

# Chapter 1

## Relating Enterprise, Application, and Infrastructure Architects

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### ABSTRACT

*The architect takes a high-profile role in many IT departments today. In fact, it can be quite difficult in some organizations to find a senior member of IT technical staff whose job title does not include the word “architect.” However there is little consensus in the academic community or amongst practitioners as to the responsibilities of the many different types of architect we encounter – or indeed, what they should even be called. In this chapter, the authors propose a simple, widely applicable taxonomy of architects, namely enterprise architects, application architects, and infrastructure architects. The authors define distinguishing characteristics, their responsibilities, the stakeholders with whom they engage, and the tools and techniques they use. The chapter shows how this taxonomy can be applied to most, if not all, practicing architects in the information systems domain, and explains how it helps us understand how such architects work together to help deliver the organization’s business goals.*

### INTRODUCTION

In recent years we have seen the role of the IT architect take a much higher profile in enterprise computing. In fact, today it can be quite difficult to find a senior member of IT technical staff who is not referred to in some way by the title “architect,” for example an “enterprise architect,” an “integration architect” or a “Unix architect.”

However the lack of widely accepted definitions of the responsibilities of the different types of architect causes quite a lot of confusion.

In this article, we attempt to remedy this state of affairs. We believe that there are some defining characteristics that all architects share, and that it is possible to identify a small set of architecture roles into which all of the different architecture jobs can be placed and which can be used as a

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test for a role actually being an architecture role (rather than that of, say, a technical expert).

Our taxonomy of architects comprises the enterprise architect, the application architect and the infrastructure architect. We characterize and classify these groups in terms of two specific aspects of their jobs: the breadth of focus that they need (e.g. the number of systems they are interested in) and the mix of domain and technology knowledge that the job requires.

## RELATED WORK

When we started thinking about the relationships between the various sorts of IT architect, we tried to find existing approaches for classifying the blizzard of job titles in this field. However, although there are plenty of references to the various job titles in formal and online literature, we found relatively few attempts to discuss how the different roles related to each other.

What we did find were a number of classification schemes used in career development or certification programs (namely those from IASA, IBM, CapGemini and the Open Group) and a number of discussions of the responsibilities of software architects specifically.

As part of its attempt to establish and formalize a profession of software architecture, the International Association of Software Architects (IASA) defines five distinct specializations (IASA, 2011) within software (or IT) architecture, namely enterprise architecture, software architecture, infrastructure architecture, information architecture and business architecture. IASA defines these roles as follows.

- **Enterprise Architecture:** Describes the terminology, the composition of enterprise components, and their relationships with the external environment, and the guiding principles for the requirement, design, and evolution of an enterprise.

- **Software Architecture:** The set of structures needed to reason about the system, which is comprised of software elements, relations among them, and properties of both.
- **Infrastructure Architecture:** Describes the structure and behavior of the technology infrastructure of an enterprise, solution or system. It covers the client and server nodes of the hardware configuration, the infrastructure applications that run on them, the infrastructure services they offer to applications, the protocols and networks that connect applications and nodes. It addresses issues such as performance and resilience, storage and backup.
- **Information Architecture:** The art of expressing a model or concept of information used in activities that require explicit details of complex systems. Among these activities are library systems, Content Management Systems, web development, user interactions, database development, programming, technical writing, enterprise architecture, and critical system software design
- **Business Architecture:** A part of an enterprise architecture related to architectural organization of business, and the documents and diagrams that describe that architectural organization.

Interestingly, one local chapter of IASA, IASA Sweden, independently looked at the same question of specialization within software architecture (Akenine, 2008) and identified a slightly different set of roles, namely enterprise architecture, business architecture, application architecture and software architecture.

IBM defines IT architecture as one of the career development professions within the company (Yi Qun, 2009) and again identifies a number of specializations within it, namely enterprise architecture, application architecture, information ar-

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