IT Project Management

Module 2

Project Integration Management

READING

Schwalbe Chapter 4

LEARNING OBJECTIVES
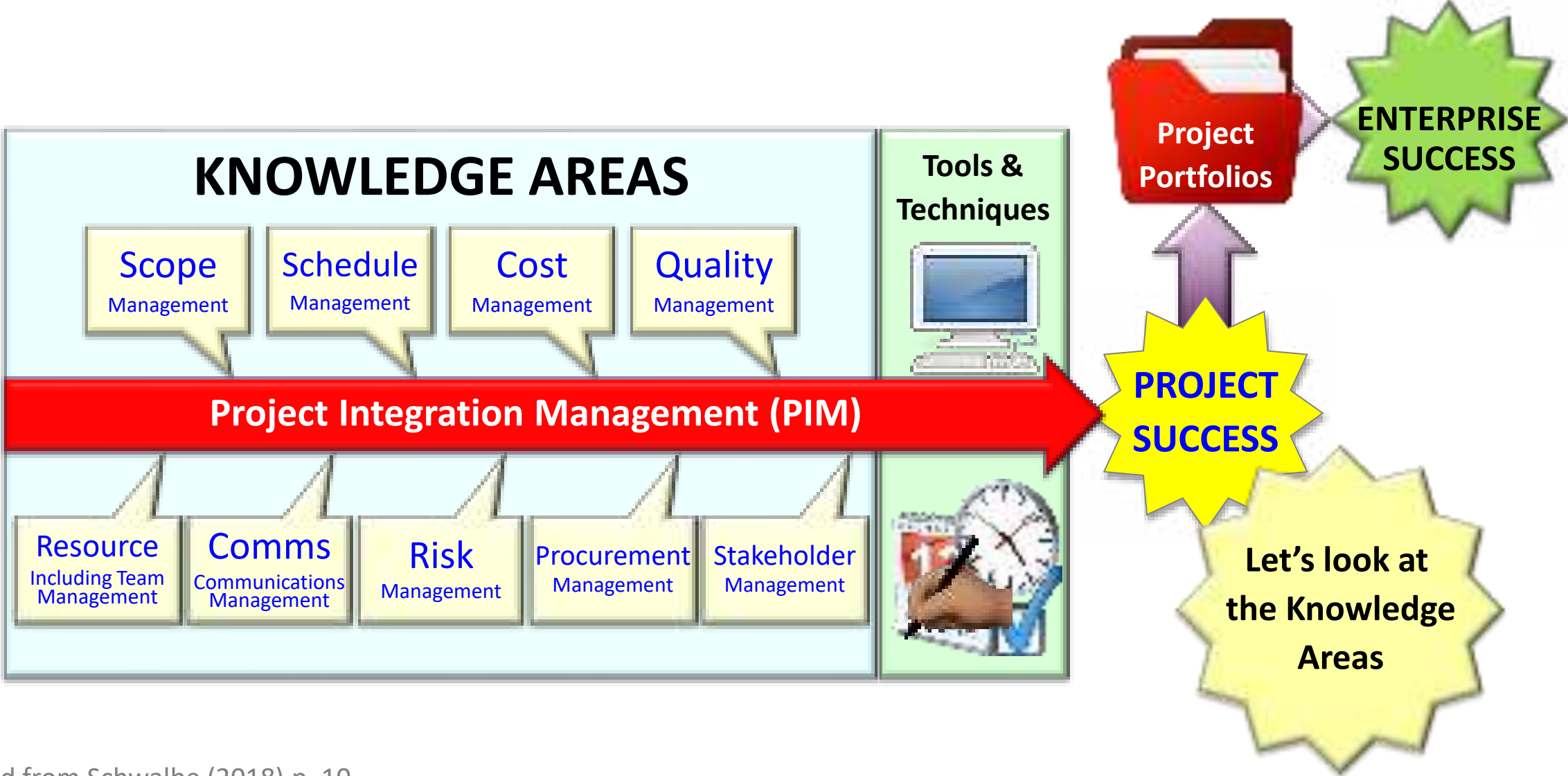
At the end of this topic you should be able to:

- ✓ **Describe** an overall framework for Project Integration Management (PIM)

- ✓ **Relate** this framework to the project management Knowledge Areas and the project life cycle

- ✓ **Outline** how to apply guidelines and templates to develop project plans and perform stakeholder analysis

- ✓ **Explain** project plan execution, its relationship to project planning and factors related to success

- ✓ **Describe** the process of monitoring & controlling a project

- ✓ **Introduce** the integrated change control process and outline how to develop a change control system

PROJECT INTEGRATION FRAMEWORK

OVERVIEW - PMBOK APPROACH

KNOWLEDGE AREAS

Tools & Techniques

Scope Management

Schedule Management

Cost Management

Quality Management

Stakeholders' needs & expectations

Project Integration Management (PIM)

Resource Including Team Management

Comms Communications Management

Risk Management

Procurement Management

Stakeholder Management

Project Portfolios

ENTERPRISE SUCCESS

PROJECT SUCCESS

Let's look at the Knowledge Areas

THE KNOWLEDGE AREAS

SCOPE MANAGEMENT
What work is being done?

SCHEDULE MANAGEMENT
When is the work being done?

COST MANAGEMENT
How much will the work cost?

PROCUREMENT MANAGEMENT
What needs to be bought?

COMMS MANAGEMENT
How are stakeholders being engaged?

INTEGRATION MANAGEMENT (Addressing Big & Small Picture)

STAKEHOLDER MANAGEMENT
The engagement approach

QUALITY MANAGEMENT
What quality is being delivered?

RESOURCE MANAGEMENT
Who & What is involved?

RISK MANAGEMENT
What risks need to be controlled?
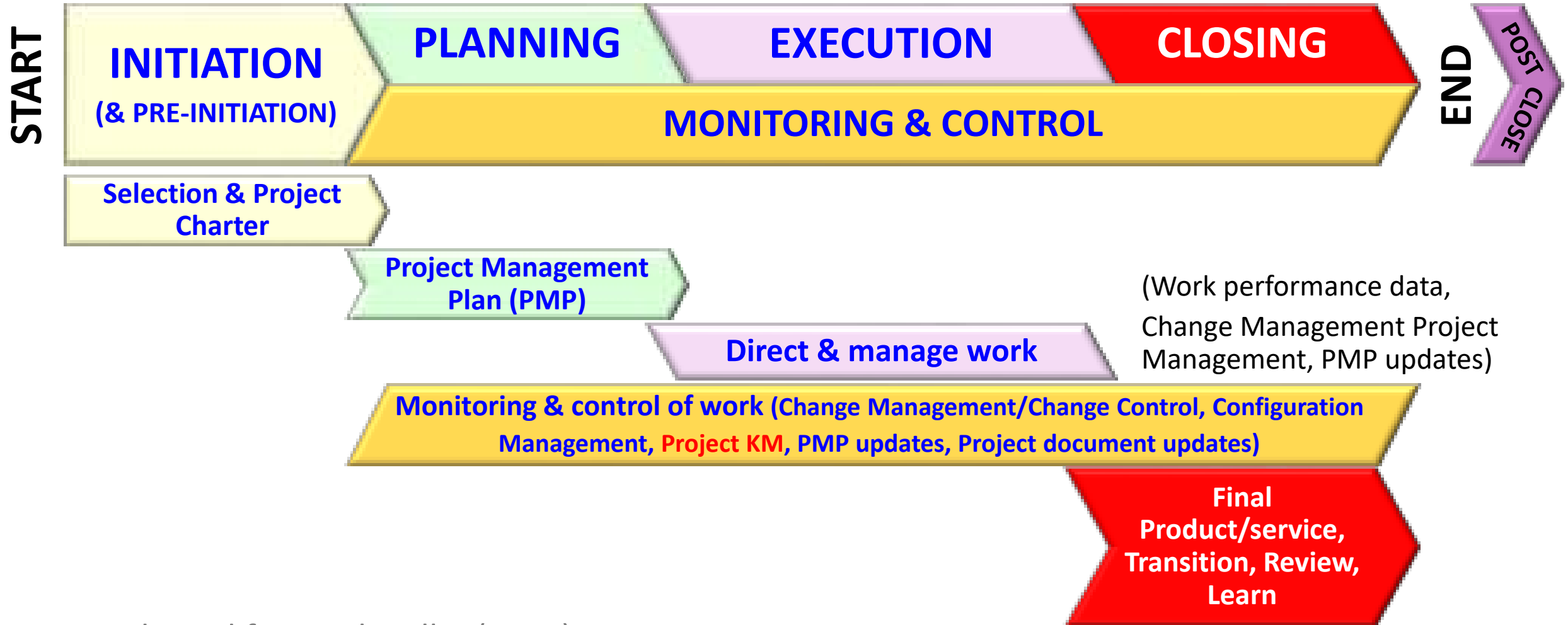
Integration is critical
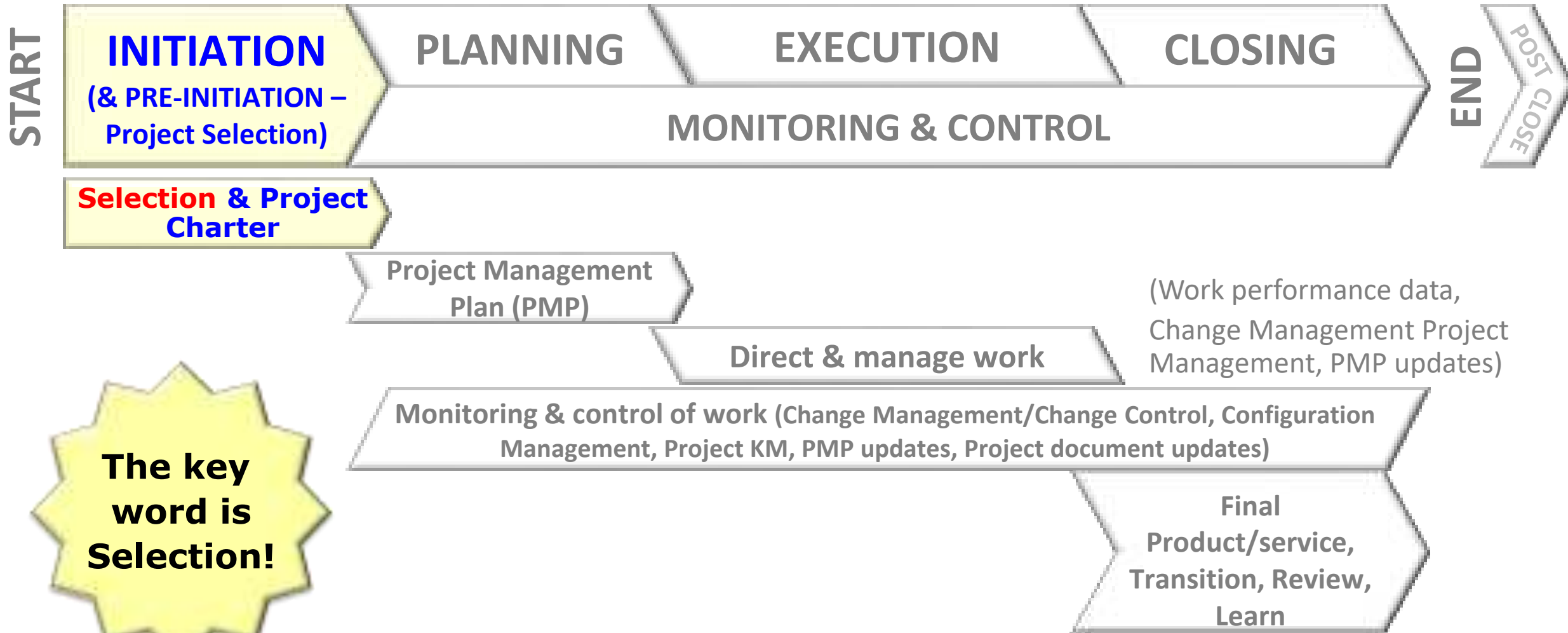
TOP 9 REASONS ICT PROJECTS FAIL

