

The Smart Manager *Series* (#2)

Project Management

**Key principles
&
Tools**

Survival Kit

August 2018



**Smart Pharma
Consulting**

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Introduction

This Survival Kit reviews key principles and tools to manage projects efficiently

- The purpose of this document is to review:

- Clearly
- Precisely
- Concisely

the key principles and tools that enable to manage projects in an effective and efficient way

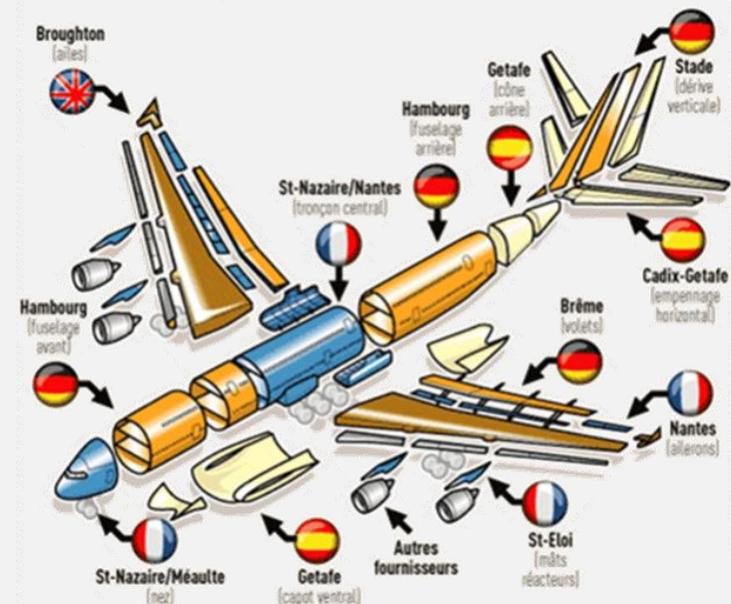
- These principles and tools can be useful to manage both simple and complex projects for personal or professional purposes
- The most important steps of the project management will be illustrated

Project Definition (1/2)

A project combines activities, carried out within a set time frame, to achieve a defined result

- The term “project” refers to a number of non repetitive and temporary activities that are carried out to produce:
 - A product
 - A service
 - A unique result
- A project can:
 - Last from a couple of hours to several years
 - Involve one or thousands of people
 - Cost from a few to billions of euros
 - Be of a professional or personal nature

Illustration of a complex project



Project Definition (2/2)

A project has 3 components: its objective, a schedule, and the required resources to complete it

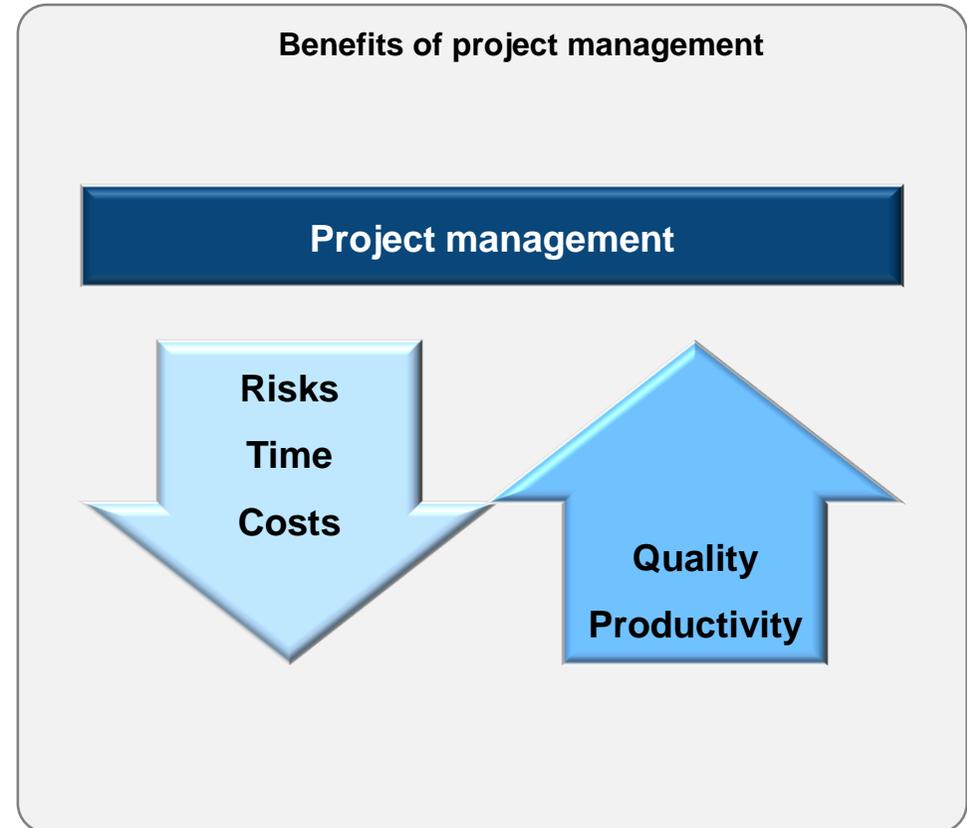
- A project can be defined by three components:
 - Its **objective**: purpose and desired outcome
 - The **schedule**: timetable and milestones, including its start and completion dates
 - The **resources** available to conduct the project: people, technical and financial resources
- The 3 components impact the quality of execution and the outcome of the project
- They are intertwined and influence each other:
 - A change in desired outcome will impact the cost and schedule
 - A shortening of the deadline could have an impact on costs and the quality of the outcome
 - A reduction in the budget can modify the quality of the outcome and the deadline



Project Management Benefits

The proper management of projects improves their probability of success

- Using a project management methodology allows a project manager to:
 - Set adequate expectations for the project
 - Improve the quality of deliverables
 - Increase productivity / efficiency
 - Reduce scope creep
 - Avoid cost overruns
 - Meet the agreed deadlines
 - Prevent risks
 - Promote communication between the project team and the project stakeholders
 - Build on experience
 - Reduce the number of projects that fail



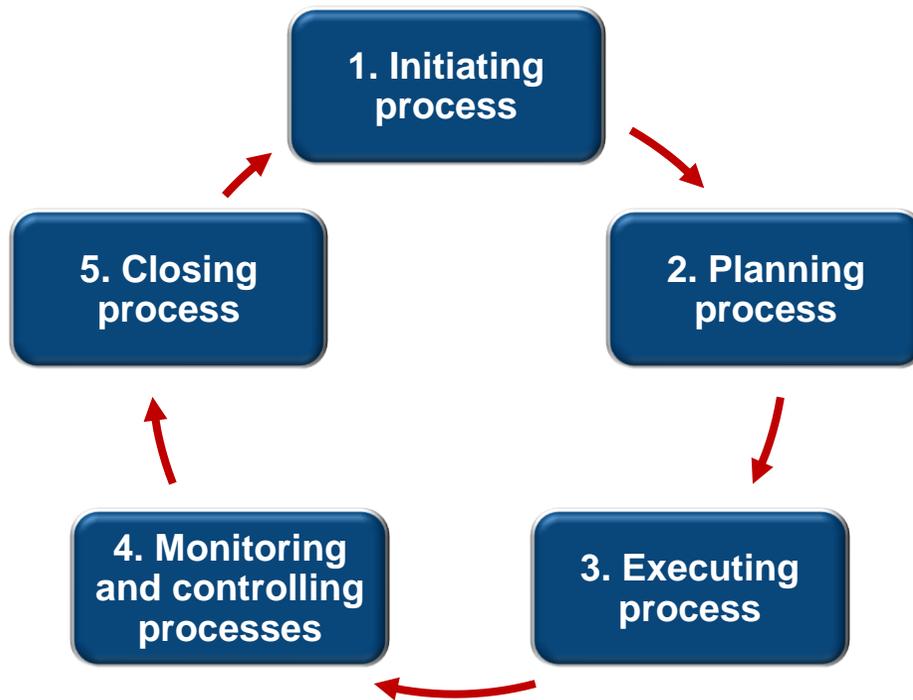
Key Principles of Project Management

These questions will help ensure the proper unfolding of a project and limit the risk of failure

