Ch1: Intro to Project Management

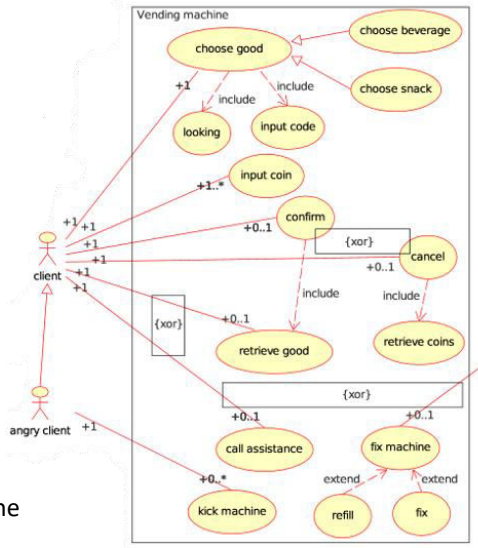
Project: A temporary endeavor with a purpose developed with progressive elaboration (beginning with a broad definition as specific aspects become clearer with time and development) thus it should be developed in increments. It requires resources such as **people**, **hardware**, and **software** and should have a **primary client/sponsor** though stakeholders/involved parties can be plenty. It also requires a **budget**.

Attributes: (for multiple choice questions)

- *A project has a unique purpose*
- *A project is temporary*. A project has a definite beginning and end.
- *A project is developed using progressive elaboration*. Projects are often defined broadly when they begin, and as time passes, the specific details of the project become clearer. Therefore, projects should be developed in increments.
- *A project requires resources, often from various areas.* Resources include people, hardware, software, and other assets.
- *A project should have a primary customer or sponsor.* Most projects have many interested parties or stakeholders, but for a project to succeed someone must take the primary role of sponsorship.
- *A project involves uncertainty*. Because every project is unique, it is sometimes difficult to define its objectives clearly, estimate how long it will take to complete, or determine how much it will cost.

Business Use Case Diagram: Represent the functionality provided by an organization as a whole. They are drawn from the organizational perspective. They do not differentiate between manual and automated processes. Unrelated to Use Case diagrams.

Note: There are no specific rules for these, just give a diagram that can be understood by someone who majored in business and not CS and forget what you know about standard use cases; go wild. Example:



Pay no attention to the {xor}
We don't know what they are either…

Why **Projects** Fail:

- **Poor Requirements Documentation (50%)**
- **Poor Communication (14%)**
- **Inadequate Risk Management (17%)**
- **Poor Scope Definition (15%):** Users – Functions – Dimensions – Constraints

Project Constraints: **The project manager has to balance these three**

- **Scope/Quality (**expected products/services and work needed to deliver them**)**
- **Cost/Resources (**what money, materials, and effort needed to deliver**)**
- **Time/Schedule (**time required to complete the project**)**

Ch2: **Skills** for Project Managers (for multiple choice questions)

Project Manager: Works closely with stakeholders and developers to manage the design, implementation, and delivery of the project.

Application Area Standards & Regulations: General tools and techniques project managers use

Project Environment: Understanding change and how organizations work within their social, political, and physical environments

General Management:

- Understand important topics related to financial management, accounting, procurement, sales, marketing, contracts, manufacturing, distribution, logistics, the supply chain, strategic planning, tactical planning, operations management, organizational structures and behavior, personnel administration, compensation, benefits, career paths, and health and safety practices.
- Delegate detailed responsibility for some of these areas to a team member, support staff, or even a supplier
- Be intelligent and experienced enough to know which of these areas are most important and who is qualified to do the work

Soft Skills: Ability to lead, communicate, negotiate, solve problems, and influence the organization at large.

