This course book preview is provided as an opportunity to see the quality of the course material and to help you determine if the course matches your needs. The preview is provided in a PDF form that cannot be printed.

It is my goal to provide a course book that is content-rich and that is useful as a reference document after the 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 the course.

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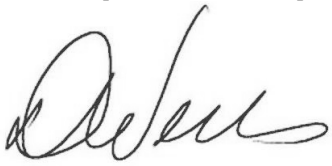
Business Requirements Workshop

BI Requirements Gathering Techniques

TABLE OF CONTENTS



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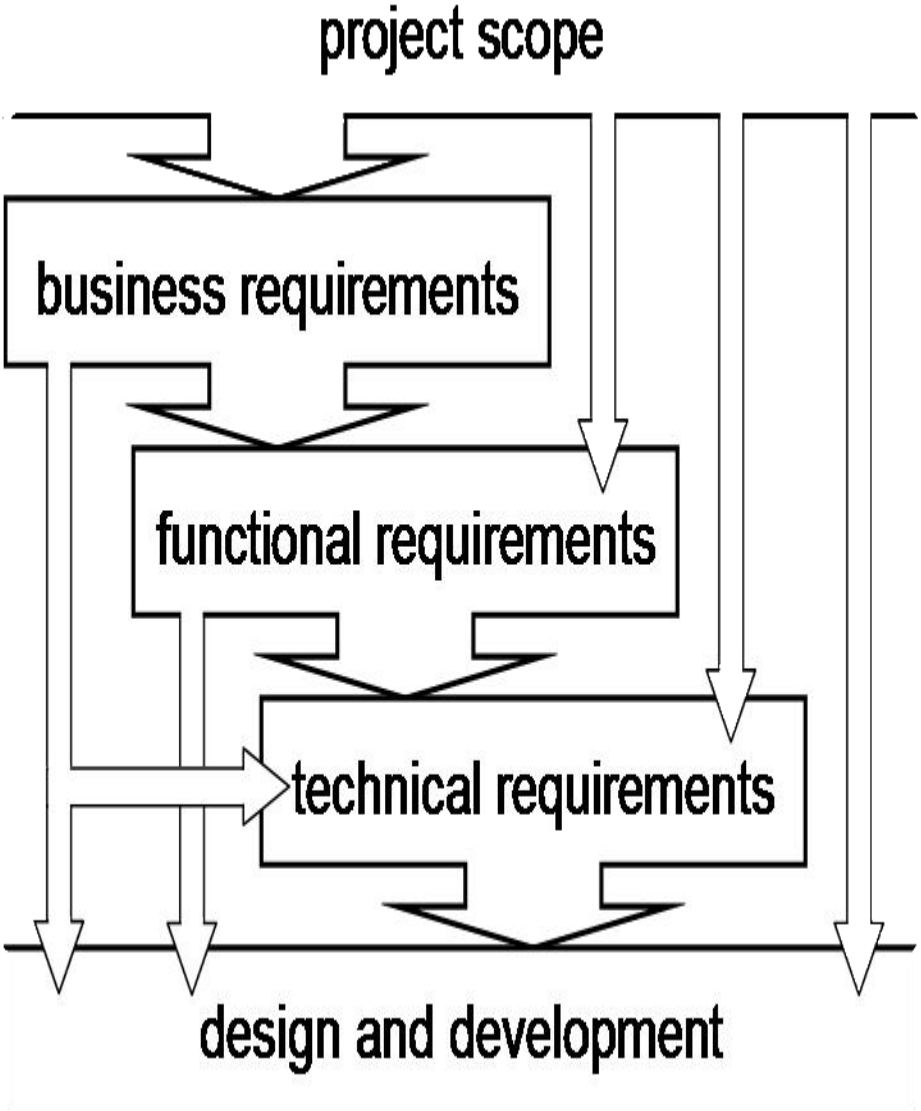
Part 1

Requirements Gathering Concepts

Levels of Requirements

A Multi-Level View



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Levels of Requirements

A Multi-Level View

THE CHALLENGE OF GATHERING REQUIREMENTS

Gathering business requirements for BI systems is more difficult than for operational systems. Without the specifics of business transactions, scheduled reports, and prescribed business rules it is difficult to know where to start and how to proceed.

The skill set for the BI requirements analyst includes techniques to identify requirements, tools to manage requirements, and checklists to ensure completeness.

Simply knowing where to begin is one of the difficulties of BI requirements. The scope of BI is broad, the possibilities almost endless, and the differences from traditional information systems not always fully understood. Starting in the right place, then following a logical progression from business to technical requirements is an important part of requirements gathering.

