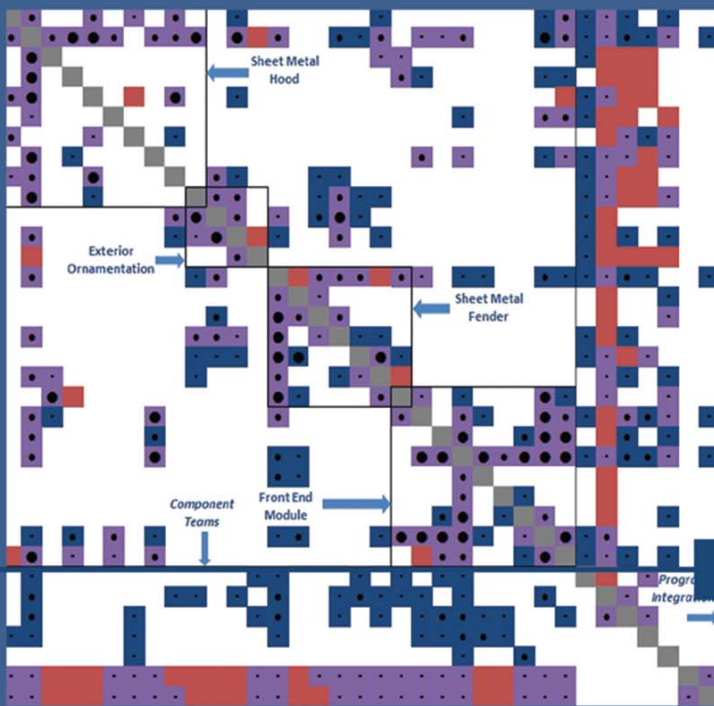


Tyson R. Browning
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Modeling and managing complex systems

Proceedings of the 17th International DSM Conference
Fort Worth (Texas, USA), 4-6 November 2015



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(editors)

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The Editors:

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Foreword

Welcome you to the 17th annual International Dependency and Structure Modeling (DSM) Conference. The 2015 conference is hosted by the Neeley School of Business at Texas Christian University (TCU) in Fort Worth, Texas, USA, November 4-6. It is organized in collaboration with Technische Universität München (TUM).

This year's theme is "Modeling and Managing Complex Systems." Complex systems pervade our products, processes, organizations, projects, and environment. Modeling them can lead to valuable insights about their structure and behavior, which in turn can increase our understanding and capability to manage (or at least co-exist with) such systems.

The design structure matrix has proved useful for modeling, analyzing, visualizing, and understanding complex systems. Over the last 25 years in particular, DSM researchers, practitioners, and software developers have designed and enhanced many varieties of DSM methods, tools, and applications. That work continues at this conference and in these proceedings.

The International DSM Conference provides an annual forum for practitioners, researchers, and developers to exchange ideas and experiences and showcase results and tools. This year's conference begins with two parallel sessions the afternoon of November 4. The first of these is a DSM Industry Special Interest Group (DSMiSIG) meeting, where industry participants will discuss the challenges of complex systems in their particular arenas and opportunities for DSM models and tools to support improved engineering and managerial decisions. The second of these is an introductory tutorial for those new to design structure matrix methods and models.

Each of the papers submitted for this year's conference was peer-reviewed by at least two members of the Scientific Committee, who made acceptance/rejection recommendations and provided helpful guidance for revisions. The accepted papers appearing in these Proceedings have each been improved based on that feedback.

This volume contains 24 peer-reviewed papers that describe the recent advances and emerging challenges in DSM research and applications. They advance the DSM concepts and practice in seven areas:

1. DSM Methods and Complexity Management
2. Analyzing and Managing Organizations, Teams, and Individuals
3. Project Management
4. Managing Failures and Risks in Complex Systems
5. Modeling Functions and Functionality of Complex Systems
6. Process and Change Management
7. Systems' Architectures and Modularities

These Proceedings represent a broad overview of the state-of-the-art on the development and application of DSM. There are a significant number of papers with industry authors or co-authors, reflecting this balance and synergy between conceptual development and real-life industrial application, which are in the genes of the DSM Conference series.

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