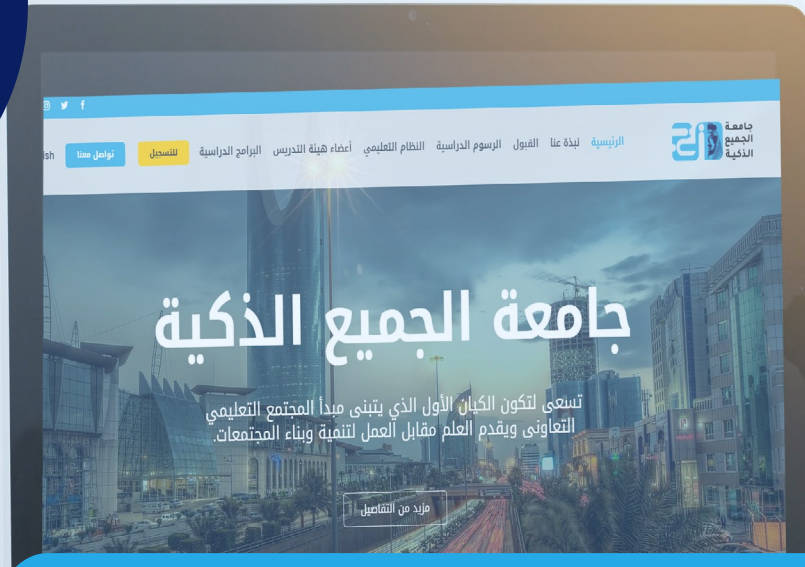


PART II :

Execution and Control Phases



Monitoring & Controlling

Lecture 9



In the previous lessons...

- The Project Execution phase is the third phase in the **Project Life Cycle**; and the most demanding. In the project **Execution Phase**:
- The team carries out all the planned activities, constructs deliverables, and presents them to **Project Stakeholders**.
- The **Project Manager** changes to performing and supervising all activities to create deliverables as outlined in the project plan
- He needs to continuously track the project's progress and ensure that the milestones and deliverables stick to the project schedule
- The Project Manager needs to step back a bit and let your team carry out **the Project Plan**.

In the previous lessons...

- **The Execution Phase** is where all the action happens and the plans start materializing.
- There will be changes to **the Scope** and **the Documentation** will change as a result.

Project Deliverables

Change Requests

Issue Log

Performance Data

Documentation Updates

In the previous lessons...

In essence, the Project Manager has three main objectives during the Execution Phase:

Managing People

Managing Processes

Managing Communication

The benefits of a well-executed Project are threefold:

- The Project can be completed on Time and Budget
- Team morale can be maintained
- Stakeholders are satisfied with overall Project progress

Outcomes of the lesson

In this lesson, we'll:

- Learn the **steps, methodology, and processes** that lead to successful Project Monitoring and Controlling Phase.
- Find **Project Monitoring and Controlling Steps and Processes**, the helpful tools to support your Project's next success, and the importance of both Monitoring and Controlling along all the phases of the Project Life Cycle .

Syllabus

- I- the Project Monitoring and Controlling Phase
- II- Importance of the Key Performance Indicators
- III- Reports That Every Project Controls Team Should Have
- VI- What are the roles of the Project Manager during the Project Monitoring and Control Phase?
- V- Project Monitoring and Control Process: 10 Key Activities

I- The Project Monitoring and Controlling Phase

- Based on the progress of the Project, **Changes**, and **Deliverables**, the Initiating Processes can be triggered to review the **Project Charter**.
- The **Planning Processes** can be triggered to revise Planning.
- The **Executing Processes** can be triggered to repair defects or implement approved changes.
- Lastly, if all Objectives of the Project are met and Results are as planned, **Closing Processes** are triggered.

I- The Project Monitoring and Controlling Phase

I-1- Definition

- Once the **Project Execution Phase** gets underway, the Project Monitoring and Controlling Phase also kicks in. This parallel phase keeps the Project on track and aligned with its initial purpose, while allowing Teams to correct course where necessary.
- In the Project Life Cycle, the **Project Monitoring and Control Phase** happens in tandem with the Execution Phase .
- This **Project Monitoring and Controlling** involves actively reviewing the status of your project as it proceeds, evaluating potential obstacles, and implementing necessary changes.

I- The Project Monitoring and Controlling Phase

- **Monitoring** refers to the process of **watching, keeping track of and gathering data about performance.**
- **Controlling** on the other hand refers to the process of actively **exercising power over, guiding and supervising behaviour, tasks and activities in a Project or organisation.**
- Controlling can include **setting up a system, procedures and policies to guide** and regulate work processes.

I- The Project Monitoring and Controlling Phase

I-2- Project Monitoring

I-2-1- Definition of Project Monitoring

- **Project Monitoring** is defined as *a process which is performed to track the progress of Project Execution so that potential problems can be identified well in time for the taking of the corrective actions for the purpose of controlling the execution of the Project.*
- It is a **continuing function during Project implementation** which provides management of an ongoing development intervention with indications of the extent of progress and achievement of objectives and progress in the use of allocated funds.
- It focuses on reviewing of progress against achieving of Goals.

I- The Project Monitoring and Controlling Phase

- It provides information and ensures the use of such information by Management to assess Project effects – both intentional and unintentional – and their impact. It aims at determining whether or not the intended **Project Goals and Objectives** are being on the track.
- In other words, Monitoring is not only concerned with the taking of the actions but is also concerned with making the progress towards achievement of the Results.
- *In the more limited approach*, Monitoring can focus on tracking project with regards to the use of the resources.
- *In the broader approach*, Monitoring also involves **tracking Strategies** and actions being taken by Management, and figuring out what **new Strategies and Actions** need to be taken to ensure progress towards the Project Objectives.

