CHƯƠNG 1: TỔNG QUAN VỀ DỰ ÁN CÔNG NGHỆ THÔNG TIN – TRUYỀN THÔNG

1. Giới thiệu chung
2. Các nguyên lý và tiến trình quản lý dự án ICT
3. Các yếu tố quyết định thành công của dự án ICT

1. Giới thiệu chung

1. Project
2. Subproject
3. Programme
4. Portfolio
5. ICT project
6. Software project
7. Project Management

Example of project?

- System Development Project
- Build a new stadium
- Introduce new process in the team
- Transfer the resident
- Hosting party
- Etc.

1.1. What is a project?

- **Def. 1:** A project is a temporary endeavor undertaken to create a unique product, service, or result [*PMBoKGuide*]
- **Def. 2:** Projects are ad hoc, resource-consuming activities used to implement organizational strategies, achieve enterprise goals and objectives, and contribute to the realization of the enterprise‘s mission [*PMDSI*]
- **Def. 3:** A project is a sequence of unique, complex and connected activities having one goal or purpose that must be completed by a specific time, within budget and according to specification [*ESPM*]

1.1. What is a project?

- **Def. 1** [*PMBoKGuide*]**:** A temporary work to create a unique product, service or result.
  - **Temporariness :** Project has a definite beginning and end.
  - **Uniqueness :** Project has new elements for the team
    - It can take many dimensions
    - Its outcome should be different in some distinguished way.
- So what?
  - Project should be managed on the assumption that the change would happen.

Project Types

- Project can be categorized in a number of ways, depending on the organization, its mission, objectives and goals, and its priorities.
- Example:
  - Developing new Product or Service
  - BPR (Business Process Reengineering)
    - Effecting a change in structure, staffing and style of the organization
  - Designing a new vehicle
  - Developing or acquiring a new IT System
  - Constructing a building or a facility
  - Creating a nationwide infrastructure

Working

- List up below the projects which you have experienced in your career.

- Based on your own experience and understanding, briefly characterize projects

1.2. What are sub-projects?

- Smaller, more manageable components of larger, more complex projects
- Have their own goals and outputs or deliverables which together constitute the final deliverable.
- Have, analogous to the main project in which they are integrated, their own scope, schedules, costs, human resources, risks etc.

- Comprised of project team members
- Headed by subproject managers who, similar to the project manager, must
  - have excellent decision-making, communication and other requisite skills
  - be in a position to manage the implementation of the subproject work effectively and efficiently

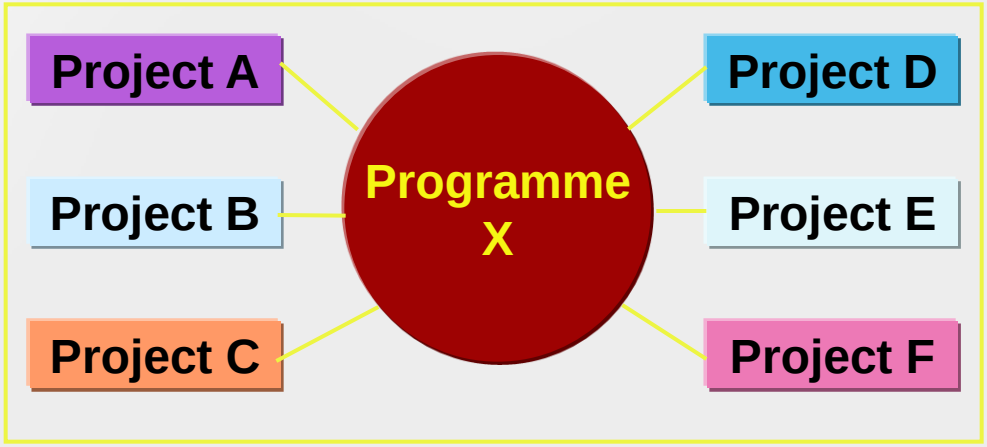
Example of sub-projects: The FIFA World Cup 2010

- Events
- Venues, Facilities Accommodation
- Transport
- Media Facilities and Coordination
- Telecommunications
- Security Arrangements
- Medical Care
- Human Resources and Volunteers
- Cultural Olympiad
- Pre-Games Training
- IT-Projects
- Opening and Closing Ceremonies
- Public Relations
- Financing
- Test Games and Trial Events
- Sponsorship Management

- A highly complex project
- Comprised several distinct work areas
- Each of these could be considered as sub-projects, in their own right
- All of these work areas have to be integrated and coordinated within the framework of the overall project

1.3. What is a Programme?

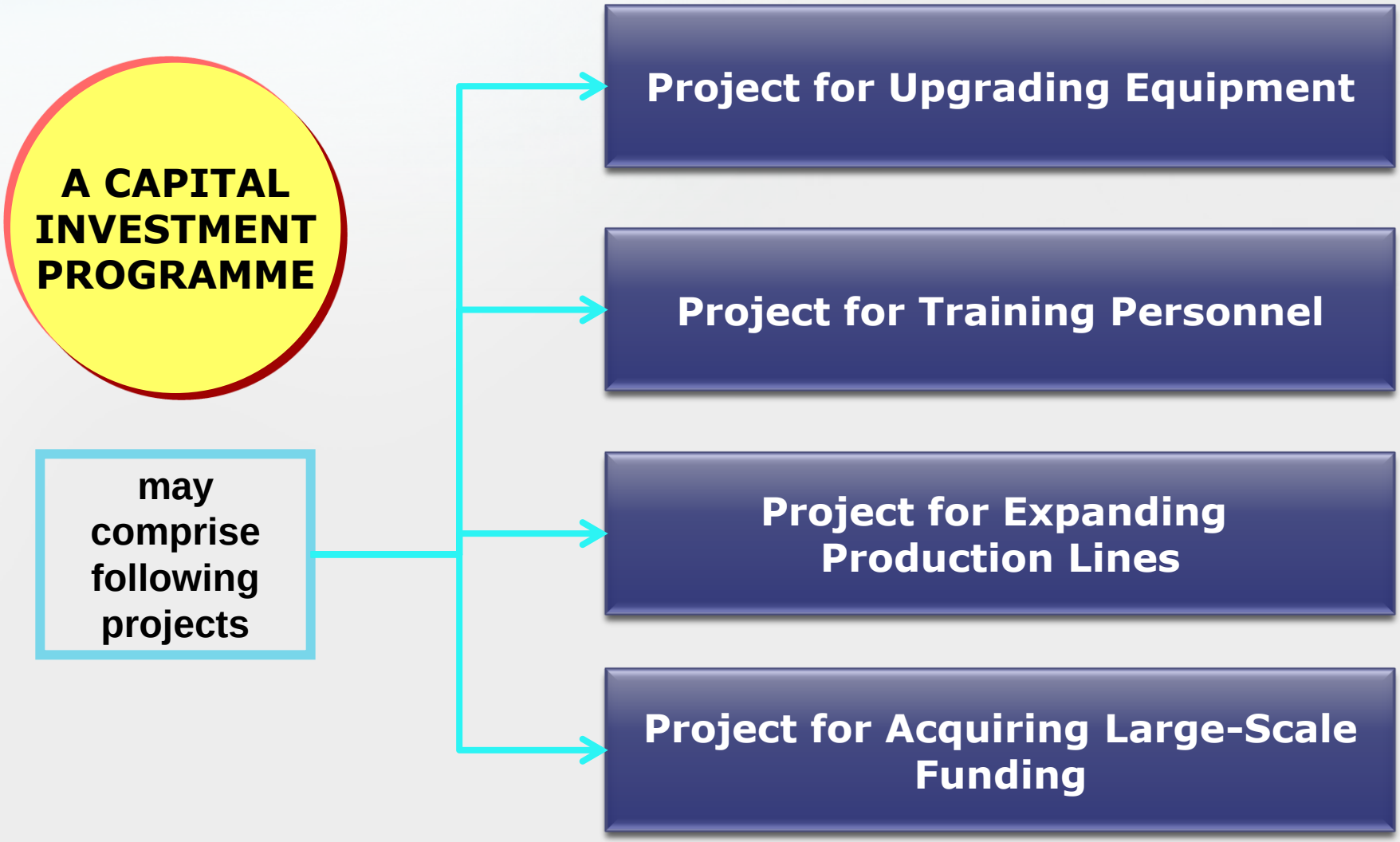
- A group of related projects managed in a coordinated way to obtain benefits and control not available from managing them individually



EXAMPLES OF PROGRAMMES

- Afforestation
- Primary Education Promotion
- Electrification
- Immunization
- Poverty Alleviation
- Privatization
- Space Exploration
- Urban Regeneration
- Water Resource Development
- Weaponization

Example of a Programme



Comparison of Programmes & Projects

Similarities

- Have goals and objectives which define their purpose of existence
- Have life-spans defining a starting and ending point in time
- Consume resources and necessarily incur a cost
- Require application of a methodology and must be managed properly to bolster their chances of success
- Aim at helping organizations achieve their mission and adding value to them.

Differences

- Projects: Result in the creation of an output and is then ended,
- Programmes: Must integrate and maintain the operability of that output for a specified period of time
  - Have multiple overarching goals whereas projects have one prime goal
  - Have a comparatively longer life-span, and obviously costs more than the combination of all the projects which constitute it
  - Are inherently more complex than a constituting project – it has a broader scope
  - May require extensive coordination between its various constituting projects

1.4. What is the Project Portfolio?

The project portfolio is the set of projects which an organization is undertaking. Projects usually differ in their type, complexity, cost, time requirement, risk level, priority, etc.

Some portfolios may be quite large, comprising dozens or hundreds of single projects,and consume a large chunk of an organization‘s resources

The projects comprising the portfolio may be in various stages of initiation, planning, and implementation

Portfolios are dynamic. Their composition will change over time as some projects end or are prematurely terminated and new projects are added

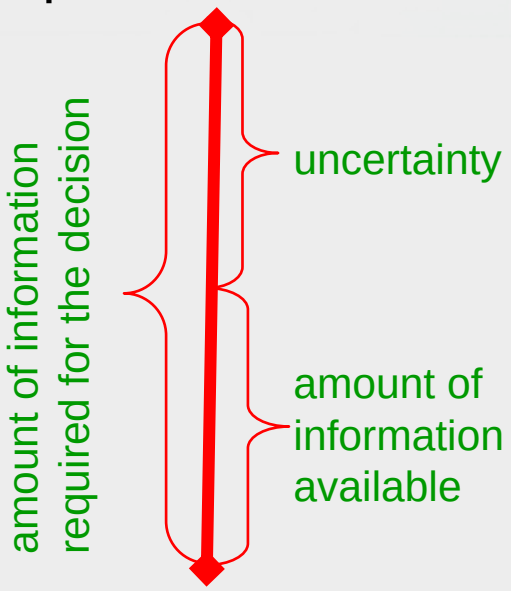
A major challenge for organizations is to devise a system for identifying, selecting and monitoring projects which are aligned with its mission, goals and objectives and add value to them

1.5. What is an ICT project?

- **Def. 2** [*PMDSI*]**:** Ad hoc, resource-consuming activities used to implement organizational strategies, achieve enterprise goals and objectives, and contribute to the realization of the organization’s / enterprise‘s mission
  - Meets defined service and government strategic needs.
  - Introduces processes and methodologies that are supported by information and communication technology.
  - Introduces technological changes in an organization that are intended to be beneficial to the organization and its client target.

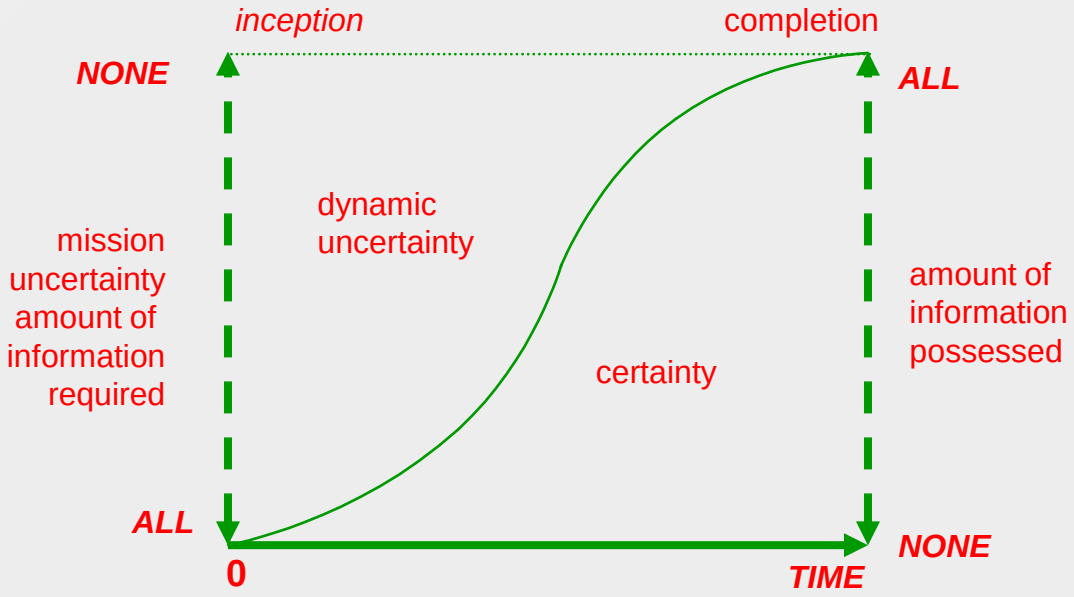
The ICT Project as an Information Processing System

- All organizations are information processing systems
  - the heart of any business process
- Flows are enabled by structure; structure is shaped by flows
  - the river analogy
- Uncertainty: the lack of information required for a decision
  - two sources
    - complexity
    - predictability
  - two modes
    - mission
    - dynamic



The ICT Project as an Information Processing System

- All organizations are information processing systems
  - the heart of any business process
- Flows are enabled by structure; structure is shaped by flows
  - the river analogy
- Uncertainty: the lack of information required for a decision
  - two sources
    - complexity
    - predictability
  - two modes
    - mission
    - dynamic
  - the dynamic reduction of uncertainty through time



1.6. What is a software project?

- **Def. 3** [*ESPM*]**:** A sequence of unique, complex and connected activities having one goal or purpose that must be completed by a specific time, within budget and according to specification
  - A complex undertaking by two or more persons within the boundaries of time, budget, and staff resources
  - Produces new or enhanced computer code that adds significant business value to a new or existing business process

