



مدیریت پروژه بر اساس PMBOK به همراه الحاقیه ساخت (ویرایش هفتم)

بخش ششم:
مدل‌ها، روش‌ها و Artifacts

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What we will learn?

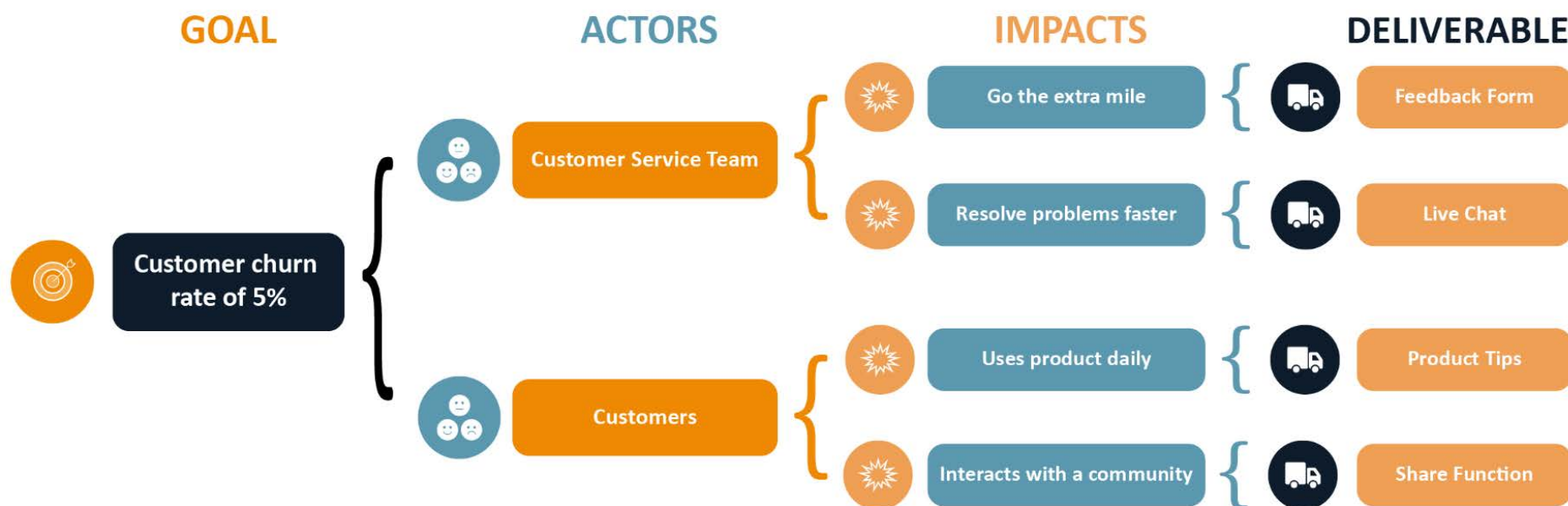
- ☐ Overview
- ☐ Commonly Used Models
- ☐ Models Applied Across Performance Domains
- ☐ Methods Applied Across Performance Domains
- ☐ Commonly Used Artifacts
- ☐ Artifacts Applied Across Performance Domains

Other methods

The methods described in this section **don't fit into a specific category**; however, they are common methods that are used for a **variety of purposes on projects**.

Other methods

- **Impact mapping.** Impact mapping is a strategic planning method that serves as a visual roadmap for the organization during product development.



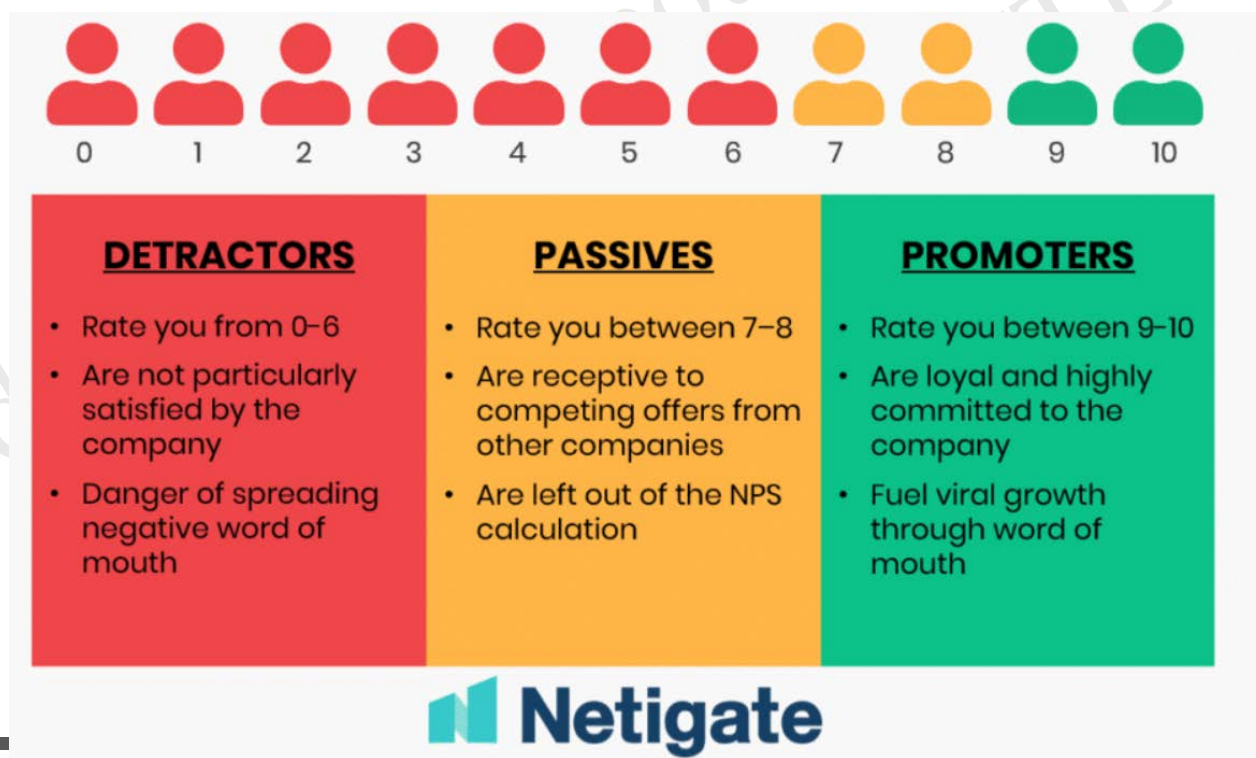
Other methods

► **Modeling.** Modeling is the process of **creating simplified representations** of systems, solutions, or deliverables such as prototypes, diagrams, or storyboards.

Modeling can **facilitate further analysis** by identifying gaps in information, areas of miscommunication, or additional requirements.

Other methods

► **Net Promoter Score (NPS®).** An index that measures the **willingness of customers** to recommend an organization's products or services to others. The score is used as a proxy for gauging the customer's overall satisfaction with an organization's product or service and the customer's loyalty to the brand.



Other methods

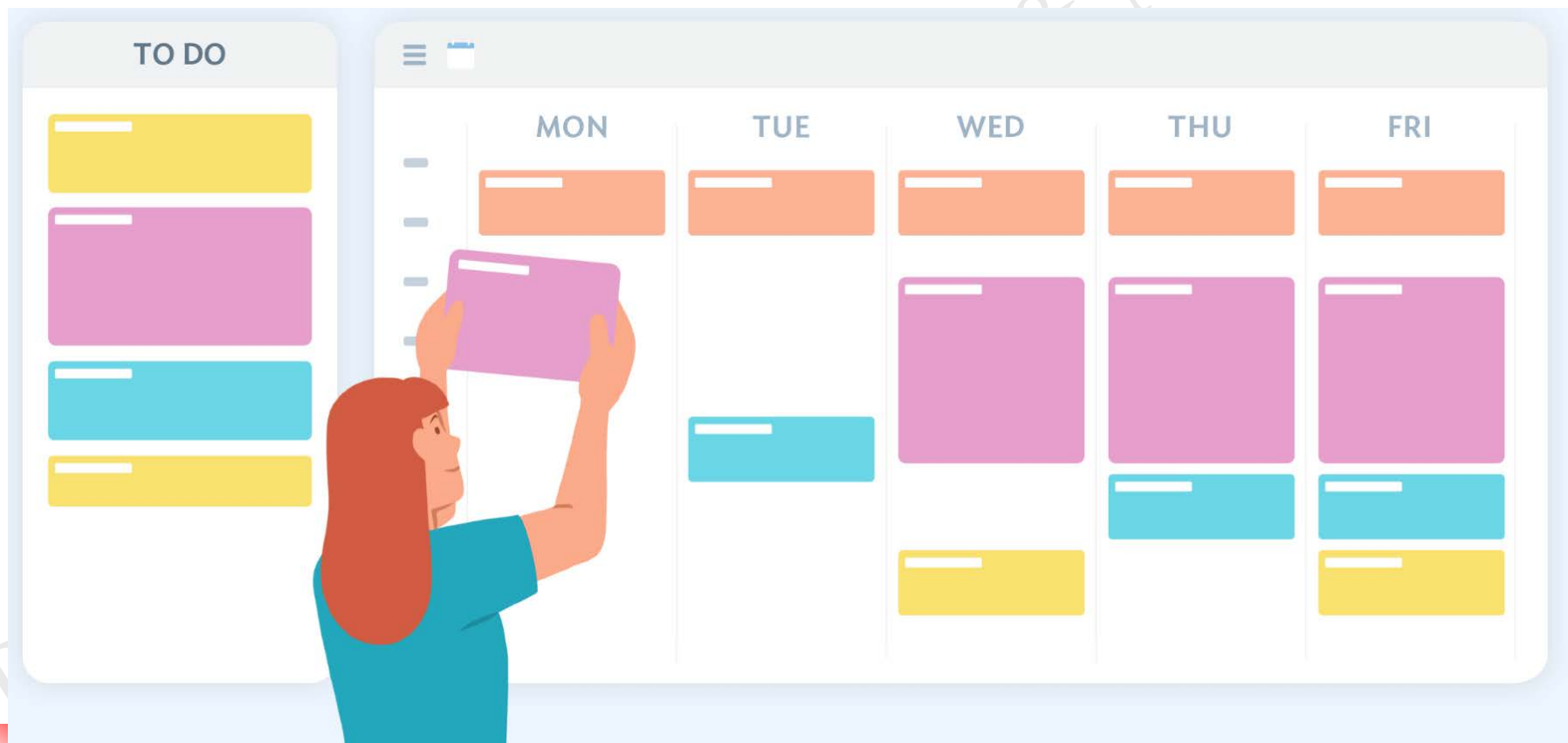
► **Prioritization schema.** Prioritization schema are methods used to **prioritize** portfolio, program, or project components, as well as requirements, risks, features, or other product information. Examples include a multicriteria weighted analysis and the MoSCoW (must have, should have, could have, and won't have) method.

Project Portfolio Prioritization

Project / Criteria	Scoring	Criteria 1	Criteria 2	Criteria 3	Criteria 4	Criteria 5	Total Project Score	Priority
		25%	15%	20%	10%	30%		
Project A	Rating	2	3	5	1	3	2.95	2
	Score	0.5	0.45	1	0.1	0.9		
Project B	Rating	2	4	3	2	2	2.5	3
	Score	0.5	0.6	0.6	0.2	0.6		
Project C	Rating	4	3	3	5	5	4.05	1
	Score	1	0.45	0.6	0.5	1.5		

Other methods

- **Timebox.** A timebox is a short, fixed period of time in which work is to be completed, such as 1 week, 2 weeks, or 1 month.



Methods Applied Across Performance Domains

Methods applied across performance domains

- ❑ **Different methods** are more likely to be **useful** in each of the performance domains.
- ❑ While the **needs** of the delivery approach, product, and organizational environment will determine **which methods** are **most applicable** for a specific project, there are some performance domains that are more likely to make use of specific methods.
- ❑ **Table 4-2 suggests** the performance domain(s) where **each method is most likely to be of use**;
however, the project manager and/or project team have the **ultimate responsibility** for selecting the right methods for their project.

