TDWI Project Management

for Business Intelligence

Transforming Data With Intelligence™

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TDWI strives to provide course books that are content-rich and that serve as useful reference documents after a class has ended.

This preview shows selected pages that are representative of the entire course book; pages are not consecutive. The page numbers shown at the bottom of each page indicate their actual position in the course book. All table-of-contents pages are included to illustrate all of the topics covered by the course.

COURSE OBJECTIVES

To learn:

- ✓ ***Why and how managing BI projects is more difficult than managing traditional IT projects***
- ✓ ***How to define a manageable BI project***
- ✓ ***How to choose among Traditional, Agile, and Rational Unified project management methods***
- ✓ ***How to combine methods to create a hybrid approach to BI project management***
- ✓ ***How to plan a project with each project management method***
- ✓ ***How to apply each method in project execution***
- ✓ ***How each method supports project monitoring and control***
- ✓ ***How to apply each method at project completion***

TABLE OF CONTENTS

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Module 1

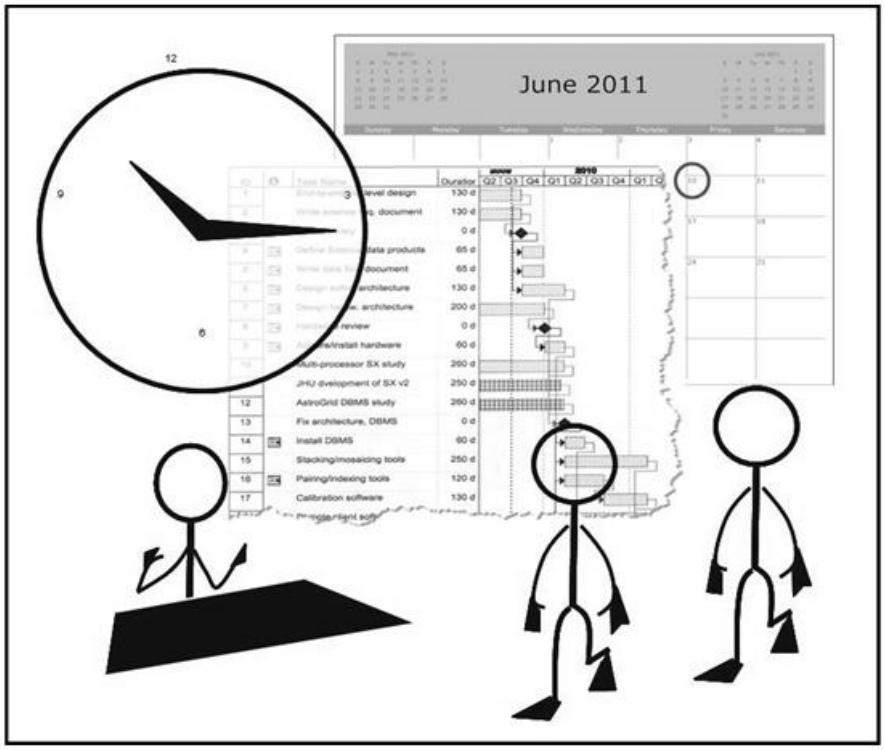
Project Management Fundamentals

Project Management Basics

Project Management Defined

PROJECT: A temporary endeavor undertaken to create a specific, product, service, or result.

MANAGEMENT: Organizing of people to accomplish desired goals.



PM Project management is the discipline of organizing and managing resources to successfully satisfy the goals of a project. It involves all of the common management functions including planning, leading, staffing, controlling, monitoring, and communicating.

Project Management Basics

Project Management Defined

GOALS FOCUSED

The facing page shows commonly accepted definitions of project, of management, and of project management. The shared element among all of these definitions is the focus on achieving goals.

- The definition of *project* expresses the goal focus as "to create a specific product, service, or result."
- The definition of *management* explicitly states "to accomplish desired goals."
- The project management definition clearly says "to successfully satisfy the goals of a project."

MULTI-FACETED

It is easy to conclude from these definitions that project management has many dimensions:

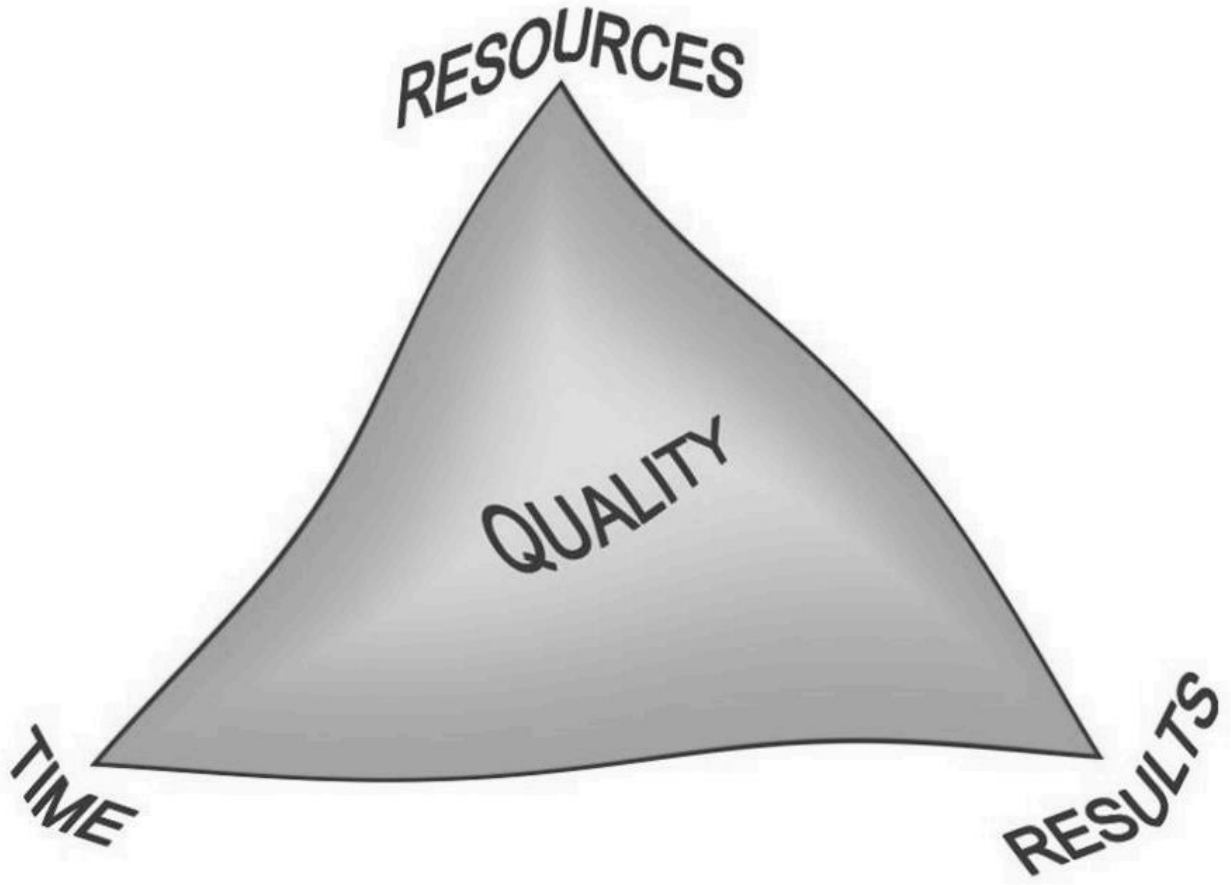
- Time – as suggested by the definition of a project as a temporary endeavor.
- People – as described in the management definition.
- Organization – as stated in the management definition.

And several aspects of project management specifically itemized in the definition of project management:

- Resources
- Planning
- Leadership
- Staffing
- Control
- Monitoring
- Communication

Project Management Success

The Right Balance



"the right results, on time and within budget …"

Project Management Success

The Right Balance

RESULTS VS. CONSTRAINTS

It is almost cliché to say that project success is defined as producing the desired results on time and within budget. But that cliché does a good job of describing the top-level challenge of project management.

The Project Management Triangle is a model of the constraints of project management. It is often used to illustrate that project management success is measured by the project team's ability to manage the project to produce expected results while managing time and cost.

It is common when first defining a project to find that the three variables – time, resources, and results – are noticeably out of balance, typically seeking a large scope of results from an inappropriately small commitment of time and resources.

Equally common is the tendency by project managers and teams to "pad" estimates of time and resource requirements as a hedge against change and uncertainty.

Both practices – understating and overstating of time and resources – are contrary to good project management practices. The ideal is a realistic balance among the three variables.

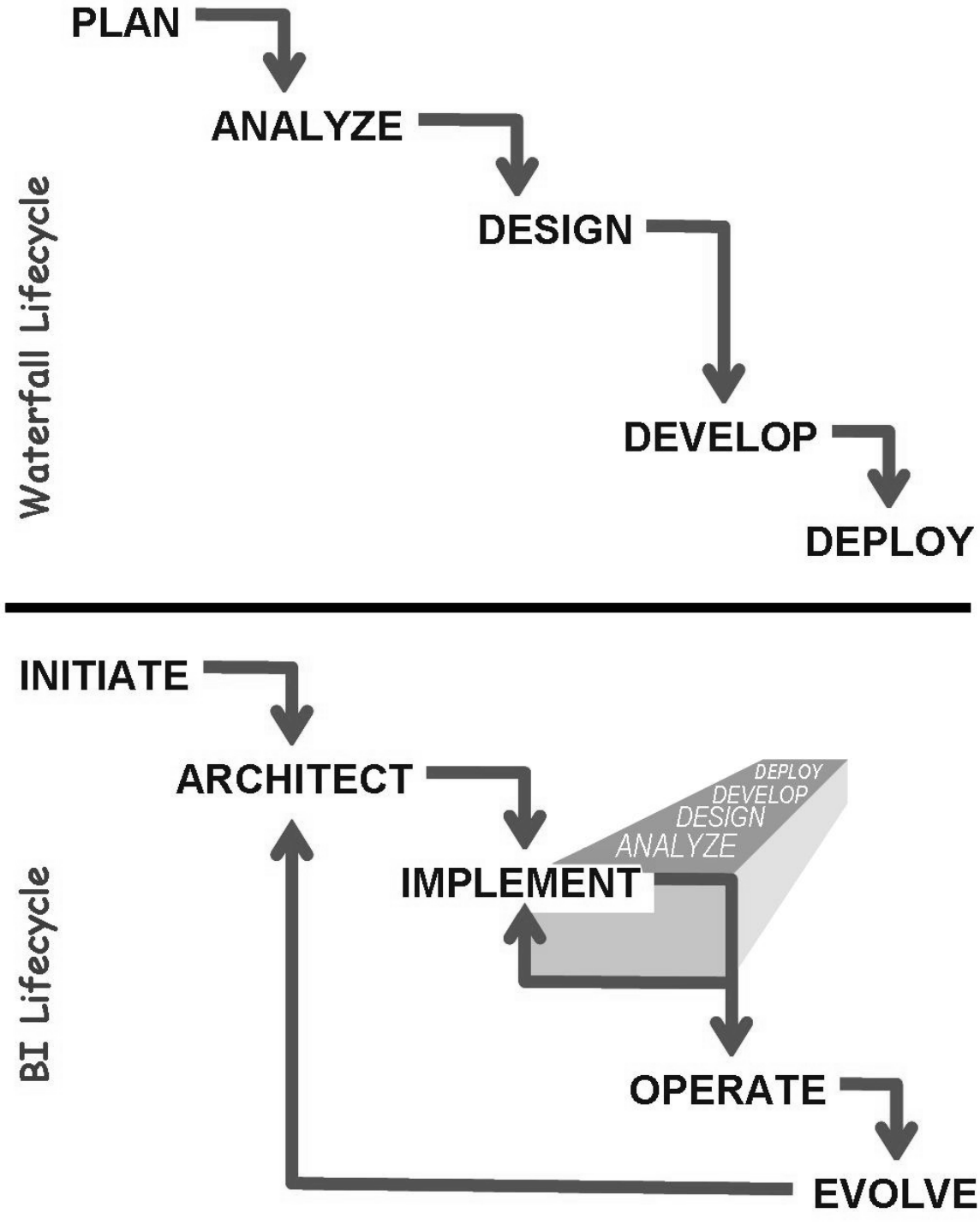
It is practical, however, to choose specific project approaches to maximize efficiency of constrained variables – especially time. We'll discuss those approaches throughout the course.