1.7. What is Project Management?

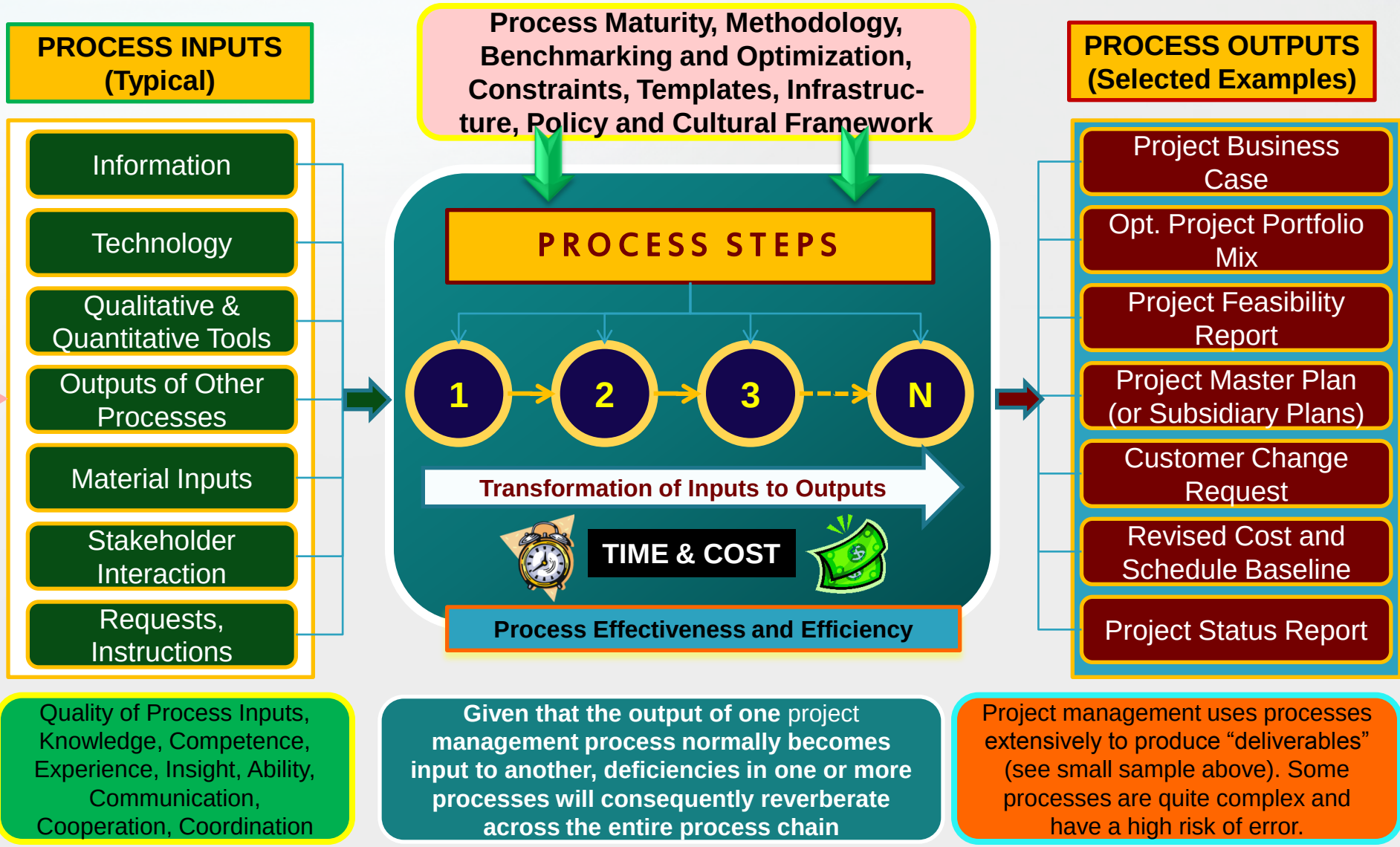
< Project needs Project Management >

- Project Management is the application knowledge, skills, tools, and techniques to project activities in order to meet the project requirements
  - →Meet objectives of the project
  - →Meet or exceed stakeholder needs and expectations
  - →Balance competing demands among Scope, Time, Cost, Quality, HR etc
- Project management includes general management skill and leadership as well.

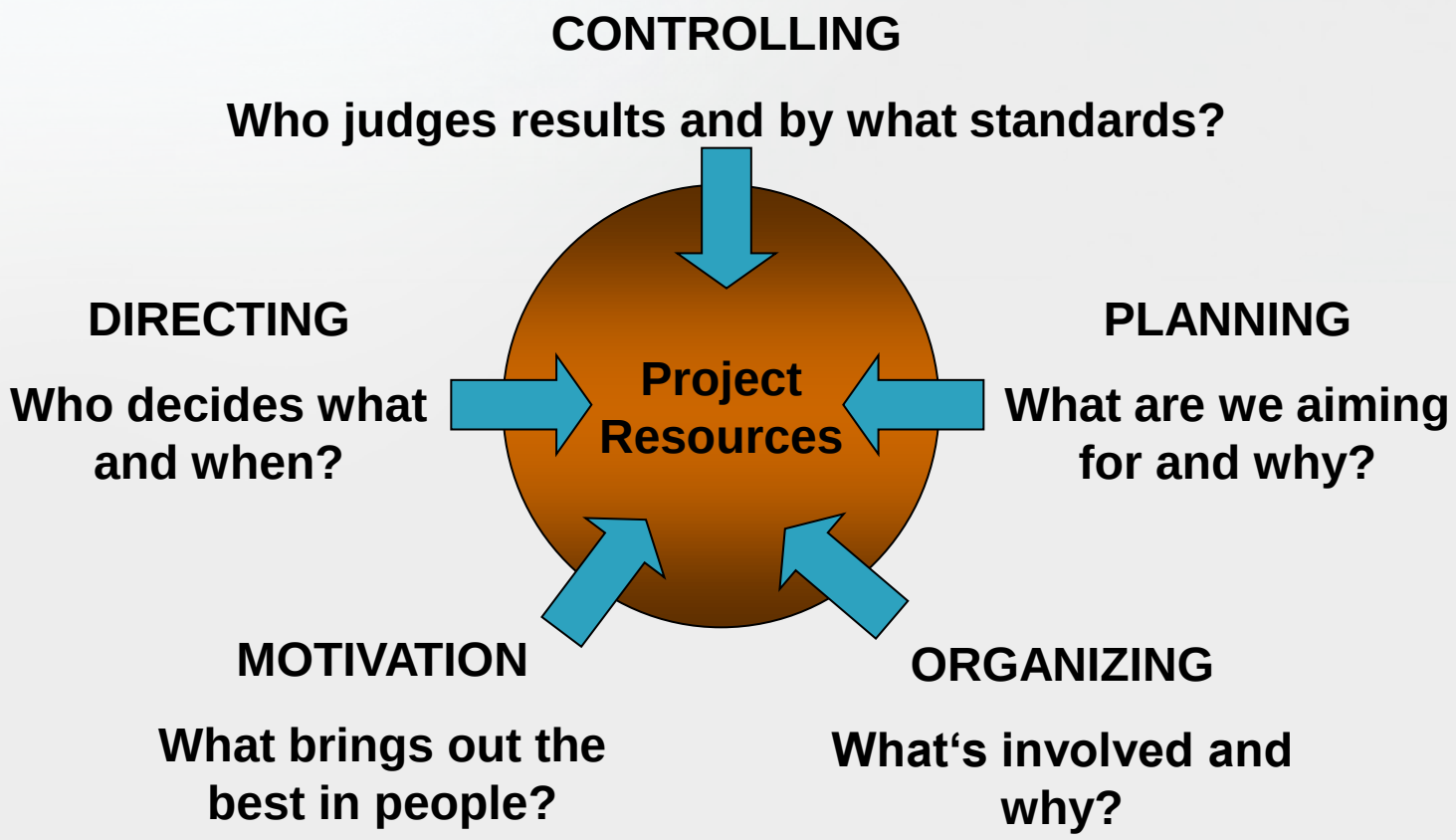
1.7. What is Project Management?

- Although there are many personal element, we can learn the way of project management as a technical skills.
  - As **a method and a set of techniques for planning, estimating and controlling work activities** to reach a desired end result on time – within budget and according to specification
  - As an unique process, consisting of **a set of coordinated and controlled activities** with start and finish dates, undertaken to achieve an objective conforming to specific requirements about time, cost and resources
  - As **the planning, organizing, directing, and controlling of company resources** for a relatively short-term objective that has been established to complete specific goals and objectives

Project Management Illustration: from the problem solving perspective

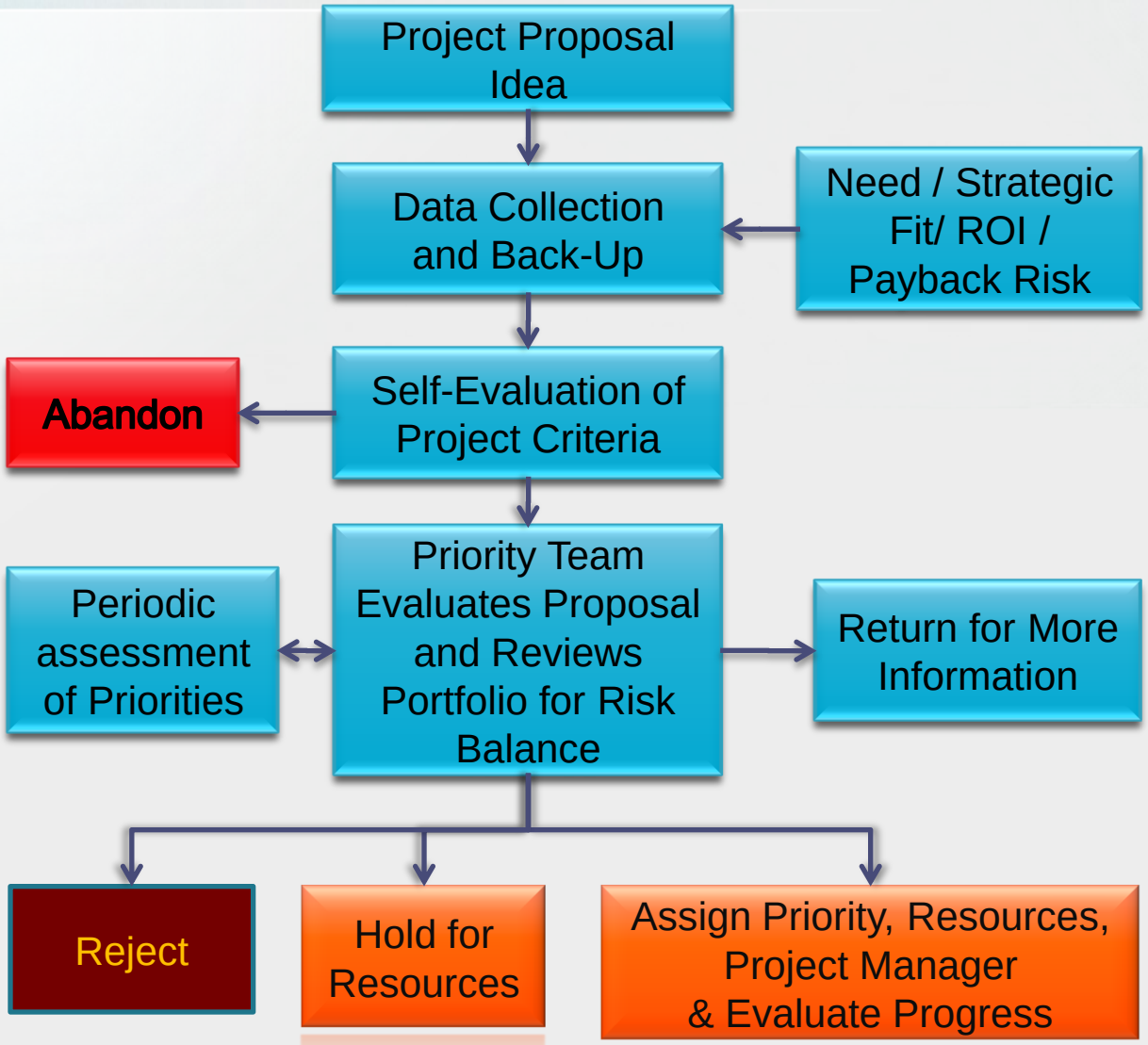


Essential Functions of Project Management



Screening the management of a project

- The management of a project focuses on the diversity of team members and complexity of tasks:
  - Tries to see the different things as different.
  - Its start point is in each member and each task.
  - Uses the process of “Plan – Do – Check – Act” (PDCA cycle)
- **A good manager find out the specifics of each members and make full use of these talent.**



ROI: return on investment

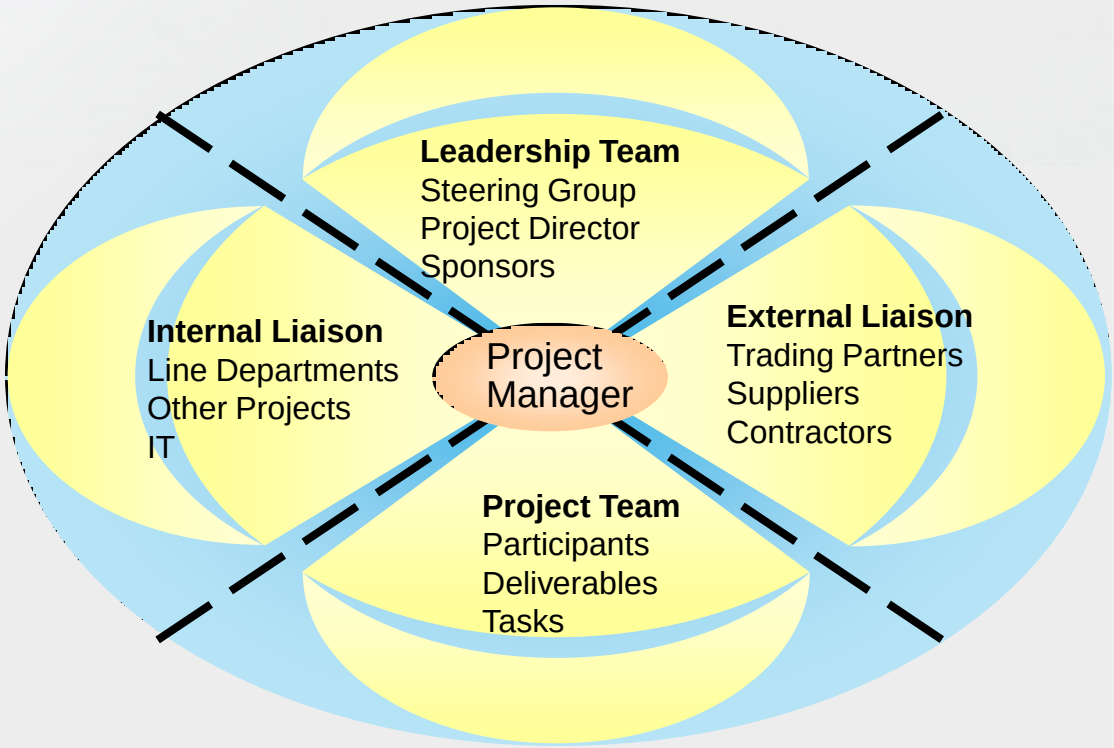
2. Các nguyên lý và tiến trình quản lý dự án ICT

1. Nhiệm vụ của người quản lý dự án
2. Quy trình quản lý dự án
3. Chức năng của văn phòng dự án
4. Theo dõi lợi nhuận của dự án
5. Mô tả dự án

2.1. What does the project manager do?

The Project Manager is responsible for everything that is required to make the project a success

- A project manager enhances the probability that a project will:
  - Produce quality products
  - Stay on schedule
  - Complete within budget
  - Satisfy the client's requirements
  - Lead to follow-on business
  - Achieve success



Project Manager is a Single Point of Contact

- Project management is a full-time job
- Project managers must know the project life cycle, project processes, and their roles in performing activities in different life cycle phases
- Project managers must realize the complexity of the environment and be prepared to deal with various conflicts

Most projects fail because of a lack of project management and people management, not because of technical reasons

Managers vs. Leaders

- Generally, leadership is the function to show the goal and integrate people to achieve it.
  - Leadership try to find out common things.
  - Leadership need to get the clear image of the future.
  - Leadership focus on complain which can relate to hope.
- A good leader has always focused on the desirable future to unify the team.