Method	Performance Domain							
	Team	Stakeholders	Dev Approach and Life Cycle	Planning	Project Work	Delivery	Measurement	Uncertainty
Data Gathering and Analysis Methods:								
Alternatives analysis				X	X	X		X
Assumptions and constraints analysis				X		X		X
Benchmarking						X	X	
Business justification analysis				X			X	
Payback period			X	X			X	
Internal rate of return				X			X	
Return on investment				X			X	
Net present value			X	X		X	X	
Cost-benefit ratio				X			X	
Check sheet						X	X	
Cost of quality				X		X	X	
Decision tree analysis				X				
Earned value analysis				X			X	
Expected monetary value				X				
Forecasting							X	
Influence diagram				X				
Life cycle assessment				X				
Make-or-buy analysis				X	X			
Probability and impact matrix				X				X
Process analysis				X	X	X	X	
Regression analysis				X			X	
Root cause analysis					X	X		
Sensitivity analysis				X	X	X		
Simulation				X			X	
Stakeholder analysis		X		X	X			
SWOT analysis				X				X
Trend analysis							X	
Value stream mapping				X	X	X		
Variance analysis							X	
What-if scenario analysis				X				X

Method	Performance Domain							
	Team	Stakeholders	Dev Approach and Life Cycle	Planning	Project Work	Delivery	Measurement	Uncertainty
Estimating Methods:								
Affinity grouping				X				
Analogous estimating				X				
Function points				X				
Multipoint estimating				X				
Parametric estimating				X				
Relative estimating				X				
Single-point estimating				X				
Story point estimation				X				
Wideband Delphi				X				
Meeting and Event Methods:								
Backlog refinement		X		X	X	X		
Bidder conference		X		X	X			
Change control board					X	X		
Daily standup				X	X			
Iteration review		X			X	X		
Iteration planning		X		X	X	X		
Kickoff	X	X			X			
Lessons learned		X		X	X	X		
Planning				X				
Project closeout	X	X			X			
Project review		X			X	X	X	
Release planning		X		X				
Retrospective	X			X				
Risk review					X			X
Status					X		X	
Steering committee		X			X			
Other Methods:								
Impact mapping	X	X		X		X	X	
Modeling						X		
Net Promoter Score®		X					X	
Prioritization schema		X			X			
Timebox			X	X	X	X	X	

Commonly Used Artifacts

Introduction

- ❑ An **artifact** is a template, document, output, or project deliverable.
- ❑ There are **many documents or deliverables** that are not described here, either because
 - (a) they are somewhat generic, such as updates;
 - (b) they are industry specific; or
 - (c) they are a result of a specific method that was used to create it, for example, while cost estimates are an important artifact, they are the result of various estimating methods.

Introduction

- ☐ The content in this section is **not meant** to describe how to develop or create an artifact.
- ☐ The descriptions are presented **at a high level** as project managers and/or project team members are expected to tailor the use of these artifacts to meet the needs of their particular project.
- ☐ There is **more detailed information** on these and other artifacts from many sources, including PMIstandards+.

Strategy artifacts

- ❑ **Strategy artifacts** are developed at the start of a project and do not normally change, though they may be **reviewed throughout the project**.
- ❑ **Documents** that are created prior to or at the start of the project that address **strategic, business, or high-level information** about the project.

Strategy artifacts

- ❑ ► **Business case.** A business case is a value proposition for a **proposed project** that may include financial and nonfinancial benefits.
- ❑ ► **Business model canvas.** This artifact is a **one-page visual summary** that describes the value proposition, infrastructure, customers, and finances. These are often used in **lean start-up situations**.
- ❑ ► **Project brief.** A project brief provides a **high-level overview** of the goals, deliverables, and processes for the project.
- ❑ ► **Project charter.** A project charter is a document issued by the project initiator or sponsor that
 1. **Formally authorizes** the existence of a project and
 2. **Provides** the project manager with the authority to apply organizational resources to project activities.

Strategy artifacts

❑ ► **Project vision statement.** This document is a concise, high-level description of the project that

1. States the **purpose**, and
2. **Inspires** the project team to contribute to the project.

❑ ► **Roadmap.** This document provides a high-level time line that depicts

1. Milestones,
2. Significant events,
3. Reviews, and
4. Decision points.

Logs and registers

- ❑ Logs and registers are used to **record** continuously evolving aspects of the project.
- ❑ They are **updated throughout** the project. The terms log and register are sometimes **used interchangeably**.
 - ❖ It is **not uncommon** to see the term risk register or risk log referring to the same artifact.

Logs and registers

❑ ► **Assumption log.** An assumption is a factor that is **considered** to be true, real, or certain, **without proof** or demonstration.

A constraint is a **factor that limits** the options for managing a project, program, portfolio, or process.

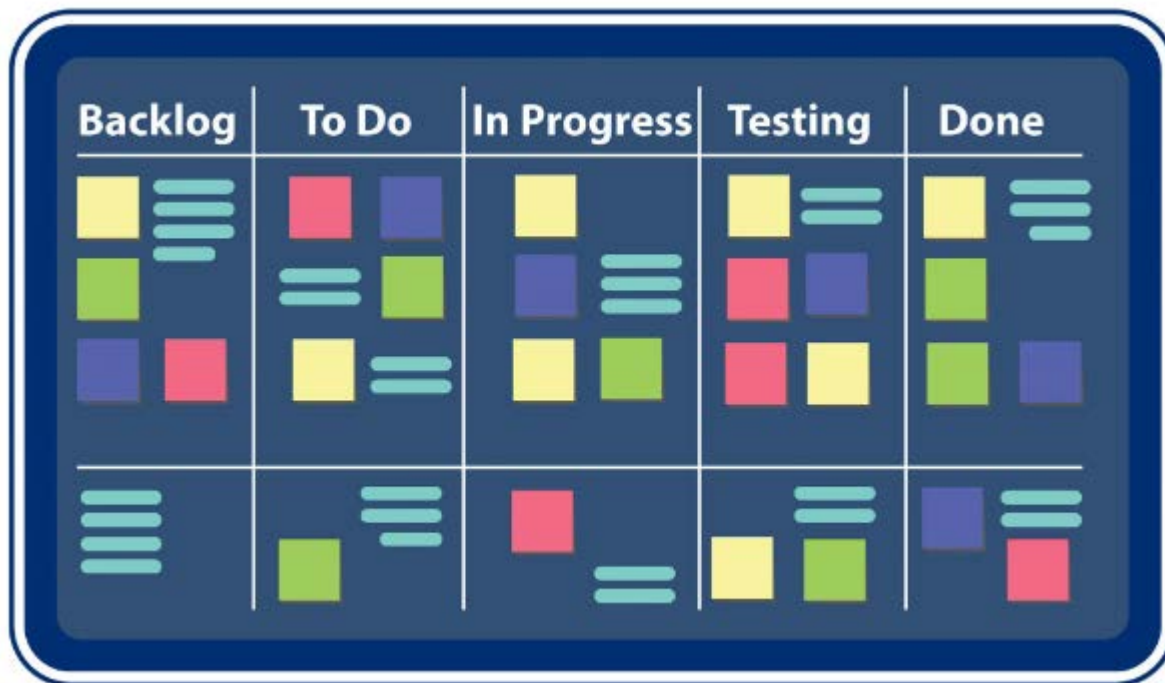
An assumption log **records all assumptions and constraints** throughout the project.

Assumption Log

Project:					Date:	
ID	Category	Assumption	Responsibility	Due Date	Status	Actions
Each assumption should have a corresponding ID number.	This should list what portion of the project the assumption impacts.	Define the assumption in this column.	Assumptions should be assigned to a team member to validate.	This is the date the assumption should be validated by.	This tracks the assumption validation and if it's open or closed.	Any actions associated with the assumption or validating the assumptions should be listed here.

Logs and registers

- ❑ ► **Backlog.** A backlog is an ordered list of work to be **done**. Projects may have a product backlog, a requirements backlog, impediments backlog, and so forth. Items in a backlog are **prioritized**. The prioritized work is then scheduled for **upcoming iterations**.



Logs and registers

- ❑ ► **Change log.** A change log is a comprehensive list of changes submitted during the project and their current status.

A change can be a **modification** to **any formally** controlled deliverable, project management plan component, or project document.

PROJECT CHANGE LOG								
Project Name:				Project Sponsor:				
#	Originator	Description of Change	Date Received	Date Required	Scope Impact	Schedule Impact	Spending Impact	Approved? Yes/No
1								
2								
3								
4								

Logs and registers

❑ ► **Issue log.** An **issue** is a current condition or situation that may have an **impact on the project objectives**.

- ❖ An issue log is used to record and monitor information on **active issues**.
- ❖ Issues are **assigned to a responsible party** for follow up and resolution.

ISSUE MANAGEMENT LOG							
Project Name:							
Project Manager Name:							
Project Ref:							
ID	Status	Priority	Issue Description	Owner	Estimated Resolution Date	Escalation Needed (Y/N)?	Impact
001	Open	Critical	Issues raised by board members about the business case are preventing the project moving out of the initiation stage.			Yes	Potential project cancellation or significant delay.
002	Work In Progress	High	The project is missing a system architect.			No	Delay to start of project design phase.
003	Closed	Medium	Availability of human resources doesn't match the project resource plan.			Yes	May be forced to level the plan to fit resource availability which will delay target go live date.
		Low					

Logs and registers

- ❑ ► **Lessons learned register.** A lessons learned register is used to **record** knowledge gained during a project, phase, or iteration so that it can be used to improve future performance for the project team and/or the organization.

Today's Date: 1/2/2023

Project Name: My Project

Project Manager: George Washington

Notes: (add any extra info here)

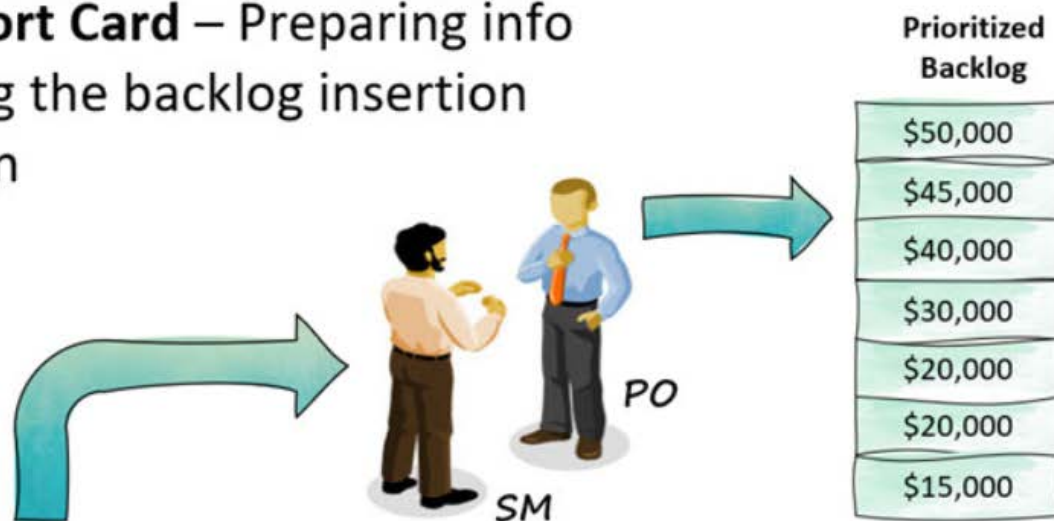


WIN or ISSUE	Describe What Happened	What Was the Impact?	How Does This Change Future Projects?	Action Items
WIN	time tracking system with the team to test whether or not productivity would improve	We saved 200 hours of time and delivered the work 2 weeks early	We will roll out time tracking to all teams in the company	1. Purchase software licenses for all employees 2. Send email explaining why time tracking is necessary
ISSUE	project was out sick for 2 weeks and there was no available replacement, so we had to wait for her	The project was delayed 4 weeks and the client was upset. A \$25,000 credit was issued to the client	We need to have redundancy in the IT department to ensure there is always someone available	Chat with CEO and HR about hiring additional IT help
	The client was so happy with the final presentation that she offered us a 2 year	This contract is going to double our revenue	The new style of in-person client presentation should be used on more	Share the new client presentation format with

Logs and registers

- ❑ ► **Risk-adjusted backlog.** A risk-adjusted backlog is a backlog that includes **work** and **actions** to address threats and opportunities.

Risk Report Card – Preparing info for having the backlog insertion discussion



Risk	Initial EMV	Residual EMV	Secondary EMV	Net EMV
Reporting Engine Performance	\$60,000	\$30,000	\$10,000	\$40,000
iOS Integration	\$30,000	-	-	\$30,000
Facebook compatibility	\$50,000	\$30,000	-	\$30,000
3 rd Party Components	\$40,000	-	\$20,000	\$20,000
QA Continuity	\$15,000	-	-	\$15,000

Logs and registers

❑ ► **Risk register.** A risk register is a **repository** in which outputs of **risk management processes** are recorded.

❑ Information in a risk register can include the **person responsible** for managing the risk, probability, impact, risk score, planned risk responses, and other information used to get a high-level understanding of **individual risks**.

