

## 01<sup>st</sup> Day Content

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02 Project Life Cycle

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What is a Project?

A temporary endeavor undertaken to create a unique product, service or result.

- A definite beginning & a definite end point

- This does not mean short duration

- Produce a product or artifact, quantifiable and end item or a component item

- Each project is unique

- A capability to perform service

- After project there is a result.

- An improvement in an existing product or service.

### Project Attributes

A project :

- Has a unique purpose

- Is temporary

- Is developed using progressive elaboration

(rolling wave planning)

- Requires resources, often from various areas
- should have a primary customer or sponsor

The project sponsor usually provides the direction & funding for the project

- Involves uncertainty

### Project vs Operation

- Operations are an organizational function performing an ongoing execution of activities.

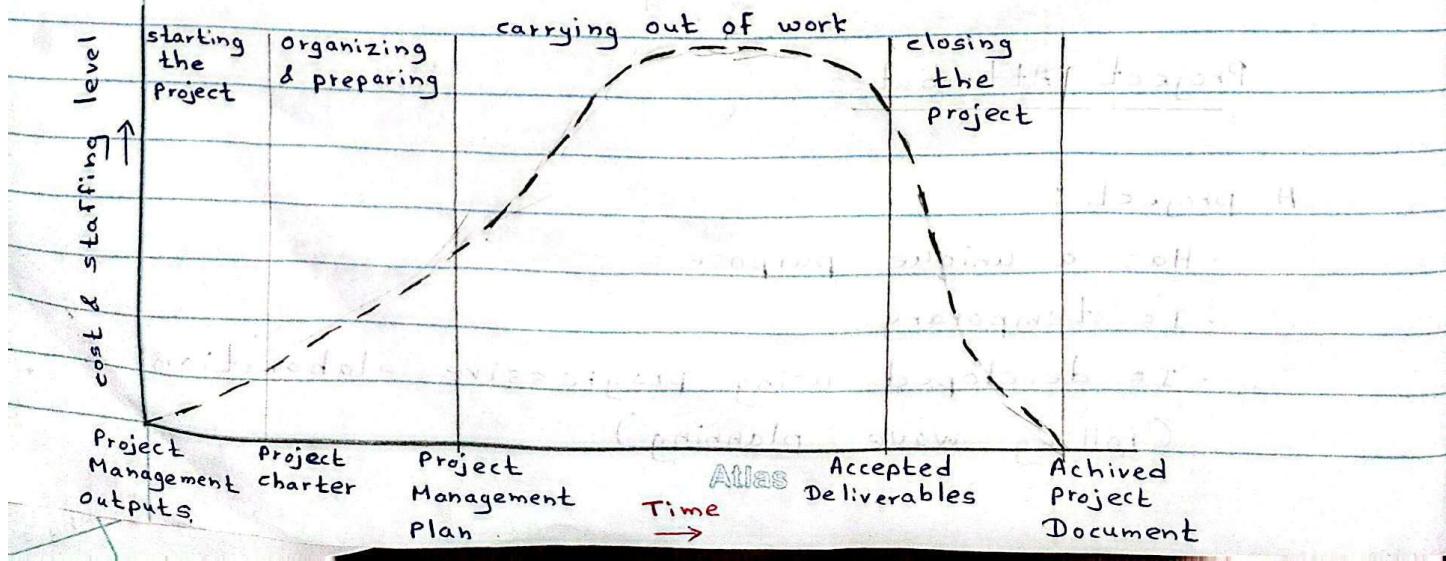
Ex:- production, Manufacturing, Accounting Operations

- projects help achieve the organizational goals when they are aligned with the organization's strategy.

- Projects require project management while operations require business process management (BPM) or operations management.

### Project Life Cycle (PLC)

The PLC illustrates the sequence of phases a project passes through, typically showing how resource usage and control change over time



PLC Phase	Purpose	Key output/Deliverable
01. starting the project Initiating	Define the project & gain formal authorization	Project charter
02. organizing and preparing Planning	Define & refine objectives, create detailed activities	Project Management plan
03. carrying out the work Execution & controlling	Execute the plan and perform the scheduled activities	Accepted Deliverables
04. closing the project closing	Formalize acceptance and bring the project to an end.	Archived project documents

### Critical PLC Trends:

- The cost and staffing level is lowest at the start and end and peaks during the Execution (carrying out the work) phase.
- The cost of changes is lowest at the beginning but increases dramatically as the project moves toward completion.
- Risk and Uncertainty are highest at the beginning and decrease over time.