They need to be able to **listen actively** to what others are saying, help **develop new approaches for solving problems,** and then **persuade others** to work toward achieving project goals. Project managers need to be able to **cope with criticism and constant change.**

Stakeholders: **People involved in or affected by the project(**Sponsors, team, support staff, customers, users, suppliers, & opponents**)**

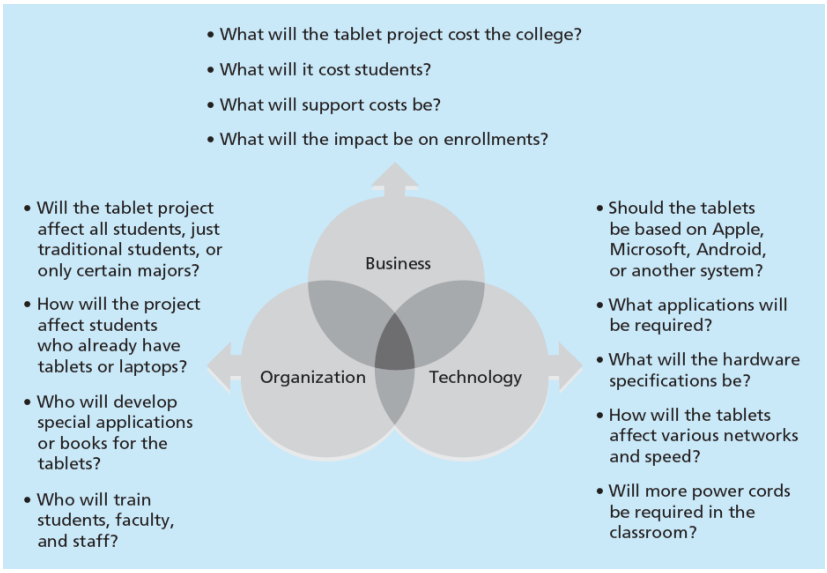
Common exam questions:

- Identify if something is a constraint or not
- Specify if a given skill is required for project managers

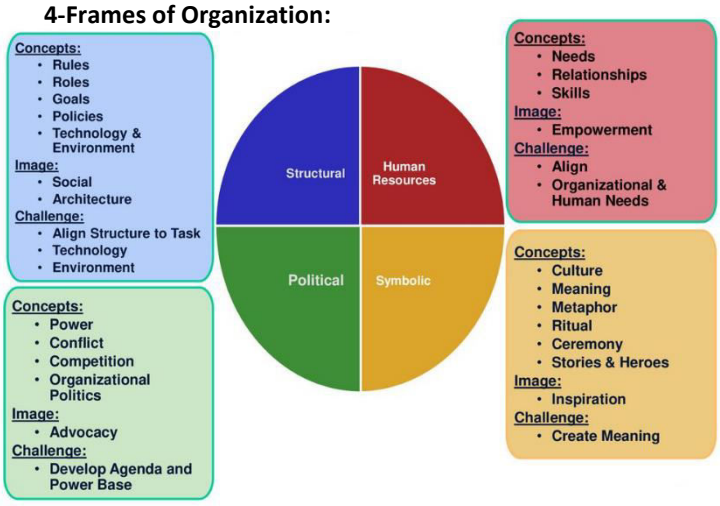
Ch3: Concepts Involved in Understanding the Project Environments

- **Systems Approach:** Describe a holistic and analytical approach to solving complex problems that includes using
  - **Systems Philosophy:** Ability to see systems with each individual component working together for a purpose
  - **Systems Analysis:** Defining the scope, dividing components, and solving problems one by one
  - **Systems Management:** Addresses the business aspect of a system. "Does it make financial sense to pursue this new technology?" or "Should the company develop this software in-house or purchase it off the shelf?"

    For proper management we use the 3-sphere model; below is an example about designing a Tablet:

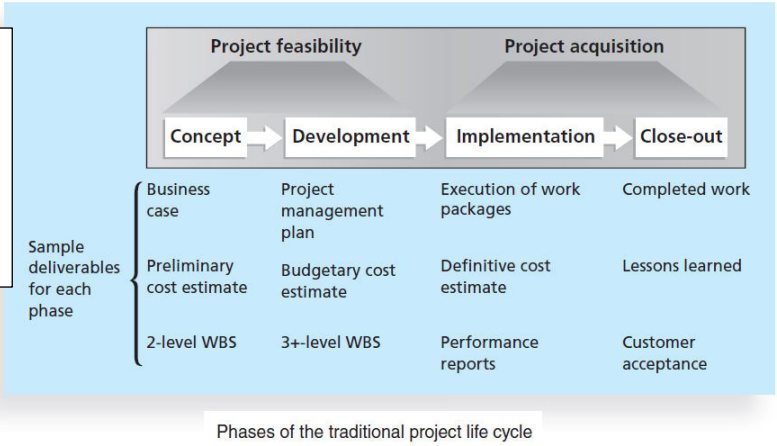


- **Understanding Organizations:** considering the political context of a project or the culture of the organization and those working on the project. For this we need the **4-Frames of Organization:**



