

# **Mitigating Organizational and Operational Impediments to Innovation: An Integrated Systems Approach**

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## **Abstract**

Operations work best when addressed from a systems perspective. Innovation is pervasive and ubiquitous globally these days. Unfortunately, the advertised potentials don't always rise to the level of expectations because of organizational and operational impediments. This is particularly essential when unification is desired across boundaries of commerce, partnerships, and cooperation. In this regard, a system is a collection of interrelated elements whose collective output, together and in unison, is higher than the mere sum of the individual outputs. For a Systems approach to be practical, profitable, realizable, and sustainable, systematic frameworks must be instituted, subject to real-world constraints. In as much as everyone is clamoring for innovation, it is imperative that effective approaches be utilized to harness quantitative and qualitative methodologies. In this presentation, the DEJI (Design, Evaluation, Justification, and Integration) Systems Model will be used as the basis for mitigating organizational and operational impediments to innovation. Design, in this context, generically covers several objectives, including planning, conceptualization, organizing, brainstorming, negotiation, and so on. The systems approach of Design leads to a structured requirement to conduct a formal **Evaluation**, followed by a rigorous **Justification**, followed by, above all, **Integration**. Programs often fail due to a lack of sustainable integration of efforts. The **DEJI Systems Model** forces a structured and rewarding approach to what could, otherwise, become disjointed efforts. With the structured methodology of this presentation, a practical decision framework can be developed. The DEJI Systems Model was originally developed for product development purposes, but it has been successfully applied in business, industry, academia, and government examples. Viewing the accomplishments of any organization pursuit as "products," it is envisioned that the template of DEJI could be effectively applied by any organization in business, industry, academia, government, or the military. Embedded within the DEJI Systems Model is the Triple-C approach of Communication, Cooperation, and Coordination. Literature references are plentiful for both techniques of DEJI Systems Model and Triple-C Model. This presentation will provide guidelines on how to apply both, together or separately, in organizational settings.

## **Authors' Bios**

**Melinda Tourangeau** is presently the Executive Director of RVJ Institute in Milford, New Hampshire. Her career began in 1984 as an Air Force ROTC scholarship recipient to Georgia Tech to study lasers to prepare her to work on President Reagan's Star Wars. Her first assignment was at Wright Patterson AFB, Dayton, OH, to work in WRDC (now AFRL) and then transition to AFIT. She has worked for four defense industry partners contributing her expertise in program management, electro-optics, and lasers. She is pursuing her PhD in Education to study technical leadership in industry. Ms. Tourangeau is an accomplished technical writer, public speaker, and business leader, devoted to mindful technical leadership for mutual benefit of the US military, industry, and the world.

**Adedeji Badiru** is a Professor of Systems Engineering and Dean of the Graduate School of Engineering and Management at the Air Force Institute of Technology (AFIT). He was previously Professor and Head of Systems Engineering and Management at AFIT, Professor and Department Head of Industrial & Information Engineering at the University of Tennessee, and Professor of Industrial Engineering and Dean of University College at the University of Oklahoma. He is a registered professional engineer (PE), a certified Project Management Professional (PMP), a Fellow of the Institute of Industrial Engineers, and a Fellow of the Nigerian Academy of Engineering. He holds BS in Industrial Engineering, MS in Mathematics, and MS in Industrial Engineering from Tennessee Technological University, and Ph.D. in Industrial Engineering from the University of Central Florida. He is the author of over 30 books, 35 book chapters, 80 technical journal articles, 110 conference proceedings and presentations. He has also published 25 magazine articles and 20 editorials and periodicals. He is a member of several professional associations and scholastic honor societies.