COURSE NAME

SOFTWARE REQUIREMENT ENGINEERING

CSC 4126

(UNDERGRADUATE)

CHAPTER 2

SOFTWARE REQUIREMENTS: WHAT, WHY, WHO
REQUIREMENTS FROM CUSTOMER'S, PRACTICE, AND BUSINESS ANALYST PERSPECTIVE

Dr. Mohammad Mahmudul Hasan
Associate Professor
Department of Computer Science
American international university – Bangladesh
Email: m.hasan@aiub.edu
Web: http://cs.aiub.edu/profile/m.hasan

THE EXPECTATION GAP

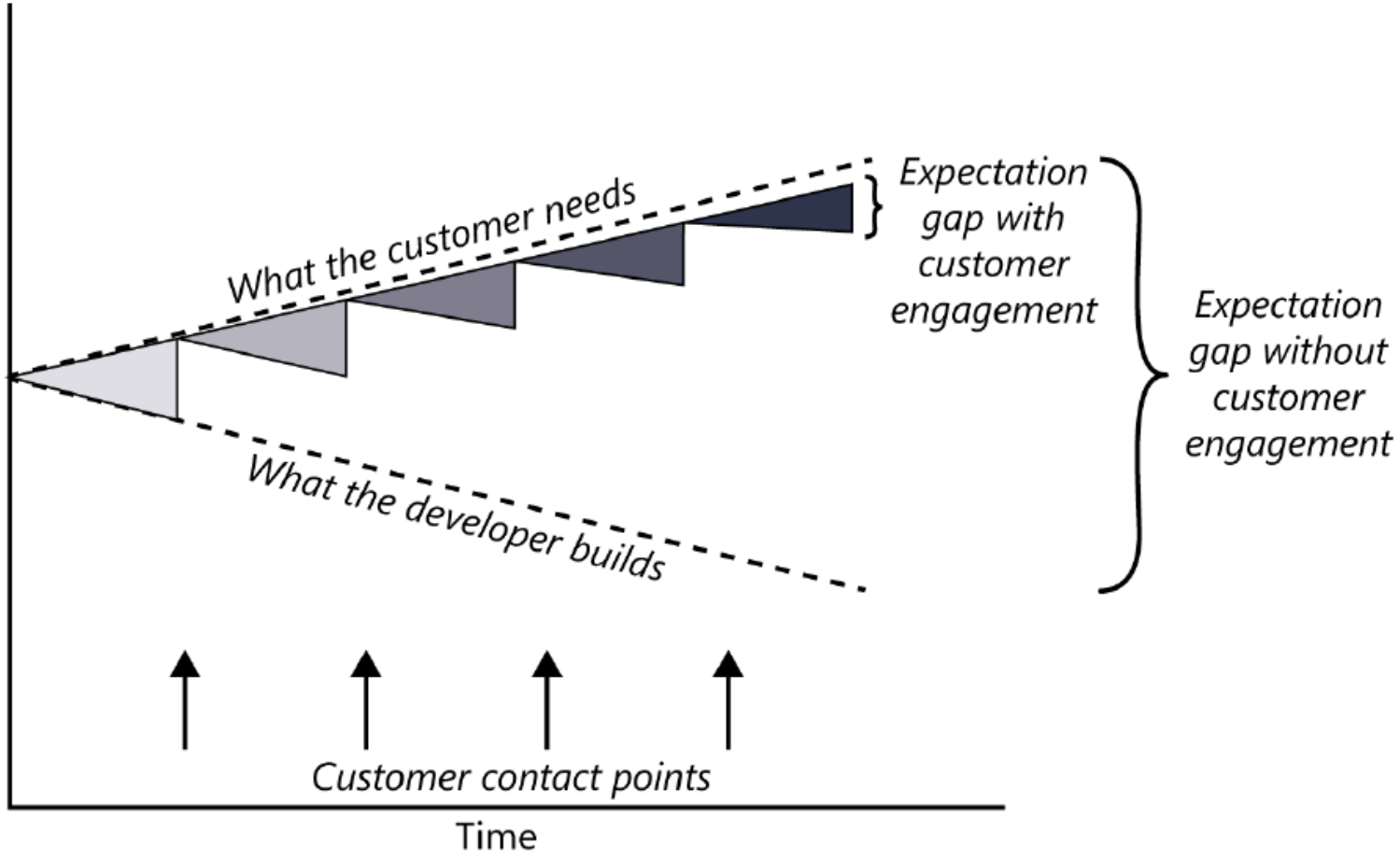

FIGURE 2-1 Frequent customer engagement reduces the expectation gap.