- 1 What is the objective? What will be the project outcome(s)?
- 2 How can this objective be achieved? What is the action plan?
- 3 What are the required resources in terms of time and money?
- 4 What are the risks associated with the project?
- 5 How will the progress and success of the project be measured?

Key Steps of a Project

Every project goes through five different steps



1. The initiating process includes a **cost-benefit analysis** and evaluating the **feasibility** of the project from a **technical** and **resource** point of view
2. The planning process **ensures** a **smooth execution** and **increases** the **chance** of **success**
3. The executing process is the part where **works get done** and where people skills and team-work are most important
4. The implementation of the project needs to be **monitored** and **controlled** to **ensure** that **everything** is carried out **according to the plan**
5. The closing process comes after the project has been completed and is **meant to build** on the **project experience**

Step 1: Initiating Process

The initiating process avoids pursuing projects that are bound to fail

The initiating process answers two key questions:

1. Should the project be done?

- Are the expected benefits worth the expected costs of the project?
- Can the issue be approached in a better way?
- Can the expected outcome be achieved in a better way?

2. Can the project be done?

- Is the project technically feasible?
- Are the required resources (people, money, time) available?

Cost-benefit analysis

A **cost-benefit analysis** is a systematic process for calculating and comparing the costs and benefits of a project **to determine** if the project **should be undertaken** (benefits > costs) or to choose among several potential projects



Step 2: Planning Process: Introduction

Project planning will reduce risks and mistakes

The project management plan should include:

- An overview of the **reasons for the project** and a detailed description of **intended results**
- A list of all **constraints, assumptions** and **required works** related to the project
- A breakdown of the **roles** and **responsibilities** of the project management and team members
- A detailed project **schedule**
- **Resources needs** (personnel, funds, equipment, facilities, information, etc.)
- A description of how significant **risks** and **uncertainties** will be managed
- Plans for **project communications**
- Plans for ensuring **project quality**

A scope statement precisising the following points must be written:

- **Rationale:** how and why the project came to be, the business need addressed, the scope of work, how it will interfere with other activities
- **Objectives:** deliverables of the project
- **Scope description:** features and functions of the deliverables
- **Acceptance criteria:** process and criteria for accepting the completed deliverables
- **Constraints:** restrictions limiting what can be achieved, the manner and deadlines within which they can be achieved, and the cost of achieving it
- **Assumptions:** way in which uncertainty related to the project will be addressed

Step 2: Planning Process: Objectives & Constraints

Success will depend on the quality of objective set and the proper management of constraints

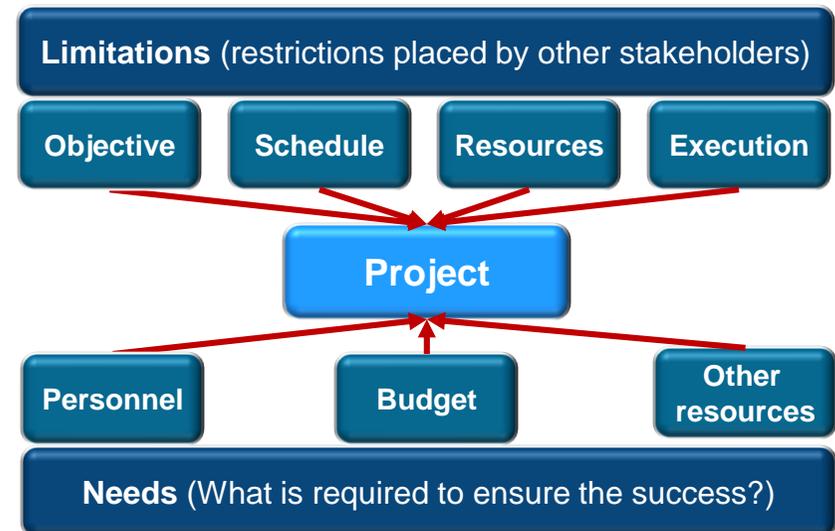
Objectives

The project objectives should be:

- **Brief** and **simple to understand** (no jargon)
- **Accepted** by the project stakeholders
- **Controllable**: the project team should be able to influence the success of each objective
- **SMART**:
 - **Specific**: clear and detailed target
 - **Measurable**: specified performance indicators¹
 - **Achievable**: challenging but attainable
 - **Rewarded**: benefits that people will get for attaining the set objective
 - **Time-bound**: including deadlines

Constraints

Every project must be achieved within a defined set of constraints influencing its duration, cost and quality



Sources: Smart Pharma Consulting

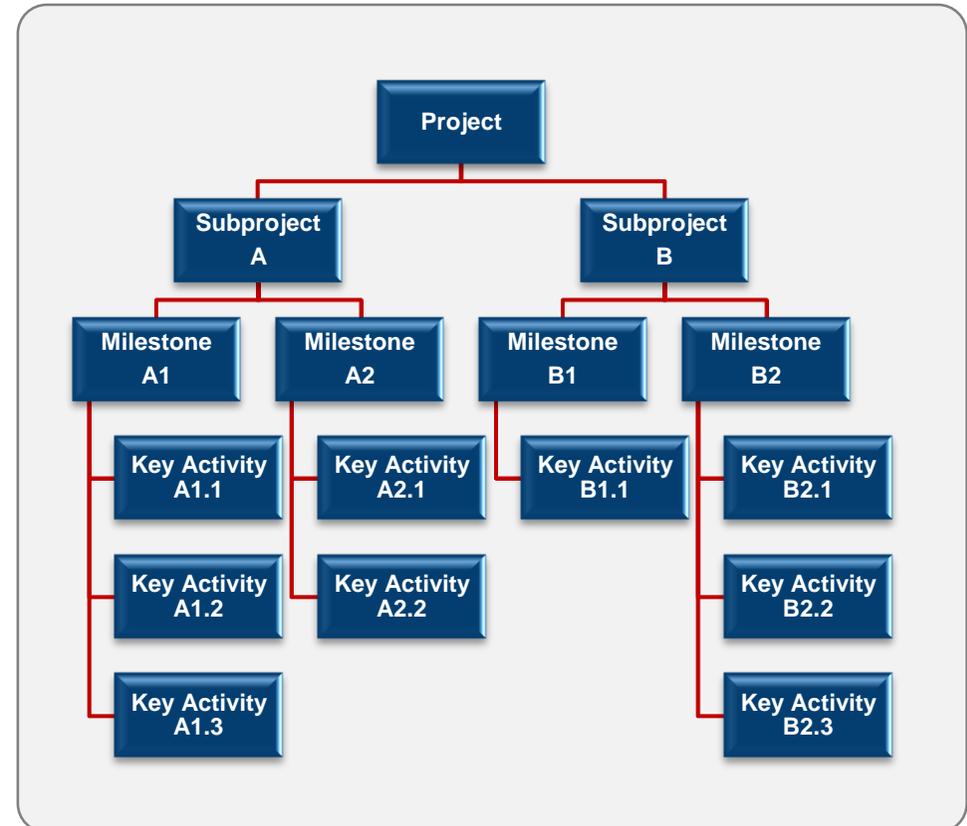
¹ Can be either quantitative or qualitative goals. What matters is that people define goals precisely enough to measure progress and the achievement

