
RESOURCES
OVERSEEING
REQUIREMENTS
PLANNING
Operations
Management
DESIGNING
COST
EFFICIENT
INPUT
OUTPUT
CONTROL
PRODUCTION
STRATEGY

“Operations keeps the lights on, strategy provides a light at the end of the tunnel, but project management is the train engine that moves the organization forward.”

Anonymous

Outline

- Operations Management
- Project Management Basics
- Goals and Boundary of Project
- Work Breakdown Structure (WBS)
- Scheduling a Project
- Project Scheduling Techniques
- Demand and Supply Forecasting
- Inventory Control

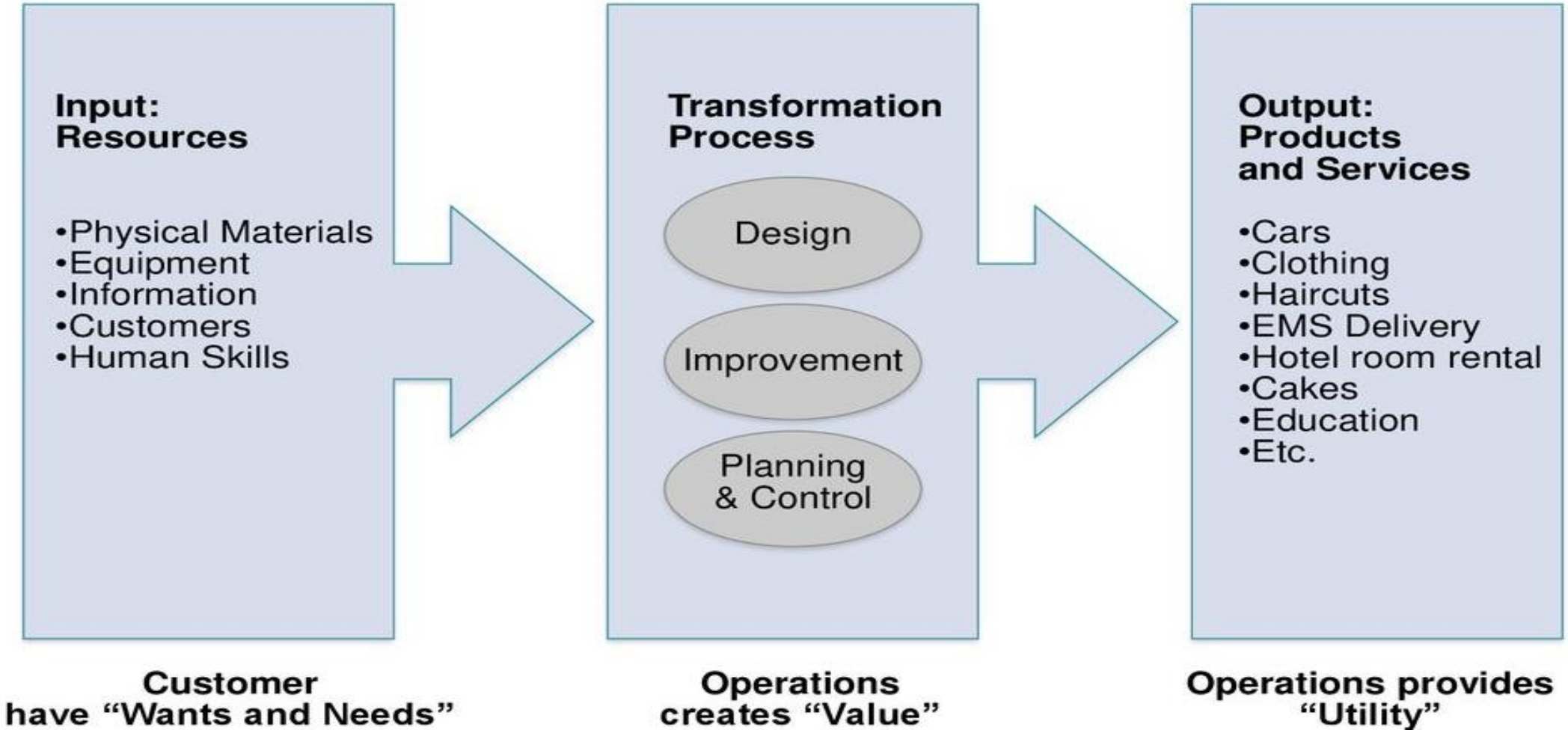

Operations Management

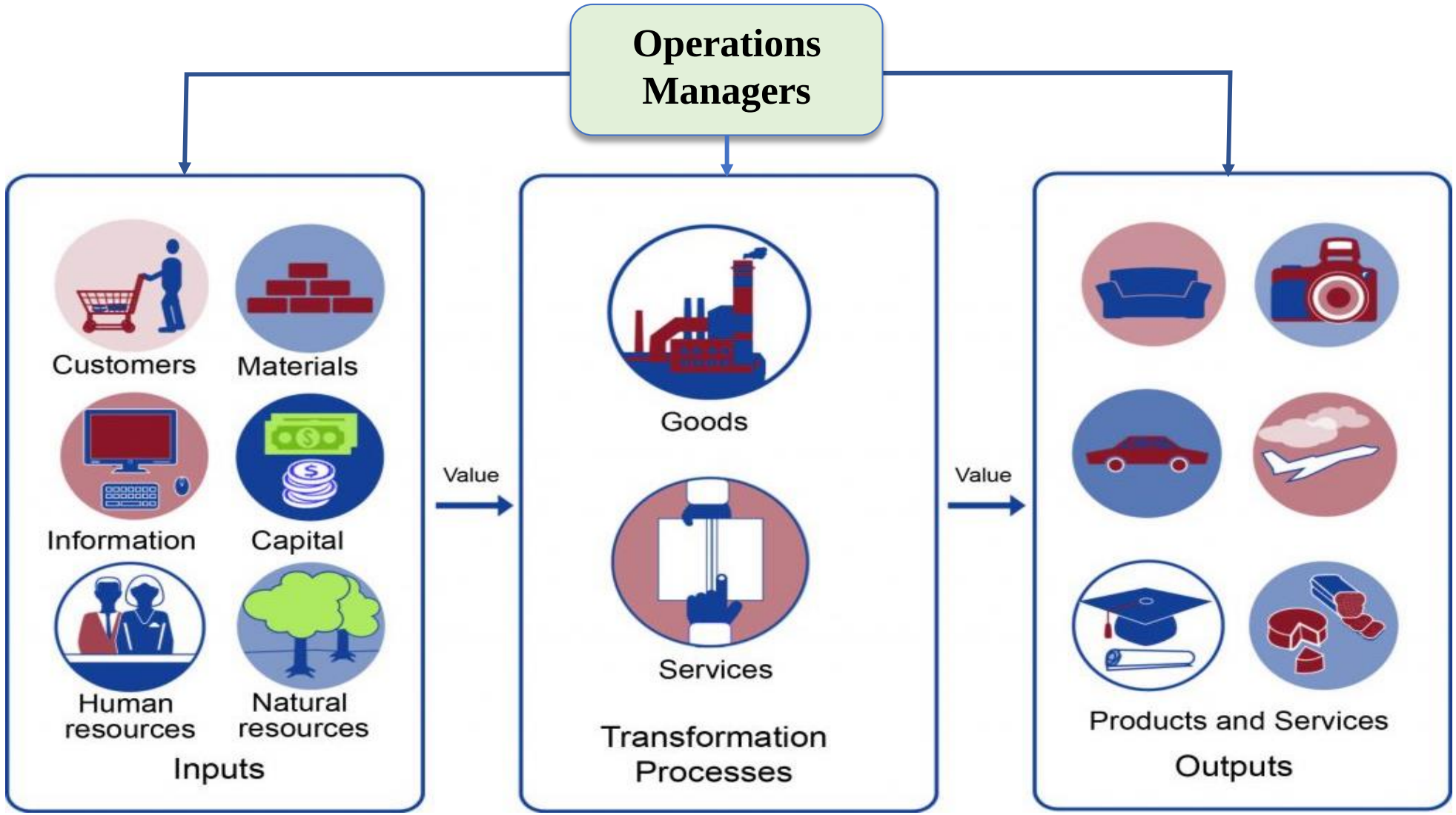
What is Operations Management?

