



Tennenbaum Institute 2004-2011

Overview

Founded in 2004, the Tennenbaum Institute (TI) focuses on fundamental change of complex organizational systems – enterprise transformation. The research initiatives in our portfolio focus on how enterprises understand and address fundamental change, as well as how they succeed or fail in such pursuits.

■ Mission Statement

Knowledge and Skills for Enterprise Transformation

■ Vision

An interdisciplinary research organization that leverages the wealth of expertise and enthusiasm across Georgia Tech's Colleges and Schools, as well as partner institutions, to understand and enable fundamental change of private and public sector enterprises via fundamental and applied research, as well as graduate and executive education.

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- Founded in 2004 by Michael Tennenbaum
- Globally recognized thought leader in the field of enterprise transformation
- 30+ faculty across all colleges and schools at GT and partner institutions
- Secured more than \$20 million in gifts, endowment, and sponsored research
- First executive M.S. program in Enterprise Transformation

Major Initiatives

Our major initiatives include [global manufacturing](#), [healthcare delivery](#), [systems research](#), and the [MS-ENTR](#), the world's first graduate degree program in enterprise transformation.

Global Manufacturing

Manufacturing companies have long rationalized their business and production processes, and outsourced those processes that could be done more effectively or efficiently by other companies. Outsourced processes typically were well-defined activities, such as accounting, payroll, or the manufacture of a specific part or subsystem. This type of collaboration tends to be well defined, and can be handled by traditional contracting practices.

More recently, the nature of collaboration is dramatically changing to network-centric manufacturing where firms collaborate across the spectrum of activities from product design and development, to manufacturing, product support, and end-of-life disposition. Processes located in different companies, different continents, and speaking different languages are expected to interact as if they were co-located and speaking a single language.

This raises fundamental questions, ranging from design of collaborative manufacturing networks, to strategies for managing them, to technical details of process interfaces and process controls. These questions pose fundamental challenges to our ability to model such systems, to discover, articulate, capture, create, and re-use relevant knowledge, and to provide the kinds of decision support needed for such collaborative systems.

The Tennenbaum Institute is helping a major automobile company envision the factory of 2030 and develop the organizational structure, strategies, skills and methods to create and operate that factory. The Institute is also working with a major aerospace company to develop the global delivery system needed to support network centric manufacture of a next-generation aircraft.

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GLOBAL MANUFACTURING: NO LONGER VERTICAL

How can you best manage a global manufacturing enterprise to produce airplanes and automobiles? Working with Lockheed Martin and General Motors, a Tennenbaum Institute team studied the issues associated with working with thousands of companies in many countries. These companies in their role as partners, rather than traditional suppliers, complicate this. Risk and trust have been found to be central issues when you are no longer vertical.

Systems Research

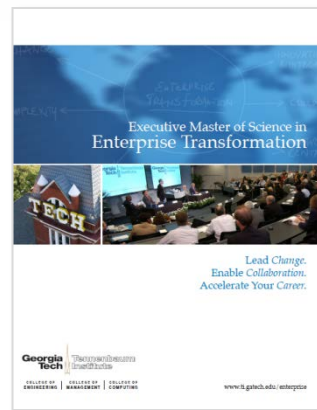
The systems research initiative addresses systems science and engineering methodologies within a variety of enterprise domains. Current methodologies focus on organizational simulation and the integration of economic models and other behavioral phenomena into simulation models. Recent enterprise domains include defense acquisition, aerospace, services, mobile telecom, and enterprise IT integration.

Each of these domains is undergoing or in need of transformation, and the intent is to provide enabling methods, tools and technologies to support successful transformation efforts, going from the "as-is" enterprise and understanding what the "to-be" enterprise entails. An additional focus includes simulation-based educational technology to transform education and training of systems engineers

MS-ENTR – Graduate Program

TI has developed an Executive MS Degree in Enterprise Transformation that was approved by the Board of Regents in May 2011. This program is led by the Executive Director and involves 14 faculty members from the Colleges of Engineering, Computing, and Management. A recently completed brochure has enabled the launch of a direct sales program with Atlanta Fortune 500 companies. The goal is to begin the program with the first cohort in Fall 2012.

