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Dynamics of Concurrent Software Development

Speaker: Dr. Hazhir Rahmandad
Industrial and Systems Engineering, Virginia Tech

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Abstract

In a concurrent development process different releases of a software product overlap. Organizations involved in concurrent software development not only experience the dynamics common to single projects, but also face interactions between different releases of their product: they share resources among different stages of different projects, including customer support, they have a common code-base and architecture that carries problems across releases, they use the same capabilities, and their market success in early releases impacts their resources in later ones. Drawing on two case studies we discuss some of the feedback processes central to concurrent software development and build a simple simulation model to analyze the resulting dynamics. This model sheds light on tipping dynamics, the nature of inter-project feedback loops, and alternative resource allocation policies relevant to management of concurrent software development.

Biography

Hazhir Rahmandad is assistant professor of Industrial and Systems Engineering at Virginia Tech, Northern Virginia Center. He received his Ph.D. in system dynamics from the Massachusetts Institute of Technology (2005) and his undergraduate degree in Industrial Engineering from Sharif University of Technology, Iran. Hazhir's research interests include understanding the evolution of product development capability, systems engineering dynamics, organizational learning and change, making strategy happen, comparing different simulation methods, and model estimation methodologies. He is also involved in applying dynamic modeling tools to complex health care problems such as obesity and polio eradication.