I- The Project Monitoring and Controlling Phase

I-2-2- General aspects of Project Monitoring

- **Project Monitoring** provides opportunities at regular predetermined points to validate the logical progress of the Project, its activities and their implementation and to make adjustments as needed.

➡ It is very difficult to evaluate Project Progress which is not well designed and which is not systematically monitored.

- Project Monitoring provides records of **Activities** and **Results**, and signals problems to be remedied along the way.

➡ Without effective Monitoring, it is normally impossible to judge if work is going in the right direction, whether progress and success can be claimed and how further efforts can be improved.

I- The Project Monitoring and Controlling Phase

I-2-3- Project monitoring activities

Project Monitoring is carried out:

Measuring progress of Project activities against established Schedules and indicators of success.

Identifying factors affecting the progress of Project activities.

Measuring the response of the decision taken on the Project Activities and its effect on the progress of Project Implementation.

To minimize the risks of Project failure.

Steps in Project Monitoring

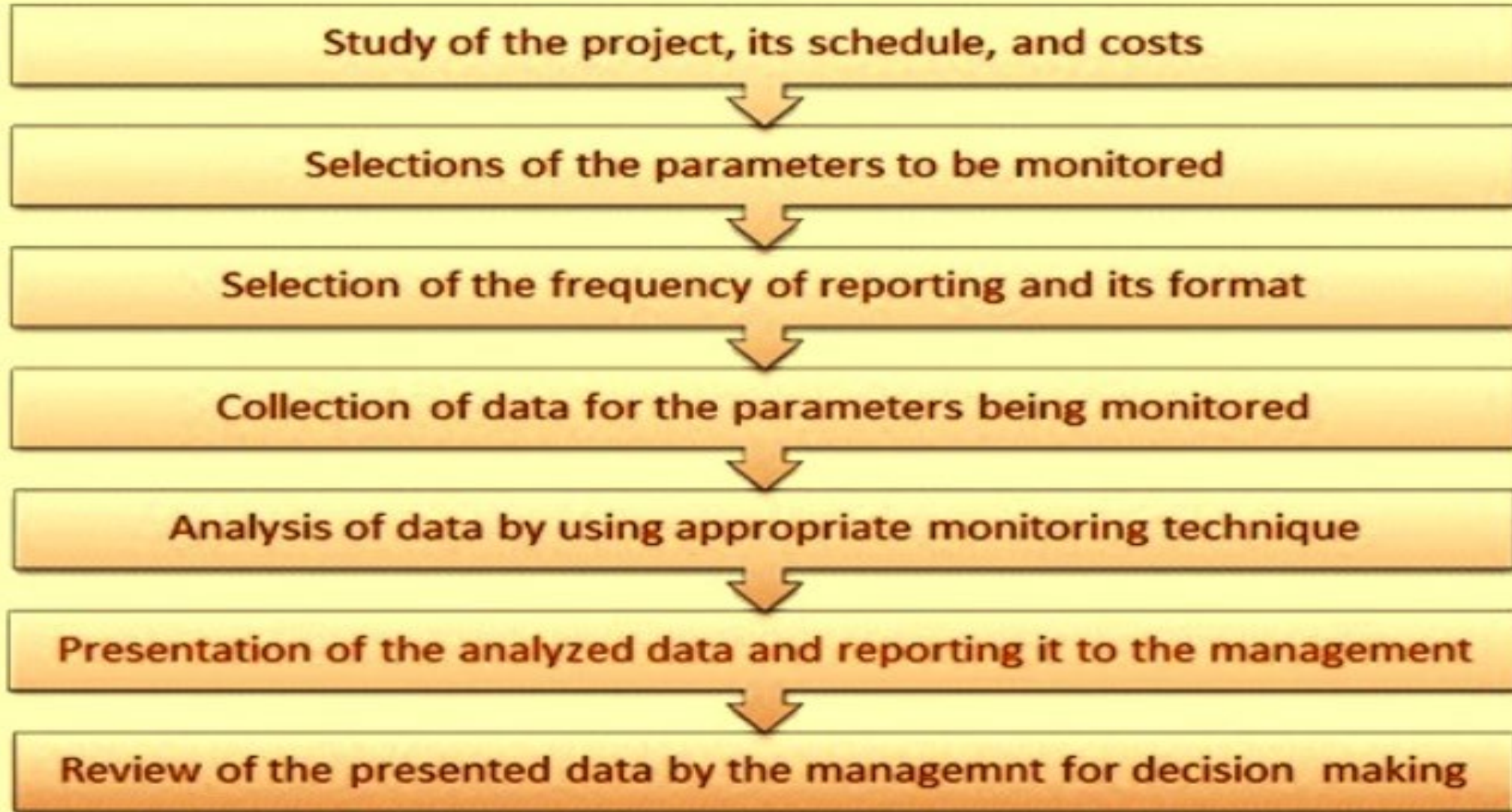


Fig 1 Steps in project monitoring

I- The Project Monitoring and Controlling Phase

Project Monitoring serves several purposes:

- It brings into focus the problems in the implementation of the Projects which are brewing up and which need solutions for the smooth progress of the Project.
- Project Monitoring always relate to pre-identified results in the development Plan of the Project.
- It is an essential **Management tool** to support the Project and helps in the Management commitment to accountability for results and effective utilization of resources entrusted to it.

I- The Project Monitoring and Controlling Phase

I-3- Project Controls

I-3-1- Definition of Project Controlling

- **Project Controls** is a process that encompasses the Resources, Procedures, and Tools for the **Planning, Monitoring, and Controlling** of all phases of the capital Project Lifecycle.
- It includes **estimating cost** and **Schedule Management, Risk Management, Change Management, Earned Value progressing, and forecasting.**
- Successful performance of a Project depends on appropriate planning.