Module 2

Challenges of BI Projects

BI Projects vs. IT Projects

Lifecycle Differences



BI Projects vs. IT Projects

Lifecycle Differences

WATERFALL LIFECYCLE

The waterfall lifecycle is a sequential approach to development where the activities and deliverables are seen as flowing continuously downward through phases of planning, analysis, design, construction, and deployment.

Waterfall is often used as a "bad" example of systems development practices. It is widely criticized, but at the same time widely used – on the surface a contradiction. In reality, waterfall is rarely practiced as it is illustrated with only a downward path. Most practitioners recognize the need for cycles – feedback loops with analysis cycling back to revise the plan, design cycling back to drive analysis changes, etc. In some variations of the waterfall approach there are milestones at which "requirements freeze" and "design freeze" must be declared.

BUSINESS INTELLIGENCE LIFECYCLE

The BI lifecycle has some visual similarity to the waterfall, with a cascade effect through five phases. But the similarities end with the visual likeness. Among the significant differences:

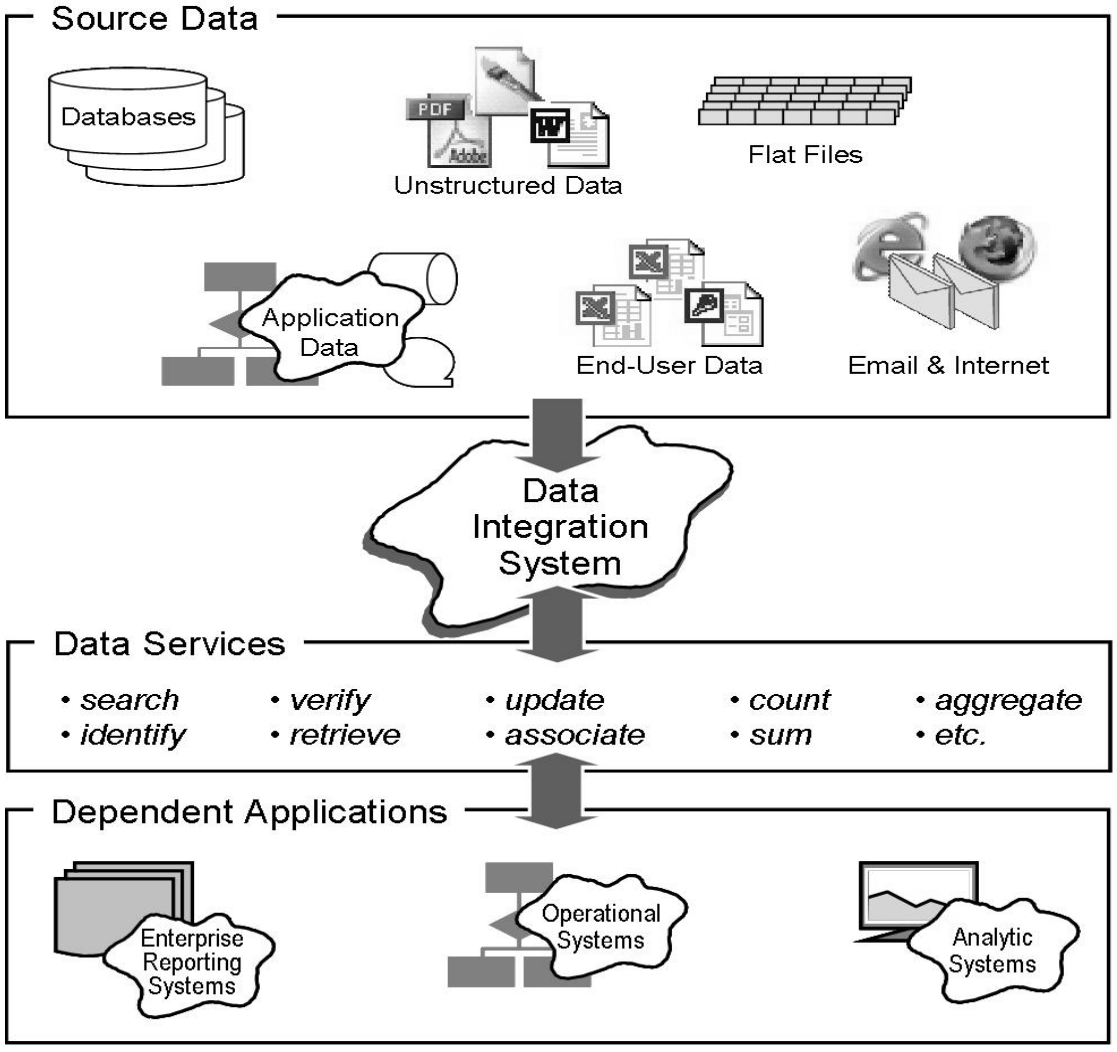
- The phases are distinctly different – Initiate, Architect, Implement, Operate, and Evolve.
- Where the waterfall describes a development process with finite ending, the BI lifecycle describes a continuously evolving process with no end point.
- The BI lifecycle has feedback loops, but they are not among contiguous phases as often practiced with waterfall. The outer loop is a cycle of all phases except initiate. The inner loop is a continuous repetition of implementations.
- The implementation phase includes analysis, design, development and deployment (the phases of waterfall) as steps or activities.

