Previews of TDWI course books are provided as an opportunity to see the quality of our material and help you to select the courses that best fit your needs. The previews can not be printed.

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. The pages shown are not consecutive. The page numbers as they appear in the actual course material are shown at the bottom of each page. All table-of-contents pages are included to illustrate all of the topics covered by a course.

TDWI Project Managment for Business Intelligence

TABLE OF CONTENTS

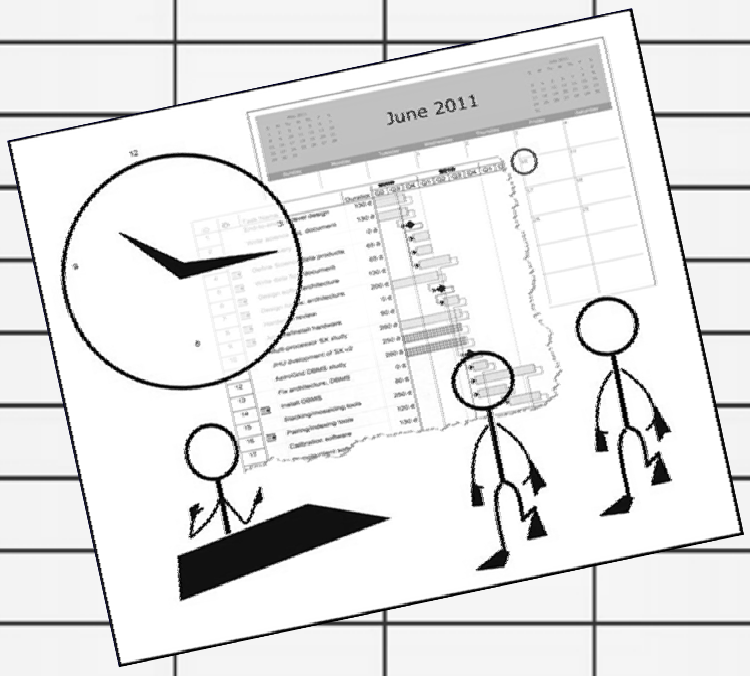
Module 1

Project Management Fundamentals

Project Management Basics

Project Management Responsibilities

	PLAN WORK	CONTROL EXECUTION	MONITOR PROGRESS	COMMUNICATE RESULTS
SCOPE				
LIFE CYCLE				
DELIVERABLES				
STAKEHOLDERS				
VALUE				
TIME				
COST				
QUALITY				
STAFFING				
PROCUREMENT				
FACILITIES				
COMMUNICATIONS				
CHANGE				
RISK				



Project Management Basics

Project Management Responsibilities

BEYOND THE DEFINITION

Project management, then, can be described as the project activities that are related to planning, control, monitoring, and communication. Looking deeper we need to ask: *Planning what? Controlling what? Monitoring what? Communicating what?*

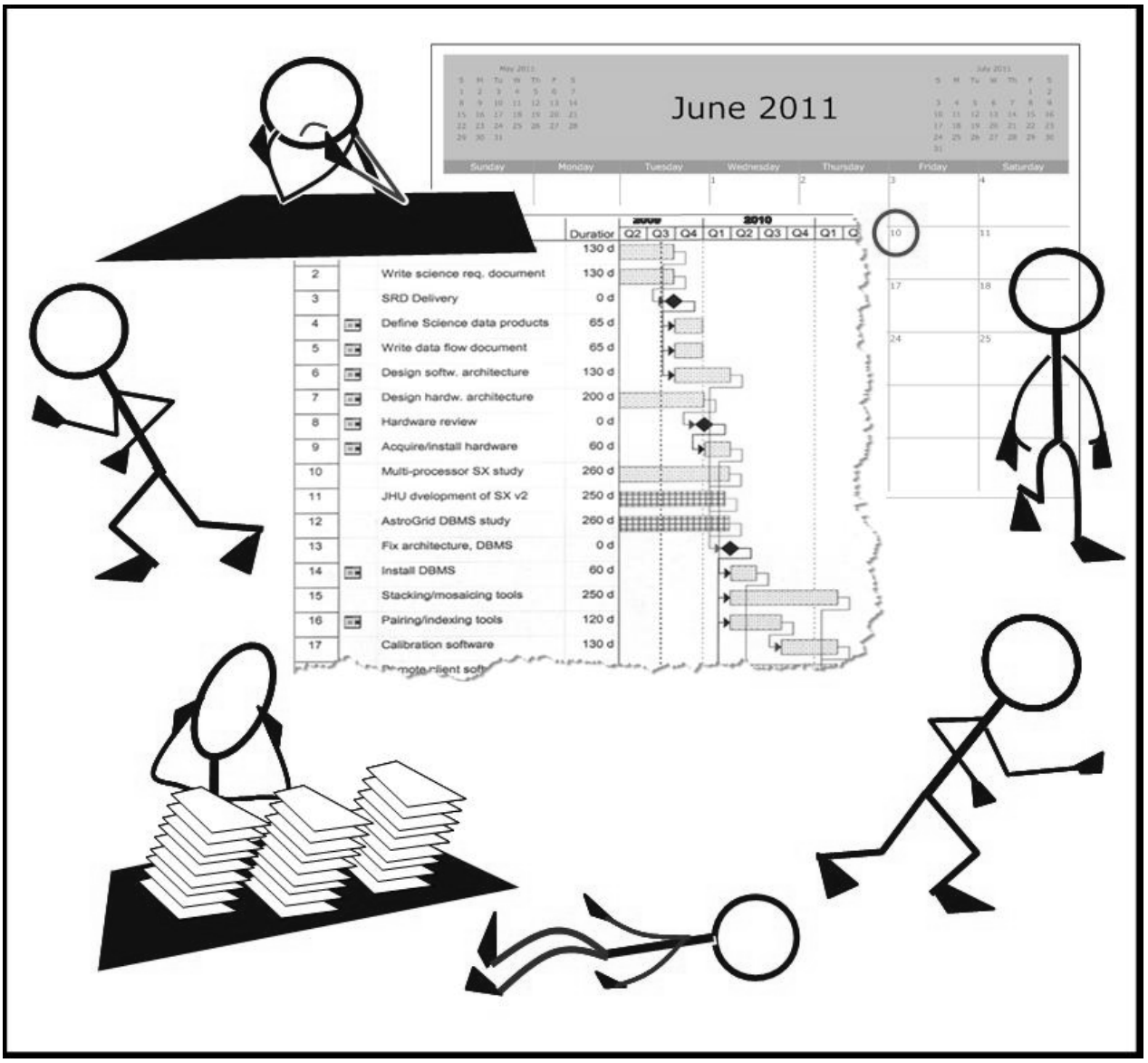
ELEMENTS OF PROJECTS

The facing page illustrates the many aspects of projects that become the focus of planning, controlling, monitoring, and communication activities:

- Scope – The boundaries of a project describing the range of requirements, problems, processes, etc. that are part of the project and (either explicitly or by implication) declaring some things to be outside of project responsibility.
- Life Cycle – The series of stages through which a project progresses from concept to termination.
- Deliverables – Tangible results. Artifacts created by activities of the project.
- Stakeholders – The people who have interest in and are affected by the outcomes of a project.
- Value – Quantifiable benefits derived by achieving project goals.
- Time – Elapsed calendar time and cumulative personnel time consumed by a project.
- Cost – Financial expenses incurred by a project.
- Quality – Product quality as the degree to which requirements are met and value is created. Project quality includes effective and repeatable processes, efficient use of resources, and team learning and growth.
- Staffing – Fitting people to project roles and responsibilities.
- Facilities – Workspace, meeting space, hardware, software, etc.
- Communications – Formal and informal distribution of project related information.
- Change – Volatility of requirements, expectations, people, and other critical project elements.
- Risk - Potential for problems and disruptions in the execution of a project, and for side-effects or undesirable outcomes from a project.

