D13 UNIT 7-A
STANDARDS

Some standards in project management

Management methodologies
Examples

- Métrica
- PRINCE2
- Scrum
- Lean
- Extreme Programming
- Kanban
- PMBOK
- …

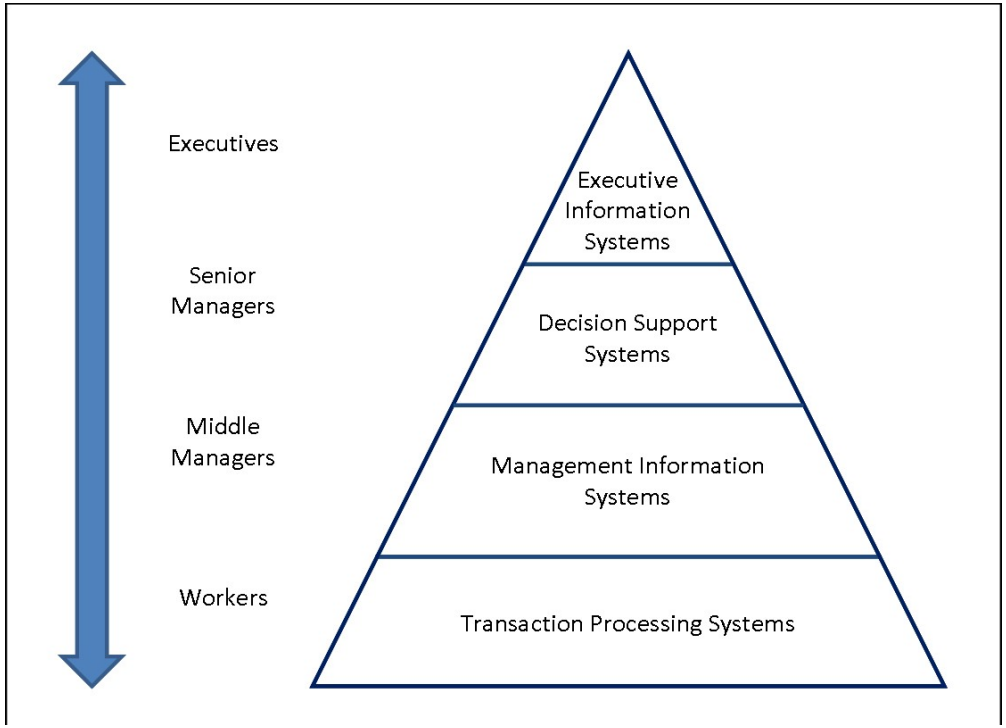
Métrica 3
Information systems

3

Methodology for the Planning, Development and Maintenance of Information Systems

An information system is a set of data which interact for a common goal.

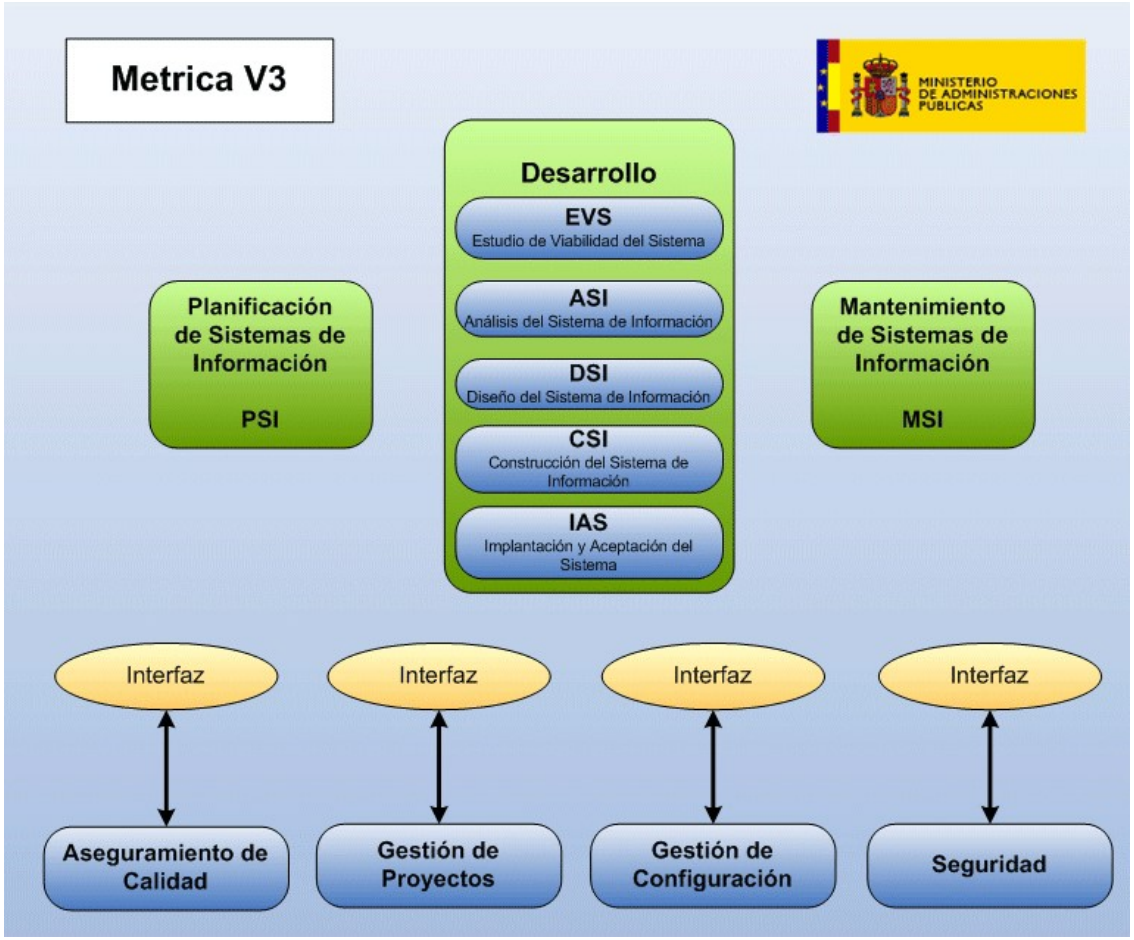
Computer information systems help manage, collect, process, store and distribute relevant information for the fundamental process and the particularities of each organization.



Métrica 3
Processes

Based on::

- Model ISO/IEC 12207 (*Information Technology - Software Life Cycle Processes*).
- Norm ISO/IEC 15504 SPICE (*Software Process Improvement And Assurance Standards Capability Determination*).



PRINCE2
Objectives

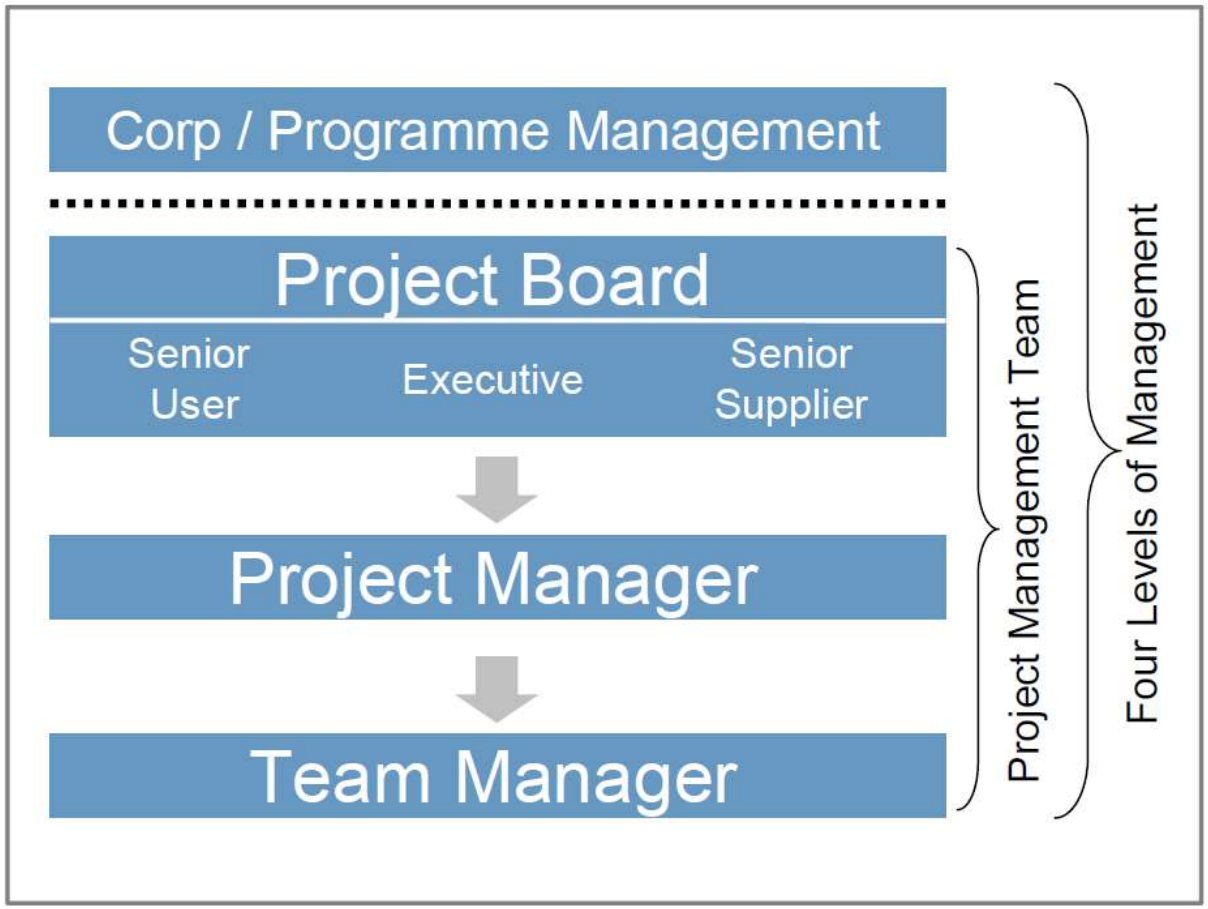
PRojects IN Controlled Environments 2

(Central Computer and Telecommunications Agency – Office of Government Commerce - UK)

- *Normal path of a project*
- *How a project begins and the steps until the project closes*
- *How all the processes fit together and how the outputs from one process are the inputs to another*

PRINCE2
Management structure levels

PRINCE2: Project Management Structure (Project Organization)