GETTING STARTED

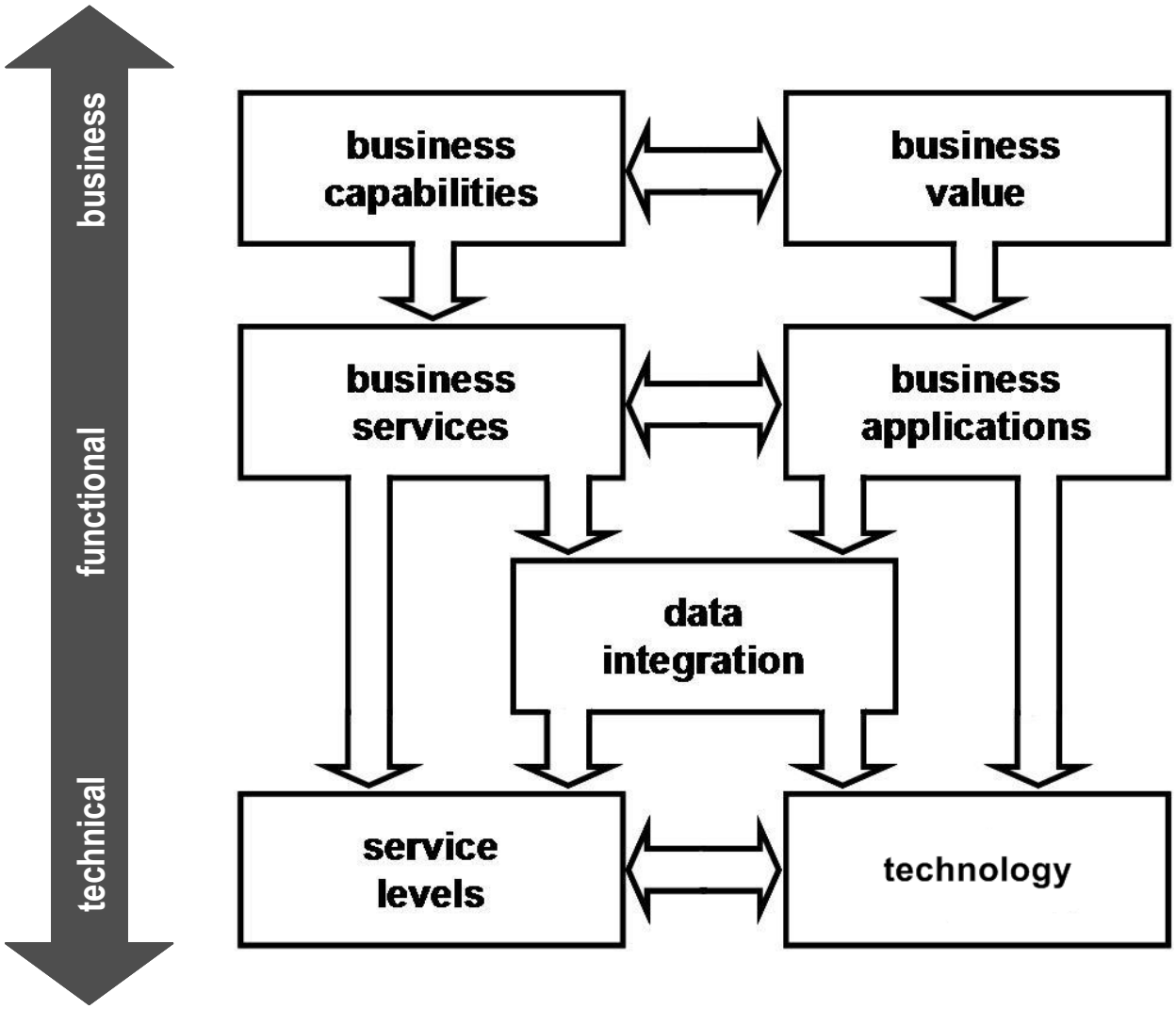
Defined scope for a program or project is the essential starting place to gather, define, and document requirements. A good scope document expresses very high level requirements in terms of business capabilities, services, or products that are needed.

FROM BUSINESS TO TECHNICAL

Specifying requirements at three levels – business, functional, and technical – provides a logical progression from *what the business needs* to *what a system does.* Every requirements gathering process should begin with business requirements, then define functional requirements, and finally technical requirements. Functional requirements are driven from business requirements, and technical requirements from both business and functional requirements.

