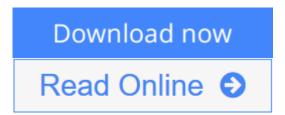


Economics-Driven Software Architecture

From Morgan Kaufmann



Economics-Driven Software Architecture From Morgan Kaufmann

Economics-driven Software Architecture presents a guide for engineers and architects who need to understand the economic impact of architecture design decisions: the long term and strategic viability, cost-effectiveness, and sustainability of applications and systems. Economics-driven software development can increase quality, productivity, and profitability, but comprehensive knowledge is needed to understand the architectural challenges involved in dealing with the development of large, architecturally challenging systems in an economic way.

This book covers how to apply economic considerations during the software architecting activities of a project. Architecture-centric approaches to development and systematic evolution, where managing complexity, cost reduction, risk mitigation, evolvability, strategic planning and long-term value creation are among the major drivers for adopting such approaches. It assists the objective assessment of the lifetime costs and benefits of evolving systems, and the identification of legacy situations, where architecture or a component is indispensable but can no longer be evolved to meet changing needs at economic cost. Such consideration will form the scientific foundation for reasoning about the economics of nonfunctional requirements in the context of architectures and architecting.

- Familiarizes readers with essential considerations in economic-informed and value-driven software design and analysis
- Introduces techniques for making value-based software architecting decisions
- Provides readers a better understanding of the methods of economics-driven architecting



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Editorial Review

Review

"This multi-faceted body of knowledge will be able to guide any practicing software architect or software engineer in making explicit economic and strategic considerations of architectural choices." - *Computing Reviews*

"The main goal of this book is to outline some of the current thinking on the processes and practices for economics- and value-oriented software architecting." - HPCMagazine.com, August 2014

From the Back Cover

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Ivan Mistrik is a computer scientist who is interested in system and software engineering (SE/SWE) and in system and software architecture (SA/SWA), in particular: life cycle system/software engineering, requirements engineering, relating software requirements and architectures, knowledge management in software development, rationale-based software development, aligning enterprise/system/software architectures, and collaborative system/software engineering. He has more than forty years' experience in the field of computer systems engineering as an information systems developer, R&D leader, SE/SA research analyst, educator in computer sciences, and ICT management consultant.

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He has written a number of editorials and prefaces, most recently for the book on Aligning Enterprise, System, and Software Architecture and the book on Agile Software Architecture. He has also written over 120 technical reports and presented over 70 scientific/technical talks. He has served in many program committees and panels of reputable international conferences and organized a number of scientific workshops, most recently two workshops on Knowledge Engineering in Global Software and Development at International Conference on Global Software Engineering 2009 and 2010 and IEEE International Workshop on the Future of Software Engineering for/in the Cloud (FoSEC) held in conjunction with IEEE Cloud 2011. He has been the guest-editor of IEE Proceedings Software: A special Issue on Relating Software Requirements and Architectures published by IEE in 2005 and the lead-editor of the book Rationale Management in Software Engineering published by Springer in 2006. He has been the co-author of the book Rationale-Based Software Engineering published by Springer in May 2008. He has been the lead-editor of the book Collaborative Software Engineering published by Springer in 2010, the book on Relating Software Requirements and Architectures published by Springer in 2011 and the lead-editor of the book on Aligning Enterprise, System, and Software Architectures published by IGI Global in 2012. He was the lead-editor of the Expert Systems Special Issue on Knowledge Engineering in Global Software Development and the coeditor of the JSS Special Issue on the Future of Software Engineering for/in the Cloud, both published in 2013. He was the co-editor for the book on Agile Software Architecture published in 2013. Currently, he is the lead-editor for the book on Economics-driven Software Architecture to be published in 2014.

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Currently a post-doctoral researcher in the CREST centre, SSE group, UCL. She received her PhD in Software Engineering from Kings College London in 2010. She has been working on multi-objective requirements selection and optimization for release planning problem.

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