Chapter 6–
Requirements

Software Engineering

Requirement

- Requirements – statements that describe what the software system should be but not how it is to be constructed
- Requirements engineering (RE) – a set of activities related to the development and agreement of the final set of requirement specification

Requirements Engineering

Activities in requirements engineering:

- Elicitation
- Documentation and definition
- Specification
- Prototyping
- Analysis
- Review and validation
- Agreement and acceptance

Types of Requirements

TABLE 1-1 Some types of requirements information

Term	Definition
Business requirement	A high-level business objective of the organization that builds a product or of a customer who procures it.
Business rule	A policy, guideline, standard, or regulation that defines or constrains some aspect of the business. Not a software requirement in itself, but the origin of several types of software requirements.
Constraint	A restriction that is imposed on the choices available to the developer for the design and construction of a product.
External interface requirement	A description of a connection between a software system and a user, another software system, or a hardware device.
Feature	One or more logically related system capabilities that provide value to a user and are described by a set of functional requirements.
Functional requirement	A description of a behavior that a system will exhibit under specific conditions.
Nonfunctional requirement	A description of a property or characteristic that a system must exhibit or a constraint that it must respect.
Quality attribute	A kind of nonfunctional requirement that describes a service or performance characteristic of a product.
System requirement	A top-level requirement for a product that contains multiple subsystems, which could be all software or software and hardware.
User requirement	A goal or task that specific classes of users must be able to perform with a system, or a desired product attribute.

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Relationships among Types of Requirement Information

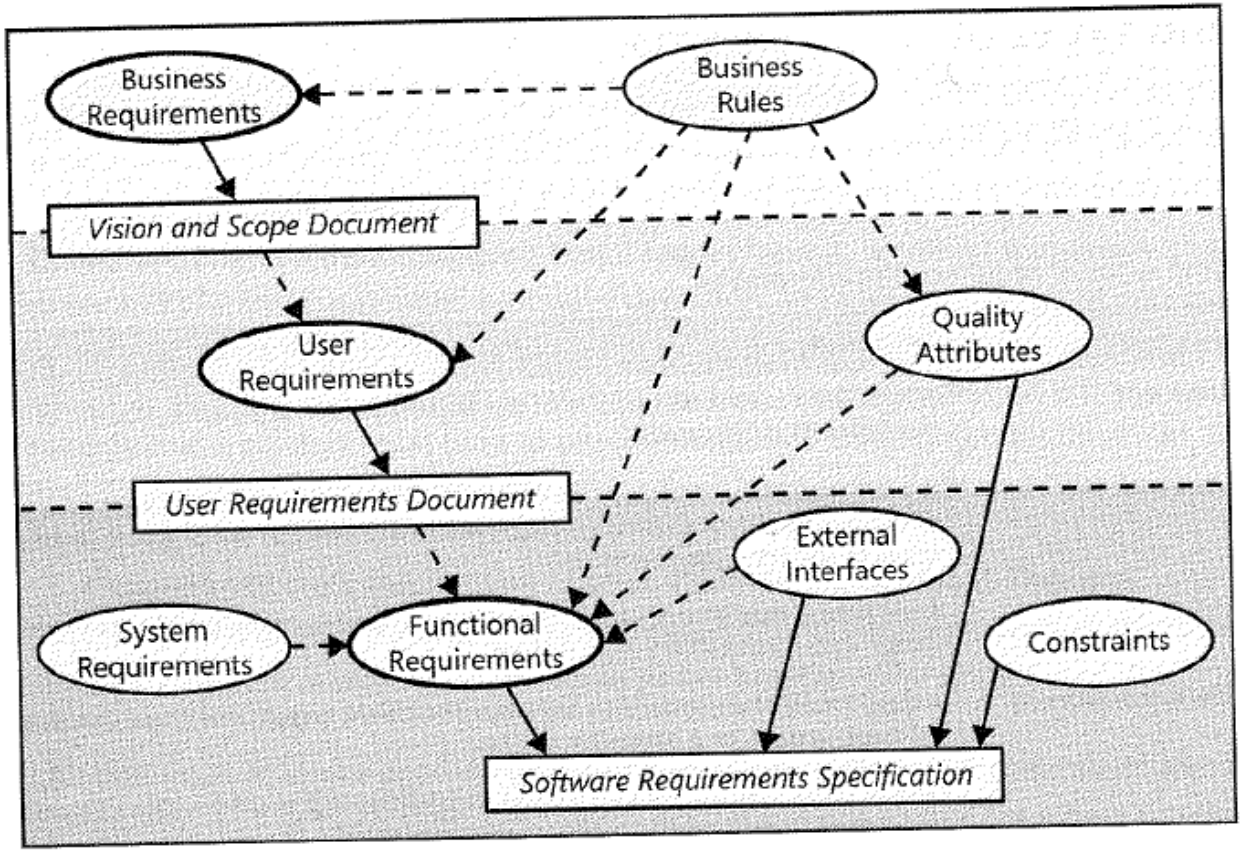

FIGURE 1-1 Relationships among several types of requirements information. Solid arrows mean "are stored in"; dotted arrows mean "are the origin of" or "influence."