<http://www.ti.gatech.edu/enterprise/index.php>



Financial Support

The Tennenbaum Institute was founded through a \$5,000,000 donation by Georgia Tech alum **Michael Tennenbaum**. Since then the Institute has secured an additional \$15,000,000 in gifts, endowment, and sponsored research. Financial support also comes from our research partners through gifts, grants and contracts, and in-kind donations such as databases and software tools.

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■ COMPUTER SERVER BUSINESS: TIME TO MARKET

How can you accelerate time to market, getting there just in time and ahead of the competition? The Tennenbaum Institute developed an organizational simulation of IBM's X-Series server business and showed how the allocation of engineering competencies could reduce time to market by almost 50 percent. Teamed with IBM researchers, we showed that supporting the social network of how work gets done makes a huge difference in the results.

Research Partners

A key component of the Tennenbaum Institute is its active and intensive collaboration with companies, academic and private foundations, government entities, and other external organizations.

TI works with organizations of all sizes on projects of various durations. Groups partnering with TI realize a number of benefits to both their organization and their personnel who interact with our multidisciplinary teams of faculty, students, and staff – including interaction with other entities with similar business interests; involvement in strategic research activities; in-depth interaction with Georgia Tech faculty, staff, and students; access to non-proprietary research and one-on-one contact with students for discussion of post-graduation employment opportunities.

- Accenture
- Air Force Surgeon General
- Ativo
- Department of Defense
- Dollar General
- Emory Woodruff Health Sciences Center
- Gates Foundation
- General Motors
- Georgia Cancer Coalition
- Georgia State University
- IBM
- Lockheed Martin
- Mayo Clinic
- National Science Foundation
- National Security Agency
- Naval Postgraduate School
- Northern Light
- SAIC
- SEEDR
- Stanford University
- Systems Engineering Research Center
- Vanderbilt University Medical Center



Students & Alumni

Student and alumni are the products of the Tennenbaum Institute. Over the past seven years, the Tennenbaum Institute has graduated and placed students in leading positions in industry and academia.

Current Students

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Leah Bovell	PhD	College of Business, Georgia State University
Marcus Bellamy	PhD	College of Management
Kyle Crawford	PhD	School of Industrial & Systems Engineering
Trustin Clear	PhD	School of Industrial & Systems Engineering
James Dickens	PhD	School of Industrial & Systems Engineering
Pradeep Jawahar	MS	College of Computing
I-Hsiang Lee	PhD	School of Industrial & Systems Engineering
Quinn Makins	MBA	College of Management
Nicola McCarthy	PhD	School of Industrial & Systems Engineering
William Miller	MS	School of Industrial & Systems Engineering
Pratik Mital	PhD	School of Industrial & Systems Engineering
Hyunwoo Park	PhD	School of Industrial & Systems Engineering
Animesh Podar	MS	College of Computing
George Thiers	PhD	School of Industrial & Systems Engineering
Annie Yu	PhD	School of Industrial & Systems Engineering



HEALTH ADVISOR: MANAGING COMPLEXITY

The healthcare delivery system is certainly complex and seems destined to consume the whole U.S. GDP. What should we do to avoid this destiny? Working with IBM, Tennenbaum Institute researchers have the answer— let 10,000 12-year olds work it out. We developed an online game – Health Advisor – where you can manage the healthcare system, providing clients with advice on alternative providers and their performance, as well as managing the process of getting through the healthcare system at a reasonable cost. We fully expect that 2-3 of the 10,000 ideas will revolutionize the system.

Institute Alumni

2010

Joshua Cuneo	MS	Instructor, Georgia Gwinnett College
Joel Feyereisen	BS	Professional Services Consultant, Equifax
Preetam Joshi	MS	System Software Engineer, Yahoo!
Huijiang Jiang	PhD	IBM Research
Parminder Juneja	PhD	Assistant Professor, UNC Charlotte
Aditya Pradhan	MS	Integration Architect, Seeburger AG

2009

Clarence Wardell	PhD	Analyst, CNA
Jun Ha Kim	PhD	Assistant Professor, Kyung Hee University
Rob Smith	MS	