The BI lifecycle is often described as **incremental**, **iterative**, or **spiral**. The three terms are frequently used interchangeably and treated as synonyms. But they do, in fact, have unique meanings and all three are important when building, operating, and sustaining BI systems.

Kinds of BI Projects

Data Integration and Data Warehousing

Data Warehouse Architecture
Data Warehousing Infrastructure
Data Warehouse Development
Master Data Management
Merger/Federation of Multiple Data Warehouses
Shift to Real-Time or Low-Latency Data Warehouse
Renewal of Aging Data Warehouse
Addition of New Subject Areas
Addition of Unstructured and/or Spatial Data



Kinds of BI Projects

Data Integration and Data Warehousing

DATA CONSOLIDATION

Data integration is the process of combining data residing at different locations to create a unified view of the data. Data integration methods span a wide range including:

- Physical integration such as a data warehouse.
- Logical integration with global schema and view-based access.
- Semantic integration with mediated schema and access services.

INTEGRATION PROJECTS

The facing page illustrates some of the kinds of data integration projects that are common in BI. The examples demonstrate that data integration projects are of many different kinds, and show that each may require a different project management approach.

Consider, for example, the variation in project issues, challenges, and needs when comparing a data warehouse architecture project with one that expands the warehouse to include unstructured data. Think about each project as it relates to:

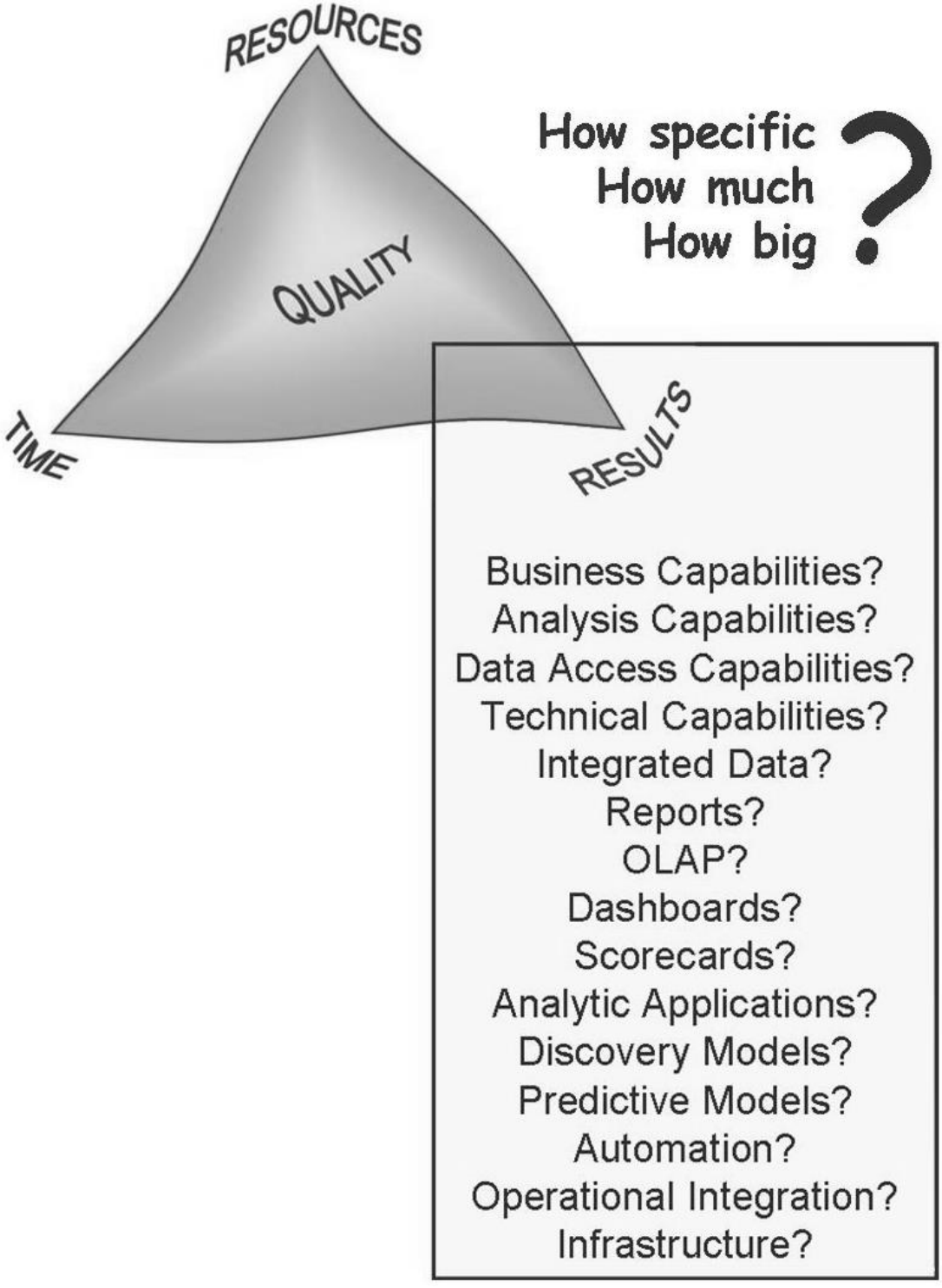
- Sponsorship
- Stakeholders
- Requirements
- Deliverables
- Activities
- Skills
- Dependencies
- Duration and Scheduling
- Lifecycle and Methodology

Module 3

Defining a BI Project

Project Definition Questions

What Will You Deliver?