I- The Project Monitoring and Controlling Phase

I-3-2- General aspects of Project Controlling

- The Execution of a Project is based on a robust Project Plan and can only be achieved through an effective **Cost and Schedule Control** methodology.
- The Development of a **Suitable Project Control System** is an important part of the overall Project Management effort and supports the achievement of **Project Objectives**.
- It has been proven time and again that Project performance can be improved if dedicated Project controls systems are in place. Good Project control practices can result in more predictable **Cost and Schedule outcomes**.

I- The Project Monitoring and Controlling Phase

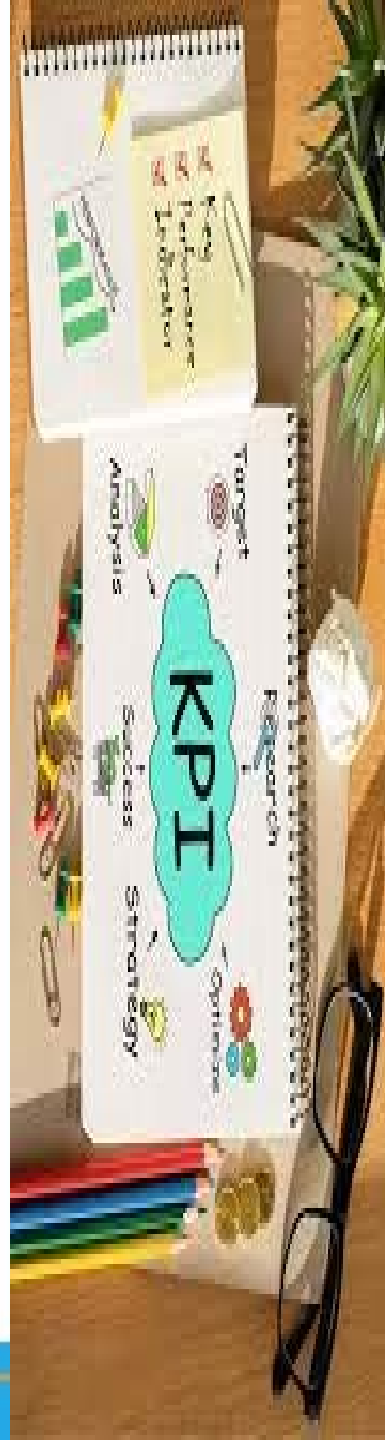
I-3-3- Project controlling activities

- Aligning Projects with portfolio/organization goals and objectives
- Developing a work-breakdown structure (WBS)
- Collaborating on initial Project Schedules
- Developing a Risk Management Plan
- Project Budgeting and Forecasting
- Controlling Project Costs
- Feedback and Reporting
- Optimizing Project Strategies to enable better outcomes in the future

Project Planning Planning is one of the important steps in which controllers and Project Managers work together. Whether it's creating Project Plans, Schedules, Work-Breakdown Structures or Cost estimates , Planning gives everyone a baseline to work with throughout the Project.	Change Management When a Project deviates from its original estimates, it's often not due to a single factor, but due to the cumulative effect of several factors that tend to go unnoticed.	Performance Management Defining and using Key Performance Indicators (KPIs) to monitor Project health and forecast trends is crucial to take corrective actions.
Budgeting Integrating the Budgeting Process into Project activities is essential to calculate costs accurately and to understand when and why variances occur.	Forecasting Good progress measurement is a critical input to the forecasting process. It serves as the comparison against actual and committed costs that enable Project controllers to extrapolate a forecast using a combination of standard forecasting methods and formulas. Regular, timely updates aid the project controller by enabling faster response and corrective action to when a project begins to get off track.	Project Administration This process involves establishing processes and systems that can help Team members communicate and collaborate with each other. The goal is to track status updates, capture meeting minutes and lessons learned, and manage workflows seamlessly so Teams can focus on actual execution rather than routine tasks.
Risk Management Project controls provide a meticulous approach to managing risk. By preemptively identifying risks, monitoring risk continuously , and developing contingency plans to address and mitigate issues , it becomes possible to reduce impact on budget and schedule. It also helps prevent some Risks from happening in the future.		

II- Importance of the Key Performance Indicators

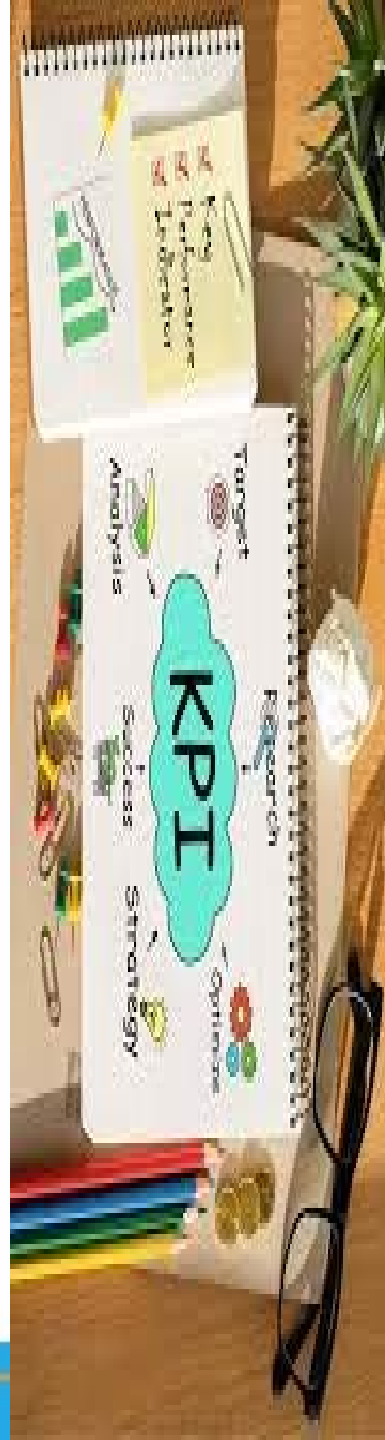
- During your Planning Phase, you may have established a series of **Checkpoints** or **Milestones** for your Project.
- Alternatively, you might have set **Goals** of completing a specific number of **Deliverables** per day, week, or month.
- Quantifiable measures like these, which are used to evaluate the success of your Project, are called **Key Performance Indicators (KPIs)**.
- **During the Project Monitoring and Controlling Phase**, keeping tabs on **KPIs** is essential to ensure your Team is on the right track.
- One way to keep your entire Team up to date is to set up **automated status reports** that go out to all interested parties.



