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701 E. Chocolate Avenue, Suite 200, Hershey PA 17033-1240, USA
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Chapter III

Architecture of an Information System for Personal Financial Planning

Oliver Braun, Saarland University, Germany

Günter Schmidt, Saarland University, Germany

Abstract

We present a reliable application architecture and a corresponding system architecture of a system for personal financial planning. The application architecture is related to the business requirements, and the system architecture is related to information technology. We will present an analysis model as part of the application architecture, showing the granularity of an industry model. An intrinsic part of the proposed system architecture is the usage of Web technologies.

Introduction

The architecture of an information system influences just about everything in the process of developing an information system. The *system architecture* gives the rules and regulations by which the information system has to be constructed. The architecture's key role is to define the set of constraints placed on the design and implementation teams when they transform the requirements and analysis models into the executable system. These constraints contain all the significant design decisions and the rationale behind them.

The mission and concern of this chapter is to present a reliable *application architecture* and a corresponding *system architecture* of a system for *personal financial planning*. The application architecture is related to the business requirements, and the *system architecture* is related to information technology. We base the discussion of the business requirements on the application architecture, LISA, where four views on models are defined in Schmidt (1999):

1. The granularity of the model differing between industry model, enterprise model, and detailed model
2. The elements of the model differing between data, function, and coordination
3. The life cycle of modelling differing between analysis, design, and implementation
4. The purpose of modelling differing between problem description and problem solution

We will present an *analysis model* as part of the application architecture showing the granularity of an industry model. It contains *data*, *function*, and *coordination models* related to the purpose of modelling. The language we use to develop the analysis model is the Unified Modeling Language (UML). An intrinsic part of the proposed system architecture is the usage of Web technologies, as the global Internet and the World Wide Web are the primary enabling technologies for delivering customized decision support. We refer to the reference model as a combination of the analysis model and the system architecture. We believe that combining analysis model and system architecture could enhance the usability of the reference model.

We understand *personal financial planning* as the process of meeting life goals through the management of finances (Certified Financial Planner's (CFP) Board of Standards, 2005). Our reference model fulfils two kinds of purposes: First, the analysis model is a conceptual model that can serve financial planners as a decision support tool for the analysis of requirements. Second, system developers can map the analysis model to the system architecture at the design stage of system development. Furthermore, the reference model serves as a capture of existing knowledge in the field of IT-supported personal financial planning. The model also addresses interoperability assessments by the concept of platform-independent usage of personal financial planning tools.