Project Management Failures

High Stress



Project Management Success

On Time and within Budget

TIME

Time is one of the primary concerns for the control aspect of project management. For any project, several perspectives of time may be considered either independently or in combination:

- Elapsed time generally refers to calendar time. Using an elapsed time perspective a week has seven days.
- Scheduled time usually refers to the amount of time worked during and elapsed time period. From a scheduled time perspective a typical week has five days.
- Productive time excludes the time consumed by the non-project activities that are part of a person's work life including time spent on travel, administrative tasks, sick time, vacation time, etc.
- Staff-time quantifies time as a variable associated with people leading to terms such as staff-month, man-hour, etc.

In project planning, two other time perspectives may be of interest:

- Estimated – The amount of time that a task is expected to take, or the date upon which an event (milestone, for example) is expected to occur.
- Time-box – The amount of time allocated to accomplish a unit of work or to deliver a project artifact.

In project tracking it is common to consider:

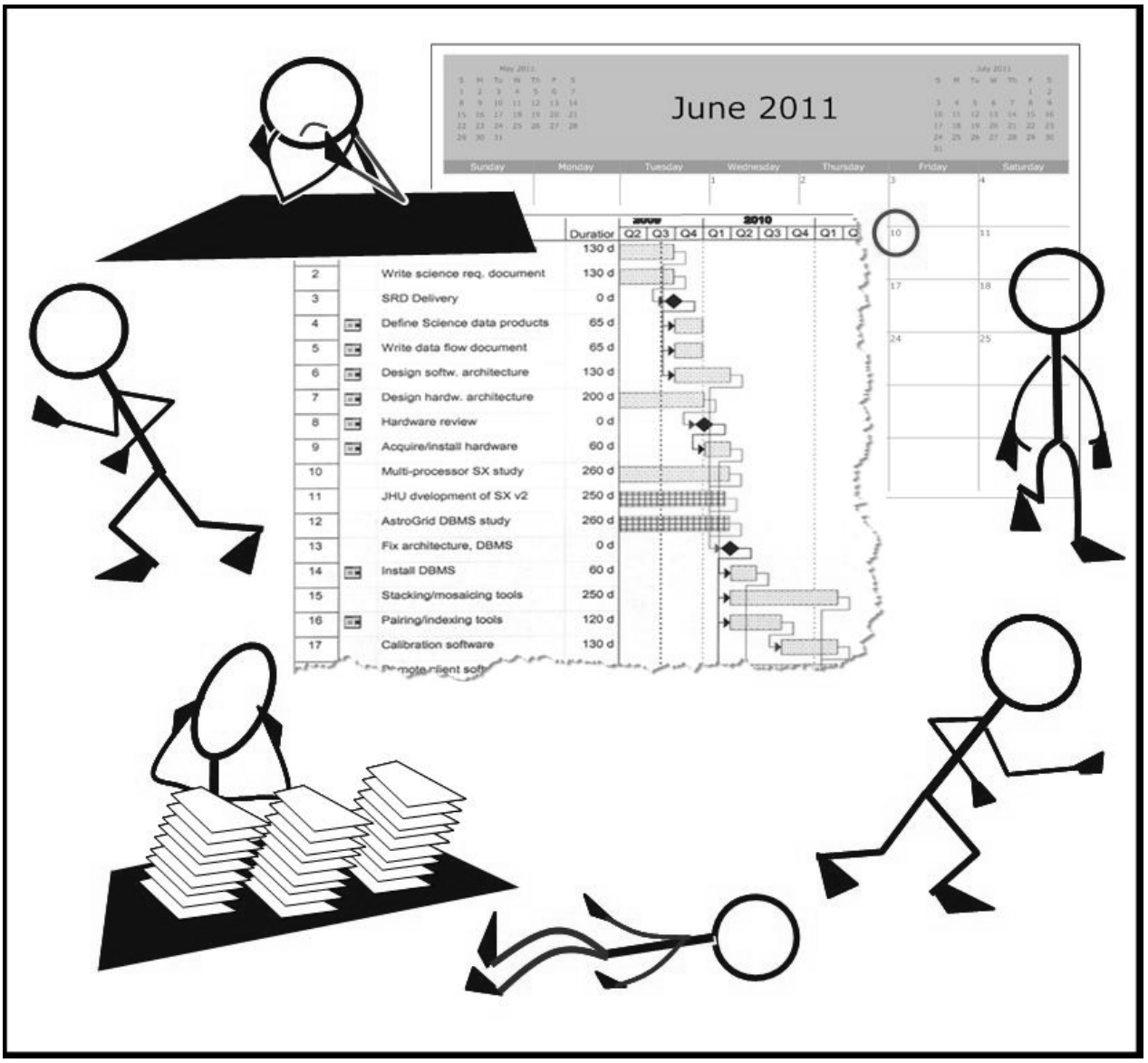
- Scheduled vs. actual time.
- Time to complete.

BUDGET

Budget is the other major consideration of project control. Budget describes and constrains the amount of money that is available to a project for equipment, supplies, goods and services, hardware, software, facilities, consulting, training, people, technology, etc.

Project Management Failures

High Stress



Project Management Failures

High Stress

A HUMAN STANDARD

The "time, resources, and results" view of projects fails to emphasize one very important consideration. Many of the resources needed for project success are human resources – people. Good project management practices consider people to be among the most valuable of resources.

Treating people as consumable resources is a failure of project management – a valuable resource unnecessarily depleted. High stress and burnout diminish the value of human resources. At best you lose productivity. At worst you lose knowledge and skills.