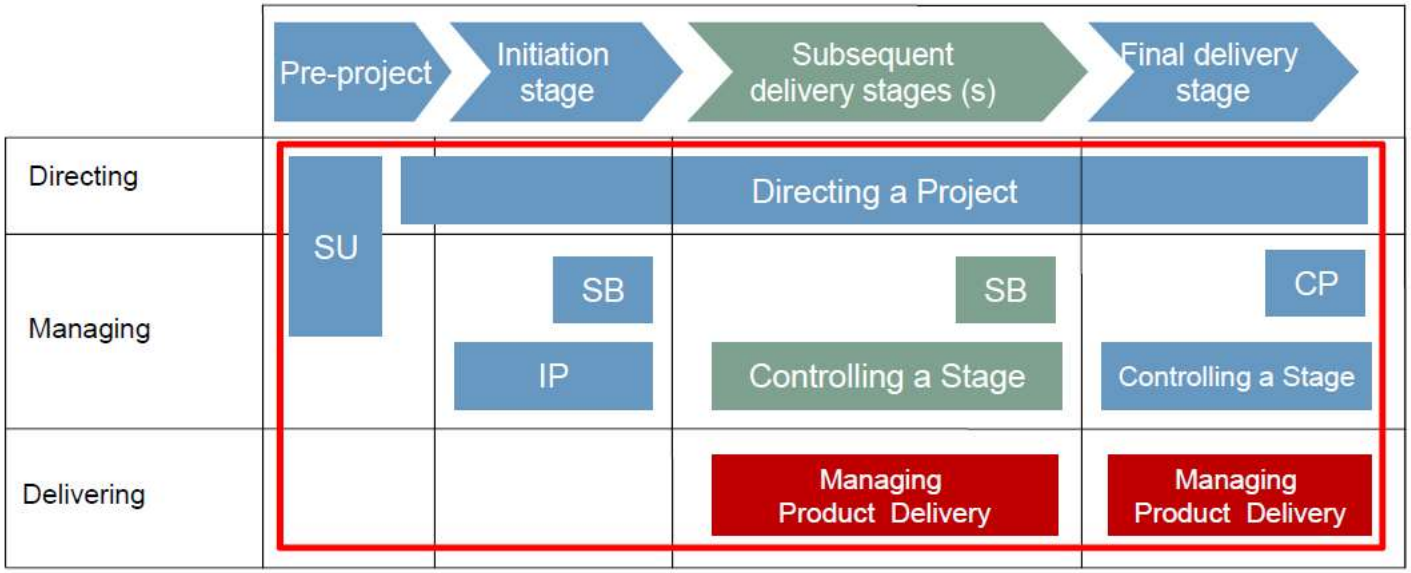
Corp./Prog. Management

Direction

Management

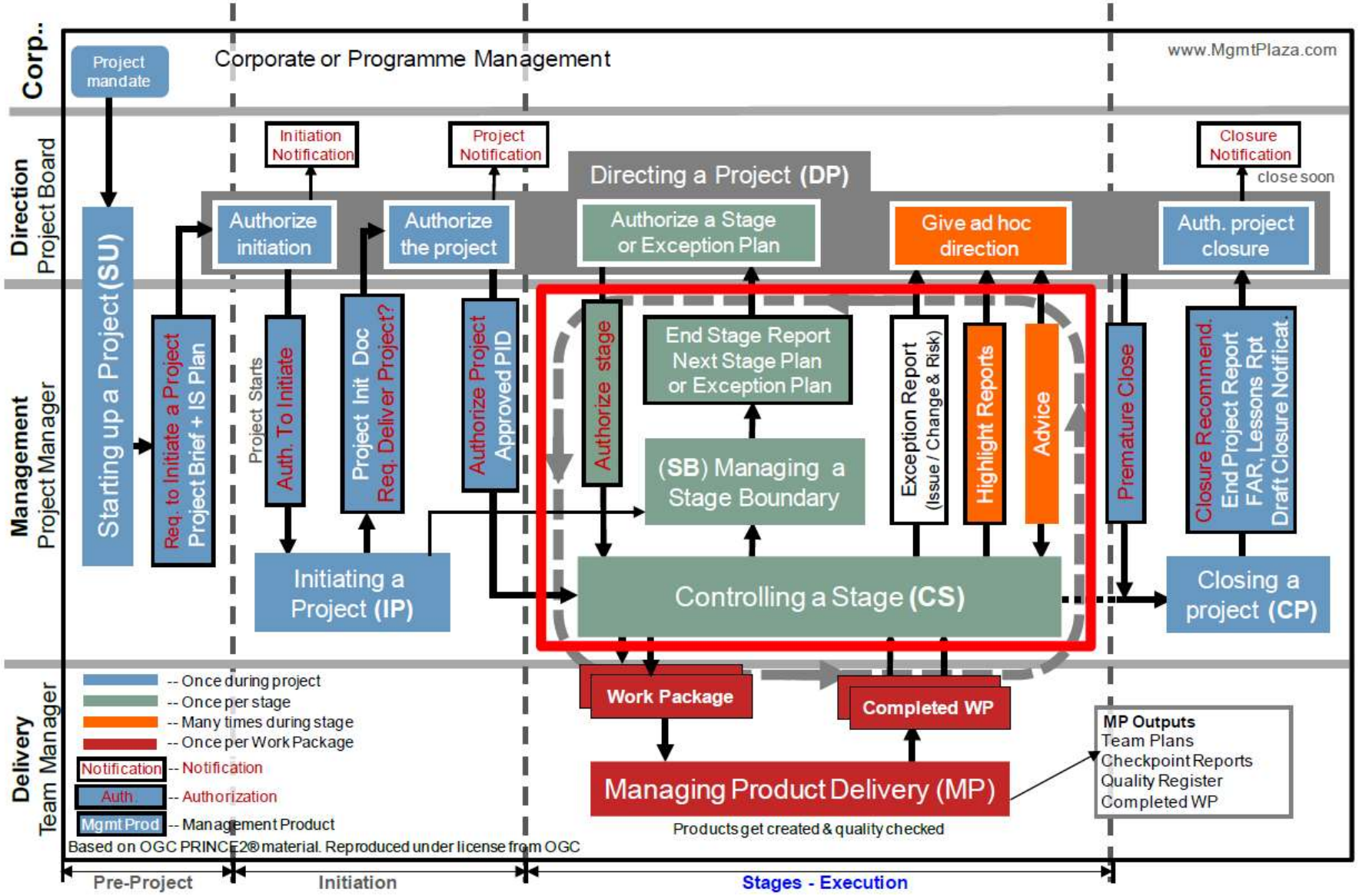
Delivery

PRINCE2
Model diagram and processes

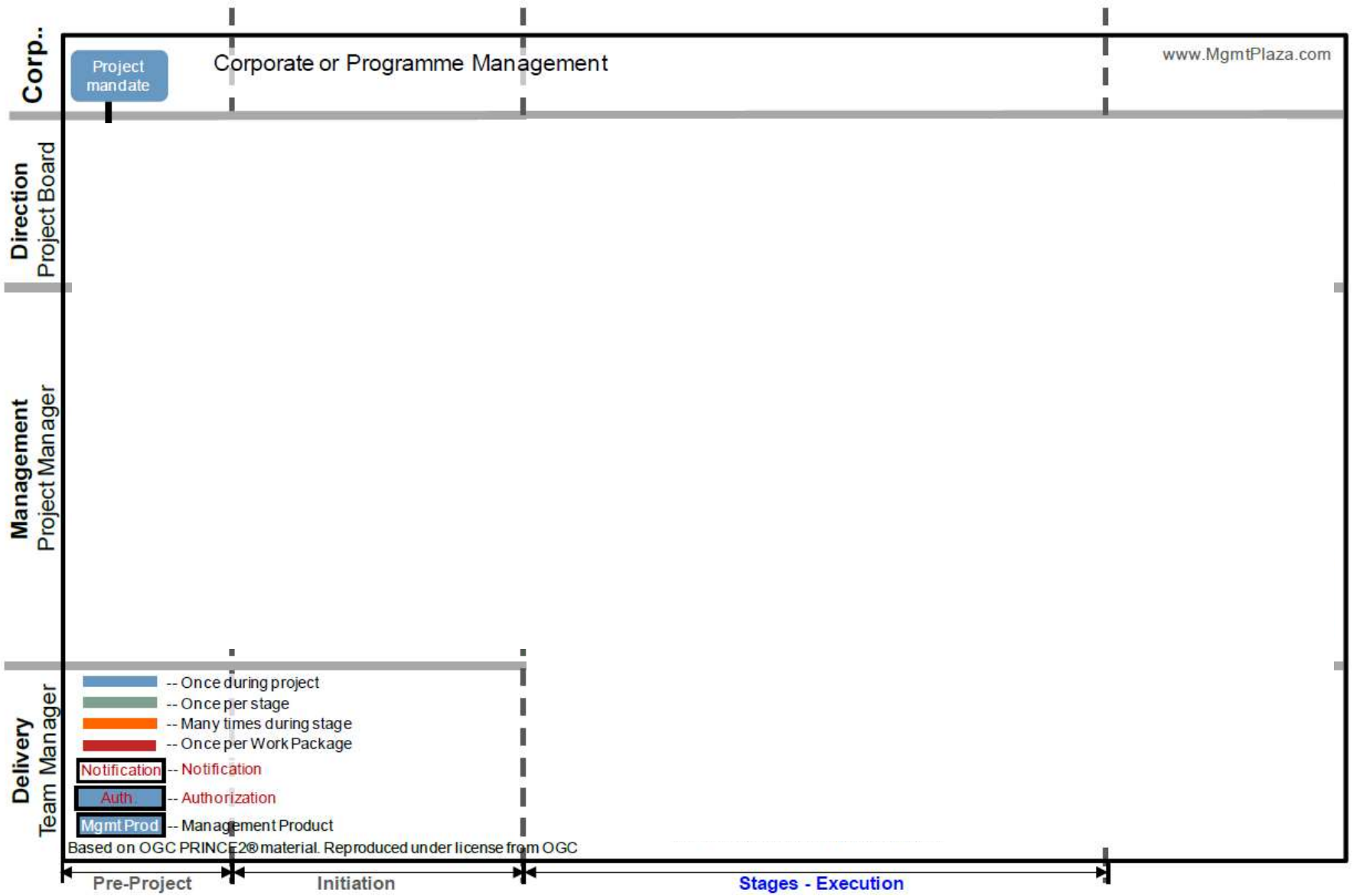


Starting Up a Project
Initiating a Project
Managing Stage Boundaries
Controlling a Stage
Managing Product Delivery
Closing a Project
Directing a Project