Document:	Risk Register : Sample	Project:	Pen Project	Author:	Project Manager	Date:	
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This risk Register is take from the "Sample PRINCE2 Pen Project"

Project Name	Pen Project		Risk / Impact
Project No	008		High Risk > € 7,500
Project Manager	Rose Clark		Medium > € 1000
Project Executive	John King		Low Risk < € 1000

Amount is related to the value of the expected benefits
Expected gain is: €58,400

ID	Risk Author	Date Register	Risk Category	Risk Description	Probability x Impact	Proximity	Response Category	Status	Risk Owner	Risk Actionee
1	P Smith	6/3/13	Ordering	A risk that pens will be delivered 2-4 weeks later which will impact the time of the project	< €1000	Medium	Reduce	Active	P Smith	J Bell
2	S. Kelly	7/3/13	Product	50% users may not like the pens and therefore not keep using them which result in 50% less benefits	€ 29,000	Medium	Reduce	Active	S. Kelly	R Clark
3	S. Kelly	9/3/13	Product	Some sales people may not distribute the pens as intended, therefore the benefits will not be realized for these users	€ 5,600	Medium	Reduce	Active	S. Kelly	S. Kelly

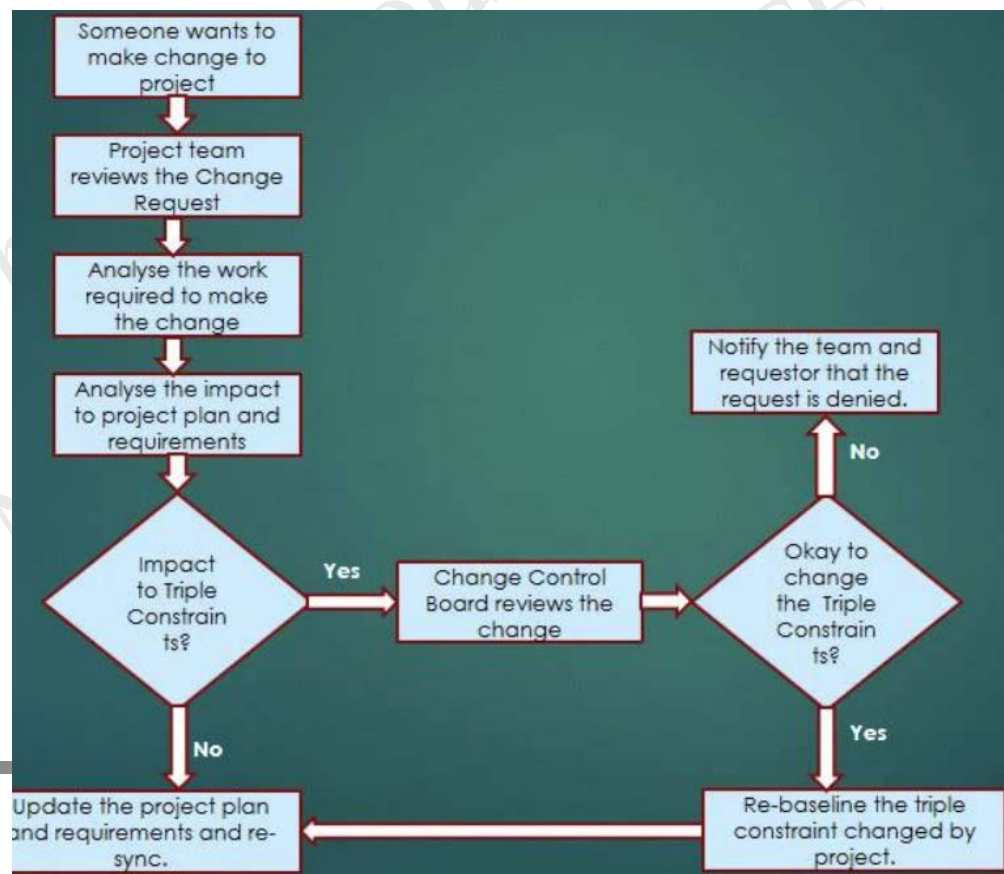
Logs and registers

- ❑ ► **Stakeholder register.** A stakeholder register records **information** about project stakeholders, which includes an assessment and classification of project stakeholders.

Stakeholder name	Title	Role	Power (H/L)	Interest (H/L)	Requirements	Concerns
Eddie Murphy	Security Manager	Sponsor	H	H	Finish implementing GDPR compliant checkouts by the end of quarter 3	Delays due to the upcoming fiscal year
Iliza Shlesinger	Sr. Developer	Developer	L	H	Security certificates	Migrating data to European servers
Bill Burr	CEO	-	H	L	5% revenue increase	GDPR compliance
Dave Chapelle	Accountant	-	L	L	-	Managing European ledgers

- ☐ A plan is a **proposed means** of accomplishing something.
- ☐ Project teams develop plans for **individual aspects** of a project and/or **combine all** of that information into an overarching project management plan.
- ☐ Plans generally are **written documents** but may also be reflected on **visual/ virtual whiteboards**.

- ❑ ► **Change control plan.** A change control plan is a **component** of the project management plan that establishes the change control board, documents the extent of its authority, and describes how the change control system will be implemented.





Plans

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- ❑ ► **Communications management plan.** This plan is a **component** of the project, program, or portfolio management plan that **describes** how, when, and by whom information about the project will be administered and disseminated.

Communication	Frequency	Goal	Owner
Project team			
Project status report	Weekly	Review project status and discuss potential issues or delays	Project manager
Team standup	Daily	Discuss what each team member did yesterday, what they'll do today, and any blockers	Project manager
Task progress updates	Daily	Share daily progress made on project tasks	Project manager
Project review	At milestones	Present project deliverables, gather feedback, and discuss next steps	Project manager
Post-mortem meeting	At end of project	Assess what worked and what did not work and discuss actionable takeaways	Project manager
Project sponsor			
Project status report	Weekly	Review project status and discuss potential issues or delays	Project manager
Project review	At milestones	Present project deliverables, gather feedback, and discuss next steps	Project manager

- ❑ ► **Cost management plan.** This plan is a **component** of a project or program management plan that describes **how costs** will be planned, structured, and controlled.
- ❑ ► **Iteration plan.** This plan is a **detailed plan** for the current iteration.

- ❑ ► **Procurement management plan.** This plan is a **component** of the project or program management plan that describes **how a project team** will acquire goods and services from outside of the **performing organization**.

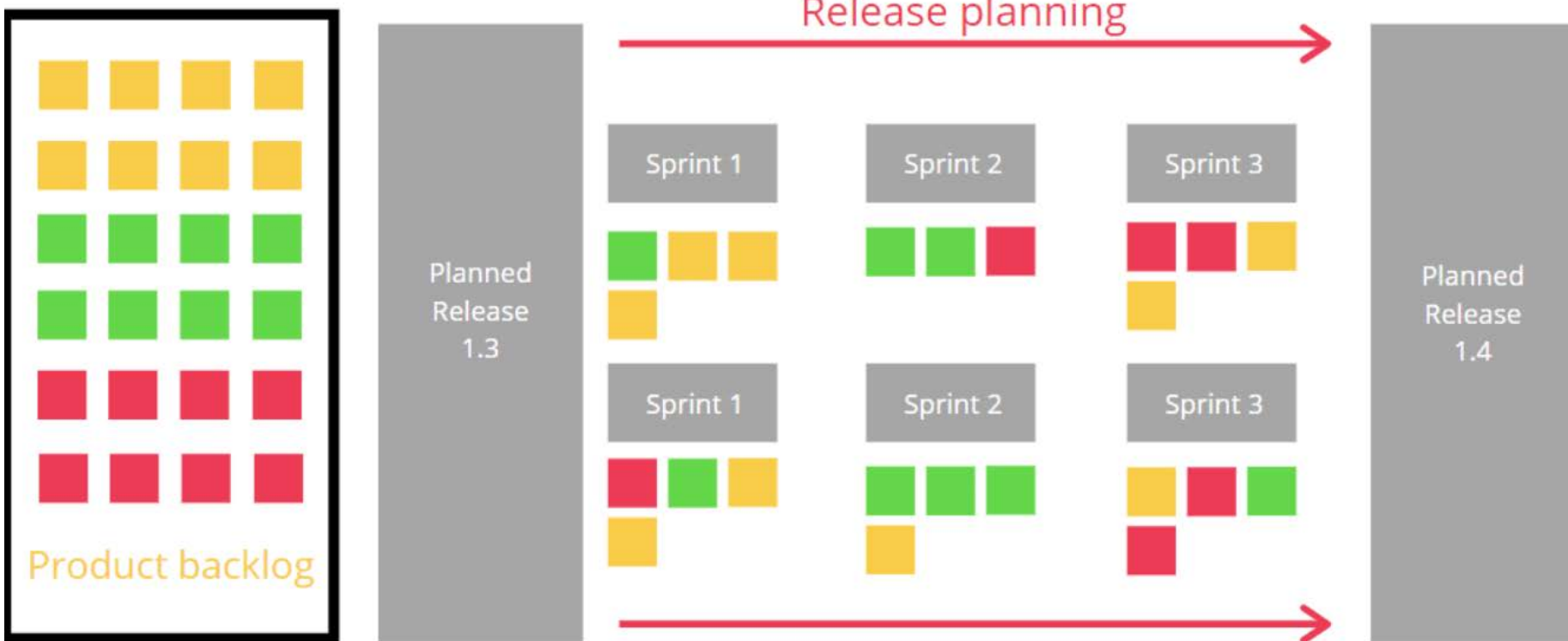
Project name:	Time sheet Reporting Tool	Project Manager:	Nicole Hansen
Updated By:	Sarah	Date :	22-09-2020
Scope of Project:	The timesheet reporting tool will be used as a tracking tool to review the time entries by the Information Technology employees globally		
Project Justification:	The Timesheet 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.		

#	Description of product or services	date of request	Requested by	Department	Procurement method selected	Action date	Delivery date	Status
1	UI Design Contract	21-05-2020	Marry	IT	Emergency procedure	22-05-2020	23-05-2020	Delivered
2	Component not estimated.	22-06-2020	Ana maria	IT support	Sole Source	24-06-2020	27-06-2020	Delivered
3	New Workflow Option	20-05-2020	Joseph	application	small purchase	04-05-2020		In process
4	Training	15-04-2020	John	Testing	small purchase	16-04-2020		Pending
5	Training materials	18-03-2020	Giana	Testing	small purchase	22-03-2020		
6								
7								
8								
9								
10								

- ❑ ► **Project management plan.** The project management plan is a **document** that describes **how the project** will be executed, monitored and controlled, and closed.

- ❑ ► **Quality management plan.** This plan is a **component** of the project or program management plan that describes **how** applicable policies, procedures, and guidelines will be **implemented** to achieve the quality objectives.

- ❑ ► **Release plan.** This plan **sets expectations** for the dates, features, and/or outcomes expected to be delivered over the course of **multiple iterations**.



- ❑ ► **Requirements management plan.** This plan is a **component** of the project or program management plan that describes **how requirements** will be analyzed, documented, and managed.

PROJECT REQUIREMENTS

PROJECT No:	MA-015-02	FULL PROJECT NAME:	Project Orion
DATE:		PROJECT MANAGER:	A Smith

REQUIREMENT LIST

ID	REQUIREMENT DESCRIPTION	REQUESTED BY	CATEGORY	PRIORITY	ACCEPTANCE CRITERIA
Give each requirement a unique ID.	The feature, function, condition or capability that is required from the project, product, service or result.	The stakeholder who requested the requirement.	The category or grouping of the requirement for example: functional, technical, operational, KPI (result metric), transitional.	The priority of the requirement for example: P1, P2, P3 or MoSCoW (Must have, should have, could have, won't have).	The criteria that the requirement must have for it to be accepted by the project stakeholders.

► REQUIREMENTS

DEFINITIONS

Useful resources



- ❑ ► **Resource management plan.** This plan is a **component** of the project management plan that describes **how project resources** are acquired, allocated, monitored, and controlled.

RACI Chart					
	HR director	HR manager	CIO	IT manager	Web developer
Define problem	A	R	I	I	I
Design solution	I	C	A	R	C
Develop	I	C	A	R	R
Test	I	I	C	A	R
Implement	I	C	I	A	R
R - Responsible A - Accountable C - Consulted I - Informed					

- ❑ ► **Risk management plan.** This plan is a **component** of the project, program, or portfolio management plan that describes **how risk management activities** will be structured and performed.

- ❑ ► **Scope management plan.** This plan is a **component** of the project or program management plan that describes **how the scope** will be defined, developed, monitored, controlled, and validated.