Module 2

Challenges of BI Projects

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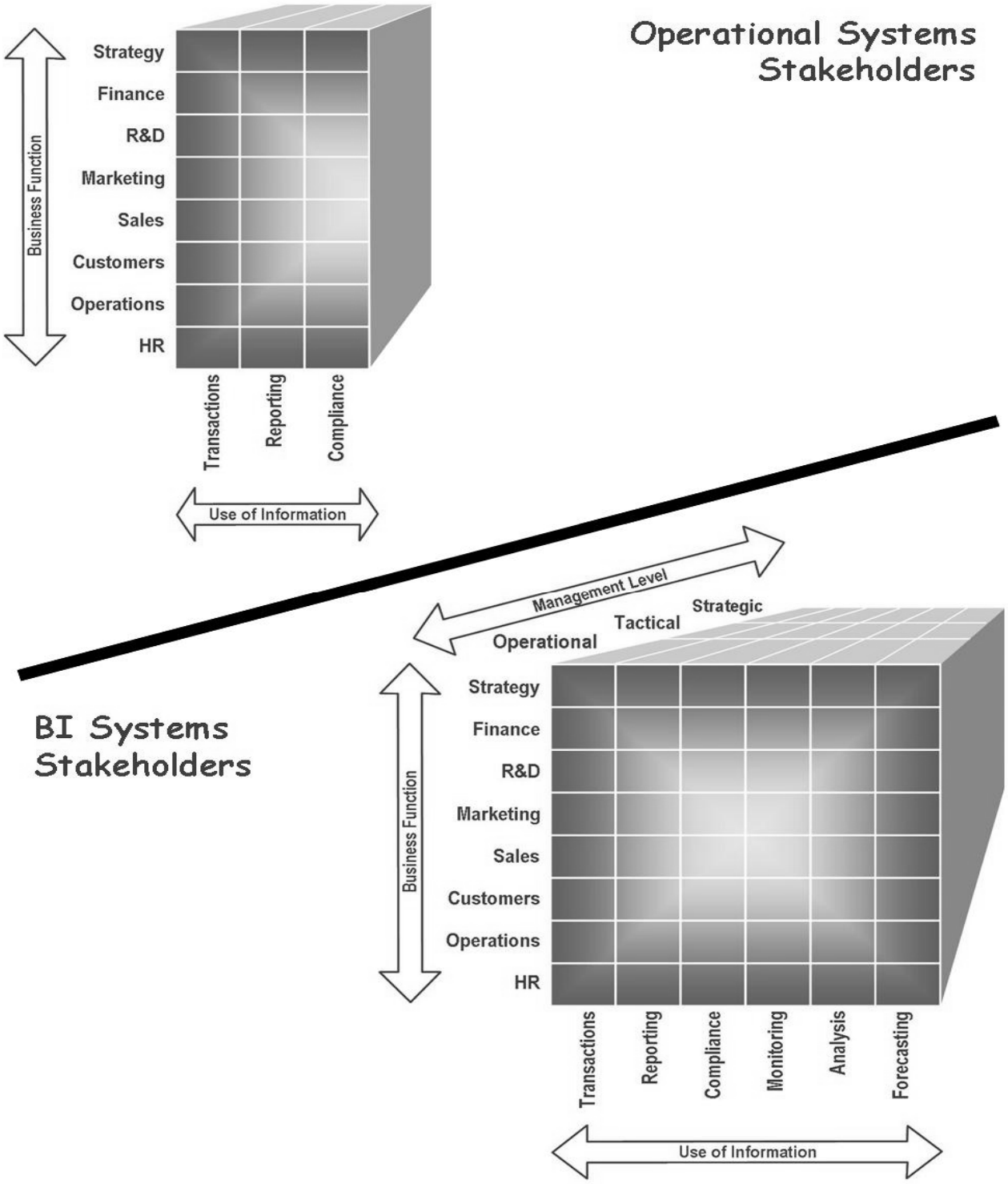
BI Projects vs. IT Projects

Different Stakeholders



BI Projects vs. IT Projects

Different Stakeholders

PEOPLE AND PROJECTS

A stakeholder is anyone who has an interest in the outcome of a project. They come in many forms and with many interests including financial, political, and process-oriented. Stakeholders bring a unique challenge to project management for one simple reason: They have expectations, and not every stakeholder group has the same expectations.

STAKEHOLDERS AND IT PROJECTS

The core group of stakeholders for a typical IT project can be identified by the business functions with which they are associated (a marketing project has stakeholders who work in marketing, for example) and the ways in which they use information systems – transactions, reporting, and compliance. For operational systems projects, stakeholder motivation is almost exclusive operations related.

STAKEHOLDERS AND BI PROJECTS

BI projects are likely to have a much larger set of stakeholders than operational systems projects. The first source of expansion is the dimension of business functions. Where an operational project includes one or a few closely related functions, BI projects integrate data and analytics across many functions. This is especially true for projects that are part of enterprise performance management initiatives.

The second area of expansion is in levels of management interest. Where operational systems primarily serve information needs of line managers, Stakeholder motivation now encompasses operational, tactical, and strategic interests. BI systems serve knowledge workers, line managers, middle management, and executives.

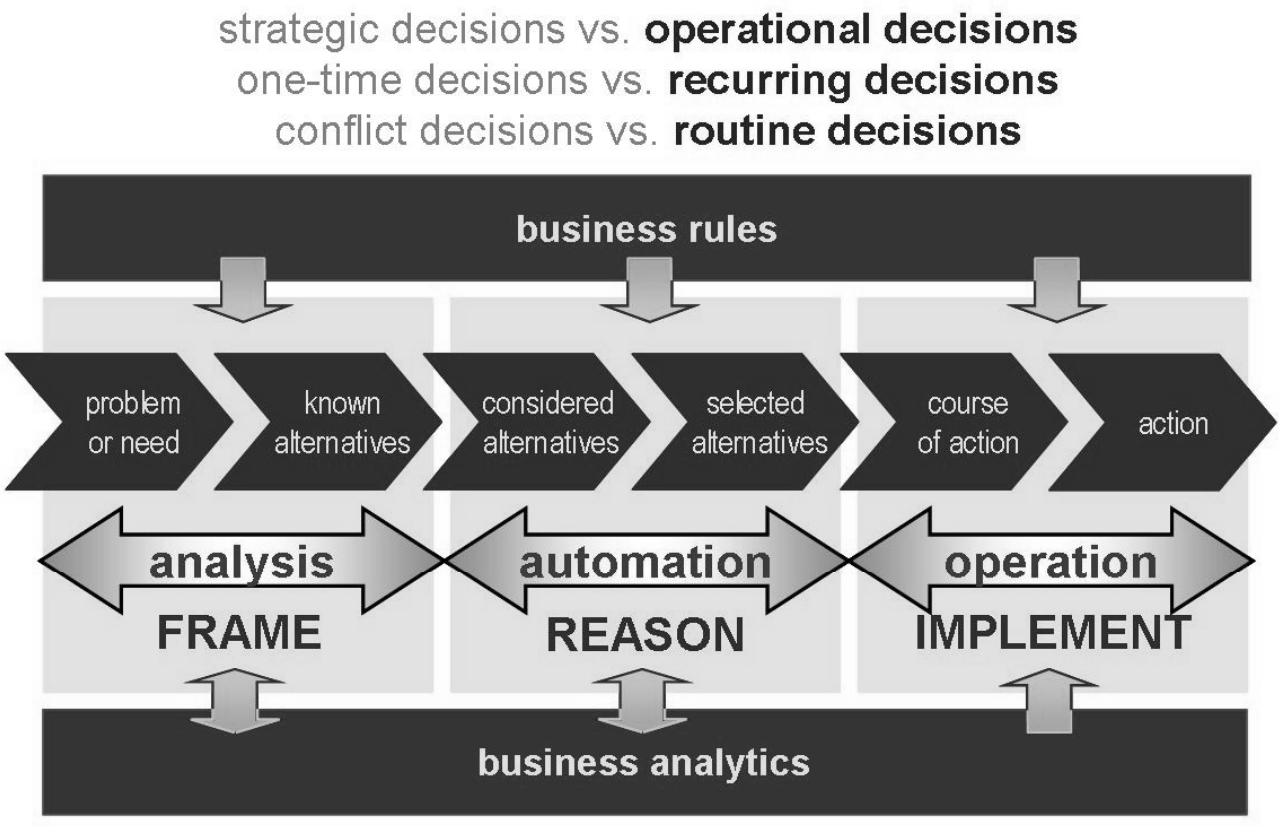
Use of data and information drives the third area of stakeholder expansion. In addition to transactions, reporting, and compliance, BI systems provide monitoring, analysis, and forecasting capabilities.

The diagrams on the facing page illustrate how the range of stakeholder interests for BI systems is easily six times as large as that of operational systems.