Step 2: Planning Process: Work Breakdown Structure

A WBS makes work sequences both identifiable and understood by breaking a project down

- A work breakdown structure (WBS) breaks down a full project into several manageable units:
 - **Subprojects**
 - **Milestones:** completion of an important set of work packages
 - **Key activities:** summary tasks
 - **Work packages:** tasks, activities, work elements

- A work breakdown structure (WBS) helps to:
 - Identify all the work that needs to be done
 - Logically organize work so that it can be scheduled
 - Assign work to team members
 - Identify the needed resources
 - Communicate what has to be done
 - Organize work using milestones



Step 2: Planning Process: Roles & Responsibilities

Roles & Responsibilities must be transparent and widely available for reference

- Roles depend on actions and activities assigned
- Each role is associated with some responsibilities
- Team members relate to each others as follows¹:
 - **Authority**: ability to make binding decisions
 - **Responsibility**: commitment to achieve results
 - **Accountability**: consequences of own performance
- Delegating involves transferring authority²
- Defining and sharing roles and responsibilities upfront can help improve performance and identify potential difficulties during a project
- A Responsibility Assignment Matrix (RAM) can be used to display the team roles and responsibilities:
 - A RAM depicts each project audience role in the performance of different project activities
 - There is no standard format for a RAM

Responsibility Assignment Matrix (RAM)

WBS code	Key activities and milestones	People			
		Project manager	Task Leader	Employee A	Employee B
3.1.	Design of a questionnaire	A	P		
3.2.	Look out for potential respondents			P	
3.3.	Carry out the interviews		A		P
3.4.	Summarize and analyze the answers	A	S, A	P	S

P = Primary responsibility
 S = Secondary responsibility
 A = Approval required

Sources: Smart Pharma Consulting

¹ Although authority can be transferred to another person, responsibility for the results can only be shared –
² Delegation involves risk as you are responsible for the consequences of someone else decisions

Step 2: Planning Process: Schedule – Introduction

The initial project schedule aims at determining the time it will take to complete the project

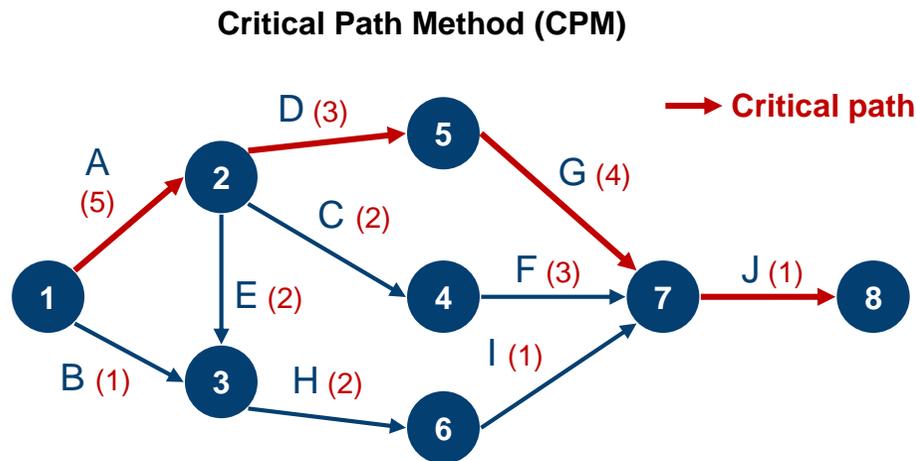
- Two pieces of information are needed to determine the amount of time required to complete a project:
 - **Sequence:** the order in which activities need to be performed
 - **Duration:** the time each activity will last
- Network diagrams can be used to illustrate the order in which project activities are to be performed:
 - Activities-on-arrow diagrams
 - Activities-on-node diagrams
- Network diagrams display:
 - Activities required to complete the project (i.e. work breakdown structure) and their dependencies
 - The time that each activity will take to complete
 - The milestones (or events) which are important but take no time and consume no resources mark the start or the end of one or more activities

Scheduling vocabulary

Critical path	A sequence of activities that takes the longest time to complete
Noncritical path	A sequence of activities in which some activities can be delayed without moving back the project completion date
Slack time/float	The maximum amount of time an activity can be delayed w/o moving back the completion date
Earliest start date	The earliest date an activity can be started
Earliest finish date	The earliest date an activity can be finished
Latest start date	The latest date an activity can be started without moving back project completion date
Latest finish date	The latest date an activity can be finished without moving back the project completion date

Step 2: Planning Process: Schedule – Activities-on-arrow Diagram

CPM displays the sequencing of activities and helps find the critical path of the project



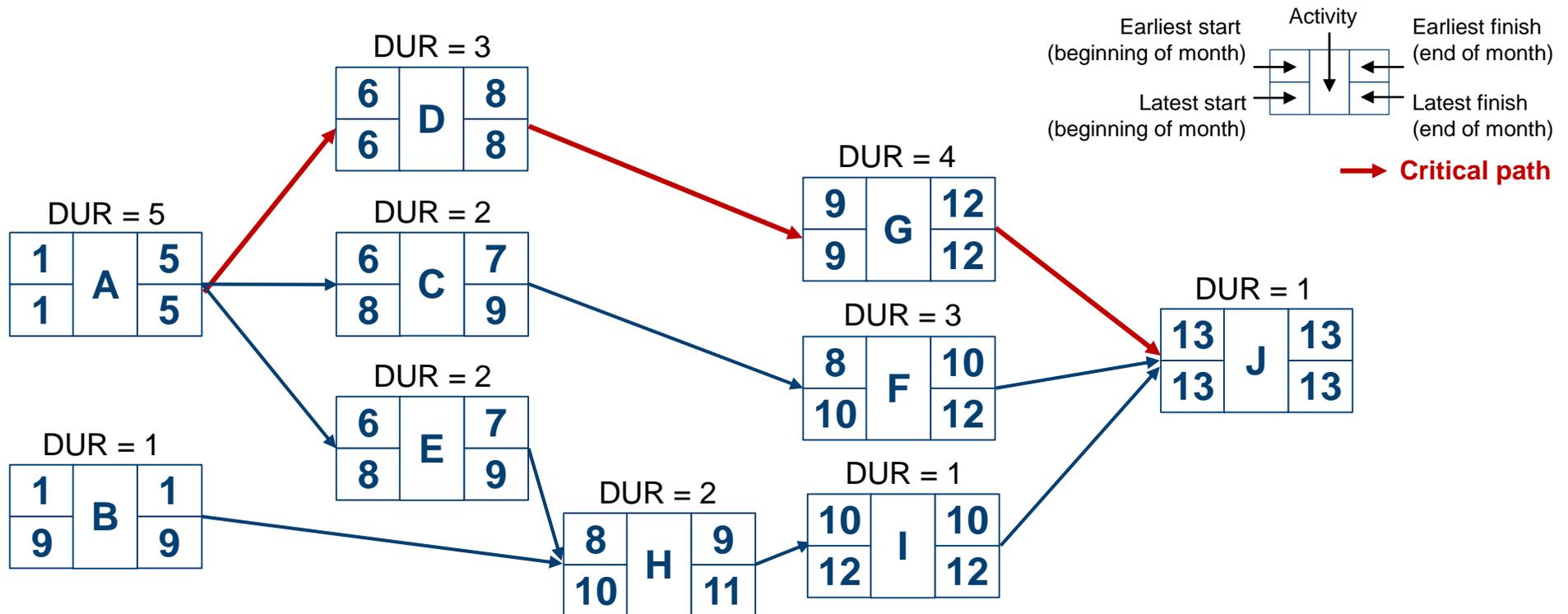
- The critical path is the path that takes the longest to complete (A-D-G-J)
- The time a project takes is equal to the time of its critical path (5+3+4+1), which in this case is 13 months if everything is done on schedule with no delays
- Other paths are not critical because they can waste some time without slowing the project (i.e. activity C can take up to two extra months and not hold up the project)