1. Inaccurate Requirements

2. Uninvolved project sponsors

3. Shifting project objectives

4. Inaccurate estimates

5. Unexpected risks

6. Dependency delays

7. Not enough resources

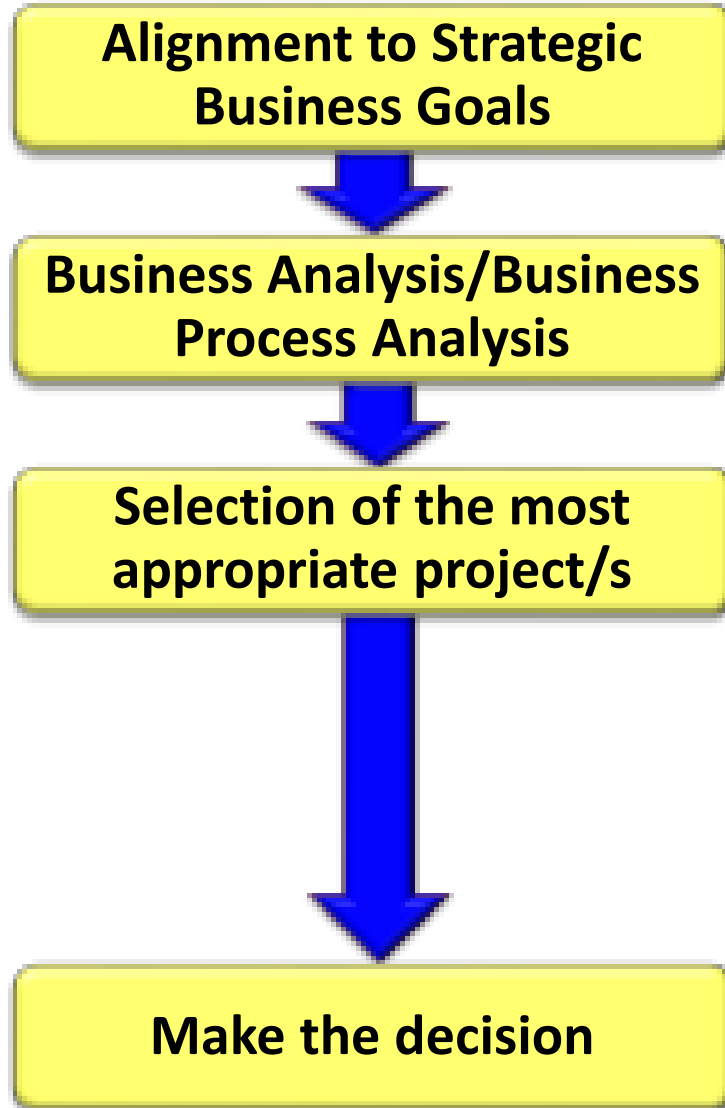8. Team Procrastination

9. **Poor Project Management**

SCOPE MANAGEMENT	QUALITY MANAGEMENT	STAKEHOLDER MANAGEMENT
STAKEHOLDER MANAGEMENT	COMMS MANAGEMENT	QUALITY MANAGEMENT
SCOPE MANAGEMENT	STAKEHOLDER MANAGEMENT	SCHEDULE MANAGEMENT
SCOPE MANAGEMENT	SCHEDULE MANAGEMENT	COST MANAGEMENT
RISK MANAGEMENT	RESOURCE MANAGEMENT	STAKEHOLDER MANAGEMENT
SCOPE MANAGEMENT	SCHEDULE MANAGEMENT	PROCUREMENT MANAGEMENT
PROCUREMENT MANAGEMENT	RESOURCE MANAGEMENT	
RESOURCE MANAGEMENT	STAKEHOLDER MANAGEMENT	

PROJECT INTEGRATION M

Resolution: Apply PIM in Process Groups

PIM DELIVERABLES IN THE PROCESS GROUPS

START

END

INITIATION (& PRE-INITIATION)	PLANNING	EXECUTION	CLOSING

MONITORING & CONTROL

POST CLOSE

Selection & Project Charter

Project Management Plan (PMP)

Direct & manage work

(Work performance data, Change Management Project Management, PMP updates)

Monitoring & control of work (Change Management/Change Control, Configuration Management, Project KM, PMP updates, Project document updates)

Final Product/service, Transition, Review, Learn

Source: Adapted from Schwalbe (2018)

INITIATION

| START | **INITIATION** (& PRE-INITIATION – Project Selection) | PLANNING | EXECUTION | CLOSING | END | POST CLOSE |

MONITORING & CONTROL

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Final Product/service, Transition, Review, Learn

The key word is Selection!

SELECTION - IDENTIFY POTENTIAL PROJECTS

Alignment to Strategic Business Goals

↓

Business Analysis/Business Process Analysis

↓

Selection of the most appropriate project/s

↓

Make the decision

What is the general business case?

Understand the options benefits/risks

Using a range of approaches
- Categorisation *(Problems, Opportunities, Directives)*
- SWOT **(Strengths, Weaknesses, Opportunity, Threat)**
- Weighted Analysis **(Importance/Effect)**
- Balanced Scorecard
- Financial Analysis **(NPV/IRR/Payback)**

Make an educated/balanced decision

SELECTION - IDENTIFY POTENTIAL PROJECTS

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Make the decision

Use the Three Spheres
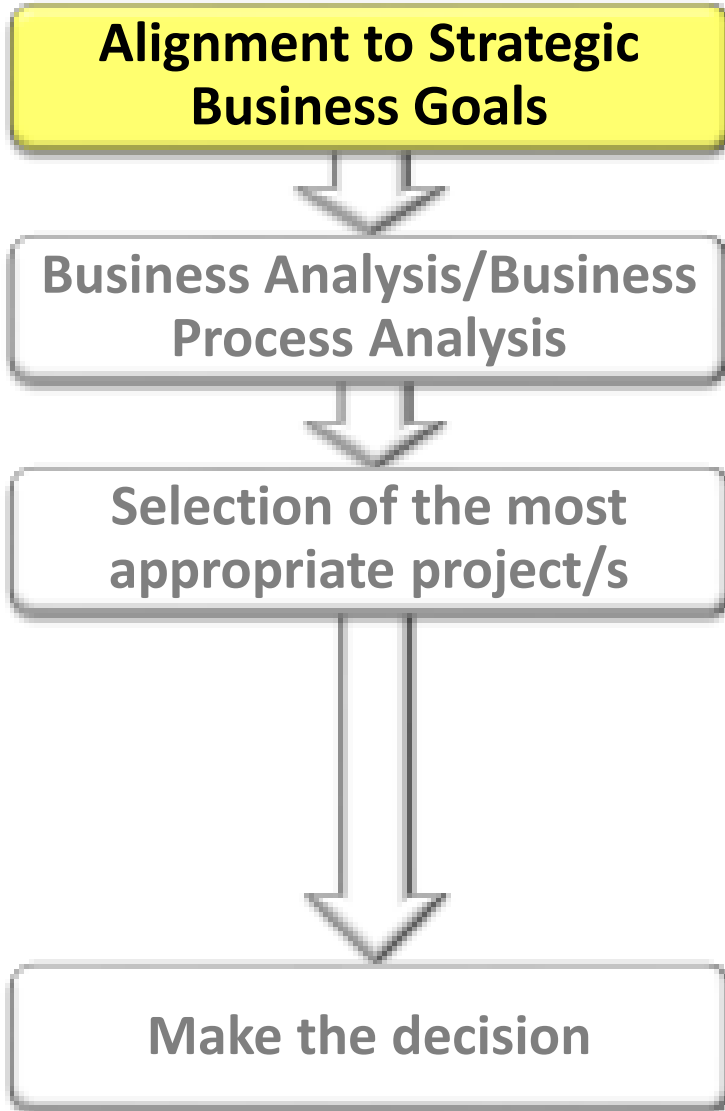
Willingness
(Business/ Individuals)

BUSINESS

ORGANISATION
4 Frames – Structural, HR, Political, Symbolic

TECHNOLOGY
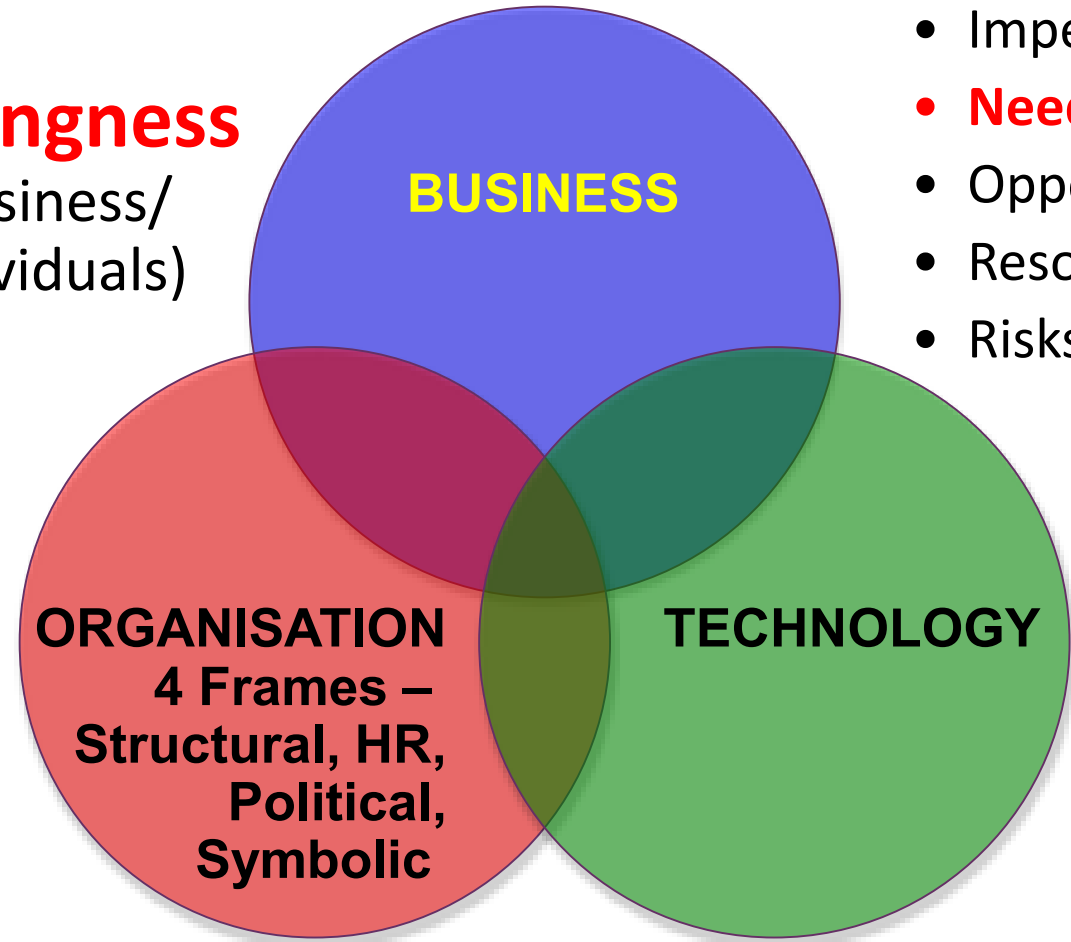
- Imperatives
- **Needs/Wants**
- Opportunities
- Resources
- Risks