II- Importance of the Key Performance Indicators

II-1- Key Performance Indicators Definition

- **KPIs** are quantifiable measurements that reflect the critical success factors of a Business.
- A handful of numbers that give the owner an “at a glance” view of the Business.
- Keep their finger on the pulse of the Business.
- Identify hot spots that need attention.
- Act quickly to drive the Business forward.



II- Importance of the Key Performance Indicators

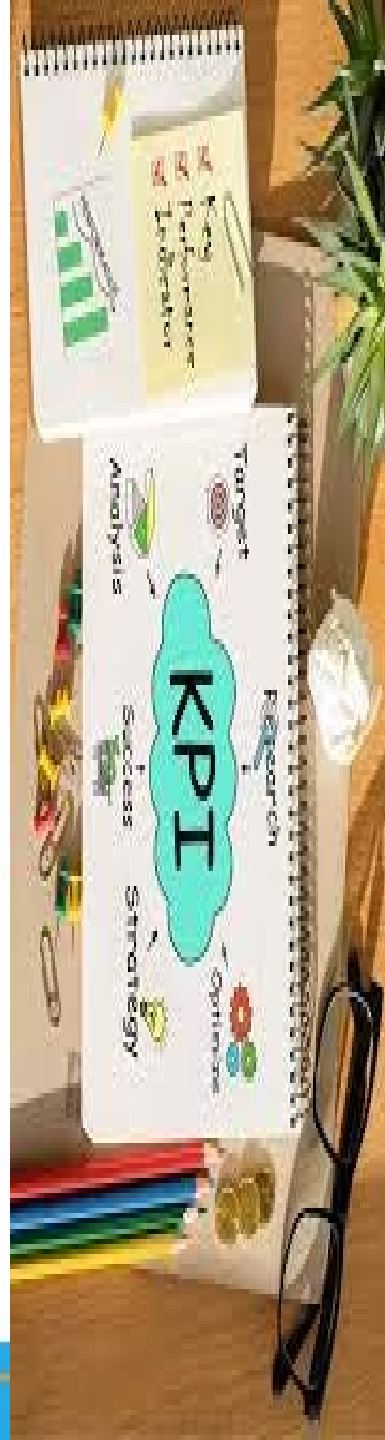
- **Key Performance Indicators** define:
- **factors** the institution needs to benchmark and monitor.
- **assessment techniques** provide the mechanism for measuring and evaluating the defined factors to evaluate progress or impact.

➡ **KPIs** specify what is measured and assessment techniques detail how and when it will be measured.

➡ **KPI** is a measure used to define and evaluate how successful an organization is.

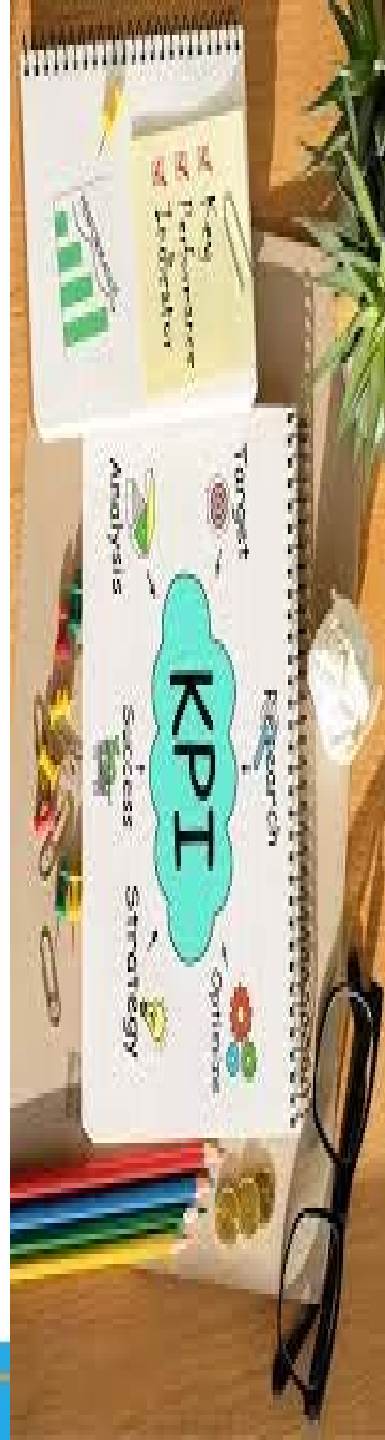
Typically is expressed in terms of making progress towards its long-term organizational goals.

➡ **KPI** incorporates information on the sources, calculations and definitions for each measure and sets out the timetable for submission of monthly data.