- Leader
  - Focus on future
  - Integration
  - Hope
  - Vision
  - Creative
  - Inspiring
  - Innovative
  - Opportunistic
- Manager
  - Focus on present
  - Diversity
  - Watch
  - Support
  - Problem-solving
  - Analytical
  - Structured
  - Realistic

Management Types of Manager

- Management type are based upon the knowledge, skills, and talent of each project manager.
  - Knowledge: Truth and lesson learned through experience and study.
  - Skills: Measures for action.
  - Talent: Unconscious, repeated pattern of thought and action.

→It is important to realize your management type for improvement.

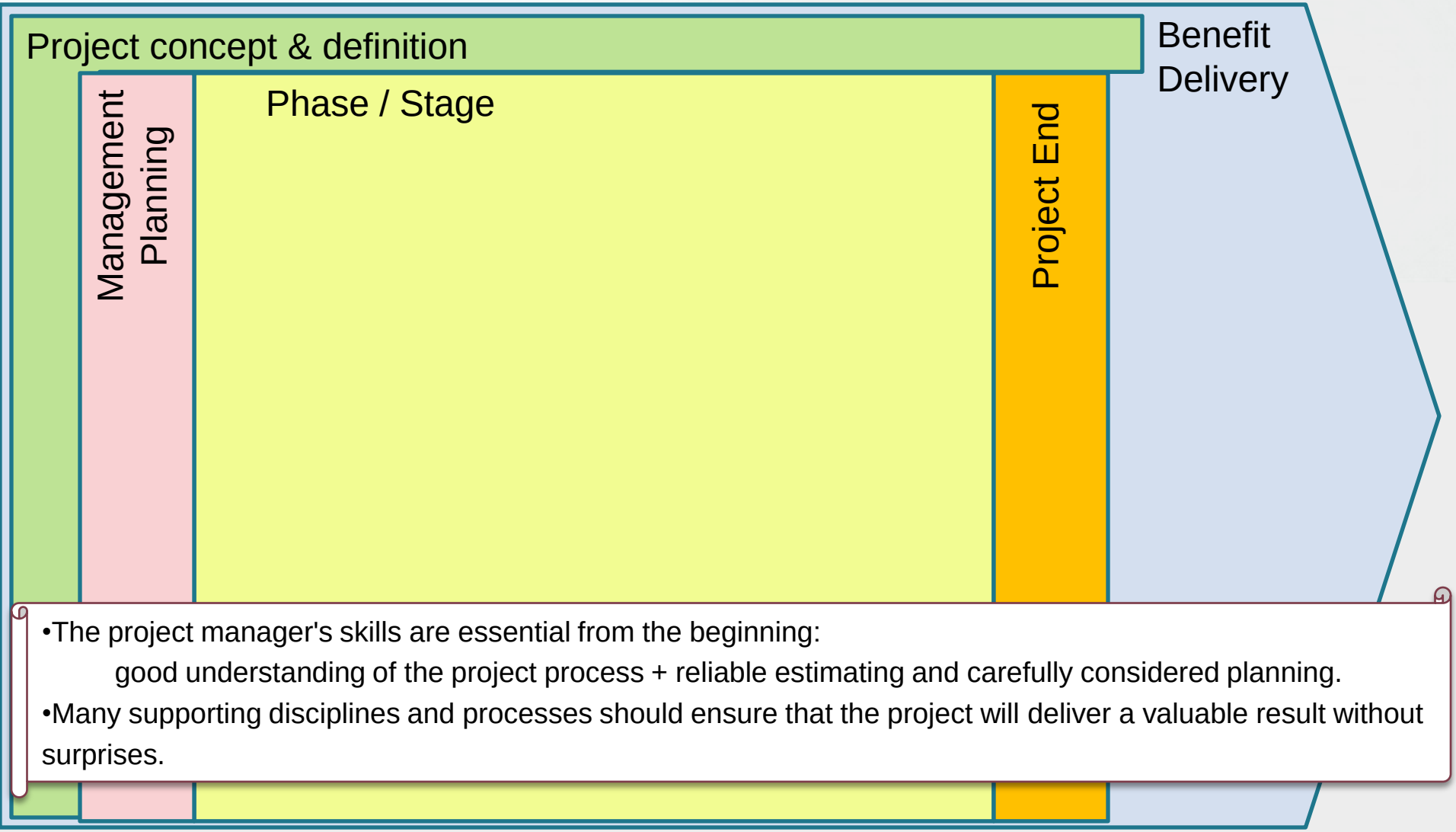
→If you realize your management type, you can realize risks and take pro-active action to prevent problems.

Management Skills for Project Management

- Leading (essentially different from ‘managing’!)
  - Establishing direction (vision and strategy)
  - Aligning people (communicating vision and strategy by words and deeds)
  - Motivating and inspiring
  - Leadership may be demonstrated at all levels
- Communicating with clarity, unambiguity
  - Written and oral, listening and speaking
  - Internal and external
  - Formal and informal
  - Vertical and horizontal
- Negotiating with others to reach an agreement
  - Scope, cost, schedule, contract, assignments, resource etc.
- Problem Solving
  - Problem definition (technical, managerial, interpersonal)
  - Decision-making (identification of viable solutions and making a choice with time element)
- Influencing the Organisation
  - Understanding the formal and informal dynamics of the organisation (power & politics - in the positive sense)

2.2. Project management process

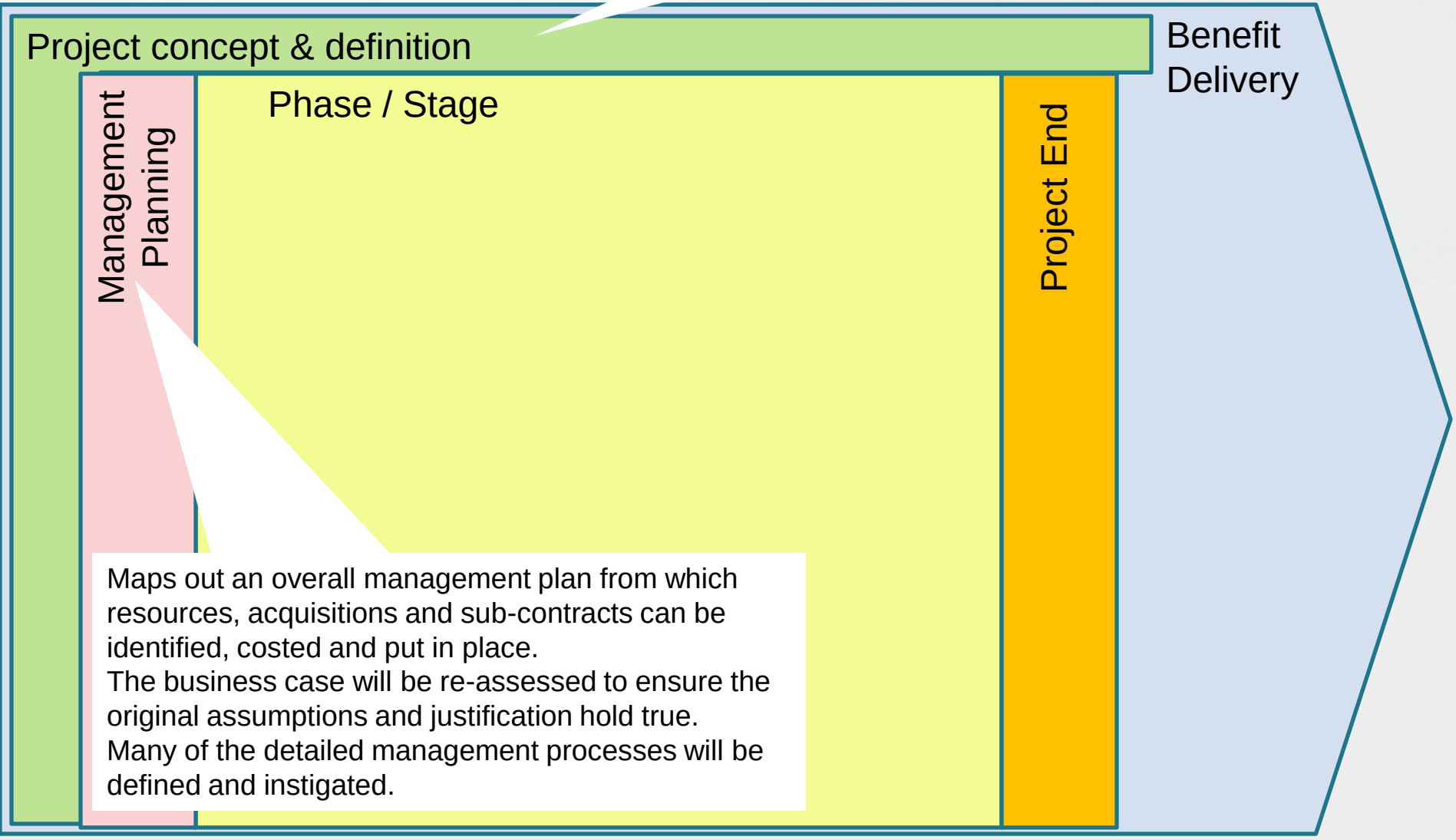
Complex undertaking, with many stages and processes.
Follow the full business lifecycle, from definition and justification of the project, through to delivering demonstrable benefits for the business.



- The project manager's skills are essential from the beginning:
  good understanding of the project process + reliable estimating and carefully considered planning.
- Many supporting disciplines and processes should ensure that the project will deliver a valuable result without surprises.

2.2. Project management process

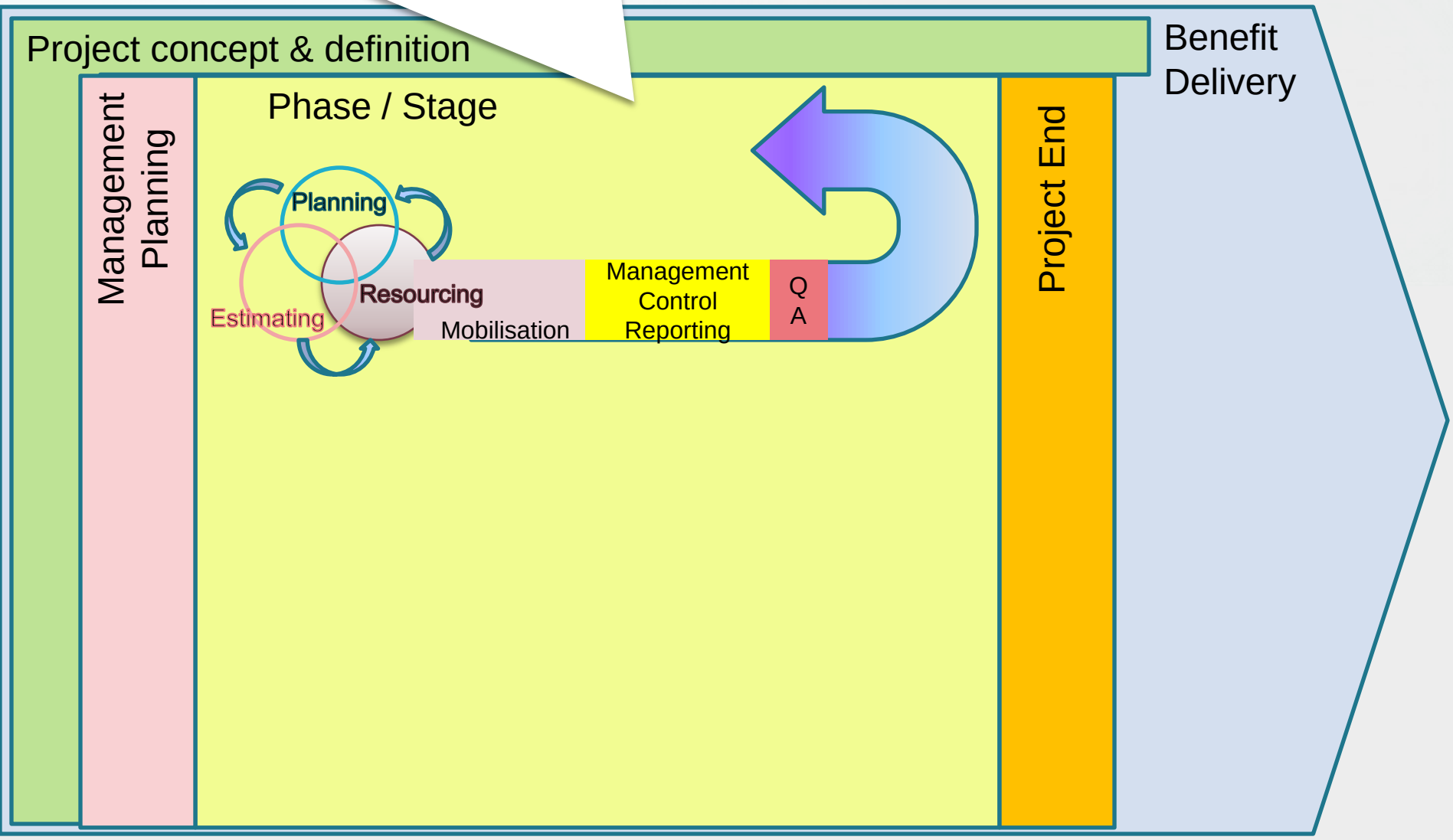
The concept, objectives, approach and justification of the project are properly defined, agreed and communicated.



Maps out an overall management plan from which resources, acquisitions and sub-contracts can be identified, costed and put in place.
The business case will be re-assessed to ensure the original assumptions and justification hold true.
Many of the detailed management processes will be defined and instigated.