Kinds of BI Requirements

Classifying the Requirements



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Kinds of BI Requirements

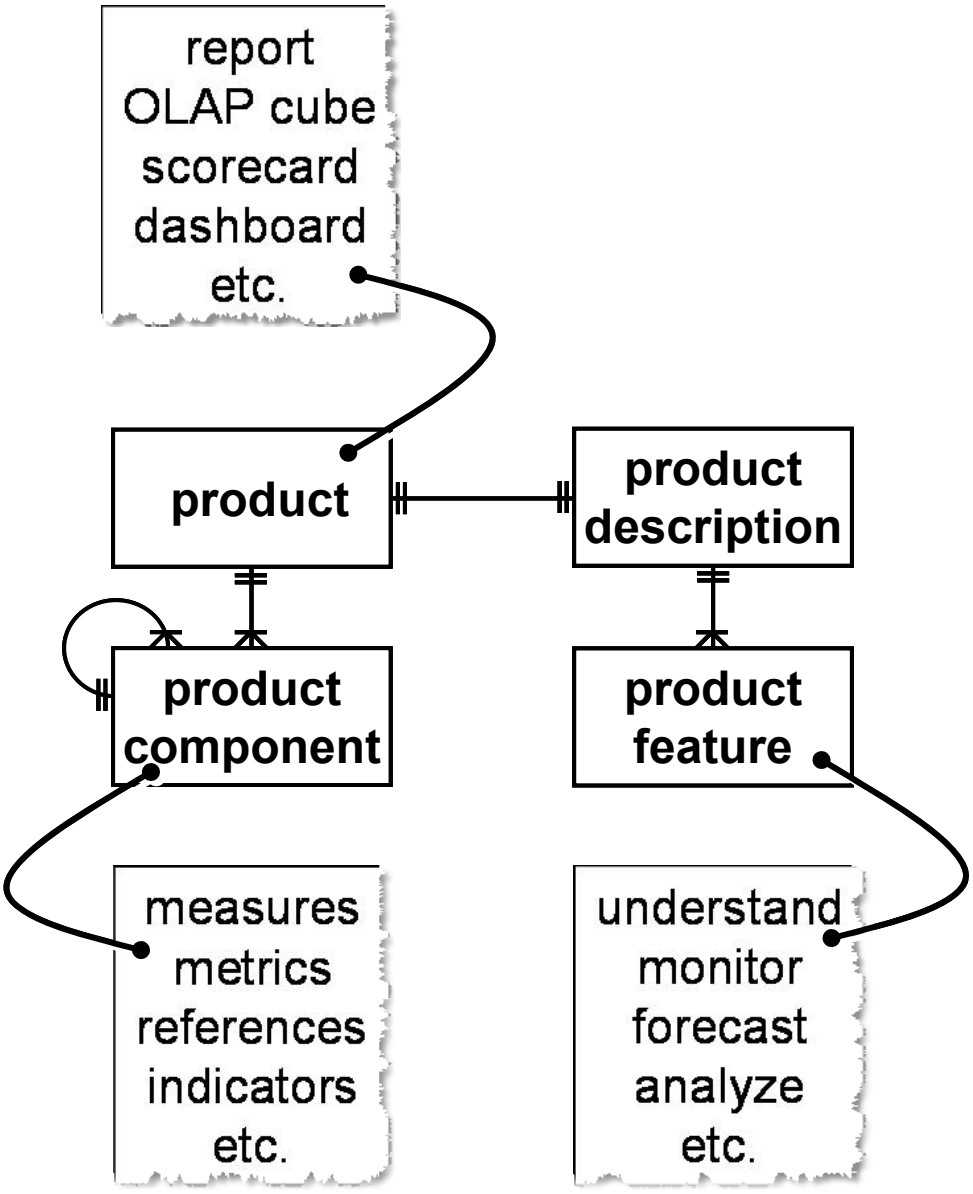
Classifying the Requirements

BI SPECIFIC REQUIREMENTS

The requirements types business, functional, and technical are generic. They apply to requirements for information and software systems of many kinds. When working specifically with business intelligence it is practical to further classify requirements into a structure that helps to assure completeness of both the requirements gathering process and the resultant set of requirements.

Setting Scope

Business Scope of BI Projects



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Setting Scope

Business Scope of BI Projects

BI PRODUCTS

BI products are named things to be produced that are both business-meaningful and user visible. They include such things as published reports, on-demand reports, OLAP, scorecards, dashboards, analytic applications, and system monitors. An example of a BI product is:

Practice Director Performance Scorecard

BI PRODUCT FEATURES

The features of BI products describe the business capabilities that are to be enabled by use of those products. Features are described using language such as reason, plan, forecast, analyze, understand, decide, learn, innovate, etc. An example of a product description is:

Practice Director Performance Scorecard:

A scorecard that provides consulting practice directors with necessary information to predict, monitor, manage, and continuously improve the profit margins realized from consulting services.