II- Importance of the Key Performance Indicators

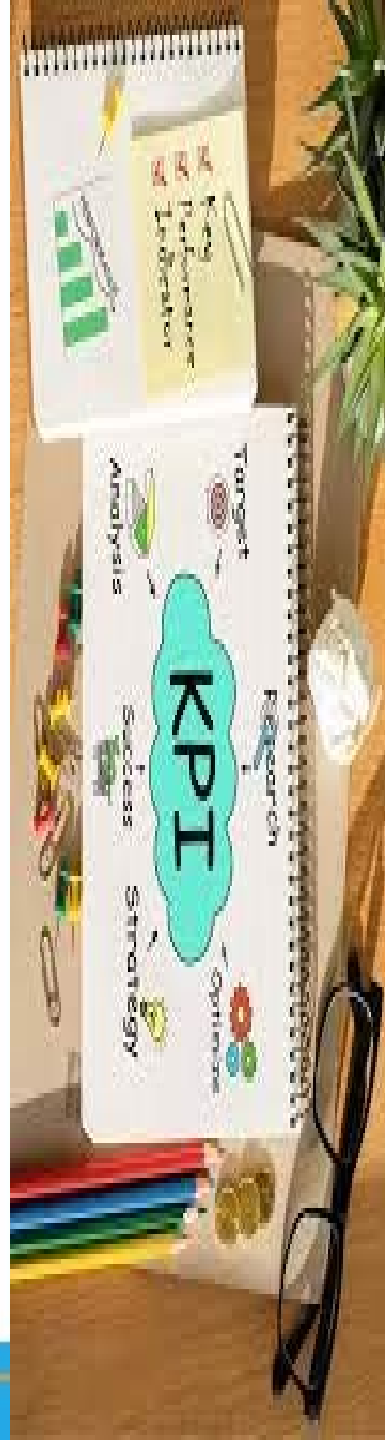
- **KPIs** assist Project to define and measure progress toward organisational goals and objectives.
- Once an organization has analysed its **Mission** and defined its **Goals**, it needs to measure progress towards those goals.
- **KPIs** provide a **measurement tool**.
- **KPIs** assist a Project to measure that it is “on track” – most often, that it is working towards and attaining a beneficial outcome or improvement.
- In many cases, KPIs are used in projects and to measure service delivery.



II- Importance of the Key Performance Indicators

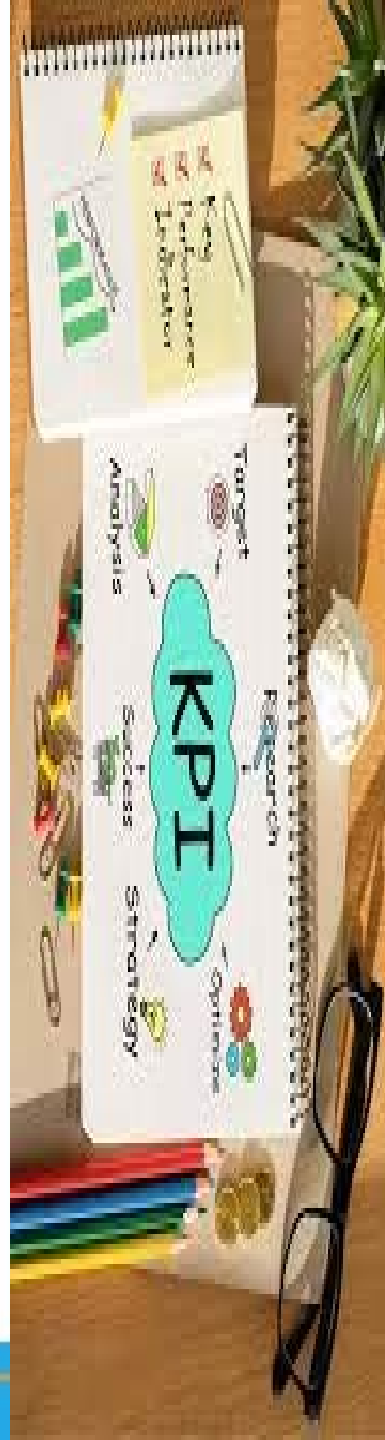
II-2- Key Performance Indicators Characteristics

- Many **KPI** characteristics are identified in the literature.
- A **KPI** does not need to satisfy all of these characteristics to be useful to the organisation and characteristics may overlap.
- A **KPI** should be:
 - ***relevant** and **consistent** with the specific organization's Vision, Strategy and Objectives
 - ***focused on organisation wide strategic value** rather than non-critical local business outcomes: selection of the wrong KPI can result in counterproductive behaviour and sub optimized outcomes;
 - ***representative**: appropriate to the organisation together with its operational performance;



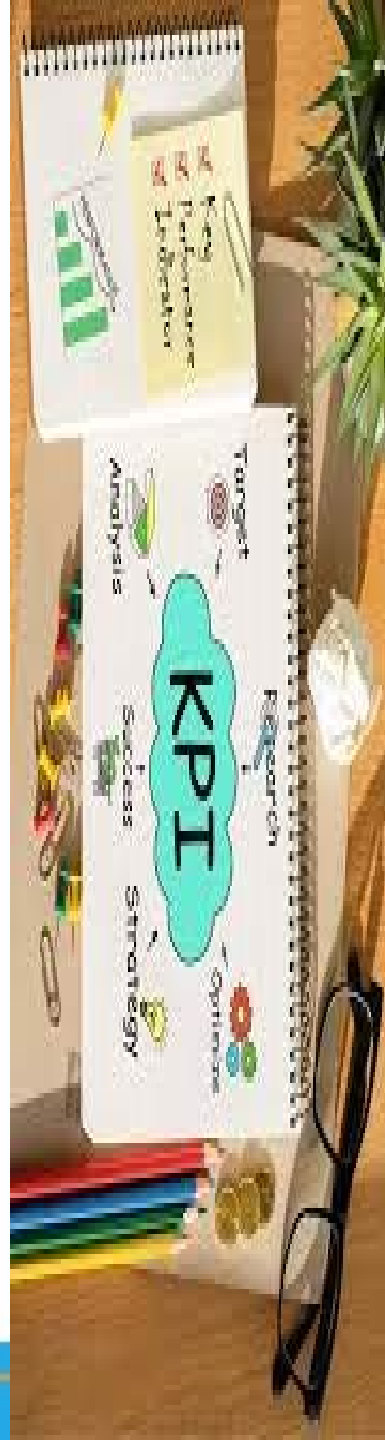
II- Importance of the Key Performance Indicators

- ***realistic**: fits into the organization's constraints and cost effective.
- ***specific**: clear and focused to avoid misinterpretation or ambiguity.
- ***attainable**: requires targets to be set that are observable, achievable, reasonable and credible under expected conditions as well as independently validated.
- ***measurable**: can be quantified/measured and may be either **quantitative** or **qualitative**; used to identify trends – changes are infrequent, may be compared to other data over a reasonably long time and trends can be identified.