The process of **Designing, Operating, and Controlling** a productive system capable of **transforming physical resources and human talent** into **needed goods and services**

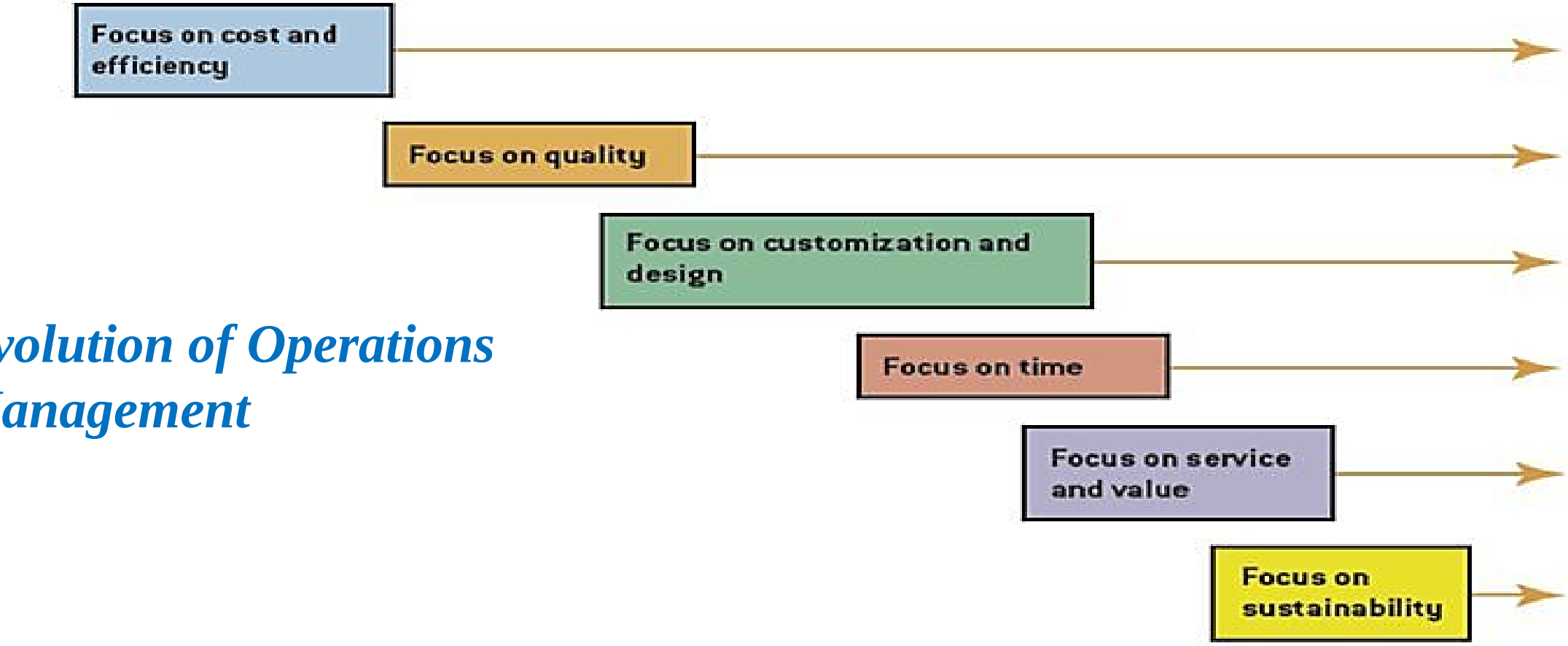
- The **process of converting inputs into desired outputs**
- The **management of the conversion of land, labor, capital, technology and management inputs into desired outputs** of goods or services

Operations Management




Operations Managers
Customers
Materials
Information
Capital
Human resources
Natural resources
Inputs
Value
Goods
Services
Transformation Processes
Value
Products and Services
Outputs

Evolution of Operations Management




Evaluate
Design
Project
Management
Analyze
Develop

What is a project?

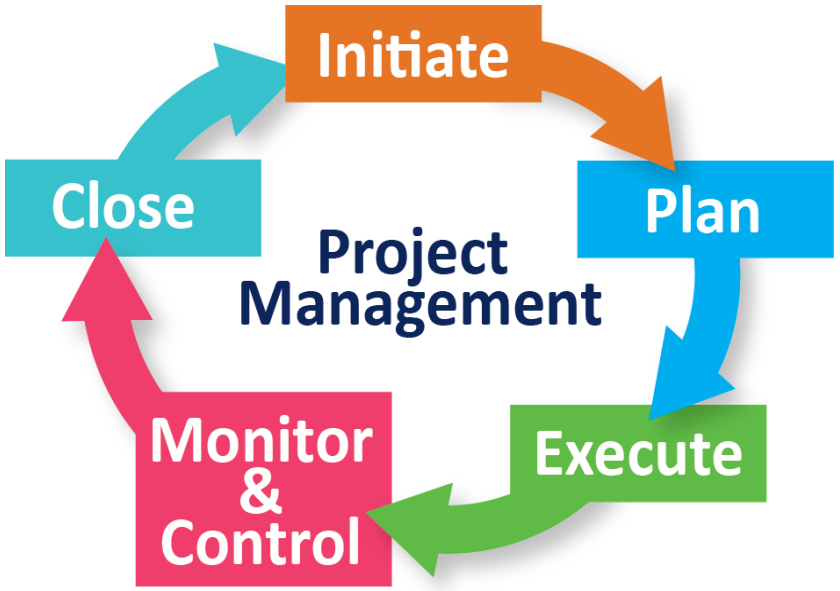
- A project is **a unique, transient endeavour,** undertaken **to achieve planned objectives**, which could be defined in terms of **outputs, outcomes or benefits**
- It is deemed **to be a success if it achieves the objectives according to their acceptance criteria,** within an agreed timescale and budget
- Building blocks of every project:
  - **Time**: Scheduling a collection of techniques to show when work will be performed
  - **Cost**: How are necessary funds acquired and finances managed?
  - **Quality**: How will fitness for purpose of deliverables and management be assured?

What is Project Management?

- It is the **application of processes, methods, skills, knowledge and experience to achieve specific project objectives** according to the project acceptance criteria within agreed parameters.

- The purpose is to plan and **manage a project to successfully,** complete its listed goals and deliverables

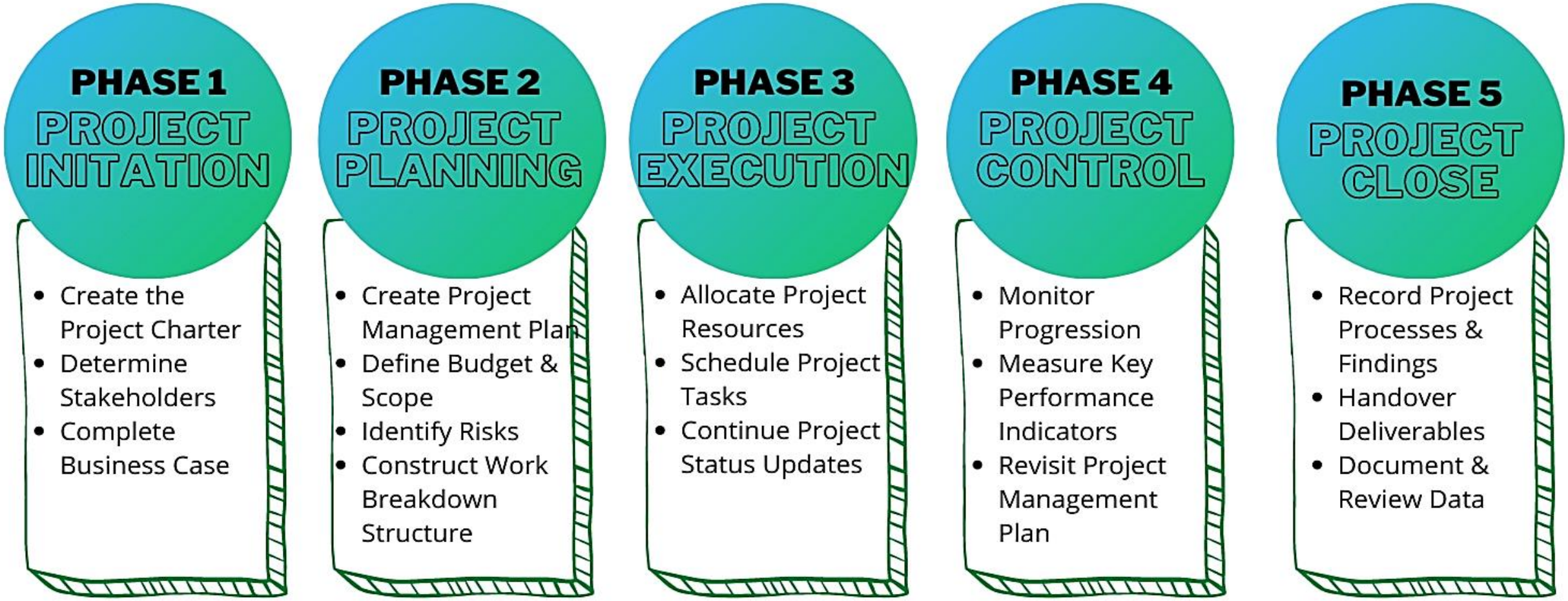
- It involves identifying and **managing risks, careful resource management, smart budgeting, and clear communication** across multiple teams and stakeholders



Operations Management Vs. Project Management

- Operations management **deals with approaching day-to-day as well as strategic business issues** systematically
- Project management **deals with planning, organizing, motivating, and controlling resources** to achieve **specific goals**
- **Projects** are defined as **unique, temporary endeavors** with a specific start and finish
- Operations constitute an organization's on-going, repetitive activities, such as accounting or production.

