

# Applying Representational Framework for Design Researcher's IS Artifact: the Case of Electronic Negotiation Systems

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## Abstract

Recent rise of interest in design research in information systems discipline calls for advances in philosophical and methodological work that would provide guidance for design researchers to better organize their research projects. One important issue in this regard is the choice of an adequate representational framework to convey important perspectives on and salient characteristics of design researchers' artifacts. Current work expands on the previously introduced representational framework by illustrating it using the case of electronic negotiation systems (ENSs). In particular two ENS design research concepts: INSPIRE and INVITE are discussed in the context of the representational framework.

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## 1. Introduction

The importance of design research in IS has been steadily rising. Influential publications on the importance and nature of design research projects in IS have appeared relatively recently, and have quickly become widely cited by the design researchers in the area [2, 7, 8, 10]. While the importance of these and other contributions in establishing foundations for design sciences in IS and guiding design researchers in their initiatives is enormous, the issue of adequate representation of IS artifacts for design researchers' reference is also of considerable significance.

A representational framework for design researcher's IS artifact derived from Zachman's architecture has been proposed in [9]. The framework combines various perspectives and aspects of classes of information systems. As a reference model the framework allows design researchers to position and scope their research projects, and identify gaps that need to be addressed. This paper aims to illustrate the application of the framework to the case of electronic (e-) negotiation systems (EMS). Specifically, it elaborates on the design of two systems: INSPIRE and INVITE in light of the representational framework.

## 2. Representational Framework

In [9] a representational framework for design researchers' IS artifact based on Zachman's framework for IS architecture has been proposed. Like Zachman's original work, the framework uses two-dimensional format to model important aspects of IS artifacts. The "perspectives" dimension allows including various important views on IS depending on the level of technical elaboration of the design.

The meta-requirements are reflected in the "analytical" perspective that Models salient system features and processes supported as characteristics of work/tasks performed within organizational/ human contexts. Next, the synthetic layer focuses on the organization of the system in terms of key capabilities of components to support the analytical representation. This is the part of meta-artifact representation that shows the design as a concept, and not necessarily as a well-organized technical solution. Technological layer focuses on the questions of the optimality and efficiency of the artifact's design. The last layer included in the framework is implementation defined as an instantiation of a system type for a given concrete problem/organization.

At each layer of representation an IS solution type can be described by four different categories. First, it can be described a set of major motivations, i.e. why the artifact is designed, and which objectives does it serve. Next, it can be characterized by its static or structural features, e.g. properties, subsystems, and relationships. The behavioral (dynamic) category shows dynamic aspect of IS, e.g. supported processes, working principles, and methods employed. Lastly, the instantiation category shows some "meat" to fill the representation described by other categories with some material content.

## 3. Representing E-Negotiation Systems

### 3.1 Analytical Layer

#### 3.1.1 Motivation

### 3.2 Subsection Title

Text (single spacing)

## References

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