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Relationships among Features, User and Functional Requirements

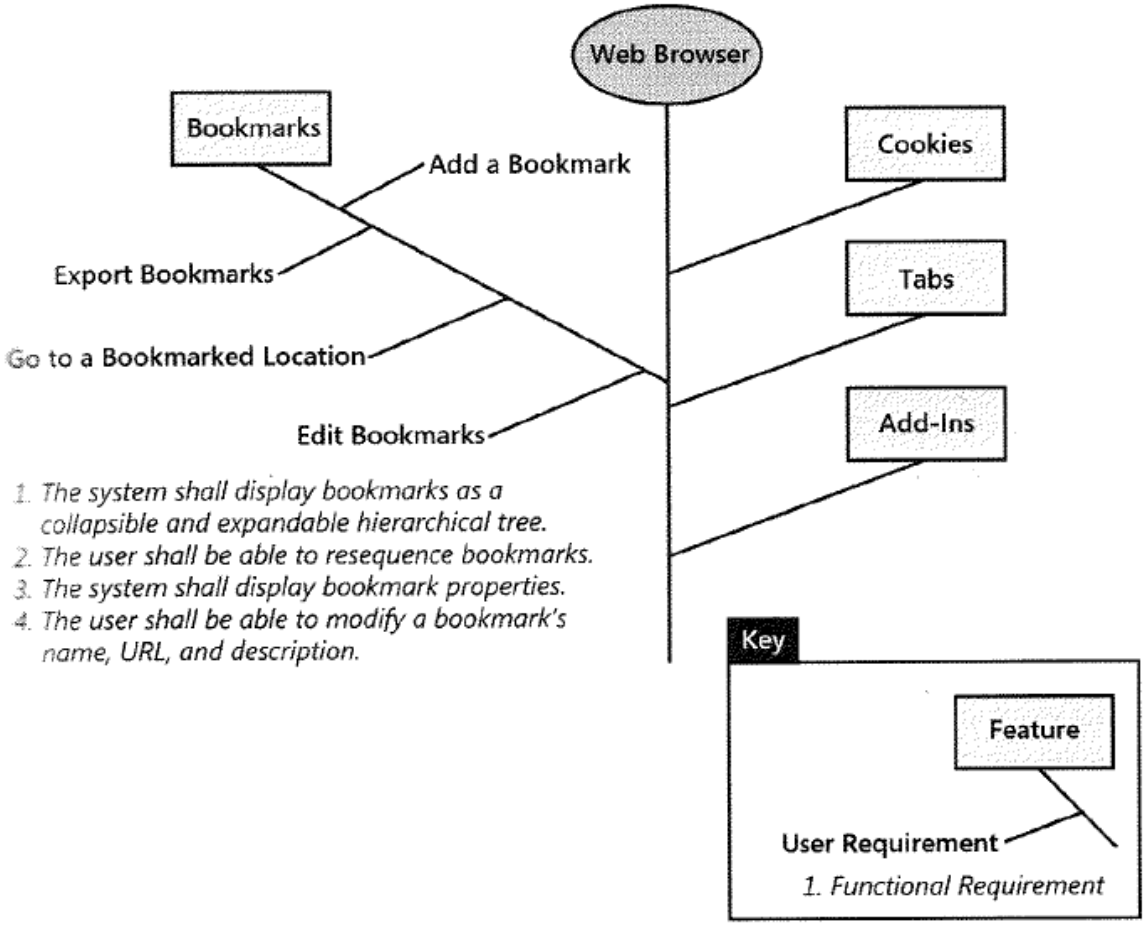

FIGURE 1-2 Relationships among features, user requirements, and functional requirements.

