An Information System Modelling Framework

Bálint Molnár, András Benczúr

Eötvös Loránd University, Faculty of Informatics, Department of Information Systems
{molnarba,abenczur}@inf.elte.hu

Abstract

Several modeling approaches were developed in last decades to put into a unified framework the models of various aspects of an Information System. The comprehensive methods includes the Enterprise Architecture based description and the methodologies for reflecting the behavior of Information Systems from different viewpoints. In the past years, the evolution of technology resulted in an environment that focuses on documents at either inputting, outputting or processing of data. Moreover, the service orientation and the service-oriented computing have achieved outstanding position in the perception of Enterprises and Business Information Systems. The evolutionary development of modeling methodologies is necessary both on theoretical and on practical side as well. In this paper, we try to outline an enhancement of Information Systems Modeling methods that will take into account the increased role of documents and their processing by Web services. There is a comprehensive model (Blokdijk 1987) for Information Systems that needs an alignment to the most recent development, namely the Web services and document-centric environment. Through a small case study, the basic ideas is outlined to demonstrate the correlation and mutual mapping between the organogram, the business processes and the document structure described in XML by –for instance – DOM (Document Object model). The dynamic side as time dimension appears as structure of events and the related elementary tasks of business processes that are mapped to defined part of the overarching documents taking into account responsibilities of business units. The possible future research directions are discussed which methods grounded in mathematics is worth pursuing as information theory, graph theoretic, or formal modeling approaches.

Keywords: Web Information System, Document Centric Process and Data Modeling, Information System Architecture Web services, Service-Oriented Architectures, Web Information Systems, Zachman Framework