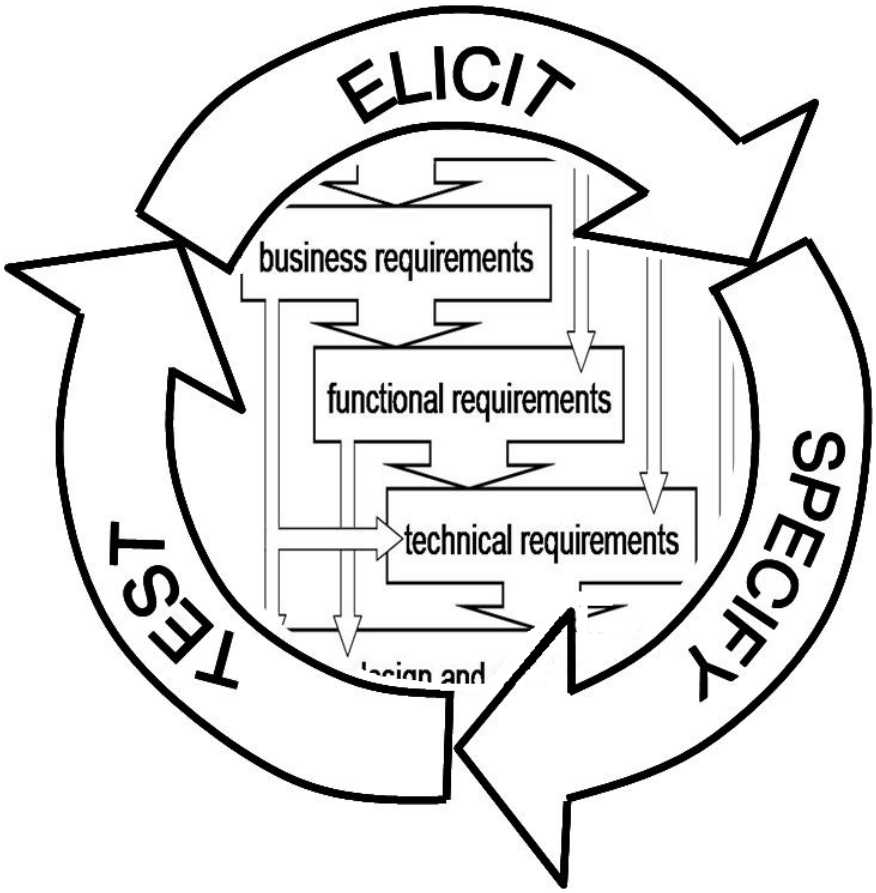
BI PRODUCT COMPONENTS

The components of a BI product are the parts that are necessary to assemble and deliver the product as described by its features. They include such things as data, measures, metrics, references, trends, indicators, and indexes. An example of a product breakdown structure is:

1. *Practice Director Performance Scorecard*
    - *1.1 Revenue Performance Indicators*
        - *1.1.1 Billed Revenue*
            - *1.1.1.1 Monthly Billed Revenue*
            - *1.1.1.2 Monthly Billed Hours*
            - *1.1.1.3 Revenue per Billed Hour*
        - *1.1.2 Budgeted Revenue*
            - *1.1.2.1 Budgeted Monthly Billable Revenue*
            - *1.1.2.2 Budgeted Monthly Billable Hours*
            - *1.1.2.3 Revenue per Billed Hour*
    - *1.2 Expense Performance Indicators*
        - *1.2.1 Overhead Cost Index*
            - *1.2.1.1 Staffing Cost*
            - *1.2.1.2 Travel Cost*
            - *1.2.1.3 Sales Cost*
            - *1.2.1.4 Materials and Logistics Cost*
        - *1.2.2 (continue with other expense indicators **...**)*
    - *1.3 (continue with other performance indicators **...**)*
2. *(continue with other products for the project **...**)*
    - *2.1 **...***

Requirements Gathering Processes

The Activities



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Requirements Gathering Processes

The Activities

THREE STAGES

Gathering requirements is more than a task. It is a process of multiple steps that are commonly described as elicit, specify, and test (EST). Alternative terms for the three-step process include elicit-model-test (EMT) and elicit-define-test (EDT). Regardless of the terminology that you choose the three steps are important to recognize and to apply.

ELICIT REQUIREMENTS

Requirements elicitation is the activity of obtaining the requirements for a developing system from the stakeholders. Steve McConnell says "The most difficult part of requirements gathering is not documenting what the users 'want'; it is the effort of helping users figure out what they 'need' that can be successfully provided …" (*Software Project Survival Guide,* McConnell, Microsoft Press, 1998). McConnell's statement captures the essence of eliciting requirements – finding what is needed.

SPECIFY REQUIREMENTS

Requirements specification (or documentation, or modeling) is the act of recording a description of each requirement. Every requirement describes a necessary attribute of a system – a capability or characteristic that the system must have to provide utility and value to its users. A well-specified requirement includes:

- What – A descriptive statement of the requirement that describes a system capability, characteristic, function, feature, or quality.
- Why – The rationale for the requirement describing the purpose or value to be achieved.
- Who – The source of the requirement and the stakeholders who will receive benefit.