5 Phases of Project Management



Project Management Goals

- A project goal is the **targeted desired business outcome** that the project should achieve
- Goals imply **utilization of resources wisely, controlling budgets, or implementation of proper procedures**



Project Boundaries

- The boundaries of a project identify **what is included within project work**. It is one of the components of the scope statement called '**The Project Boundaries Identification**.'
- It is a definition of the **limits and exclusions** of the project work
- Boundaries are important for the project as they will state the **things applicable to the project and those out of the project's limits**.
- This helps the project manager to determine the content of project activities
- The boundaries are defined as measurable and auditable characteristics and are closely linked to project objectives

Project Scope Statement Example

Project Name	IVR Project		
Project Sponsor	Dave Sponsor	Project Manager	Alice Michaels
Date of Project Approval	08 March 2015	Last Revision Date	08 March 2015
Scope Description	IN SCOPE: - An IVR system to handle and direct sales calls. - Setup of the IVR system ready to handle all sales enquiries - Training for the sales team on how to use the system - An administration system so the IVR system can be configured by the sales team OUT OF SCOPE: - Support for any other team other than sales - The ability to route complex sales enquiries, such as partnerships etc.		
Project Deliverables	- A customer facing IVR system - An IVR configuration system - A training manual for new and existing sales team members		
Acceptance Criteria	The project will be accepted when it is agreed by the sale team that the deliverables meet their needs (deliverables signed off). The project will also be considered a success if post launch testing shows that customer satisfaction is over 5 points higher than where it is now.		
Constraints	The sales team are not dedicated to this project, and must fit this around their day-to-day sales jobs.		

Project Scope Statement

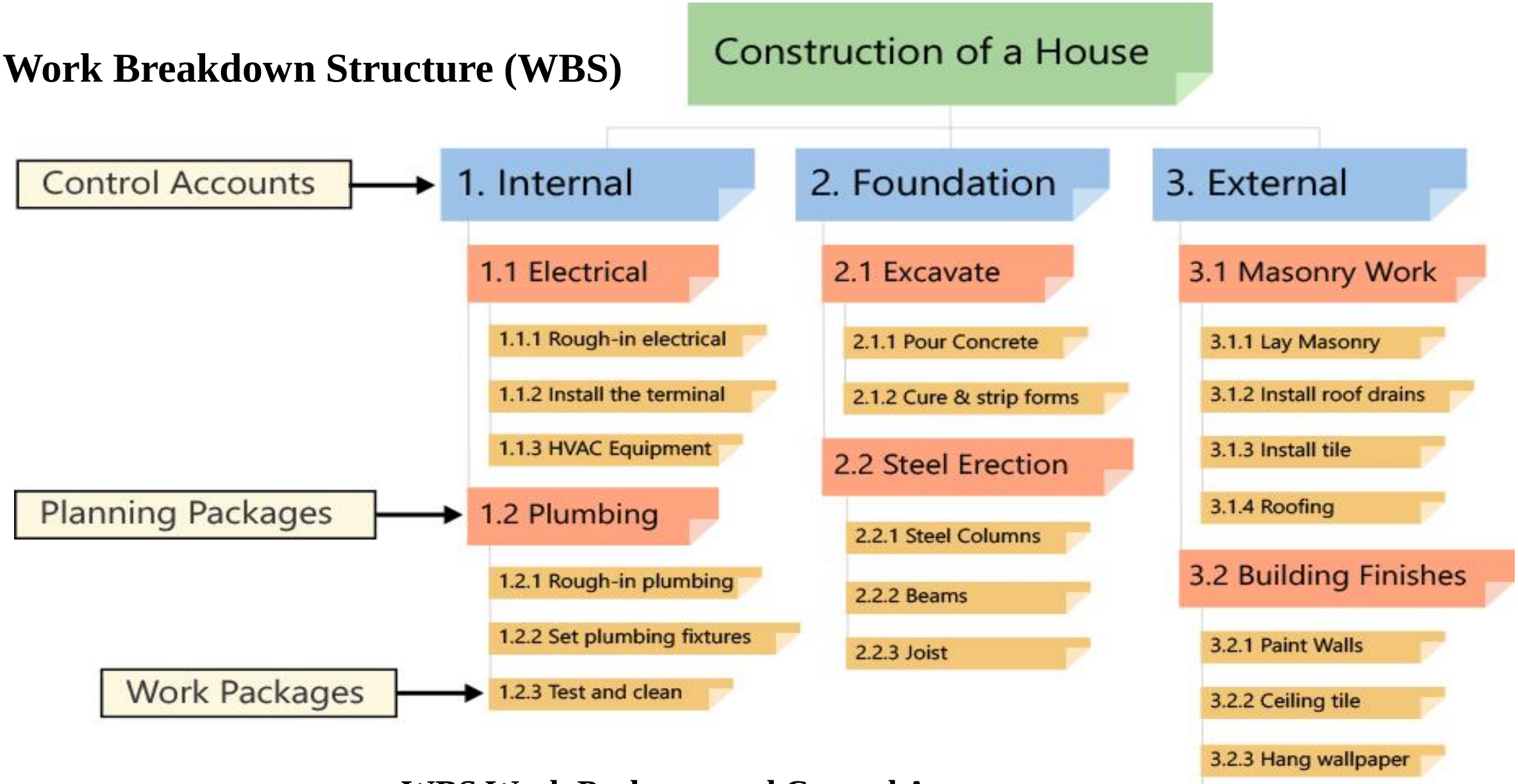
Title	**Timesheet Reporting Tool**	**Date**	June 08, 2017
Project Manager	**Nicole Hansen**		
Project Justification	The Timesheet Reporting tool will be the creation of a user-friendly web based application. The application will automate the process of tracking the daily time entries made by employees		
Project Scope Description	The timesheet reporting tool will be used as a tracking tool to review the time entries by the Information Technology employees globally		
Project Objective	To create a tool to track the timesheet entries for all the Information Technology employees		
High Level Requirements	• User access for the tool granted to all employees • Admin access to support team • Report generation access to project managers • Enable users to remotely access the tool • Standard templates for all reports		
In Scope	• Multi – level approvals for timesheets • Timesheet tasks additions to the tool by Admin access users • 'Copy Previous Week' timesheets feature • Access tool via Desktop		
Out of Scope	• New project/task addition to the tool by managers • Connectivity with HRMS to update employee leaves automatically • Role based task list template • Access tool via mobile and tablet		

TECHNO-PM
PROJECT MANAGEMENT TEMPLATES

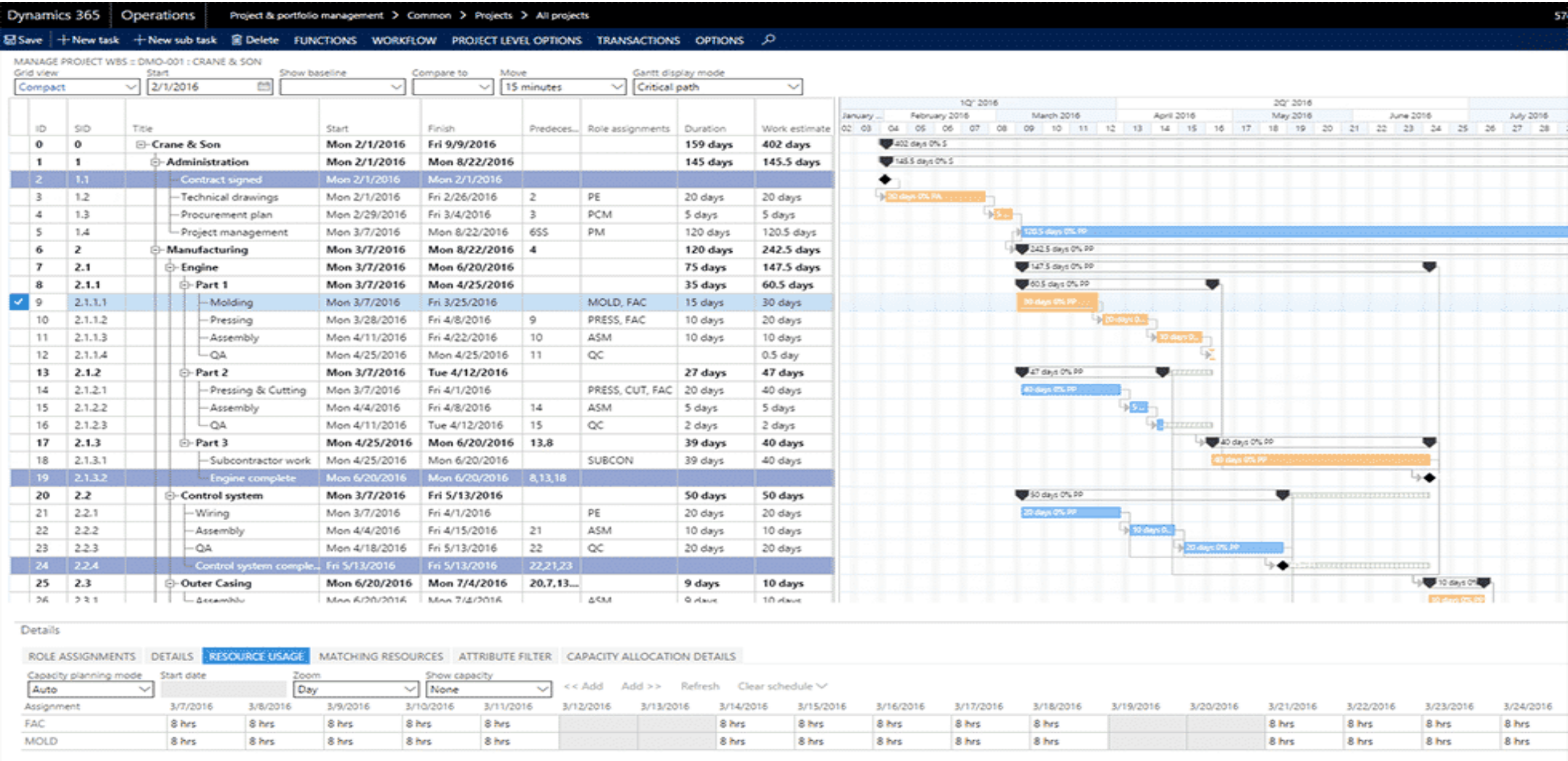
Work Breakdown Structure (WBS)

