



Discussion Paper

Design it like Darwin - A Value-based Application of Evolutionary Algorithms for Proper and Unambiguous Business Process Redesign

by

Patrick Afflerbach, Martin Hohendorf¹, Jonas Manderscheid

in: Information Systems Frontiers, 2016, p. 1-22

¹ Martin Hohendorf has written this paper as a continuation of his master thesis.
Now he is working at Ernst & Young.

Design it like Darwin

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Abstract

Business process management (BPM) is an acknowledged source of corporate performance. Despite the mature body of knowledge, computational support is considered as a highly relevant research gap for redesigning business processes. Therefore, this paper applies Evolutionary Algorithms (EAs) that, on a conceptual level, mimic the BPM lifecycle – the most popular BPM approach – by incrementally improving the status quo and bridging the trade-off between maintaining well-performing design structures and continuously evolving new designs. Beginning with describing process elements and their characteristics in matrices to aggregate process information, the EA then processes this information and combines the elements to new designs. These designs are then assessed by a function from value-based management. This economic paradigm reduces designs to their value contributions and facilitates an objective prioritization. Altogether, our triad of management science, BPM and information systems research results in a promising tool for process redesign and avoids subjective vagueness inherent to current redesign projects.

Keywords: Evolutionary Algorithms, Genetic Programming, Business Process Redesign, Business Process Management, Computational Process Management, Value-based Business Process Management