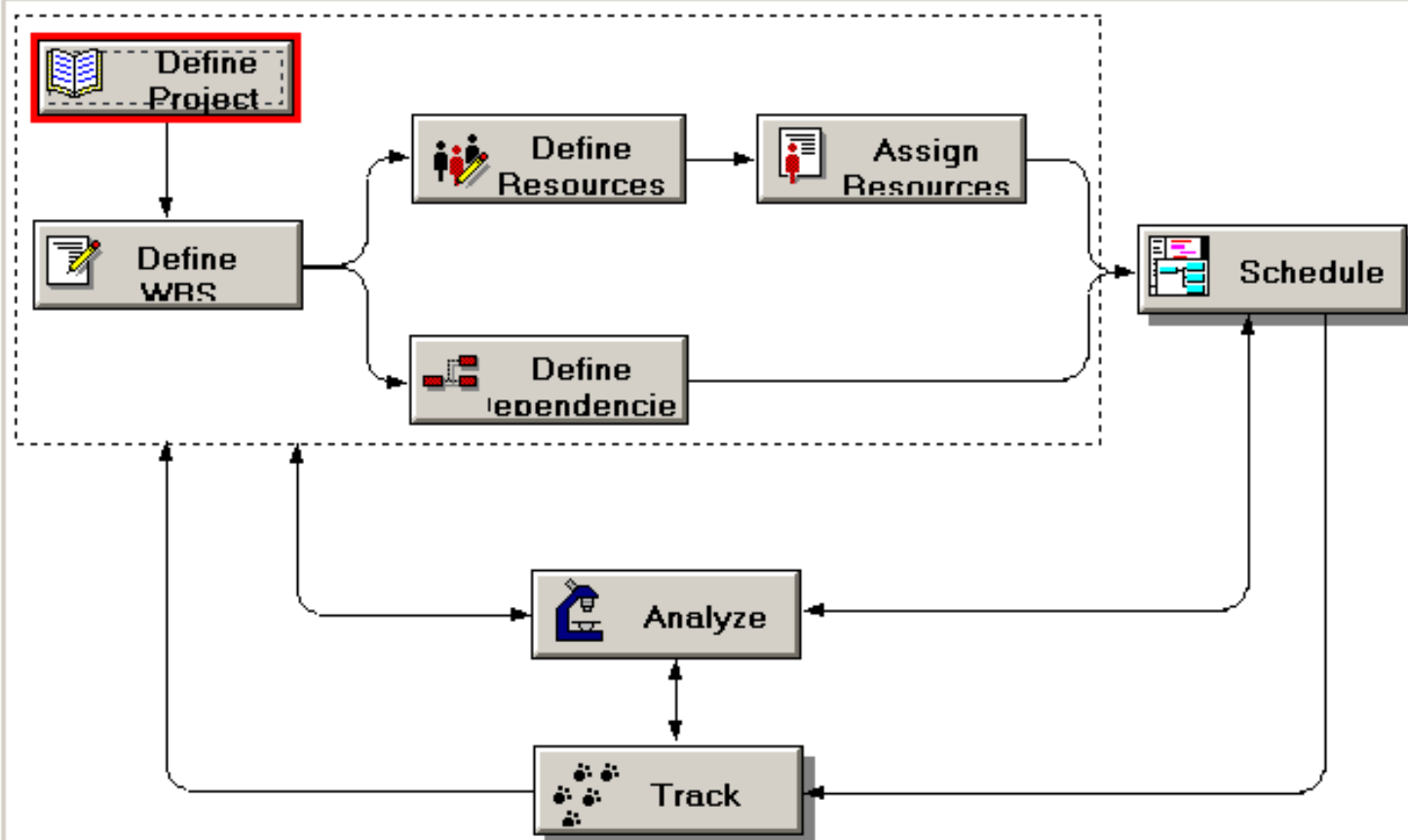
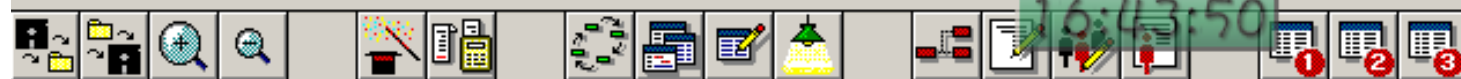
Guidelines for Developing a WBS

- **WBS** 必须和项目章程相一致，与工作任务的实际执行过程相一致
- 项目组成员必须参与制定**WBS**，以确保一致性和全员参与
- 任务分解中**应该**包括诸如管理、质量等任务