A six-fold increase in stakeholders probably brings about similar growth in expectations, conflicts, issues, and communications – a real challenge for the BI project manager.

Kinds of BI Projects

Decision Automation



Business Rules Automation
Business Process Automation
Enterprise Decision Management
Industrial Automation
Marketing Automation
Workflow Automation

Kinds of BI Projects

Decision Automation

RULE-BASED INTELLIGENCE

Dan Power, a recognized authority in the field of decision support, describes the decision automation as follows:

> "The concept of decision automation (DA) is deceptively simple and intriguingly complex. DA refers to using information technologies to make decisions and implement programmed decision processes. Typically decision automation is considered most appropriate for well-structured, clearly defined, routine or programmed decision situations. … Decision making procedures evaluate stored or real time data from sensors [then use] algorithms based on quantitative models, logical or quantitative heuristics, statistical inference, or artificial intelligence [to choose] actions. … Decision automation … can 'learn' from successes and failures and automatically improve and update [their models and rules]." (source: www.decisionautomation.com)

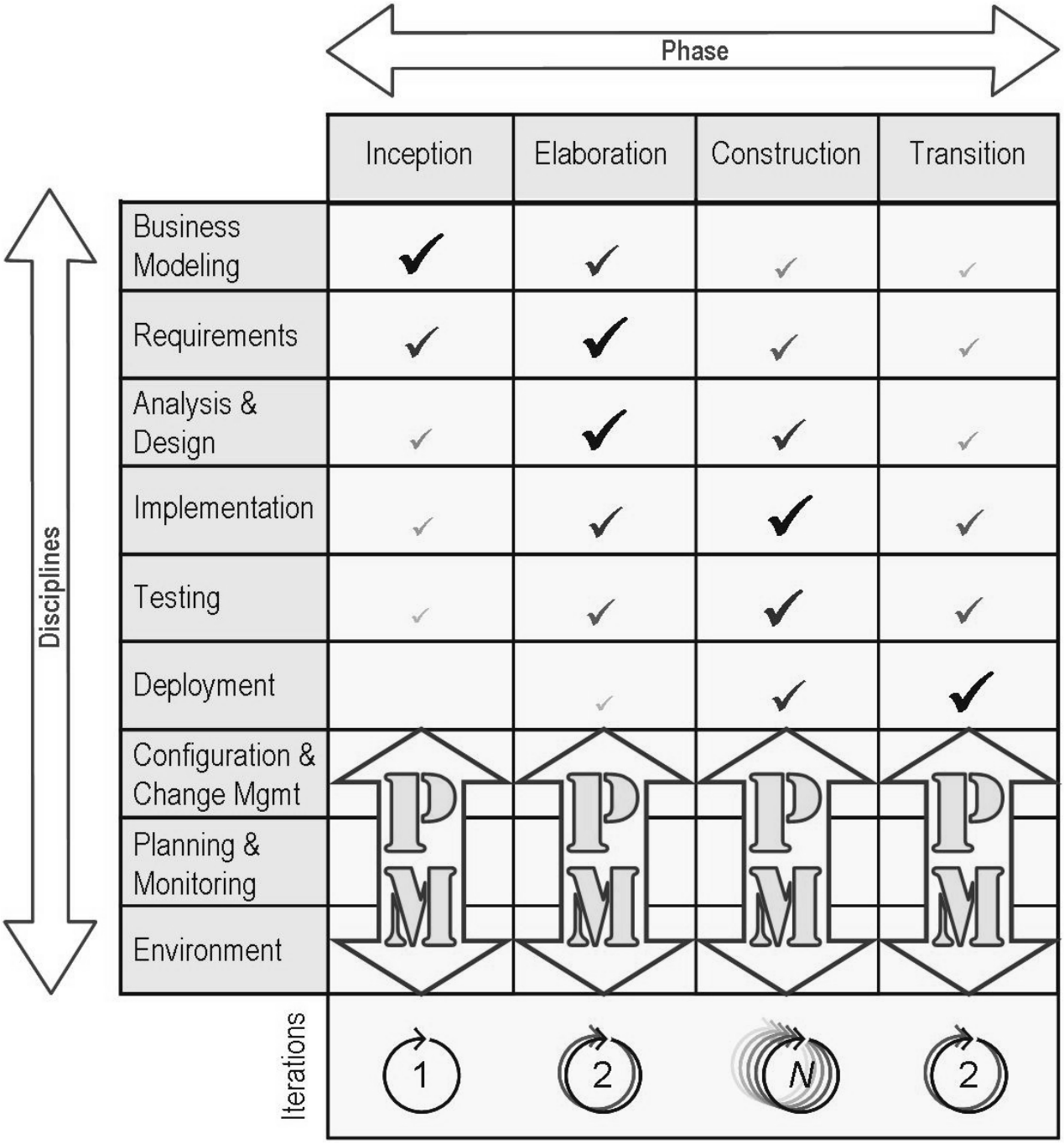
DECISION AUTOMATION AND PROJECTS

Decision automation sounds like powerful stuff; and it is powerful. With power comes risk – it is critical that the right decisions are automated and that the decisions are good decisions. It is certainly enticing to technology lovers with business rules engines and artificial intelligence in the mix. But how do those technologies fit into the BI infrastructure? What about the desire for real-time data? What skills are needed for projects that involve quantitative models, logical or quantitative heuristics, statistical inference, and artificial intelligence? Are we ready for systems that learn and update their own rules?

Decision automation is intriguing and certainly on the leading edge of BI applications. At the leading edge it comes with many unknowns and with best-practices yet to be discovered and defined. Consider projects in each of the decision automation domains – business rules, business processes, enterprise decisions, and industrial, marketing, or workflow automation – and ask what they mean for project management variables such as sponsorship, stakeholders, requirements, activities, skills, dependencies, and methodology.

Project Management Methods

Rational Unified Process (RUP)



Project Management Methods

Rational Unified Process (RUP)

A SOFTWARE ENGINEERING PROCESS

The Rational Unified Process (RUP) is an iterative software development process framework created by the Rational Software Corporation, a division of IBM since 2003. RUP can be applied as an adaptable process framework to be tailored by the organizations and project teams who use it. RUP may also be applied as a prescriptive approach to standardize software engineering practices throughout an organization.

Note that RUP is specifically designed for **software engineering** and is not a general information systems development process. It is certainly not tailored to BI projects. Still RUP offers some powerful techniques for iterative development that we can explore for application to BI projects later in the course.

RUP OVERVIEW

RUP implements software engineering best within a two-dimensional framework as illustrated on the facing page. One dimension describes disciplines while the other describes phases of a project lifecycle. The relative importance of each discipline in each phase is indicated by the size and color of the check marks within the matrix – larger and darker means more significant; smaller and lighter means the discipline is less important within the phase.

RUP AND PROJECT MANAGEMENT

RUP integrates project management into the framework and distributes management activities throughout the lifecycle. Three disciplines:

- Configuration and Change Management
- Planning and Monitoring
- Environment

specifically target project management responsibilities.

ITERATIVE DEVELOPMENT

Iterative development is a core concept of RUP, thus iteration is a key component of the lifecycle. The bottom row of the matrix describes the typical frequency of iteration across lifecycle phases.