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Make the decision
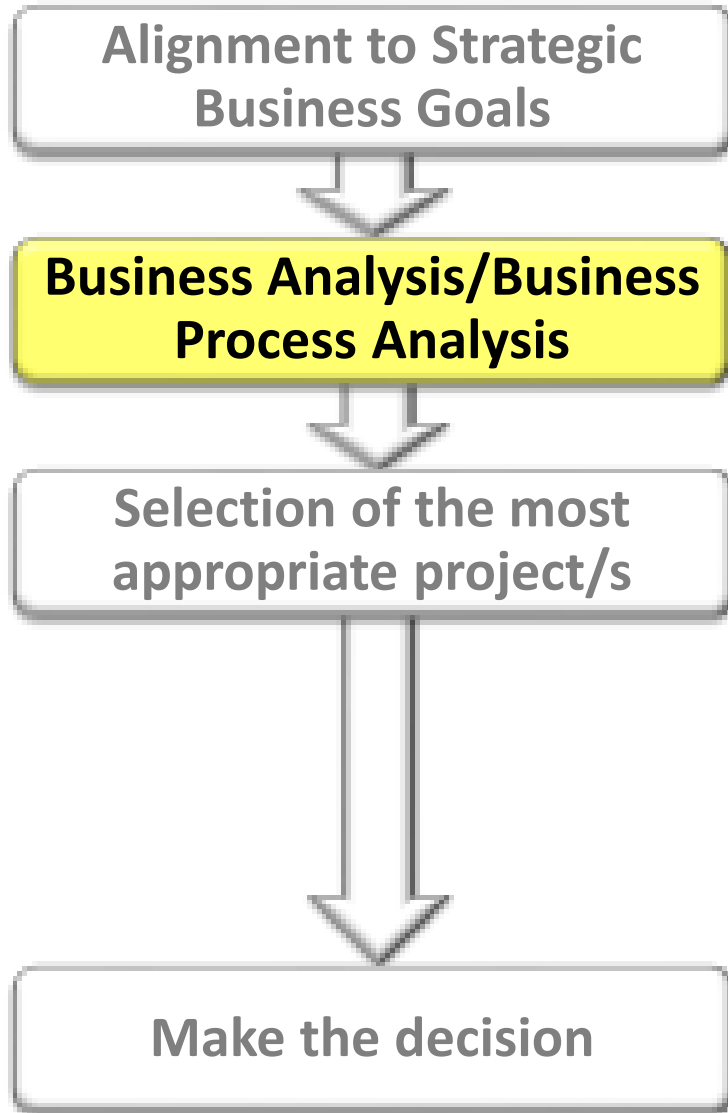
What is the organisation doing now? (what business, what clients, what products, what services)

How is the organisation doing its tasks? (how is it organised, how is it structured, how are the processes implemented)

When is the business doing the various tasks (timeframes, process timelines)

Who is doing various tasks (who is doing the work, who are the clients, who are the stakeholders)

Why is change needed (problems, opportunities, directives)

USE METHODS LIKE USECASE ANALYSIS

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Make the decision
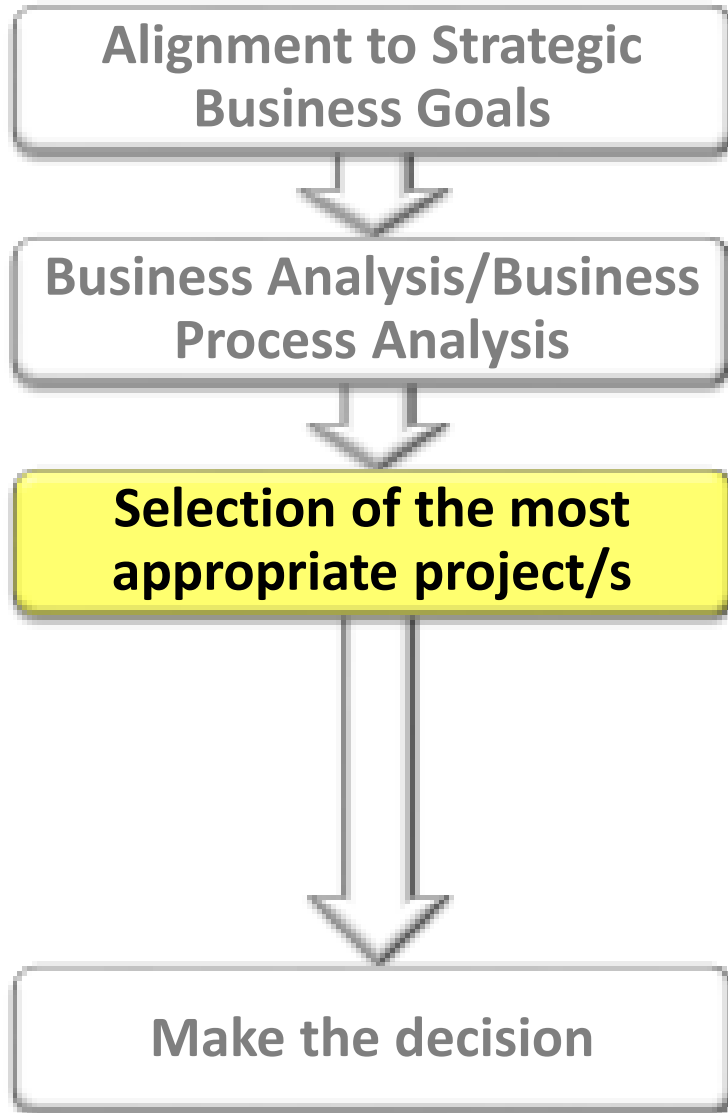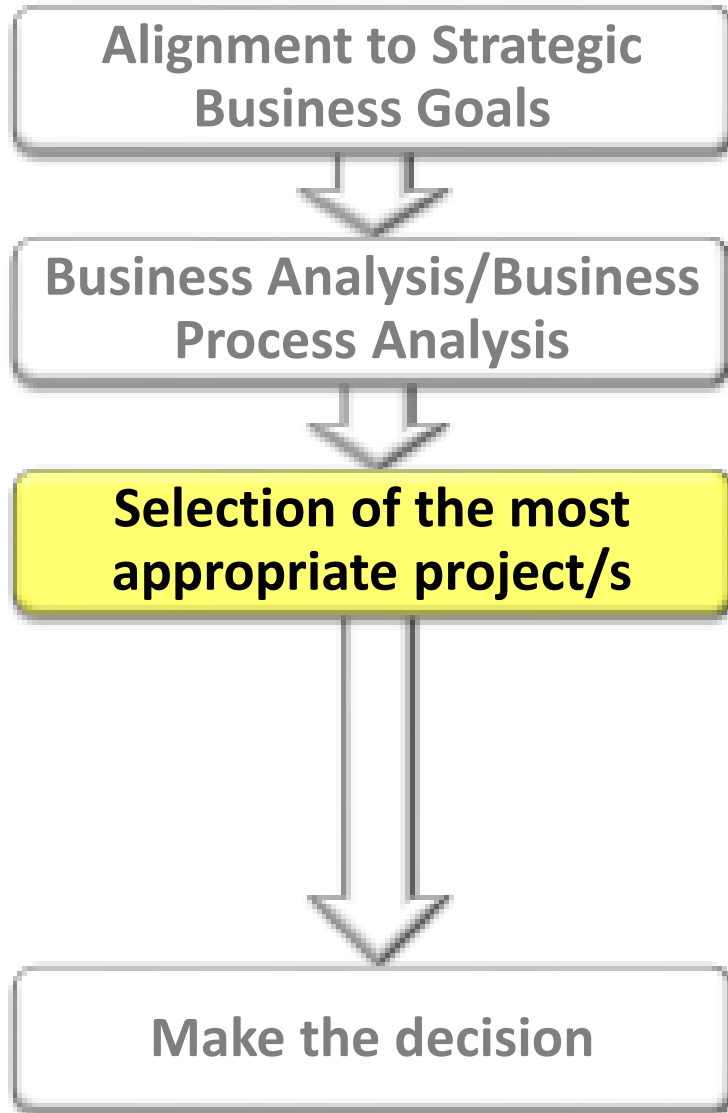
Apply one or more of the following

- Categorisation
  - ***Problems –*** *What problem needs to be fixed*
  - ***Opportunities –*** *What gives the greatest benefit*
  - ***Directives –*** *What has been ordered*
  - ***Duration –*** *How long will it take*
  - ***Risk –*** *Which has the greatest risk/s*
  - ***Cost –*** *Which has the highest cost*
  - ***Cost/Benefit –*** *Which project will provide the greatest benefit for the cost*

Use the following techniques to help categorisation

SELECTION - IDENTIFY POTENTIAL PROJECTS

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↓

Make the decision

Apply one or more of the following

- SWOT **(Strengths, Weaknesses, Opportunity, Threat)**

	POSITIVES	**NEGATIVES**
INTERNAL	**STRENGTHS** ✓ Return on Investment ✓ Improved business outcomes	**WEAKNESSES** ✓ Existing business weaknesses ✓ Project weaknesses
EXTERNAL	**OPPORTUNITY** ✓ Competitive Edge ✓ Reduce weaknesses	**THREATS** ✓ Competitive Issues ✓ Risks (Business/Project)