- A WBS is a hierarchical outline of the tasks required to complete a project
- The WBS ‘breaks down’ the structure of a project into manageable deliverables
- **Each deliverable is assigned a task, or series of tasks that can be further broken down into subtasks to meet the needs of the project**
- The advantage of using a WBS as part of project lifecycle management is that **it takes large, complex projects and breaks them into smaller, more manageable tasks** that can be assigned to specific people or teams to deliver

Work Breakdown Structure (WBS)



WBS Work Packages and Control Accounts

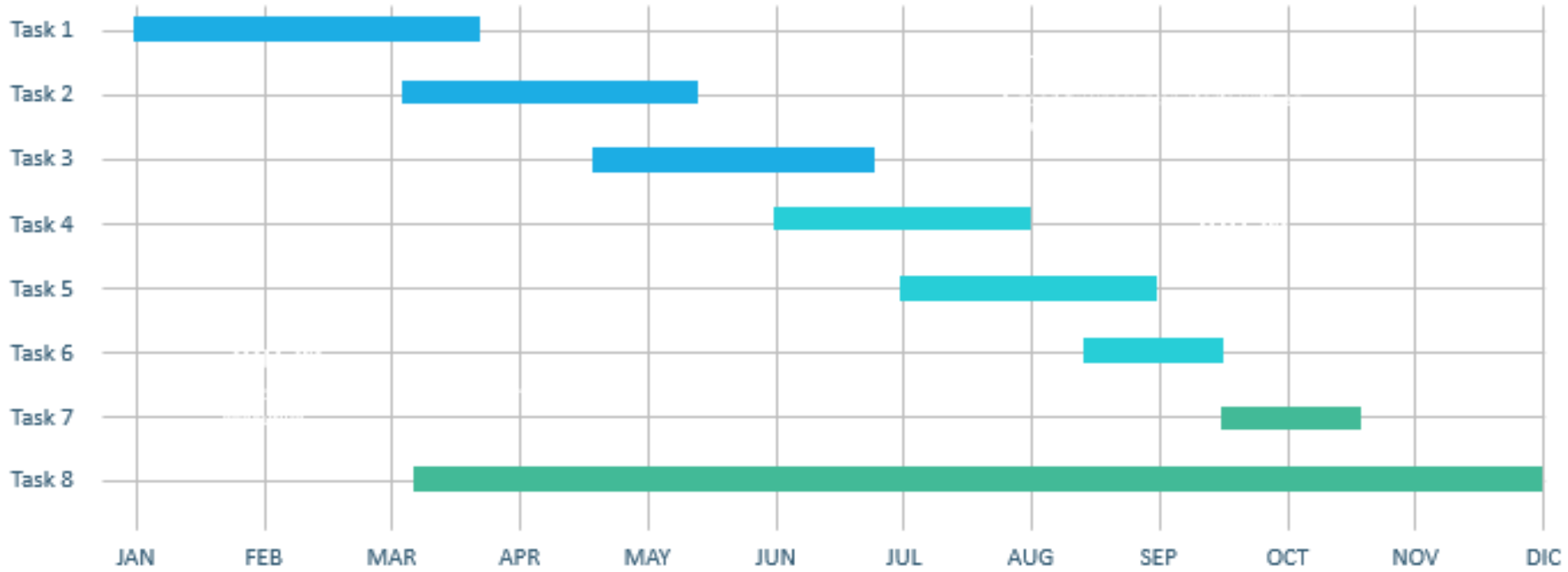

Dynamics 365
Operations
Project & portfolio management > Common > Projects > All projects
Save
New task
New sub task
Delete
FUNCTIONS
WORKFLOW
PROJECT LEVEL OPTIONS
TRANSACTIONS
OPTIONS
MANAGE PROJECT WBS : DMO-001 : CRANE & SON
Grid view
Compact
Start
2/1/2016
Show baseline
Compare to
Move
15 minutes
Gantt display mode
Critical path
ID
SID
Title
Start
Finish
Predeces...
Role assignments
Duration
Work estimate
0 0 Crane & Son Mon 2/1/2016 Fri 9/9/2016 159 days 402 days
1 1 Administration Mon 2/1/2016 Mon 8/22/2016 145 days 145.5 days
2 1.1 Contract signed Mon 2/1/2016 Mon 2/1/2016
3 1.2 Technical drawings Mon 2/1/2016 Fri 2/26/2016 2 PE 20 days 20 days
4 1.3 Procurement plan Mon 2/29/2016 Fri 3/4/2016 3 PCM 5 days 5 days
5 1.4 Project management Mon 3/7/2016 Mon 8/22/2016 6SS PM 120 days 120.5 days
6 2 Manufacturing Mon 3/7/2016 Mon 8/22/2016 4 120 days 242.5 days
7 2.1 Engine Mon 3/7/2016 Mon 6/20/2016 75 days 147.5 days
8 2.1.1 Part 1 Mon 3/7/2016 Mon 4/25/2016 35 days 60.5 days
9 2.1.1.1 Molding Mon 3/7/2016 Fri 3/25/2016 MOLD, FAC 15 days 30 days
10 2.1.1.2 Pressing Mon 3/28/2016 Fri 4/8/2016 9 PRESS, FAC 10 days 20 days
11 2.1.1.3 Assembly Mon 4/11/2016 Fri 4/22/2016 10 ASM 10 days 10 days
12 2.1.1.4 QA Mon 4/25/2016 Mon 4/25/2016 11 QC 0.5 day
13 2.1.2 Part 2 Mon 3/7/2016 Tue 4/12/2016 27 days 47 days
14 2.1.2.1 Pressing & Cutting Mon 3/7/2016 Fri 4/1/2016 PRESS, CUT, FAC 20 days 40 days
15 2.1.2.2 Assembly Mon 4/4/2016 Fri 4/8/2016 14 ASM 5 days 5 days
16 2.1.2.3 QA Mon 4/11/2016 Tue 4/12/2016 15 QC 2 days 2 days
17 2.1.3 Part 3 Mon 4/25/2016 Mon 6/20/2016 13,8 39 days 40 days
18 2.1.3.1 Subcontractor work Mon 4/25/2016 Mon 6/20/2016 SUBCON 39 days 40 days
19 2.1.3.2 Engine complete Mon 6/20/2016 Mon 6/20/2016 8,13,18
20 2.2 Control system Mon 3/7/2016 Fri 5/13/2016 50 days 50 days
21 2.2.1 Wiring Mon 3/7/2016 Fri 4/1/2016 PE 20 days 20 days
22 2.2.2 Assembly Mon 4/4/2016 Fri 4/15/2016 21 ASM 10 days 10 days
23 2.2.3 QA Mon 4/18/2016 Fri 5/13/2016 22 QC 20 days 20 days
24 2.2.4 Control system comple... Fri 5/13/2016 Fri 5/13/2016 22,21,23
25 2.3 Outer Casing Mon 6/20/2016 Mon 7/4/2016 20,7,13,... 9 days 10 days
1Q' 2016
2Q' 2016
January
February 2016
March 2016
April 2016
May 2016
June 2016
July 2016
Details
ROLE ASSIGNMENTS
DETAILS
RESOURCE USAGE
MATCHING RESOURCES
ATTRIBUTE FILTER
CAPACITY ALLOCATION DETAILS
Capacity planning mode
Auto
Start date
Zoom
Day
Show capacity
None
<< Add
Add >>
Refresh
Clear schedule
Assignment
3/7/2016
3/8/2016
3/9/2016
3/10/2016
3/11/2016
3/12/2016
3/13/2016
3/14/2016
3/15/2016
3/16/2016
3/17/2016
3/18/2016
3/19/2016
3/20/2016
3/21/2016
3/22/2016
3/23/2016
3/24/2016
FAC 8 hrs 8 hrs 8 hrs 8 hrs 8 hrs 8 hrs 8 hrs 8 hrs 8 hrs 8 hrs 8 hrs 8 hrs 8 hrs
MOLD 8 hrs 8 hrs 8 hrs 8 hrs 8 hrs 8 hrs 8 hrs 8 hrs 8 hrs 8 hrs 8 hrs 8 hrs 8 hrs