Module 3

Defining a BI Project

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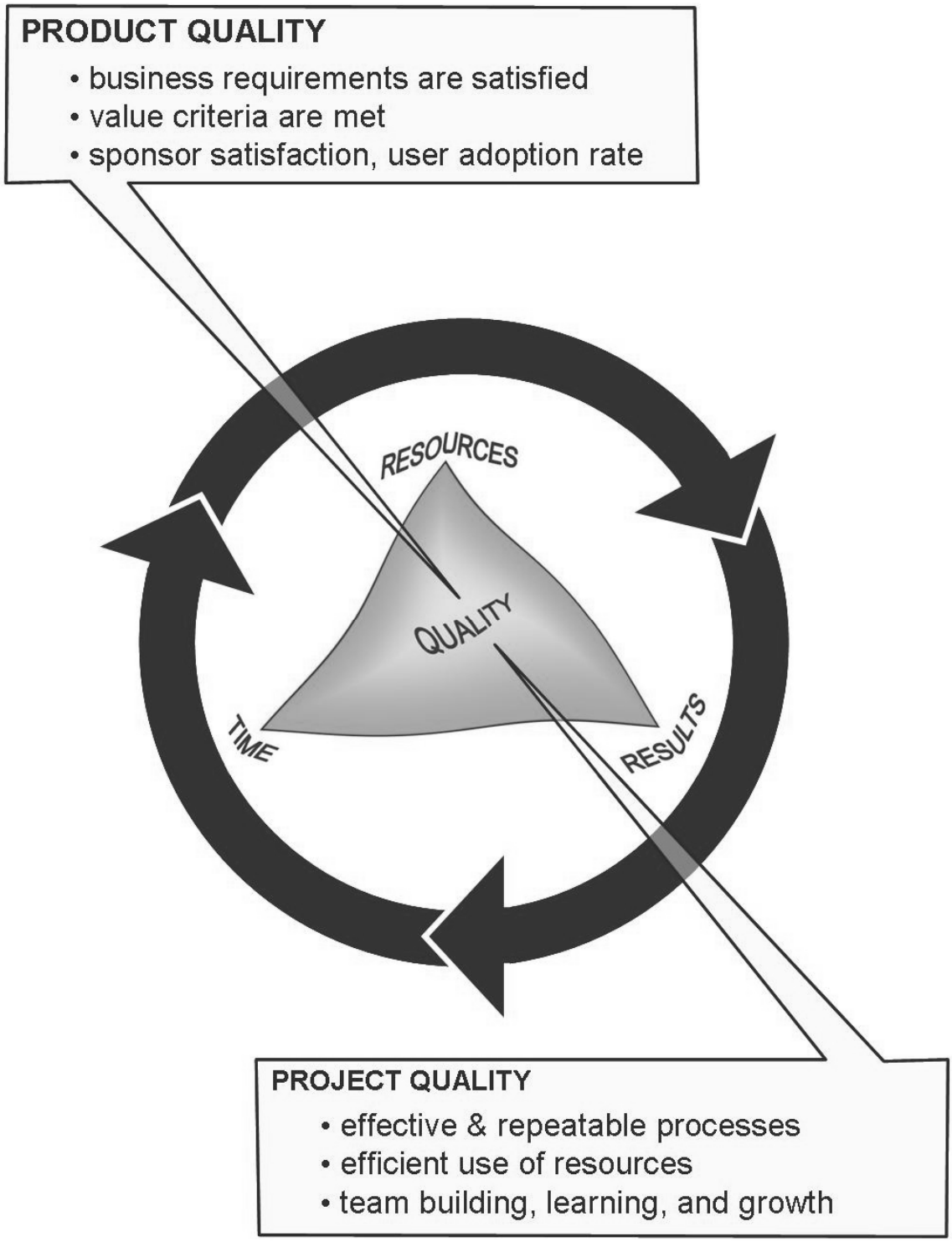
Project Definition Questions

With What Success Criteria?



Project Definition Questions

With What Success Criteria?

THE MEASURES

How will you know when you're finished? And how will you know how well you've done? What are the acceptance criteria for deliverables and products? What are the quality criteria? What product measures are important? And what project measures are important?

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.

Module 4

Choosing the Project Approach

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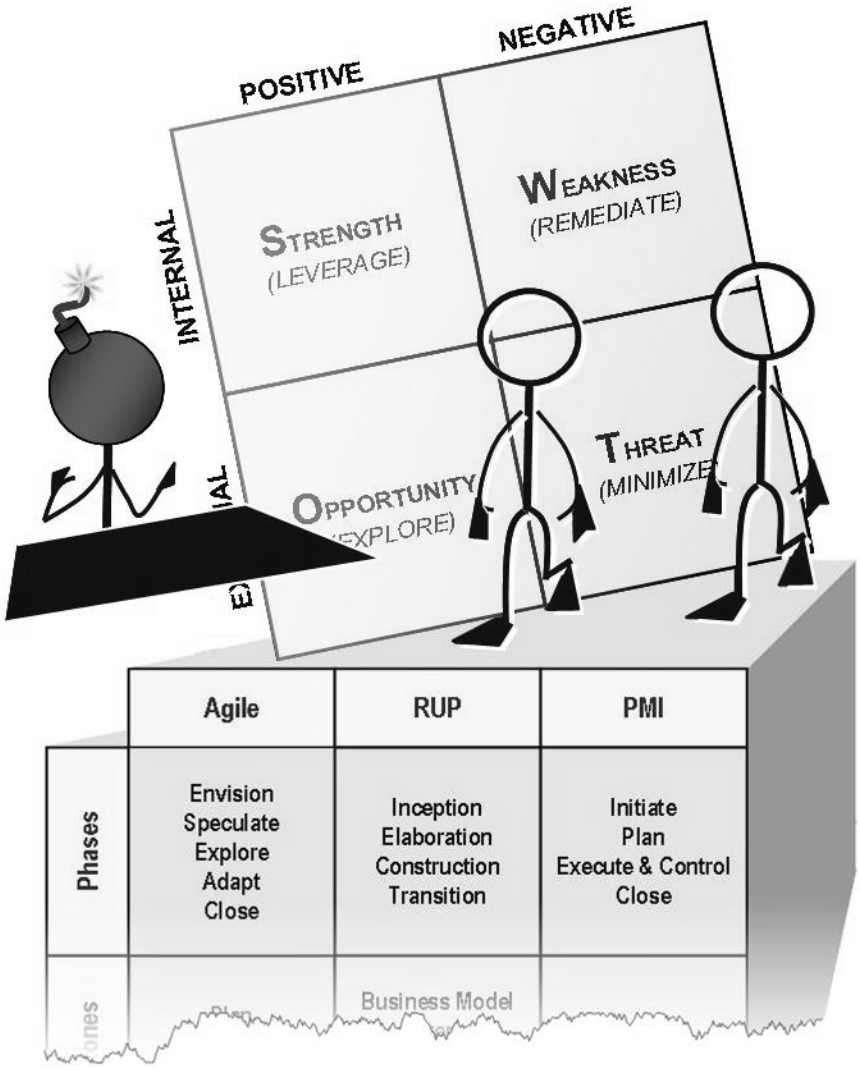
Fitting to the Project

Level of Risk



- ✓ **Risk through Weakness**
- ✓ **Risk by Threat**
- ✓ **Financial Risk**
- ✓ **Legal Risk**
- ✓ **Political Risk**
- ✓ **Technological Risk**
- ✓ **Social/Cultural Risk**

Fitting to the Project

Level of Risk

FIT TO UNCERTAINTIES

Managing risk is really a process of working with uncertainty. Every project has its own unique uncertainties and levels of risk. If you performed SWOT analysis or otherwise identified risks as part of a project charter, then you'll have a good start here. Each assumption and constraint in a project charter may also characterize a risk.