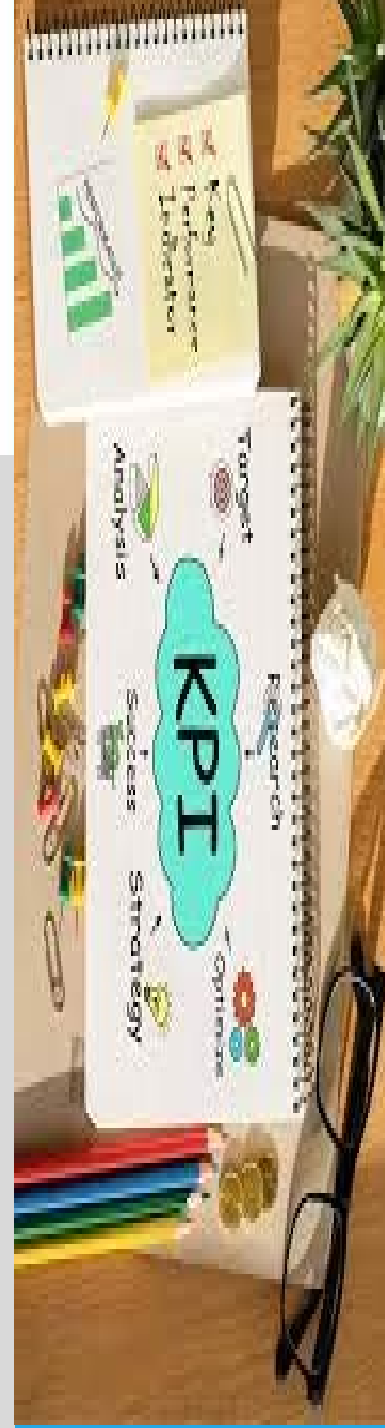
II- Importance of the Key Performance Indicators

- ***timely**: achievable within the given timeframe;
- ***understood**: individuals and groups know how their behaviours and activities contribute to overall organisational goals;
- ***agreed**: all contributors agree and share responsibility within the organisation;
- ***reported**: regular reports are made available to all stakeholders and contributors;
- ***governed**: accountability and responsibility is defined and understood; and
- ***resourced**: the program is cost effective and adequately resourced throughout its lifetime



II- Importance of the Key Performance Indicators

II-3- Why are KPIs important?



III- Reports That Every Project Controls Team Should Have

- **The Project Monitoring and Control Process** aims at tracking and reviewing the Project and is undertaken from the Initiation of the Project to its Closure.
- Various activities performed during this process assess if the Project is being run in accordance with the established Plan.
- This process is based on the **PMBOK Framework**. This means it is a proven practice that is applied widely in Project Management.
- **Monitoring and Controlling** a Project facilitate identification of deviations that pose a threat to successful completion of the Project.

III- Reports That Every Project Controls Team Should Have

- If deviations are not identified and addressed, they result in unplanned and undesired Project outcomes. Thus, this process ensures that abnormalities are detected and acted upon early on to prevent their escalation, which may lead to major and costly issues.
- When unplanned issues are eliminated, there is an assurance that the Project will be completed on time and that envisioned results will be achieved.
- There are several methods that are applied by Project Managers together with other **key Stakeholders** to evaluate the Project Performance.
- **Monitoring and Evaluation** consist one of these approaches and it should be undertaken regularly at different Project phases.
- Doing that will make sure that issues that arise are recognized and addressed on time.

III- Reports That Every Project Controls Team Should Have

- Too often, Project Controls are perceived as “**back office analytics**,” without a clear understanding of how it directly relates back to **Project Performance** and **ROI (Return On Investment)**.
- This makes it difficult for Project Teams to grab the attention of management.
- However, when recommendations are backed by facts and actionable data, Teams are more likely to embrace them. This is why it's essential to build smart, automated and regular reports into the process.
- Here are a few reports that help to socialize project controls concepts with project teams and allow everyone to align on the best path forward:

III- Reports That Every Project Controls Team Should Have

1. Cost Report

- One of the most frequently used **tools for communication**, a **Status Report** should include all metrics regarding Project Costs.
- Cost reports can be shared in a variety of formats and frequency: some teams prefer a daily scrum style, some have their own customized templates sent on a weekly basis, and some pack them into real-time dashboards.
- While frequency of reporting has been shown to improve project performance, all stakeholders should be clear on how to access the report and how to use the information provided.

2. Change Management Register

- **Scope Creep** is a common challenge for most Project Managers.
- A **Change Management Register** keeps track of Change in Scope from the initial Statement of Work or estimate.
- It identifies how much **extra cost** the Project has to incur and how much the Project may be delayed due to the addition in Scope.
- This information helps project teams prepare for the impact and communicate that impact to customers, whether internal or external.

3. Risk Register

- A **Risk Register** is a document that manages Risks and records contingency money associated with known risks.
- It works as a **RAID (Risk, Action, Issues, Decision)** log and is created at the beginning of a Project, documenting risks, assumptions, issues, and dependencies.
- As a Project progresses, the **Risk factors** can change, and these changes are tracked in the Risk Register.
- In large Teams, a **Risk Register** provides visibility to everyone about the top concern areas. It lends **clarity to Stakeholders** by addressing what-if scenarios and correlating these scenarios to their **Risk Quotient**.
- It also builds **more predictability** into Projects, as Team members can review past occurrences of these changes or risks to anticipate how it may affect this Project.