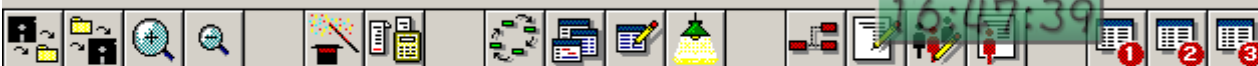
利用项目管理软件生成WBS

- **Project Workbench (PMW)**
- **微软Project**



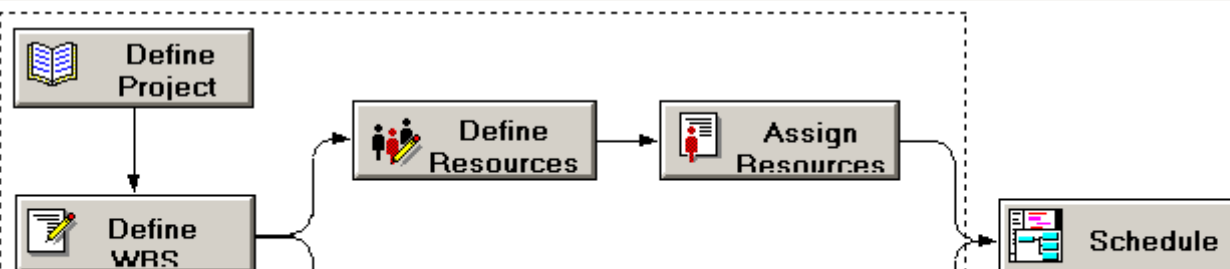


File Edit View Setup Operations Window Help



Phase

Process Flow - Plan



Define WBS



Type	Name	ID	Deliverable	Catego	Duration	Dur Typ
Phase	MARKET ANALYSIS	P10	Marketing Report			
Activity	Plan Analysis	A10	Outline			
Task	Define Objectives	T10	List of measurable objectives	PLAN	12	Variable
Task	Arrange Resources	T20	Resource Commitments	ADMIN	16	Variable
Milestone	Interim Plan	M10	Report	PLAN		
Activity	Conduct Interviews	A20	Screened candidates			
Task	Interview Corp Png	T25	Corporate Png requirements	ADMIN	9	Variable
Task	Interview Operations	T30	Operations Requirements	ADMIN	8	Variable
Task	Interview Marketing	T40	Marketing requirements	MKTG	6	Variable
Task	Consolidate Findings	T50	Consolidation Report	ADMIN	20	Variable
Task						



Verify Scope

- Verify Scope is the process of formalizing acceptance of the completed project deliverables. Verifying scope includes reviewing deliverables with the customer or sponsor to ensure that they are completed satisfactorily and obtaining formal acceptance of deliverables by the customer or sponsor.
- Scope verification differs from quality control in that scope verification is primarily concerned with acceptance of the deliverables, while quality control is primarily concerned with correctness of the deliverables and meeting the quality requirements specified for the deliverables. Quality control is generally performed before scope verification, but these two processes can be performed in parallel.



Control Scope

- Control Scope is the process of monitoring the status of the project and product scope and managing changes to the scope baseline. Controlling the project scope ensures all requested changes and recommended corrective or preventive actions are processed through the Perform Integrated Change Control process.
- Project scope control is also used to manage the actual changes when they occur and is integrated with the other control processes. Uncontrolled changes are often referred to as project scope creep. Change is inevitable, thereby mandating some type of change control process



范围变更控制

- 制定变更管理程序
- 建立变更管理数据库
- 团队意识



小案例

- A公司的张经理最近心里挺烦。公司前一段签了一个100多万的单子，由于双方老板很熟，且都希望项目尽快启动，在签合同时候也没有举行正式的签字仪式。合同签完，公司老总很快指定张经理及其他8名员工组成项目组，由张经理任项目经理。老总把张经理引见给客户老总，客户老总在业务部给他们安排了一间办公室。
- 项目进展开始很顺利，张经理有什么事都与客户老总及时沟通。可客户老总很忙，经常不在公司。张经理想找其他部门的负责人，可他们不是推托说做不了主，就是说此事与他无关，有的甚至说根本就不知道这事儿。问题得不到及时解决不说，很多手续也没人签字。
- 项目组内部问题也不少，有的程序员多次越过张经理直接向老板请示问题；几个程序员编的软件界面不统一；项目支出的每笔费用，财务部都要求张经理找老板签字。张经理频繁打电话给老板，其他人心里想，张经理怎么老是拿老板来压人。由此，张经理与项目组其他人员和财务部的人员产生了不少摩擦，老板也开始怀疑张经理的能力。
- 问题：项目问题出在哪里？