

# Real-Time Inter-Enterprise Coordination in a Highly Dynamic World

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**Abstract:** Because of the relatively low cost of intercontinental transportation, activities take place in those parts of the world that either have cheap labor, or specialize in certain types of value adding activities. This causes supply chains and transport networks to grow in complexity, and makes them more and more vulnerable to dynamics and disruptions. Disasters like the flooding in Thailand a few years ago or the Fukushima tsunami, caused critical component stock-outs for the world market, disrupting thousands of supply chains across the planet. Coordination principles and information exchange have not adapted to the high volatility of today's enterprise networks, and risk assessment is not a standard tool in supply chain setup and inter-organizational information systems design. Yet, we all expect that sensor data and real-time coordination and control would be present to immediately address the problems that occur, and steer the complex systems to a stable state again. Unfortunately, current systems practices are often unable to utilize the real-time information and deal with the dynamics inherent to the overall system. The presentation will focus on these issues and will provide potential solutions using a modeling perspective.

## BRIEF BIOGRAPHY

Alexander Verbraeck (MSc in applied mathematics 1987 (cum laude); PhD in logistics 1991), is a full professor at Delft University of Technology, Faculty of Technology, Policy and Management, Policy Analysis Department. His research focuses on modeling and simulation, especially in heavily distributed environments and using real-time data. Examples of research on these types of simulations are real-time decision making, interactive gaming using simulations, and the use of 3D virtual and augmented reality environments in simulations for training. The major application domains for research are logistics and transportation, and safety and security. He is a member of ACM, IEEE, SCS, and INFORMS, and a Fellow in the Research School TRAIL for Transport, Infrastructure and Logistics. In addition Alexander has a position as adjunct professor at the R.H. Smith School of Business at the University of Maryland, USA. Here, he applies the modeling and simulation research for studying real-time supply chains.