IV- What are the roles of the Project Manager during the Project Monitoring and Control

The role of the Project Manager in the Project Monitoring and Control Phase can be summarized briefly in three items:

The project manager is accountable for meeting the performance measurement baseline.

Performance measurement Baseline includes **Budget, Schedule, Quality and Targets of the Project**.

And meeting these **Targets** are under the **main responsibility** of the **Project Manager**.

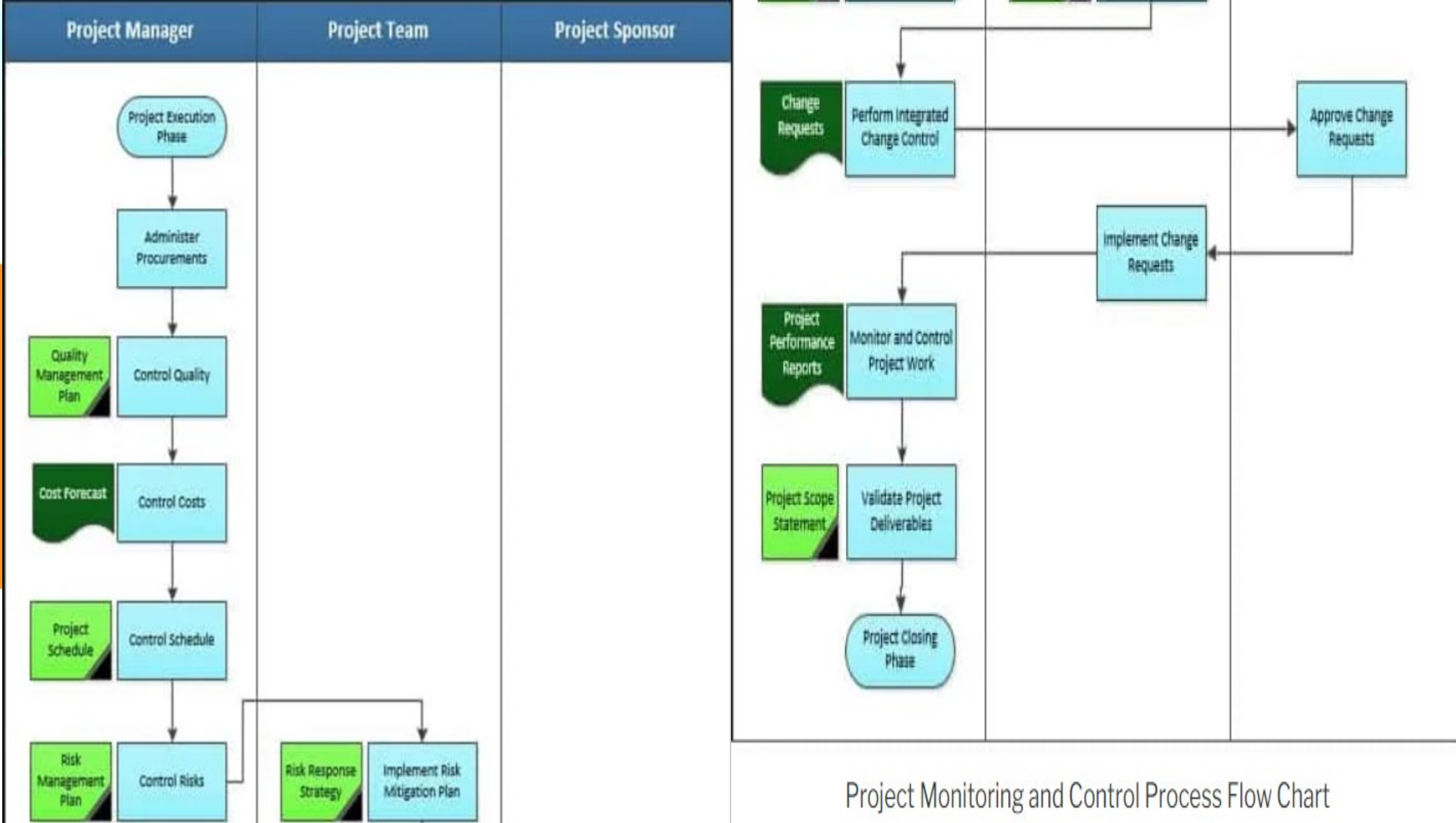
Project manager **manages** the **Project Team** and **Stakeholders** to **meet these Targets** by the end of the Project.

The project manager takes actions to correct any variances.

If there are any problems that are causing to meet **Project Objectives**, these variances must be corrected. For instance, if the **Total Budget** will be exceeded, how to find **additional funds** for the Project must be checked.

Any deviations from the plan should be made up rather than requesting a change to the project to accommodate them.

If there is a **deviation**, before changing the Targets of the Project, whether this deviation can be handled by alternative, solutions must be analyzed. **Requesting change, asking for funds, an extension of the Schedule etc...** must be the last options for accommodating deviations in a Project.



V- Project Monitoring and Control Process: 10 Key Activities

- Project Monitoring and Control processes help to check whether the project is going as well as planned.
- These **Project Monitoring and Control processes identify if there are any deviations in actual results from the planned values.**
- For instance, whether the Project is under Budget, whether the Project will be finished on time, whether quality Requirements are met etc. are all checked and evaluated with the help of Project Monitoring and Control Processes.
- The following activities are performed during Project Monitoring and Control phase:

1. Administer Procurements

This activity ensures to monitor the vendor to make sure that their performance satisfied the requirements of the contract.

2. Control Quality

The aim of this activity is to assess and make a determination on whether the activities are meeting the quality standards that have been established.

3. Control Costs

This activity is concerned with the supervision and management of project expenses. At this phase, the project manager needs to prepare for financial risks that might occur.

4. Control Schedule

This activity seeks to **monitor** the **status** of **different activities** involved in a Project. The activity also concerns making necessary **updates** to the **Project Process** and managing **changes** made to the **Schedule**.