- ❑ ► **Schedule management plan.** This plan is a **component** of the project or program management plan that **establishes** the **criteria** and the **activities** for developing, monitoring, and controlling the schedule.

- ❑ ► **Stakeholder engagement plan.** This plan is a **component** of the project management plan that **identifies** the **strategies** and **actions** required to promote productive involvement of stakeholders in **project or program decision making and execution**.

Project Manager	Stakeholders		Project Phase		Initiation	
						
Role	Stakeholder	Category	Interest	Influence	Expectations	Communication approach
Sponsor	Caitlin	Internal			On-time project delivery	Video conference
Project lead	John	Internal			Project within the budget	Email
Project manager	Anthony	Internal			Clear requirements	Phone
PMO	James	Internal			Completion of documentation	Phone
Supervisor	Kevin	Internal			Budget approvals	Email
Maintenance	Laura	External			Keep project on track	Phone
Support	Cassandra	External			Connect with suppliers	Phone

❑ ► **Test plan.** This document **describes**

1. Deliverables that will be **tested**,
2. Tests that will be **conducted**, and
3. Processes that will be used in **testing**.

It forms the **basis** for formally testing the components and deliverables.

Hierarchy charts

- ☐ **Hierarchy charts** begin with high-level information that is **progressively decomposed** into greater levels of detail.
- ☐ The information at the **upper levels encompasses** all the information at the lower or subsidiary levels.
- ☐ **Hierarchy charts** are often progressively elaborated into greater levels of detail as **more information is known** about the project.

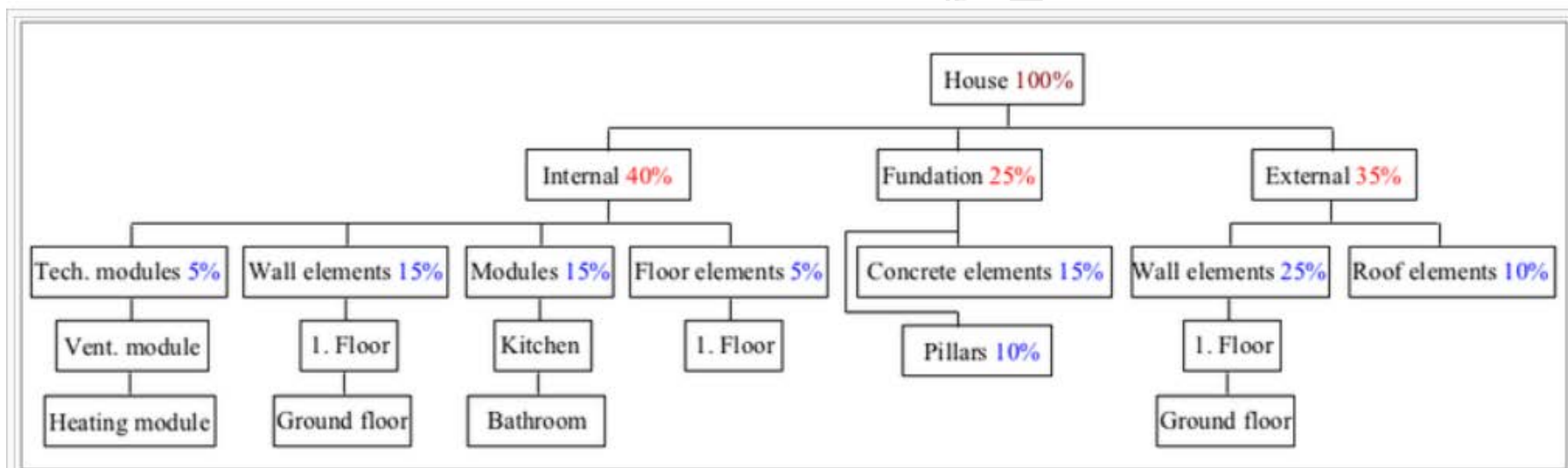
Hierarchy charts

- ❑ ► **Organizational breakdown structure.** This chart is a hierarchical representation of the project organization, which illustrates the **relationship between project activities** and the organizational units that will perform those activities.



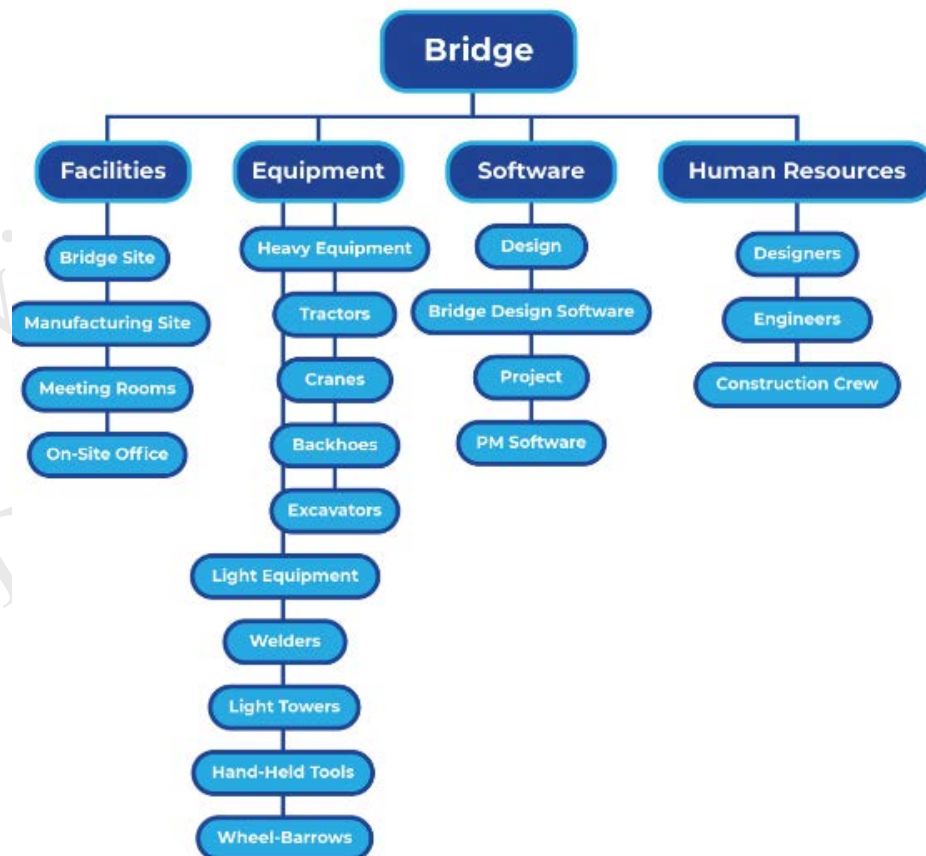
Hierarchy charts

- ❑ ► **Product breakdown structure.** This chart is a hierarchical structure reflecting a product's components and deliverables.



Hierarchy charts

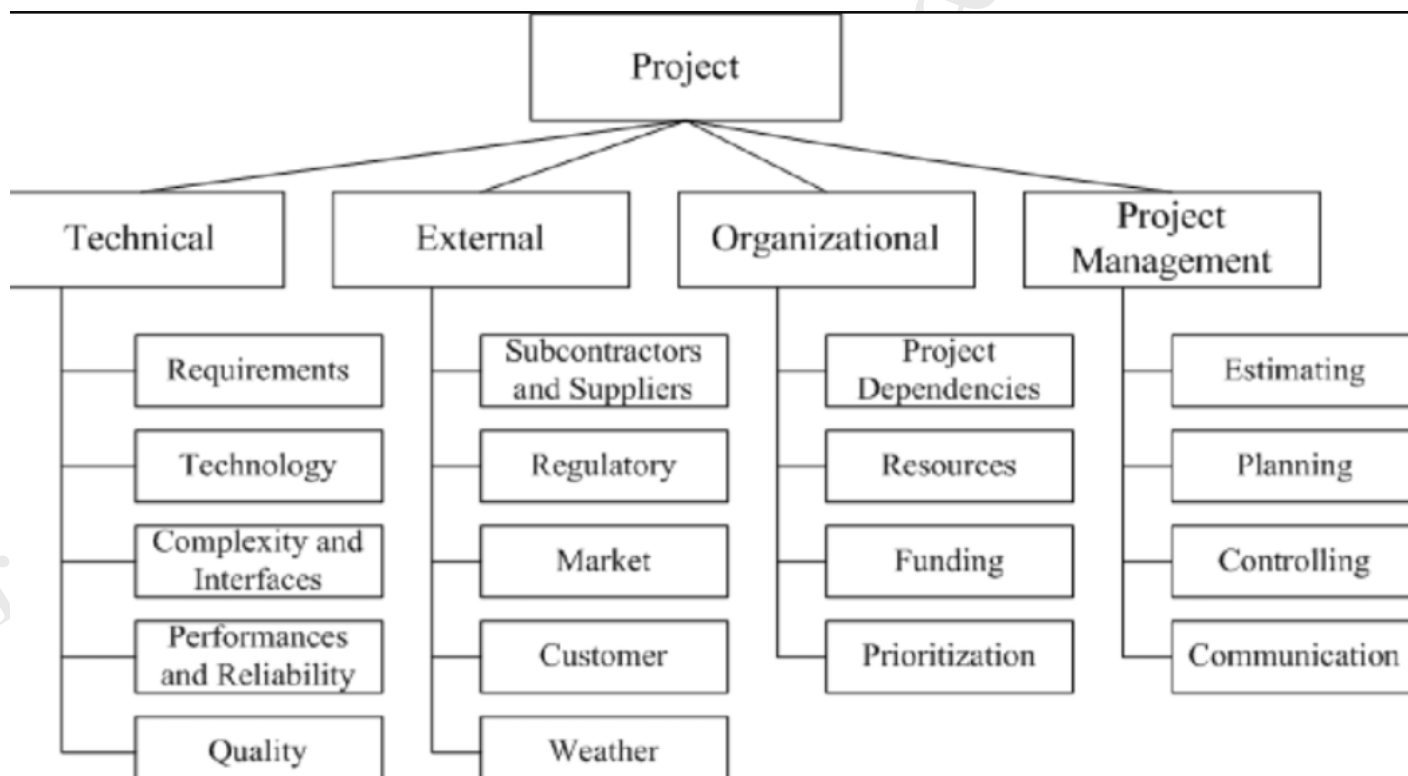
- ❑ ► **Resource breakdown structure.** This chart is a hierarchical representation of resources by category and type.



PROJECTMANAGER

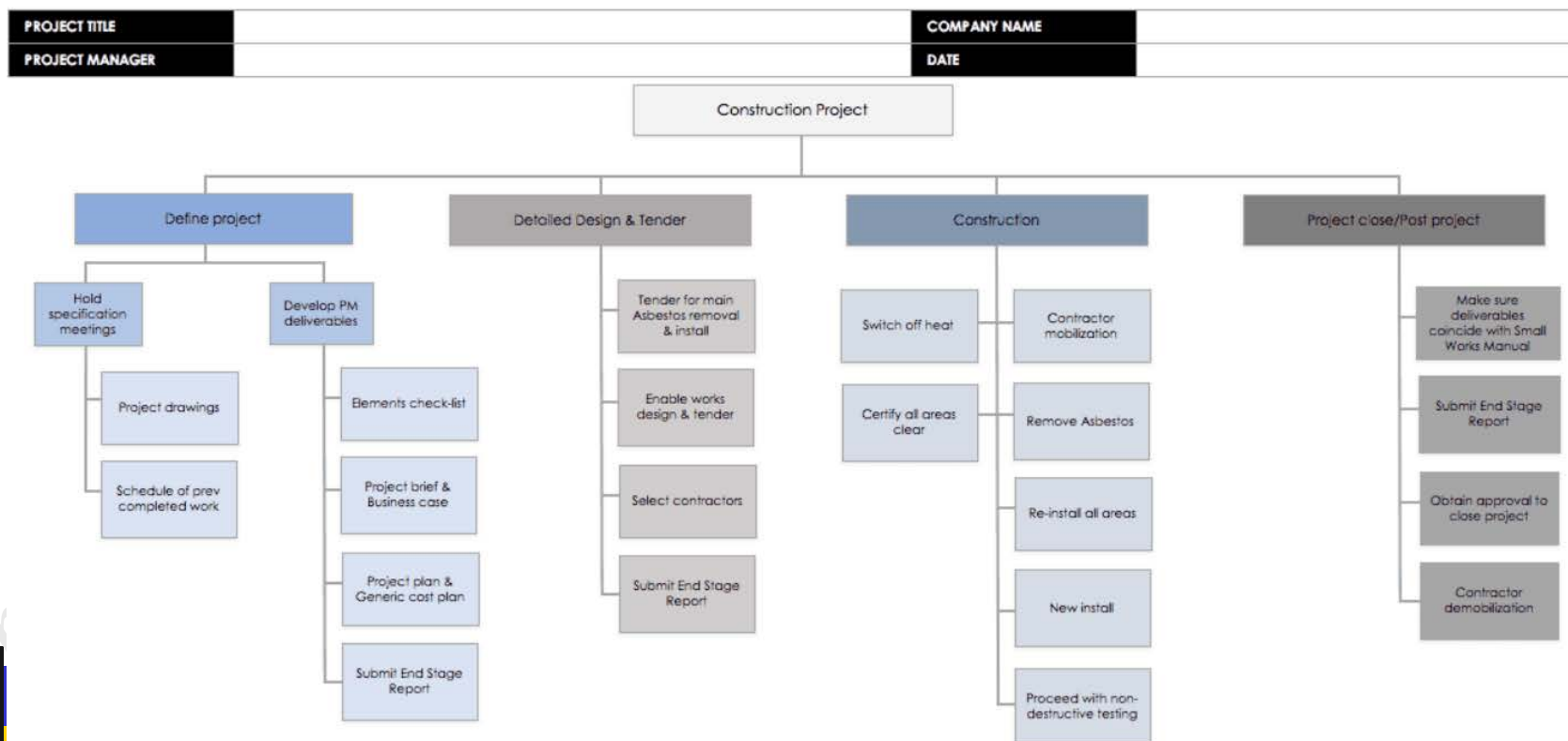
Hierarchy charts

- ❑ ► **Risk breakdown structure.** This chart is a hierarchical representation of potential sources of risks.