### What is Project Management

Project management is the application of knowledge, skills, tools and techniques to project activities to meet project requirements. It is fundamentally about balancing the Triple constraint.

## The Triple constraint:

Project success is often measured by its ability to meet the competing demands of:

01. Scope - What work is included by its and excluded (the features)

02. Time - The schedule and duration of the project.

03. Cost - The budget and required funding.

Note :- A change in one constraint almost always necessitates a change in at least one of the others.

### Why is PM is Important

- It is a Basic Knowledge Building Box.
- The world is Moving to Project base Execution
- Leads to High Salaries
- You cannot Live in Organization without Projects.

### PMBOK Framework

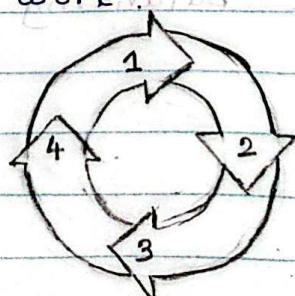
The PMBOK (Project Management Body of Knowledge) is the global standard for project management, defining the structure for PM work.

1 - Initiating

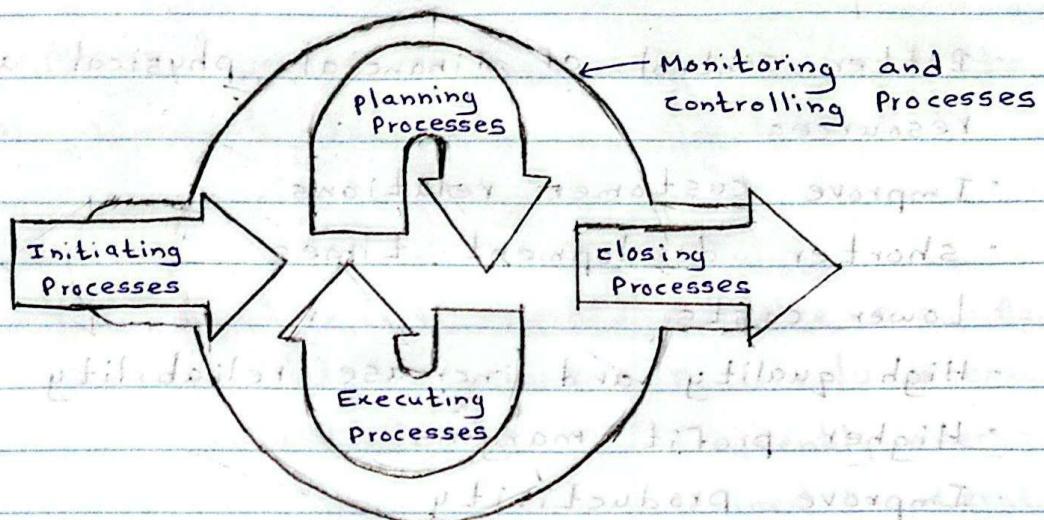
2 - Planning

3 - Executing & Controlling

4 - Closing



## Project Management Process Groups



These groups categorize the work activities and overlap and interact throughout the project.

Process Group	Objective (PMBOK Focus)	Connection to course Material
Initiating	Define and authorize the project or a phase (formalizing the start)	Produces the project Charter
Planning	Define and refine objectives determine how the project will be executed	Produces the project Management Plan
Executing	carry out the work manage the team and resources	Runs concurrently with M&C where most project resources are consumed
Monitoring & Controlling	Track review and regulate progress manage changes & risks	Mitigates high costs by managing variances & taking corrective action
Closing	Formalize acceptance and finalize all activities	Final step includes gathering Lessons Learned

## Advantages of Using Formal Project Management :-

- Better control of financial, physical and human resources.
- Improve customer relations
- shorter development times
- Lower costs
- High quality and increase reliability
- Higher profit margins
- Improve productivity
- Better internal coordination
- Higher worker morale (less stress)

## The Top Ten Project Management Knowledge Areas :-

These disciplines define what the Project Manager must know and manage across the process groups.