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Make the decision
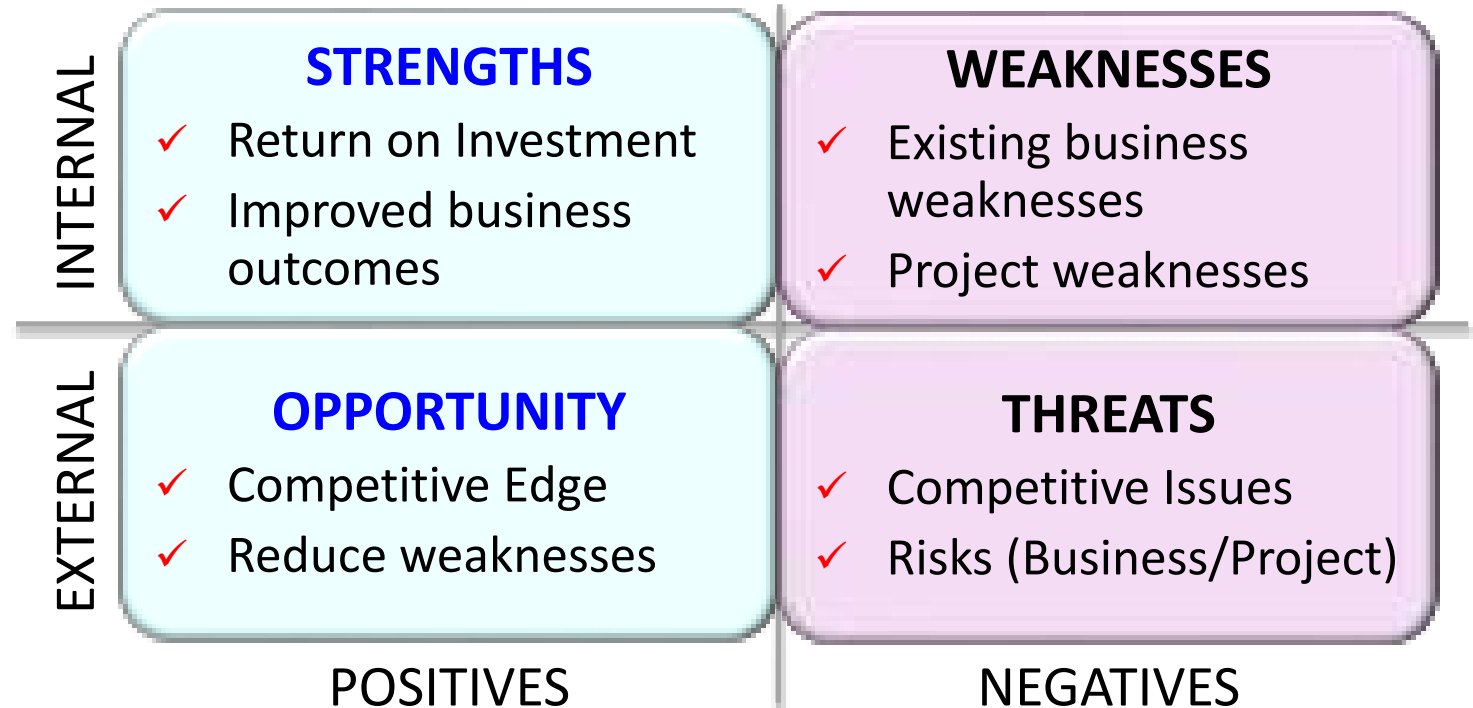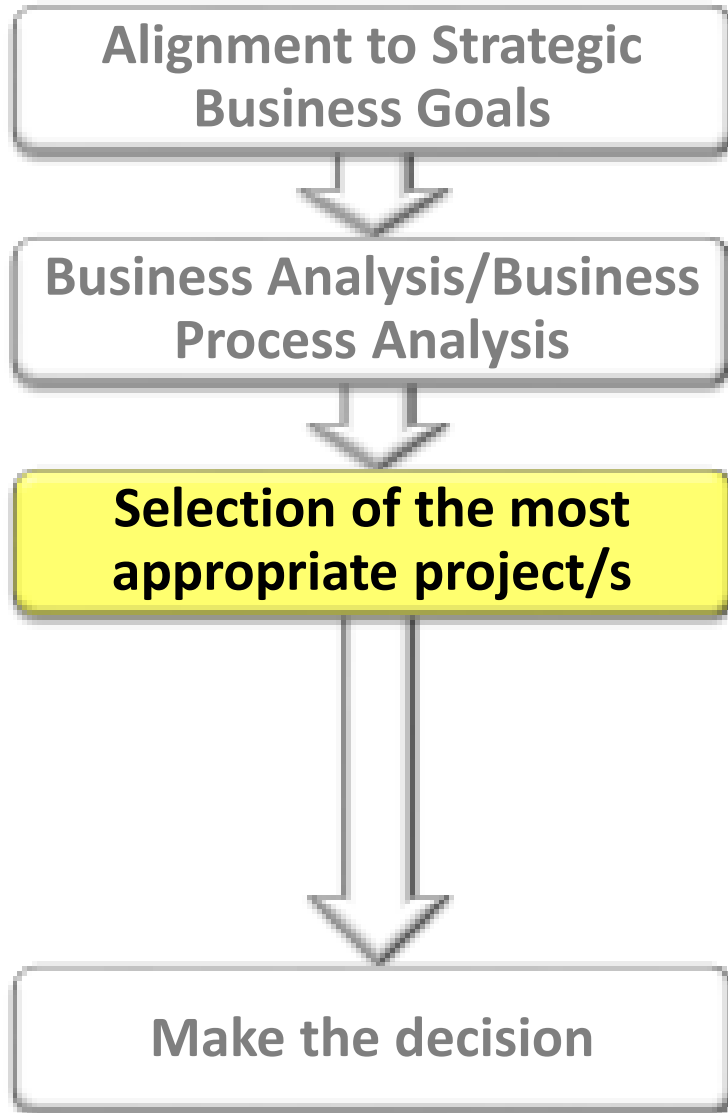
Apply one or more of the following

- Weighted Analysis

There are a variety of different techniques. We'll look at a key one during the workshop this week.

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Make the decision
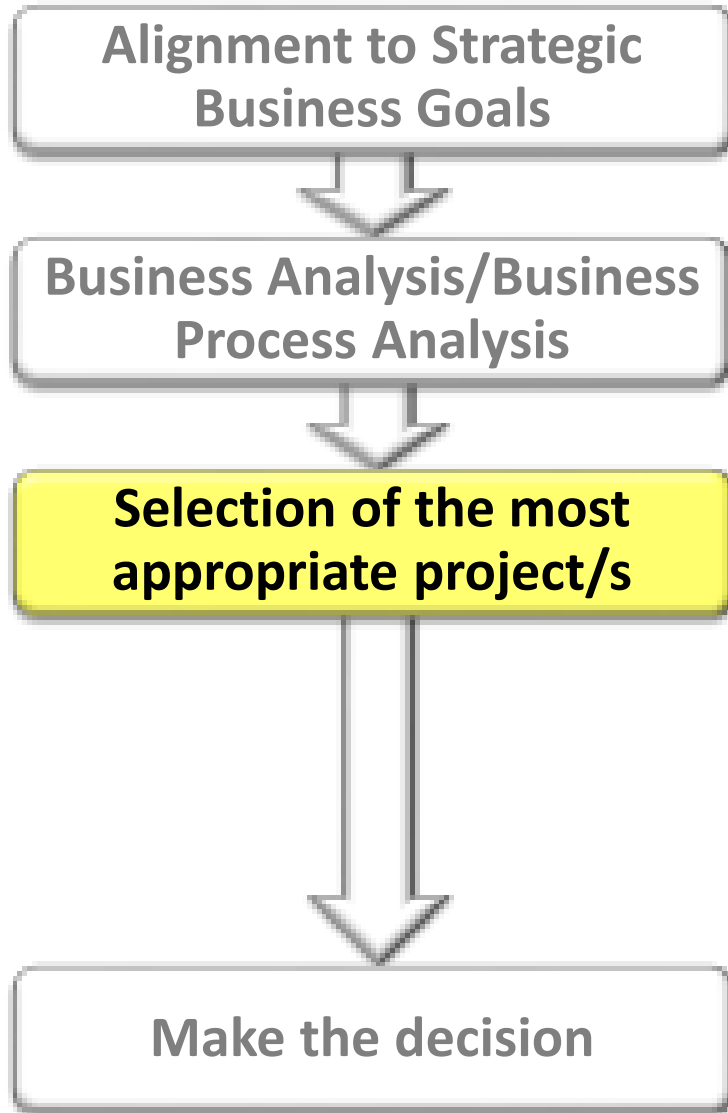
Apply one or more of the following

- Balanced Scorecard – Five Factors
  - **Business Vision & Strategy**
  - Financial *(Stewardship)*
  - Customer & Stakeholder
  - Internal Process
  - Organisational Capacity *(Learning & Growth)*

PERSPECTIVES

Lets look at the interaction

BALANCED SCORECARD PERSPECTIVE INTERACTION

FINANCIAL
(STEWARDSHIP)
- ✓ Financial Performance
- ✓ Effective Resource Use

ORGANISATION'S VISION & STRATEGY

CUSTOMER & STAKEHOLDER
- ✓ Customer Value
- ✓ Satisfaction & Retention

INTERNAL PROCESSES
- ✓ Efficiency
- ✓ Quality

ORGANISATIONAL CAPACITY (Learning/Growth)
- ✓ Human capacity/Culture
- ✓ ICT (Infrastructure/Tech)

STRATEGIC OBJECTIVES
- ✓ Strategy Maps
- ✓ Performance Measures
- ✓ Strategic Initiatives

Lots of good templates on the internet

SELECTION - IDENTIFY POTENTIAL PROJECTS

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↓

Make the decision

Apply one or more of the following

- Financial Analysis
  - **Net Present Value (NPV)**
  - **Return on Investment (ROI)**
  - **Payback Period (Break-Even)**

Lets look at each of these individually

NET PRESENT VALUE (NPV)

✓ ## What is **NPV**?

- ➢ A method of calculating the expected monetary gain/loss of a project

- ➢ Takes into account changing value of money due to costs (e.g. interest/inflation) – Discount Rate or Minimum RRR

RETURN ON INVESTMENT (ROI)

✓ ## What is **ROI**?

➢ Identifies how much money will be made in relation to how much was spent

ROI = (Total Discounted Benefits – Total Discounted Costs)/Discounted Ted Costs

PAYBACK ANALYSIS (PB)

✓ ## What is **Payback**?

➤ The time it will take to recoup the money invested (project & support, etc.)