Project Definition Questions

What Will You Deliver?

DEFINING PROJECTS

Every project needs to be defined if it is to deliver something useful and reach a successful conclusion. The degree of formality in that definition may vary widely between organizations and projects. And the timing and process of project definition may also vary.

Regardless of process, timing, and formality there are several questions that need to be answered for every project. The next several pages describe those questions. In every instance the questions are largely self-explanatory so the text describing them is brief. The discussion guide that follows each question is perhaps the more important part.

DEFINING RESULTS

It is important for every project to identify the ultimate deliverables – What will you produce? Can you express it as business capabilities? Or as a specific product such as a scorecard? Or perhaps as technological capabilities?

DISCUSSION GUIDE

- How important is it to answer these questions before choosing a project methodology or lifecycle?
- Is it necessary to answer the questions before starting any analysis, design, or development work?
- How specific and definitive do the answers need to be?
- How likely it that answers to the questions will change as the project progresses?
- How important is it that the answers remain stable throughout the project?
- Are the answers more or less critical for some types of projects than for others? Consult the list below to consider this question.
  - Data Integration and Data Warehousing
  - Query and Reporting
  - Business Analytics
  - Monitoring and Management Systems
  - Data Mining
  - Decision Automation
  - Operational Integration
  - Technology and Infrastructure
- Is the question more or less critical for some approaches?
  - PMI?
  - Rational?
  - Agile?

The Project Charter

Formal Project Definition

(PROJECT NAME) PROJECT CHARTER

SPONSORED BY:
- Executive Sponsor
- Project Sponsor(s)

PROJECT DESCRIPTION:
- Brief textual project summary that provides the reader with an introduction to the project. The description is a project summary that provides very high level answers to the 1uestions: *What* will the project produce? *Why* is it needed? *Who* wants it? *When* will it start and end?

PROJECT SCOPE:
- What business needs are within the scope of the project? Which are explicitly excluded?
- What are the key deliverables of the project?

BUSINESS REQUIREMENTS:
- Expanded scope statement with a list of top-level business requirements. Keep the list high-level and business-oriented. Do not stray into functional or technical requirements.

PROJECT DEPENDENCIES:
- Are there other projects on which this project depends?
- Are there other projects that depend upon this project?

STAKEHOLDERS:
- sponsors, subject matter experts, business process owners, political and financial stakeholders, key project team members

PROJECT STAFFING:
- Essential roles, skills, and responsibilities for the project

PROJECT SCHEDULE:
- Top level schedule with start date, end date, and major milestones

RESOURCES AND BUDGET:
- Resource needs including people, technology, and facilities
- Budgeted expenses for each resource requirement

MEASURES OF SUCCESS
- Product quality and acceptance criteria
- Project success criteria

ASSUMPTIONS AND CONSTRAINTS
- Any "essential to success" assumptions
- Budget, schedule, resource, and technology constraints

READINESS AND RISK ASSESSMENTS:
- Evaluation of team readiness to produce and of business/organizational readiness to use
- Known risks (technical, financial, political) and means to mitigate

The Project Charter

Formal Project Definition

DOCUMENTING THE OBJECTIVES

In project management, a project charter is a statement of the scope, objectives, and participants in a project. It provides a preliminary statement of roles and responsibilities, outlines the project objectives, and identifies the main stakeholders. A project charter formally documents answers to many of the questions discussed earlier in this module.

The importance of a project charter and the degree of completeness and formality that you need are determined by organizational standards and practices together with the size, complexity, and duration of the project that you undertake.

The next several pages step through the typical sections of a project charter and discuss each section briefly. Consider these pages to be more like an "a la carte menu" than as a "prescription." Select only the pieces that make sense for a specific project when chartering that project.

PROJECT NAME

A good starting place for a project charter is to name the project. With a name it has an identity. A descriptive name that gives a sense of what will be delivered is better than a neutral name such as "Phase Two." For high-visibility projects it is useful to have an acronym or a short name that becomes part of everyday organizational language.