2008

Baabak Ashuri	PhD	Assistant Professor, Georgia Tech
Karan Gandhi	MS	Associate, McKinsey
Michael Pennock	PhD	Systems Engineer, Northrop Grumman

2007

James Caverlee	PhD	Assistant Professor, Texas A&M University
Lokendra Chauhan	MS	Consultant, The Patent Board
Mark G. Mykityshyn	PhD	Executive Chairman, Tangible

2006

Rahul C. Basole	PhD	Sr. Research Scientist, Tennenbaum Institute
Dominie Garcia	PhD	Assistant Professor, San Jose State University

2005

Sebastian Kleinau	MS	Consultant, The Boston Consulting Group
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Faculty & Staff

The Tennenbaum Institute draws upon knowledge and skills from many disciplines and organizations, across Georgia Tech and beyond. The faculty, staff, and students at TI have strong analytical, empirical, and methodological backgrounds from engineering, computing, management, policy, architecture, and behavioral and social sciences. They are committed to both understanding complex organizational systems and contributing to enhancing these systems, whether they are healthcare, manufacturing, or other domains.

In Alphabetical Order

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Baabak Ashuri, Ph.D.	Building Construction
Godfried Augenbroe	College of Architecture
Rahul C. Basole, Ph.D.	Tennenbaum Institute
Daniel C. Bello, Ph.D.	Robinson College of Business, Georgia State University
Nate Bennett, Ph.D.	College of Management
James Bertoglio	Georgia Tech Research Institute
Douglas A. Bodner, Ph.D.	Tennenbaum Institute
Kenneth R. Boff, Ph.D.	Tennenbaum Institute
Mark Braunstein, M.D.	College of Computing
S. Tamer Cavusgil, Ph.D.	Robinson College of Business, Georgia State University
Marcia E. Chandler	Tennenbaum Institute
Stephen E. Cross, Ph.D.	Georgia Tech
Harry Cook, Ph.D.	School of Mechanical Engineering
Goutam Challagalla, Ph.D.	College of Management
J. Michael Cummins, Ph.D.	College of Management
Judith Curry, Ph.D.	School of Earth & Atmospheric Sciences
Richard A. DeMillo, Ph.D.	College of Computing
Merrick L. Furst, Ph.D.	College of Computing
Marc Goetschalckx, Ph.D.	School of Industrial & Systems Engineering
William Greenwood, Ph.D.	Mississippi State University
Diane Hicks, Ph.D.	School of Public Policy
Narayan Jayaraman, Ph.D.	College of Management
Ethan B. Kapstein, Ph.D.	INSEAD
William C. Kessler, Ph.D.	Tennenbaum Institute

Faculty (cont.)

Gordon Kingsley, Ph.D.	School of Public Policy
Kristi Kirkland	Tennenbaum Institute
Ajay Kohli, Ph.D.	College of Management
Diane Kollar	Tennenbaum Institute
Jennie Lincoln	School of International Affairs
Ling Liu, Ph.D.	College of Computing
Lars Matthiasen, Ph.D.	Robinson College of Business, Georgia State University
Leon McGinnis, Ph.D.	Tennenbaum Institute
Elizabeth Mynatt, Ph.D.	College of Computing
Dennis Nagao, Ph.D.	College of Management
Chris Paredis, Ph.D.	School of Mechanical Engineering
Javier Pereda	Monterrey Technological Institute
Elisabeth Pate-Cornell, Ph.D.	Stanford University
Calton Pu, Ph.D.	College of Computing
Kathy Roper	College of Architecture
Frank Rothaermel, Ph.D.	College of Management
William B. Rouse, Ph.D.	Tennenbaum Institute
Nicoleta Serban, Ph.D.	School of Industrial & Systems Engineering
Hyeon Ju Seol, Ph.D.	Korean Air Force Academy
Valerie B. Sitterle, Ph.D.	Georgia Tech Research Institute
John T. Stasko, Ph.D.	College of Computing
Chelsea C. White, Ph.D.	School of Industrial & Systems Engineering



■ BUILD TO ORDER

The idea of a "build to order" computer is not unusual, thanks to Dell. Can the same be said about your car? The Tennenbaum Institute compared seven computer companies to six automobile companies. The computer companies dramatically decreased inventories, a benefit not realized by the car companies. Why? Because they could not cut excess capacity from their distribution network. There is good news, though. They sold more expensive and more profitable cars by delivering them more quickly.