Hierarchy charts

- ❑ ► **Work breakdown structure.** This chart is a hierarchical decomposition of the total scope of work to be carried out by the project team to accomplish the **project objectives** and create the required deliverables.



- ☐ A **baseline** is the approved version of a work product or plan.
- ☐ **Actual performance** is compared to baselines to identify variances.

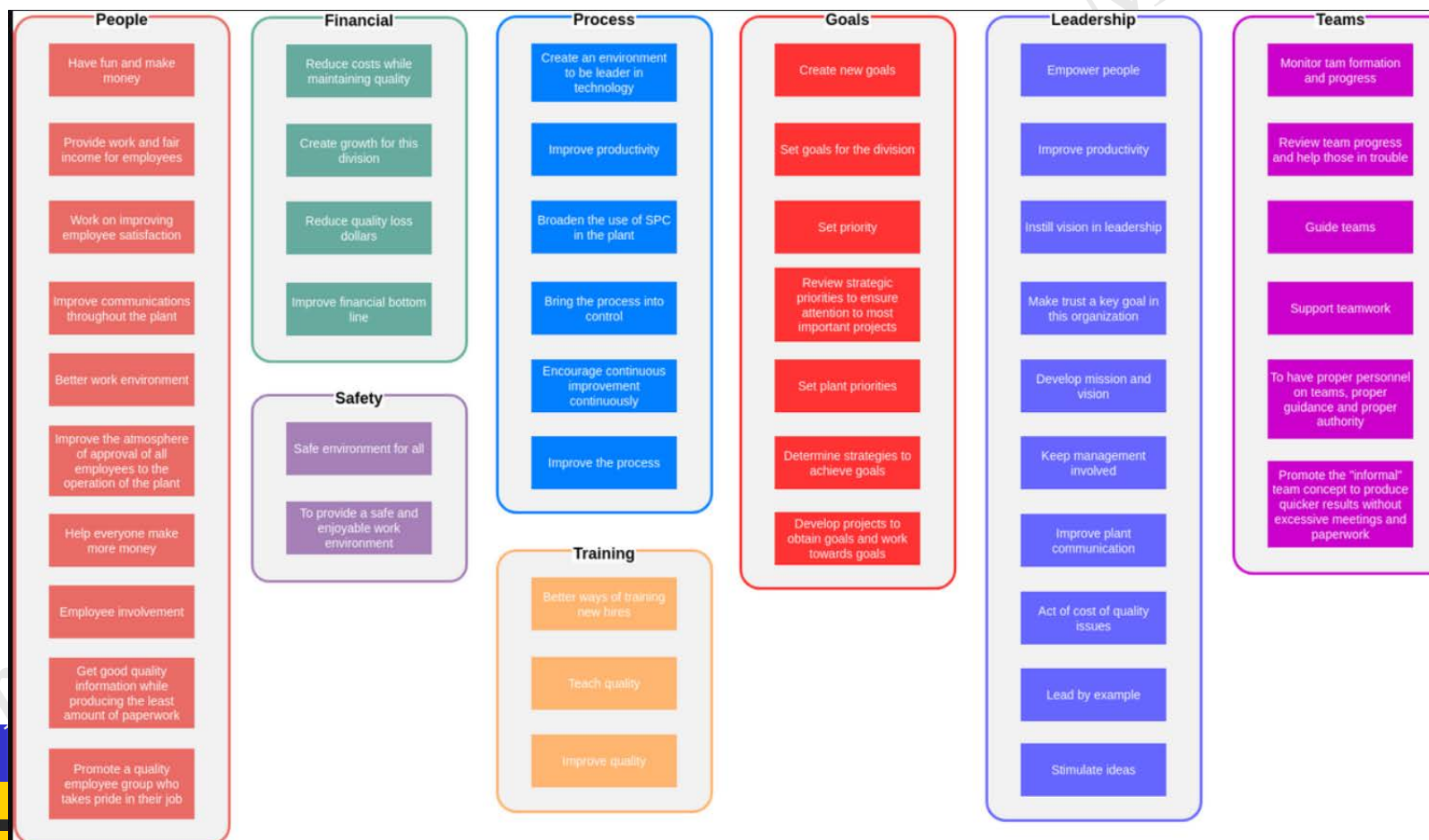
- ❑ ► **Budget.** A budget is the approved estimate for the project or any work breakdown structure (WBS) component or any schedule activity.
- ❑ ► **Milestone schedule.** This type of schedule presents **milestones** with planned dates.
- ❑ ► **Performance measurement baseline.** **Integrated** scope, schedule, and cost baselines are used for comparison to manage, measure, and control project execution.
- ❑ ► **Project schedule.** A project schedule is an output of a schedule model that presents linked activities with planned dates, durations, milestones, and resources.
- ❑ ► **Scope baseline.** This baseline is the **approved version** of a scope statement, work breakdown structure (WBS), and its associated WBS dictionary that can be **changed** using formal change control procedures and is used as the basis for comparison to actual results.

Visual data and information

- ❑ **Visual data and information** are artifacts that **organize and present data** and information in a visual format, such as charts, graphs, matrices, and diagrams.
- ❑ Visualizing data makes it **easier to absorb** data and turn it into information.
- ❑ **Visualization artifacts** are often produced after data have been collected and analyzed. These artifacts can **aid in decision making** and prioritization.

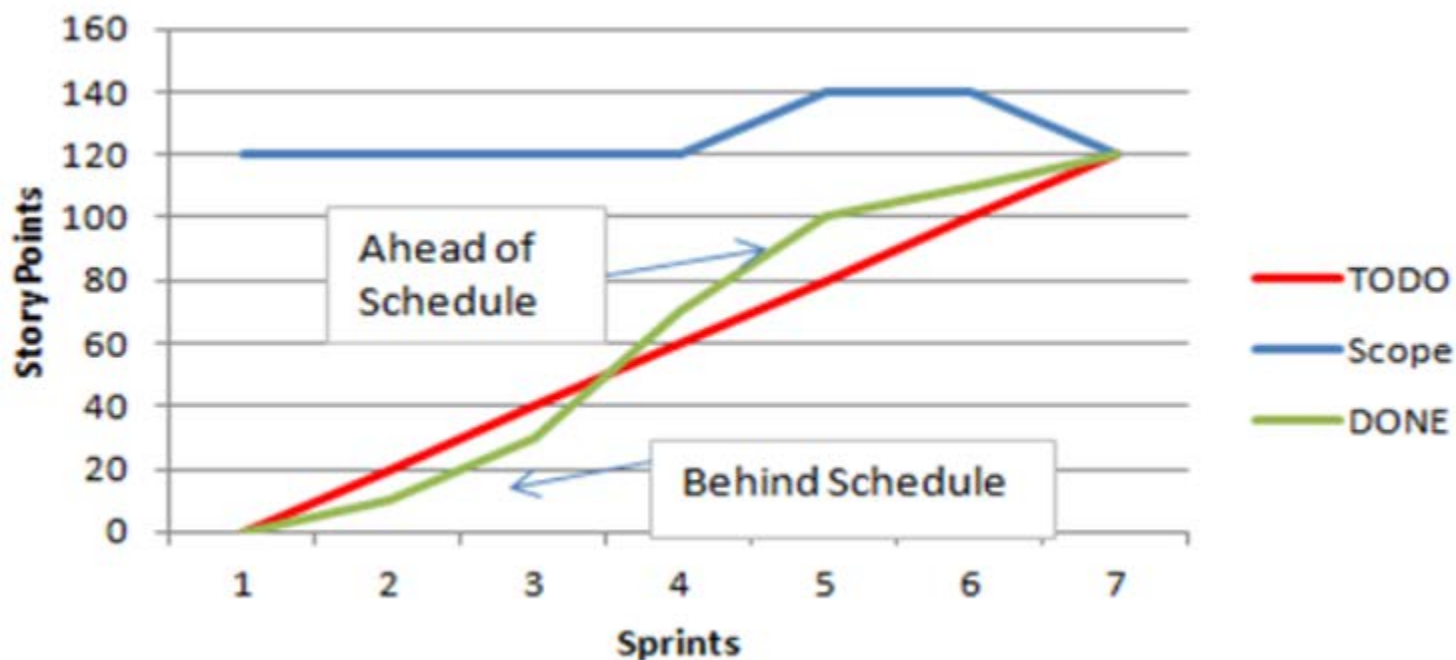
Visual data and information

❑ ► **Affinity diagram.** This diagram shows large numbers of ideas **classified** into groups for review and analysis.



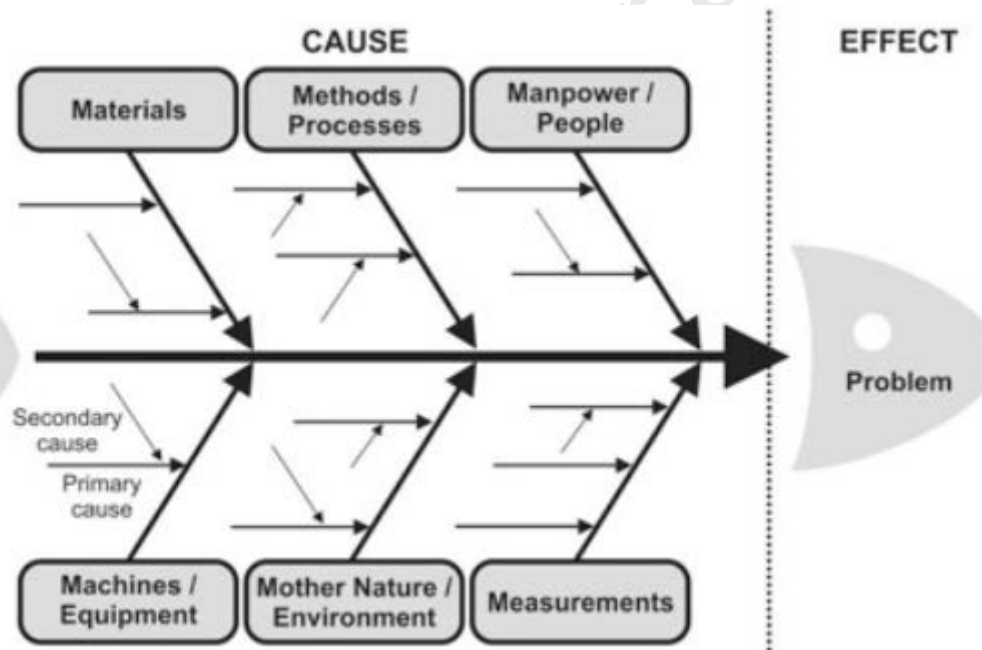
Visual data and information

❑ ► **Burndown/burnup chart.** This chart is a graphical representation of the work remaining in a timebox or the work completed toward the release of a product or project deliverable.