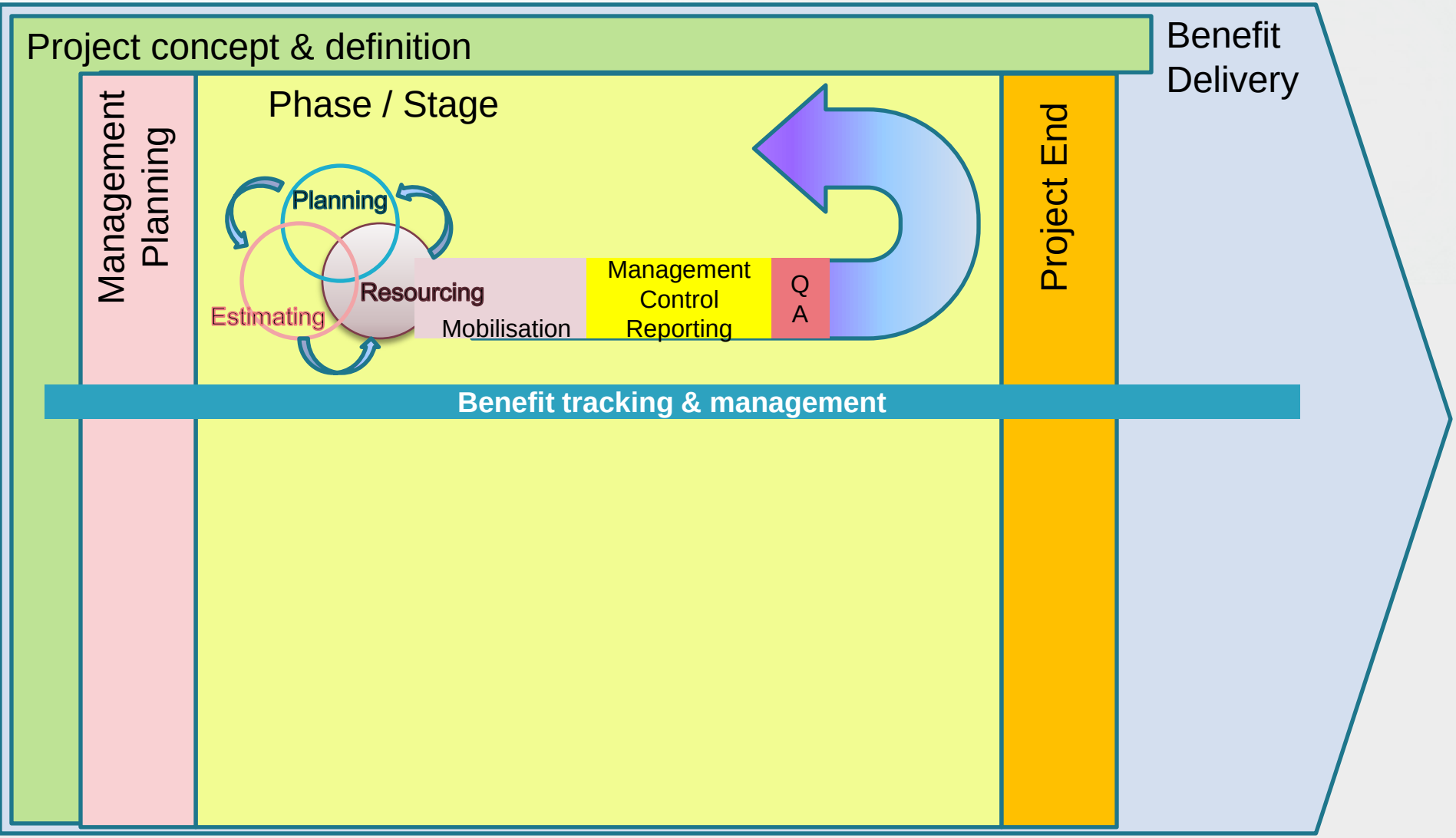
2.2. Project management process

A project will pass through several stages or phases, each with a different objective and deliverable.
Typically the phases will require different skills, structures and resource levels.
It is normal to plan, estimate and resource each phase separately



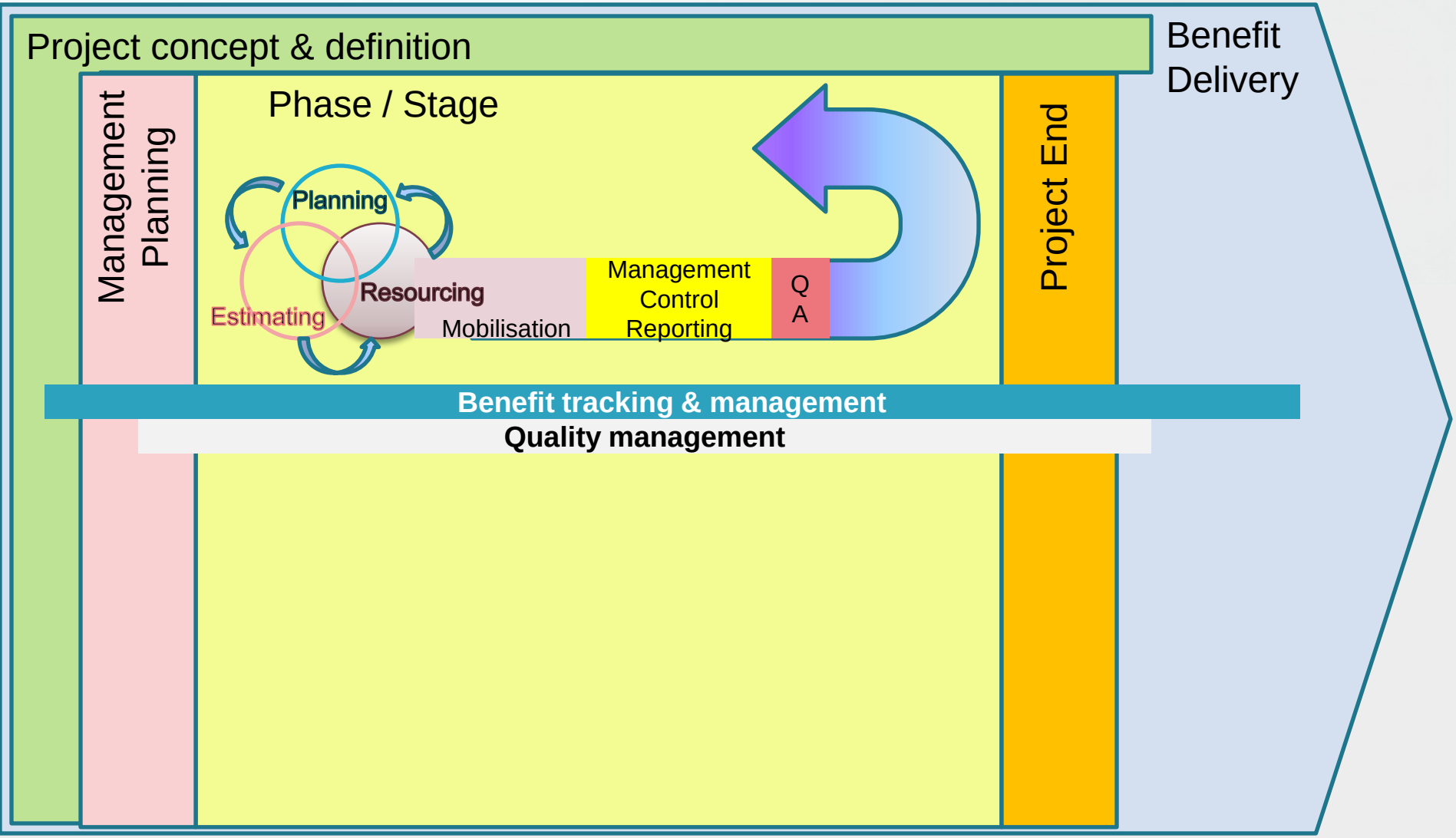
2.2. Project management process

•The foremost need is to monitor the anticipated level of benefits and make adjustments to deliver optimum results. The leadership team should also actively identify and manage risks, issues, changed requirements, quality standards, plus a host of other side issues.



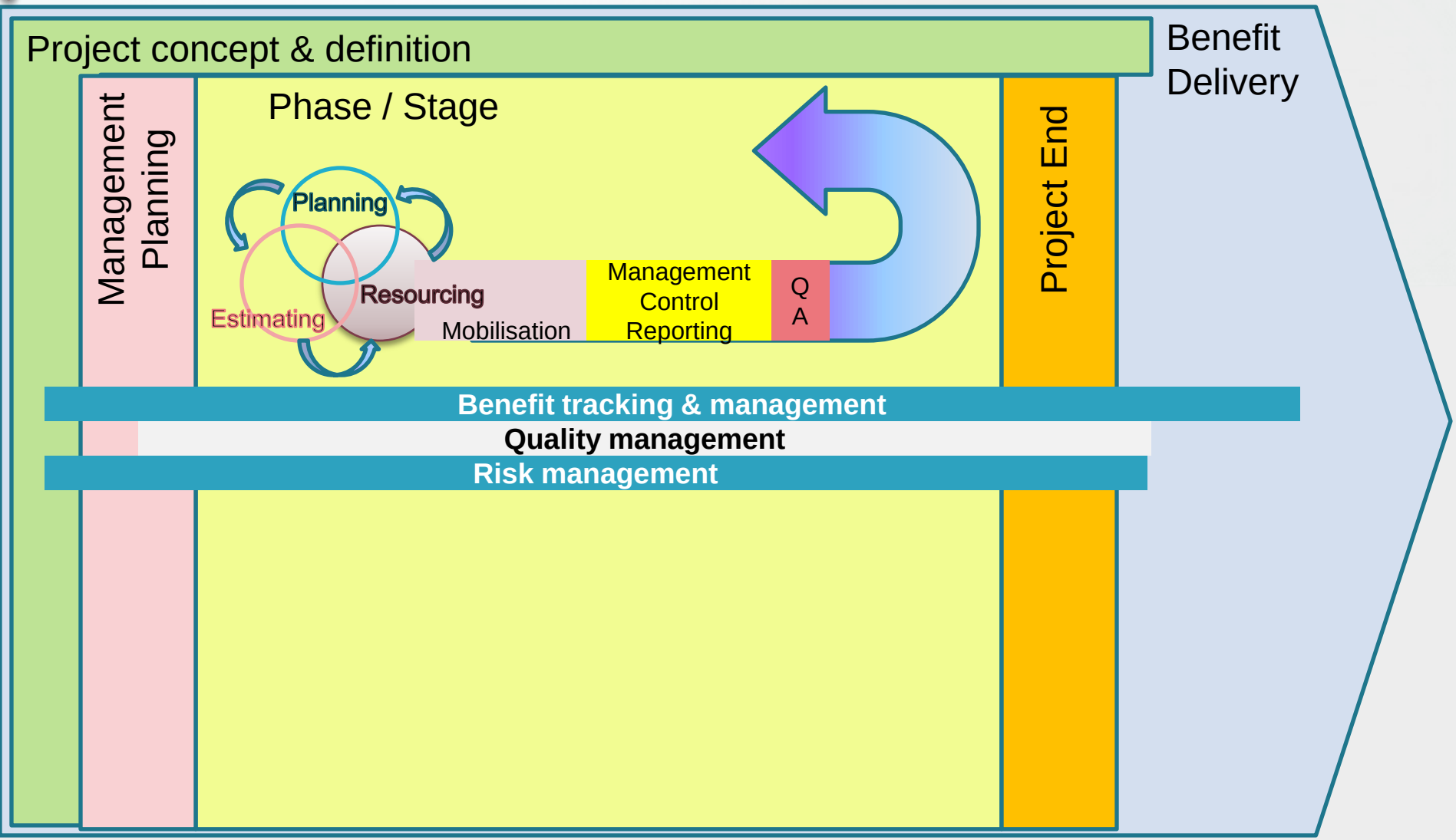
2.2. Project management process

•Quality requirements and approaches will be defined and agreed during the project start-up. Typically there will be rules that apply to the routine work of the team plus specified quality audits at the end of the phases.



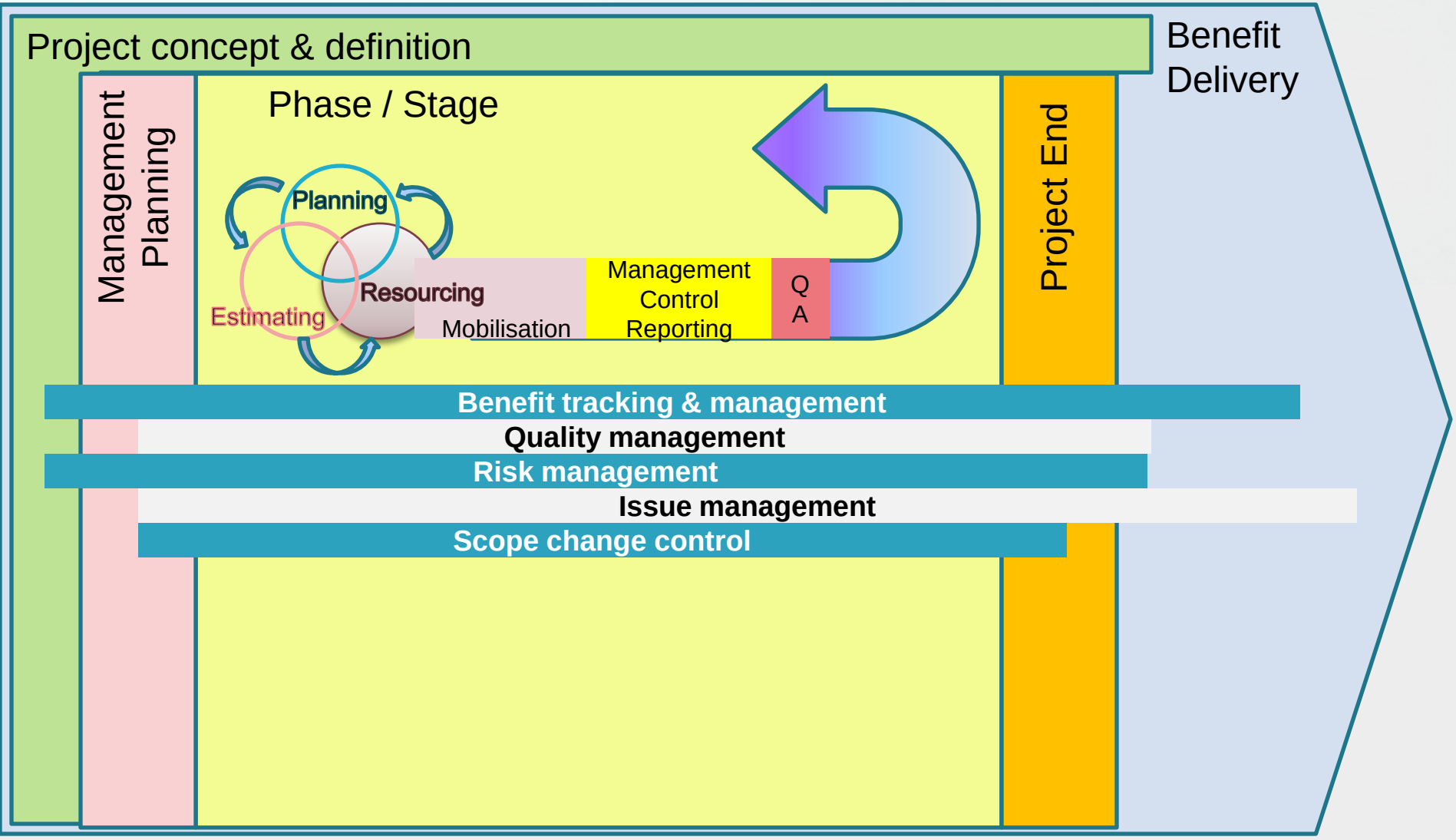
2.2. Project management process

Risks will be assessed at the start of the project.
Contingency plans and avoiding action will be defined as appropriate.
The risk management process will pro-actively monitor risks throughout the project.
Risk assessments and plans will be modified as appropriate.