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Stakeholders Participating in Requirements Development

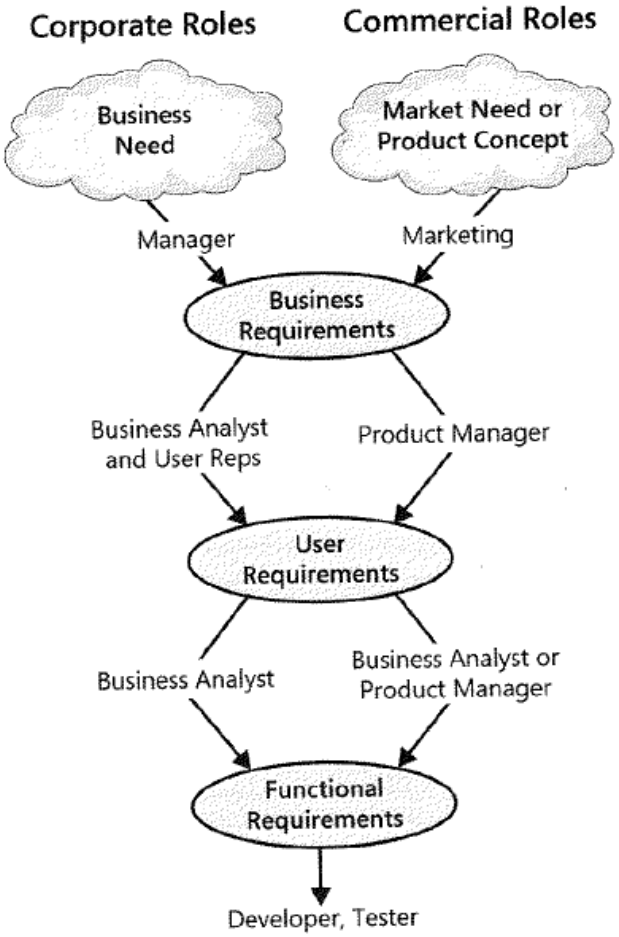

FIGURE 1-3 An example of how different stakeholders participate in requirements development.

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Subdisciplines of Requirements Engineering

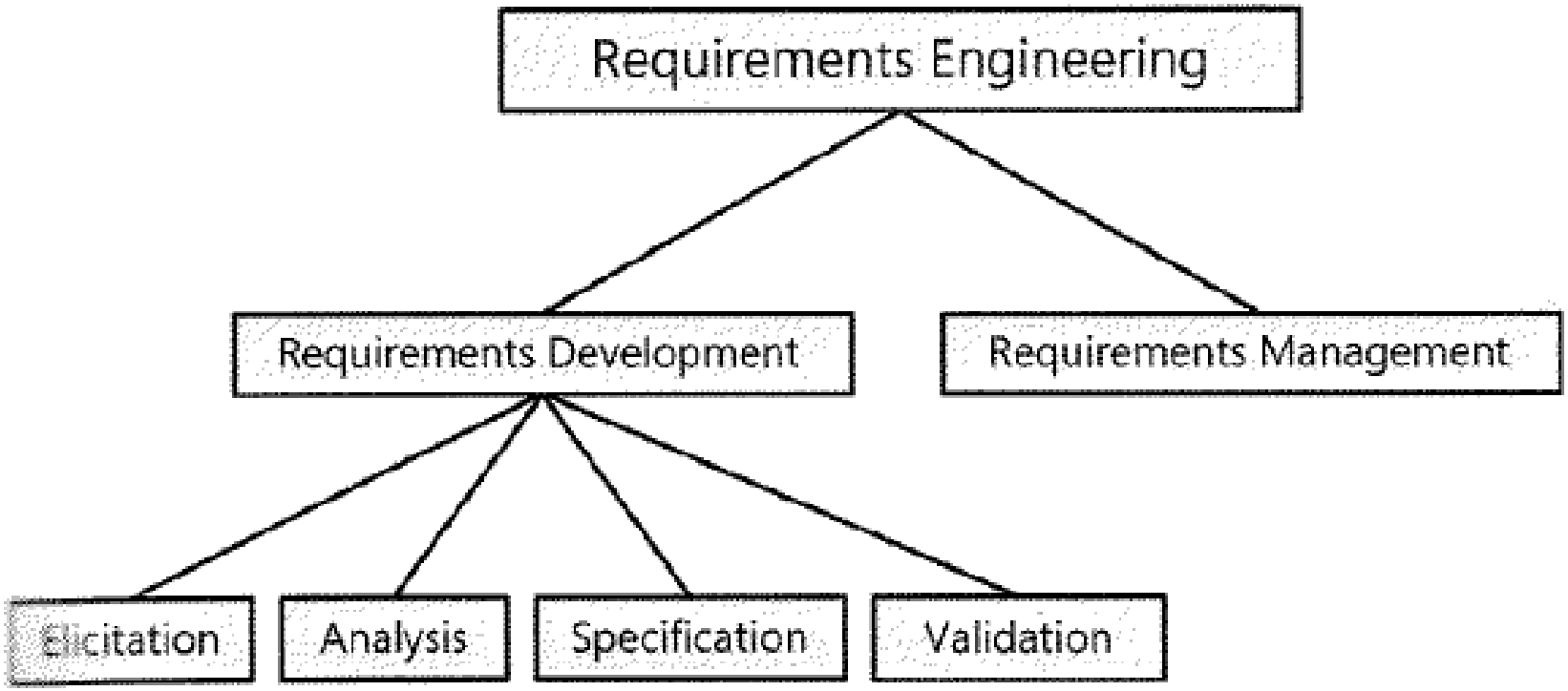

FIGURE 1-4 Subdisciplines of software requirements engineering.