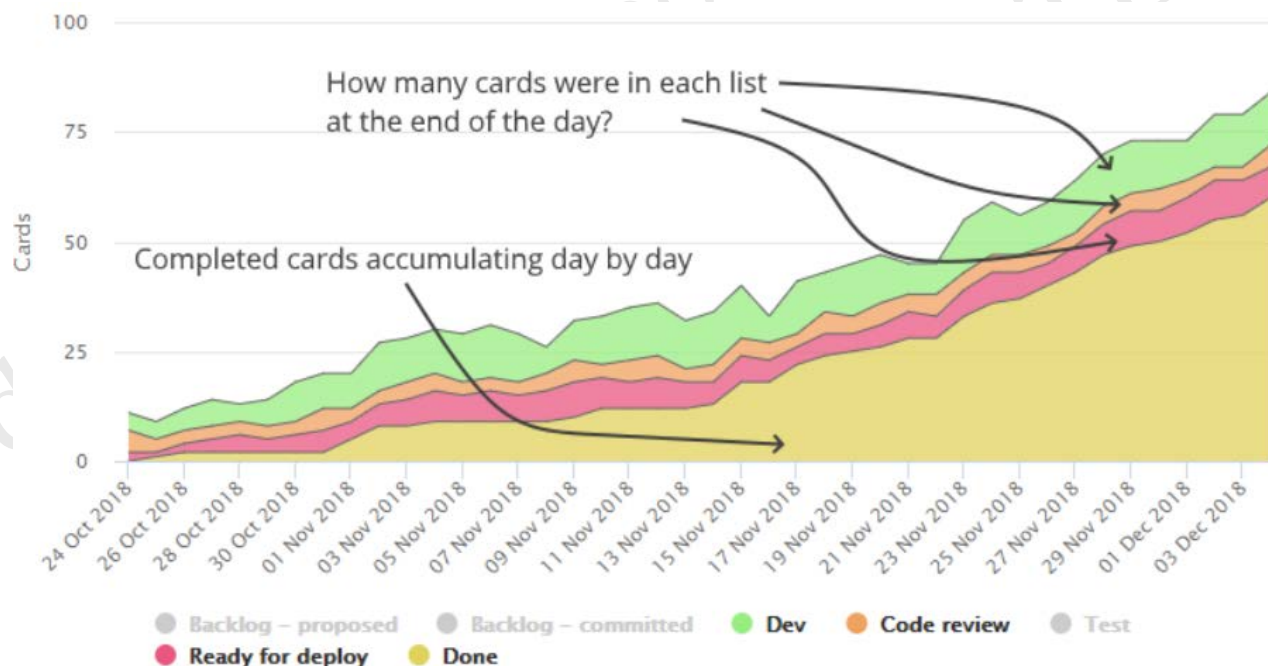
Visual data and information

- ❑ ► **Cause-and-effect diagram.** This diagram is a visual representation that helps trace an undesirable effect back to its root cause.



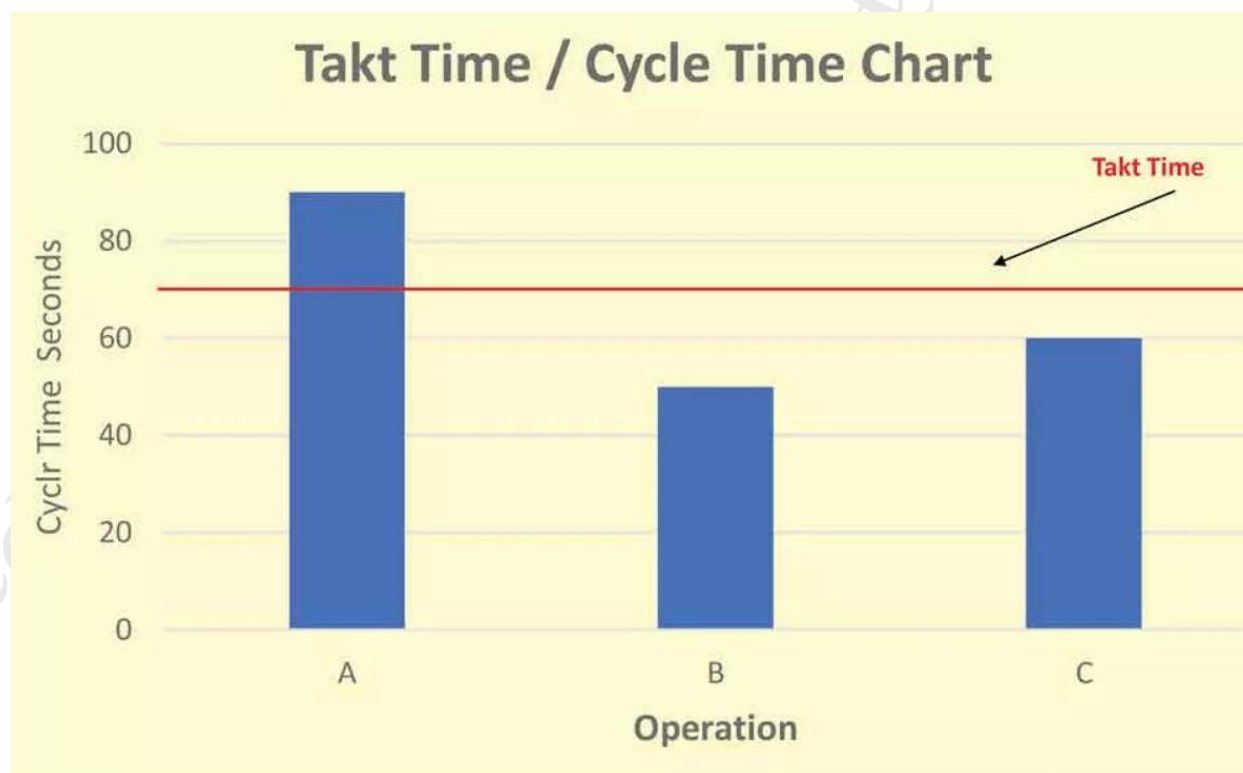
Visual data and information

- ❑ ► **Cumulative flow diagram (CFD).** This chart **indicates** features completed over time, features in development, and those in the backlog. It may also include **features at intermediate states**, such as **features designed but not yet constructed**, those in **quality assurance**, or those in **testing**.



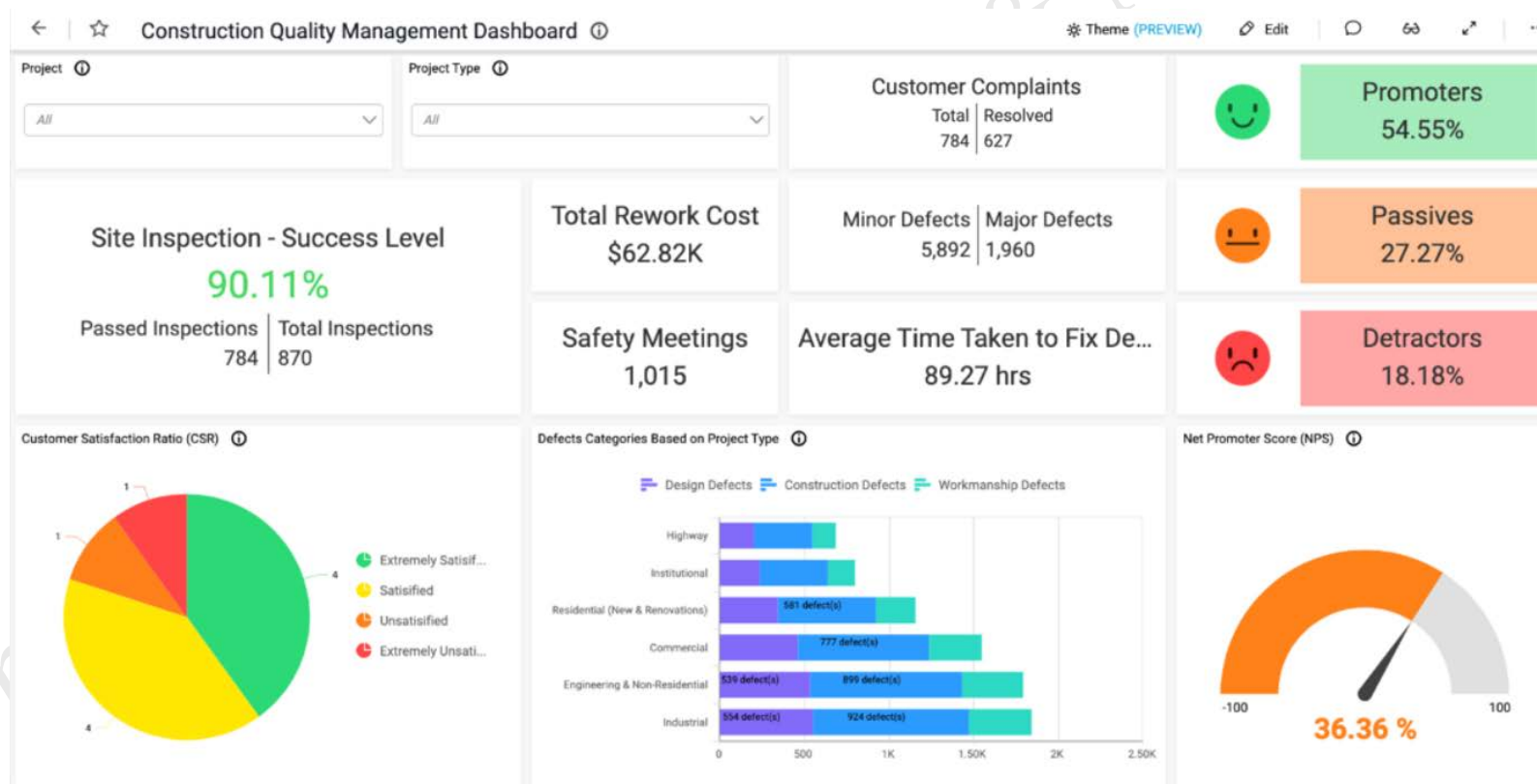
Visual data and information

- ❑ ► **Cycle time chart.** This diagram shows the average cycle time of the work items completed over time. A cycle time chart may be shown as a **scatter diagram** or a **bar chart**.



Visual data and information

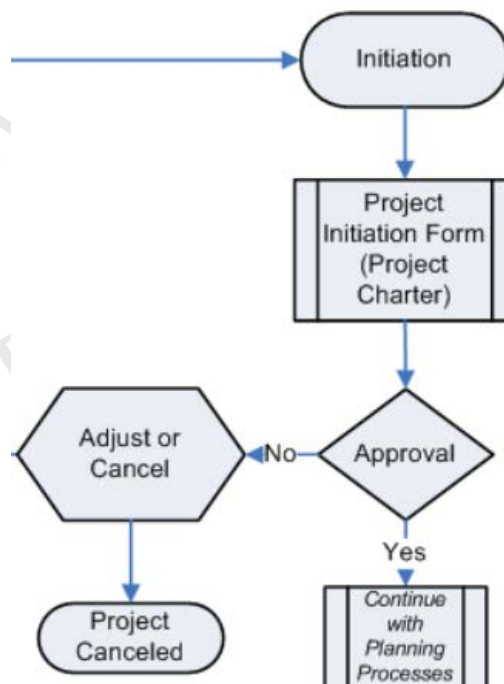
❑ ► **Dashboards.** This set of charts and graphs shows progress or performance against **important measures** of the project.