When choosing a project lifecycle or PM approach it is valuable to have a known set of risks, to assess the probability of each risk becoming a reality, and to assess the severity of impact should the risk occur. Risks in BI projects fit into a finite number of categories, so a matrix such as the one shown below is a useful tool:

Category of Risk	Identified Risk (short description)	Probability (1=low, 3= high)	Severity (1=low, 3= high)
People			
Process			
Technology			
Resources			
Budget / Financial			

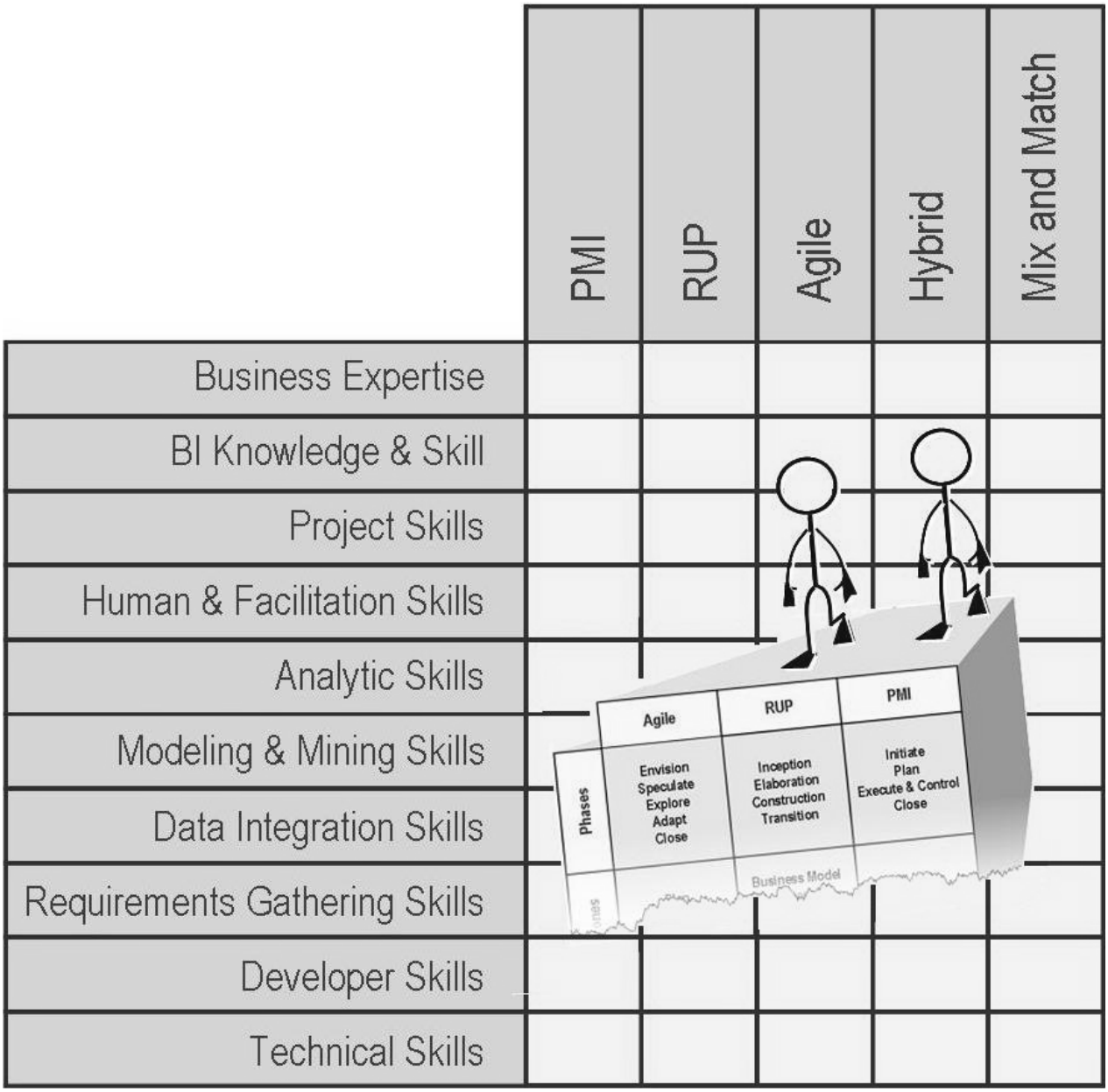
Identify, Classify, and Quantify Risks Here

Using a risk assessment such as this matrix you can quickly determine where the highest risks exist. Multiply probability by severity for each row, and then sum the results for each category. Now you can match high risk areas to project approach. But don't expect a recipe. It takes some thought to determine what will work. For example:

- Budget risks might best be mitigated with planning and control – a natural fit to PMI. Agile, however, may reduce budget risk by eliminating waste and rework.
- Technology risks may be better addressed through prototyping and proof-of-concept – iterative activities that fit well with RUP.
- People risks may best be mitigated by the team practices of agile methods and the values of the agile manifesto. But if the risk is a large number of people PMI's communication may be needed.
- Process risks may call for adaptive processes – not a PMI strength. Or they may best be mitigated using strong process controls – a good fit for PMI.

Defining the Project Structure

Organizations and Teams



Defining the Project Structure

Change Control

CHANGE HAPPENS

Change control is the process used to ensure that changes to a project are introduced in a controlled and coordinated manner. It reduces the possibility that unnecessary changes are introduced leading to waste and rework, or that conflicting changes are introduced from different sources.

PMI AND CHANGE

PMI explicitly addresses change control in steps *4.6 Integrated Change Control* and *5.5 Scope Control*.

RUP AND CHANGE

RUP engages change through iteration while simultaneously controlling change as part of the *Configuration and Change Management* discipline.

AGILE AND CHANGE

Agile methods embrace change. One of the explicitly stated values of the agile manifesto is *"value responding to change over following a plan."* The stated goals of adaptive teams and adaptive products suggest that change is more to be managed than controlled and that change management is built into the agile process.