Activities

Activity	Description	Required Predecessor	Duration (months)
A	Product design	(None)	5
B	Market research	(None)	1
C	Production analysis	A	2
D	Product model	A	3
E	Sales brochure	A	2
F	Cost analysis	C	3
G	Product testing	D	4
H	Sales training	B, E	2
I	Pricing	H	1
J	Project report	F, G, I	1

Step 2: Planning Process: Schedule – Activities-on-node Diagram

The activities-on-node diagrams are more used than those displaying activities on the arrows

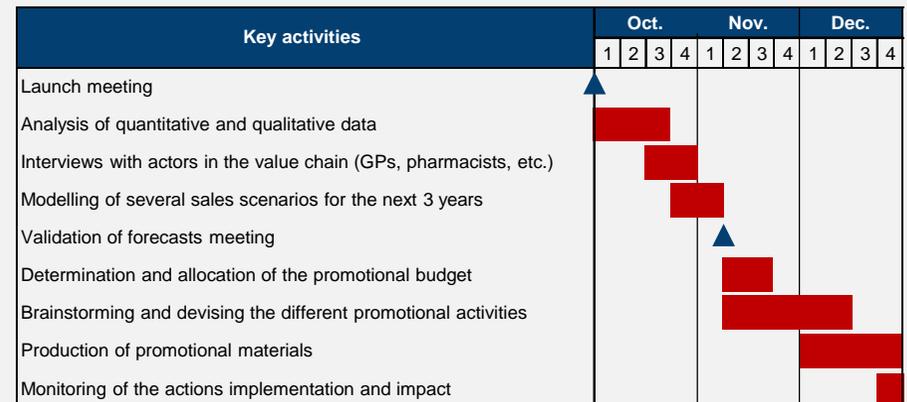


Step 2: Planning Process: Schedule – Gantt Chart

The Gantt chart allows to visualize the start and completion dates of a sequence of tasks

- The Gantt chart is a planning tool that displays the dates by which a series of activities should be completed as well as the expected duration of those activities
- To create a Gantt chart, it is previously necessary to have determined:
 - A list of all activities required to complete the project (i.e. the work breakdown structure)
 - The time that each activity will take to complete
 - The dependencies between the activities (i.e. some activities can't be started before others are finished)
 - The milestones (events)
- Gantt charts provide a good presentation tool for illustrating milestones and the planned duration of activities, however they provide less information than network diagrams

**Illustration of a Gantt chart
Marketing plan product X**



▲ Meeting
■ Planned duration

Step 2: Planning Process: Schedule – Human Resources Allocation

Matching people to the most suitable tasks can save time and increase the quality of the outcome

- Planning for the personnel needed for a project raises the probability of success by enabling the project manager to:
 - Ensure the best qualified people available are assigned to each task
 - Explain more effectively to team members what contribution to the project is expected from them
 - Develop more accurate and realistic schedules
 - Ensure that people are on hand when they're needed
 - Monitor resources expenditure to identify and address possible overruns or underruns
- A Skills Matrix can be used to display people proficiency in specified skills and knowledge, as well as their interest in working on assignments using these skills and knowledge

Skills Matrix

	Employee A			Employee B		
	Level of skill or knowledge	Level of responsibility applying it	Interest	Level of skill or knowledge	Level of responsibility applying it	Interest
Writing skills	0	2	0	2	1	1
Quantitative skills	3	3	1	1	1	0
Communication skills	2	1	1	3	2	1

Level of skill or knowledge	Level of responsibility applying the skill or knowledge	Interest
0 = no capability	1 = must work under supervision	0 = no interest in applying this skill or knowledge
1 = basic level	2 = can work independently with little or no direct supervision	1 = interested in applying this skill or knowledge
2 = intermediate level	3 = can manage others applying the skill or knowledge	
3 = advanced level		

Step 2: Planning Process: Budget

The planning phase budget is a more detailed version of the one calculated at project initiation

- Estimating a project costs is important for three key reasons:
 - It is a way to weigh the anticipated benefits vs. costs to see whether the project makes sense
 - It allows to determine whether the necessary funds are available to support the project
 - It serves as a guideline to help ensure that sufficient funds are available to complete the project
- A project costs can be divided into:
 - Direct costs on the project:
 - Salaries for team members
 - Specific materials, supplies, and equipment
 - Travel to perform work
 - Subcontracts that provide support¹
 - Indirect costs on the project:
 - Overhead costs²
 - General and administrative costs³

Detailed project estimates

Bottom-up approach

- Determine detailed cost estimates for each lowest-level activity/task
- Aggregate these estimates to obtain the total project budget estimates

Top-down approach

- Set a target budget for the entire project
- Apportion this budget among all Level 2 components in the WBS
- Apportion the budget for each of the Level 2 components among its Level 3 components

Sources: Smart Pharma Consulting

¹ Consultants, advertising agency, etc. – ² Office space rent, equipment, etc. – ³ Finance, accounting, etc.