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Module 4

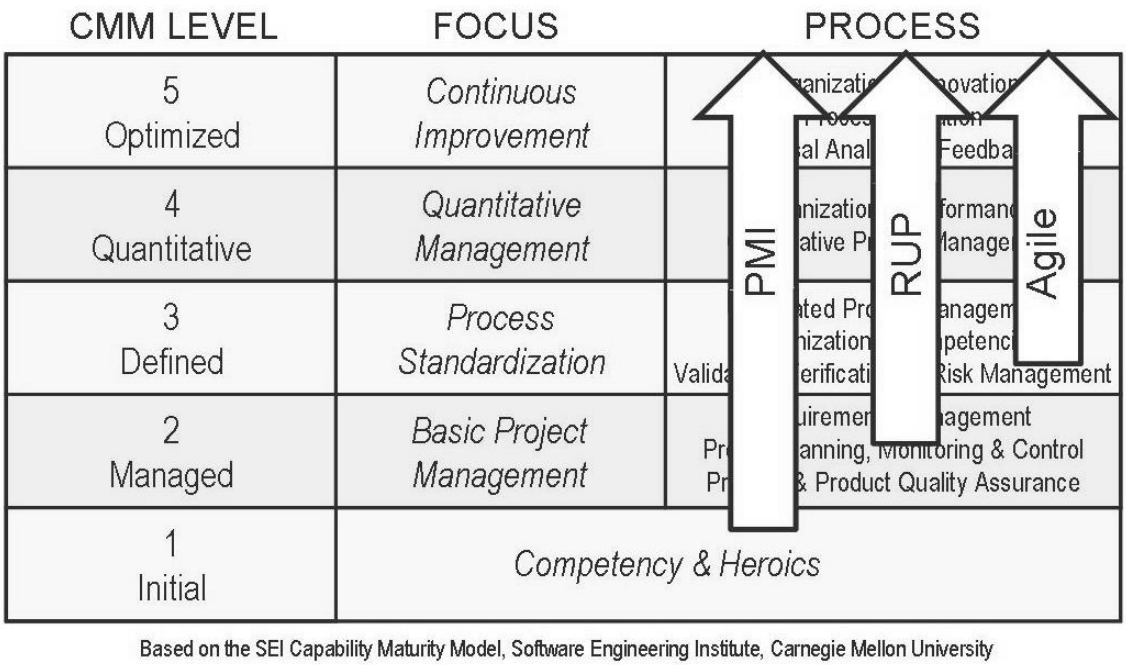
Choosing the Project Approach

Fitting to the Organization

A CMMI View

CMM LEVEL	FOCUS	PROCESS
5 Optimized	*Continuous Improvement*	Organizational Innovation Process Evolution Causal Analysis & Feedback
4 Quantitative	*Quantitative Management*	Organizational Performance Quantitative Project Management
3 Defined	*Process Standardization*	Integrated Project Management Organizational Competencies Validation, Verification, & Risk Management
2 Managed	*Basic Project Management*	Requirements Management Project Planning, Monitoring & Control Process & Product Quality Assurance
1 Initial	*Competency & Heroics*	

Based on the SEI Capability Maturity Model, Software Engineering Institute, Carnegie Mellon University



Based on the SEI Capability Maturity Model, Software Engineering Institute, Carnegie Mellon University

Fitting to the Organization

A CMMI View

MATCHING TO CAPABILITIES

One of the most important aspects of choosing a project approach is making a good fit with organizational capabilities. The ideal is to stretch but not to break. The challenge is to objectively assess capabilities in a way that offers useful matching criteria. A good Capability Maturity Models (CMM) meets that need.

WHAT IS CMM?

A capability maturity model in software engineering is a model of the maturity of capabilities in certain business processes. A maturity model is a structured collection of elements to describe certain aspects of maturity in an organization, and to aids in defining and understanding processes. For BI project management we're particularly interested in the processes of systems development and systems management. For that purpose the Software Engineering Institute (SEI) process maturity model from Carnegie-Mellon University is a good fit.

AND CMMI?

CMMI means Capability Maturity Model Integration. It is Carnegie-Mellon's process for fitting CMM into the everyday activities and processes of an organization. CMMI identifies five levels of process maturity that range from initial to optimized. The diagram at the top of the facing page describes those levels. CMMI is a good basis for choosing project lifecycles and management approaches because it has a very strong project management focus.