01. Integration

02. Scope

03. Schedule (Time)

04. Cost

05. Quality

06. Resource (Human Resource)

07. Communications

08. Risk

09. Procurement

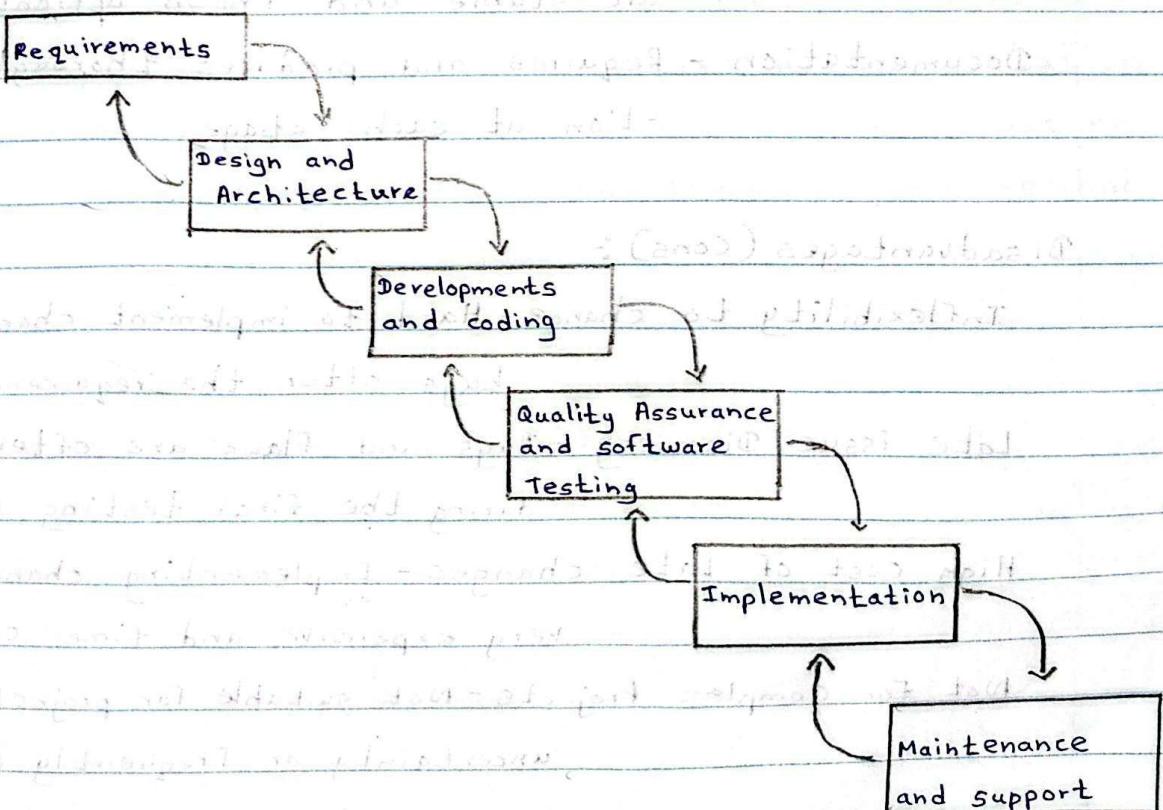
10. Stakeholder

## Project Development Lifecycle

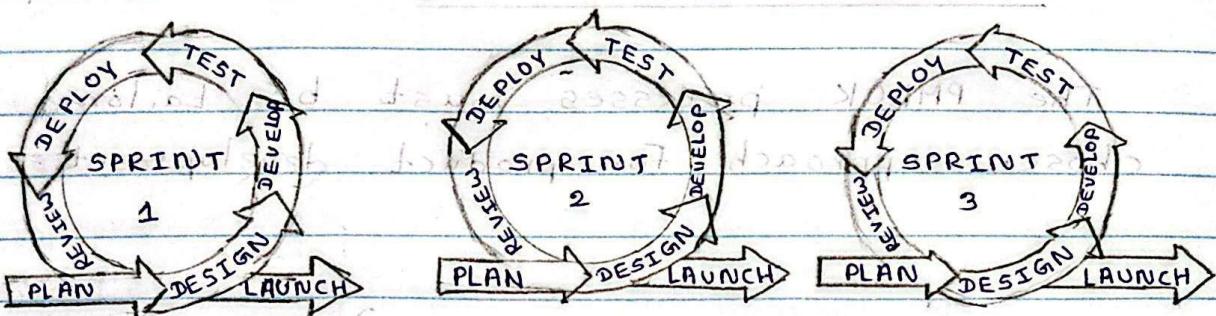
The PMBOK processes must be tailored to the chosen approach for product development.