Advisory Board

- Chairman
H. Ronald Nash (IE '70)
Partner, InterWest Parters
 - Vice Chairman (Healthcare Delivery)
Jack Calhoun
Founder & CEO, Accelare
 - Vice Chairman (Global Manufacturing)
Mark Miller (ChemE '80, MS MSE 82)
Founder & CEO, Venetia Systems
-
- **Bob Anclien** (MGT '69, MS MGT '70)
General Partner, Liberty Land Group;
Formerly Partner, Accenture
 - **Amy Cockerham Brown**
Chief Development Officer ,
Technology Division, Allegiance Capital
- 12
- **Tom Burbage**
Executive VP and General Manager,
Lockheed Martin Aeronautics
 - **Percy V. Gilbert, Ph.D.**
VP, Technology Development,
Semiconductor R&D Center (SRDC), IBM
- **CP Gurnani**
CEO,
Mahindra Satyam
 - **Larry Huang** (MGT '73)
Partner, Sabal Partners; formerly
Vice-President, Ciena Corporation
- **Ronald L. Johnson** (MS O.R. '85)
Sr. Vice President - Referee Operations
National Basketball Association
 - **John C. McLean, Jr.** (IE '70)
Formerly Senior Executive Vice
President, Wachovia
- **David Seuss** (IE '72)
CEO,
Northern Light Technologies
 - **Susan Smyth, Ph.D.**
Chief Scientist, Manufacturing,
General Motors
- **Michael Sutcliff** (EE '85, MS MGT '87)
Managing Director, New Business,
Accenture
 - **Donna Troy**
General Manager & VP Corporate
Accounts, DellComputers

Publications

Tennenbaum Institute faculty members are thought leaders in the field of large-scale, complex enterprise transformation. Their ground-breaking research defines, shapes, and advances the field. Published research can be seen in leading academic journals, books, and case studies. As thought leaders, TI scholars partner with other academics, policy makers, and the business community.

- Tennenbaum Institute faculty and graduate students have produced an impressive body of work that explore the fundamental theories and practice of enterprise transformation of complex organizational systems.
- TI faculty have published scholarly articles in leading academic journals such as *IEEE Transactions*, *IIE Transactions*, *Journal of Information Technology*, *IBM Systems Journal*, *Systems Engineering*, *Journal of Enterprise Transformation*, *Decision Support Systems*, *IEEE Computer Graphics & Applications*, *IEEE Systems Journal*, *Business & Information Systems Engineering*, *Communications of the ACM*, and *Journal of Systems Research and Behavioral Science*, and *Journal of Information, Knowledge, and Systems Management*.
- TI also founded the *Tennenbaum Institute Series on Enterprise Systems*, published by IOS Press in Amsterdam. The goal of each volume in the series is to bring together multi-disciplinary and trans-disciplinary perspectives, empirical and axiomatic research, and design methods and tools within focus areas of particular importance to enable fundamental enterprise transformation in both private and public sectors. Focus areas of interest range from value creation and work processes to management decision-making and social networks, all in the context of fundamental enterprise and organizational change. The objective is to address enterprise systems at all levels, ranging from technological systems to human and organizational systems.

Books – The Tennenbaum Institute Series on Enterprise Systems

Volume 5

Complex Socio-Technical Systems: Understanding and Influencing Causality of Change

W.B. Rouse, K. R. Boff and P. Sanderson, Editors
Forthcoming 2012

Volume 4

Enterprise Transformation: Manufacturing in a Global Enterprise

Nathan Bennett, William Kessler, and Leon McGinnis , Editors
Forthcoming 2012

Volume 3

Engineering the System of Healthcare Delivery

William B. Rouse and Denis A. Cortese, Editors
May 2010

Volume 2

Enterprise Mobility: Applications, Technologies, and Strategies

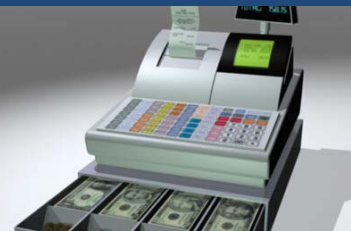
Rahul C. Basole, Editor
September 2008

Volume 1

Work, Workflow and Information Systems

William B. Rouse and Andrew P. Sage, Editors
August 2007

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■ CONSUMER GOODS LOCATIONS: WHERE'S THE STORE?