STAKEHOLDER

- A stakeholder is a person, group, or organization that is actively involved in a project, is affected by its process or outcome, or can influence its process or outcome.
- Stakeholders can be internal or external to the project team and to the developing organization.

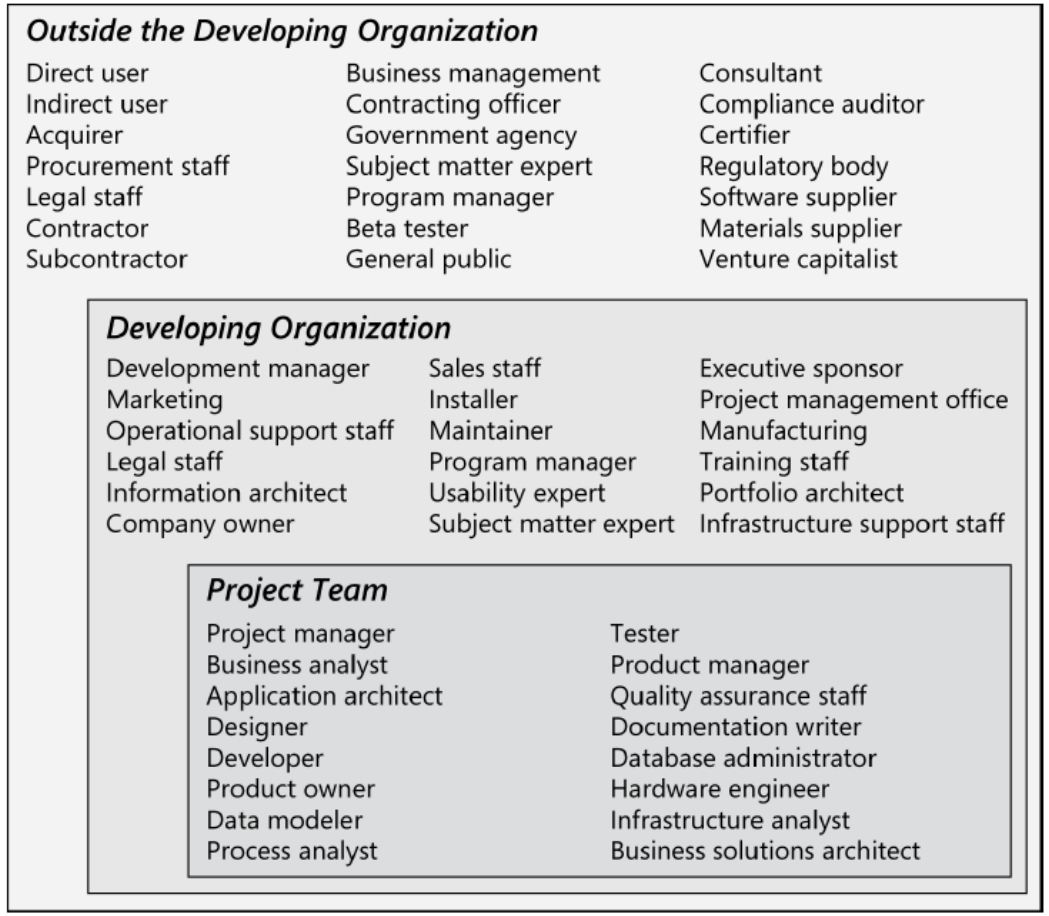

FIGURE 2-2 Potential stakeholders within the project team, within the developing organization, and outside the organization.

WHO IS THE CUSTOMER?

- Customers are a subset of stakeholders.
- **A customer is an individual or organization that derives either direct or indirect benefit from a product.**
  - Software customers could request, pay for, select, specify, use, or receive the output generated by a software product.
- User requirements should come from people who will actually use the product, either directly or indirectly. These users (often called end users) are a subset of customers.
  - Direct users will operate the product hands-on.
  - Indirect users might receive outputs from the system without touching it themselves, such as a warehouse manager who receives an automatic report of daily warehouse activities by email.
- Users can describe the tasks they need to perform with the product, the outputs they need, and the quality characteristics they expect the product to exhibit.