- **Managing Stakeholders:** People **involved** in or **affected** by project activities **inside** or **outside** the organization
  - **Internal:** Project Sponsor, Project Team, Support Staff, and Internal Customers of the project, and managers who are affected since projects use up the organization's limited resources
  - **External:** Customers (if they are external to the organization), Competitors, Suppliers, and sometimes government officials or concerned citizens
- **Project Life Cycle:** Collection of phases that break projects down into smaller, more manageable pieces to reduce uncertainty

WBS: **Work Breakdown Structure**
Deliverable-oriented breakdown of a project into smaller components
Deliverable: product or service, such as a technical report, a training session, a piece of hardware, or a segment of software code, produced or provided as part of a project.



Phases of the traditional project life cycle

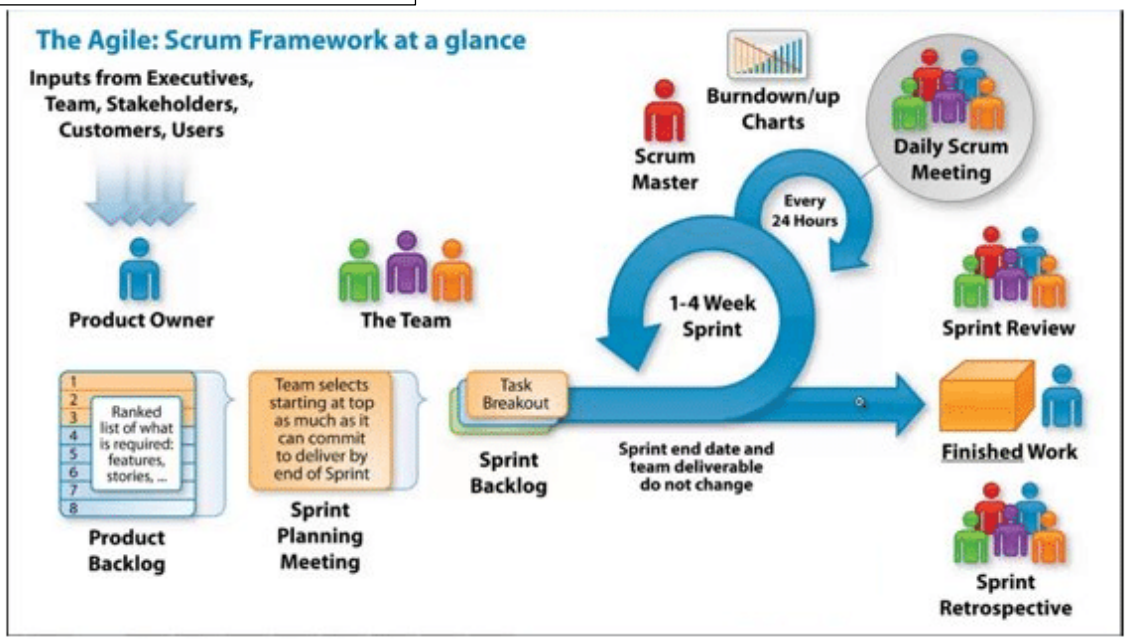
- **Understanding the Context of IT Projects:** Differences in technical knowledge can make communication between professionals challenging with many diverse technologies changing rapidly. This fast-paced environment requires equally fast-paced processes to manage and produce IT projects and products
- **Reviewing Recent Trends that affect IT Project Management:** Increased **Globalization, Outsourcing, Virtual teams,** and **Agile**
  - **Globalization:** PMs must seek to maintain **Communication**, **Trust**, **Common Practices**, and unified **Tools** in a diverse workplace that spans multiple offices in different cultures. Ex: companies make their own unique tools & software
  - **Outsourcing:** Acquisition of goods and services from an outside source which could be cheaper and save time by receiving certain parts of the product externally instead of maintaining a team to deliver them
  - **Offshoring:** Outsourcing from another country
  - **Virtual Teams:** People who work together despite time and space boundaries using communication technologies
    - **+:** Lower costs, more flexibility, and work-life balance
    - **-:** Isolation, communication problems, reduced networking, and high reliability on software