Step 2: Planning Process: Communication

Effective communication is critical in that it ensures that everyone is on the same page

- Effective communication consists in:
 - Sharing the **right message**....
 - ... with the **right people**...
 - ... in a **timely manner**...
 - ... through the **right communication channels**

- Informative communication supports the following:
 - Continued buy-in and support from key audiences and team members
 - Prompt problem identification and decision-making
 - A clear project focus
 - Ongoing recognition of project achievements
 - Productive working relationships among team members

Communication Management Plan

It is a document that specifies all communications generated throughout the project. At a minimum, it should include:

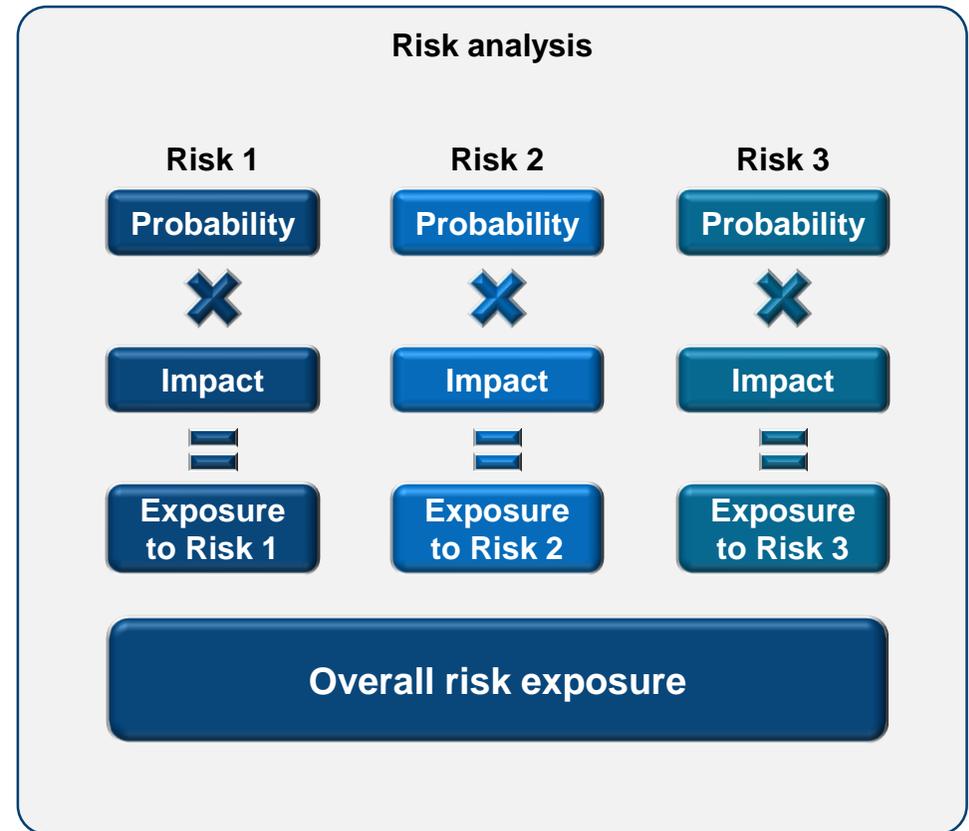
Target audience	The people whose information needs are addressed through the project communication
Information needs	The information that the target audience wants and/or needs
Information-sharing activity	The specific type of activity to be used to transmit information to the audience
Content	The specific data to be shared in the project communication
Frequency	When the information-sharing activity occurs (regular schedules vs. ad hoc)
Data collection	How and when the data for the report are collected

Step 2: Planning Process: Risk Assessment

Risks that could come up during the project should be identified, assessed and dealt with

- They are four ways to deal with a risk:
 - **Accept:** incur the chance of a negative impact
 - **Avoid:** adapt plans to circumvent the problem
 - **Mitigate:** reduce the impact through implementation of actions
 - **Transfer:** outsource the risk to a third party that is used to or prepared to manage the outcome

- When assessing how to deal with a risk, two criteria must be considered:
 - **Probability:** the likelihood that the risk will materialize
 - **Impact:** the consequences that will affect the project



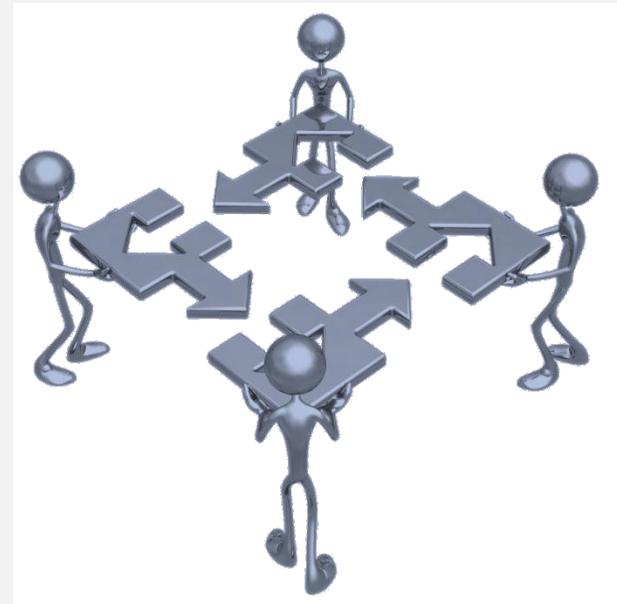
Step 3: Executing Process

The executing process is where works get done and people skills and team-work are key

The executing process can be split between:

- **The preparation phase**
 - Assigning people to all project roles
 - Introducing team members
 - Giving and explaining tasks to team members
 - Defining how the team will perform
 - Setting up necessary tracking systems
 - Announcing the project to the organization

- **The execution phase**
 - Doing the work that is in the plan
 - Assuring quality
 - Managing the team (assignment, review, etc.)
 - Developing the team (training and mentoring)
 - Sharing information



Step 4: Monitoring and Controlling Processes: Introduction

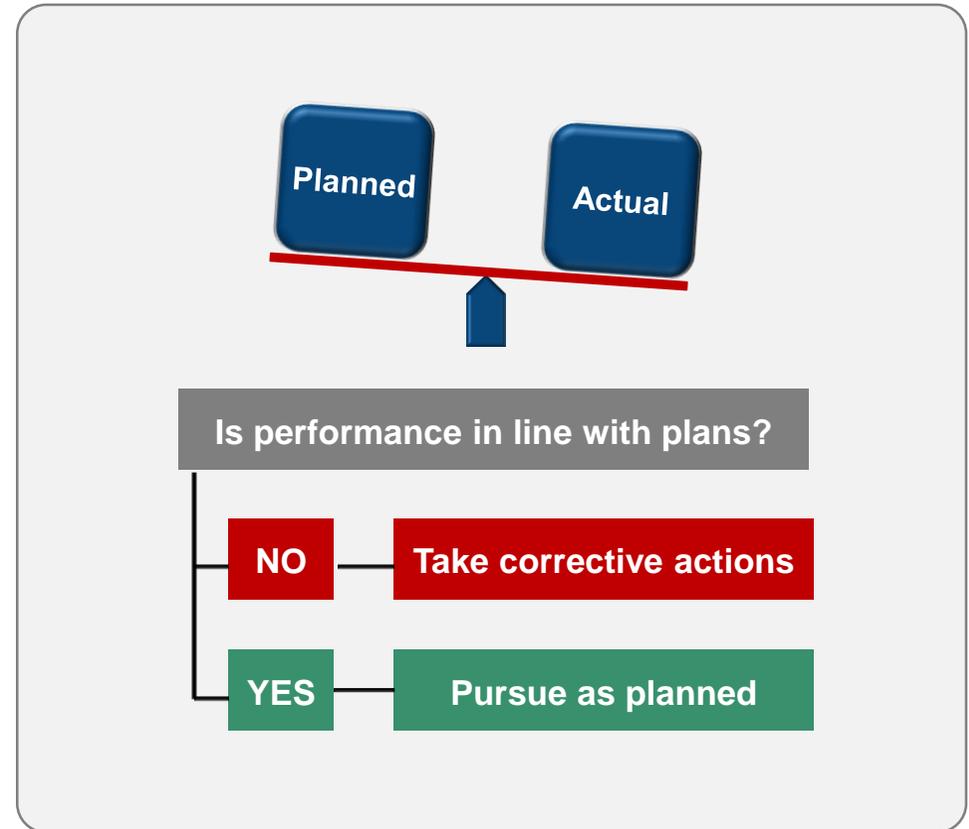
Monitoring and controlling processes are used to bring a project to a successful close