WBS Components: The parts of the WBS

1. **Tasks** – A number, ID, title, and description of each task.
2. **Task Owner** – Who is responsible for completing the task.
3. **Task Dependency and Predecessors** – Linking two tasks if epends on the other
4. **Start and Finish Date of Task** –Time each task may take; ultimately the project
5. **Duration** – How long will each task take on the calendar (days or hours)
6. **Work Estimate** – How many hours/ days of work are required to complete
7. **Task Status** – Whether each task is assigned to an owner, started, in progress, late, complete, etc.
8. **Gantt Chart** – A visualization of the WBS with tasks represented graphically over time.

END OF PART ONE

Project Scheduling Management



What is a Project Schedule?

- A project schedule is **a timetable that organizes tasks, resources and due dates in an ideal sequence** so that a project can be completed on time

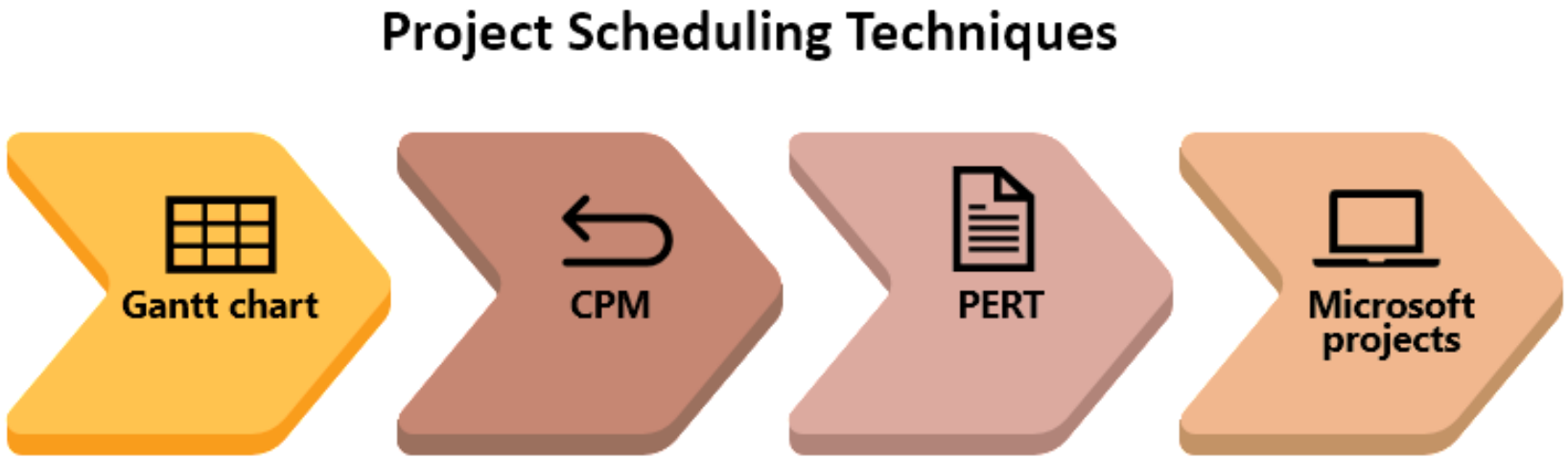
- Created during the planning phase and includes:

  - A project timeline with start dates, end dates and milestones
  - The work necessary to complete the project deliverables
  - The costs, resources and dependencies associated with each task
  - The team members that are responsible for each task

Scheduling a Project

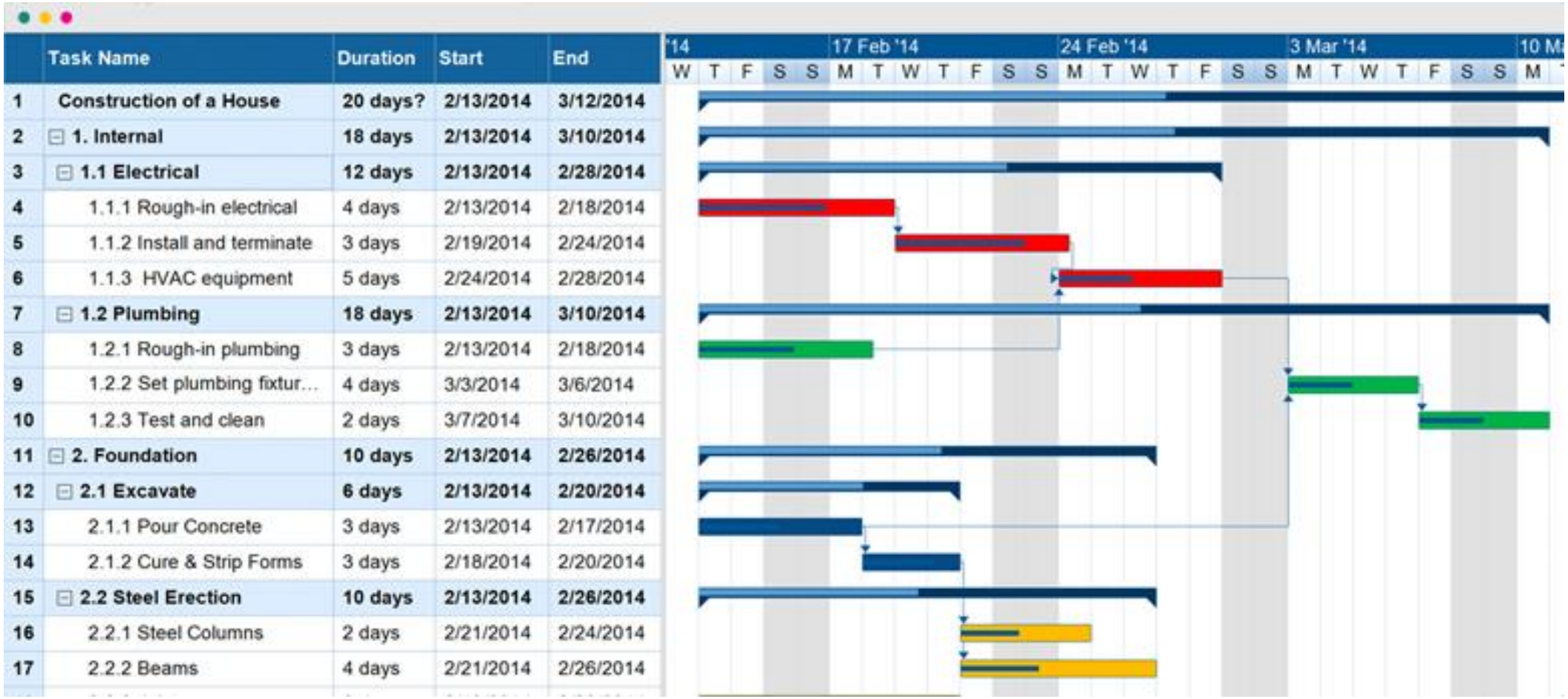
- A project management schedule is **a calendar or timeline that project managers use to keep track of tasks and deadlines**

- Managers schedule start and end dates for individual tasks within the project timeline to make sure the entire project advances at an appropriate speed.



