

18 April 2008

Stevens/QUT study explains how organizations document their business processes

Study finds that business process modelers use just 20% of business process modeling notation

HOBOKEN, N.J. -- Researchers from Stevens Institute of Technology and Queensland University of Technology have explained how organizations document their business processes using a visual notation. The study found that although modeling language offers many symbols to construct detailed process descriptions, only 20% of them are regularly used.

"Organizations need to document their business processes for various reasons: To document compliance to legal requirements, to implement new information technology, or to improve the flow of work in order to increase performance. The Business Process Modeling Notation (BPMN) is a rich and increasingly popular standard set of symbols for the visual representation of business processes. It offers a way to represent the details of business processes, but we know very little about how much of this notation is actually used in practice. This study will illuminate this aspect," said Dr. Michael zur Muehlen, Assistant Professor in the Wesley J. Howe School of Technology Management at Stevens.

In collaboration with Dr. Jan Recker from Queensland University of Technology, zur Muehlen collected a large sample of business process models and analyzed the use of modeling techniques. Their results show that only a fraction of the standard notation is commonly used. The remaining symbols follow a long-tail distribution, very similar to how natural language is used:

- Only five symbols (normal flow, task, end event, start event and pool) occurred in more than 50% of the models.
- Seven additional elements occurred in at least 25% of the models – gateways (parallel and two variants of XOR), lanes, message flow and start messages.
- Seventeen elements were identified in less than three models. Seven elements occurred in just two models, five in just one model and were not used in any of the models analyzed in this study.

The core of BPMN constructs used is similar to traditional flowcharting notations, while the more advanced symbols, such as the specification of exceptions, time constraints and similar details went largely unused. The study also found that to date, no new symbols have emerged, and that different modelers tend to construct their vocabulary based on the process they want to model. "This suggests that many organizations are at a very early stage of documenting their processes."

Recker illustrates the implications of this study: "Organizations use BPMN in a manner similar to organizations that existed many years ago – they want to describe their operations in simple, graphical terms. The process modeling efforts in most organizations are simply not advanced or mature enough to start specifying service-enable workflows with exception behavior, which would require specialized BPMN symbols."

The first publication of their results sparked a wave of comments from analysts, software vendors, and standards organizations. One analyst even dubbed it "The Great BPMN Debate." While many commentators pointed out the need for a simple, light-weight documentation technique, some pointed out that BPMN should be used more fully to realize its potential benefit.

"We welcome the fact that our findings have generated some discussion around the proper use of BPMN," says zur Muehlen. "There is tremendous potential for better Business/IT alignment based on accurate process descriptions. However, people hold different views on the crossover point between the process documentation used by a business analyst and the process specification used by an IT professional. This is the focus of our ongoing research."

As part of the research project, "Modeling in the Large," researchers from Queensland University of Technology, Stevens Institute of Technology, Queensland University of Technology and University of Melbourne are studying the issues surrounding the identification, documentation and analysis of business processes in large-scale environments, such as multinational corporations, federated projects and enterprise-wide projects.

About Stevens Institute of Technology

Founded in 1870, Stevens Institute of Technology is one of the leading technological universities in the world dedicated to providing a broad-based education. Through its broad-based curricula, nurturing of creative inventiveness, and cross disciplinary research, the Institute is challenged in engineering, science, and technology management. Partnerships and collaboration between, and among government and other universities contribute to the enriched environment of the Institute. A new model for technology academe, known as Technogenesis®, involves external partners in launching business enterprises to create broad opportunities for economic development.

Stevens offers baccalaureates, master's and doctoral degrees in engineering, science, computer science and management. The university also offers a baccalaureate degree in the humanities and liberal arts, and in business and technology. The university has a total enrollment of over 10,000 undergraduate and 3,085 graduate students, and a worldwide online enrollment of 2,250, with a full-time tenured/tenure-track and more than 200 full-time special faculty. Stevens' graduate programs have attracted international participation from China, Europe and Latin America. Additional information may be obtained from its web page at www.stevens.edu.

For the latest news about Stevens, please visit StevensNewsService.com.

Contact: Stephanie Mannino, +1-201-216-5602, Stephanie.Mannino@stevens.edu
Stevens Institute of Technology, Castle Point on Hudson, Hoboken NJ 07030-5991 USA +1.201.216.5602

©1998-2007 Stevens Institute of Technology. All rights reserved.
This page was last updated 18 April 2008 .