Monitoring and controlling processes are used to bring a project to a successful close, and they involve:

- Reconfirming the plan and team members commitment
- Assessing performance
- Comparing performance with plans
- Taking corrective actions and fixing problems
- Keeping everyone informed

Projects progress can be measured by tools such as:

- Gantt charts to control achievement vs. plan
- Labor report to show how resources have been initially allocated and how they are being used



Step 4: Monitoring and Controlling Processes: Labor report

The workload chart summarizes how resources are used and organized during a project

- The labor report shows how resources have been initially allocated and how they are being used on the project
- This tool is a way to plan for the workload (in hours, days, etc.) of the different members of the team for each of the activities that constitute the project
- The labor chart shows the number of days of work allocated to each activity (e.g.: forecast, remaining, revised, realized)

Illustration of a labor report

Employee A is spending less time than planned at the beginning but ends up working slightly more than what was planned

Work break-down code	Description of key activity	Employee		Budget	Week 1	Week 2	Week 3
2.1	Analysis of quantitative and qualitative data	A	Planned	150 hrs	50 hrs	50 hrs	50 hrs
			Actual		40 hrs	50 hrs	70 hrs
			Remaining	150 hrs	110 hrs	60 hrs	0 hrs
			Difference		-10 hrs	-10 hrs	+10 hrs
2.1	Analysis of quantitative and qualitative data	B	Planned	75 hrs	0 hrs	40 hrs	35 hrs
			Actual		0 hrs	30 hrs	20 hrs
			Remaining	75 hrs	75 hrs	45 hrs	25 hrs
			Difference		0 hrs	-10 hrs	-25 hrs

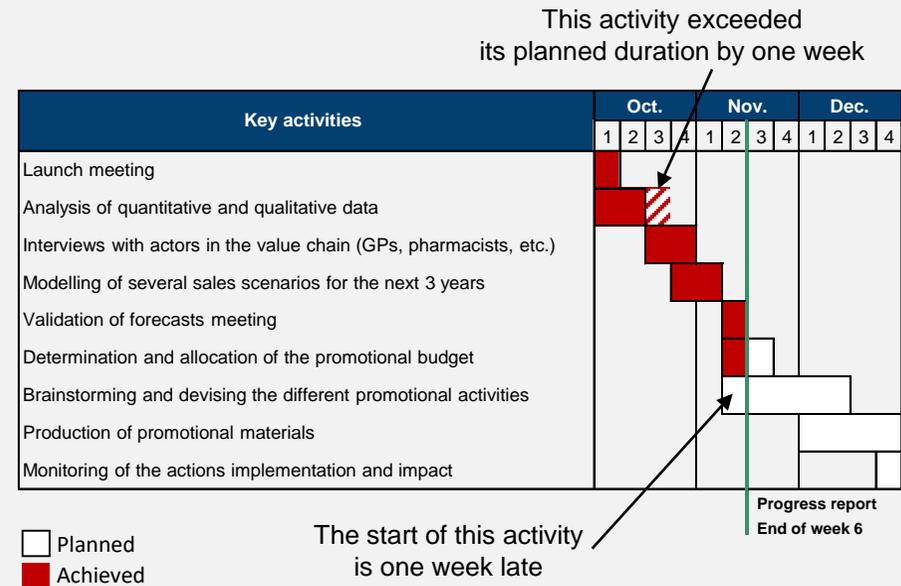
Employee B is spending less time than planned on the activity, which needs to be investigated: he might be working faster than anticipated or he might be working on some other activities/projects

Step 4: Monitoring and Controlling Processes: Gantt chart

Besides its use for planning purposes, the Gantt chart can also be used as a controlling tool

- The Gantt chart is also used for controlling purposes as this tool can display on the same chart the dates by which a series of activities should be completed and the status of their effective achievement
- It is therefore possible to distinguish what remains to be done to complete a certain task or project, and to determine if work is ahead, late, or in line with the planned timetable
- The Gantt chart allows to measure the gaps between the actual and expected dates of completion of tasks or activities
- As such, when a gap is recorded, the project manager can decide whether he needs to implement a corrective action to catch up for the delay or prevent the delay from expanding

Illustration of a Gantt chart Marketing plan product X



Step 4: Monitoring and Controlling Processes: Dashboards

Dashboards depict key indicators of project performance in a visual way

Designing a dashboard requires to follow 3 steps:

1. Select the major categories of information:
 - Results (outcome of the project or KPI¹)
 - Performance to schedule² and resource budgets
 - Risk management (current status of risk factors)
2. Choose specific indicators for each information
 - Results (e.g. Patient adherence increase by 9%)
 - Performance to schedule (e.g. # of milestones met vs. missed) and to resource budgets (e.g. ratio of funds used to budget)
 - Risk management (e.g. # of risks likely to occur)
3. Select the format for each indicator
 - Table, bar graph, pie chart, traffic lights, etc.

Scheduled status of activities in progress



activities

2

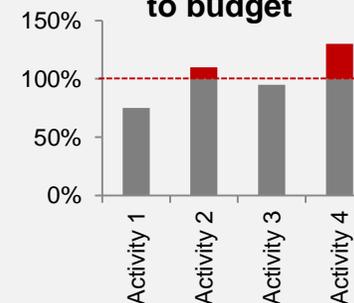
4

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Legend

- Red light:** one or more serious situation(s) requiring urgent attention
- Yellow light:** one or more minor problem(s) existing
- Green light:** the element is proceeding according to plan

Ratio of expenditure to budget



Percentage of milestones reached on time to date



Step 5: Closing Process

The closing process is meant to build on the project experience

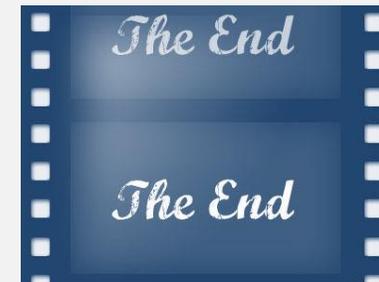
The closing process involves a number of activities that must be carried out after the project has been completed:

- Closing all project accounts
- Performing a post-implementation review
- Holding a post-project evaluation with the project team to recognize project achievements and discuss lessons that can be applied to the next project
- Providing performance feedbacks and help team members move on to their next assignments
- Delivering project completion report

Post-project evaluation

A **post-project evaluation** is an assessment of the results, activities, and processes that allows the project manager to:

- Recognize achievements and acknowledge people work
- Identify techniques and approaches that worked, and devise steps to ensure they're used in the future
- Identify techniques and approaches that didn't work, and devise steps to ensure they aren't used again in the future



Summary of Project Key Steps

The 5 steps of project management include activities essential to maximize chances of success

1. Initiating process

- Clarification of the business need(s)
- Definition of the high-level expectations and resource budgets
- Identification of the audiences that may play a role in the project

2. Planning process

- Detail of the project scope, time frames, resources, risks, quality, etc.