Whether recorded as text (specify, document) or as diagrams (model) describing requirements is an important and separate step from eliciting requirements.

TEST REQUIREMENTS

Requirements testing is the third and final step of the process. Each requirement must be evaluated with respect to ensure that it is clear, non-ambiguous, complete, consistent, necessary, and feasible.

Requirements Gathering Techniques

Choosing Techniques

	large project / broad scope	high level of complexity	high level of uncertainty	need for innovation	need for speed	existing system influence	large number of stakeholders	poor stakeholder participation	conflict, territorialism, politics	geographic or logistics difficulty
Group Facilitation	✓						✓	✓	!	
Interviewing		✓	✓					✓	✓	✓
Brainstorming		✓		!						
Surveys & Questionnaires	✓						✓	✓	✓	!
Prototyping		✓	✓	✓	!					
Observation		✓	✓		✓	✓		✓		
Current State Analysis			✓			!				
Reverse Engineering		✓				!				
Requirements Workshops	!						!	✓		✓
Interface & Use Case Analysis				✓	✓			✓		

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Requirements Gathering Techniques

Choosing Techniques

MATCHING TO THE PROJECT

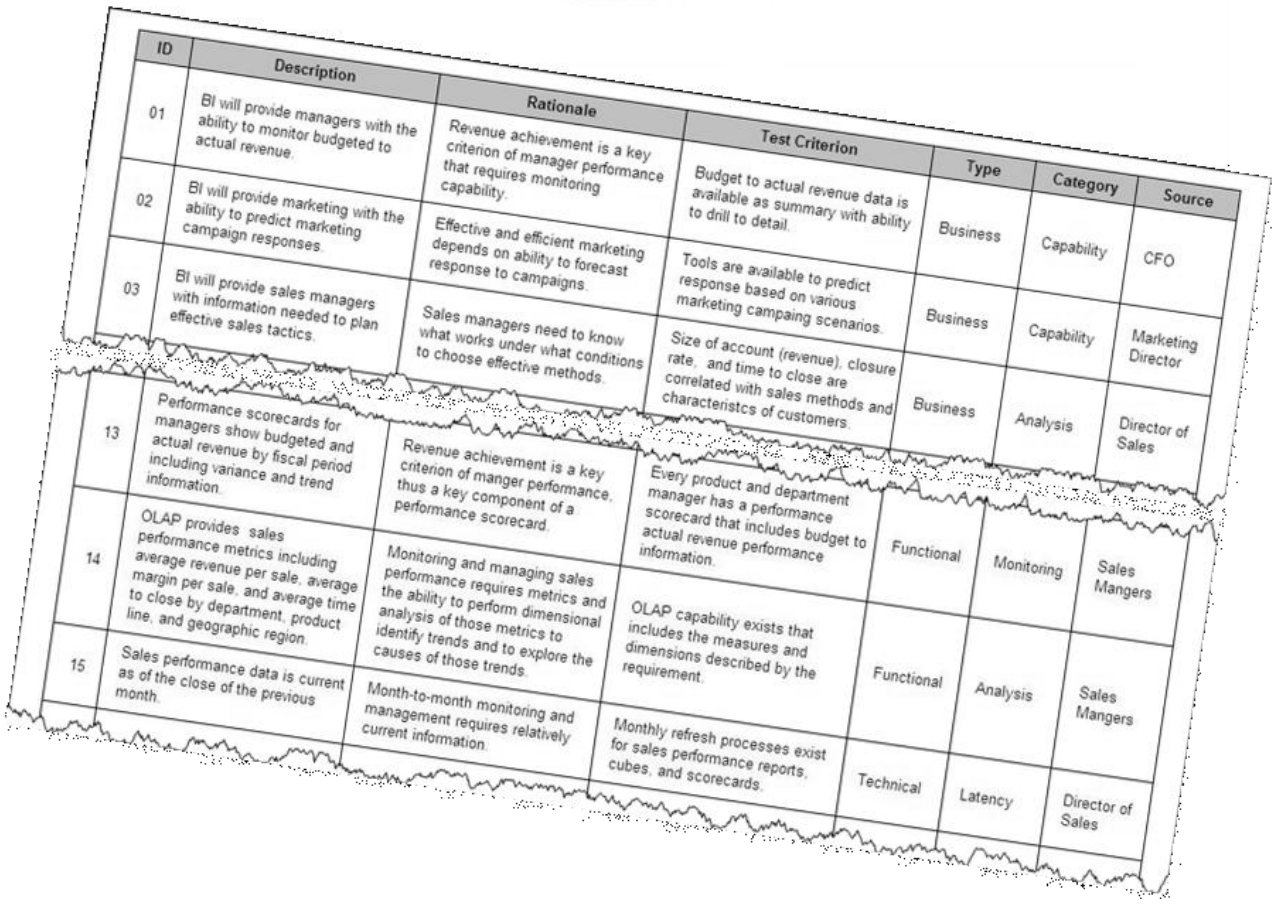
The matrix on the facing page associates techniques with some of the common considerations and challenges of requirements gathering. Use it as a guide to select the techniques that best fit your project profile.