5. Control Risks

In all Projects, Risks are always present a Project Manager should have the ability **to mitigate** those **Risks** proactively and envision potential Risks as well.

Control Risks activity concerns **implementing Risk Response Plans**.

6. Implement Risk Mitigation Plan

This activity aims to **actualize** the **measure** outlined in the **Risk Management Plan**. This includes exploring available **opportunities**, **restructuring** the **workforce**, **using the latest technology**, and **developing risk barriers**.

7. Perform Integrated Change Control

This activity focuses on measuring change **impact on project limitations**.

All change or modification requests to **baselines**, **deliverables**, **project documents**, or **Project Management Plan** are reviewed and either accepted or rejected based on their **impact on the Project**.

8. Implement Change Requests

This activity aims to incorporate into the **Project Scope** the change requests that have been approved.

Feedback on changes that have been done is provided.

This is followed by an assessment of whether implemented changes were sufficient.

9. Monitor and Control Project Work

The aim of this activity is to **track** and **review** as well as report the Project Progress. This activity enables Stakeholders to comprehend the Project's current status, Schedule, Budget, steps taken, and Scope Forecasts.

10. Validate Project Deliverables

This activity concerns **checking Project Deliverables** to ascertain their correctness and completeness. The activity helps to know whether they meet the set quality criteria.

All Deliverables are reviewed to ensure they are satisfactory.

The **Project Scope Statement** is referenced during this activity.

Summary

1

2

3



1

Initiation

2

Planning

3

Execution

4

Monitoring & Control

5

Closure

Monitor and Control Project Work

Inputs

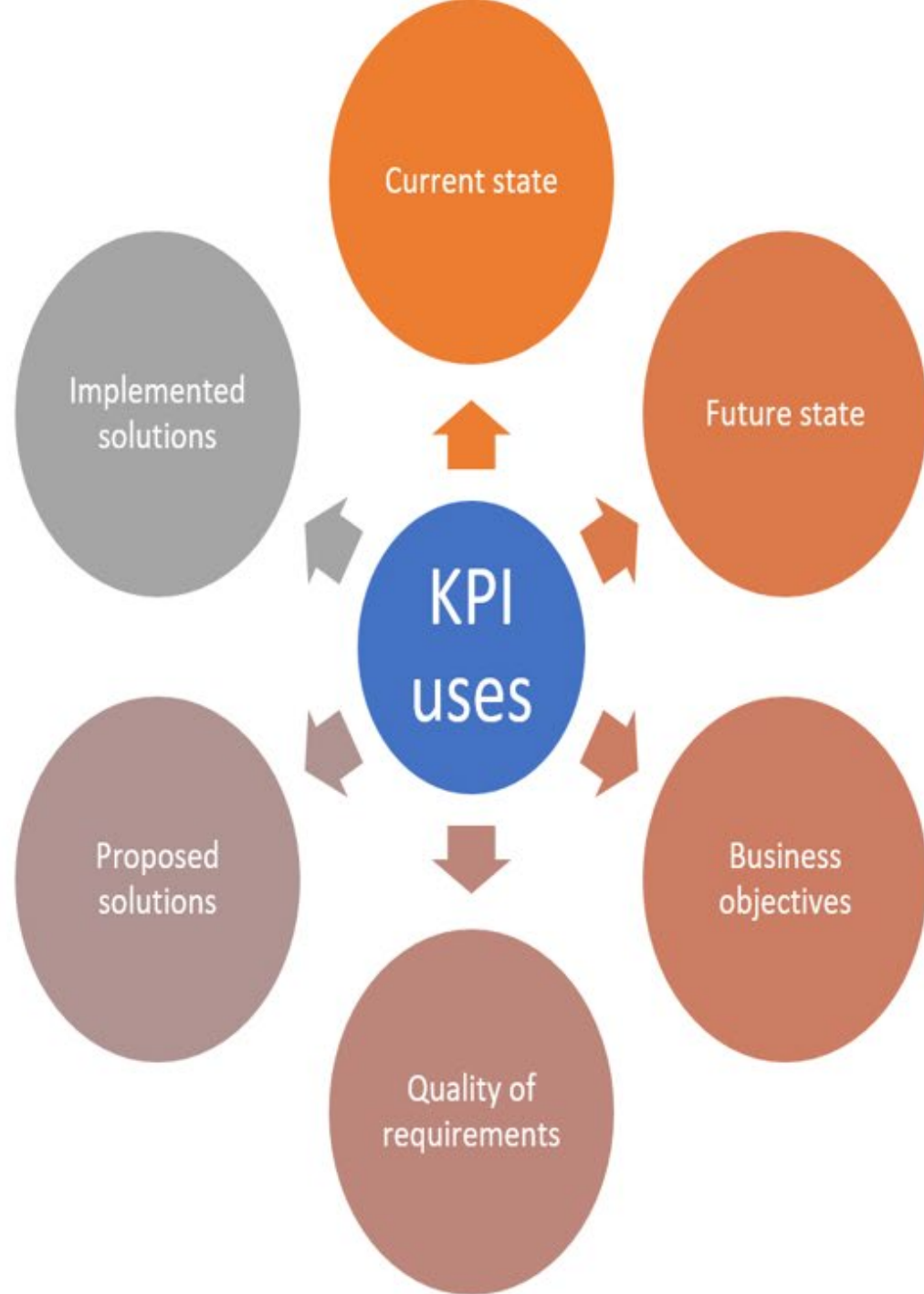
- PM Plan
- Schedule Forecasts
- Cost Forecasts
- Validated Changes
- Work Performance Information
- Enterprise Environmental Factors
- Organizational Process assets

Tools & Techniques

Expert Judgement
Analytical Techniques
PM Information System
Meetings

Outputs

Change Requests
Work Performance Reports
PM Plan Updates
Project Document Updates



See you
Next Time