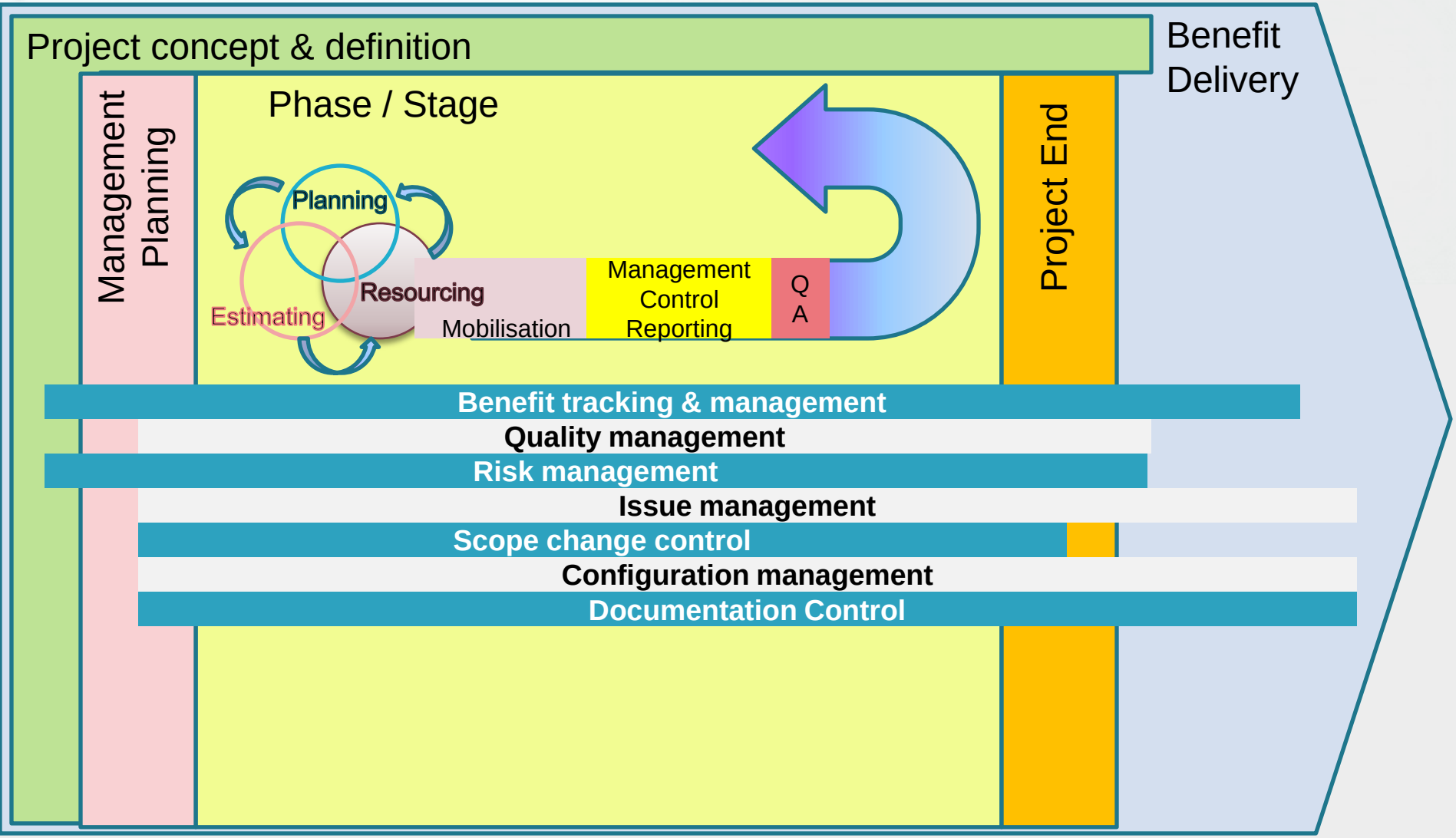
2.2. Project management process

•All participants will be encouraged to communicate potential issues for resolution. The issues management process will ensure they are considered and addressed.
•The scope of the project and specific changes to the solution will be controlled through a management process with appropriate balances and controls - focused on achieving optimum overall benefit.



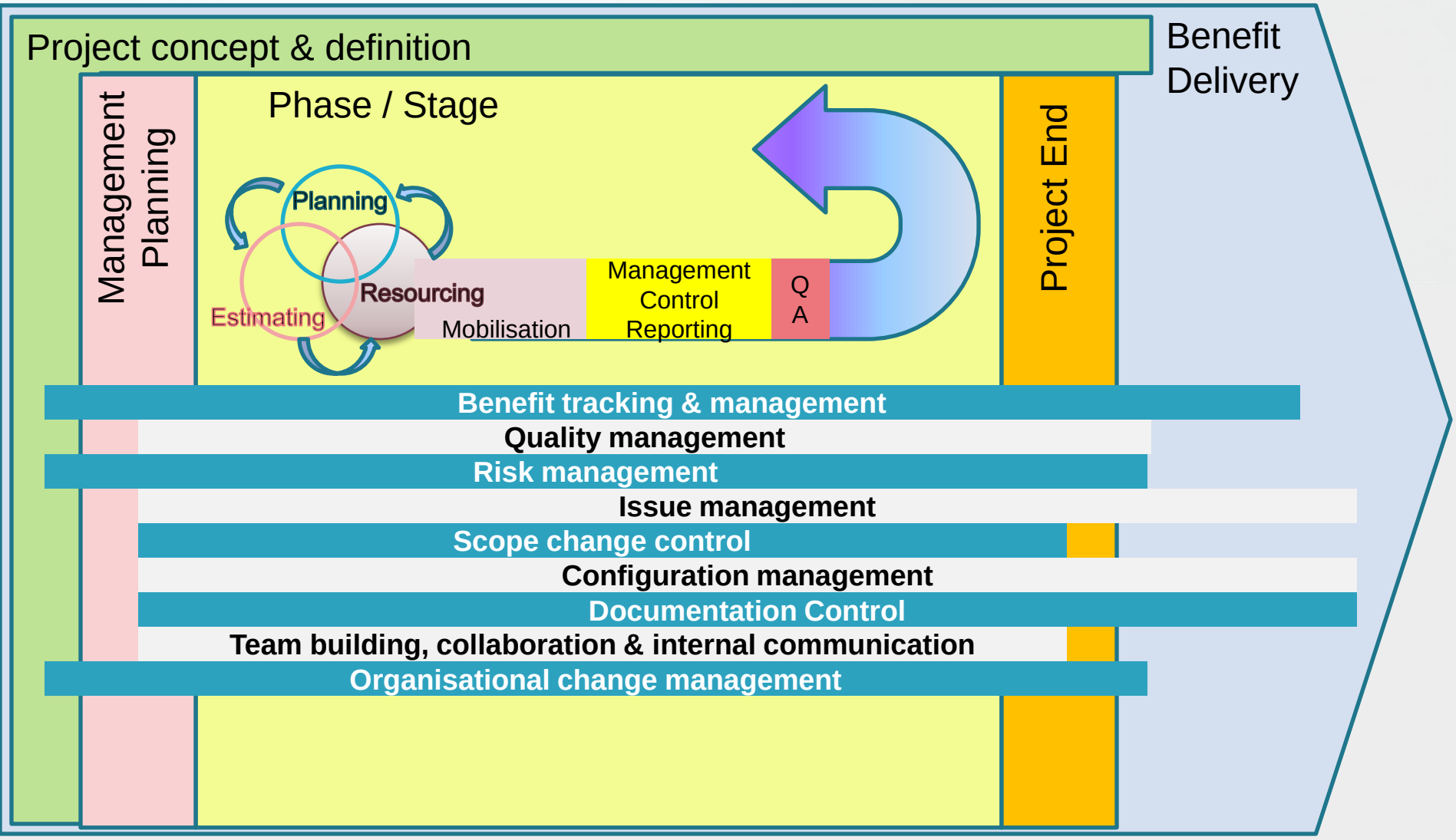
2.2. Project management process

•Versions of all deliverables will be controlled (whether temporary working papers or permanent outputs) through a configuration management process.
•A documentation management process will ensure all information is available to all those who require it, and is subject to careful control over authorship, reviews and updates.



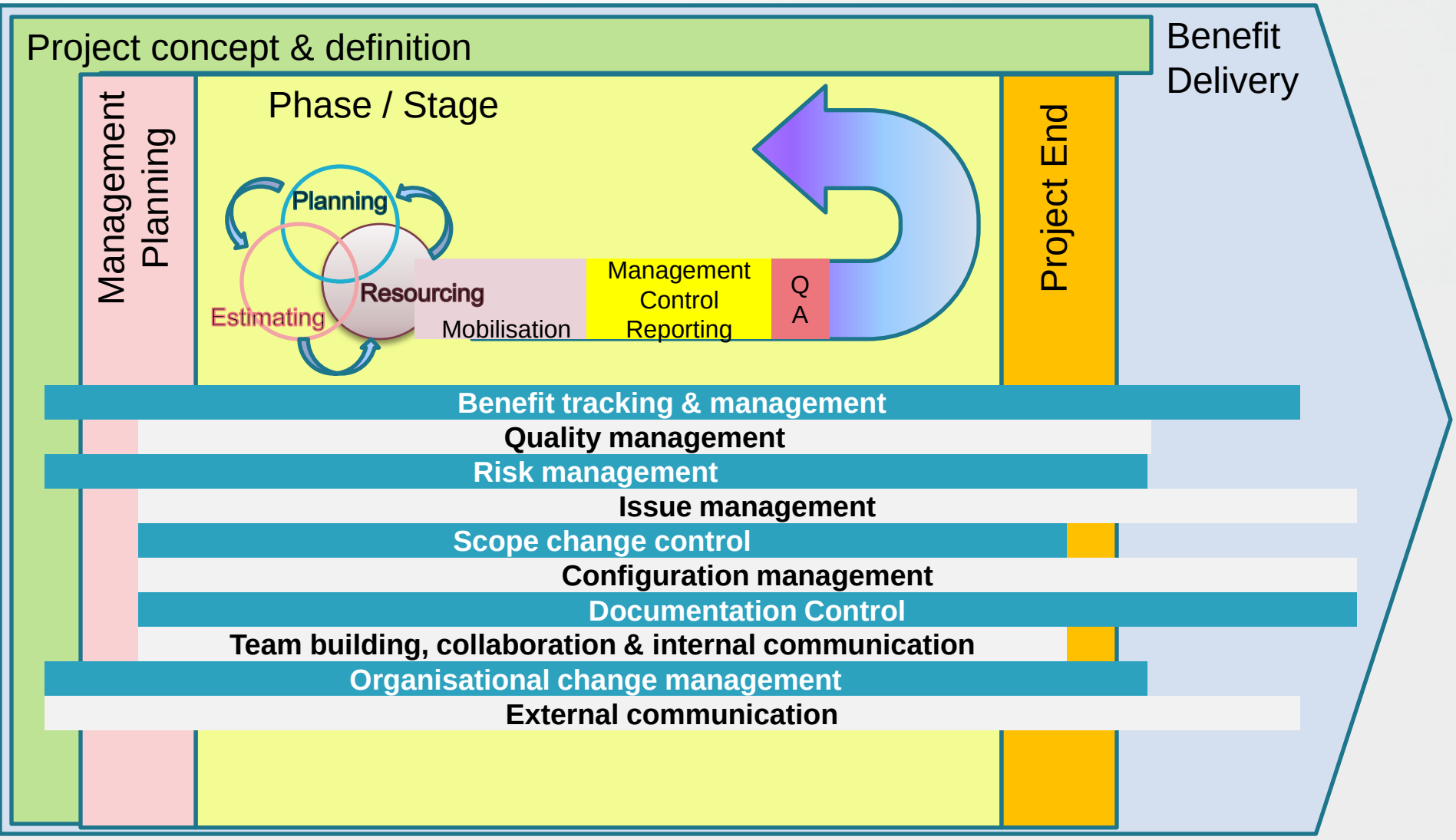
2.2. Project management process

- An effective team will be nurtured through appropriate initiation, training, communications, and social events.
- Organizational change issues will be assessed early in the project, leading to a course of communications, events and other activities to ensure all parties affected by the change are ready and willing to change.



2.2. Project management process

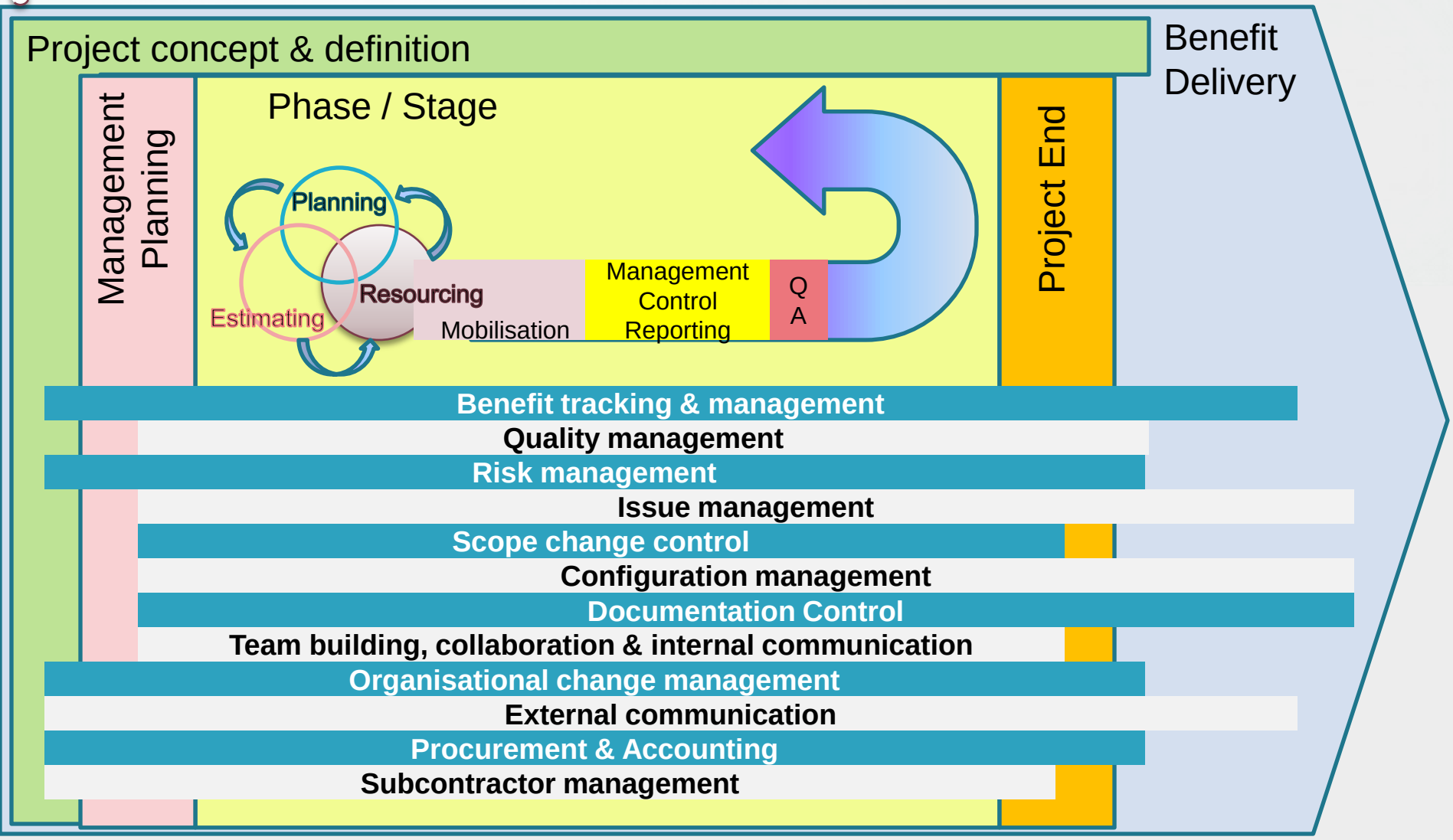
•The needs to communicate outside the team with other parts of the organization, customers, suppliers, and other parties will be assessed. A course of communications will be defined and actioned.