- **Agile:**

Scrum Master
Responsible for enacting Scrum values and practices
Ensure that the team is fully functional and productive
Enable close cooperation across all roles and functions

Team
Cross-functional: Programmers, testers, user experience designers, etc. Members should be full-time and self-organizing

Daily scrum meeting
Daily review meeting for 10-15 mins
Status review and not for problem solving
All sprint team members participate



Product Owner
Defines features and release plans
Prioritize features every iteration as needed
Accept or reject work results

Sprint review
Demo of new features to customer/product owner
Team presents work accomplished during the sprint
All major stakeholders participate

Sprint retrospective
Periodic post mortem to review what's working and what's not
Done after every sprint
All major stakeholders participate

Ch4: Project Management Characteristics [Process Group]

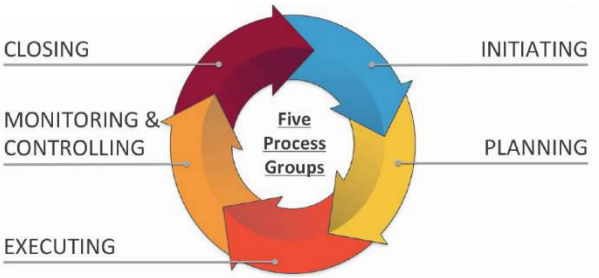
Project management consists of 10 knowledge areas:

Integration, Scope, Time, Cost, Quality, Human Resources, Communications, Risk, Procurement, and Stakeholder Management

Decisions and actions taken in one knowledge area at a certain time usually affect other knowledge areas

Closing processes include formalizing acceptance of the project or project phase and ending it efficiently. Administrative activities are often involved in this process group, such as archiving project files, closing out contracts, documenting lessons learned, and receiving formal acceptance of the delivered work as part of the phase or project A common monitoring and controlling process is reporting performance, where project stakeholders can identify any necessary changes that may be required to keep the project on track.

Monitoring and controlling processes include regularly measuring and monitoring progress to ensure that the project team meets the project objectives. The project manager and staff monitor and measure progress against the plans and take corrective action when necessary. A common monitoring and controlling process is reporting performance, where project stakeholders can identify any necessary changes that may be required to keep the project on track.



Initiating processes include defining and authorizing a project or project phase. Initiating processes take place during *each* phase of a project. For example, in the close-out phase, initiating processes are used to ensure that the project team completes all the work, that someone documents lessons learned, and that the customer accepts the work

Executing processes include coordinating people and other resources to carry out the various plans and create the products, services, or results of the project or phase. Examples of executing processes include acquiring and developing the project team, performing quality assurance, distributing information, managing stakeholder expectations, and conducting procurements

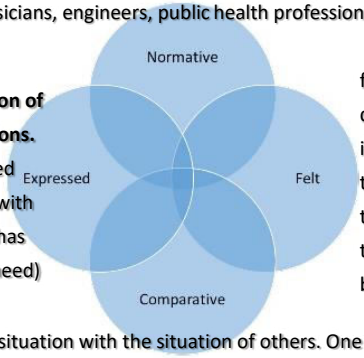
Planning processes include devising and maintaining a workable scheme to ensure that the project addresses the organization's needs. Projects include several plans, such as the scope management plan, schedule management plan, cost management plan, and procurement management plan. These plans define each knowledge area as it relates to the project at a particular point in time.