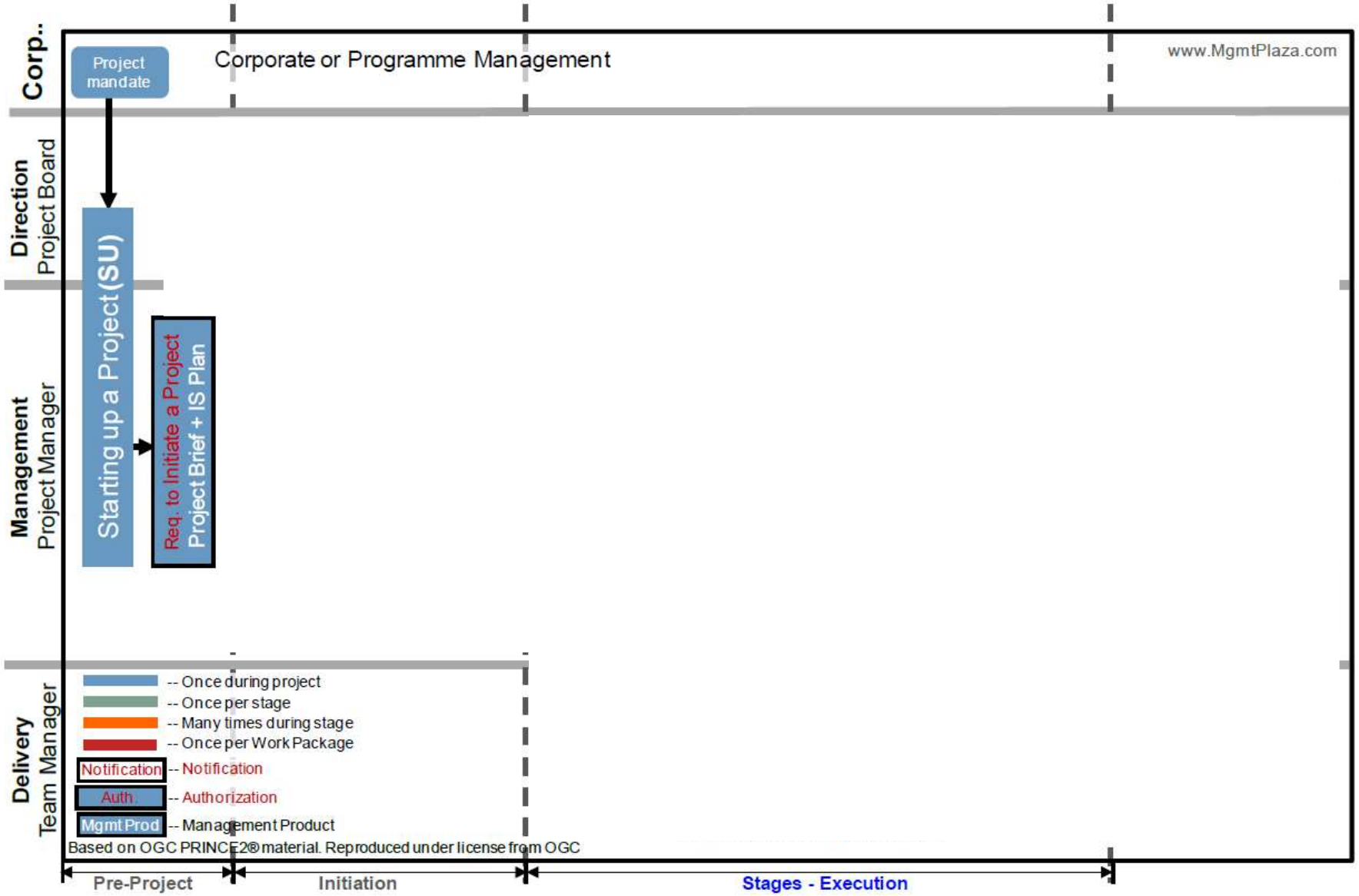
PRINCE2
Detailed diagram



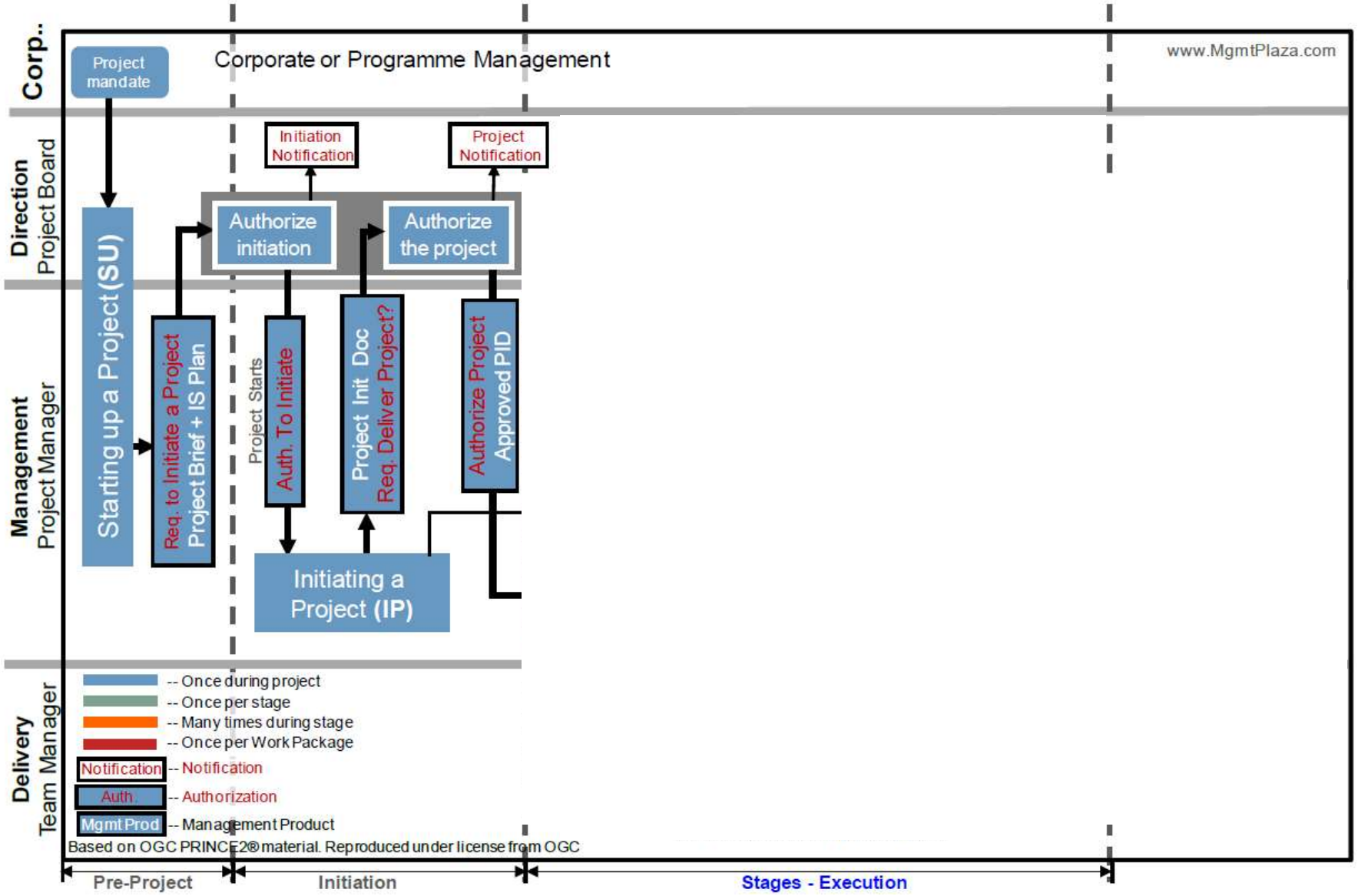
PRINCE2
Detailed diagram



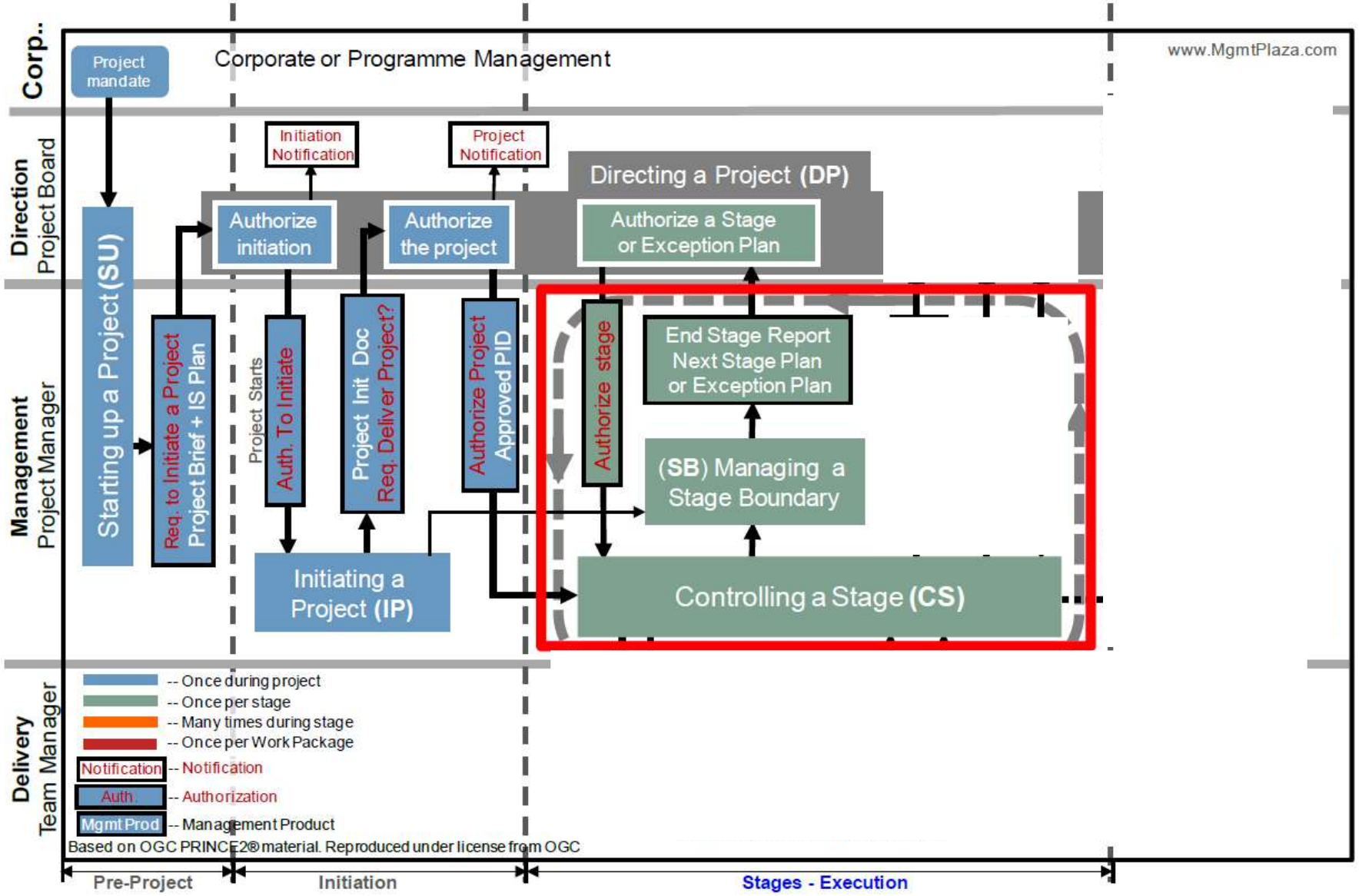
PRINCE2
Detailed diagram



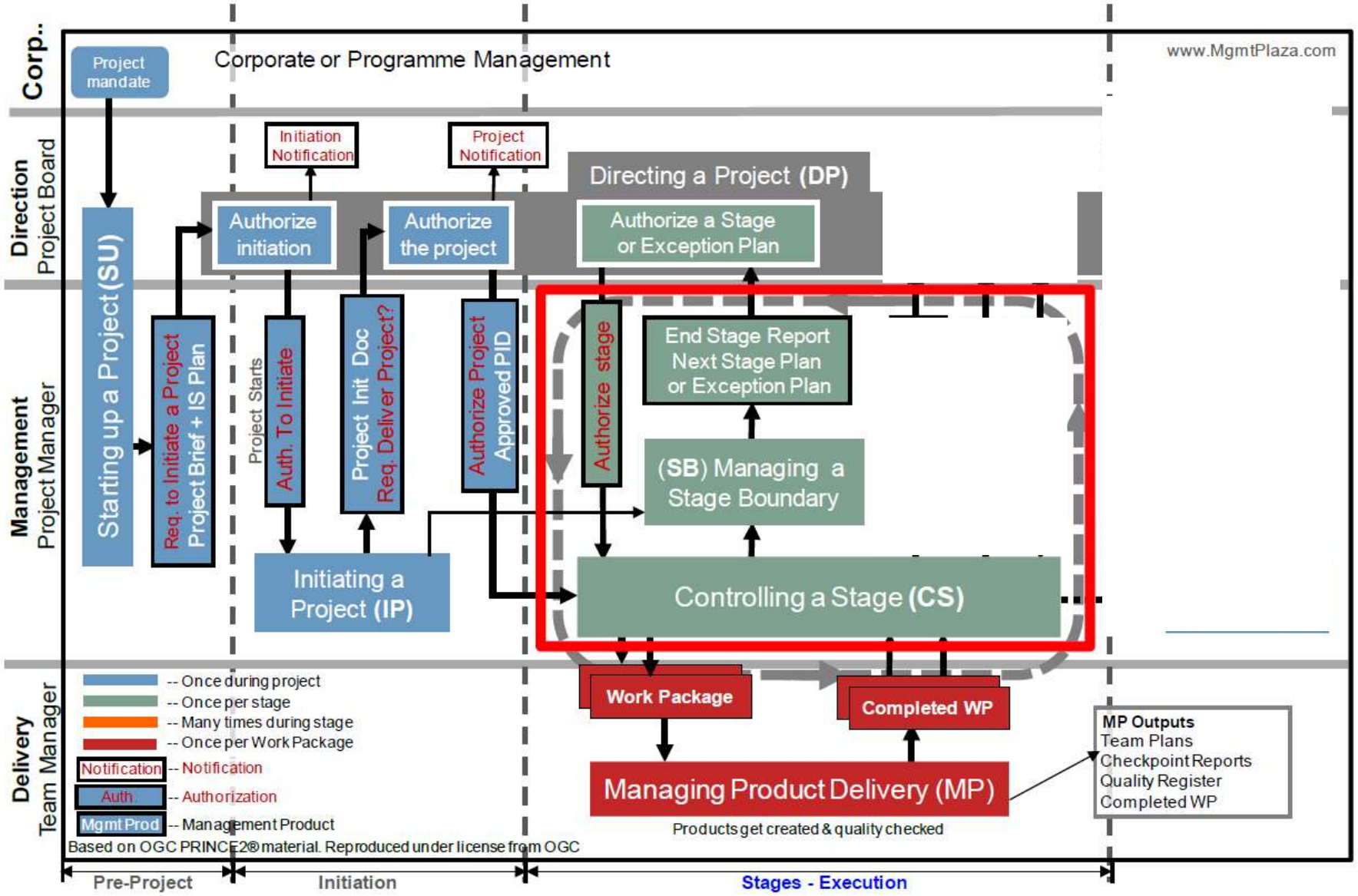
PRINCE2
Detailed diagram



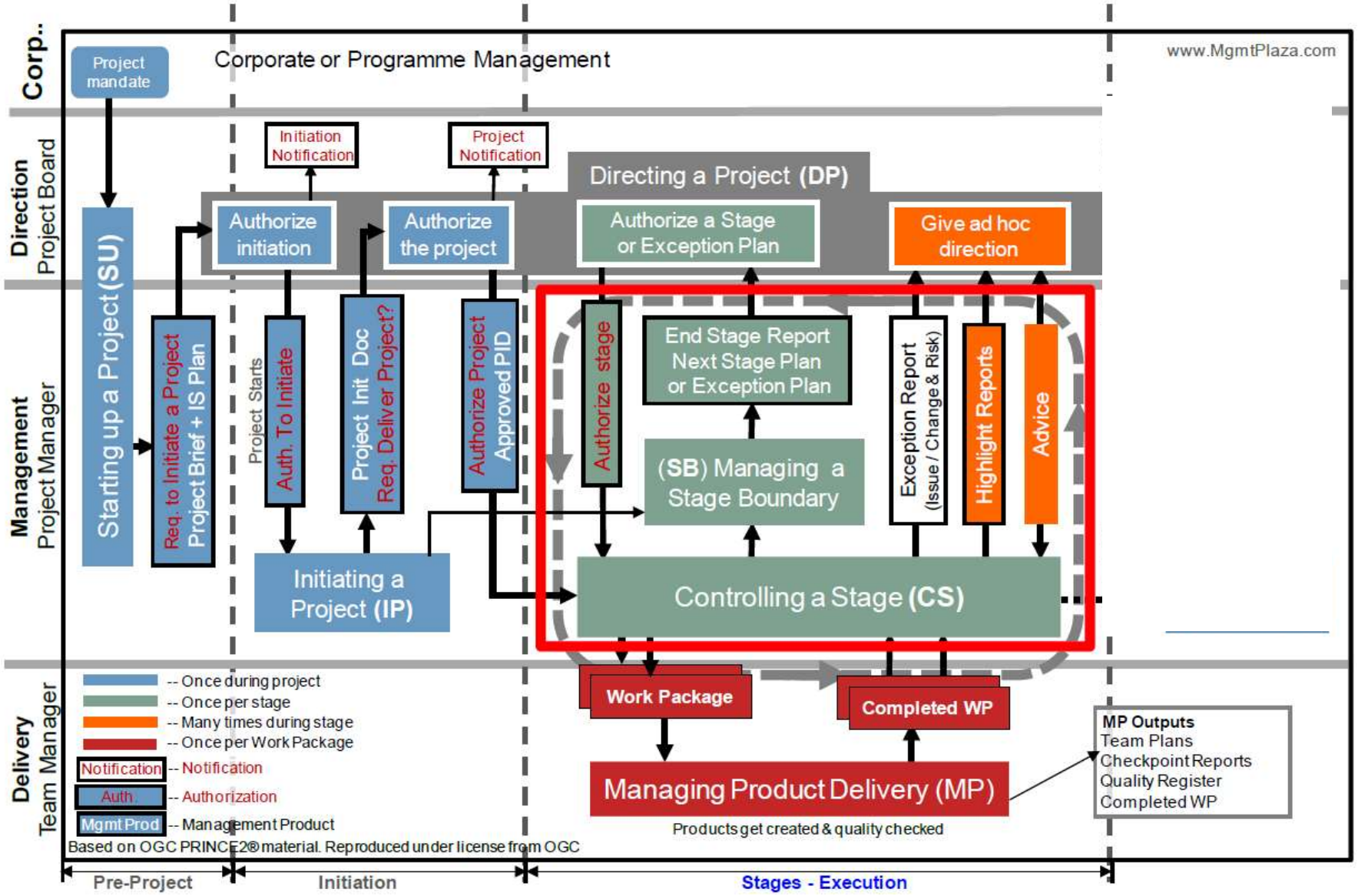
PRINCE2
Detailed diagram



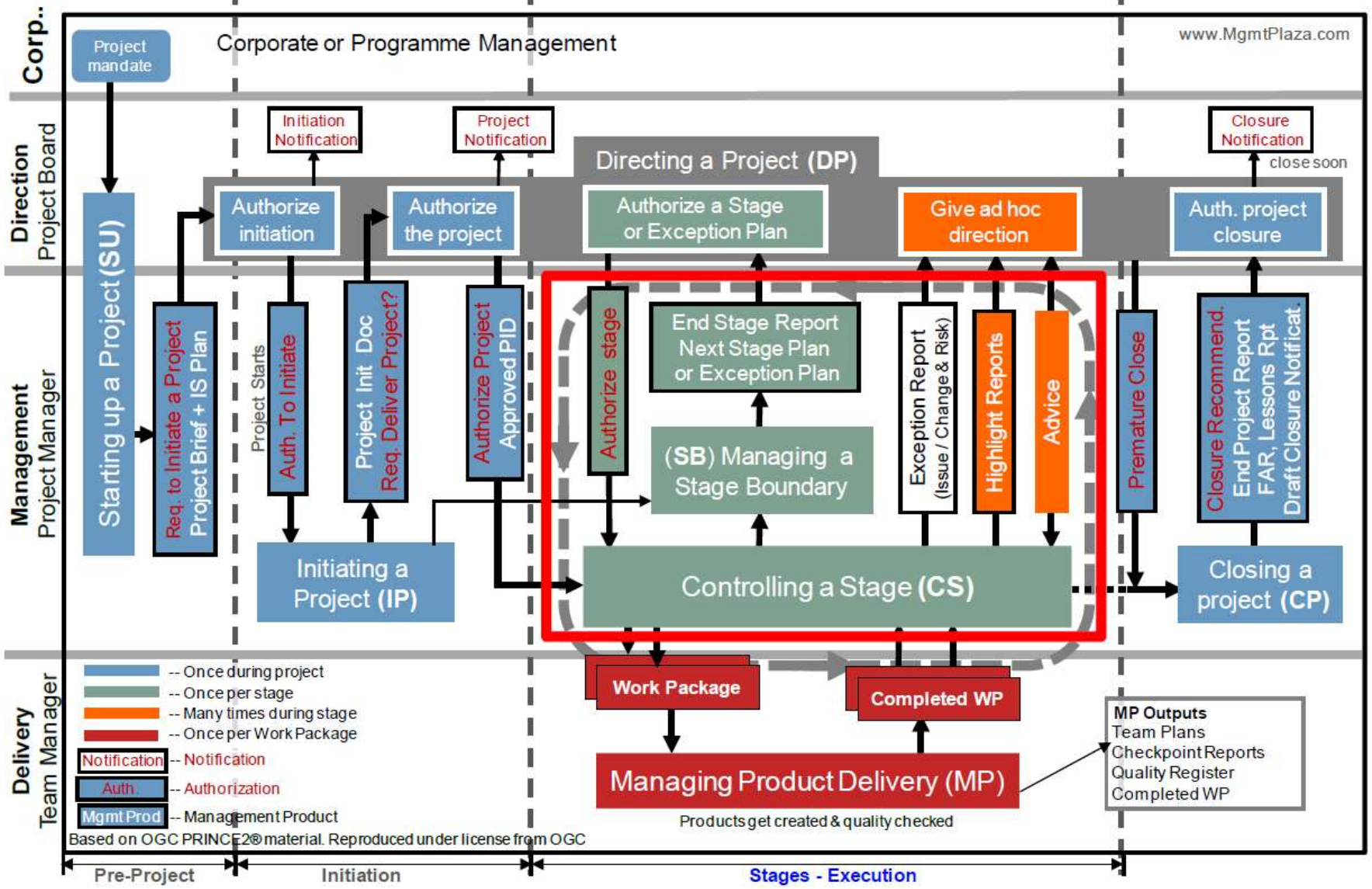