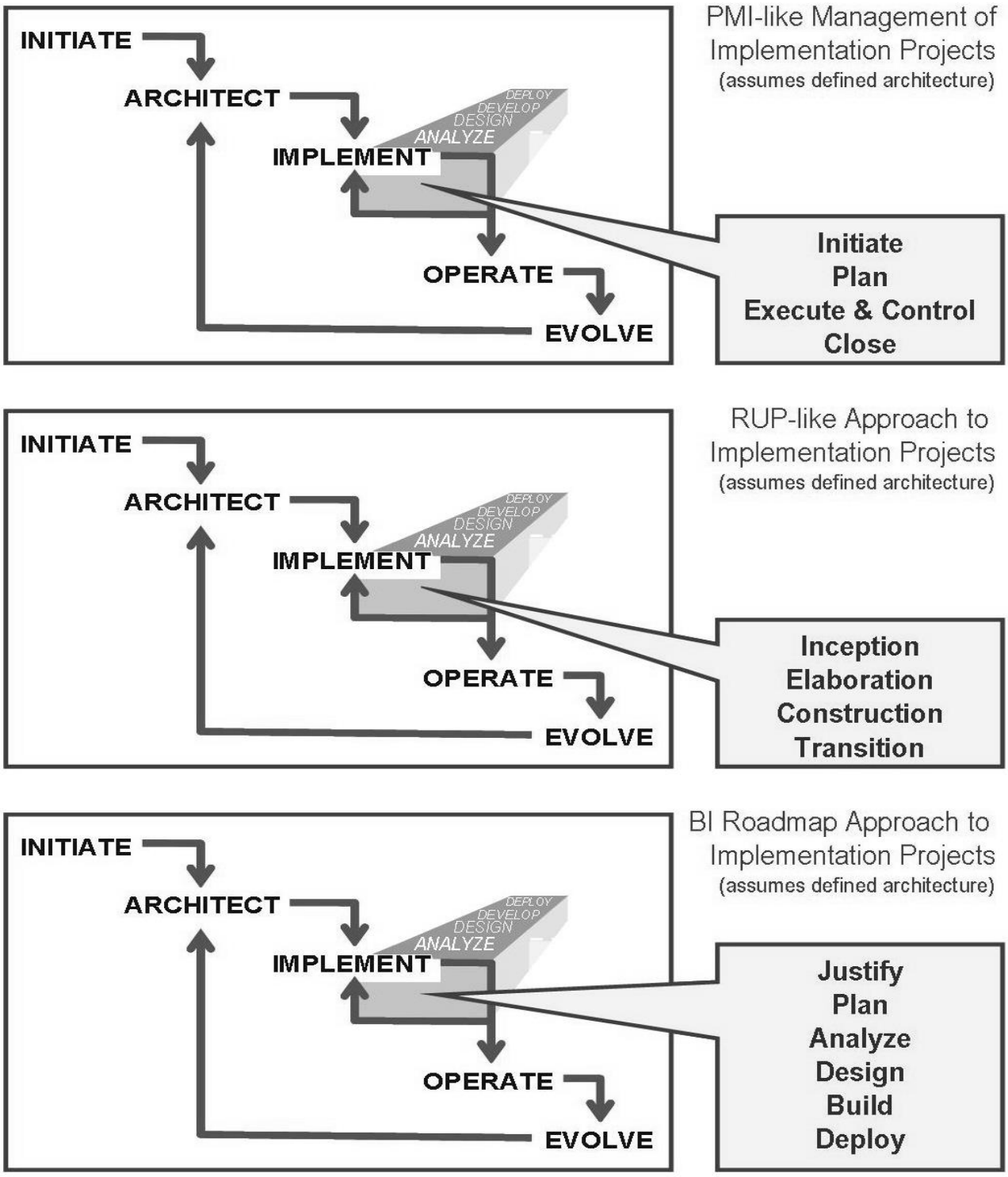
USING CMMI

The ideal in capability maturity is continuous growth – continuous increases in the level of maturity. The in-practice objective for project management is to stretch without breaking. To achieve that goal involves these activities:

- Identify the level at which your processes currently operate.
- Determine which processes are strong and which are weak at your current CMM level.
- Decide upon your stretch goal – the maturity level at which you will operate your project. Don't stretch too far; remember the objective is to stretch without breaking.
- Choose a project approach that is compatible with your stretch goal. The diagram at the bottom of the facing page maps PMI, RUP, and agile approaches to the CMM as a guideline.

Defining the Project Structure

Lifecycle and Methodology



Defining the Project Structure

Lifecycle and Methodology

EXPLORING THE POSSIBILITIES

Keep in mind that all of the methodologies and PM approaches need to work with the BI lifecycle – that of evolving architecture and incremental implementation. Through the next several pages we'll examine how several approaches – PMI, RUP, scrum, BI Roadmap, and hybrids – fit into that lifecycle at two levels: for implementation projects and for full lifecycle application.

IMPLEMENTATION PROJECTS

The diagrams on the facing page illustrate three methodologies mapped into implementation projects in the BI lifecycle. In all three instances the lifecycle phases of the methodology become the project steps – the highest level of work breakdown structure – for an implementation project. Each example assumes that BI architecture is already defined and implemented.

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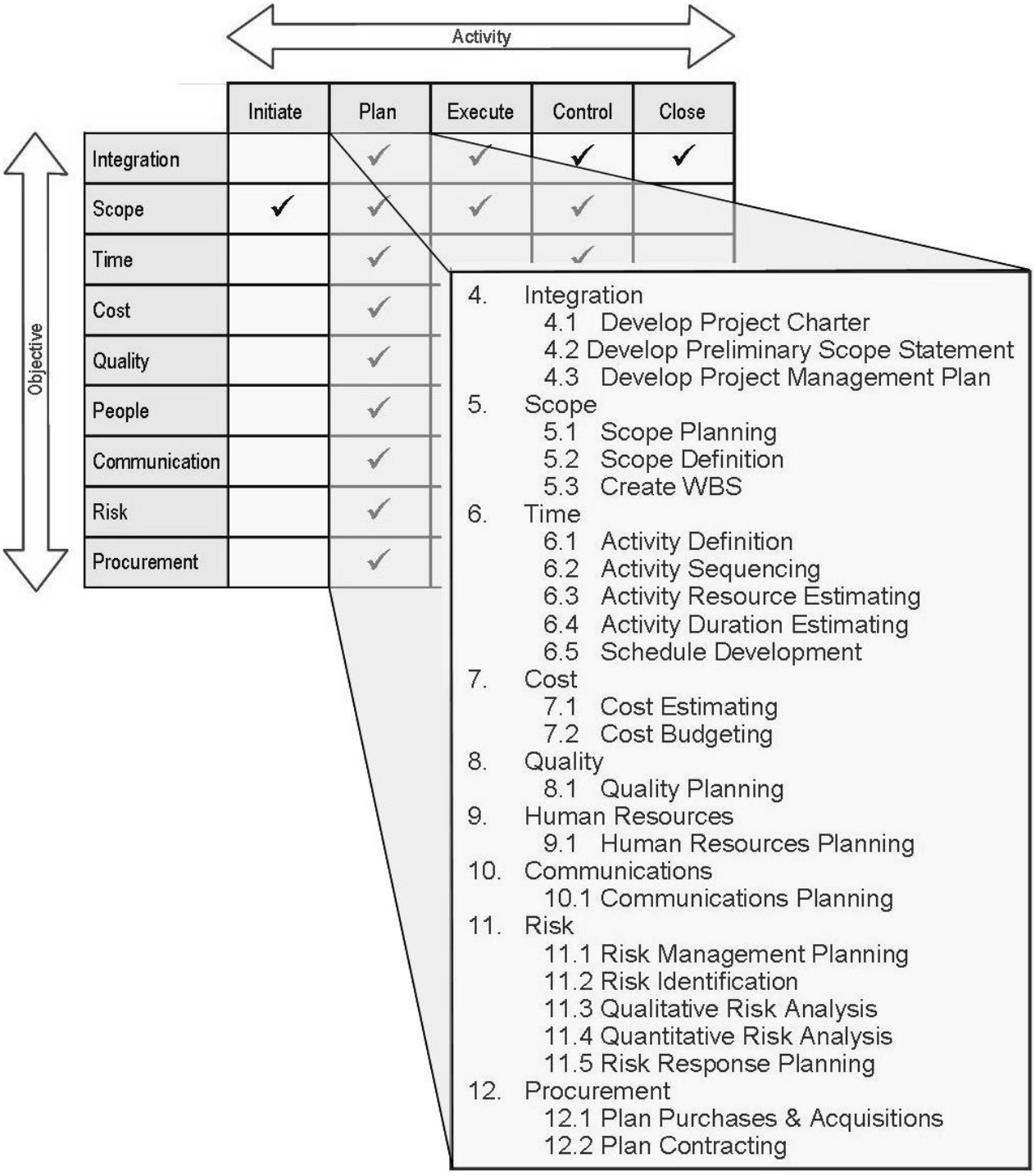
Module 5