THE CUSTOMER-DEVELOPMENT PARTNERSHIP

Rights: expectations that customers can legitimately hold regarding their interactions with BAs and developers during the project's requirements engineering activities (BA responsibility, obligation)

1. Expect BAs to speak your language
2. Expect BAs to learn about your business and your objectives
3. Receive explanations of requirements practices and deliverables
4. Change your requirements
5. Expect an environment of mutual respect
6. Hear ideas and alternatives for your requirements and for their solution
7. Describe characteristics that will make the product easy to use
8. Hear about ways to adjust requirements to accelerate development through reuse (early exp.)
9. Receive a system that meets your functional needs and quality expectations

THE CUSTOMER-DEVELOPMENT PARTNERSHIP

Responsibilities: responsibilities that the customer has to BAs and developers during the requirements process (BA rights)

1. Educate BAs and developers about your business
2. Dedicate the time that it takes to provide and clarify requirements
3. Be specific and precise when providing input about requirements
4. Make timely decisions about requirements when asked (user-friendliness, security)
5. Respect a developer's assessment of the cost and feasibility of requirements
6. Set realistic requirement priorities in collaboration with developers
7. Review requirements and evaluate prototypes (after iteration)
8. Establish acceptance criteria; promptly communicate changes to the requirements
9. Respect the requirements development process (SDLC)

IDENTIFYING DECISION MAKERS

- The decision leader makes the choice, either with or without discussion with others.
- The group votes and the majority rules.
- The group votes, but the result must be unanimous (agreed) to approve the decision.
- The group discusses and negotiates to reach a consensus. Everyone can live with the decision and commits to supporting it.

Reaching Agreement on requirements

- Customers agree that the requirements address their needs.
- Developers agree that they understand the requirements and that they are feasible.
- Testers agree that the requirements are verifiable.
- Management agrees that the requirements will achieve their business objectives.

THE REQUIREMENTS BASELINE

- **A requirements baseline is a set of requirements that has been reviewed and agreed upon and serves as the basis for further development.**
- A meaningful baselining process gives all the major stakeholders confidence in the following ways:
  - Customer management or marketing is confident that the project scope won't explode out of control, because customers manage the scope change decisions.
  - User representatives have confidence that the development team will work with them to deliver the right solution, even if they didn't think of every requirement before construction began.
  - Development management has confidence because the development team has a business partner who will keep the project focused on achieving its objectives and will work with development to balance schedule, cost, functionality, and quality.
  - Business analysts and project managers are confident that they can manage changes to the project in a way that will keep chaos to a minimum.
  - Quality assurance and test teams can confidently develop their test scripts and be fully prepared for their project activities.