3. Executing process

- Establishment and management of the project team
- Communication with and management of project audiences
- Implementation of project plans

4. Monitoring and controlling processes

- Tracking of the project developments (time frames, costs and quality)
- Introduction of the necessary actions to ensure project plans are successfully implemented and the desired results achieved

5. Closing process

- Evaluation of the achieved outcome
- Final evaluation (feedback with the project team)

The Project Manager (1/2)

The project manager specifies, organizes and plans a project from conception to realization

The project manager:

- Defines and implements the execution plans (schedules and deadlines, workloads, budget and funding, quality and risks)
- Keeps tracks of, and control, the progress, the execution of the plans and the meeting of budgets
- Animates the team (roles and responsibilities definition, consciousness raising, mobilization, communication, delegation, control)
- Communicates internally on the project progress
- Is both a manager and a leader
- Is responsible for the outcomes of the project

The ideal project manager should have:

- Enthusiasm for the project
- Team-building and negotiation skills
- Ability to manage change effectively
- A tolerant attitude toward ambiguity
- A customer-focused orientation
- Adherence to the priorities of business
- Knowledge of the industry or technology

The Project Manager (2/2)

A key role of the project manager is to create and sustain the motivation of team members

To foster team members motivation and commitment to a project success, the project manager must:

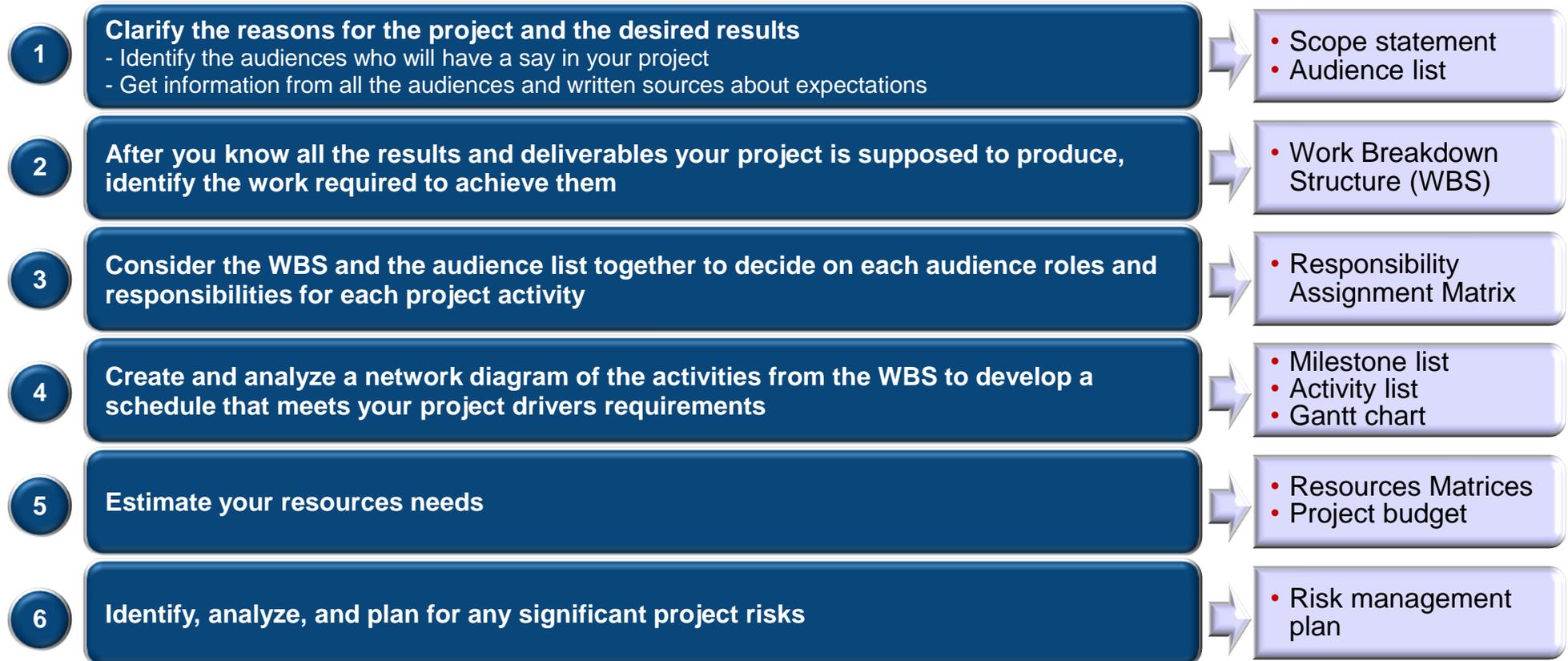
- **Raise commitment by clarifying project benefits**
 - To the organization, its employees, its clients and to each team member
- **Encourage persistence by demonstrating feasibility**
 - Involve team members in the planning process
 - Explain why targets and plans are feasible
 - Develop responsive risk-management plans
- **Let people know how they are doing**
 - Establish meaningful and frequent milestones
 - Continually assess people performance
 - Frequently reinforce the project potential benefits
- **Provide rewards for work well-done**
 - Talk with the concerned person and express appreciation for the work done

Leadership and Management approaches to project activities

	Leadership approach	Management approach
Planning	Create and share visions and strategies	Specify objectives, schedules, and budgets
Organizing	Elicit commitments from members	Assign people to the team, and define roles of members
Performing	Motivate team members	Monitor and report on progress

Key Learnings: Preparing a Project Plan (1/2)