2.2. Project management process

•Large projects inevitable require a process to handle expenditure on subcontractors, equipment, software, and facilities. Project accounting will monitor and control expenditure - both as a routine management activity and as part of the overall focus on delivering optimum benefits.

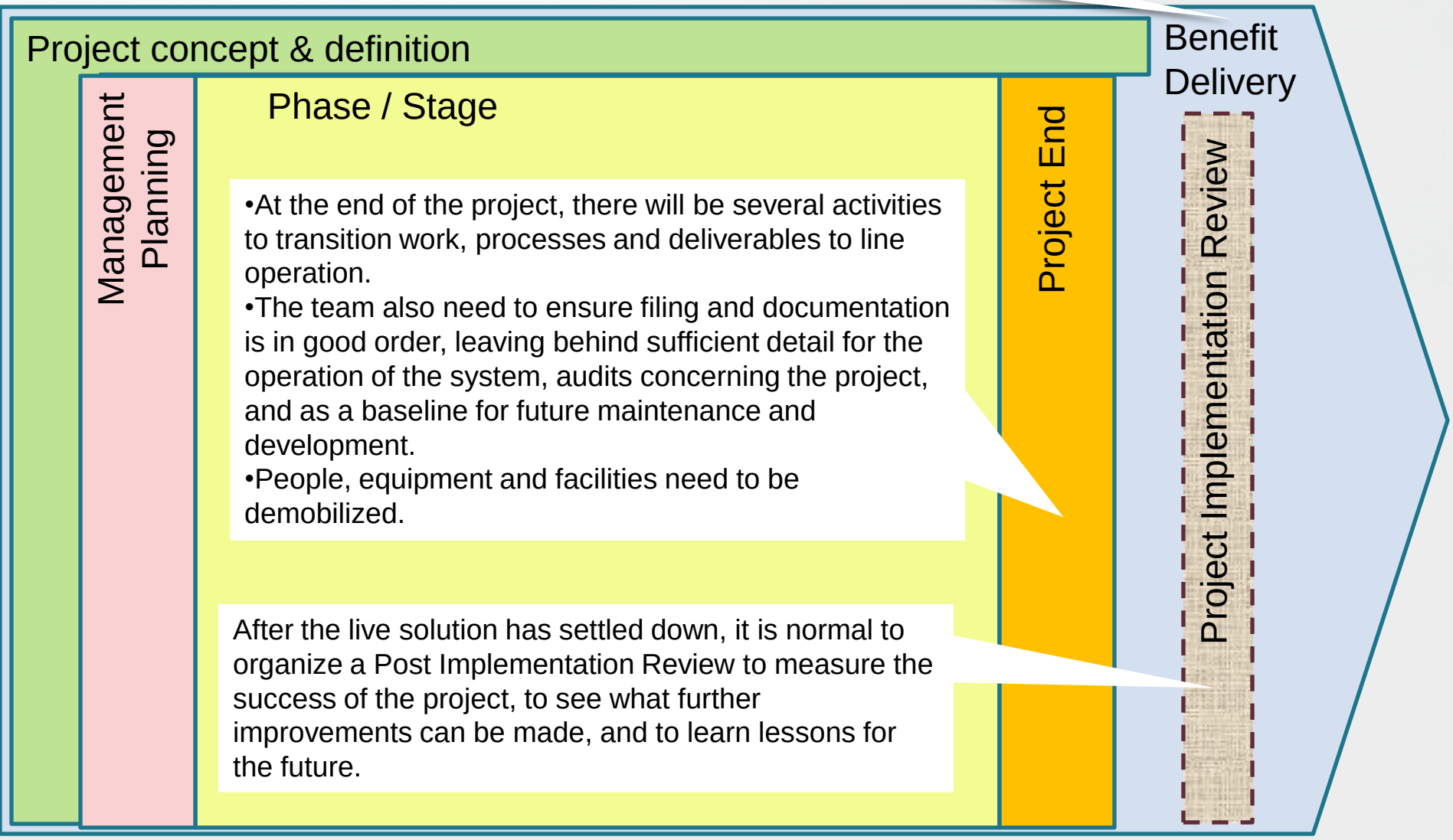
•Where sub-contractors are involved, there will be a management process to agree and monitor contracts.



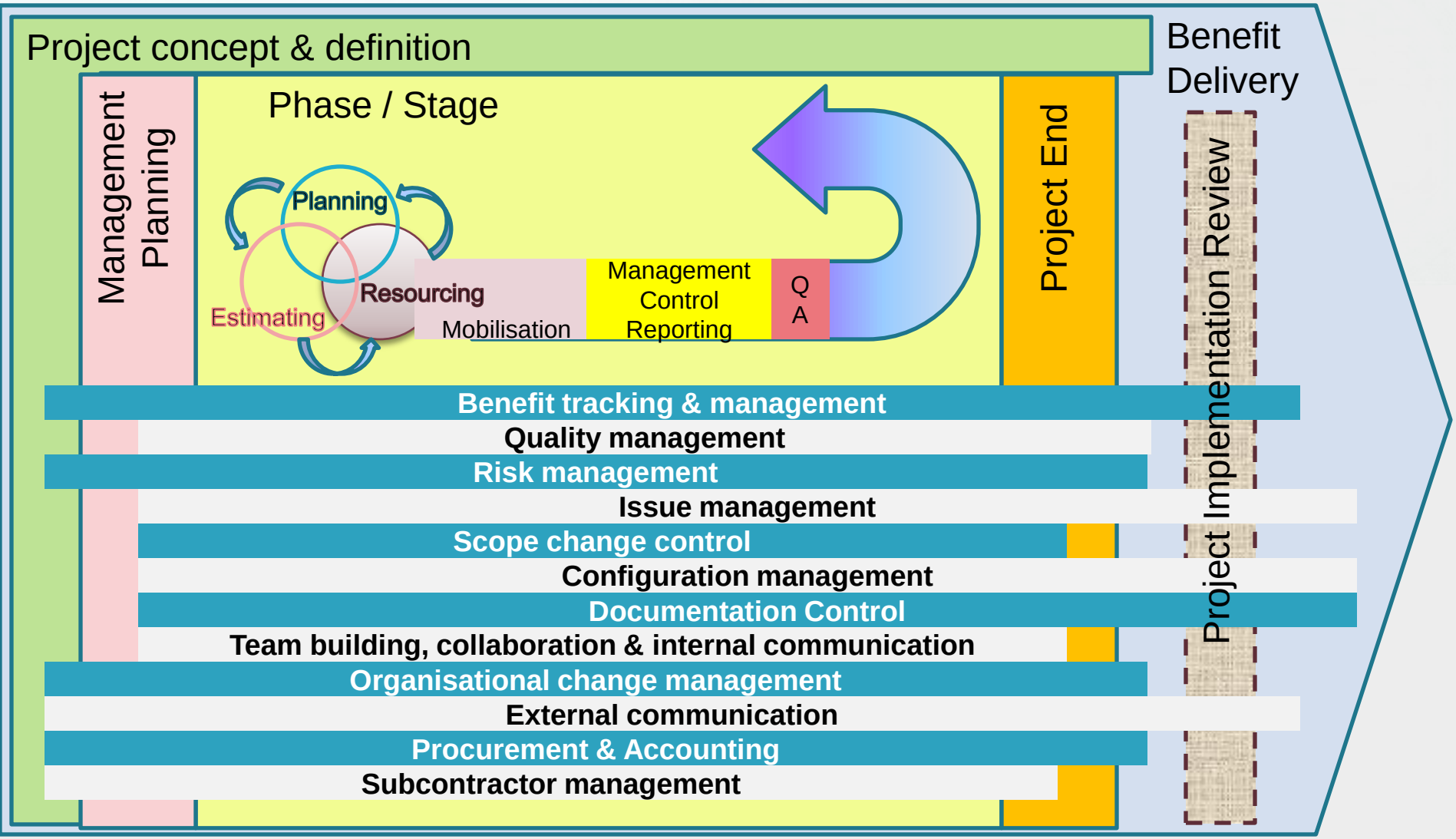
2.2. Project management process

Planned benefits will be assessed and monitored throughout the project

Optimizing benefit should be the prime goal of the project manager.



2.2. Project management process

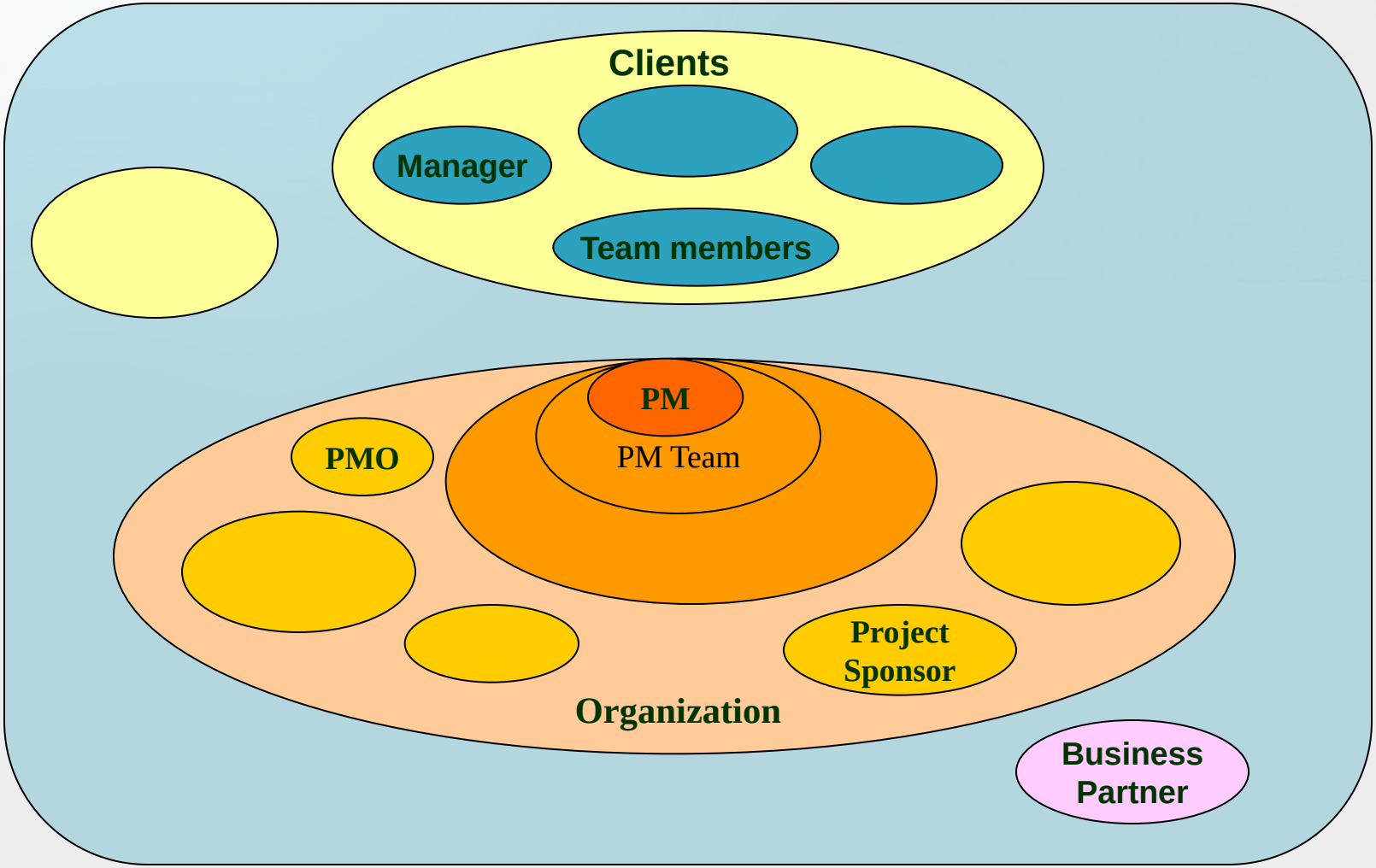


Project Stakeholders

- Identify the stakeholders
  - Project Manager, Customer, Performing Organisation, Funding Organisation, Suppliers & Contractors, Govt. Agencies, Citizen and Society at large etc.
- Determine stakeholders' needs and expectations
  - Different objectives may come into conflict, major challenge in finding appropriate resolutions
- Manage and influence the expectations towards successful project completion
- Identify roles and responsibilities for the stakeholders

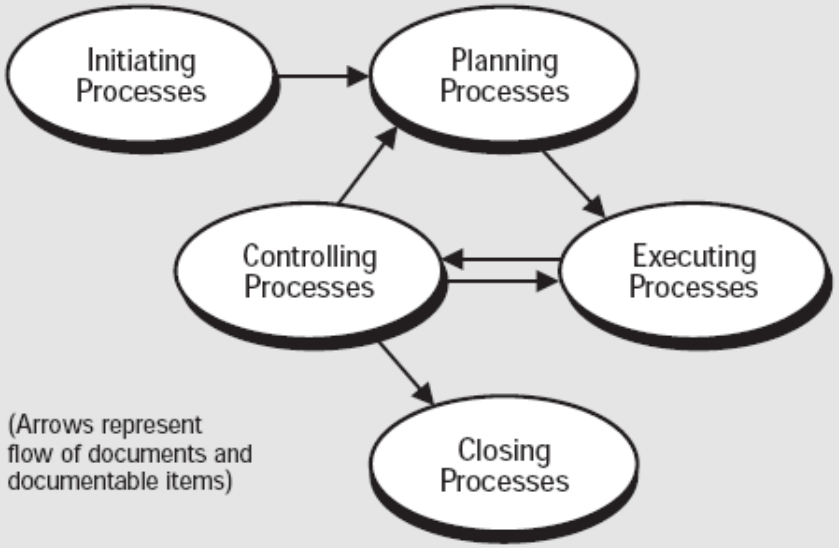
Project Stakeholders

- Fill stakeholder name in the blank circles.