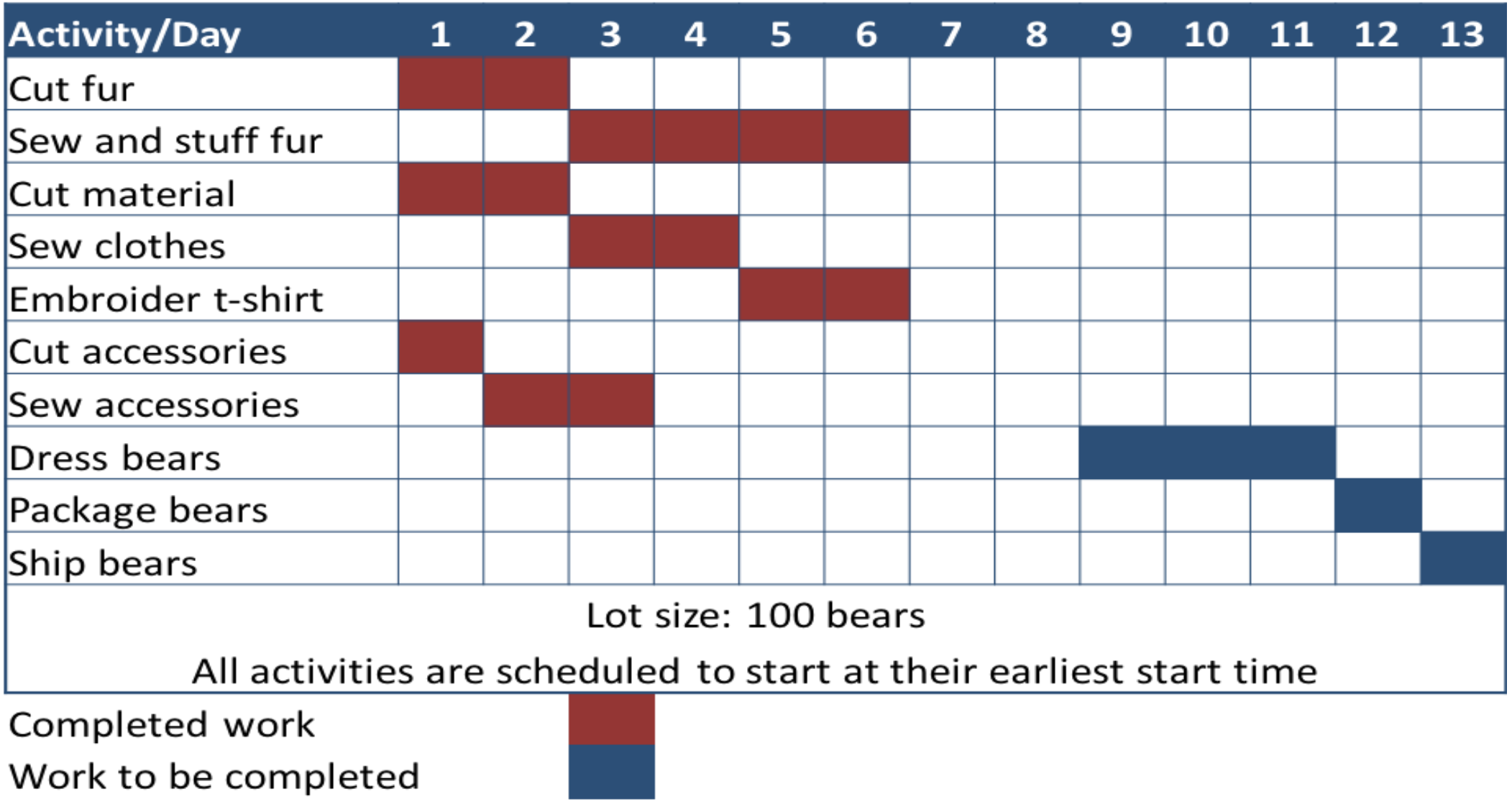
Gantt chart

A Gantt chart, named after the **designer, Henry Gantt**, is an easy-to-use graphical tool that helps operations managers determine the status of projects.



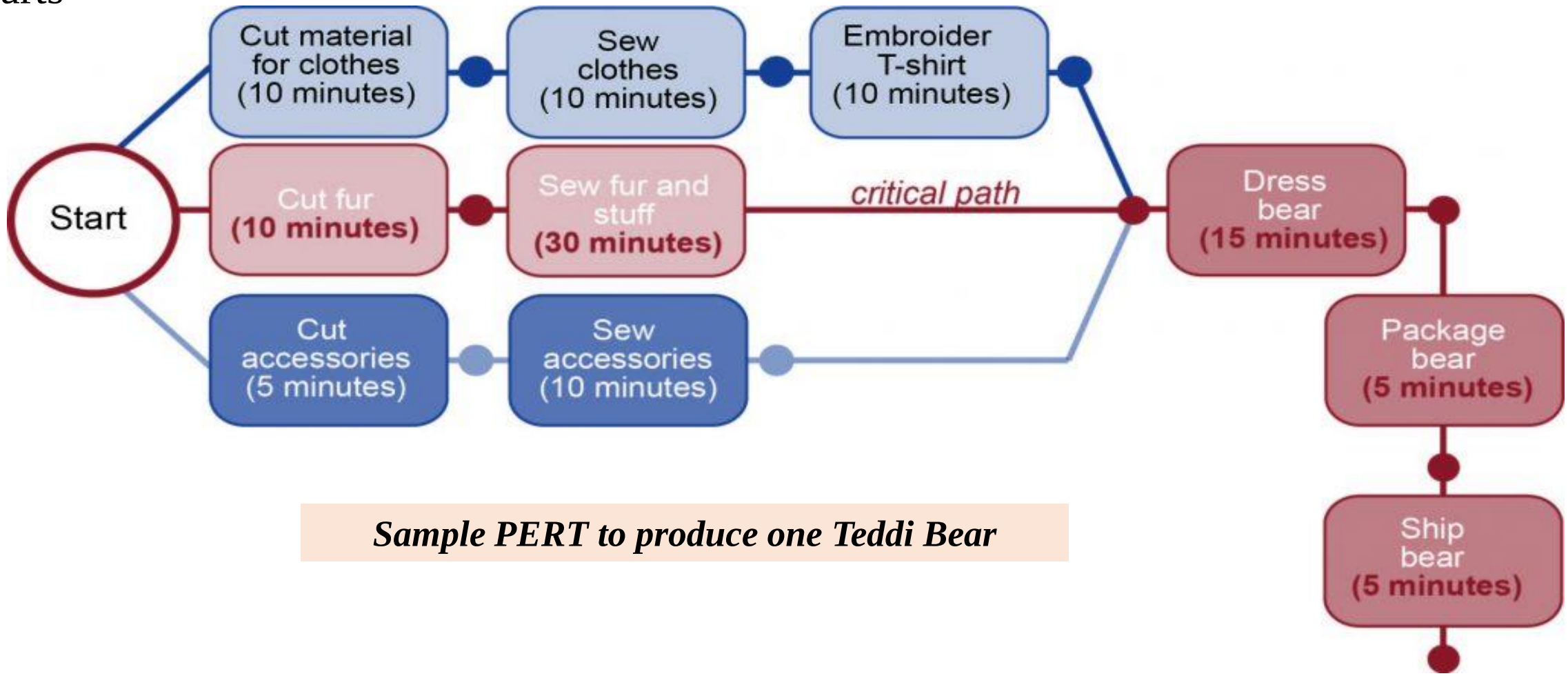
	Task Name	Duration	Start	End
1	**Construction of a House**	**20 days?**	**2/13/2014**	**3/12/2014**
2	**1. Internal**	**18 days**	**2/13/2014**	**3/10/2014**
3	**1.1 Electrical**	**12 days**	**2/13/2014**	**2/28/2014**
4	1.1.1 Rough-in electrical	4 days	2/13/2014	2/18/2014
5	1.1.2 Install and terminate	3 days	2/19/2014	2/24/2014
6	1.1.3 HVAC equipment	5 days	2/24/2014	2/28/2014
7	**1.2 Plumbing**	**18 days**	**2/13/2014**	**3/10/2014**
8	1.2.1 Rough-in plumbing	3 days	2/13/2014	2/18/2014
9	1.2.2 Set plumbing fixtur...	4 days	3/3/2014	3/6/2014
10	1.2.3 Test and clean	2 days	3/7/2014	3/10/2014
11	**2. Foundation**	**10 days**	**2/13/2014**	**2/26/2014**
12	**2.1 Excavate**	**6 days**	**2/13/2014**	**2/20/2014**
13	2.1.1 Pour Concrete	3 days	2/13/2014	2/17/2014
14	2.1.2 Cure & Strip Forms	3 days	2/18/2014	2/20/2014
15	**2.2 Steel Erection**	**10 days**	**2/13/2014**	**2/26/2014**
16	2.2.1 Steel Columns	2 days	2/21/2014	2/24/2014
17	2.2.2 Beams	4 days	2/21/2014	2/26/2014