Every requirements gathering effort is likely to use more than one technique. Key stakeholders are typically interviewed as a core method of gathering requirements. Other techniques are used to enrich the requirements process. Consider these guidelines when choosing requirements techniques:

- Requirements workshops work will for large projects, broad scope, and large numbers of stakeholders.
- Brainstorming is a good fit when innovation is needed.
- Prototyping works well to address uncertainty and rapid discovery when speed is critical.
- Current system analysis fits when existing systems have strong influence.
- Group facilitation helps in projects where conflict, territorialism, and politics are barriers.
- Surveys and questionnaires can help with geographic and logistics challenges.
- Highly complex projects need to use a combination of several techniques including brainstorming, prototyping, and observation of existing processes.
- Poor stakeholder participation can be addressed using several methods including group facilitation and requirements workshops.

Requirements Gathering Tools

Templates



ID	Description	Rationale	Test Criterion	Type	Category	Source
01	BI will provide managers with the ability to monitor budgeted to actual revenue.	Revenue achievement is a key criterion of manager performance that requires monitoring capability.	Budget to actual revenue data is available as summary with ability to drill to detail.	Business	Capability	CFO
02	BI will provide marketing with the ability to predict marketing campaign responses.	Effective and efficient marketing depends on ability to forecast response to campaigns.	Tools are available to predict response based on various marketing campaing scenarios.	Business	Capability	Marketing Director
03	BI will provide sales managers with information needed to plan effective sales tactics.	Sales managers need to know what works under what conditions to choose effective methods.	Size of account (revenue), closure rate, and time to close are correlated with sales methods and characteristcs of customers.	Business	Analysis	Director of Sales
13	Performance scorecards for managers show budgeted and actual revenue by fiscal period including variance and trend information.	Revenue achievement is a key criterion of manger performance, thus a key component of a performance scorecard.	Every product and department manager has a performance scorecard that includes budget to actual revenue performance information.	Functional	Monitoring	Sales Mangers
14	OLAP provides sales performance metrics including average revenue per sale, average margin per sale, and average time to close by department, product line, and geographic region.	Monitoring and managing sales performance requires metrics and the ability to perform dimensional analysis of those metrics to identify trends and to explore the causes of those trends.	OLAP capability exists that includes the measures and dimensions described by the requirement.	Functional	Analysis	Sales Mangers
15	Sales performance data is current as of the close of the previous month.	Month-to-month monitoring and management requires relatively current information.	Monthly refresh processes exist for sales performance reports, cubes, and scorecards.	Technical	Latency	Director of Sales

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Requirements Gathering Tools

Templates

SPECIFICATION MODELS

Templates are similar to checklists. They serve the same purposes related to completeness, consistency, and knowing what is expected. They differ from checklists because they also serve a standard for specification and documentation.