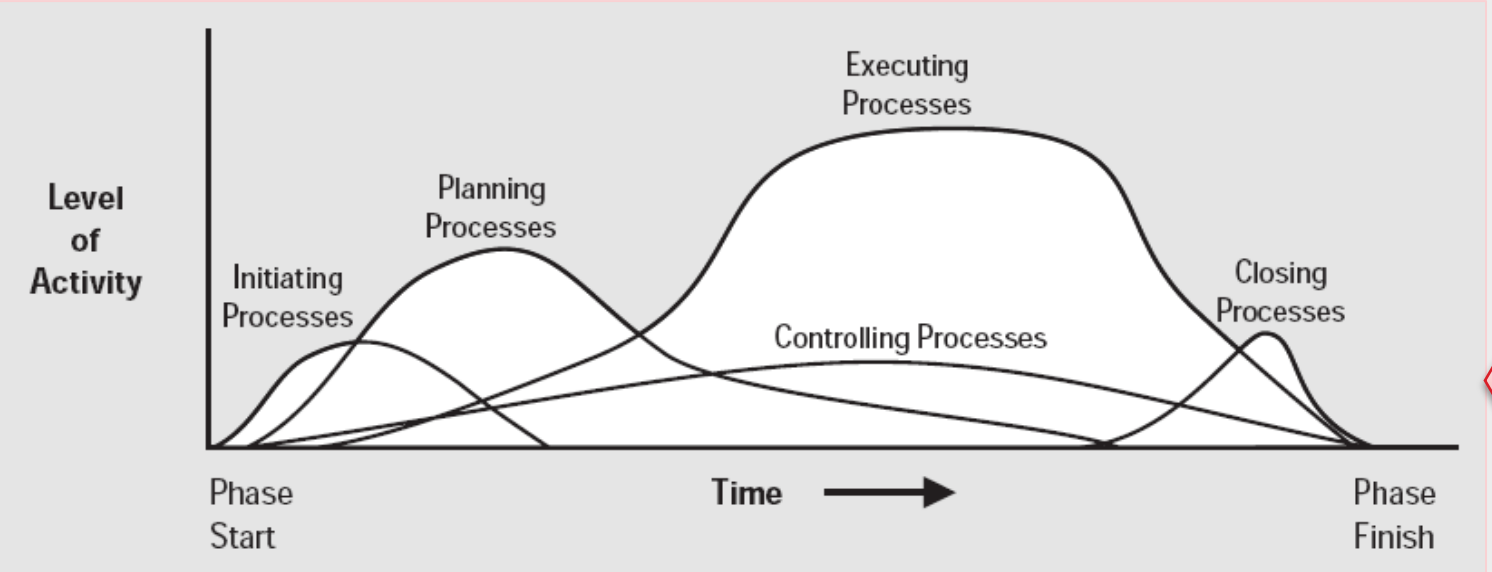


Five Groups of Project Process

- **Initiating Processes**: beginning of a phase
- **Planning Processes**: devising and maintaining a workable scheme
- **Executing Processes**: coordinating people and other resources
- **Controlling Processes**: monitoring and measuring progress and taking corrective actions
- **Closing Processes**: formalizing acceptance of an orderly end of the project or phase

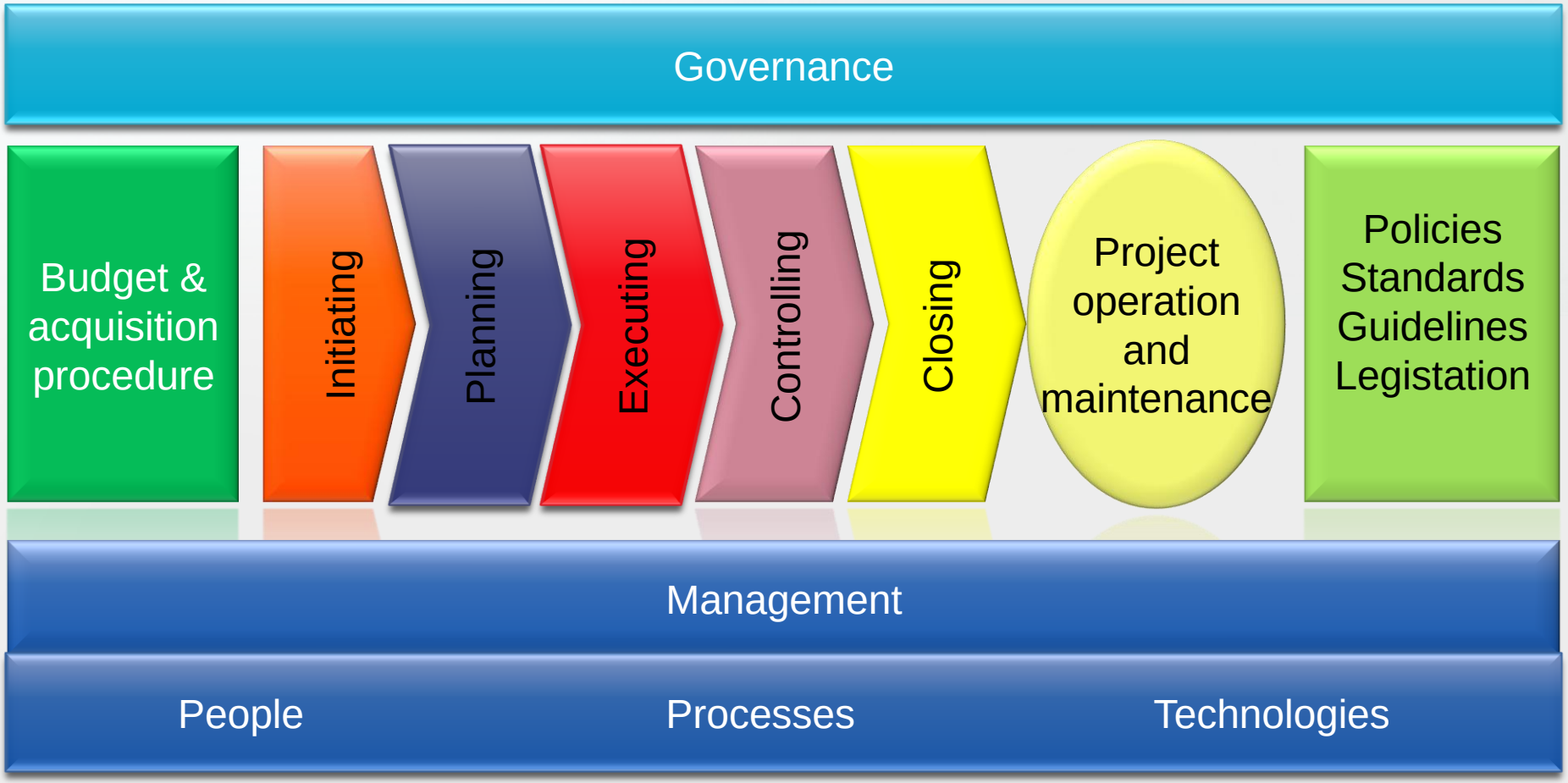


Links among Process Groups in a Phase



Overlap of Process Groups in a Phase

Project scope



Project process directory

- Identifies and describes all project management processes:
  - each process task is carefully analyzed in terms of
    - its input(s)
    - Its output(s)
    - its estimated cost, duration and risk factors
- Illustrates graphically these PM processes
- Documents subsequently for reference by project stakeholders.

→ This directory should be periodically revised and the processes therein modified, simplified or, where necessary, reengineered to improve their effectiveness and efficiency.

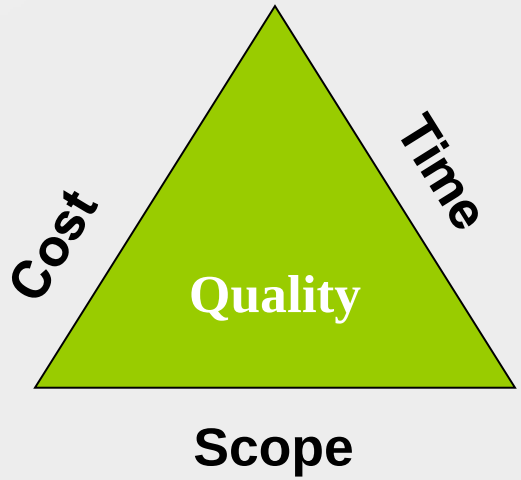
3. Các yếu tố quyết định thành công của dự án ICT

1. ICT project life cycle
2. ICT project parameters
3. ICT PM environment’s trends
4. Essential functions of ICT PM successful

Triple Constraint of Project Success

- PM seeks at least to meet - and preferably to exceed - stakeholder needs (i.e. the identified requirements) as well as stakeholder expectations (i.e. unidentified requirements) from a given project within the constraints of scope, cost, time and quality.
- PM is an evolving area of knowledge striving for continuous self-improvement over time.

→ Successful project: it achieves its goal within time and allocated budget to the satisfaction of all stakeholders concerned.



Probability of project success

- What do you think the rate of IT project success?
  - 90% ?
  - 70% ?
  - 50% ?
  - 30% ?

Which is the successful project?

- Project A System
  - Delivered the system by the date agreed on.
  - Completed the project within budget.
  - Almost never used after appreciation.
- Project B System
  - Missed the deadline.
  - Completed the project over budget.
  - Has been used over 10 years.
- Which is the better project for you?

Success and Failures in ICT Projects

- 15% are Successes- Most stakeholder groups attained their major goals and did not experience significant undesirable outcomes
- 50% Partial Successes- Major goals for the initiatives were not attained and/or there were significant undesirable outcomes
- 35% are Total Failures- The initiative was never implemented or was implemented but immediately abandoned

Success and Failures in ICT Projects

- A recent standish group survey of 8000 software projects found the average project exceeded budget by 90% and its schedule by 120%
  - 63% of projects have schedule delays
  - 49% of projects exceed budget or do not meet business objectives
  - 45% of project face cost overruns
  - 23% of all project FAIL
- A standish group study found the most common cause of ICT project failure were:
  - Incomplete requirements
  - Lack of user (customer) involvement
  - Lack of resources
  - Unrealistic expectations
  - Lack of executive support
  - Changing requirements (scope creep)
- A cutter study found 40% of IT projects no longer supported corporate strategy

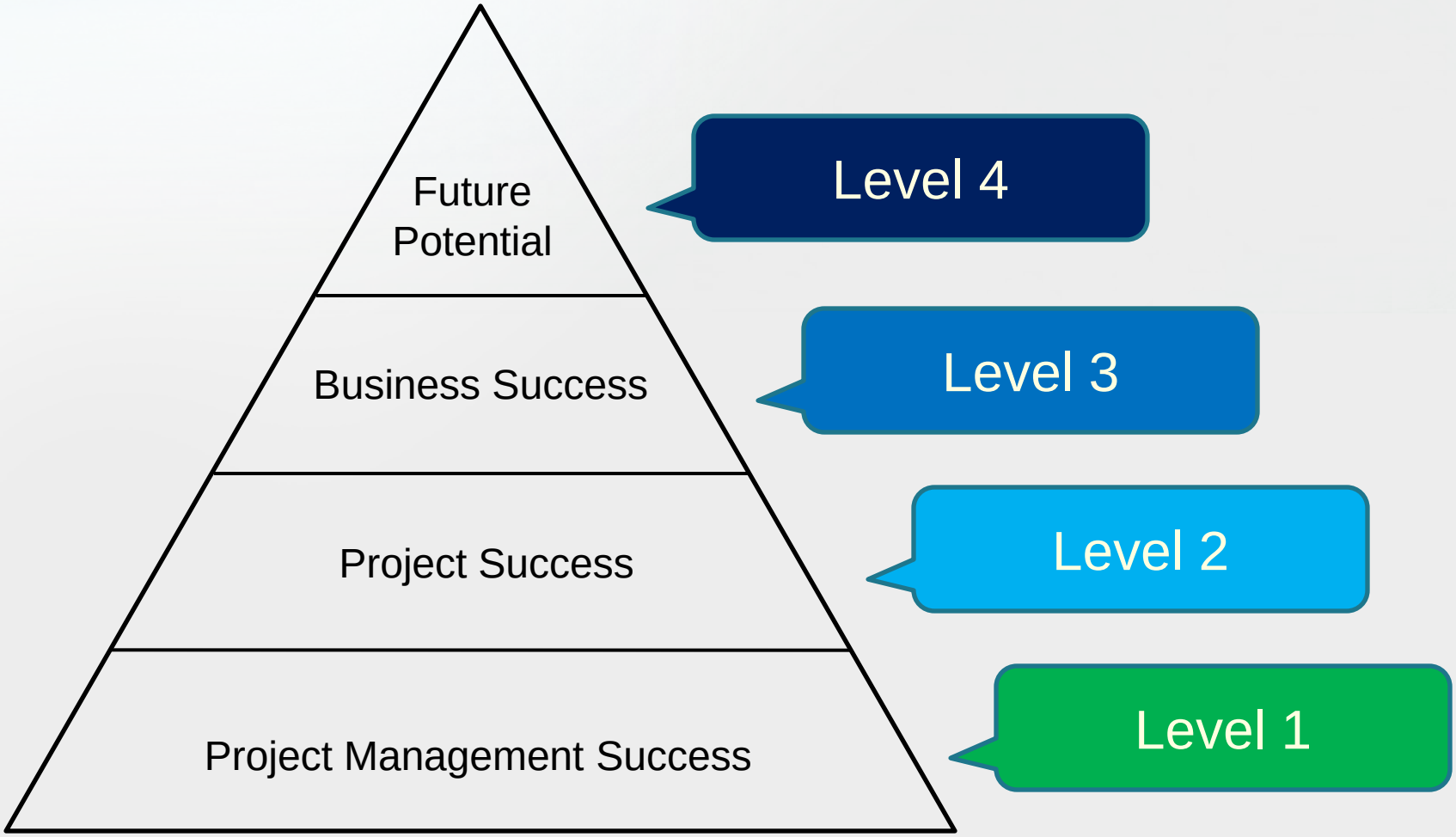
Why Lots of I(C)T Projects Fail?