Sample GANTT CHART to produce one hundred Teddi Bears



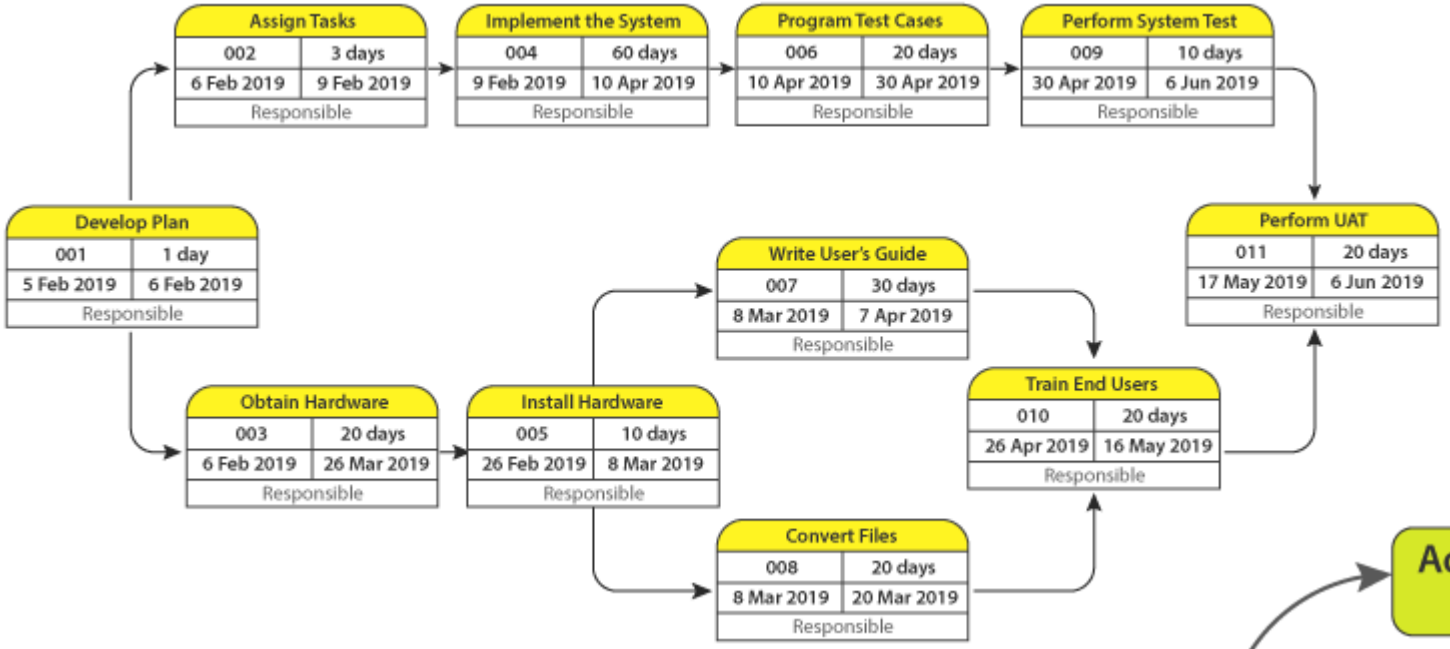
PERT: Program Evaluation and Review Technique

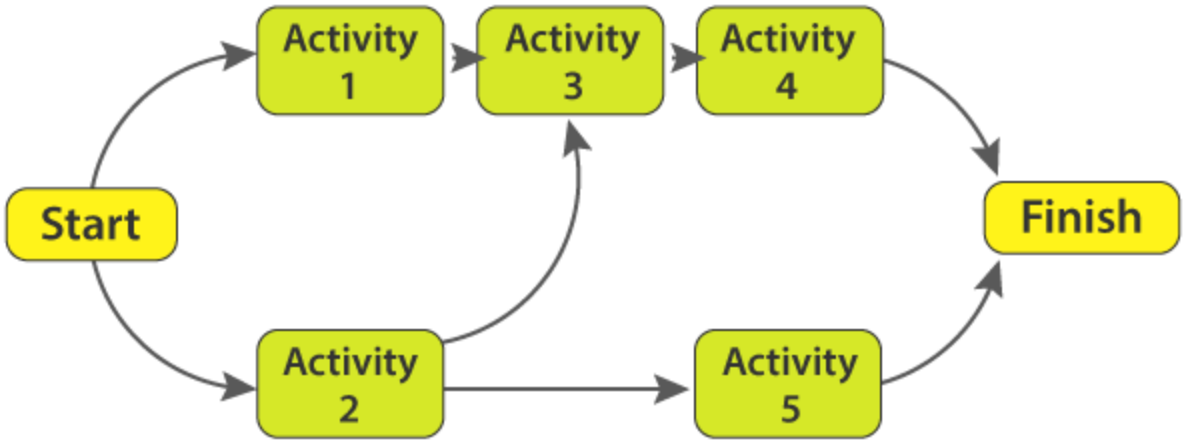
For more complex schedules, activities are interrelated operations managers may use PERT charts



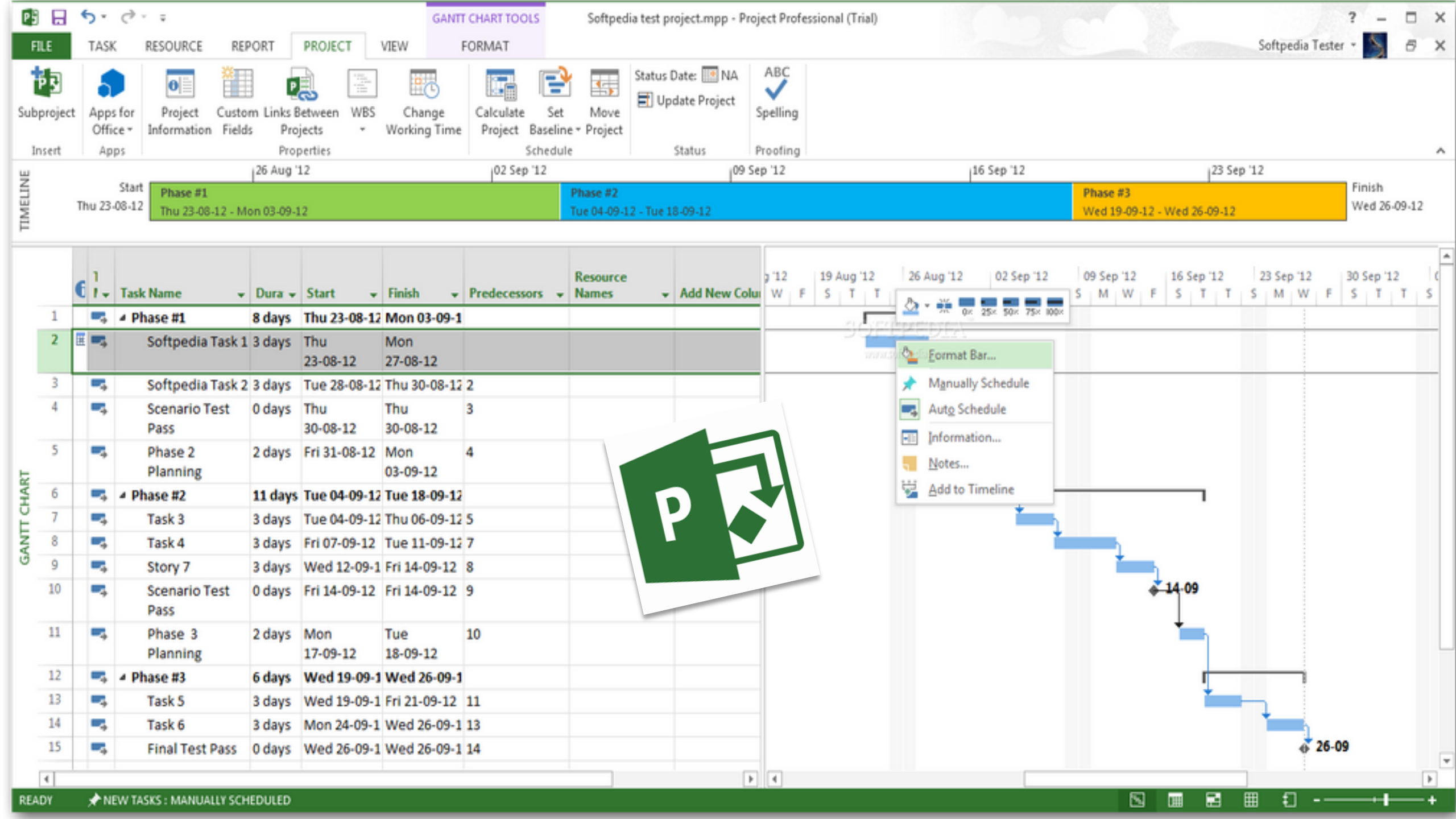
Sample PERT to produce one Teddi Bear

PERT Vs. CPM





PERT is a popular project management technique applicable when the time required to finish a project is not certain	CPM is a statistical algorithm which has a certain start and end time for a project