We'll look at NPV, ROI & Payback during the Topic 2 workshop

CUMULATIVE COSTS & REVENUES
(ADJUSTED FOR NPV)

BREAK-EVEN

REVENUE

PROFIT

COSTS

Payback Period

LOSS

COST/REVENUE ($M)

YEARS

SELECTION - IDENTIFY POTENTIAL PROJECTS

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Make the decision
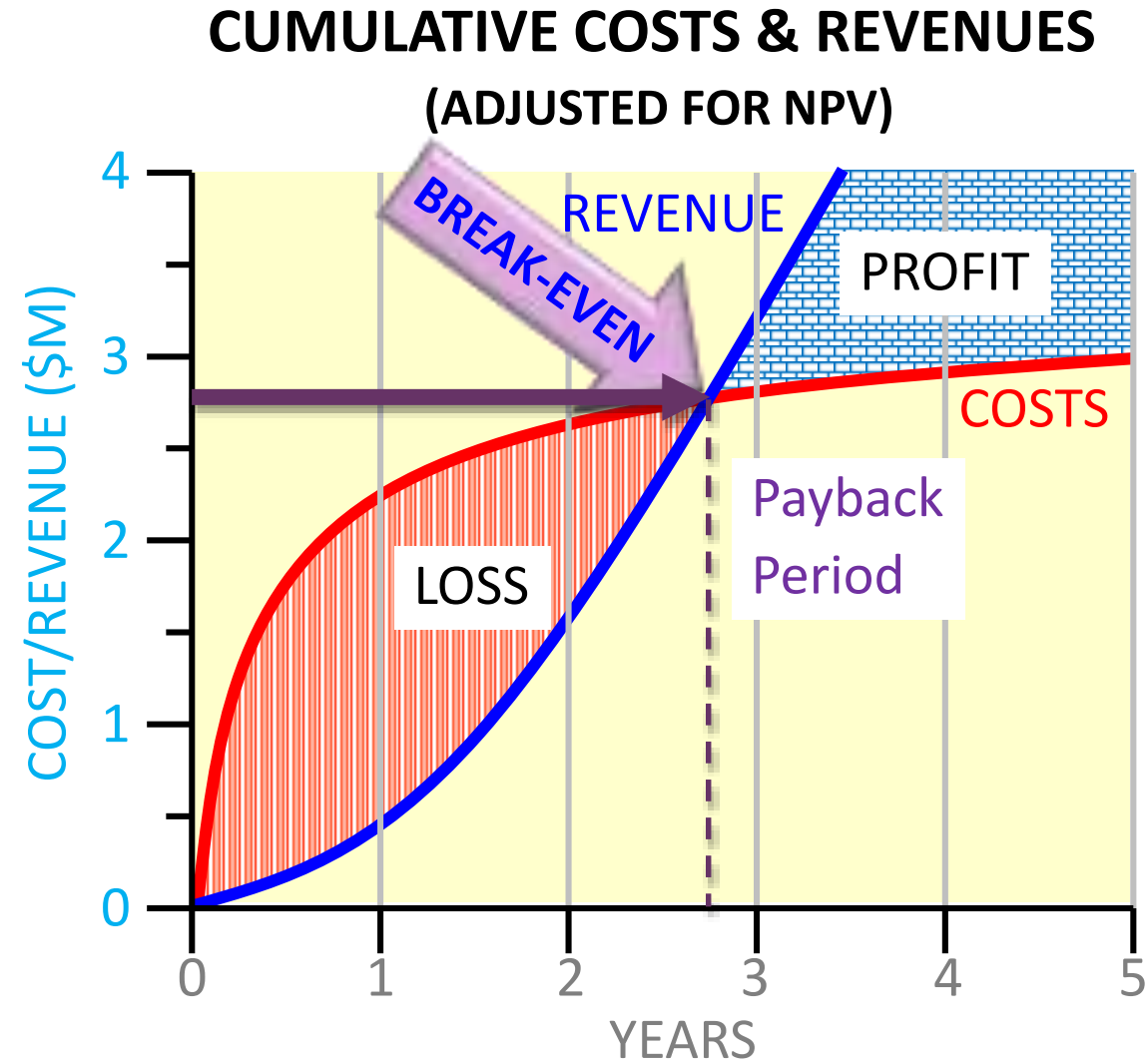
These types of analysis

- Categorisation *(Problems, Opportunities, Directives)*
- SWOT **(Strengths, Weaknesses, Opportunity, Threat)**
- Weighted Analysis **(Importance/Effect)**
- Balanced Scorecard
- Financial Analysis **(NPV/IRR/Payback)**

can…

SELECTION - IDENTIFY POTENTIAL PROJECTS

Alignment to Strategic Business Goals

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Business Analysis/Business Process Analysis

↓

Selection of the most appropriate project/s

↓

Make the decision

… help you make the right decisions about selecting projects
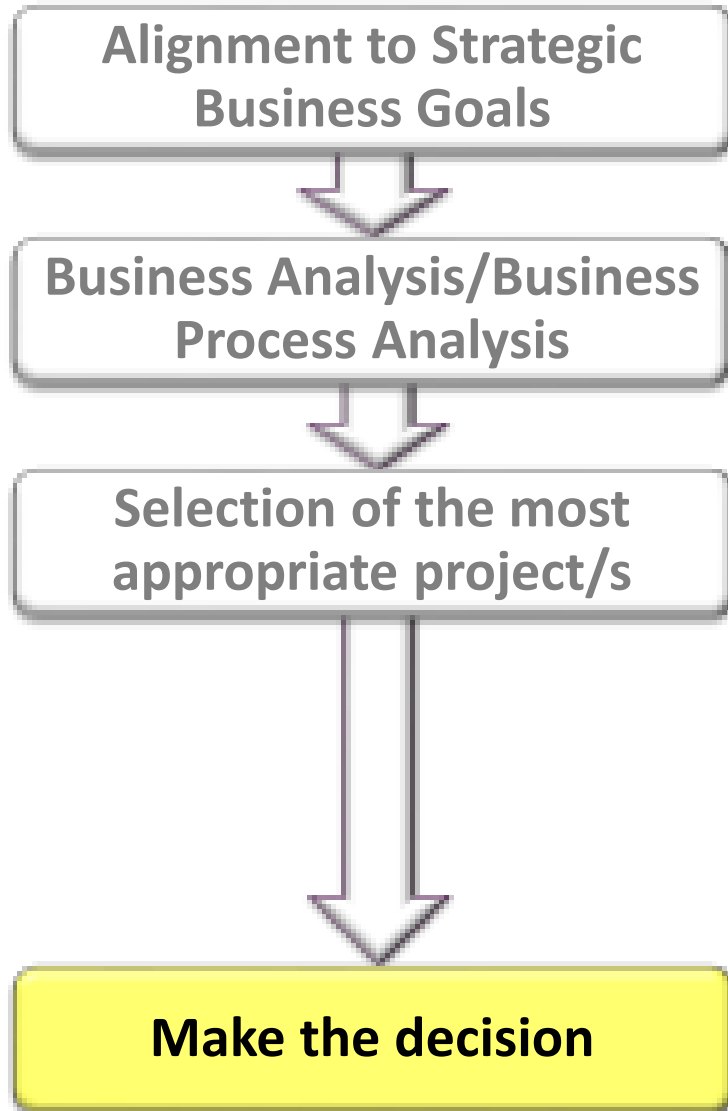
Once the selection is made – develop the Project Charter

THE PROJECT CHARTER

✓ A **project charter** is a short document that:

> ➢ formally recognises the existence of a project

> ➢ provides high level direction and feasibility information

> ➢ gives a summary of the schedule (including key milestones)

> ➢ supplies high level budgetary information

> ➢ provides the name/s & contacts for key stakeholders

> ➢ outlines the project objectives

> ➢ explains the main project success criteria

> ➢ gives a high level overview of the approach

> ➢ outlines key roles & responsibilities

> ➢ other fundamental information

Includes sign off for all key stakeholders (essential)

PROJECT CHARTER EXAMPLE

We will discuss this during the Topic 2 Workshop

PLANNING

START

| INITIATION (& PRE-INITIATION) | PLANNING | EXECUTION | CLOSING |

MONITORING & CONTROL

END

POST CLOSE

Selection & Project Charter

Project Management Plan (PMP)

Direct & manage work

(Work performance data, Change Management Project Management, PMP updates)

Monitoring & control of work (Change Management/Change Control, Configuration Management, Project KM, PMP updates, Project document updates)

Final Product/service, Transition, Review, Learn

The Master document is the PMP

WHAT IS THE PMP

✓ A high level document used to coordinate (binds others)

✓ Used as the overall map (Single document that everyone can use to get an understanding of what is going on)

✓ It is used to outline approaches for all Knowledge Areas

✓ Gives key personnel insights so they can manage their areas (points to subsidiary documents)

✓ **It is a living document** – it continues to evolve as the project continues (make sure it is visible to all stakeholders)

HOW SHOULD IT BE STRUCTURED?

✓ Lots of different standards (organisational/project differences)

✓ And templates to meet standards

✓ For example…

Use the appropriate template (and be willing to modify it if necessary)

IEEE STD 1058-1998 – SOFTWARE PMP STANDARD

1. Overview (Project Summary)
2. References
3. Definitions
4. Project Organisation
5. Managerial Process Plans (Start-up Plan, Work Plan, Control Plan, Risk Management Plan, Closeout Plan)
6. Technical Process Plans
7. Supporting Process Plans (CM Plan, Verification & Validation Plan, Documentation Plan, Quality Assurance Plan, Reviews & Audits, Problem Resolution Plan, Contractor Management Plan, Process Improvement Plan)
8. Additional Plans

HOW SHOULD IT BE STRUCTURED?

✓ A generalised template has been provided
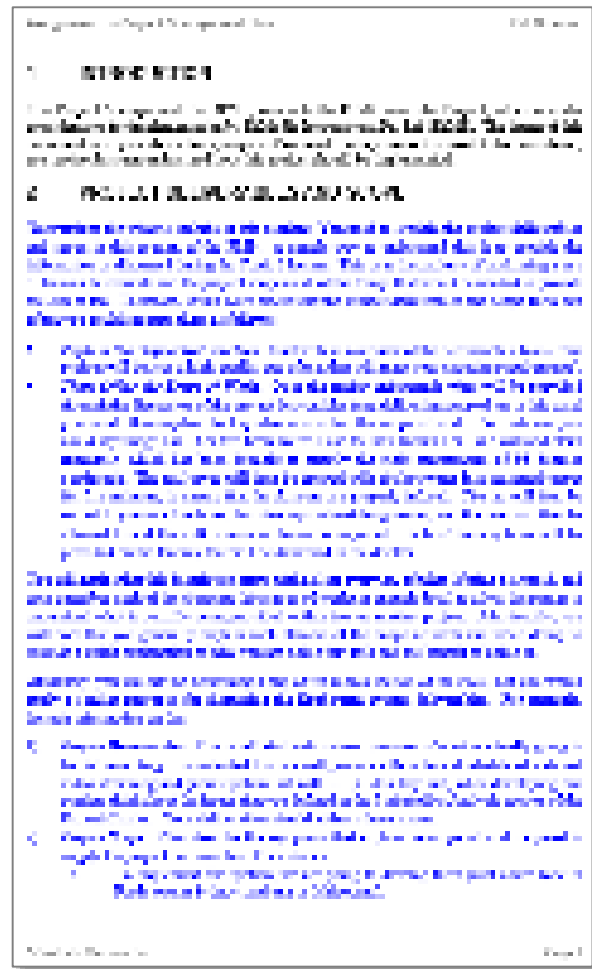
We will discuss this during the Topic 2 Workshop

EXECUTION

START

INITIATION (& PRE-INITIATION)	PLANNING	EXECUTION	CLOSING

MONITORING & CONTROL

END

POST CLOSE

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Monitoring & control of work (Change Management/Change Control, Configuration Management, Project KM, PMP updates, Project document updates)

Work the Plan

Final Product/service, Transition, Review, Learn

PROJECT EXECUTION

✓ Project Execution involves managing and performing the work described in the Project Management Plan (and other plans/documents)

✓ The majority of time and money is usually spent on execution

✓ This is where the team needs to produce what was offered in the project commitment

PROJECT EXECUTION

✓ Requires diverse management skills

✓ Project Managers must have both!