Reason (in rank order)

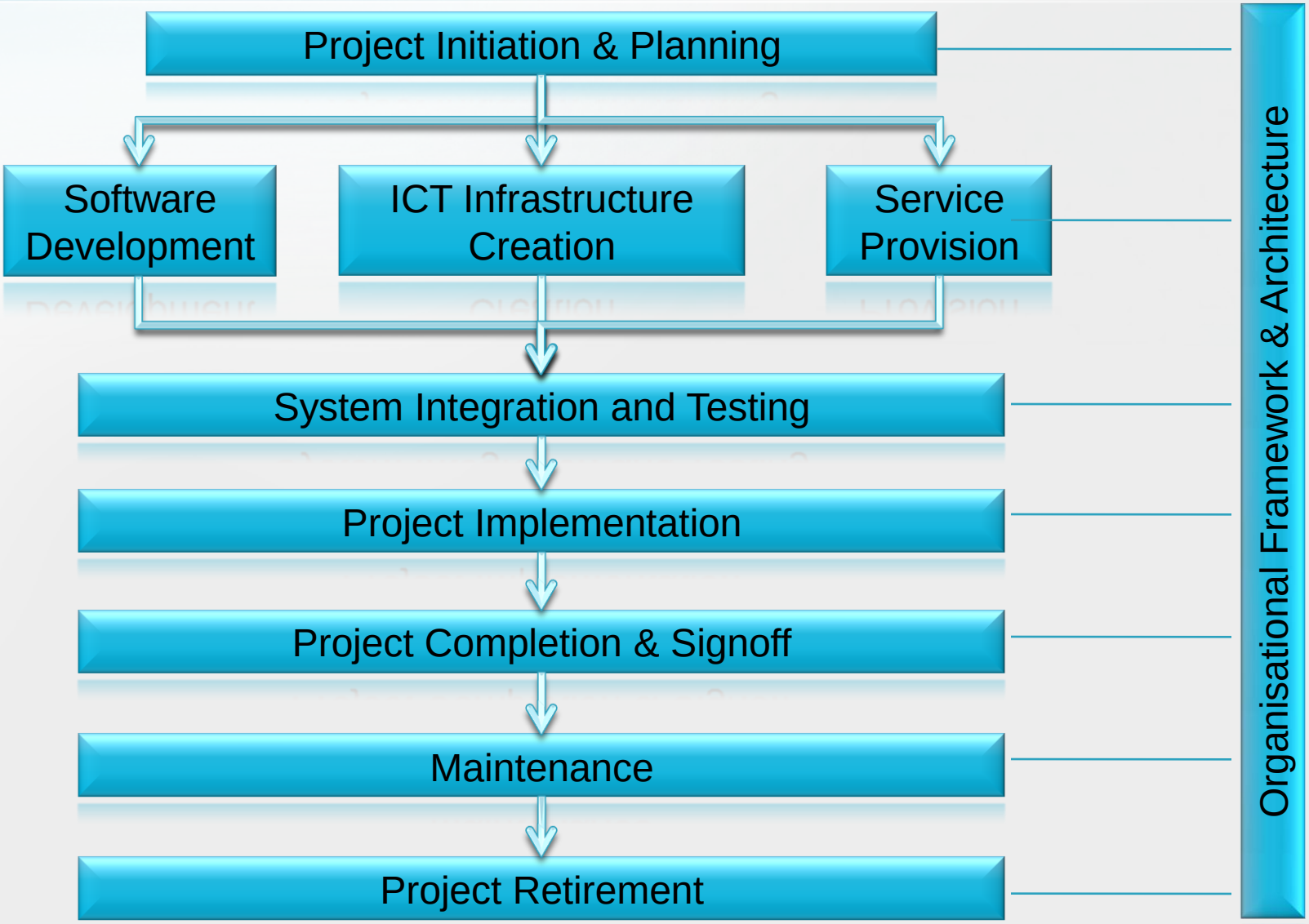
1. Technology did not work
2. Did not meet the requirements
3. It was late
4. Requirements had changed
5. The users would not use it
6. Did not produce the expected benefits
7. No longer mattered to the business
8. Failure in business change management
9. Other reasons

Dimensions of I(C)T project success

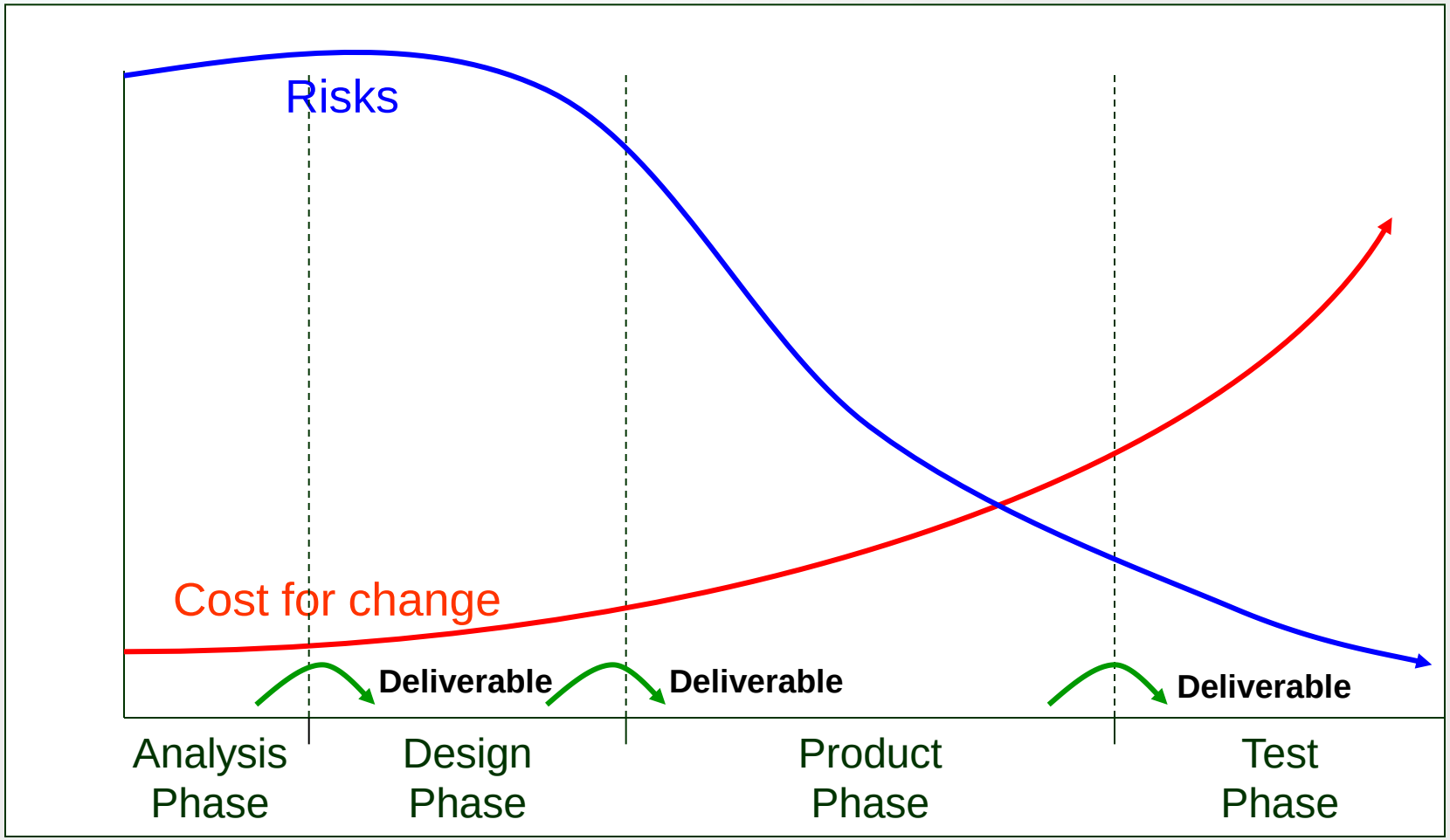
The Layer of Project Success



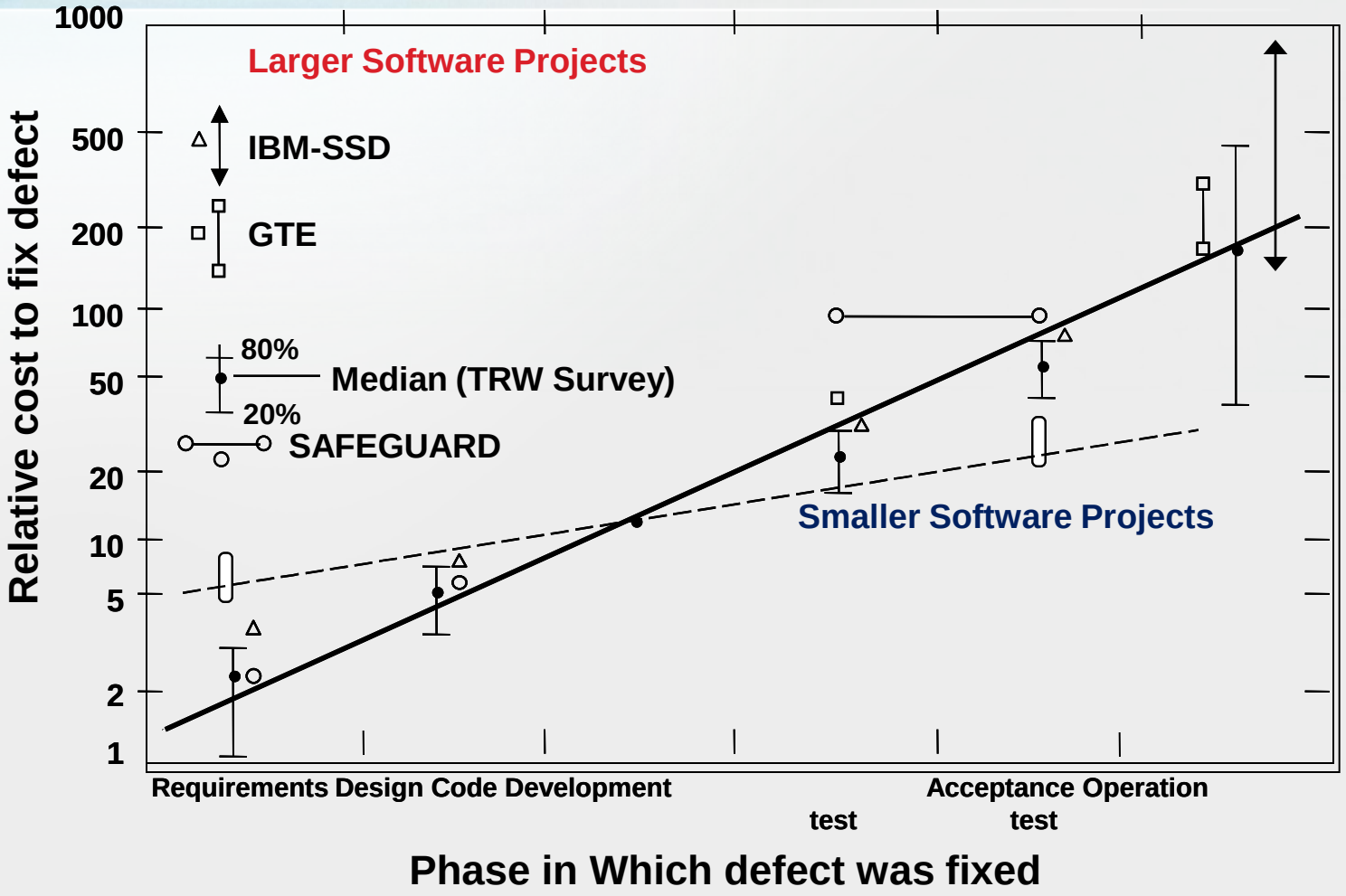
1.1. ICT Project Life Cycle



Shift from System Life Cycle to Project Life Cycle

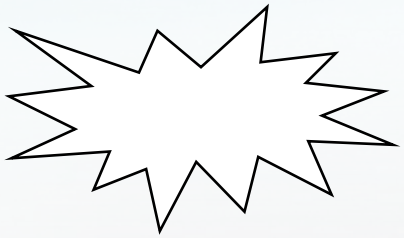


Figure

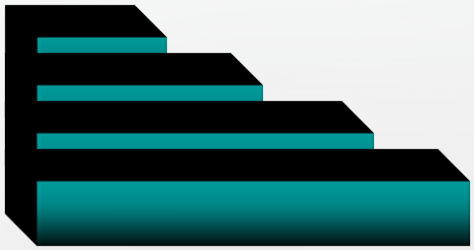


Richard W. Selby, “Software Engineering: Barry W. Boehm's Lifetime Contributions to Software Development, Management, and Research” P223

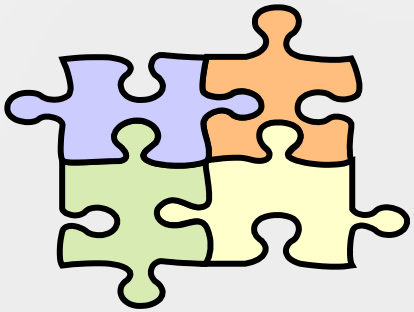
Project Implementation Styles vs. A Successful Implementation



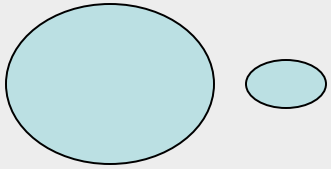
Big Bang



Phased



Parallel



Pilot

- Commitment from senior officers
- User involvement
- Detailed planning
- Good communication
- Realistic timescales & expectations
- Effective training & support

Example: eGov Projects Implementation Issues

Integration Management	Scope Management	Time Management
Lack of team spirit No e-Champion	Scope is not precise Scope creeps	Delays in Decisions Delays in sign-offs
Cost Management	**Quality Management**	**HR Management**
No Flexibility Delays in payments	Lack of Skills Lack of Institutional approach to QM	Turnover of Key people Lack of PM Skills
Communications Management	**Risk Management**	**Procurement Management**
Too many meetings Too few decisions	Risk Aversion One-sided contracts	Vagueness in specifying requirements

2.1. Needs, opportunities, requirements

- All ICT projects are in response to an internal or external customer‘s or user‘s need, or in order to exploit an opportunity.
  - Example?

    Develop a new product or service
- Sometimes ICT projects are done in order to
  - conform to some statutory requirement.
    - Example?

      Build and install a sensor as a precautionary measure against fire hazard in the student hostels
  - comply with legal requirements (laws, regulations, etc.).
    - Example?

      A law or regulation requiring that student hostels reduce the risk of fire hazard would necessitate projects aimed at complying with these.

2.2. Goal

- All ICT projects have one prime goal.

  Example?

- ICT projects may have sub goals and subsidiary goals (objectives).

  Example?

- The goal must be as specific as possible so that there is no ambiguity about what the project intends to achieve.
- The project goal and project deliverables along with all the requirements and specifications determine the project‘s scope.

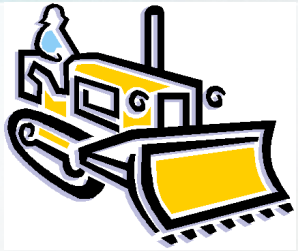
→ A project which does not achieve its goal is seen as failed.

Goal: Important Topics

- Project Proposal
- Project Contract
- Project Charter
- Elicitation of Project Requirements and Specifications
- Project Statement of Work
- Project Scope Statement
- Project Work Breakdown Structure
- Scope Creep, Control and Verification
- Project Change Management
- Project Integration Management

2.3. Project Output & Outcome: Highway Example

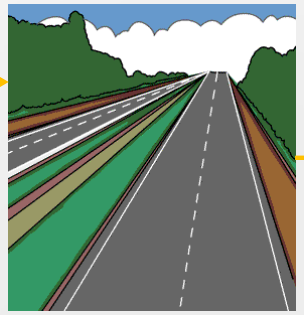
Project Phase



Project Life-Cycle
Initiation, Planning, Implementation and Closure of the Project

Project Output

Operations Phase



Not Projects: Routine main-tenance & repair

Short-term

Medium-term

Long-term

Selected Project Outcomes

(+ and -)

Economic – Impact on investment, trade, local businesses, tourism, employment, inflation, wealth accumulation and distribution

Social – Impact on services like health and education, travel, crime, social relations, communities' out-look and values

Environmental – Impact on fauna and flora, pollution levels, waste accumulation and disposal

Projects: Highway extension, widening, recarpeting, con-struction of bridges, additional exit and entrance ramps, petrol stations and rest stops etc.

3. ICT PM environment's trends

- What are some trends that impact the environment in which projects are managed today ?
  - Corporate globalization
  - Massive mergers and reorganisations
  - Platter organisations
  - Short-term results driven
  - Team environment
  - Contract PM and outsourcing
  - Primacy of interpersonal skills
  - Multinational projects
  - Importance of cultural differences
  - Dependence on technology

4. Essential functions of PM success

- Offer a systematic but flexible framework which can increase the chances of the project succeeding or, conversely, decrease its chances of failing.
  - No guarantee that the project will be successful
- The intensity with which Project Management is applied must be proportional to the need and complexity of that project.
  - Don’t apply the full gamut of project management processes and tools to a project which can probably be successfully managed more effectively and efficiently using a simpler and intuitive approach.