GANTT CHART TOOLS
Softpedia test project.mpp - Project Professional (Trial)
FILE
TASK
RESOURCE
REPORT
PROJECT
VIEW
FORMAT
Softpedia Tester
Subproject
Apps for Office
Project Information
Custom Fields
Links Between Projects
WBS
Change Working Time
Calculate Project
Set Baseline
Move Project
Status Date: NA
Update Project
Spelling
Insert
Apps
Properties
Schedule
Status
Proofing
TIMELINE
26 Aug '12
02 Sep '12
09 Sep '12
16 Sep '12
23 Sep '12
Start
Thu 23-08-12
Phase #1
Thu 23-08-12 - Mon 03-09-12
Phase #2
Tue 04-09-12 - Tue 18-09-12
Phase #3
Wed 19-09-12 - Wed 26-09-12
Finish
Wed 26-09-12
GANTT CHART
Task Name
Dura
Start
Finish
Predecessors
Resource Names
Add New Colu
1 Phase #1 8 days Thu 23-08-12 Mon 03-09-1
2 Softpedia Task 1 3 days Thu 23-08-12 Mon 27-08-12
3 Softpedia Task 2 3 days Tue 28-08-12 Thu 30-08-12 2
4 Scenario Test Pass 0 days Thu 30-08-12 Thu 30-08-12 3
5 Phase 2 Planning 2 days Fri 31-08-12 Mon 03-09-12 4
6 Phase #2 11 days Tue 04-09-12 Tue 18-09-12
7 Task 3 3 days Tue 04-09-12 Thu 06-09-12 5
8 Task 4 3 days Fri 07-09-12 Tue 11-09-12 7
9 Story 7 3 days Wed 12-09-1 Fri 14-09-12 8
10 Scenario Test Pass 0 days Fri 14-09-12 Fri 14-09-12 9
11 Phase 3 Planning 2 days Mon 17-09-12 Tue 18-09-12 10
12 Phase #3 6 days Wed 19-09-1 Wed 26-09-1
13 Task 5 3 days Wed 19-09-1 Fri 21-09-12 11
14 Task 6 3 days Mon 24-09-1 Wed 26-09-1 13
15 Final Test Pass 0 days Wed 26-09-1 Wed 26-09-1 14
19 Aug '12
26 Aug '12
02 Sep '12
09 Sep '12
16 Sep '12
23 Sep '12
30 Sep '12
Format Bar...
Manually Schedule
Auto Schedule
Information...
Notes...
Add to Timeline
14-09
26-09
READY
NEW TASKS : MANUALLY SCHEDULED



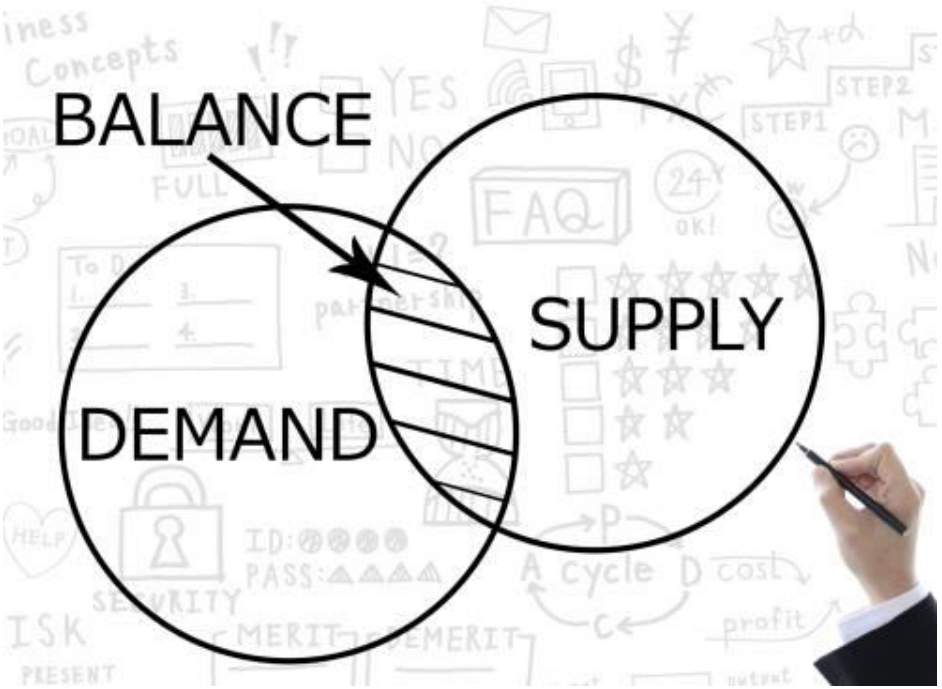
Demand and Supply Forecasting

Demand and Supply Forecasting

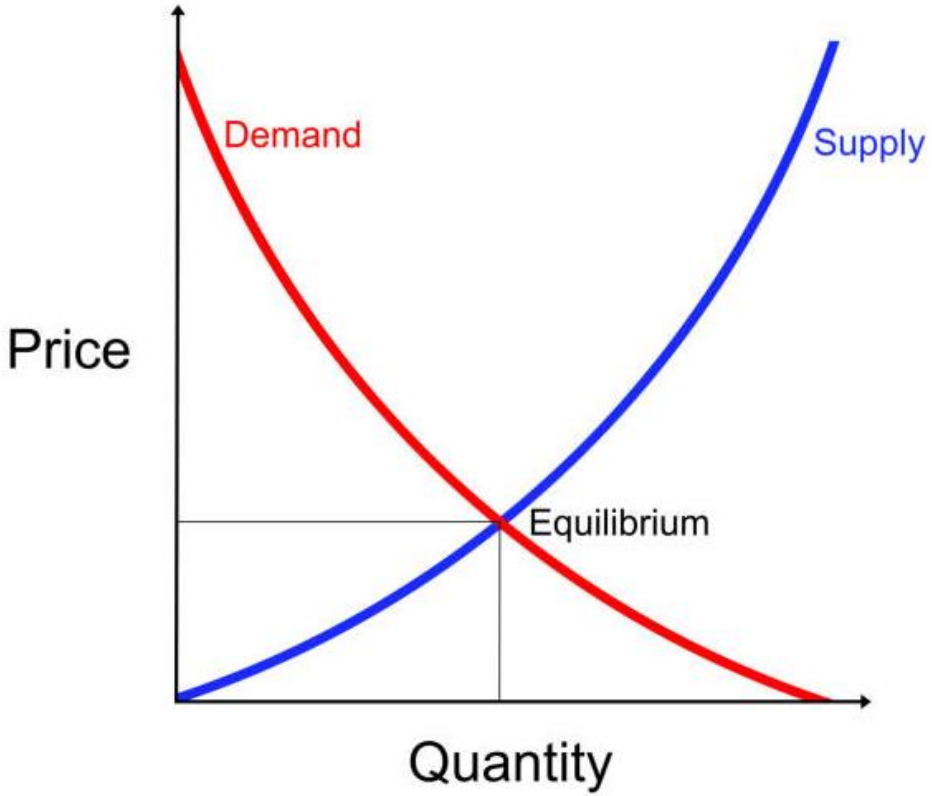
What is Demand Forecasting?

- Demand forecasting refers to the **process of planning or predicting the demand** of materials to ensure **delivery the right products in the right quantities to satisfy customer demand** without creating a surplus

- Forecast error can result in creating a surplus, which is both wasteful and costly



Demand and Supply Forecasting



Law of Supply and Demand



	Supply	Demand
If price increases:	↑	↓
If price decreases:	↓	↑

Ceteris Paribas

How Can Demand Forecasting Benefit Operations/ Projects

- **Reduced Uncertainty** –Can remove uncertainty, ensuring supply-related functions are adequately resourced, and \managers are better informed to make effective decisions

- **Enhanced Supply Infrastructure** –Demand forecasting supports enhanced supply chain management by optimising capacity, stock replenishment, and the streamlined management of warehouse personnel.

- **Increased Revenue** – Optimal product availability, so you never miss a sale

- **Reduced Need for Safety and Surplus Stock** –Demand forecasting reduces the need for safety stock, so you can cut inventory costs while focusing on the most profitable products.

- **Improved Fulfilment = Better Long-term Customer Advocacy** –Improving order fulfilment through accurate demand forecasting can encourage repeat customer boosting your revenue/ customer base.

What is Inventory Control?

- Also called **stock control**, is the process of **managing the inventory levels, at own warehouse or spread over other locations**. It ensures managing inventory levels to ensure the optimal amount of each product

- Proper inventory control can keep track of purchase orders and supply chain functional

- An inventory control system also monitors their movement, usage, and storage



What is Inventory Control?

- An inventory control system helps with forecasting and allow to set reorder points. Inventory control can include:
  - *Barcode scanner integration*
  - *Complete inventory counts*
  - *Keeping track of physical inventory with sales and purchase orders*
  - *Product details, locations, and histories*
  - *Reports and adjustments*

Methods of Inventory Control

- Using Inventory Optimization Tools
- ABC Analysis
- Batch Making
- Economic Order Quantity
- Barcode Scanning



Questions