SOFT SKILLS

Leadership
Problem solving
Teamwork
Negotiations
Politics

HARD SKILLS

Technical
Schedule
Resource
Budget
Reporting

PROJECT EXECUTION

✓ And needs an integrated approach that applies

PROJECT MANAGEMENT METHODOLOGY **(PM Processes, Procedures and Systems)**	**PROJECT MANAGEMENT TOOLS** **(PM Software)**

These support monitoring & control

MONITORING & CONTROL

START
| INITIATION (& PRE-INITIATION) | PLANNING | EXECUTION | CLOSING |

MONITORING & CONTROL

END

POST CLOSE

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Final Product/service, Transition, Review, Learn

Carried out from Initiation to Closing

PROJECT MONITORING & CONTROL

✓ As the name suggests – it involves …

This is
IMPORTANT
because…

Project Elements & Processes
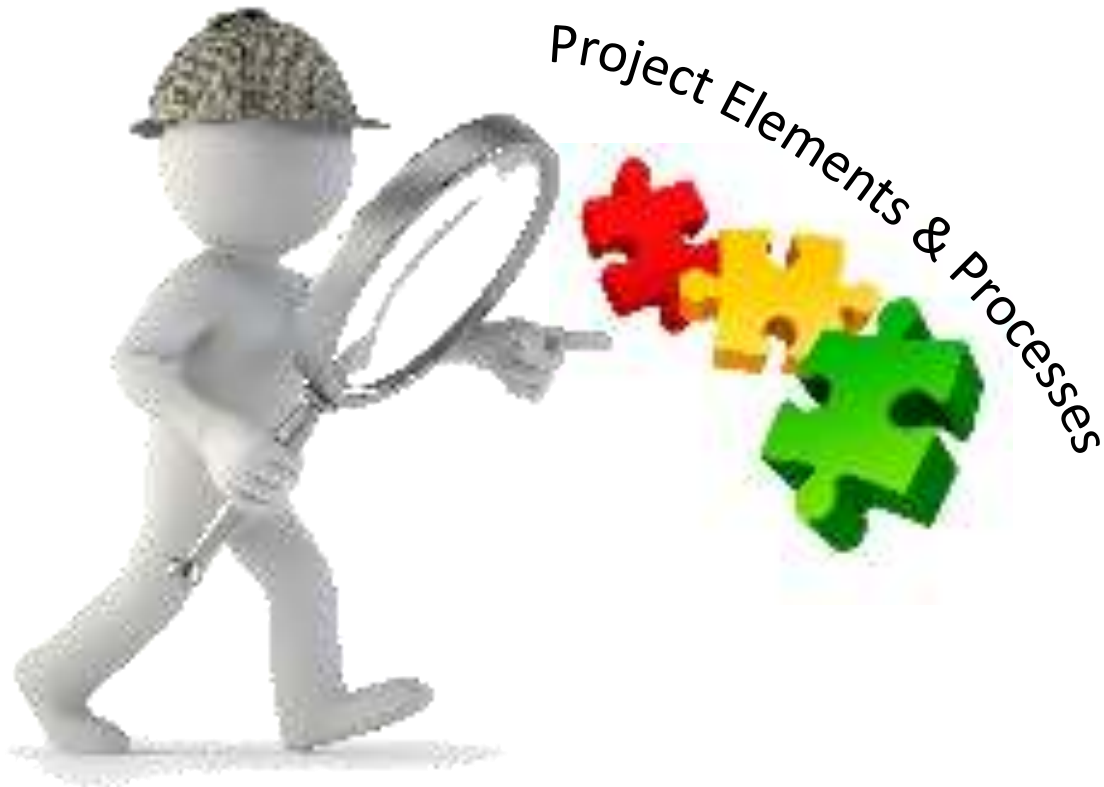
Proactive monitoring of project aspects
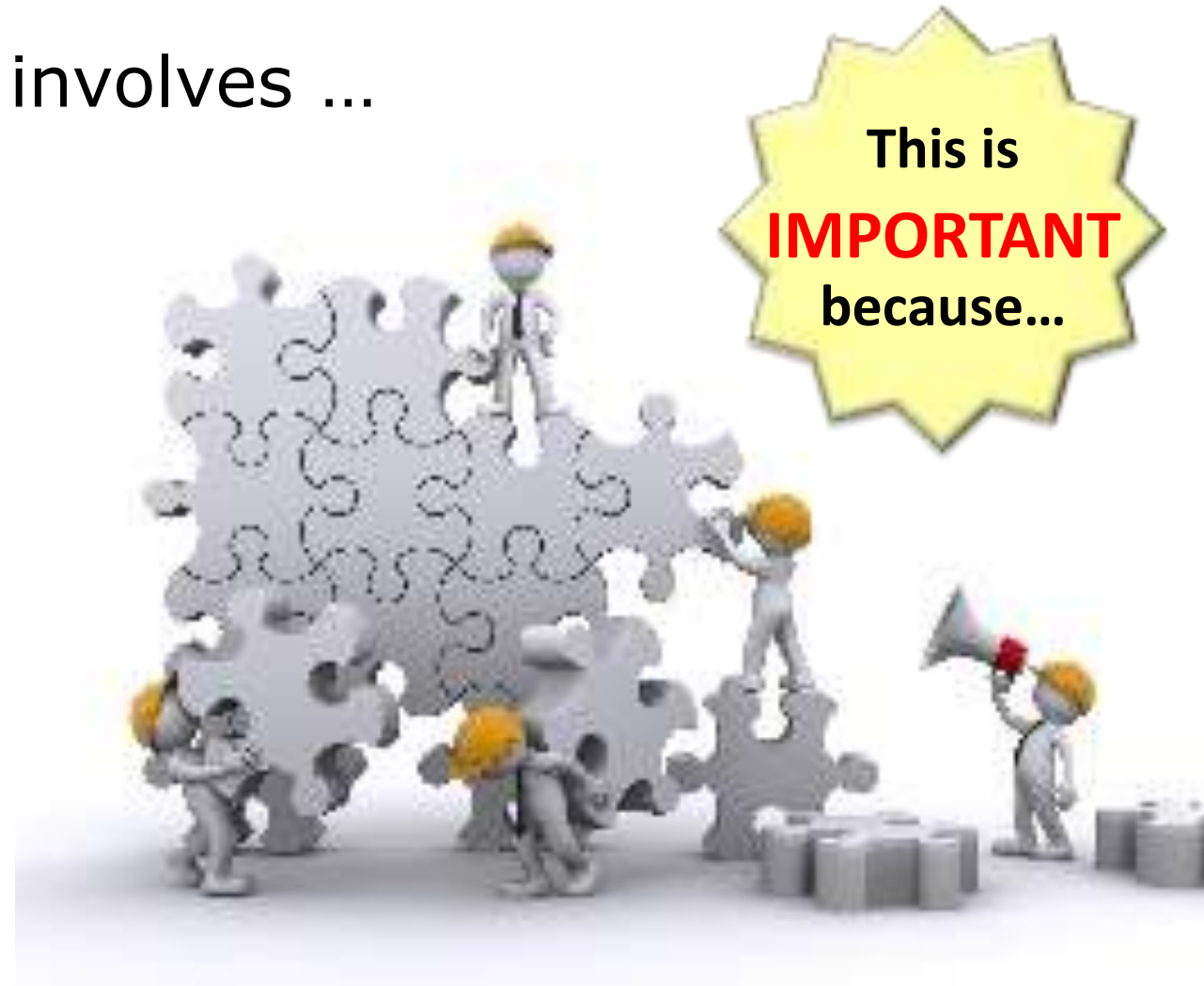
Proactive control of project related activities

PROJECT MONITORING & CONTROL

✓ All project **plans evolve** (many things change!!!!)

✓ So our implementation must also evolve (and this needs to be done proactively – don't just react at the last minute)

Let's use an analogy

PROBLEM

PROJECT MONITORING & CONTROL

✓ The same is true for any project

✓ Monitor the situation and **proactively evolve** your approach as necessary

✓ Three main objectives are:
1. Influence the factors that create changes to ensure that changes are beneficial (needs a managed process)
2. Determine that a change has occurred (either proactive or responsive control)
3. Manage actual changes as they occur (through the Change Management process)

AN OVERVIEW OF CHANGE MANAGEMENT
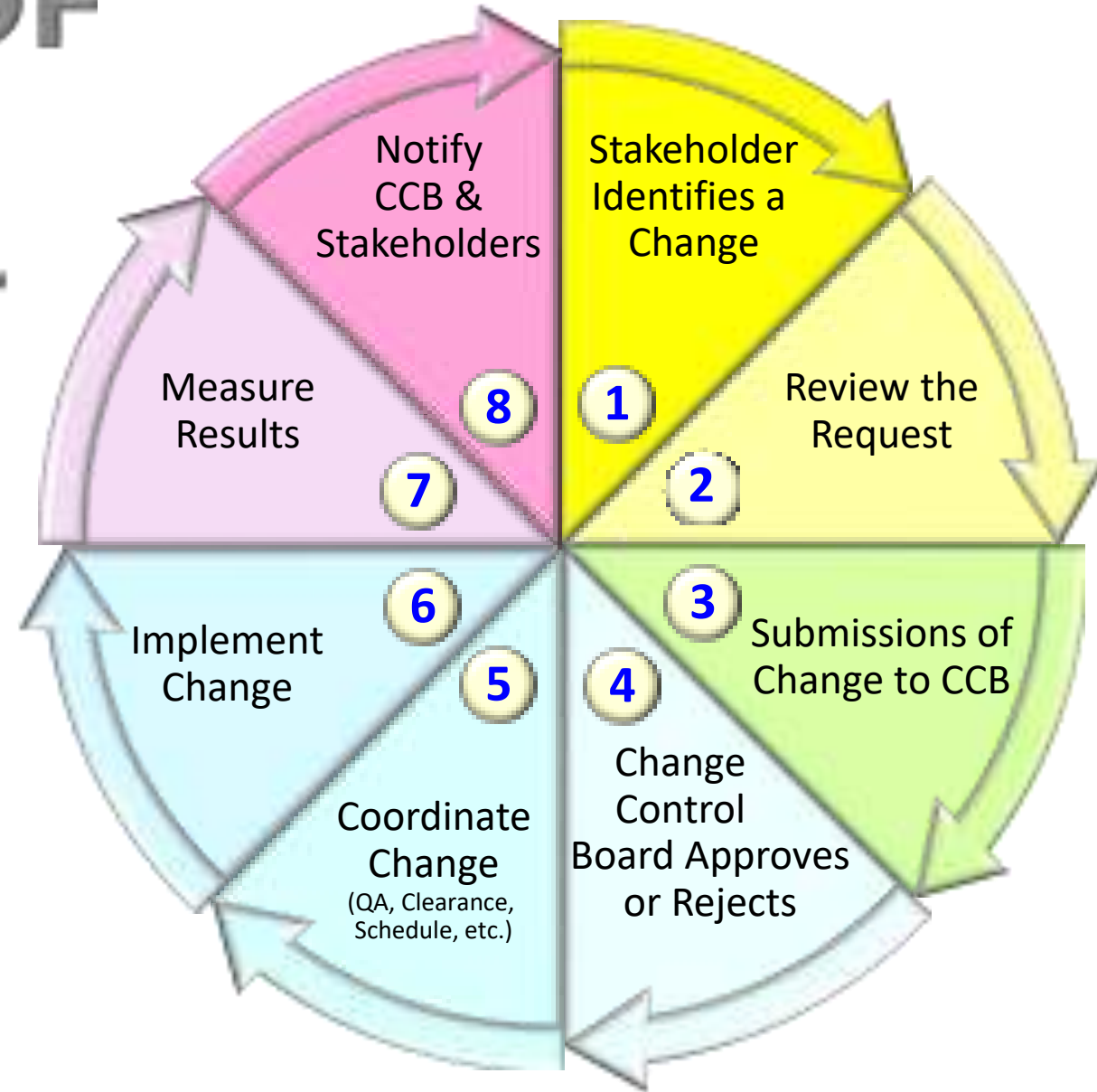
Different organisations have different approaches (all much the same).
Use ChM – it will save you from many problems