Our economy is fueled by consumerism. Consumer goods stores are everywhere. Not really. Working with Dollar General, a Tennenbaum Institute team studied the competitive problem of entering consumer markets and locating new stores. Not surprisingly, the best investment decisions depend on the nature of the area, the characteristics of the store, and who else is there to compete. There is another complication, by the way – all these things change in time.

Other Books

Economic Systems Analysis and Assessment: Cost, Value and Competition on Information and Knowledge Intensive Systems, Organizations, and Enterprises

Andrew P. Sage and William B. Rouse
John Wiley, New York
May 2011

The Economics of Human Systems Integration: Valuation of Investments in People's Training and Education, Safety and Health, and Work Productivity

William B. Rouse, Editor
John Wiley, New York
September 2010

People and Organizations: Explorations of Human-Centered Design

William B. Rouse
John Wiley, New York
June 2007

Enterprise Transformation: Understanding and Enabling Fundamental Change

William B. Rouse, Editor
John Wiley, New York
February 2006

Organizational Simulation: From Modeling and Simulation to Games and Entertainment

William B. Rouse and Ken Boff, Editors
John Wiley, New York
June 2005



■ MOBILE ICT: GOING MOBILE

There seems to be no limit to being connected. Considering this trend, it is easy to imagine mobile enterprises whereby members of the organization have access to the full spectrum of the enterprise's assets anywhere, any time. The Tennenbaum Institute studied this possibility. We assessed the extent to which enterprises seeking mobility are ready to adopt this set of technologies. Drawing on the expertise of a large set of global mobility researchers and practitioners, an online tool was developed for assessing the readiness of an enterprise to successfully become mobile.

Knowledge dissemination is a primary activity of the Institute. Students, staff, and faculty are strongly encouraged to contribute to the archival knowledge base

2011

Models of Complex Enterprise Networks

Rahul C. Basole, William B. Rouse, Leon F. McGinnis, Doug A. Bodner, and William C. Kessler
Journal Article, 2011, *Journal of Enterprise Transformation*

On the Evolution of Mobile Platform Ecosystem Structure and Strategy

Rahul C. Basole and Juergen Karla
Journal Article, 2011, *Business & Information Systems Engineering*

Cost/Benefit Analysis for Human Systems Investments: Assessing and Trading Off Economic and Non-Economic Impacts of Human Factors and Ergonomics

William B. Rouse and Kenneth R. Boff
Book Chapter, 2011, *Handbook of Human Factors and Ergonomics*, Wiley

Understanding and Improving Cross-Cultural Decision Making in Design and Use of Digital Media: A Research Agenda

R. Proctor, W.B. Rouse, et al.
Journal Article, 2011, *International Journal of Human-Computer Interaction*

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■ TRANSFORMATION IN THE RETAIL INDUSTRY: SUCCESS FACTORS

Here's a market opportunity. The market has doubled in the last 10 years. Profits have remained flat. Half of the publicly-listed companies have disappeared. Welcome to retail! The Tennenbaum Institute studied this transformation. The central element of success – and many failures – was leadership. It was not just a case of leaders articulating a vision and cheerleading. The key was leadership involvement – walking the talk with some regularity.

2011 (cont.)

Cultures, Situations and Behaviors: Theories and Models that Explain Why Best Laid Plans Go Awry

William B. Rouse

Book Chapter, 2011, *Cultural Factors in System Design: Decision Making and Action*, Taylor & Francis

A Computational Theory of Enterprise Transformation

X. Yu, W.B. Rouse, and N. Serban

Journal Article, 2011, *Systems Engineering*

Necessary Competencies for Transforming an Enterprise

William B. Rouse

Journal Article, 2011, *Journal of Enterprise Transformation*

Firm-Specific Assets, Multinationality, and Financial Performance: A Meta-Analytic Review of and Theoretical Integration

S. Tamer Cavusgil et al.

Journal Article, 2011, *Academy of Management Journal*

Does IT Integration Really Enhance Supplier Responsiveness in Global Supply Chains?