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Part 2

Reference Documents

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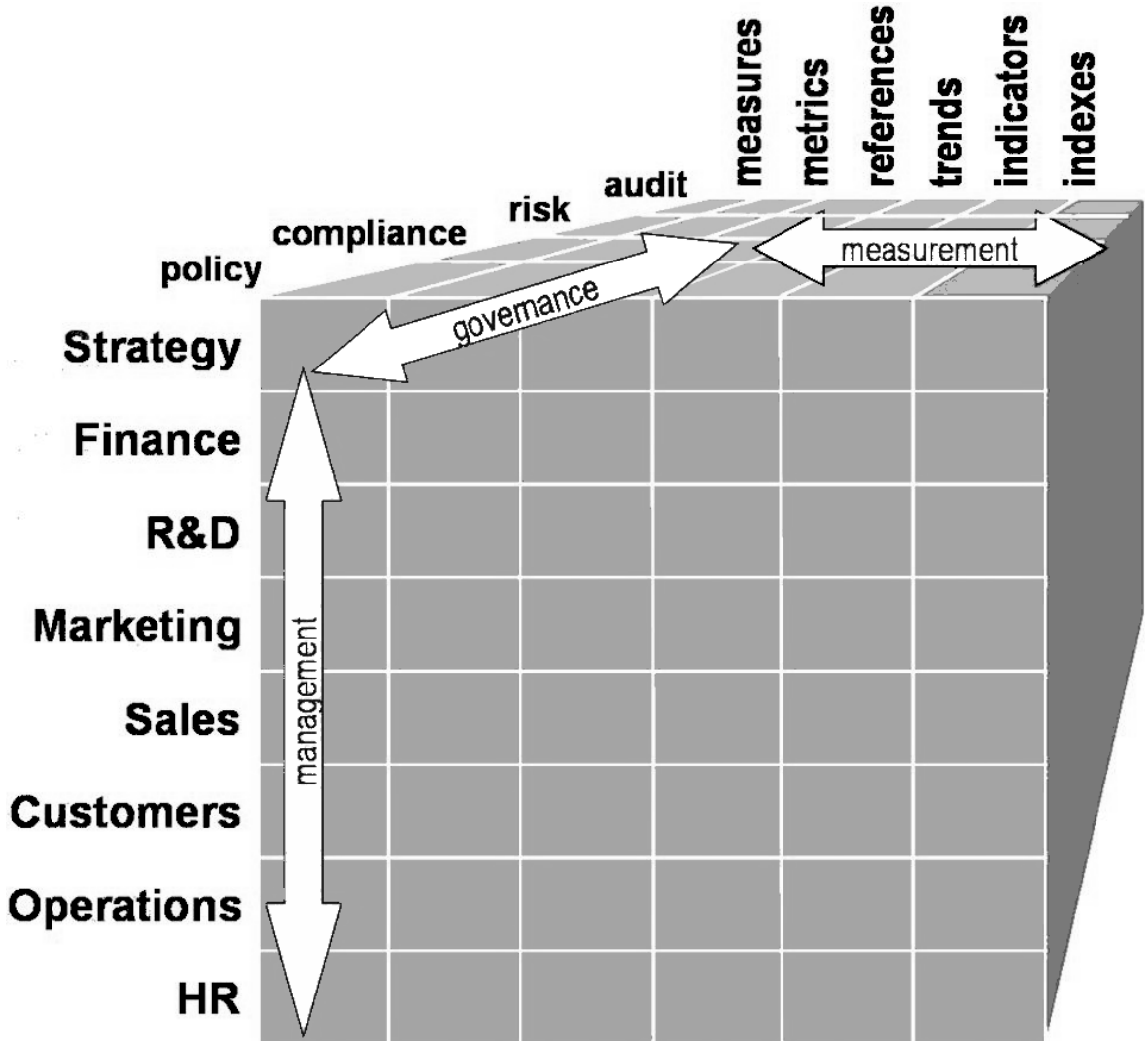
General Business Framework for BI



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General Business Framework for BI

The Three Dimensions

THE BUSINESS MANAGEMENT DIMENSION

Business Intelligence is, first and foremost, about business. Yet all too frequently the basics of business don't have a place in the overall structure of BI program management.

Virtually every business has processes, functions, and organizations with responsibility for each of eight business management disciplines: strategy and planning, financial management, research and development, marketing, sales, customer support, operations, and human resources.

THE CORPORATE GOVERNANCE DIMENSION

The most effective BI solutions are corporate systems that integrate across the organizational, functional, and data boundaries of the enterprise. As with any enterprise-wide resource, coordination is best achieved and value is maximized through governance.

Corporate governance is composed of seven areas: organization, ethics, legal, policies and procedures, compliance, risk, and audit. Four of these factors – policies and procedures, compliance, risk, and audit – have strong influence on BI alignment. The other three are of less concern for alignment.

THE BUSINESS MEASUREMENT DIMENSION

BI delivers business measures; that is the essence of dashboards and scorecards. But measures alone don't assure success or value. This truth is effectively illustrated in a statement that I heard from Aaron Walz, a Business Architect at the University of Illinois – *"You can't make a pig fat by weighing it."*

This short quote makes two important points. Measures aren't useful unless they are actionable; and they aren't valuable unless they are acted upon. Getting from measures to value demands attention to six principles of measurement: measures, metrics, references, trends, indicators, and indexes.