- 1. Stakeholder Identifies a Change
- 2. Review the Request
- 3. Submissions of Change to CCB
- 4. Change Control Board Approves or Rejects
- 5. Coordinate Change (QA, Clearance, Schedule, etc.)
- 6. Implement Change
- 7. Measure Results
- 8. Notify CCB & Stakeholders

Sources: Adapted from Gardner & Ash (2003); Akhtar (2016); Galup, et al. (2009)

PROJECT MONITORING & CONTROL

✓ This Change Management (ChM) requires:

- Proactive planning (Plan for change and proactively evolve)

- Integral reporting/monitoring (through the whole ChM system)

- Good communication (Project management as a process of constant reporting, communication and negotiation)

- Good control structures (systems and a Change Control Board)

- Well defined procedures for making timely decisions (large & small)

- Use project management and other software to help manage and communicate changes

- Integrated Configuration Management (CM) (technical system documentation and management)

WHAT IS CONFIGURATION MANAGEMENT?

✓ Configuration Management includes the following activities

| CM Planning | ⟷ | Configuration Control | Control changes to a product & its documentation |

Configuration Identification — Define the product & its configuration documentation

Verify consistency of configuration documentation — **Configuration Audits**

CM Status Accounting

Provide status and information about a product and its configuration documentation
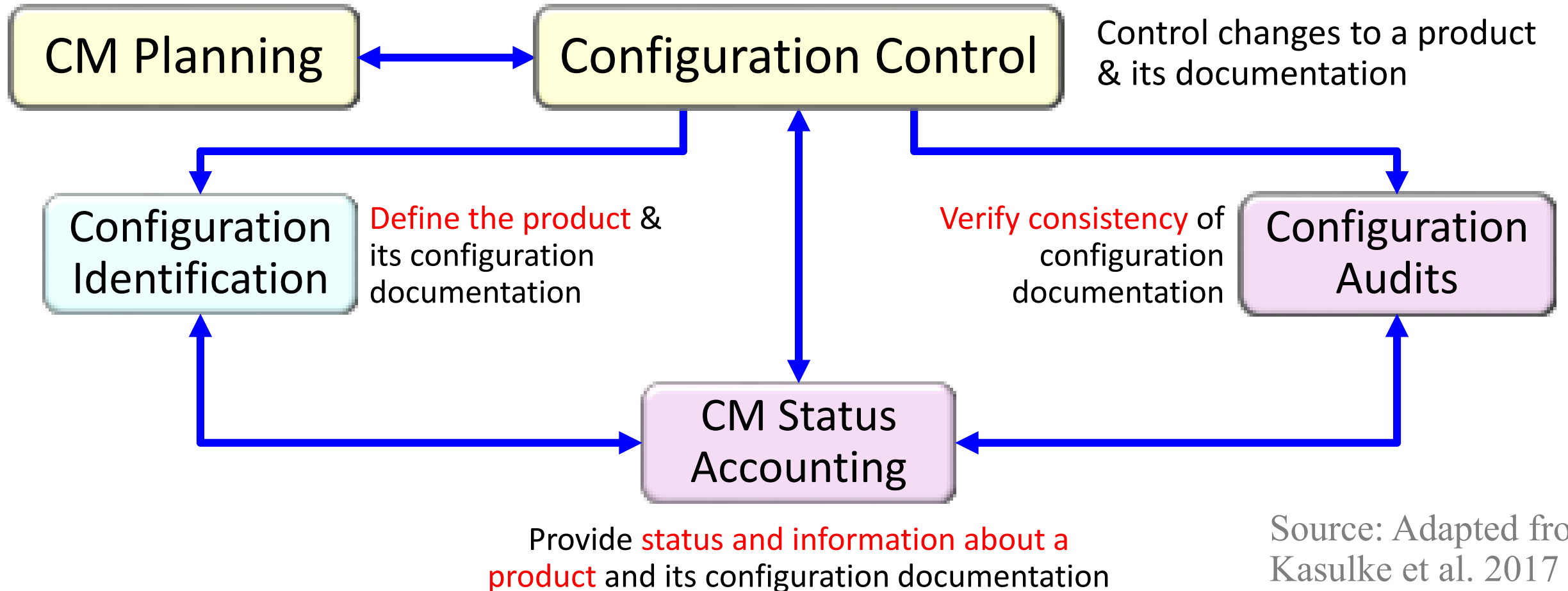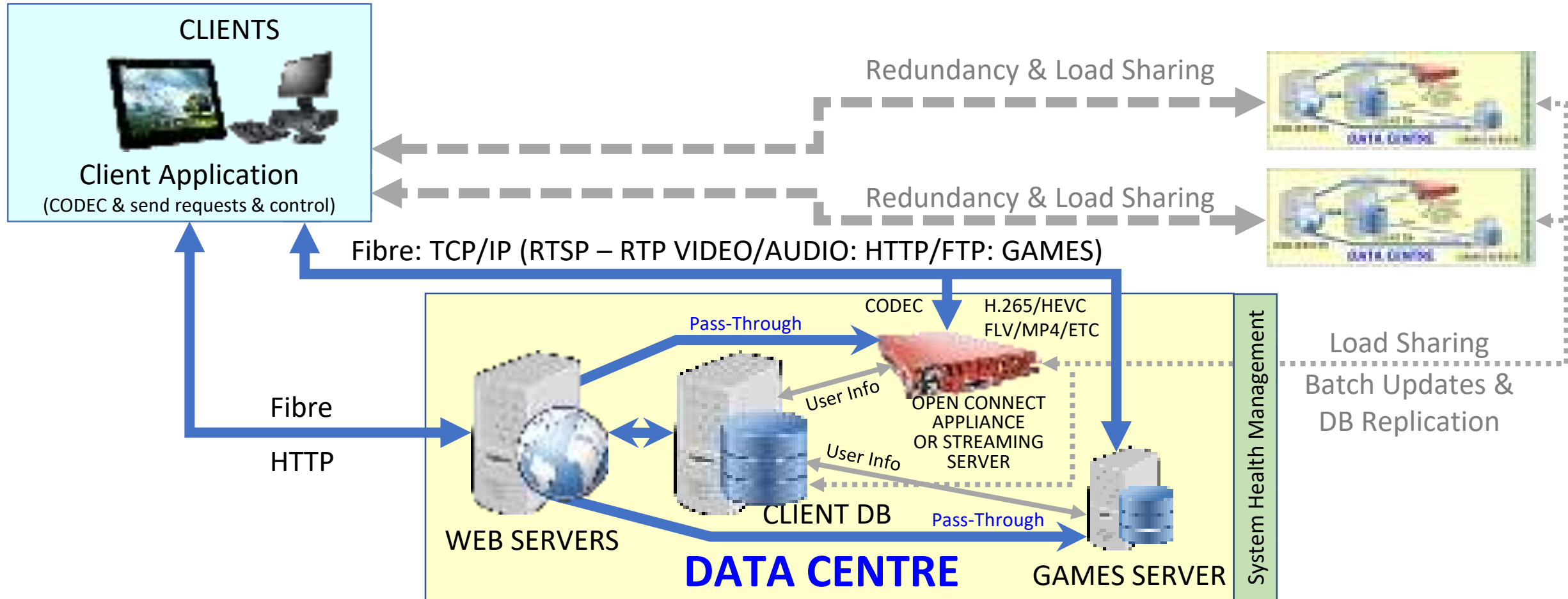
WHAT IS CONFIGURATION MANAGEMENT?

- ✓ Identifies functional and physical design (e.g. technical design)
- ✓ Documents key descriptive aspects (so they are understood by all pertinent stakeholders)
- ✓ Help to ensure that:
  - ➢ The right information is available for planning (technical, procurement, system design, roll out, etc.)
  - ➢ Changes in one part of the system will not impact on another (ensure that the design remains coherent)
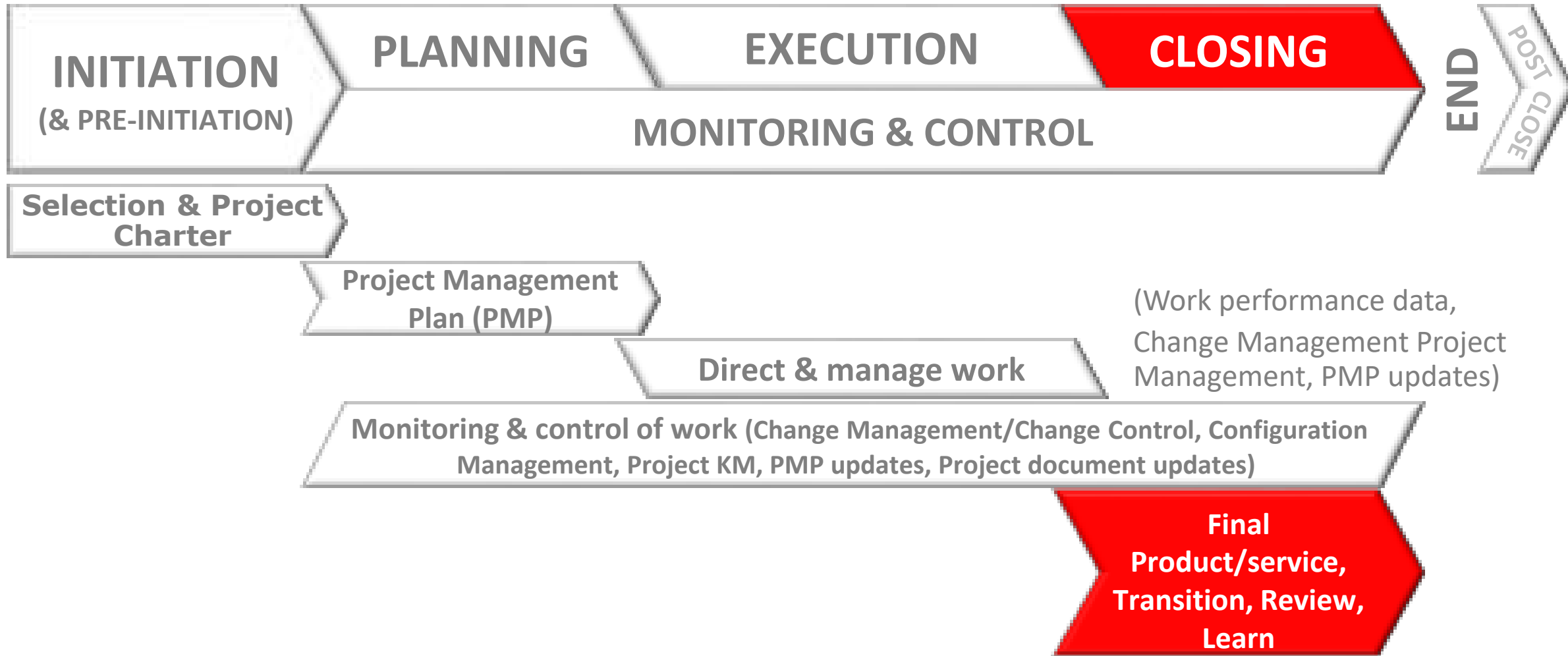 - ➢ Everyone's part of the solution will mesh together during Execution