S. Tamer Cavusgil et al.

Journal Article, 2011, *Management International Review*

International Integration and Coordination in MNEs: Implications for International Management

Rudolf Sinkovics, Anthony Roath, and S. Tamer Cavusgil

Journal Article, 2011, *Management International Review*

Investigating an Innovative Approach for Developing Systems Engineering Curriculum: The Systems Engineering Experience Accelerator

Alice F. Squires, Jon P. Wade, Douglas A. Bodner, Masa Okutsu, Dan Ingold, Peter G. Dominick, Richard. R. Reilly and Donald Gelosh

Conference Article, 2011, American Society for Engineering Education Annual Conference

From Solicitation to Search: A Study of Monitoring Costs as a Driver of Donor Giving Behavior in Online Portal Websites

Clarence Wardell III and Shena R. Ashley

Journal Article, 2011, *International Journal of Nonprofit and Voluntary Sector Marketing*

A Survey of Challenges in Modelling and Decision-Making for Discrete Event Logistics Systems

Lars Mönch, Peter Lendermann, Leon F. McGinnis, and Arnd Schirrmann

Journal Article, 2011, *Computers in Industry*

2010

Understanding Complex Product and Service Delivery Systems

William B. Rouse and Rahul C. Basole
Book Chapter, 2010, *Handbook of Service Science*, Springer Verlag

Car Wars: Factors Underlying the Success or Failure of New Car Programs

E. S. Hanawalt and W. B. Rouse
Journal Article, 2010, *Systems Engineering*

Impacts of Healthcare Price Controls: Potential Unintended Consequences of Firms' Responses to Price Policies

William B. Rouse
Journal Article, 2010, *IEEE Systems Journal*

Your Career Game: How Game Theory Can Help You Achieve Your Professional Goals

N. Bennett and S. Miles
Book, 2010, Stanford University Press

The Limits of Effort in Understanding Performance: What Employees "Do" and What Might Be Done About It

R.E. Kidwell, N. Bennett, and S. Valentine
Journal Article, 2010, *Journal of Applied Management Education*

Making the Move from COO to CEO

N. Bennett and S.A. Miles
Journal Article, 2010, *Outlook*

Business Decisions are Like Golf Decisions

N. Bennett and S.A. Miles
Journal Article, 2010, *Forbes.com*

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■ 10 BEST / 10 WORST CARS: GROWING LEMONS

Ever wonder why so many ugly, boring cars make it to the market? Working with General Motors, the Tennenbaum Institute studied the 10 best and 10 worst cars in the last 50 years, all defined relative to the market objectives for these offerings. The oldest success was the 1955 Chevy and the newest the 2003 Cadillac CTS, but we also included the Edsel, Pinto, and Pontiac Aztec. Success or failure depends on how decisions are made, how quickly they can be executed, and a bit of luck.

2010 (cont.)

Foreign Market Entry Mode Behavior as a Gateway to Further Entries: The NAFTA Experience

S. Tamer Cavusgil et al.

Journal Article, 2010, *International Business Review/Elsevier Inc.*

Global Account Management Strategies: Drivers and Outcomes

Linda Hui Shi, Chris White, Shaoming Zou, and S. Tamer Cavusgil

Journal Article, 2010, *Journal of International Business Studies*

Enhancing International Customer-Supplier Relationships through IT Resources: A Study of Taiwanese Electronics Suppliers.