Ch5: A Guide to the PMD Pro

~~~~Beyond this point I will only include information specified as important by the professor~~~~

- **PHASE 1: PROJECT IDENTIFICATION AND DESIGN**
  - **Are you doing the right project?**
    The first step in determining whether you are "doing the right project" is to collect data to broadly explore a wide variety of issues to inform priorities and identify interventions that will address the challenges in a target area
  - **Identifying Project Needs**
    Needs differ depending on who you ask. A good approach is a triangular assessment of data. By using three methods/perspectives to answer a question, the hope is that the results of at least two of the three will reinforce each other. On the other hand, if three conflicting answers are produced, the investigator knows that the question needs to be reframed, methods reconsidered, or both
    Four categories of social need:

Compare the current situation to a set of professional or expert standards. Often, these needs are identified by a professional or expert – physicians, engineers, public health professionals

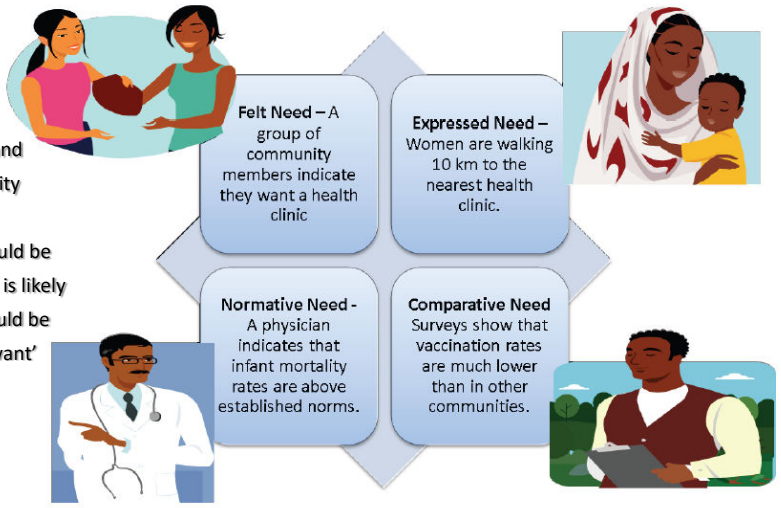


inferred by observation of the community's actions. At times, the expressed needs are consistent with what the community has expressed (their felt need)

focus on the thoughts and dreams of the community itself. What the people themselves believe should be the priority. A felt need is likely to be subjective and could be better described as a 'want'

Compare the current situation with the situation of others. One of the most common uses of this approach has been the comparison of people's access to resources

Example:



Note: Vertical Log-frame Logic:

Project Description	Indicators	Means of Verification	Assumptions
Goal	If the OUTCOMES occur; Then this should contribute to the overall GOAL		
Outcome(s)	If the OUTPUTS are produced; Then the OUTCOMES can occur		
Outputs	If the ACTIVITIES are conducted; Then OUPUTS can be produced		
Activities	If adequate RESOURCES/INPUTS are provided; Then the ACTIVITIES can be conducted		

- At each level of the logical framework, there are external factors that may affect the success of the project.
- These important external factors should be noted under the Assumptions column. You may not be able to do anything about some of the risks but it is important to anticipate possible problems.
- The list of risks and assumptions may also help to explain why a project did not achieve all of its objectives.

  - **Project Decision Gates:** Series of points in the project that require a decision to either proceed with the next phase of the project, modify the Scope, Schedule or Budget of the project or end the project outright. Standard locations for them are:
    - **Project conception paper** presented to stakeholders for analysis & feedback
    - **Expression of Interest paper** intended for external stakeholders/donors detailing resource requirements and usage
    - **Project Proposal document** intended to receive funding for the project to move forward
- **PHASE 2: PROJECT SET UP**
  - **Establishing the Project Governance Structure:**
    - **Authority**: Who has the power to make decisions and within what tolerance levels?
    - **Accountability**: Who is accountable for the success of the project? With no clear accountability for project success, there is no one moving agendas to resolve project issues.
  - **Project Board(**Relatively small; grows based on variety of project's fields**)** that includes representatives of **all** stakeholders
  - **Series of Meetings:** To discuss changes after feedback reception (Changing budget or deadlines)
  - **Officially Authorizing the Start of the Project:** Should be documented through the development of a project charter: a document that provides a high-level description of the project and which is signed by the project governing body
  - **Communicating the Project Launch:** By releasing the charter publicly and to all stakeholders
  - **Risk management:**
    - **Identification (**document possible risks**)** Though uncategorizable, some include Legal, Economic, Political, etc.
    - **Assessment (**probability of each + impact**)** Use pre-set criteria to rank them and identify how much is tolerable
    - **Response Planning (**What to do to deal with each**): Avoidance(**Change scope**), Transference(**Let another party absorb the risk, ex: insurance**), Reduction(**Reduce probability before it happens**), Acceptance(**Tolerable risks**)**
    - **Monitoring and Control (**Responding when risks occur**) Risk Register** with category, status, probability, & impact
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