HERE IS AN EXAMPLE OF WHY THIS IS IMPORTANT

SIMPLIFIED TECHNICAL ARCHITECTURE

CLIENTS

Client Application
(CODEC & send requests & control)

Redundancy & Load Sharing

Redundancy & Load Sharing

Fibre: TCP/IP (RTSP – RTP VIDEO/AUDIO: HTTP/FTP: GAMES)

Load Sharing
Batch Updates &
DB Replication

DATA CENTRE

CODEC   H.265/HEVC
FLV/MP4/ETC

Pass-Through

User Info

OPEN CONNECT
APPLIANCE
OR STREAMING
SERVER

User Info

Pass-Through

Fibre

HTTP

WEB SERVERS

CLIENT DB

GAMES SERVER

System Health Management

CLOSING

START

INITIATION (& PRE-INITIATION)	PLANNING	EXECUTION	CLOSING

MONITORING & CONTROL

END

POST CLOSE

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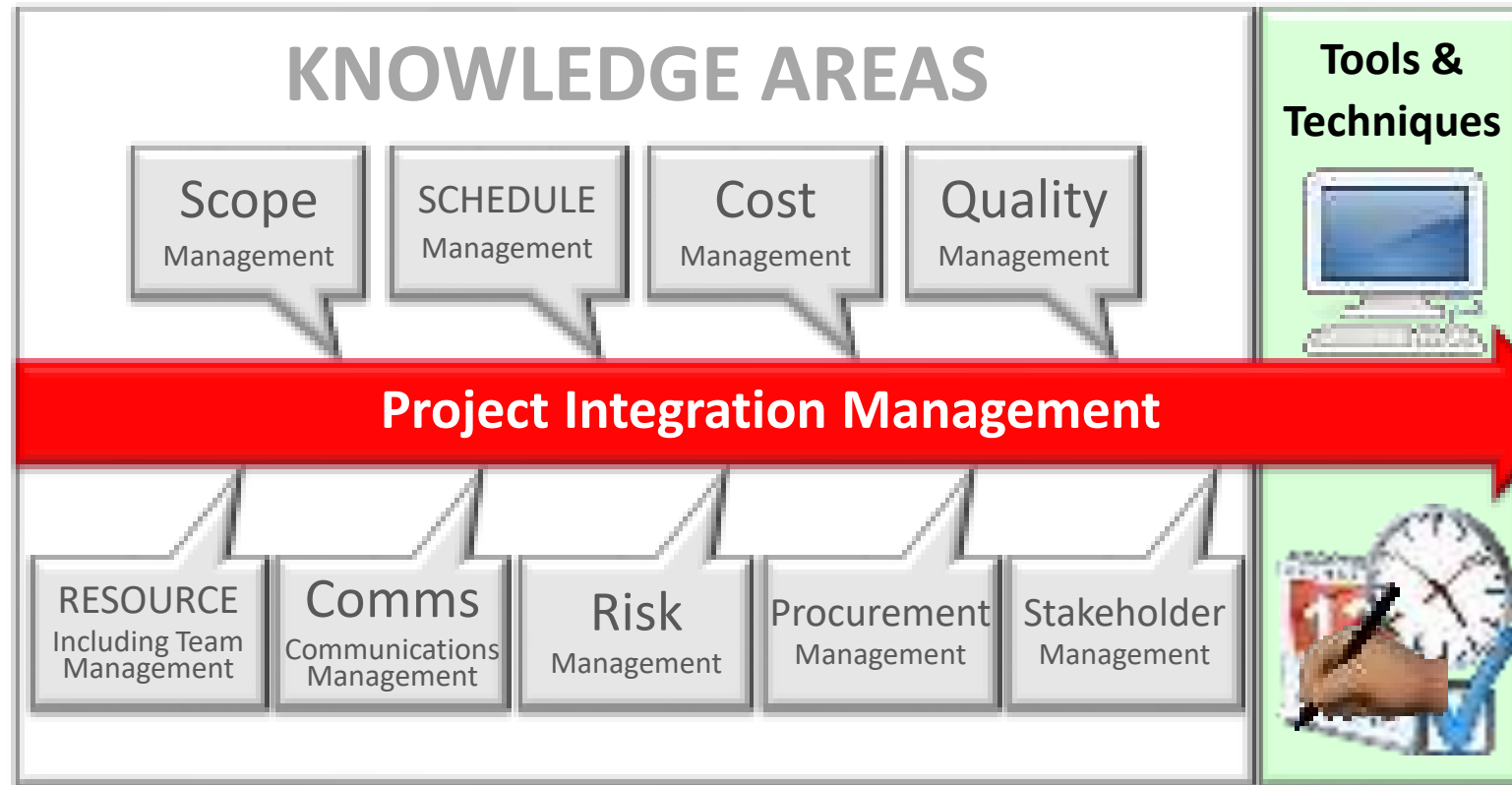
Final Product/service, Transition, Review, Learn

CLOSING

- ✓ To close a project - finalise all activities and transfer the completed or cancelled work to the appropriate stakeholders

- ✓ Main outputs include:

  - ➤ Administrative closure procedures

  - ➤ Contract closure procedures

  - ➤ Final products, services, or results

  - ➤ Organisational process asset updates

SOFTWARE

KNOWLEDGE AREAS

Tools & Techniques

Scope Management
SCHEDULE Management
Cost Management
Quality Management

Project Integration Management

RESOURCE Including Team Management
Comms Communications Management
Risk Management
Procurement Management
Stakeholder Management

Stakeholders' needs & expectations

Project Portfolios

ENTERPRISE SUCCESS

PROJECT SUCCESS

SOFTWARE FOR PIM

✓ Different types of software can be used to assist in PIM:

- Word processing software creates documents

- Presentation software creates presentations

- Spreadsheets or databases perform tracking

- Communication software such as e-mail and Web authoring tools facilitate communications

- Project management software can pull everything together and show detailed and summarised information

- **Business Service Management** (BSM) tools track the execution of business process flows

SOFTWARE FOR PIM

Can be very Useful – get to know them

SOFTWARE FOR PIM
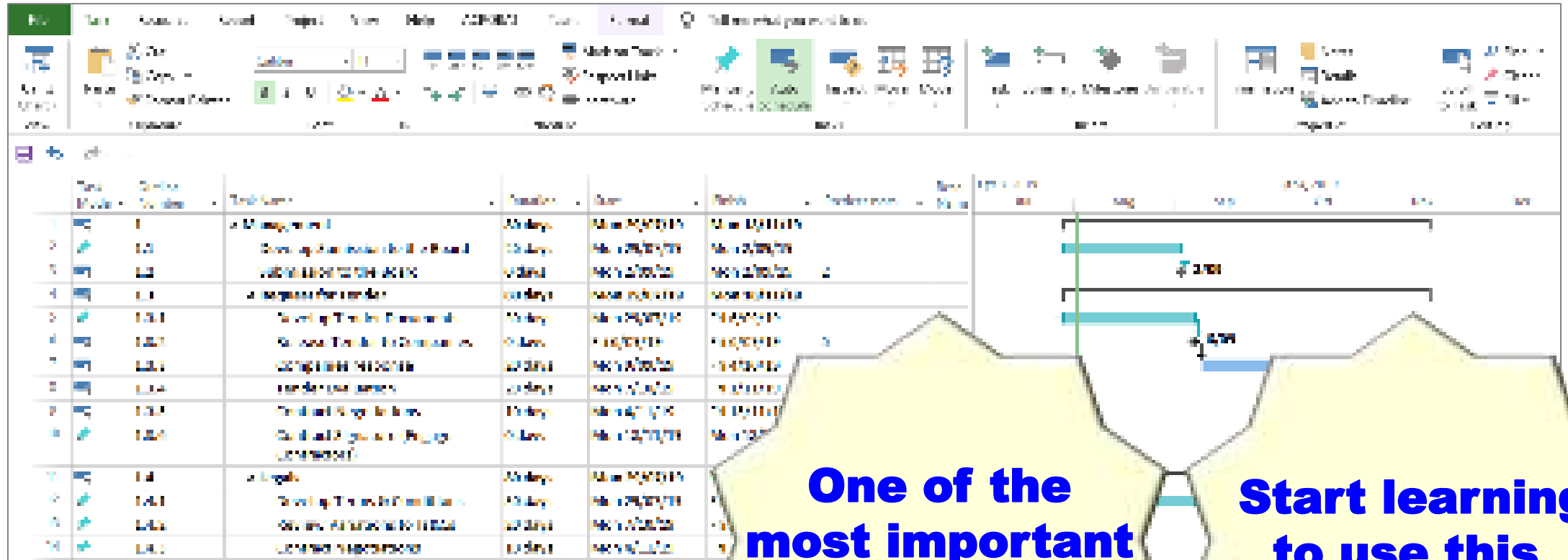
One of the most important is MS Project

Start learning to use this (if you don't already know it)

TOPIC SUMMARY

TOPIC SUMMARY

- ✓ **PIM** involves coordinating the other Knowledge Areas throughout a project's life cycle

- ✓ Project integration management includes:
  - ➢ Initiation (Pre-Initiation) - Selecting the right project
  - ➢ Initiation - Developing a Project Charter
  - ➢ Planning - Developing a Project Management Plan (PMP)
  - ➢ Execution - Directing and managing project execution
  - ➢ Monitoring and controlling project work **(including performing integrated Change Control (ChC), etc.)**
  - ➢ Closing the project