PRINCE2
Detailed diagram



PRINCE2
Detailed diagram

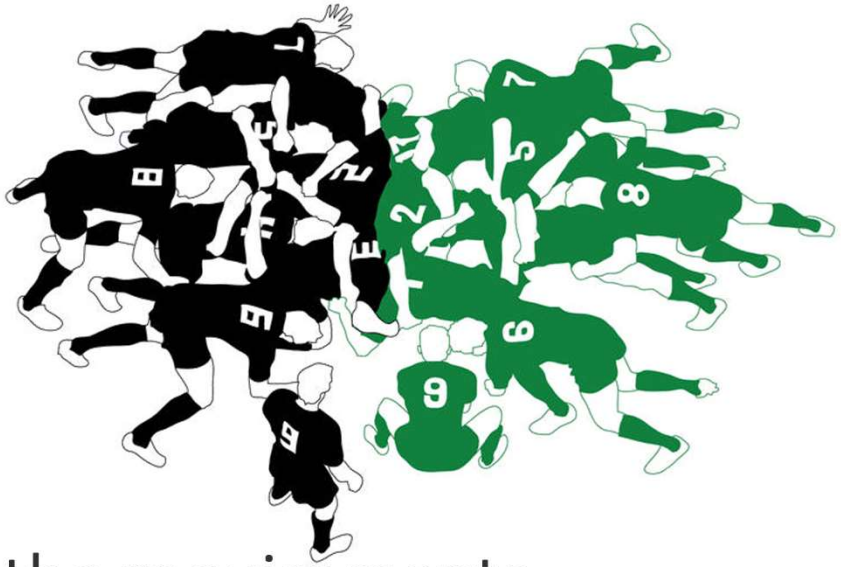


PRINCE2
Detailed diagram



Scrum
Features

- Iterative
- Incremental
- Agile
- Fast deliveries
- Adaptability to changes
- Open to the volatility of the requirements



Scrum
Roles

Product owner

Determines what is going to be done in the product backlog and what the priorities are