Ruey-Jer (Brian) Jean, Rudolf Sinkovics and S. Tamer Cavusgil

Journal Article, 2010, *Journal of International Business Studies*

A Multilevel Examination of the Drivers of Firm Multinationality: A Meta-Analysis

A. Kirca, G. Tomas M. Hult, S. Deligonul, M. Perry, and S. Tamer Cavusgil

Journal Article, 2010, *Journal of Management*

Addressing Cost Increases in Evolutionary Acquisition

Douglas A. Bodner, Farhana Rahman and William B. Rouse

Conference Article, 2010, Acquisition Research Symposium

Organizational Simulation for Economic Assessment

Douglas A. Bodner

Book Chapter, 2010, *The Economics of Human Systems Integration*

Architecture of Service Organizations

Moises Cases, Douglas A. Bodner and Bhyrav Mutnury

Book Chapter, 2010, *Introduction to Service Engineering*

2009

Engineering Perspectives on Healthcare Delivery: Can We Afford Technological Innovation in Healthcare?

William B. Rouse

Journal Article, 2009, *Journal of Systems Research and Behavioral Science*

A Parameterized Approach to Spam-resilient Link Analysis of the Web

J. Caverlee, S. Webb, L. Liu, and W.B. Rouse

Journal Article, 2009, *IEEE Transactions on Parallel and Distributed Systems*

2009 (cont.)

Structural Analysis and Visualization of Ecosystems: A Study of Mobile Device Platforms

Rahul C. Basole

Conference Article, 2009, *Fifteenth Americas Conference on Information Systems (AMCIS)*.

Models of Complex Enterprise Networks

William B. Rouse, Leon F. McGinnis, Rahul C. Basole, Doug A. Bodner, and William C. Kessler

Conference Article, 2009, *Second International Symposium on Engineering Systems*, MIT

Visualization of Interfirm Relations in a Converging Mobile Ecosystem

Rahul C. Basole

Journal Article, 2009, *Journal of Information Technology*

Engineering the Enterprise as a System

William B. Rouse

Book Chapter, 2009, *Handbook of Systems Engineering and Management*

Organizational Simulation

Doug A. Bodner and William B. Rouse

Book Chapter, 2009, *Handbook of Systems Engineering and Management*

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Information Technology and Knowledge Management

William B. Rouse and Andy P. Sage

Book Chapter, 2009, *Handbook of Systems Engineering and Management*

Modeling Design Services for Improving Service Delivery Effectiveness

Douglas A. Bodner, Bhyrav Mutnury, Moises Cases and William B. Rouse

Conference Article, 2009, *DesignCon*



■ **TRANSFORMATION OF SHIPBUILDING: FASTER AND CHEAPER**

Let's say you want to buy an aircraft carrier. How quickly could you get one? The answer is amazing. If military ships could be produced in zero time, it would take three years to get one! This time is consumed by the process of buying ships. What if we could streamline this process? Even if the likelihood of success were small, we found that the payoff is sufficiently huge to easily justify the investment. Put simply, investments in ships are more valuable if you buy them more efficiently.

2009 (cont.)

Are Simulation Standards in Our Future?

Hans Ehm, Leon McGinnis, and Oliver Rose
Conference Paper, 2009, Winter Simulation Conference

2008

Complexity of Service Value Networks: Conceptualization and Empirical Investigation

Rahul C. Basole and William B. Rouse
Journal Article, 2008, *IBM Systems Journal*

Healthcare as a Complex Adaptive System

William B. Rouse
Journal Article, 2008, *The Bridge*

2007

Towards the Mobile Enterprise: Readiness and Transformation

Rahul C. Basole and William B. Rouse
Book Chapter, 2007, *Encyclopedia of Mobile Computing and Commerce*

Complex Engineered, Organizational & Natural Systems: Issues underlying the Complexity of Systems and Fundamental Research needed to address these Issues

William B. Rouse
Journal Article, 2007, *Systems Engineering*

Transforming the Acquisition Enterprise: A Framework for Analysis and a Case Study of Ship Acquisition

Michael J. Pennock, William B. Rouse and Diane L. Kollar
Journal Article, 2007, *Systems Engineering*

Understanding R&D Value Creation with Organizational Simulation

Douglas A. Bodner and William B. Rouse
Journal Article, 2007, *Systems Engineering*

Enterprise modeling and enterprise transformation

Leon F. McGinnis
Journal Article, 2007, *Information-Knowledge-Systems Management*

2006

Enterprise Transformation

William B. Rouse and Marietta L. Baba
Journal Article, 2006, *Communications of the ACM*