Lifecycle	Predictive (e.g:- waterfall)	Adaptive (e.g:- Agile)
Requirements	stable, defined upfront & sequentially	Evolving / undetermined frequently emerge & are refined in iterations
Process	Sequential Requirements → Design → Build → Test	Iterative Plan → Design → Build → Test → repeated in short cycles, Review
Best For	simple projects where scope is stable and known	Complex IT projects involving innovation and high uncertainty

### Predictive LifeCycle



## Adaptive / Agile Life Cycle :-



## Predictive / Development Life Cycle (Waterfall)

### Advantages (Pros) :-

~~clear structure~~ - Easy to follow with defined, sequential phases.

~~Easy Management~~ - clear milestones and concise workflow make monitoring simple.

~~Predictability~~ - Allows for accurate prediction of timeline and budget if requirements remain stable.

~~Suitable scope~~ - Best for simple projects where demands are stable and known upfront.

~~Documentation~~ - Requires and produces thorough documentation at each stage.

### Disadvantages (cons) :-

~~Inflexibility to change~~ - Hard to implement changes or fix bugs after the requirements phase.

~~Late issue Discovery~~ - Bugs and flaws are often found only during the final testing stage.

~~High cost of late changes~~ - Implementing changes late is very expensive and time consuming.

~~Not for complex projects~~ - Not suitable for projects with high uncertainty or frequently emerging requirements.

~~No early feedback~~ - The customer sees the final product only at the end, increasing risk.

## Adaptive Development Lifecycle (Agile)

### Advantages (Pros) :-

Resilience to change - Highly flexible and adapts easily to new or changing requirements

Early Value Delivery - Provides working software and value frequently through short iteration (sprints)

High Quality - short feedback loops and frequent testing effectively eliminate vulnerabilities & bugs early

suitable Scope - Best for complex projects & those in rapidly evolving industries where requirements are undetermined.

### Disadvantages (cons) :-

Excessive client Involvement - Requires continuous collaboration and frequent review by the client.

Increased Development Time - Continuous communication and iteration can lengthen overall time

Less Detailed Documentation - Due to the focus on working software over comprehensive documentation

Collaboration Dependency - Quality may be impacted if deep collaboration across teams is not well managed

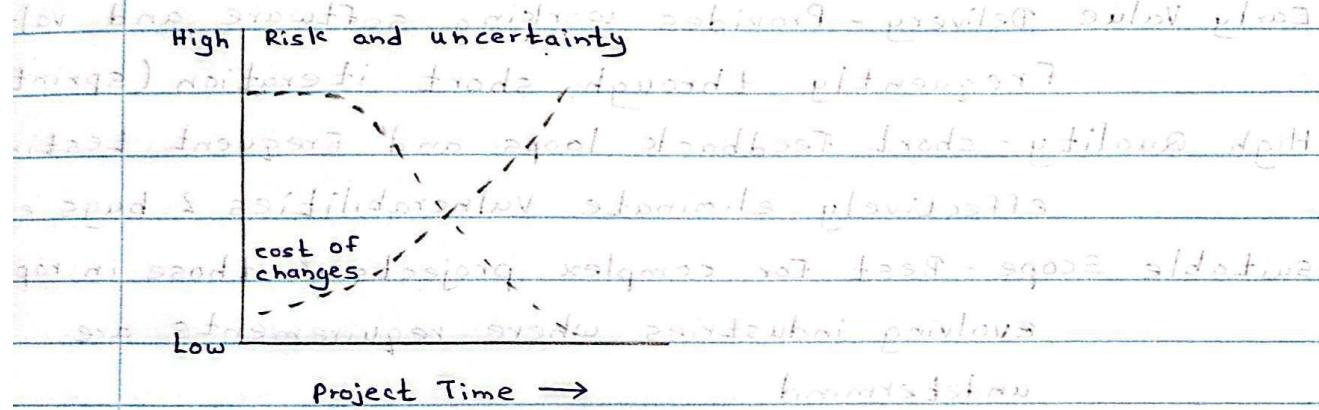
## Projects and strategic Planning:-

Projects start as a result of:

- Market demand
- Strategic opportunity & business need
- Social Need
- Environmental consideration

- Customer requests
- Technological advance
- Legal requirements

### Impact of Variable Based on Progress



### Program Management

Is a group of related projects, sub programs and program activities managed in coordinated way to obtain benefits & control not available from managing them individually.