THE BUSINESS ANALYST ROLE

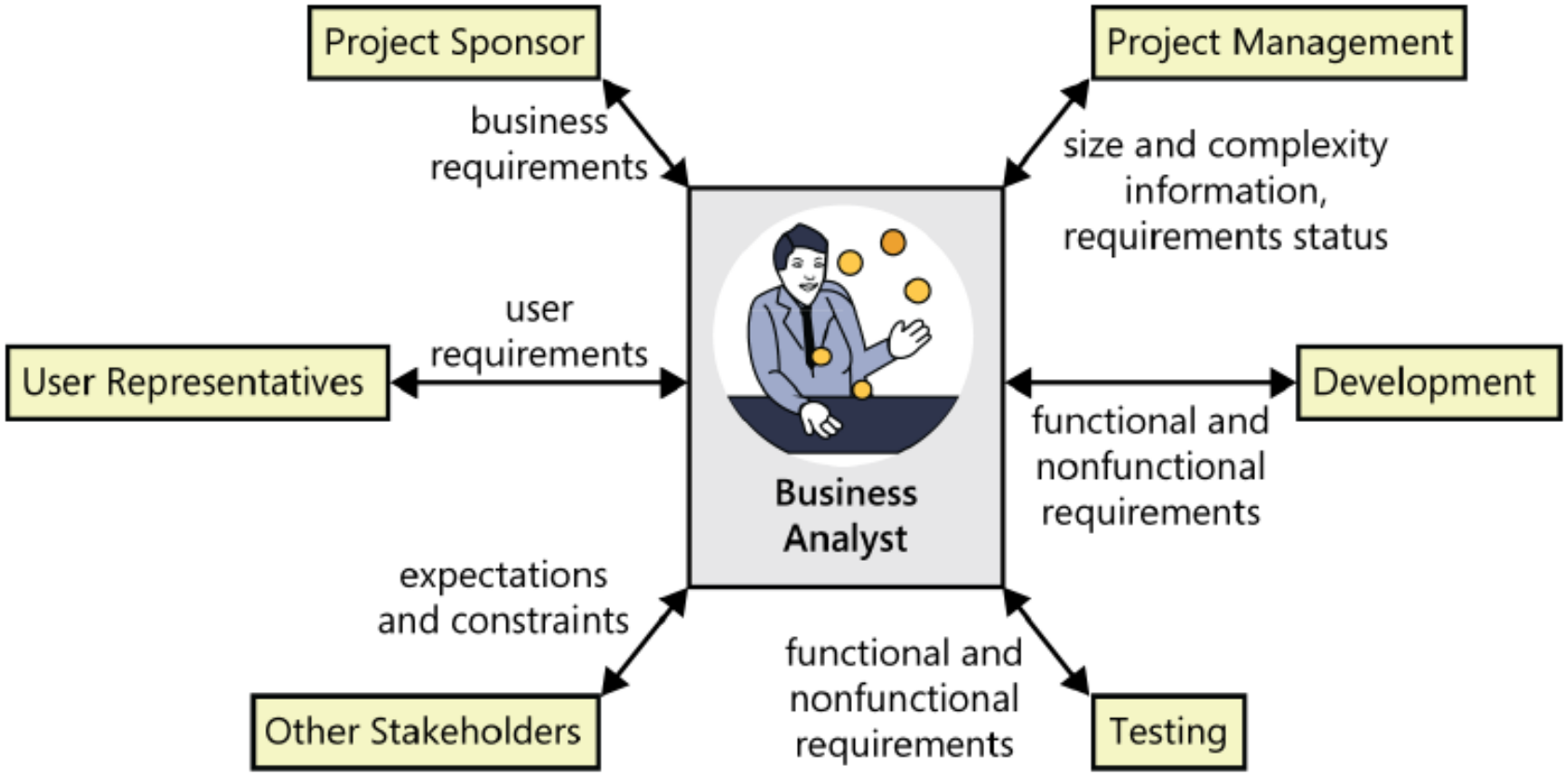

FIGURE 4-1 The business analyst bridges communication between customer and development stakeholders.

THE BUSINESS ANALYST'S TASKS

- Define business requirements
- Plan the requirements approach
- Identify project stakeholders and user classes
- Elicit requirements
- Analyse requirements
- Document requirements
- Communicate requirements
- Lead requirements validation
- Facilitate requirements prioritization
- Manage requirements

ESSENTIAL ANALYST SKILLS

- Listening skills
- Interviewing and questioning skills
- Thinking on your feet
- Analytical skills
- Systems thinking skills
- Learning skills
- Facilitation / Simplification skills
- Leadership skills
- Observational skills
- Communication skills
- Organizational skills
- Modelling skills
- Interpersonal skills
- Creativity

ESSENTIAL ANALYST KNOWLEDGE

- In addition to having specific capabilities and personal characteristics, business analysts need
  - a breadth of knowledge, much of which is gained through experience.
  - to understand contemporary requirements engineering practices and how to apply them in the context of various software development life cycles.

THE MAKING OF A BUSINESS ANALYST

- The former user
- The former developer or tester
- The former (or concurrent) project manager
- The subject matter (domain) expert

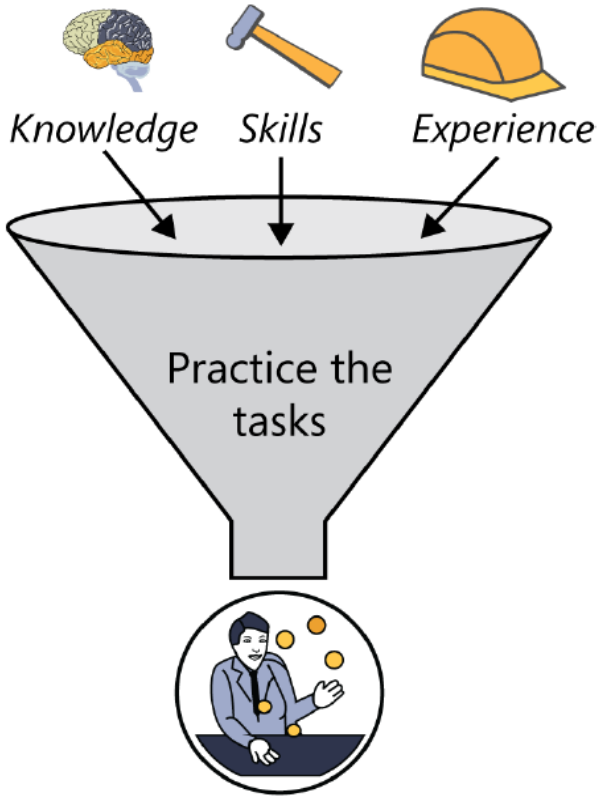

FIGURE 4-2 Knowledge, skills, and experience feed into creating an effective business analyst.

REFERENCES

- Wiegers, K., & Beatty, J. (2013). *Software requirements*. Pearson Education.
- http://www.cs.ccsu.edu/~stan/classes/CS530/notes14/04-Requirements.html