An Introduction to Business Transformation of Technology Services

Cases et al.
Conference Paper, 2006, *International Electronics Packaging Education Conference*

Enterprise Readiness for Mobile ICT: A Web-Based Assessment Tool

Rahul C. Basole
Conference Paper, 2006, *Decision Sciences Institute*

Mobilizing the Enterprise: A Conceptual Model of Transformational Value and Enterprise Readiness

Rahul C. Basole
Conference Paper, 2006, *American Society of Engineering Management*

Agile Information Systems for Agile Decision Making

William B. Rouse
Book Chapter, 2006, *Agile Information Systems*

Systems Engineering and Design Of High-tech Factories

Leon F. McGinnis, Edward Huang, and Kan Wu
Conference Paper, 2006, *Proceedings of the 38th conference on Winter Simulation*

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■ R&D WORLD FOR FORESTRY INDUSTRY: R&D WORLD

How should you invest your R&D monies to maximize the return to your company? This question is perennial issue for Chief Technology Officers (CTO) in many industries. Working with the forest products industry, the Tennenbaum Institute developed an organizational simulation – R&D World – that represents the flow of ideas, projects, and results through a corporation. R&D World was used to show a large audience of CTOs how the nuances of these investment decisions tremendously impact corporate profits.

2005

A Theory of Enterprise Transformation

William B. Rouse

Journal Article, 2005, *Systems Engineering*

Enterprises as Systems: Essential Challenges and Approaches to Transformation

William B. Rouse

Journal Article, 2005, *Systems Engineering*

R&D World: Simulation-Based Analysis of R&D Enterprises

Douglas A. Bodner and William B. Rouse

Conference Paper, 2005, *IIE-IERC*

Transforming Enterprises through Mobile Applications: A Multi-Phase Framework

Rahul C. Basole

Conference Paper, 2005, *Americas Conference on Information Systems*

Using Simulation to Analyze R&D Value Creation

Douglas A. Bodner, William B. Rouse, and Michael Pennock

Conference Paper, 2005, *Winter Simulation Conference*

An Integrated and Adaptive Decision-Support Framework for High-tech Manufacturing and Service Networks

Peter Lendermann, Malcolm Yoke Hean Low, Boon Ping Gan, Nirupam Julka, Lai Peng Chan, Loo Hay Lee, Simon J. E. Taylor, Stephen J. Turner, Wentong Cai, Xiaoguang Wang, Terence Hung, Leon F. McGinnis, and Stephen Buckley

Conference Paper, 2005, Proceedings of the 37th conference on Winter Simulation

2004

Embracing the Enterprise

William B. Rouse

Journal Article, 2004, *IE Magazine*

Enterprise Transformation: Conceptual Frameworks for Understanding NonLinear Growth Dynamics

Mark Mykityshyn

Conference Paper, 2004, *International Federation of Automatic Control*

The Value and Impact of Mobile Information and Communication Technologies

Rahul C. Basole

Conference Paper, 2004, *International Federation of Automatic Control*

2004 (cont.)

Enterprise Transformation: Forces and Processes of Change

Dominie Garcia

Conference Paper, 2004, *International Federation of Automatic Control*

Framing Strategic Trade Offs Between Traditional and Virtual Enterprises and Workplaces

Baabak Ashuri

Conference Paper, 2004, *International Federation of Automatic Control*

Moving Up in the Rankings: Creating and Sustaining a World-Class Research University

Dominie Garcia and William B. Rouse

Journal Article, 2004, *Journal of Information, Knowledge, Systems Management*

Teamwork in the Performing Arts

William B. Rouse and Rebecca Rouse

Conference Paper, 2004, *IEEE Proceedings*

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Analysis of a Borderless Fab Scenario in a Distributed Simulation Testbed

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■ **EMERGENCY RESPONSE: ENTERPRISE COLLABORATION**

When a disaster or other large-scale emergency happens, many non-governmental organizations deploy their human and financial resources to help relief efforts. There are often overlapping and conflicting missions and initiatives, both to deploy relief and attract financial resources to support these efforts. The Tennenbaum Institute developed simulation models to improve NGO coordination by optimizing the allocation of resources and deployment of relief efforts.



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