Running the Project

Planning the Project

PMI Planning



Planning the Project

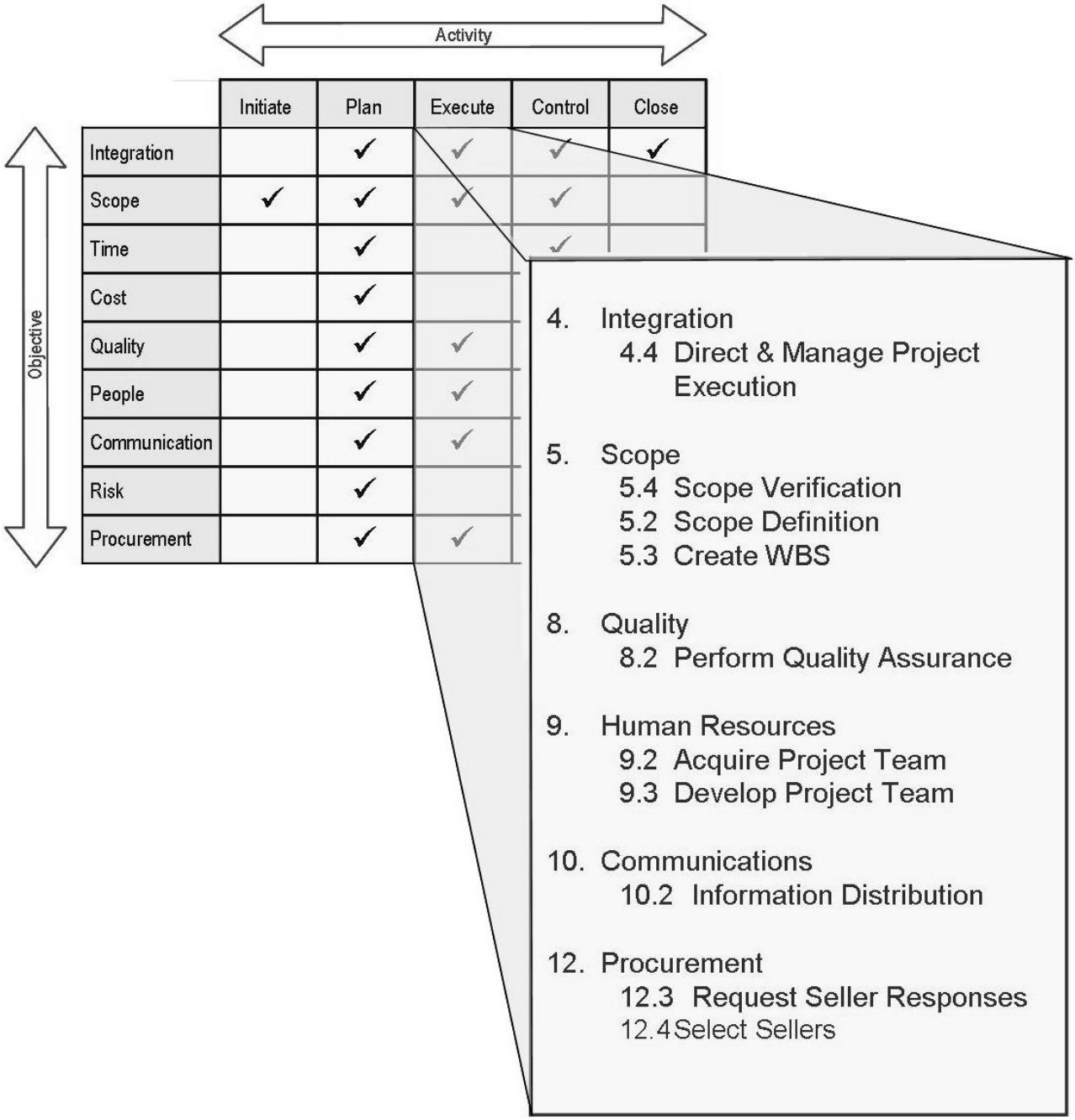
PMI Planning

A THOROUGH PLAN

PMI focuses on thorough planning as one of the keys to project success. The facing page shows the planning activities that are part of the PMI approach to project management. Note that every project management objective has at least one planning activity and most have several. Planning constitutes twenty-three of the forty-three activities in the PMBOK.

Executing the Project

PMI Execution



Executing the Project

PMI Execution

JUST DO IT!

In the PMI framework project management activities are fewer in execution than in planning. This fits well with the philosophy that the key to success is found in planning. Now the job is to execute a well-made plan. Only ten activities appear in the execution phase where the strong focus is on scope, people, and procurement. Time, cost, quality, and risk don't even get a mention in execution, though they will resurface as subjects of control.