Visual data and information

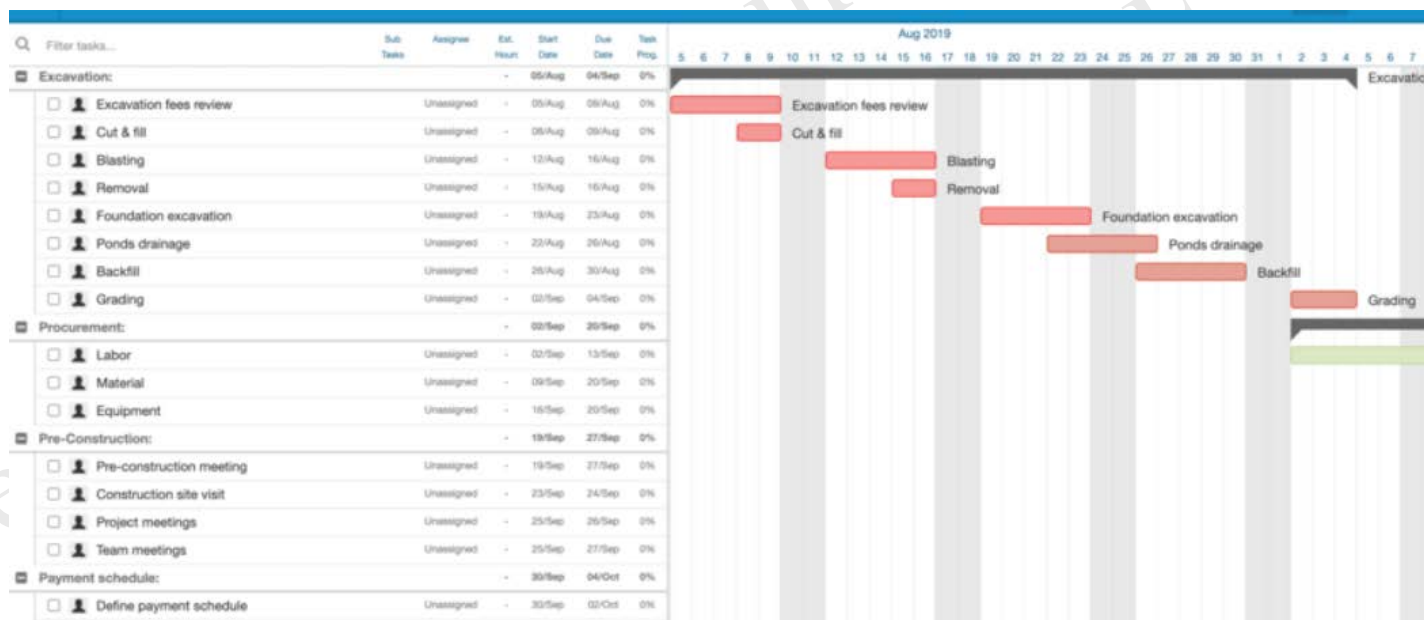
❑ ► **Flowchart.** This diagram depicts the inputs, process actions, and outputs of one or more processes **within a system**.

Initiation Processes



Visual data and information

- ❑ ▶ **Gantt chart.** This bar chart provides schedule information where activities are listed on the vertical axis, dates are shown on the horizontal axis, and activity durations are shown as horizontal bars placed according to start and finish dates.

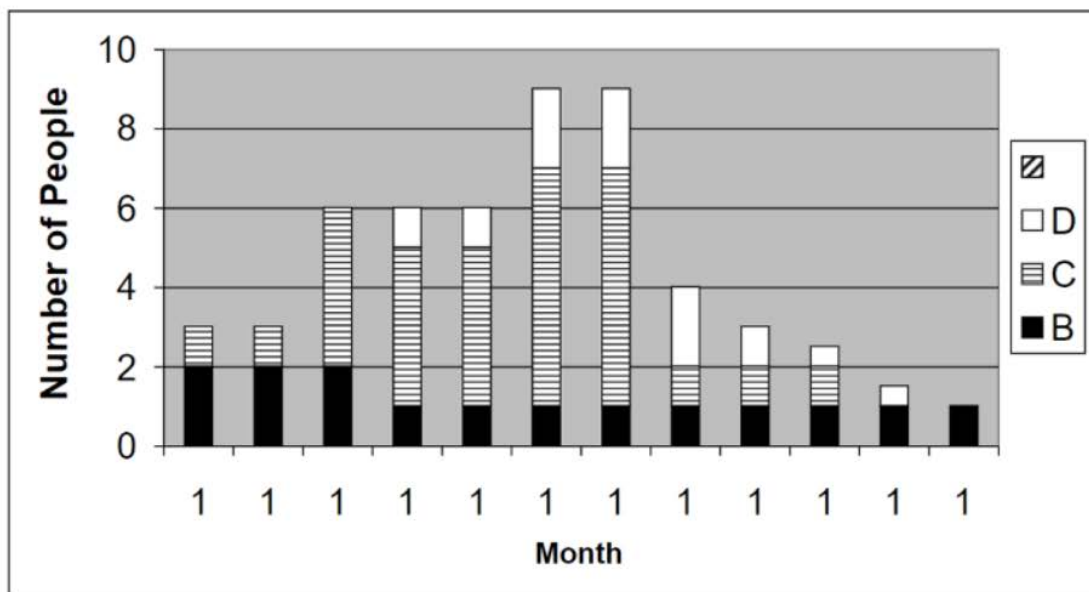


Visual data and information

❑ ► **Histogram.** This bar chart shows the graphical representation of numerical data.

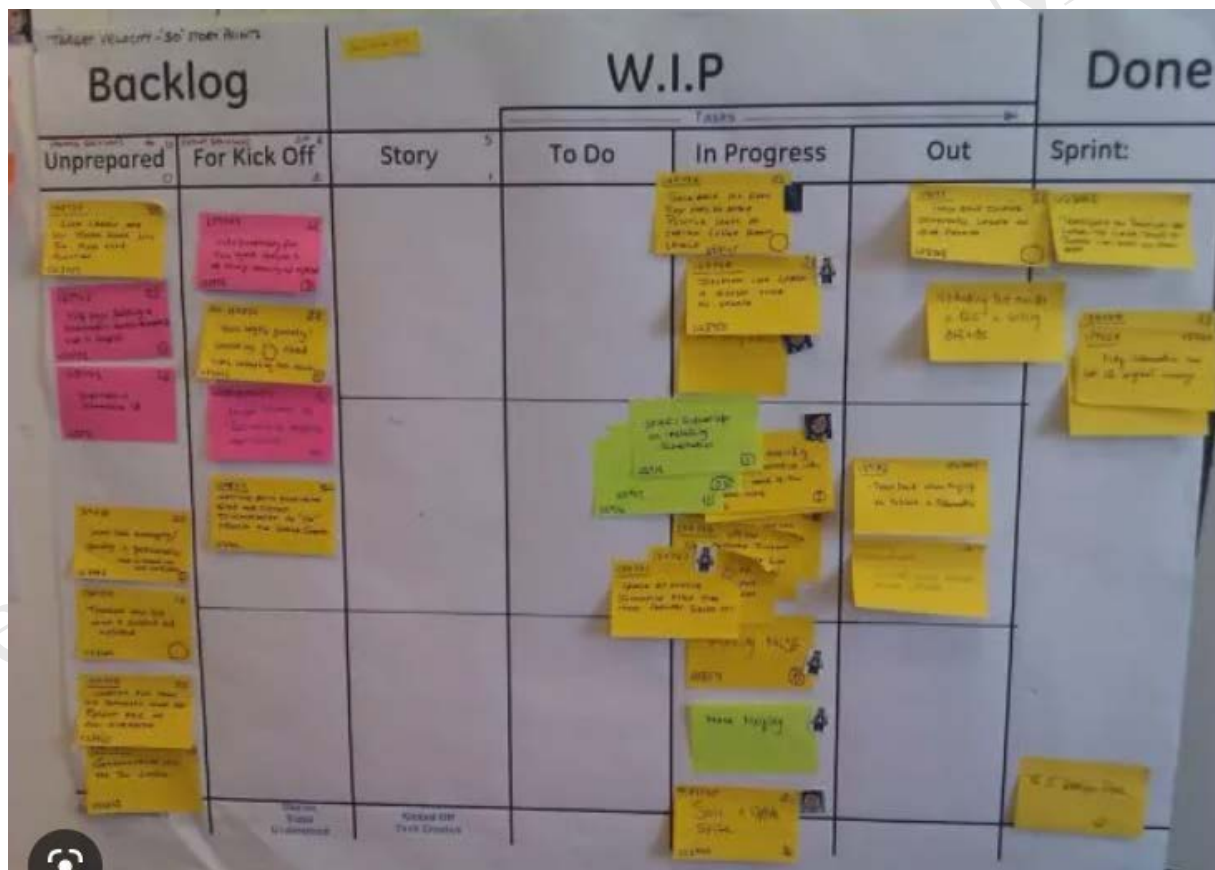
Enter resource names, months, and number of resources for your project.

Resource	1	2	3	4	5	6	7	8	9	10	11	12
A	1	1	1	1	1	1	1	1	1	1	1	1
B	2	2	2	1	1	1	1	1	1	1	1	1
C	1	1	4	4	4	6	6	1	1	1	0	0
D	0	0	0	1	1	2	2	2	1	0.5	0.5	0



Visual data and information

- ❑ ► **Information radiator.** This artifact is a visible, physical display that provides information to the rest of the organization, enabling timely knowledge sharing.

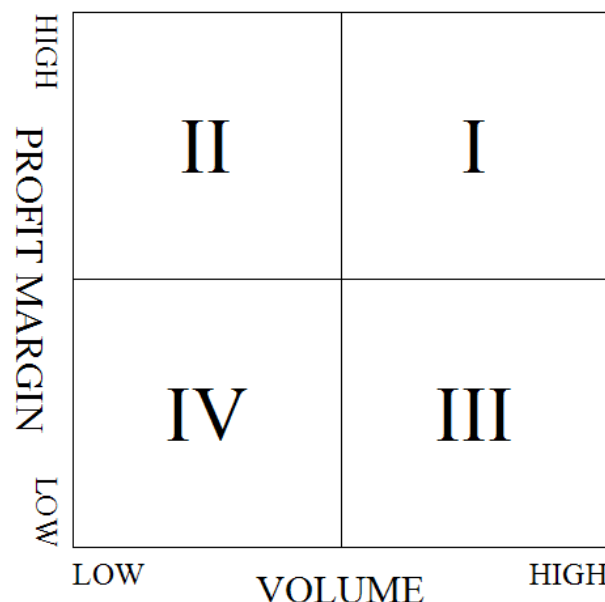


Visual data and information

- ❑ ► **Lead time chart.** This diagram **shows the trend** over time of the average lead time of the items completed in work. A lead time chart may be shown as a **scatter diagram** or a **bar chart**.

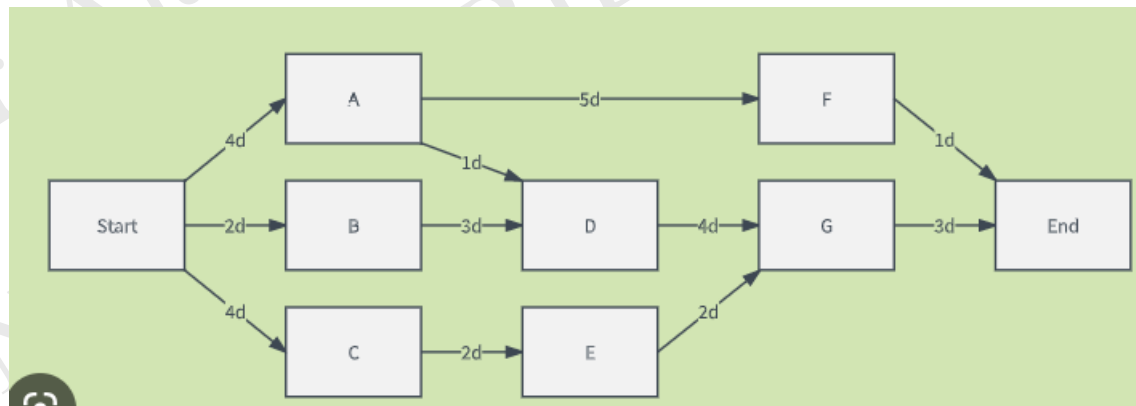
Visual data and information

❑ ► **Prioritization matrix.** This matrix is a scatter diagram where effort is shown on the horizontal axis and value on the vertical axis, divided into four quadrants to classify items by priority.



Visual data and information

- ❑ ► **Project schedule network diagram.** This graphical representation shows the logical relationships among the project schedule activities.



Visual data and information

- ❑ ► **Requirements traceability matrix.** This matrix **links** product requirements from **their origin** to the deliverables that satisfy them.

