Research in Supply Chain Engineering
Peter O’Grady

Research covers improving the operations of supply chains. Research topics include:

• Supply Chain Disruption Analysis
• Extended Kalman Filters for Collaborative Supply Chains
• Risk pooling in centralized and satellite warehouse facilities (with Caterpillar)
• Six Sigma in healthcare supply chain operations (with Mercy Hospital and VA Hospital)
• Improving managers decision making in supply chains (with Iowa State University)
• Supply chain inventory reductions for spares (with Rockwell-Collins)
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• Supply Chain Disruption Analysis
  - Use extended Petri Net approach to model a supply chain.
  - For a given supply chain system with an initial marking $T_0$, the reachability set, $R(T_0)$ is generated by enumerating all markings from $T_0$.
  - Approach is able to model how changes disseminate through a supply chain system and calculate the impact of the attributes, without an extensive computation burden.
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• Extended Kalman Filters for Collaborative Supply Chains

- Inaccurate estimates of the state of the supply chain system can lead to incorrect decisions

- This work combines an extended Kalman Filter with a network approach that models the supply chain as an abstraction.

- Aim to obtain an improved estimation of the state of a supply chain system