



Chapter 25: Architecture Competence

The lyf so short, the craft so long to lerne.

—Geoffrey Chaucer



Chapter Outline

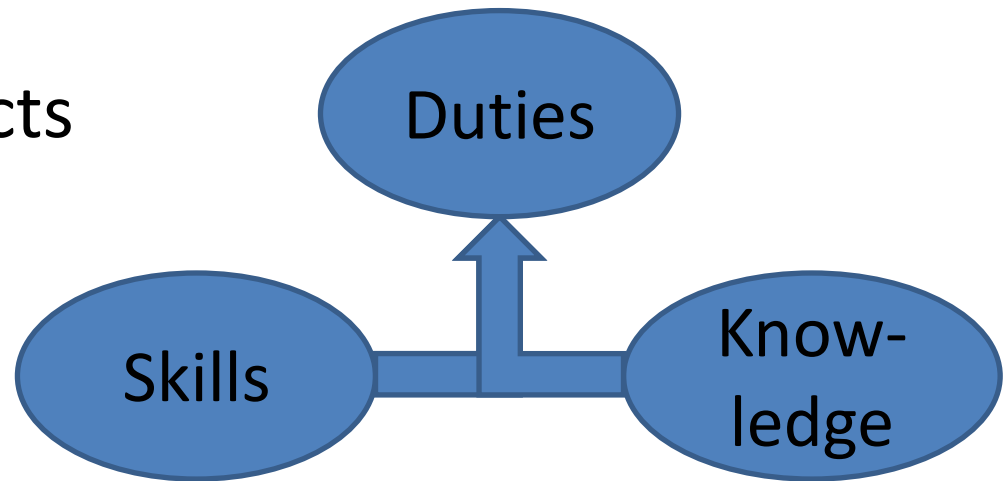
- Competence of Individuals: Duties, Skills, and Knowledge of Architects
- Competence of a Software Architecture Organization
- Become a Better Architect
- Summary

Competence of Individuals

Architects perform many activities beyond directly producing an architecture.

These activities, which we call *duties*, form the backbone of an individual's architecture competence.

Writers about architects also speak of *skills* and *knowledge*.



Duties, skills, and knowledge form the foundation of architecture competence.



Competence of Individuals

- If you want to improve your individual architectural competence, you should:
 - *Gain experience carrying out the duties.*
 - *Improve your nontechnical skills.*
 - *Master the body of knowledge.*



Technical Duties of an Architect

General Duty	Specific Duties
Architecting	Creating an architecture
	Evaluating and analyzing an architecture
	Documenting an architecture
	Working with and transforming other systems
	Performing other architecting duties
Other life cycle activities	Managing the requirements
	Implementing the product
	Testing the product
	Evaluation future technologies
	Selecting tools and technology



Non-Technical Duties of an Architect

General Duty	Specific Duties
Management	Managing the project
	Managing the people
	Supporting the management
Organization and business related duties	Supporting the organization
	Supporting the business
Leadership and team building	Providing technical leadership
	Building a team



Skills of an Architect

General Skill Area	Specific Skills
Communication skills	Outward
	Inward
Interpersonal skills	Within team
	With other people
Work skills	Leadership
	Workload management
	Skills to excel in corporate environment
	Skills for handling information
	Skills for handling unexpected



Knowledge of an Architect

General Knowledge Area	Specific Knowledge
Computer Science knowledge	Architecture
	Software Engineering
	Design knowledge
	Programming knowledge
Technology and Platforms	Specific knowledge
	General knowledge
Organization context and management	Domain knowledge
	Industry knowledge
	Enterprise knowledge
	Leadership and management techniques



Competence of a Software Organization

- It is not enough for the architect to be competent.
- The organizational setting is usually outside the control of individual architects.
- The architect must operate in an environment that understands how to create/nurture/reward architects.



Organizational Competence

- The architectural competence of an organization is:

the ability of that organization to grow, use, and sustain the skills and knowledge necessary to effectively carry out architecture-centric practices at the individual, team, and organizational levels to produce architectures with acceptable cost that lead to systems aligned with the organization's business goals.



Some Examples of Activities by a Competent Organization

- Establish a career track for architects.
- Establish a clear statement of responsibilities and authority for architects.
- Establish a mentoring program for architects.
- Establish an architecture training/education program.
- Include architecture milestones in project plans.
- Have architects provide input into product definition.
- Have architects advise on development team structure.
- Give architects influence throughout the entire project life cycle.
- Reward or penalize architects based on project success or failure.



Become a Better Architect

- How do architects become good architects?
 1. Be mentored
 2. Mentor others



Be Mentored

- Few people have the luxury to gain firsthand all the experience needed to make us great architects.
- But we can gain experience secondhand:
 - Find a skilled architect and attach yourself to that person.
 - Find out if your organization has a mentoring program that you can join.
 - Establish an informal mentoring relationship.



Mentor Others

- You should also be willing to mentor others as a way of giving back or paying forward the kindnesses that have enriched your career.
- But there is a selfish reason to mentor as well: teaching a concept is the litmus test of whether you deeply understand it. This will improve your knowledge.



Summary

- When we think of software architects, we usually first think of their technical work.
- But, in the same way that an architecture is much more than a technical “blueprint” for a system, an architect is much more than just a designer.
- An architect must carry out the duties, hone the skills, and acquire the knowledge necessary to be successful.
- The key to becoming a good architect is continuous learning, mentoring, and being mentored.