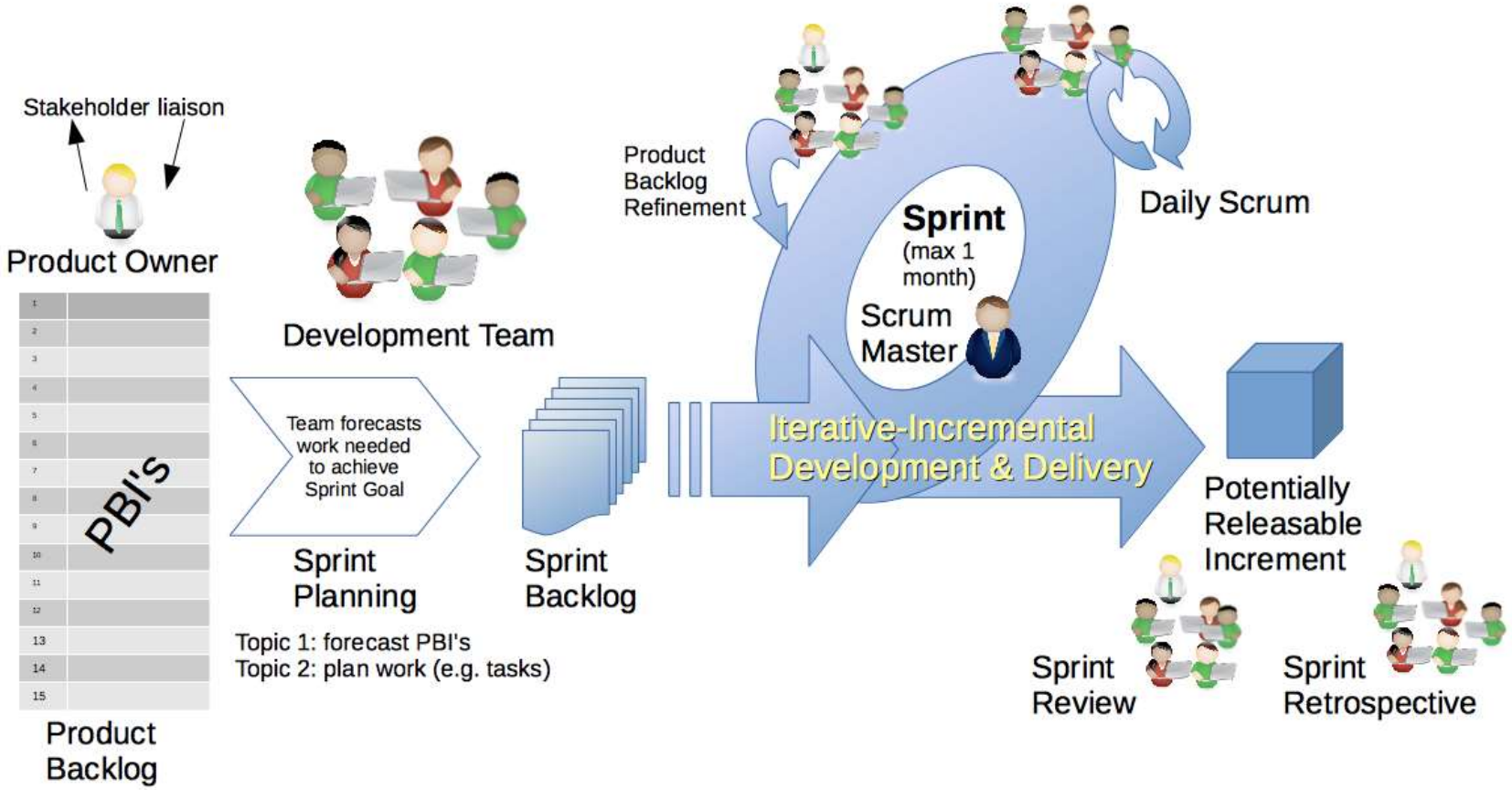
Scrum master

Provides resources and manages meetings

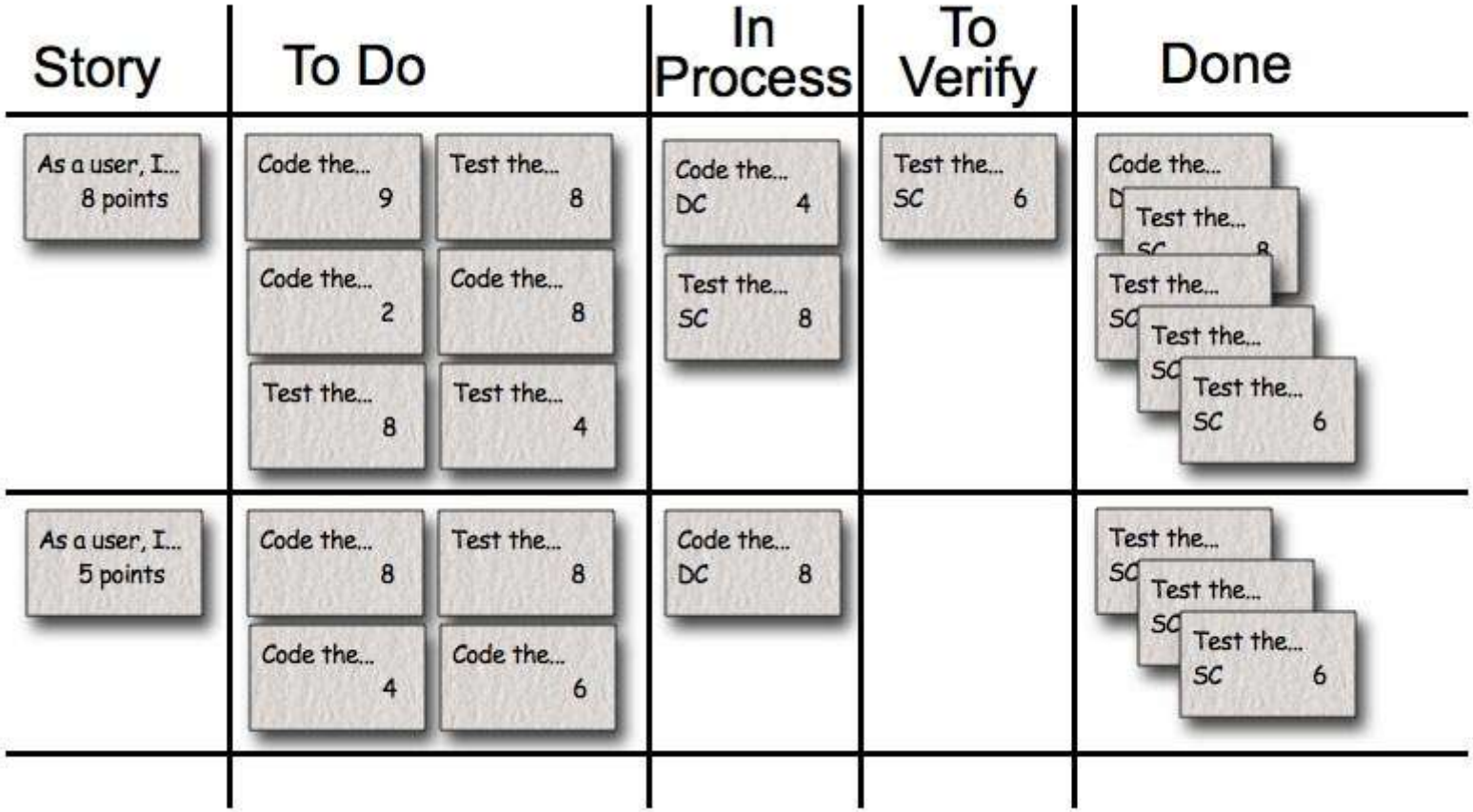
Developers and testers

Develop and test

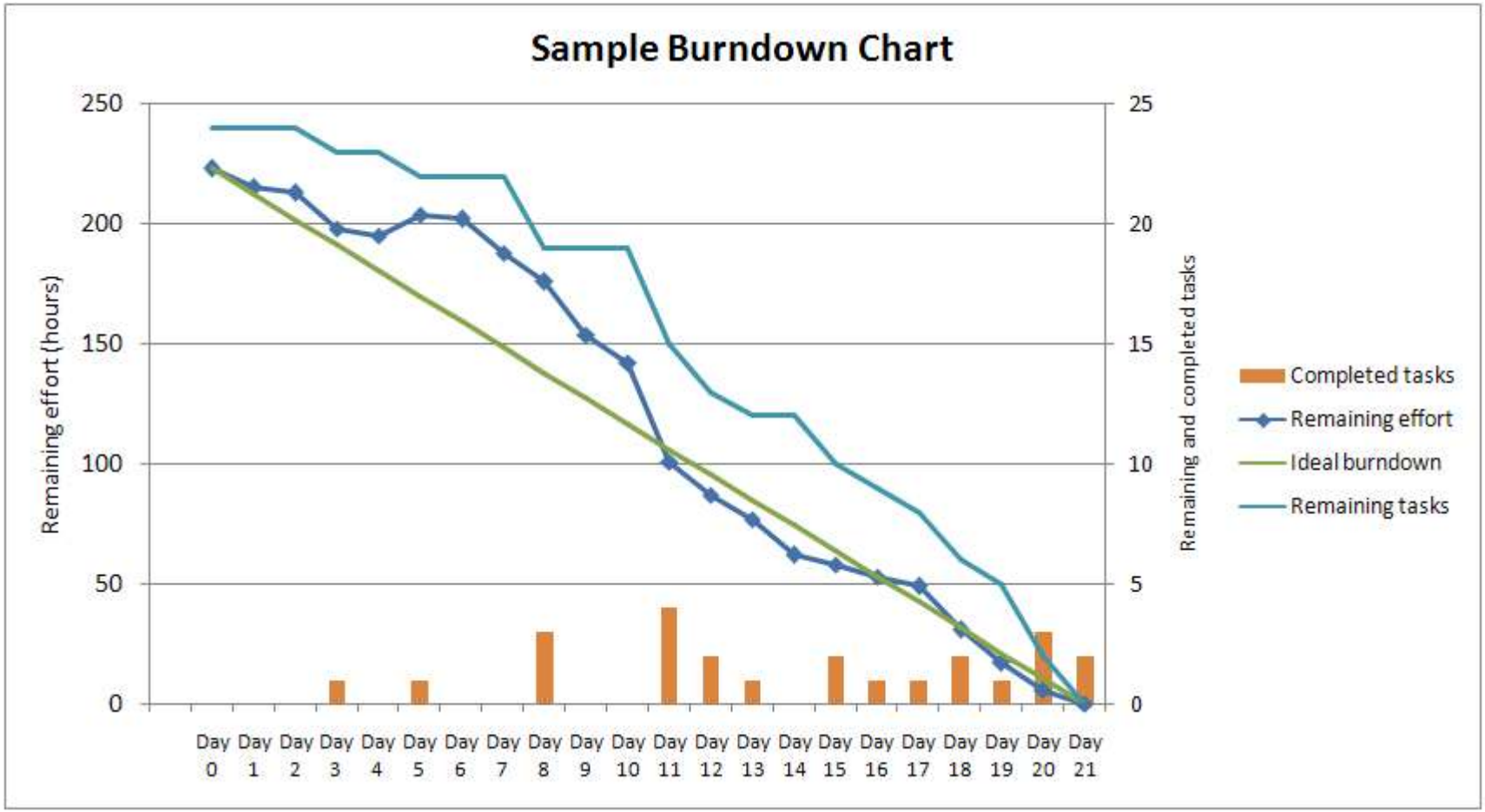
Scrum
General view



Scrum
Task Board



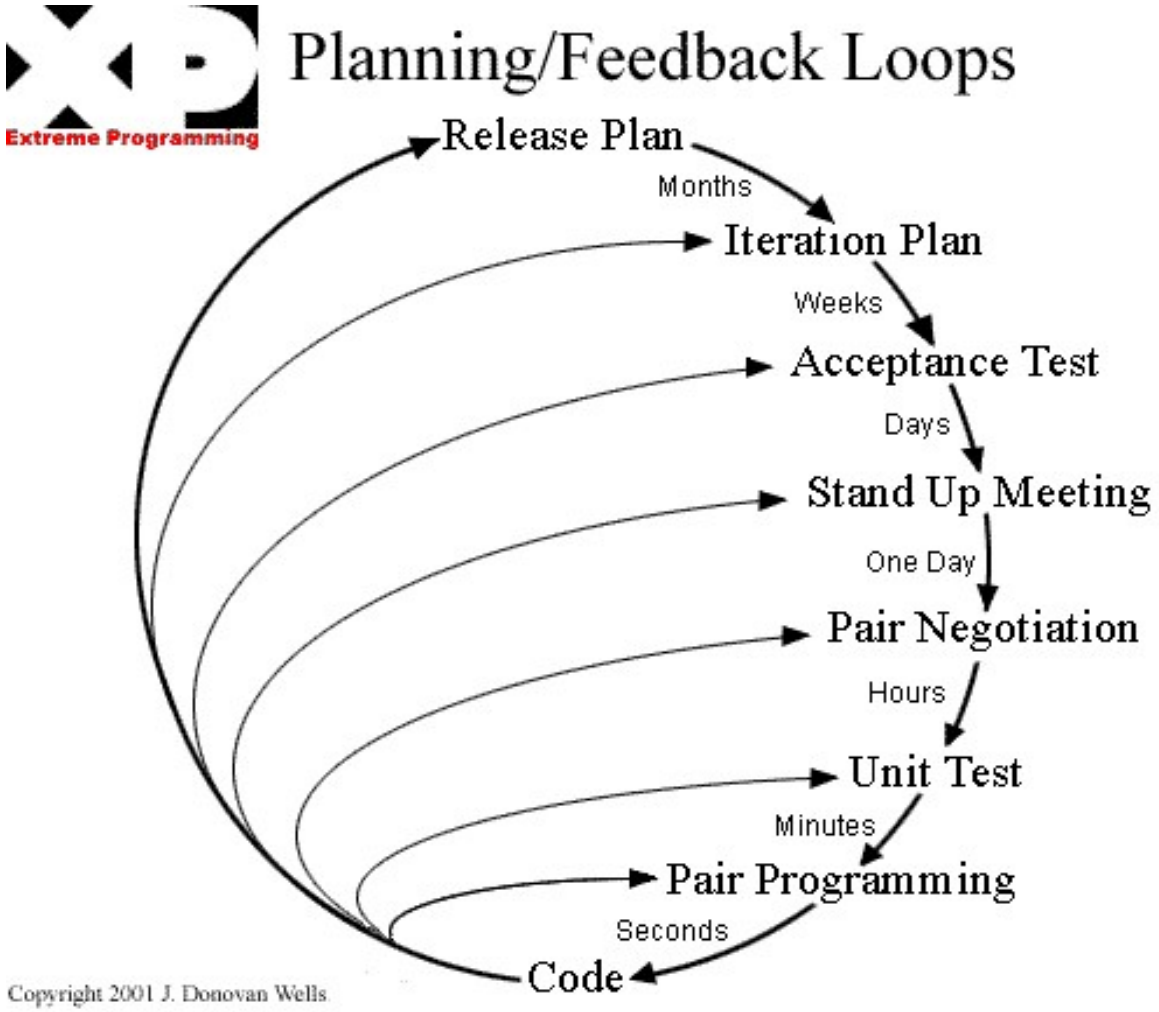
Scrum
Burndown chart



Management methodologies
Classical vs Scrum

	Business Owner	Customers	Project Manager	Product Owner	Scrum Master	The Team
Typical role type	Command-and-control	Receives products	Command-and-control	Collaboration	Protection	Execution
Responsibility	Deliver project	Consume products	Manage project on behalf of Business Owner Accountable to Business Owner for the whole project	Deliver products for customers	Own the process for delivery of products	Build products for customers
Project-specific management tasks	Manage the project manager	None	Manage all internal-aspects of the project	Create the product backlog and by implication the release plan and release schedule	Maintain project metrics: burn-down chart showing how fast we're producing	• Self-manage • assigning work • estimating work • track task status
Activities	Governance	• Give input into project • Articulate needs & wants • Understand what is of-value and what is not	• Assign activities • Manage the team • Manage budget • Manage risks • Control scope • Single point of contact for the project • Single point of contact for the team • Resolve conflict	• Customer – proxy • Prioritise activities to deliver products	• Keep everyone to the agreed Agile rules • Scrum meetings • Sprint planning facilitation • Analyse & remove impediments to product delivery • Assist team to be self-organising	• Self-manage • Assess value • Analysis • Build