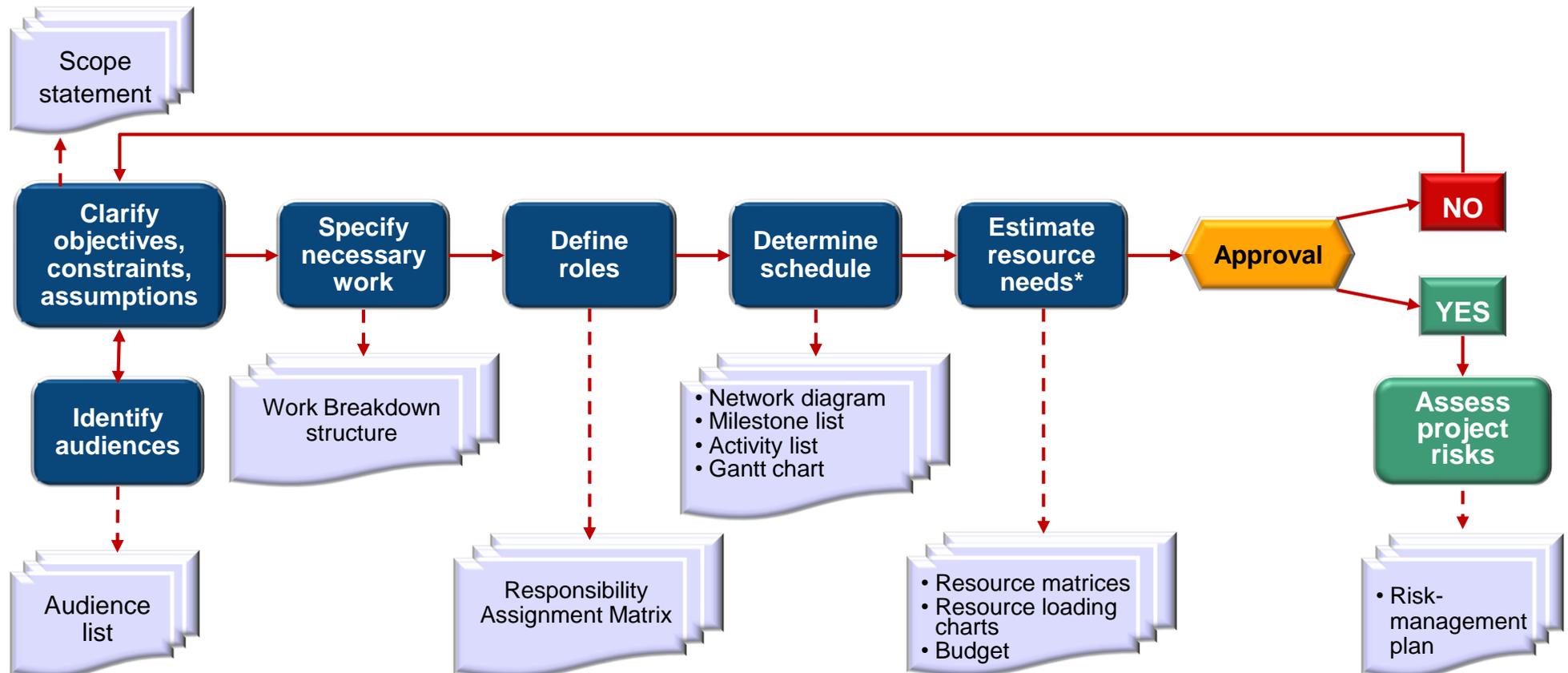
Project planning involves several steps for which several sections of the plan are produced



Sources: Smart Pharma Consulting

Key Learnings: Preparing a Project Plan (2/2)

These steps should be adjusted until drivers and supporters agree with and support the results

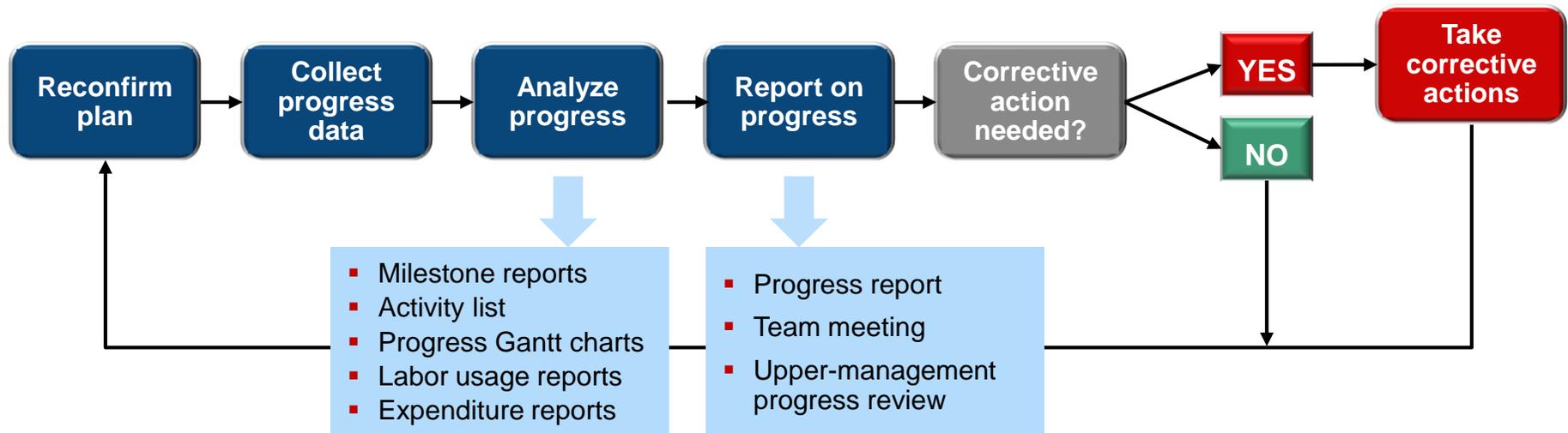


* Personnel, equipment, raw materials, facilities, information, funds

Key Learnings: Controlling Project Execution

Tracking, assessing and reporting project performance requires to apply specific activities

- At the start of each performance period, people and resources availability must be confirmed and scheduled
- At the end of each performance period, activities performed, milestones dates, resource expenditure and quality should be assessed vs. project plan; issues or problems should identified and necessary corrective actions taken



Sources: Smart Pharma Consulting, adapted from S. E. Portny

Training Program – Intra-company

One-day program (or longer) to manage effectively and efficiently projects, more or less complex

Content & Organization

- The program will include basic principles, key tools, practical exercises and case studies relative to the pharmaceutical industry
- The program content will be customized according to the specific needs of the clients
- The program duration will be of one day, a day and a half or two days, according to the clients desire

Target Audience

- Any collaborators from pharmaceutical companies having the responsibility to manage projects that are more or less complex
- Participant can be part of the medical, marketing, commercial, market research, strategic,... departments

Example of a One-Day Program

9:00	Introduction to the program
9:10	Review of the basic principles and key tools to properly manage projects
10:40	<i>Break</i>
11:00	Exercises: Familiarization with the key tools
12:30	<i>Lunch</i>
13:30	Case study #1: Application to a simple project
15:00	<i>Break</i>
15:20	Case study #2: Application to a moderately complex project
16:50	Conclusion and key takeaways
17:30	End of the program

The Smart Manager Series

- This series intends to provide practical recommendations to enhance the efficacy and efficiency of executives in order to help them become or remain *Smart Managers*

Issue #2: Project Management

- The first issue of The Smart Manager Series, published in 2017, proposed practical recommendations to improve executives time management
- This second issue dedicated to Project Management intends to share key principles and tools to ensure an effective and efficient management of projects
- Over the past decades, the development of the horizontal management model, also called matrix management model, has led to the multiplication of projects, within companies in general and pharma companies in particular
- More recently, we have also observed a booming of projects carried out with external stakeholders such as Patient Advocacy Groups, Key medical opinion leaders, hospitals

Smart Pharma Consulting Editions



- Besides our consulting activities which take 85% of our time, we are strongly engaged in sharing our knowledge and thoughts through:
 - Our teaching and training activities
 - The publication of articles, booklets, books and expert reports
- As of today, more than 100 publications in free access can be downloaded from our website
- Since the beginning of 2017, we have published:
 - 2 business reports (The French Pharma Market 2016 – 2022 – The French Generics Market, incl. Biosimilars)
 - 10 position papers in the “Smart Manager Series” and in the “Best-in-Class Series”
- Our research activities in pharma business management and our consulting activities have shown to be highly synergistic
- We expect that this new publication will interest you and we remain at your disposal to carry out consulting projects or training seminars to help you improve your operations

Best regards

Jean-Michel Peny