#### Area of Focus / Interdependency :-

Resource constraints - Managing shared resources (Finance, human, personnel) across all projects in the program.

Aligning Direction - Ensuring all projects remain consistent with the overall strategic program goal.

Resolving Issues & change Management - Managing project conflicts & dependencies, ensuring changes in one project don't derail others in the program.

## Project Manager (PM)

The PM must successfully balance three areas:-

1. Task needs - completing the required work

2. Team needs - Fostering cohesion & effective process

3. Individual needs - Motivating, coaching and developing

## Management Context :-

Program Management

Portfolio Management

## Portfolio Management

Focus on a collection of projects, programs and operations managed as a group to achieve strategic business objectives.

## Essential Interpersonal skills :-

Leadership, Political & culture Awareness

Team building

Negotiation

Motivation, Trust building

Communication, Conflict Management

Influencing, Coaching

Decision Making

## Defect Management & Categorization

Defect management is key to Quality Management within the Monitoring and controlling process group

## Bug categorization by Severity (Impact) :-

Severity Level	Core Impact	Priority
Critical	System hangs or crashes - loses data	High Priority
High (Major)	System functionality broken, unusable (Blocker)	High Priority
Medium (Normal)	Functionality broken, system still usable	Normal Priority
Low / Trivial	Minor inconvenience, cosmetic errors	Low / Lowest Priority

## What is Business Analysis (BA)

The practice of identifying business needs and recommending solutions to improve an organization.

It bridge the gap between what a business needs and how it can achieve it.

IIBA Definition - Enabling change in an organizational context by defining needs and recommending solutions that deliver value to stakeholders.

## Why BA is Important

Prevent Failure - 47% of unsuccessful projects fail due to poor requirements, 39% due to inaccurate requirements gathering

Drives Success - Organizations mature in BA practices  
 organizations are 55% more successful in implementing strategy

Benefits - Improve decision making, enhance efficiency  
 efficiency / effectiveness, drive innovation / growth,  
 reduce costs and increase stakeholder satisfaction

Value to Company :-

- Ability to Implement strategy
- Improve organizational agility
- Management of projects

Affect to overall financial performance

Business Analyst - Managing business analysis

Business Analyst - Managing business analysis

Role:-

An advisory role responsible for investigating and analysing business situation, identifying and evaluating options for improving business systems, defining requirements and ensuring effective implementation

Core Responsibilities:-

Investigate business systems, evaluate actions, document the business requirement and elaborate requirements.

Competencies (3 key Groups):-

1. Personal Qualities - Communication, Leadership, Problem Solving, Team working

2. Business Knowledge - Business, Finance, Domain

3. Methodologies, Principles of IT, Organisation

Concepts and structures

Atlas

### 03. Professional Techniques - Project Management, Requirements engineering, Business modelling, Facilitation skills.

#### Rationale for the Business Analyst (BA's Focus)

Root causes not symptoms - Distinguish between symptoms & root causes.

Business improvement not IT change - Enable business opportunity / problem resolution & enable business agility

Options not solutions - challenge pre determined solutions and evaluate option for meeting business needs.

Feasible, contributing requirements not meeting all requests - Identify requirements that are feasible and contribute to business objectives.

Negotiation not avoidance - Recognise conflicting

#### BA vs PM :-

Feature	Business Analysis (BA)	Project Management (PM)
Focus	solution (delivers measurable business value)	Project (temporary endeavor to create a unique product)
Scope	product scope (features & functions that characterize a solution)	project scope (work performed to deliver a product)
Role	product Requirements (The what & why of the solution)	Project objectives (The how & when of the delivery)

Success	Measured by the solution's ability to deliver its intended benefits & achieve business objectives	Measured by product/project quality, timeline, budget compliance
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## Requirements Categories

Business Requirements - Higher level needs of the organization (issues, opportunities, goals)

Stakeholder Requirement - Needs of a stakeholder

Solution Requirement - Features / functions that meet business / stakeholder needs.

Transition Requirements - Temporary capabilities.