Ethos	Deliver the project	Give it to me now	On-time. On-budget	Does this add-value?	Protect the team	Deliver early and often
Involvement	Governance	Consultative	Direct work	Understand value of products on behalf	Coaching – tasks to deliver products	Execute work

Extreme Programming
General view



Lean
Principles and wastes

Eliminate waste

Amplify learning

Decide as late as possible

Deliver as fast as possible

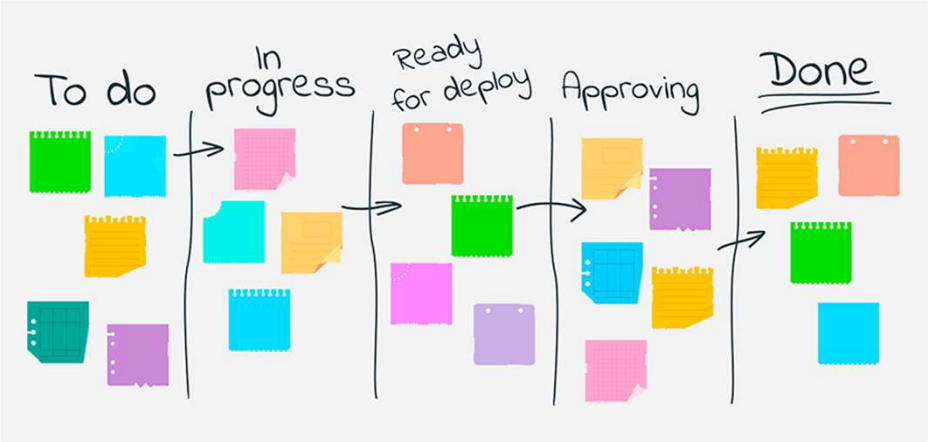
Empower the team

Build integrity in

See the whole

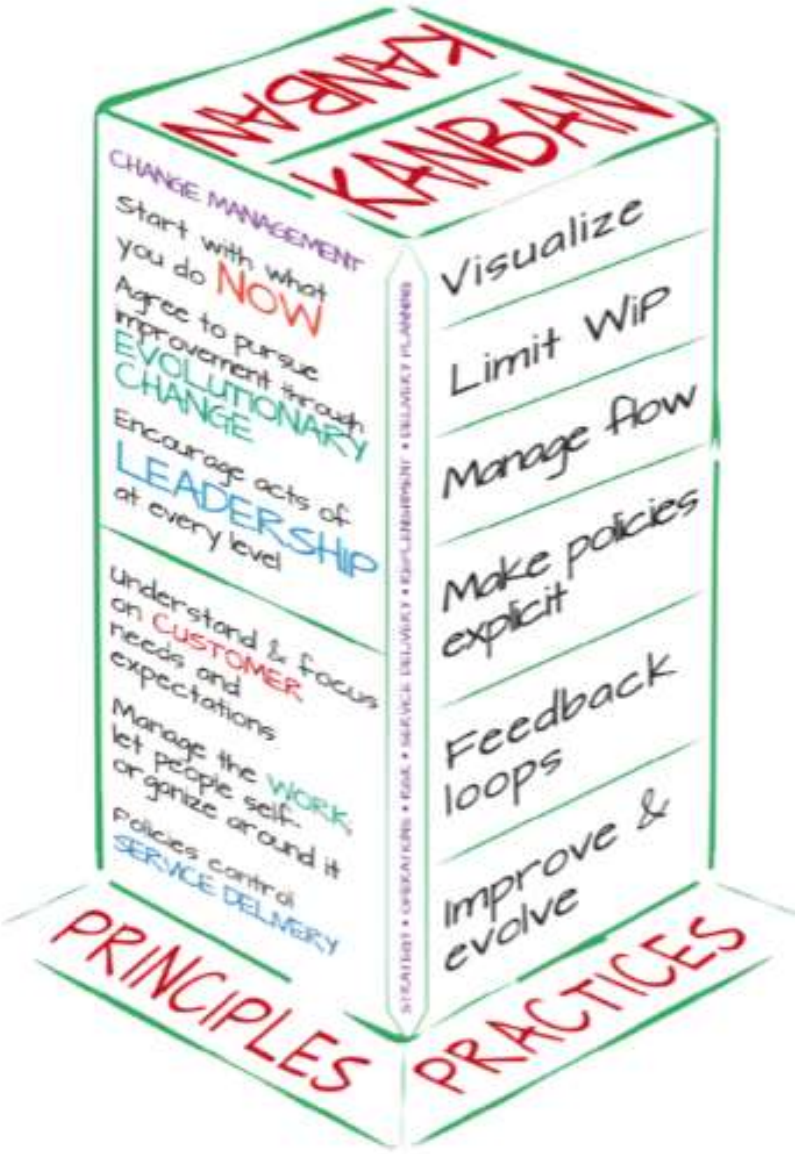
http://knowledgeblob.com/agile/lean-software-development/

Kanban
Principles and practices



看板

カンバン



PMBOK
Introduction

PMI (Project Management Institute)

http://www.pmi.org

PMBOK (**Project Management Body of Knowledge**)

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

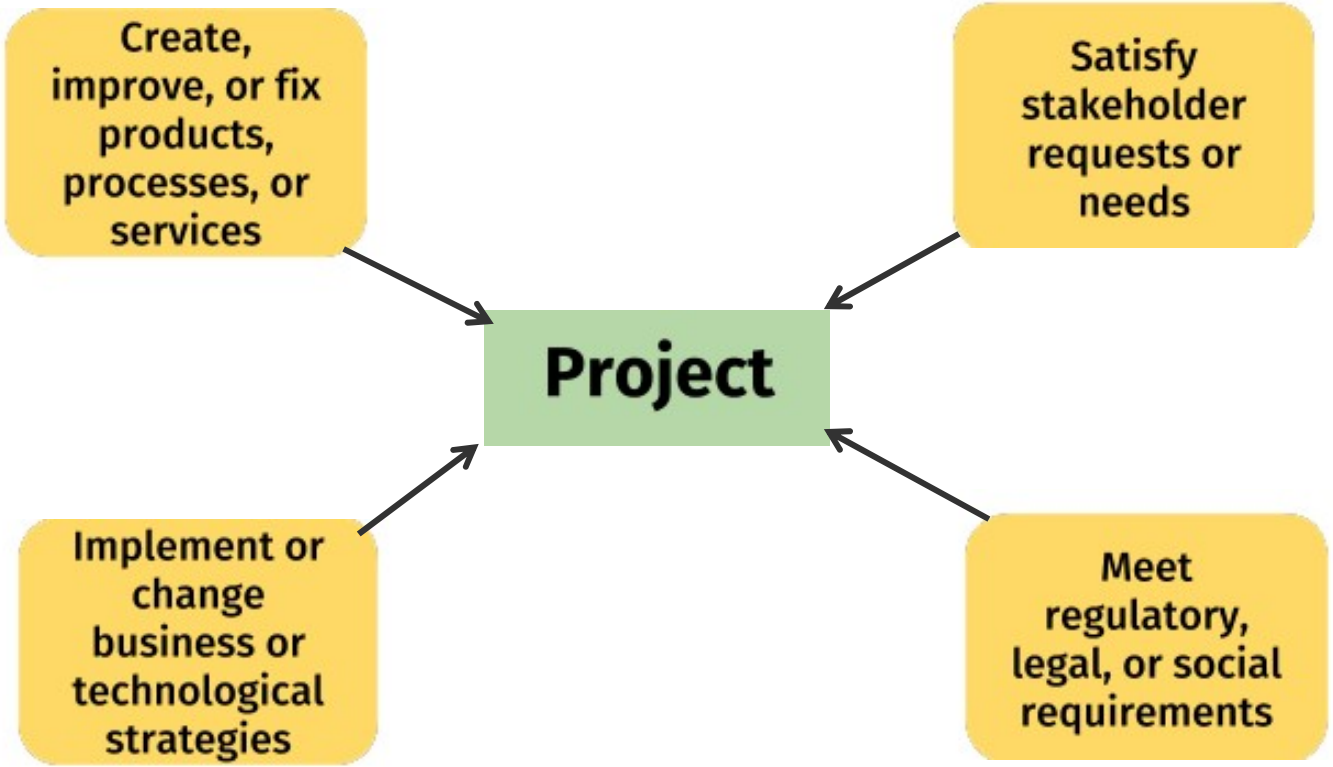
PMBOK
Project

- **Unique product, service, or result.** Projects are undertaken to fulfill objectives by producing deliverables.
- An objective is defined as an outcome toward which work is to be directed, a strategic position to be attained, a purpose to be achieved, a result to be obtained, a product to be produced, or a service to be performed.
- A deliverable is defined as any unique and verifiable product, result, or capability to perform a service that is required to be produced to complete a process, phase, or project.
- Deliverables may be tangible or intangible.