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Part 3

Workshop Activities

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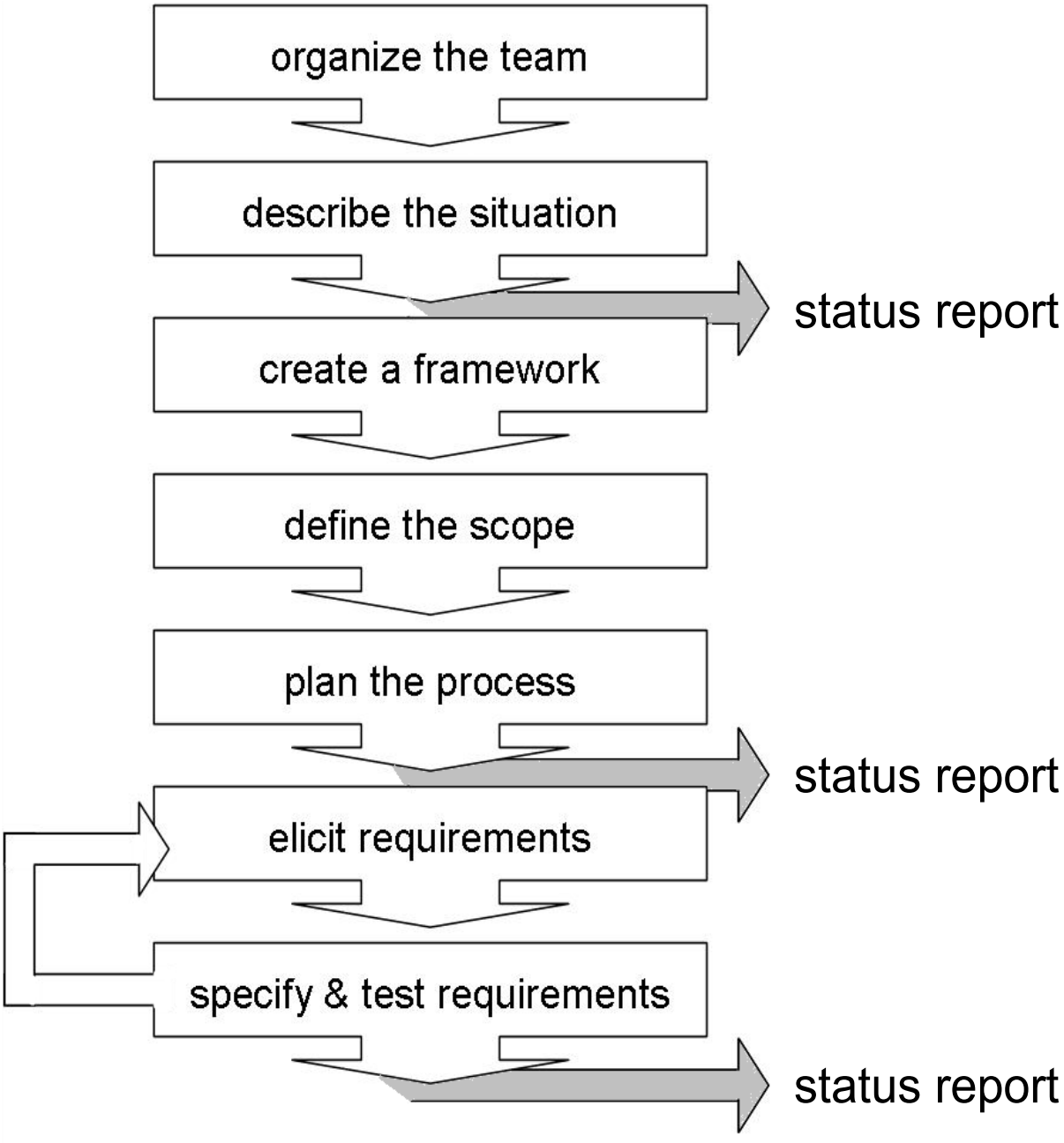
Workshop Roadmap

Steps of the Process



Workshop Roadmap

Steps of the Process

ORGANIZE THE TEAM Discuss the knowledge and skill that each team member brings to the team. Then assign roles and responsibilities in the requirements gathering process.

DESCRIBE THE SITUATION Provide the entire team with an overview of the business and its needs for business intelligence. Identify the primary stakeholders in the BI development effort.

STATUS REPORT: Describe your efforts and results to the class.

CREATE A FRAMEWORK Determine how to use or adapt the business framework to provide business context to your requirements gathering effort.

DEFINE THE SCOPE Determine the scope of your requirements gathering effort. First decide whether you are defining program (architecture) or project (product) requirements. Then define the breakdown structure that is the basis for requirements.

PLAN THE PROCESS Define a plan and process for requirements gathering. Determine which techniques you will use to elicit requirements, the standards or templates that will be used to specify requirements, and the means that you will use to test the requirements.

STATUS REPORT: Describe your efforts and results to the class.

ELICIT REQUIREMENTS Employ the techniques that you defined in your plan to gather requirements from business subject experts.

SPECIFY AND TEST REQUIREMENTS Employ the methods that you defined in your plan to specify and test requirements. Use any templates, frameworks, checklists, or other tools that are suited to your needs.

STATUS REPORT: Describe your efforts and results to the class.

The following pages contain several worksheets that are simply a grid on a blank sheet. You can use these pages to record your requirements gathering work or you may decide to use an entirely different medium. The sheets are simply graph paper to avoid being prescriptive about the results that you will produce.