## Business Analysis Process (Model) (5 steps & Tools)

01. Business Context - Familiarize with the environment to avoid recommending the wrong solution

Tools :- VMOST (vision, Mission, objectives, strategy

Tactics (for alignment) + SWOT

SWOT (strengths, weaknesses, opportunities,

Threats for sustainable approach)

02. Investigate situation - Define the exact problem ("what is the pain of the business")

Tools :- Interview (5 whys), observation, workshop,

surveys, Fishbone diagrams (to identify root

(cause) factors)

03. Consider Perspectives - Understand stakeholders views and desired solution

Tools :- Power grid (to identify stakeholders), CATWOE analysis, Business Activity Modelling

04. Analyse Needs - Ensure the proposed solution delivers value & drill down to requirements by addressing gaps

Tools :- GAP Analysis (current state → GAP → Desired state)

05. Evaluate Options - Determine solutions that are feasible (risk-wise, cost-wise, investment-wise)

Tools:- Cost Benefit Analysis, Risk Analysis, CBA, Investment Appraisal

06. Define Requirements - Define the actual user requirements & what is needed to create a viable solution.

Modelling Techniques :- Unified Modelling Language (UML), Business Process Modelling Notation (BPMN), Dataflow Diagram

Business Context Tools

V-MOST → Used to ensure solution recommendations align with strategic goals

(Design standards, etc. for AT)

SWOT → Helps understand the sustainable approach

including solution implementation (Implementation)

for strengths - Unique capabilities & resources the company

possesses (Internal, Positive)

Weaknesses - Areas where the company underperforms

relative to competitors (Internal, Negative)

Opportunities - Favorable conditions in the external

market (External, Positive)

(different entities like Atlas, etc.)

Threats - External factors that could harm the company or prevent it from meeting objectives (External, Negative)

### Value of BA Industry Wise

Financial - Create or modify financial products that meet customer needs

Health Care - Minimize wait times from entrance to first diagnosis

Construction - Define requirements for a new building to use as the scope of work basis.

Manufacturing - Optimize assembly line processes

Goverment - Analyze situations and determine best solution  
-s For issues like poverty, economic crises and environmental issues

IT - Translate business requirements into stakeholder and system requirements to guide designers / developers

- Stakeholder - Person / Group with interest in or affected by project
- stand up meeting - Daily 15 min team sync on work done, planned & blockers keep short by standing
- SE - Software Engineer
- PM - Project Manager
- BA - Business Analyst
- PO - Project Owner
- SM - Senior Management
- A - Architecture
- Risk calculating - Measure the risk which can be happen during project
- Project Management - Is an universal language. A basic knowledge building block
- PMBOK - Project Management Body of knowledge (current version 07)
- UAT - User Acceptance Testing  
A software development phase Test in a real world scenario by end user

- Bug severity levels
  - Blocker
  - Critical
  - Major
  - Moderate
  - Minor
- Progressive elaboration - rolling wave planning
- Decision makers - CTO, CEO, Team leaders, PM
- Sprint (Agile) - It is like a sub project within a project.
- SDLC - Software Development Life cycle
- PMP - Project Management Plan
- QC - Quality Control
  - Ensures product quality, find defects
  - Done after development
  - Tools :- Testing, bug Tracking
- BPM - Business Process Management
  - Ensures process efficiency, Improve workflows, done during business
  - Operations
  - Tools :- BPMN, workflow automation

VMOST - strategic planning framework

V → Vision ← J

M → Mission A ← A

O → Objectives ← T

S → Strategy ← W

T → Tactics ← O

standard diagram J ← J

SWOT - strategic planning tool

S → Strengths

W → Weaknesses

O → Opportunities

T → Threats

mix & match strategy

S ⇌ O      W ⇌ T

Fishbone diagram:-



Tool to find root causes of a problem

shape: Fish → Head = problem, Bones = Causes

common categories: Man, Machine, Method,

Material, Measurement, Environment

Used for brainstorming & analyzing why a problem happens

Atlas

## CATWOE - structured problem solving tool

C → customers ← H

A → Actors/H → H

T → Transformation

W → World View

O → Owner/H → H

E → Environment Constraints

fact: parada significa - task

## GAP Analysis

current state → GAP → Desire

state → Plan state

→ desired state

upstade da base de ato

T → W → O → E

Transform, Standardize

hold up and increase base bank of fact

standardise, including definition of fact

fact & M, orientate with principles of norm

improve management, transform