Module 5

Running the Project

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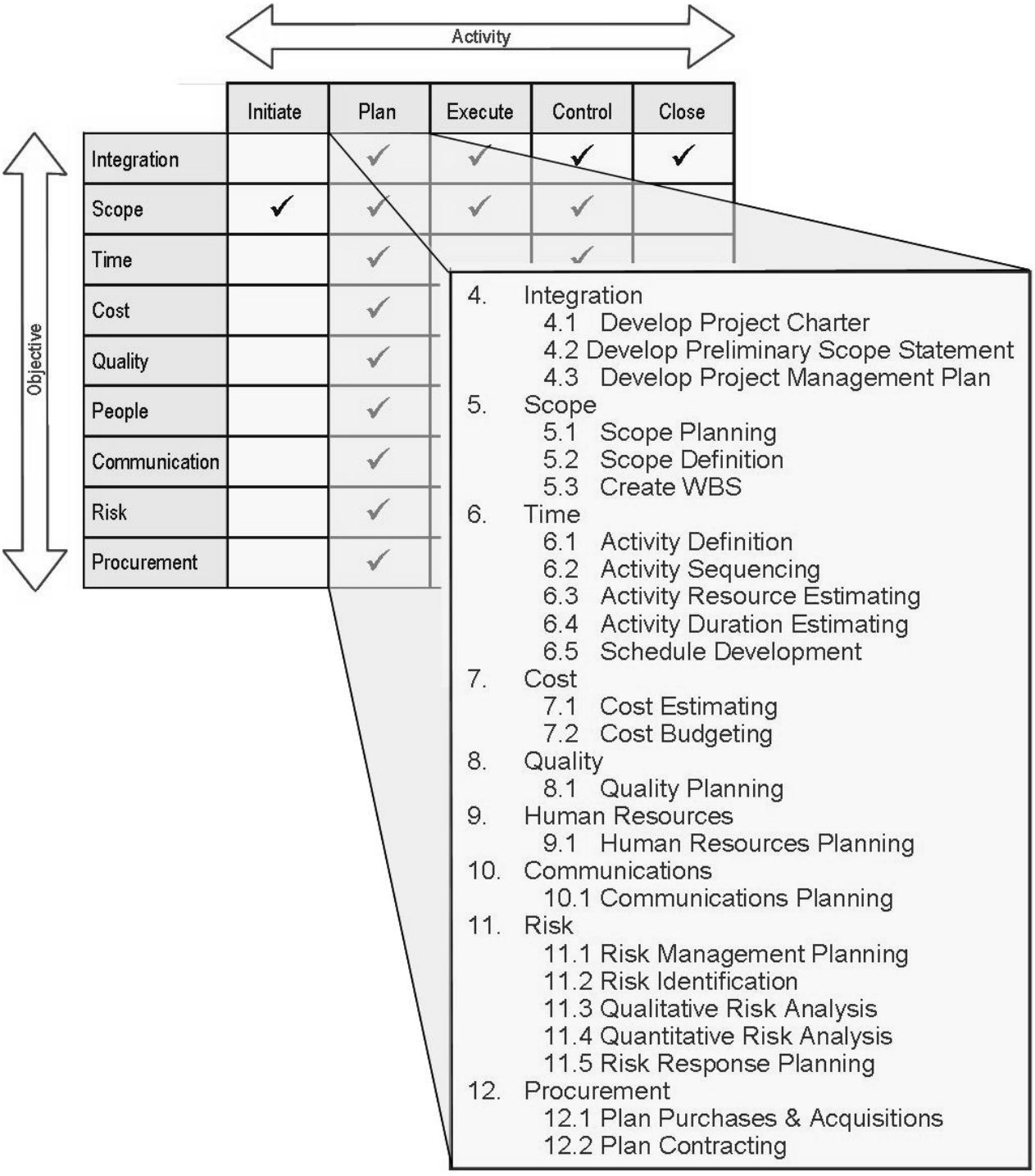
Planning the Project