PMBOK
Project

- **Temporary endeavor.** The temporary nature of projects indicates that a project has a definite beginning and end.
- Temporary does not necessarily mean a project has a short duration.

PMBOK
Project initiation context



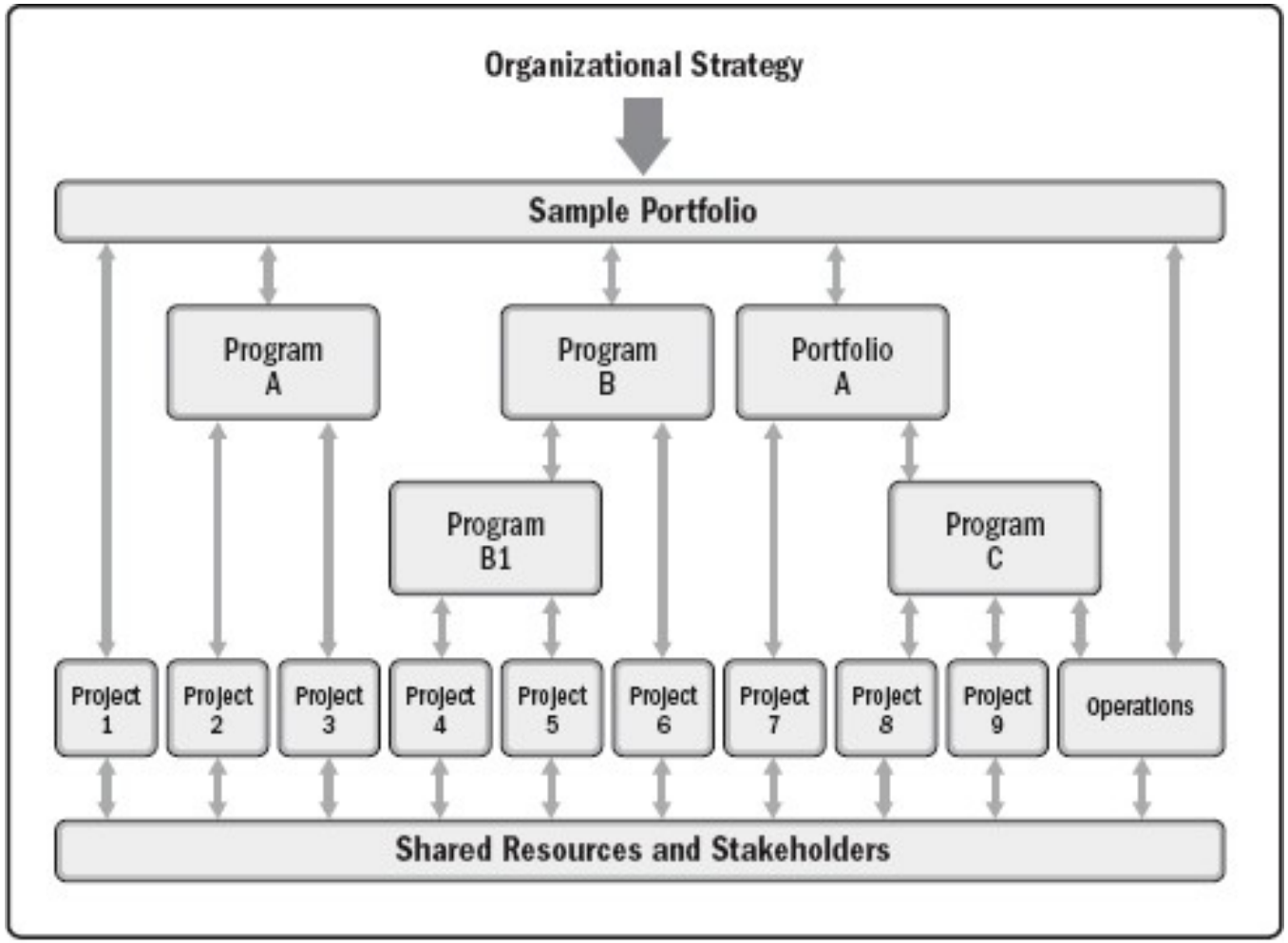
PMBOK
Project / Program / Portfolio

- A project may be managed in three separate scenarios: as a stand-alone project (outside of a portfolio or program), within a program, or within a portfolio.
- A program is defined as a group of related projects, subsidiary programs, and program activities managed in a coordinated manner to obtain benefits not available from managing them individually. Programs are not large projects. A very large project may be referred to as a megaproject.
- A portfolio is defined as projects, programs, subsidiary portfolios, and operations managed as a group to achieve strategic objectives.

PMBOK
Project / Program / Portfolio

- Program and project management focus on doing programs and projects the “right” way.
- Portfolio management focuses on doing the “right” programs and projects.

PMBOK
Project / Program / Portfolio



PMBOK

Components in the life cycle of a project

Project life cycle	The series of phases that a project passes through from its start to its completion.
Project phase	A collection of logically related project activities that culminates in the completion of one or more deliverables.
Phase gate	A review at the end of a phase in which a decision is made to continue to the next phase, to continue with modification, or to end a program or project.
Project management processes	A systematic series of activities directed toward causing an end result where one or more inputs will be acted upon to create one or more outputs.
Project Management Process Group	A logical grouping of project management inputs, tools and techniques, and outputs. The Project Management Process Groups include Initiating, Planning, Executing, Monitoring and Controlling, and Closing. Project Management Process Groups are not project phases.
Project Management Knowledge Area	An identified area of project management defined by its knowledge requirements and described in terms of its component processes, practices, inputs, outputs, tools, and techniques.

PMBOK

Components in the life cycle of a project

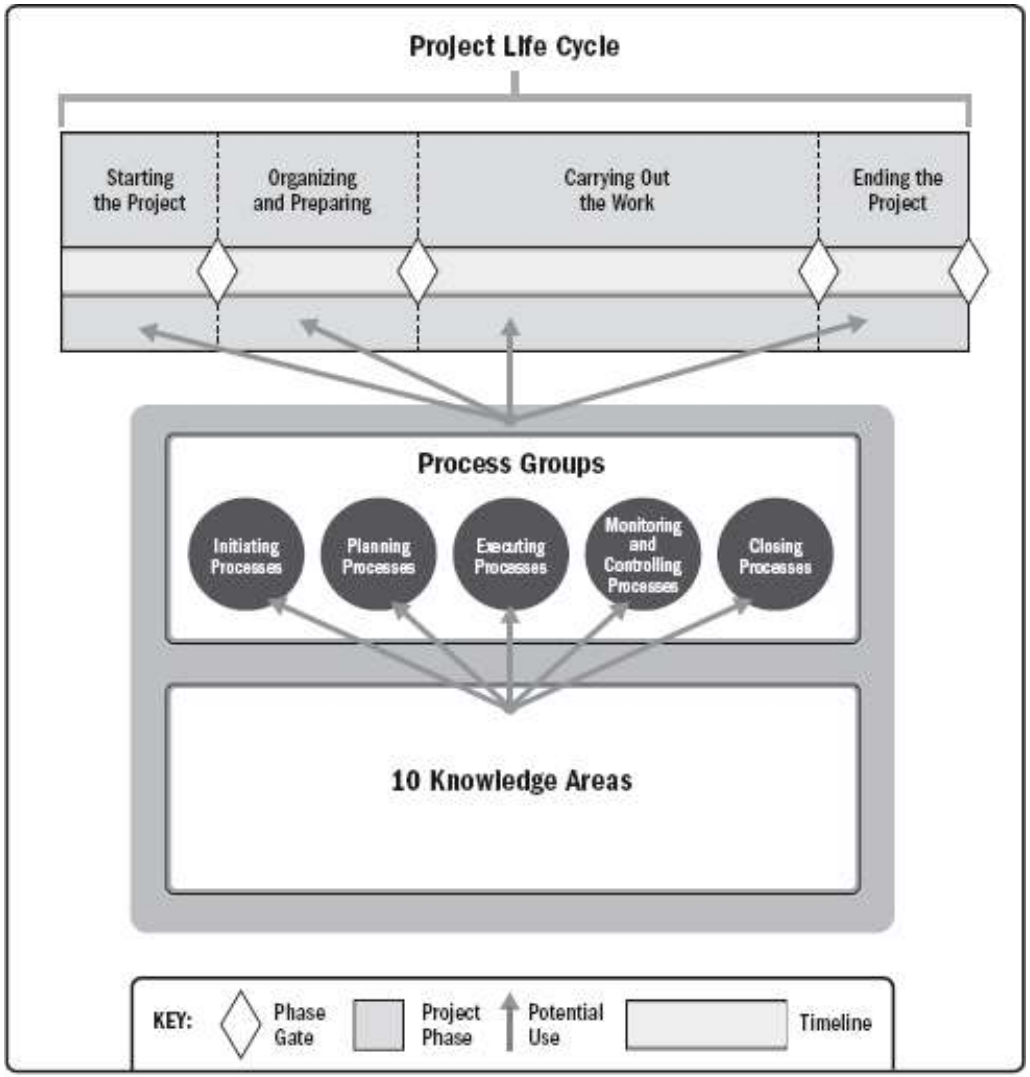
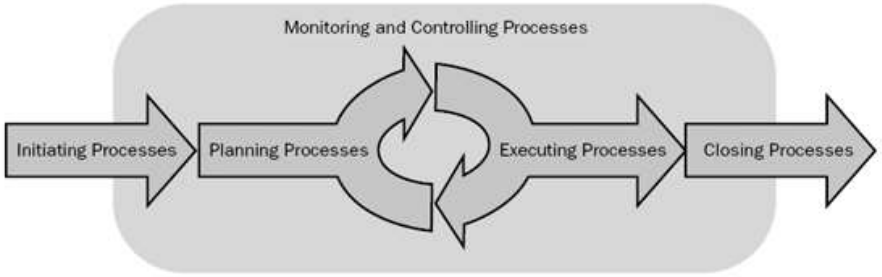
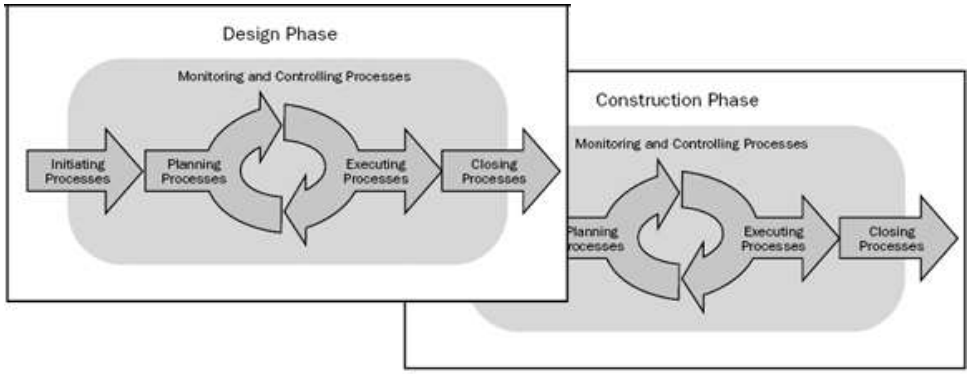
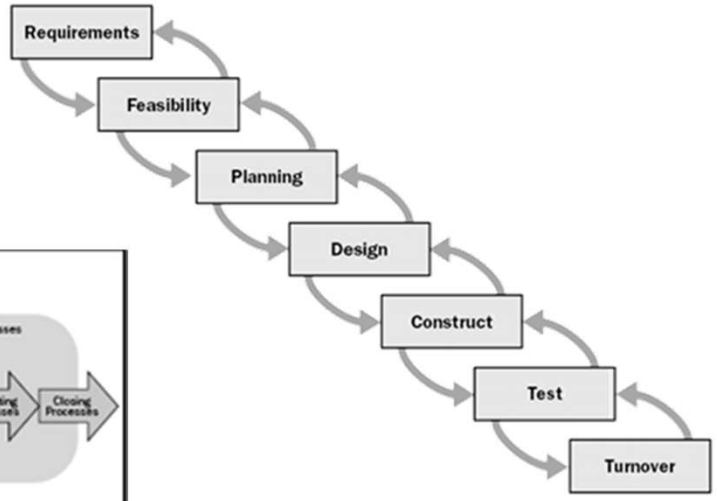


