COLLOQUIUM

DEPARTMENT OF MATHEMATICS AND STATISTICS
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Using the Design Structure Matrix to Model an Early Vehicle Development Process

Abstract

The Design Structure Matrix (DSM) has been applied to model the early stages of General Motors' product development process and to identify opportunities for enhancing its operational efficiency. A highly cross-functional team including members from marketing, finance, product planning, manufacturing, and a broad array of engineering disciplines were interviewed to ascertain their roles in three of the earliest phases of the product development process and their interactions with other team members. It was found that the process proceeds initially in a highly serial fashion, but becomes highly concurrent and iterative during the last two phases of the process. The simulation-based analysis indicated that the major block of tasks straddling over the last two phases impacted the total process duration significantly. We conclude with some challenges presented by simulating phase gate processes with information exchanges across the phases.

372 Science and Engineering Building
Thursday, 17th April, 2003
3:00 to 4:00 P.M.
(Refreshment at 2:30 to 3:00 P.M. in Room 368,
Science and Engineering Building)

About the speaker

Devadatta Kulkarni works as Staff Research Scientist at GM Research & Development Center in Warren. He has earned his Ph. D. in mathematics from Purdue University. He has woked as a faculty member of Department of Mathematics and Statistics at Oakland University for several years before moving to industrial reasearch.