PMI Planning



Planning the Project

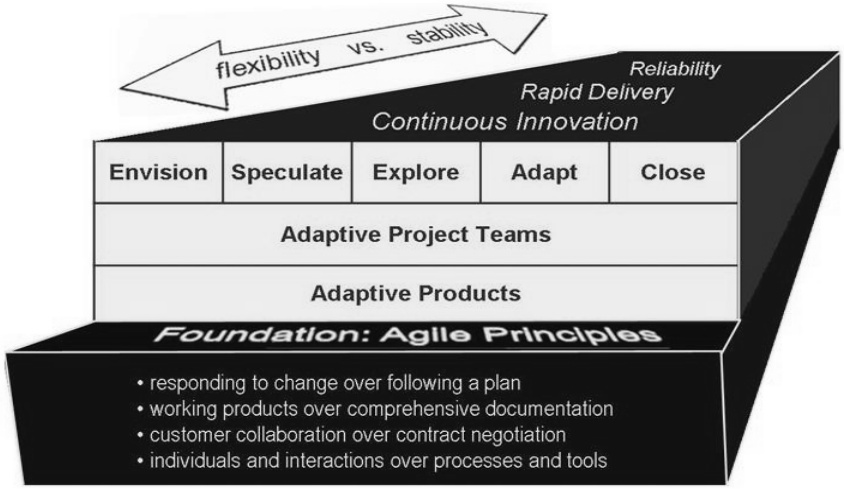
PMI Planning

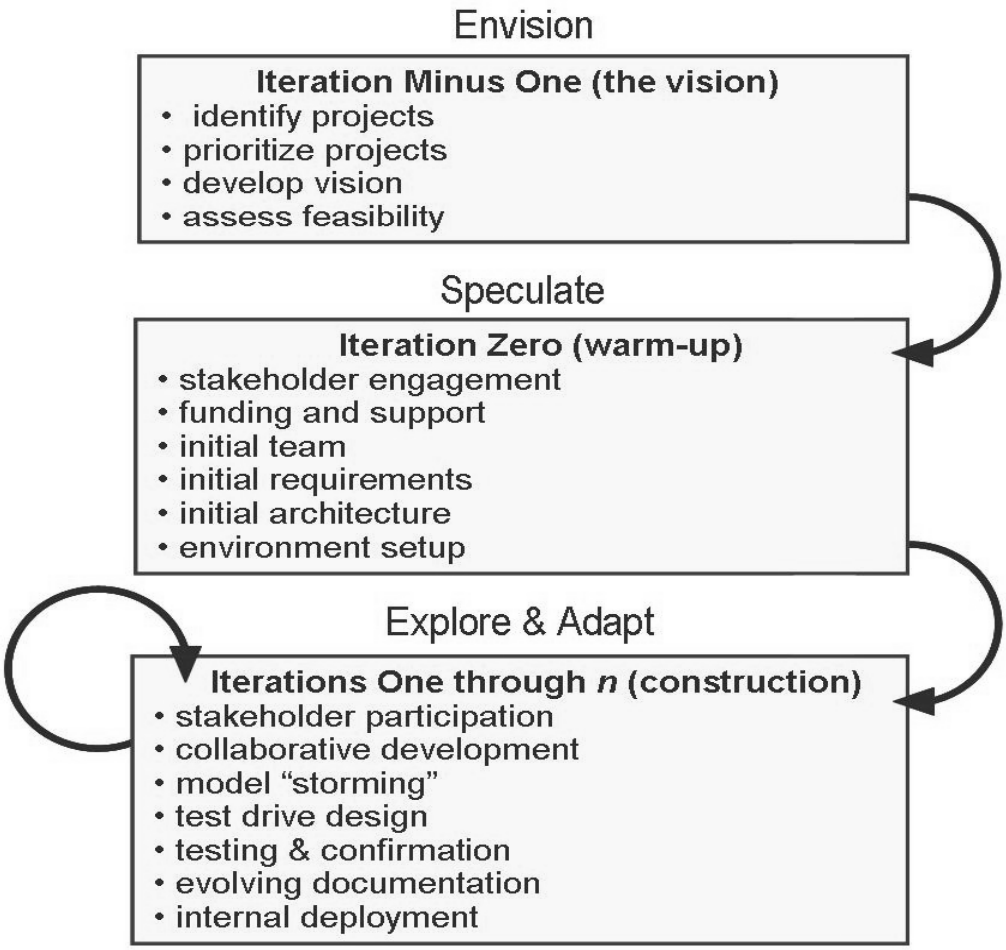
A THOROUGH PLAN

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

Agile Execution





Executing the Project

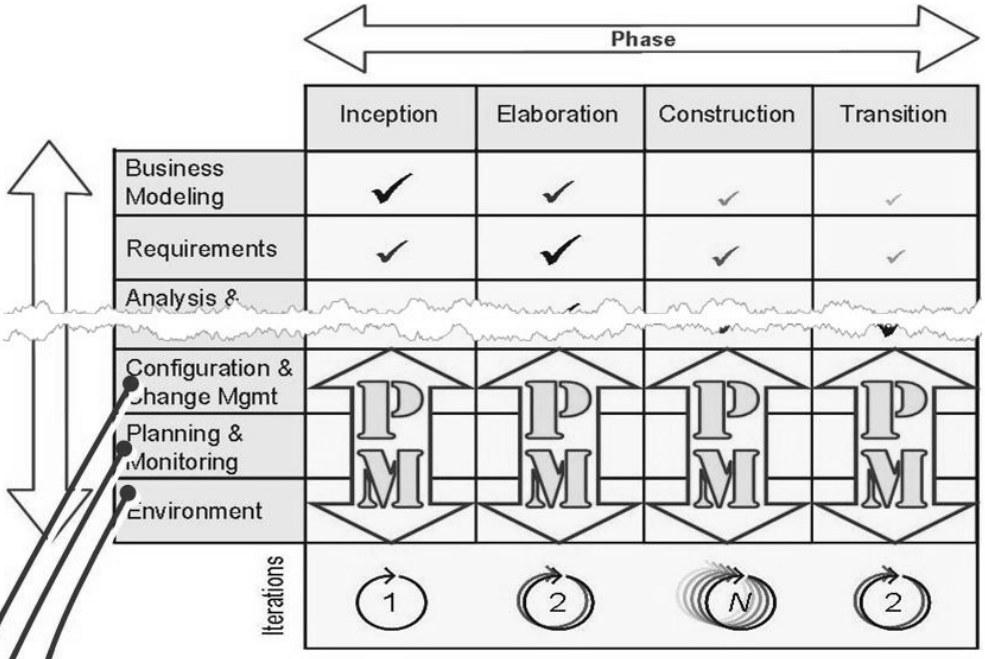
Agile Execution

SELF-MANAGING

In agile execution it is difficult to distinguish the project management activities from the development activities. The greater the degree to which teams become self-managing and projects self-managed, the more agile the projects and processes become. Through the execution phases – envision, speculate, explore and adapt – some goals, principles, and best practices guide the path to agility.

Monitoring and Controlling the Project

Rational Project Control



Environment

Processes, tools, technologies, standards, guidelines, templates, and developer kits, necessary to provide a functional, adaptable, and ready environment for software developers.

Planning & Monitoring

Progress evaluation and attention to variations in business case, project scope, estimates of time and cost, to achieve the right balance of managed requirements and iterative development.

Configuration & Change Management

Enabling the change tracking that is essential in an environment where change is inevitable. Monitoring to confirm that each change is acceptable. Managed processes for integration and software builds.

Monitoring and Controlling the Project

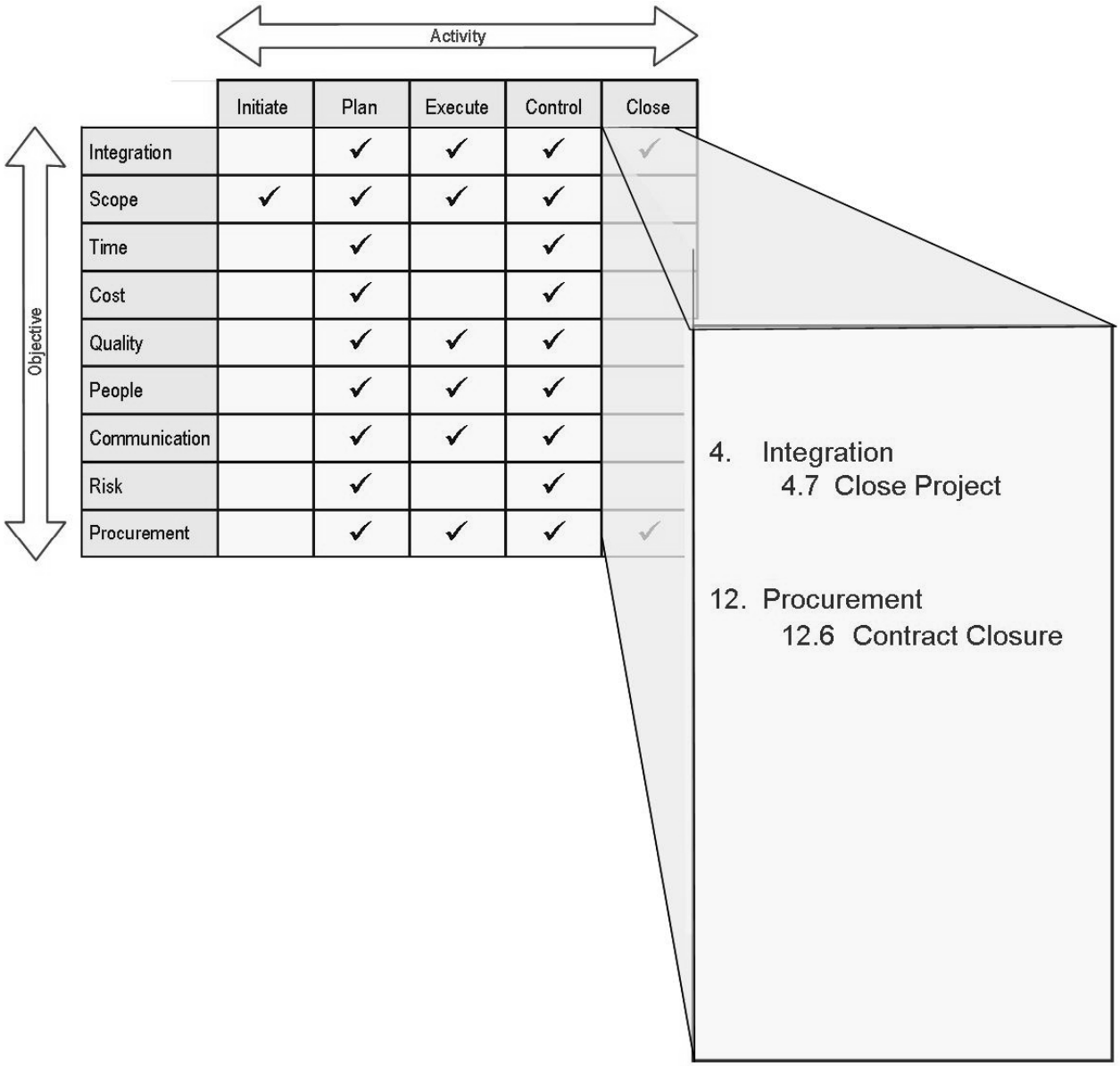
Rational Project Control

MONITORING AND AWARENESS

Rational is less control-oriented than PMI but still attentive to the needs for progress monitoring and early detection and resolution of problems. The project management disciplines of RUP – environment, planning and monitoring, and configuration and change management – all have control elements as part of the scope of activities and responsibilities. The management objectives for each PM discipline are illustrated on the facing page.

Completing the Project

PMI Project Closure



Completing the Project

PMI Project Closure

ADMINISTRATIVE FORMALITY

The project closure activities in PMI are relatively few and are entirely administrative in nature, addressing only formal recognition of project termination and official closure of open contracts. In the PMI model user acceptance, migration to a production environment, and similar activities are part of execution and of the WBS, and are not closure responsibilities. Some practitioners extend closure to include a post-implementation review that examines questions of what went right, what went wrong, and what was learned.

Module 6

Summary and Conclusion

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