Project Manager:		Mark Smith			Project ID:		FX-ERTY-XXX	
Project Sponsor:		Lisa Hodges			Project Title:		Cascade	
 Requirement Information					 Relationship Traceability			
Id	Category	Requirement	Priority	Source	Business objective	Deliverables	Verification	Validation
REQ-001	Mandatory	Competence for customer to check solutions for broadband problems	High	Chief technical officer	Increase resolution rate by 10%	Analytics knowledge base module	Achievement of objective	User acceptance testing
REQ-002	Should have	Text here	Medium	Text here	Text here	Text here	Text here	Text here
REQ-003	Nice to have	Customer skill to check latest knowledge articles near account area	Low	Service desk	Increase customer satisfaction by 4%	Customization with account module to check knowledge articles	Uptick of customer satisfaction	User acceptance testing

Visual data and information

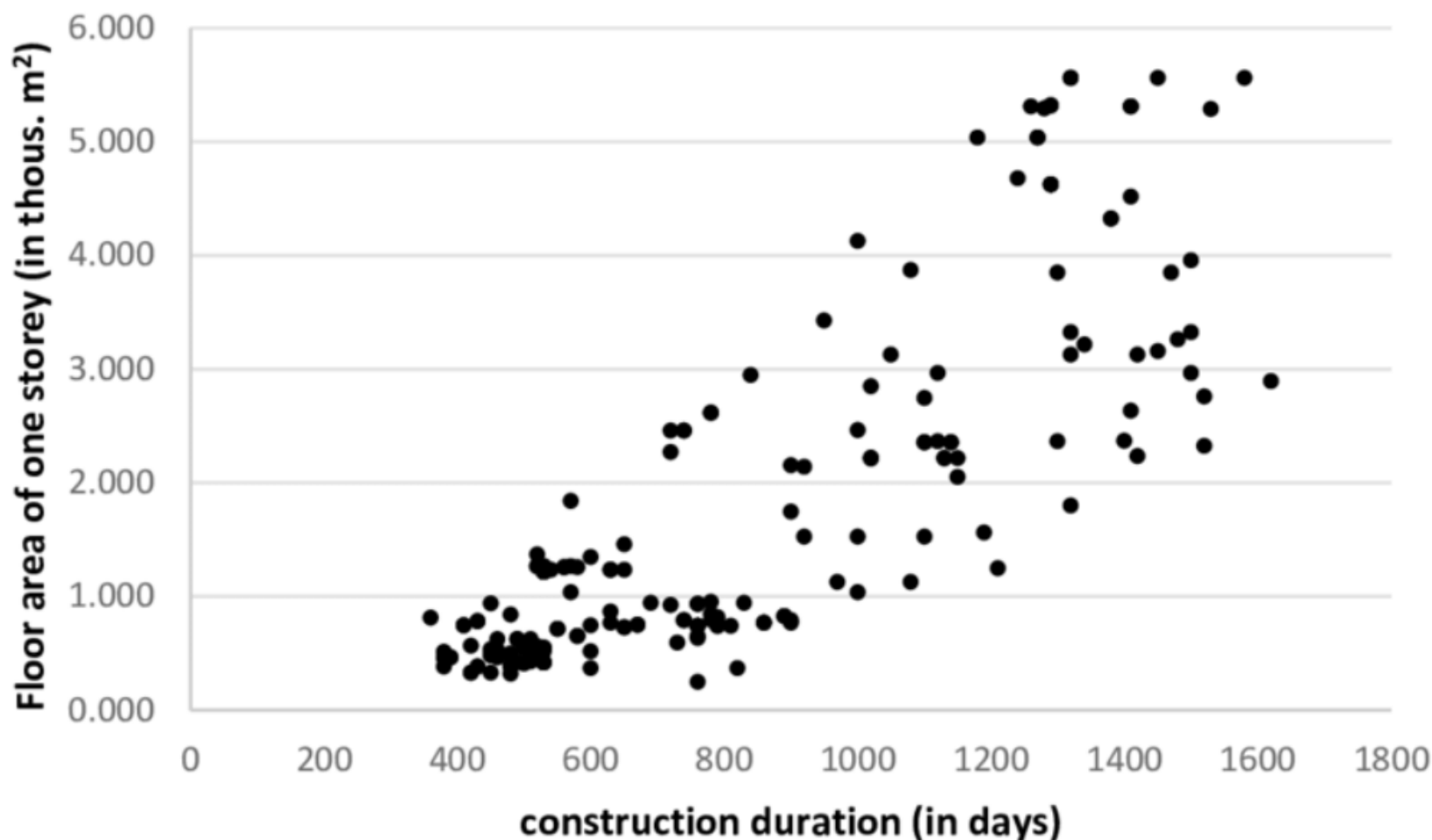
- ❑ ► **Responsibility assignment matrix (RAM).** This matrix is a grid that shows the **project resources assigned** to each work package. A RACI chart is a **common way of showing stakeholders** who are responsible, accountable, consulted, or informed and are associated with project activities, decisions, and deliverables.

Activity Description	Roles					
	Sponsor	Project Authority	Project Manager	Team Member 1	Team Member 2	Team Member 3
1	A	I	I	R	I	R
2	I	A	R	I	R	I
3		C	A	I	R	I
4	A	I	I	R	I	R

R: Responsible, A: Accountable, C: Consulted, I: Informed

Visual data and information

❑ ► **Scatter diagram.** This graph shows the **relationship** between **two variables**.



Visual data and information

- ❑ ► **S-curve.** This graph displays cumulative costs over a **specified period of time**.
- ❑ ► **Stakeholder engagement assessment matrix.** This matrix **compares** current and desired stakeholder **engagement levels**.
- ❑ ► **Story map.** A story map is a **visual model** of all the features and functionality **desired** for a given product, created to **give the project team** a holistic view of what they are building and why.
- ❑ ► **Throughput chart.** This chart shows the **accepted deliverables** over time. A throughput chart may be shown as a scatter diagram or a bar chart.

Visual data and information

- ❑ ► **Use case.** This artifact **describes** and **explores** how a user interacts with a system to achieve a specific goal.
- ❑ ► **Value stream map.** This is a lean enterprise method used to document, analyze, and improve the flow of information or materials required to produce a product or service for a customer. Value stream maps can be **used to identify waste**.
- ❑ ► **Velocity chart.** This chart **tracks the rate** at which the deliverables are produced, validated, and accepted within a **predefined interval**.

- ☐ **Reports** are formal records or summaries of information.
- ☐ Reports **communicate relevant (usually summary level) information** to stakeholders.
- ☐ Often **reports are given to stakeholders** who are interested in the project status, such as sponsors, business owners, or PMOs.

Reports

❑ ► **Quality report.** This project document includes

1. Quality management issues, recommendations for **corrective actions**, and
2. A summary of findings from **quality control activities**.

It may include **recommendations** for process, project, and product improvements.

❑ ► **Risk report.** This project document is **developed progressively** throughout the risk management processes and summarizes information on **individual project risks** and the **level of overall project risk**.

❑ ► **Status report.** This document provides a report on the current status of the project. It may include information on progress since the last report and forecasts for cost and schedule performance.

Agreements and contracts

- ☐ An **agreement** is any document or communication that defines the **intentions** of the parties.
- ☐ In projects, agreements take the form of contracts or other defined understandings.
- ☐ A contract is a **mutually binding agreement** that obligates the seller to provide the specified product, service, or result and obligates the buyer to pay for it.
- ☐ There are different types of contracts, some of which fall within a category of fixed-price or cost-reimbursable contracts.

Agreements and contracts

- ❑ ► **Fixed-price contracts.** This category of contract involves setting a fixed price for a well-defined product, service, or result. Fixed-price contracts include firm fixed price (FFP), fixed-price incentive fee (FPIF), and fixed price with economic price adjustment (FP-EPA), among others.
- ❑ ► **Cost-reimbursable contracts.** This category of contracts involves payments to the seller for actual costs incurred for completing the work plus a fee representing seller profit. These contracts are often used when the project scope is not well defined or is subject to frequent change. Cost-reimbursable contracts include cost plus award fee (CPAF), cost plus fixed fee (CPFF), and cost plus incentive fee (CPIF).

Agreements and contracts

- ❑ ► **Time and materials (T&M).** This contract establishes a **fixed rate**, but not a precise statement of work. It can be used for **staff augmentation**, **subject matter expertise**, or other **outside support**.
- ❑ ► **Indefinite delivery indefinite quantity (IDIQ).** This contract provides for an **indefinite quantity** of goods or services, with a stated lower and upper limit, and **within a fixed time period**. These contracts can be used for architectural, engineering, or information technology engagements.
- ❑ ► **Other agreements.** Other types of agreements include memorandum of understanding (MOU), memorandum of agreement (MOA), service level agreement (SLA), basic ordering agreement (BOA), among others.

Other artifacts

- ☐ The **documents and deliverables** described here do not fit into a specific category; however, they are important artifacts that are used for a variety of purposes.

Other artifacts

- ❑ ► **Activity list.** This document provides a tabulation of schedule activities that shows the activity description, activity identifier, and a sufficiently detailed scope of work description so project team members understand what work is to be performed.
- ❑ ► **Bid documents.** Bid documents are used to request proposals from prospective sellers.
 - ❖ Depending on the goods or services needed, bid documents can include, among others:
 - Request for information (RFI),
 - Request for quotation (RFQ), and
 - Request for proposal (RFP).
- ❑ ► **Metrics.** Metrics describe an attribute and how to measure it.

Other artifacts

- ❑ ► **Project calendar.** This calendar identifies working days and shifts that are available for scheduled activities.
- ❑ ► **Requirements documentation.** This document is a record of product requirements and relevant information needed to manage the requirements, which includes the associated category, priority, and acceptance criteria.
- ❑ ► **Project team charter.** This document records the project team values, agreements, and operating guidelines, and establishes clear expectations regarding acceptable behavior by project team members.
- ❑ ► **User story.** A user story is a **brief description of an outcome** for a specific user, which is a promise of a conversation to clarify details.

Artifacts Applied Across Performance Domains

Introduction

- ❑ Different artifacts are more likely to be useful in **different performance domains**.
- ❑ While the delivery approach, product, and organizational environment will determine which artifacts are most applicable for a specific project,
there are **some performance domains that are more likely** to make use of specific artifacts.
- ❑ **Table 4-3 suggests** the performance domain(s) where each artifact is more likely to be of use; however, the project manager and/or project team has the ultimate responsibility for selecting and tailoring the artifacts for their project.

Artifact	Performance Domain							
	Team	Stakeholders	Dev Approach and Life Cycle	Planning	Project Work	Delivery	Measurement	Uncertainty
Strategy Artifacts:								
Business case		X		X				
Project brief		X		X				
Project charter		X		X				
Project vision statement		X		X				
Roadmap		X	X	X				
Log and Register Artifacts:								
Assumption log				X	X	X		X
Backlog				X	X	X		
Change log					X	X		
Issue log					X			
Lessons learned register					X			
Risk-adjusted backlog				X				X
Risk register				X	X	X		X
Stakeholder register		X		X				
Plan Artifacts:								
Change control plan				X	X	X		
Communications management plan		X		X	X			
Cost management plan				X				
Iteration plan				X				
Procurement management plan				X	X			
Project management plan		X		X	X			
Quality management plan				X	X	X		
Release plan				X		X		
Requirements management plan				X		X		
Resource management plan				X	X			
Risk management plan				X	X			X
Scope management plan				X		X		

Artifact	Performance Domain							
	Team	Stakeholders	Dev Approach and Life Cycle	Planning	Project Work	Delivery	Measurement	Uncertainty
Schedule management plan				X	X	X		
Stakeholder engagement plan		X		X				
Test plan				X	X	X	X	
Hierarchy Chart Artifacts:								
Organizational breakdown structure	X	X		X				
Product breakdown structure				X		X		
Resource breakdown structure	X			X	X		X	
Risk breakdown structure					X			X
Work breakdown structure				X		X	X	
Baseline Artifacts:								
Budget				X	X		X	
Milestone schedule			X	X	X		X	
Performance measurement baseline				X	X	X	X	
Project schedule				X	X		X	
Scope baseline				X	X	X	X	
Visual Data and Information Artifacts:								
Affinity diagram				X	X			
Burn chart				X		X	X	
Cause-and-effect diagram					X	X		X
Cycle time chart						X	X	
Cumulative flow diagram						X	X	
Dashboard					X		X	
Flow chart				X	X	X		
Gantt chart				X	X		X	
Histogram							X	
Information radiator					X		X	
Lead time chart						X	X	
Prioritization matrix		X			X	X		

Artifact	Performance Domain							
	Team	Stakeholders	Dev Approach and Life Cycle	Planning	Project Work	Delivery	Measurement	Uncertainty
Project schedule network diagram				X	X			
Requirements traceability matrix				X		X	X	
Responsibility assignment matrix				X	X			
Scatter diagram					X	X	X	
S-curve				X			X	
Stakeholder engagement assessment matrix		X		X	X			
Story map				X		X		
Throughput chart						X	X	
Use case				X		X		
Value stream map					X	X	X	
Velocity chart						X	X	
Report Artifacts:								
Quality report					X	X	X	
Risk report					X			X
Status report					X			
Agreements and Contracts:								
Fixed-price		X		X	X	X	X	X
Cost-reimbursable		X		X	X	X	X	X
Time and materials		X		X	X	X	X	X
Indefinite time indefinite quantity (IDIQ)		X		X	X	X	X	X
Other agreements		X		X	X	X	X	X
Other Artifacts:								
Activity list	X	X		X	X			
Bid documents		X		X	X			
Metrics				X		X	X	
Project calendars	X			X	X			
Requirements documentation		X		X		X	X	
Project team charter	X				X			
User story		X		X		X		

موسسه مهندسی و مدیریت ساخت علوی پور (ACEMI)

دفتر آموزش



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