Figure 1-5. Interrelationship of *PMBOK® Guide* Key Components in Projects

PMBOK
Phases of a project







PMBOK
Process groups

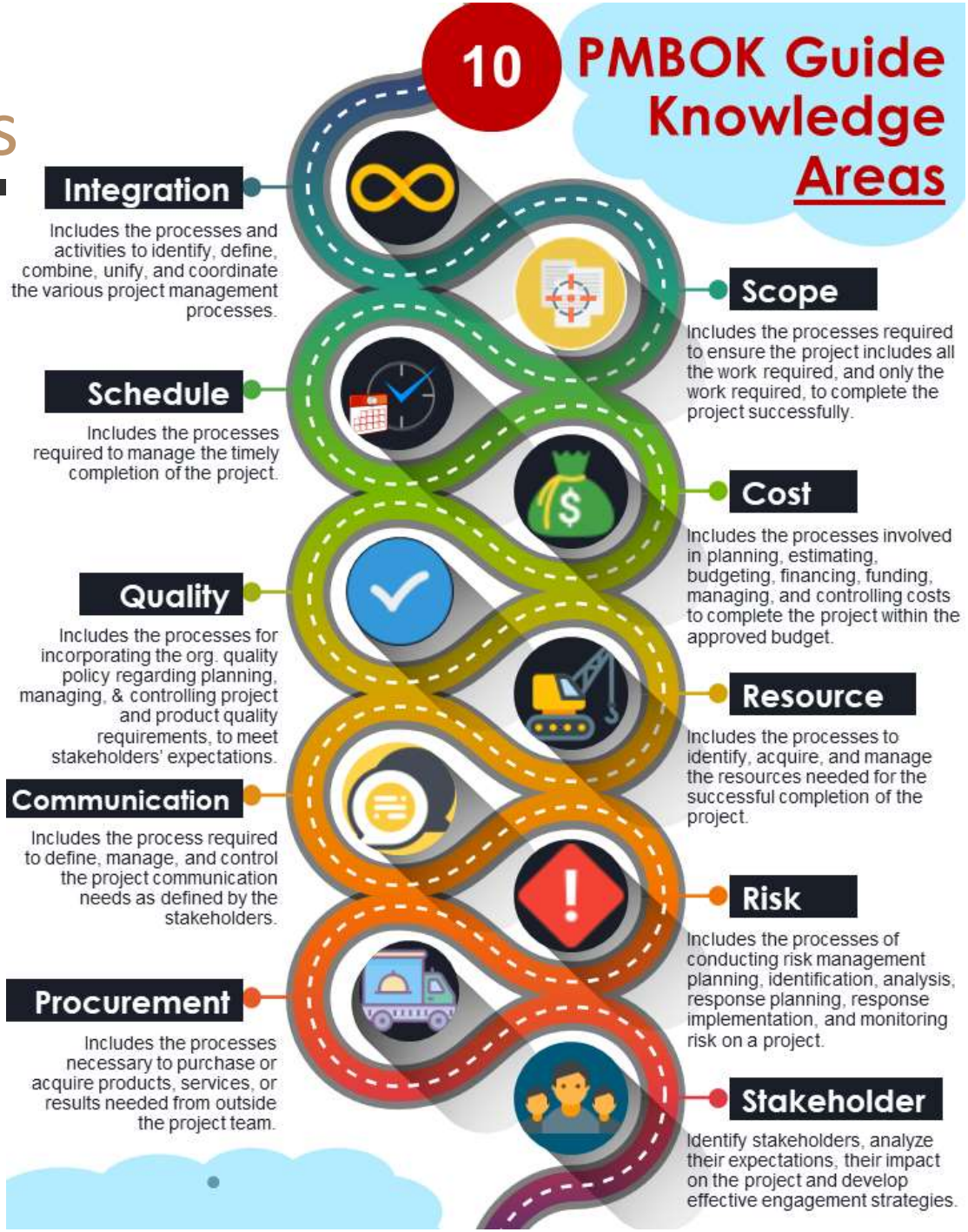
A Project Management Process Group is a logical grouping of project management processes to achieve specific project objectives. Process Groups are independent of project phases. Project management processes are grouped into the following five Project Management Process Groups:

- **Initiating Process Group.** Those processes performed to define a new project or a new phase of an existing project by obtaining authorization to start the project or phase.
- **Planning Process Group.** Those processes required to establish the scope of the project, refine the objectives, and define the course of action required to attain the objectives that the project was undertaken to achieve.
- **Executing Process Group.** Those processes performed to complete the work defined in the project management plan to satisfy the project requirements.
- **Monitoring and Controlling Process Group.** Those processes required to track, review, and regulate the progress and performance of the project; identify any areas in which changes to the plan are required; and initiate the corresponding changes.
- **Closing Process Group.** Those processes performed to formally complete or close the project, phase, or contract.

PMBOK
Process types

- The number of process iterations and interactions between processes varies based on the needs of the project. Processes generally fall into one of three categories:
- **Processes used once or at predefined points in the project.** The processes *Develop Project Charter and Close Project or Phase* are examples.
- **Processes that are performed periodically as needed.** The process *Acquire Resources* is performed as resources are needed. The process *Conduct Procurements* is performed prior to needing the procured item.
- **Processes that are performed continuously throughout the project.** The process *Define Activities* may occur throughout the project life cycle, especially if the project uses rolling wave planning or an adaptive development approach. Many of the monitoring and control processes are ongoing from the start of the project, until it is closed out.

PMBOK
Knowledge areas



PMBOK
Knowledge areas

- **Project Integration Management.** Includes the processes and activities to identify, define, combine, unify, and coordinate the various processes and project management activities within the Project Management Process Groups.
- **Project Scope Management.** Includes the processes required to ensure the project includes all the work required, and only the work required, to complete the project successfully.
- **Project Schedule Management.** Includes the processes required to manage the timely completion of the project.
- **Project Cost Management.** Includes the processes involved in planning, estimating, budgeting, financing, funding, managing, and controlling costs so the project can be completed within the approved budget.

PMBOK
Knowledge areas

- **Project Quality Management.** Includes the processes for incorporating the organization's quality policy regarding planning, managing, and controlling project and product quality requirements, in order to meet stakeholders' expectations.
- **Project Resource Management.** Includes the processes to identify, acquire, and manage the resources needed for the successful completion of the project.
- **Project Communications Management.** Includes the processes required to ensure timely and appropriate planning, collection, creation, distribution, storage, retrieval, management, control, monitoring, and ultimate disposition of project information.
- **Project Risk Management.** Includes the processes of conducting risk management planning, identification, analysis, response planning, response implementation, and monitoring risk on a project.

PMBOK
Knowledge areas

- **Project Procurement Management.** Includes the processes necessary to purchase or acquire products, services, or results needed from outside the project team.
- **Project Stakeholder Management.** Includes the processes required to identify the people, groups, or organizations that could impact or be impacted by the project, to analyze stakeholder expectations and their impact on the project, and to develop appropriate management strategies for effectively engaging stakeholders in project decisions and execution.

Processes according to group and area	Initiating	Planning	Executing	Monitoring and Controlling	Closing	
Integration Management	Develop Project Charter	Develop Project Management Plan	Direct and Manage Project Work Manage Project Knowledge	Monitor and Control Project Work Perform Integrated Change Control	Close Project or Phase	7
Scope Management		Plan Scope Management Collect Requirements Define Scope Create WBS		Validate Scope Control Scope		6
Schedule Management		Plan Schedule Management Define Activities Sequence Activities Estimate Activity Durations Develop Schedule		Control Schedule		6
Cost Management		Plan Cost Management Estimate Costs Determine Budget		Control Costs		4
Quality Management		Plan Quality Management	Manage Quality	Control Quality		3
Resource Management		Plan Resource Management Estimate Activity Resources	Acquired Resources Develop Team Manage Team	Control Resources		6
Communications Management		Plan Communications Management	Manage Communications	Monitor Communications		3
Risk Management		Plan Risk Management Identify Risks Perform Qualitative Risk Analysis Perform Quantitative Risk Analysis Plan Risk Responses	Implement Risk Responses	Monitor Risks		7
Procurement Management		Plan Procurement Management	Conduct Procurements	Control Procurements		3
Stakeholder Management	Identify Stakeholders	Plan Stakeholder Engagement	Manage Stakeholder Engagement	Monitor Stakeholder Engagement		4
	2	24	10	12	1	**49**

PMBOK
Data / Information / Reports

- **Work performance data.** The raw observations and measurements identified during activities performed to carry out the project work. Examples include reported percent of work physically completed, quality and technical performance measures, start and finish dates of schedule activities, number of change requests, number of defects, actual costs, actual durations, etc.
- **Work performance information.** The performance data collected from various controlling processes, analyzed in context and integrated based on relationships across areas. Examples of performance information are status of deliverables, implementation status for change requests, and forecast estimates to complete.
- **Work performance reports.** The physical or electronic representation of work performance information compiled in project documents, which is intended to generate decisions or raise issues, actions, or awareness. Examples include status reports, memos, justifications, information notes, electronic dashboards, recommendations, and updates.

PMBOK
Responsibility assignment matrix

R	*Responsible*	Those who do the work to complete the task. There is at least one role with a participation type of *responsible*, although others can be delegated to assist in the work required (see also *RASCI* below for separately identifying those who participate in a supporting role)
A	*Accountable*	The one ultimately answerable for the correct and thorough completion of the deliverable or task, the one who ensures the prerequisites of the task are met and who delegates the work to those *responsible*. In other words, an *accountable* must sign off (approve) work that *responsible* provides. There **must** be only one *accountable* specified for each task or deliverable.
C	*Consulted*	Those whose opinions are sought, typically subject-matter experts; and with whom there is two-way communication.
I	*Informed*	Those who are kept up-to-date on progress, often only on completion of the task or deliverable; and with whom there is just one-way communication.

RACI Chart	Person				
Activity	Ann	Ben	Carlos	Dina	Ed
Create charter	A	R	I	I	I
Collect requirements	I	A	R	C	C
Submit change request	I	A	R	R	C
Develop test plan	A	C	I	I	R

R = Responsible A = Accountable C = Consult I = Inform