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Boundary Between Development and Management

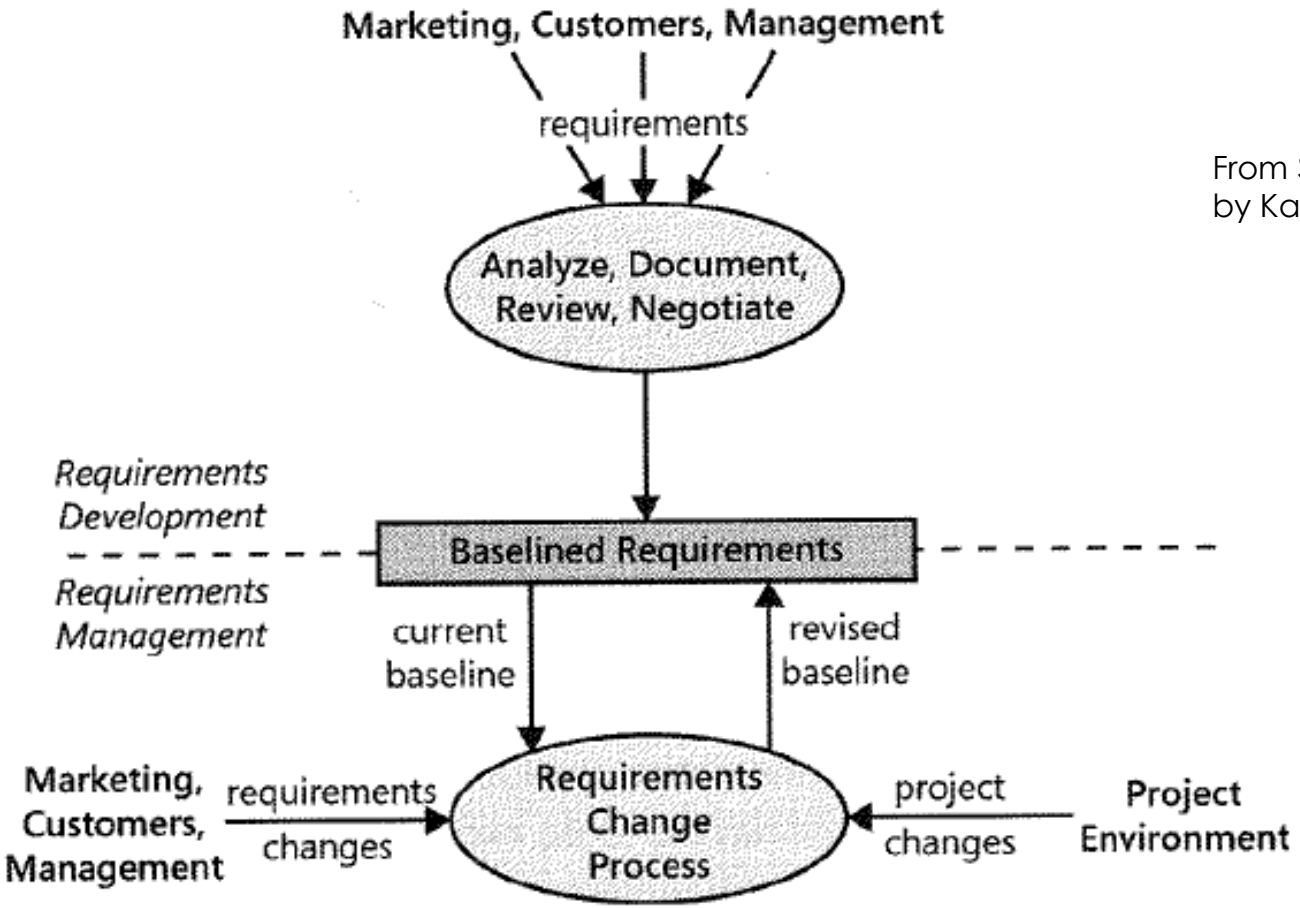

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FIGURE 1-5 The boundary between requirements development and requirements management.