

## **Design Science Research**

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*Submission Deadline:* August 1, 2006

### **Background**

Dependency upon information technology (IT) for daily operations and for strategy formulation and implementation has become so commonplace that technology decisions and policies have moved from the backroom to the boardroom. Advertising for information technology has moved from the technical journals to the broadcast media. Buzzwords such as “on demand computing,” “integrating the enterprise,” and “Internet time” fuel the notion that the *right* information technology can effortlessly transform a stagnant, lumbering organization into a lean and efficient one. The reality is that organizations and the information technologies that support them are both artificial systems (artifacts). They must be interdependently and intentionally designed and implemented considering the knowledge, capabilities, shortcomings, incentives, motivations, and behavior of the people who are engaged with and dependent upon them.

IT artifacts are broadly defined as constructs, models, methods, and instantiations (March and Smith 1995) created to enable the representation, analysis, understanding, and development of successful information systems within organizations. Constructs are vocabulary and conceptualizations that enable communication and description of problems (phenomena, possibly within a causal chain), solution components, constraints, and objectives for the designed artifact. Models use these constructs to represent a problem and its solution space. Methods are algorithms or guidelines that are used to search the solution space and enable the construction of instantiations—computer-based systems implemented within an organization. Each may constitute a contribution to research knowledge. The contributions of new constructs, models, and methods are evaluated with respect to their ability to improve performance in the development and use of information systems. Instantiations or implementations demonstrate the feasibility of utilizing those information technology artifacts for a given task. They embody newly developed constructs, models, and methods. They are evaluated with respect to their effectiveness and efficiency in the performance of the given task.

From a research perspective, innovative IT artifacts extend the boundaries of known applications of IT (Markus et al. 2002). They address important problems heretofore not thought to be amenable to computational approaches (Walls et al. 1992). The science of design is fundamental to the creation of such artifacts. Simon (1996) identified five elements of design theory:

1. The Evaluation of Designs
  - a. Theory of Evaluation
  - b. Computational Methods
2. The Formal Logic of Design
3. The Search for Alternatives
  - a. Heuristic Search
  - b. Allocation of Resources Search
4. Theory of Structure and Design Organization
5. Representation of Design Problems

This special issue of *Management Information Systems Quarterly* invites unpublished research that utilizes and explicates the design-science paradigm in IT research. It specifically seeks research that creates and evaluates innovative IT artifacts (constructs, models, methods, or instantiations) that further knowledge applicable to the productive application of IT for managerial and organizational purposes. Presentation must be appropriate for a managerial audience. Examples of such research include Bapna et al. (2004), Markus et al. (2002), Tillquist et al. (2002), and Walls et al. (1992).

Topics include but are not limited to

- Requirements Determination and System Development Methodologies
- Software and Database Design
- Business Process and Work System Design
- Data Warehousing and Knowledge Discovery
- Collaboration and Decision Support
- Knowledge Management
- Security and Privacy
- Distributed and Interorganizational Systems
- Workflow Management

Submissions to the special issue will be screened by the Special Issue co-editors to insure that they conform to the guidelines for design science research presented in Hevner et al. (2004). Papers that do not pass this initial screening will be immediately returned to the authors. Associate editors and reviewers will apply those guidelines in forming recommendations for acceptance, revision, or rejection. The review process will be accelerated requiring reviewers to adhere to a 3-month review cycle and authors to adhere to a 3-month revision cycle. A maximum of two revisions will be invited. Papers that miss the required revision cycle or that are not deemed acceptable after two revisions will be removed from consideration. The submission deadline is **August 1, 2006**.

Submissions should be e-mailed to the Special Issue Co-Editors:

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## Special Issue Associate Editors

Appropriate current and past *MISQ* Senior and Associate editors will be solicited. Additional senior researchers in the Design Science area will also be solicited.

## References

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