THE LEAN INNOVATION ROADMAP

A Systematic Approach to Introducing Lean in Product Development
Processes and Establishing a Learning Organization

Name: Joern Hoppmann
Advisor: Dr. Eric Rebentisch
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1 MOTIVATION
- Rising awareness that use of Lean Principles in product development offers large potential for increased efficiency
- Lean Product Development Systems have been studied by several authors
- Components that are characteristic of Lean Product Development could be identified
- Question of how to introduce Lean in Product Development remains underinvestigated

2 GOAL OF RESEARCH
- Develop framework to systematically analyze the Lean PD components and their interdependencies
- Investigate alternative orders of introducing the single parts of a Lean PD system
- Give recommendations on which sequence of steps is likely to give best results when introducing the components of a Lean Product Development System

3 LEAN PD COMPONENTS
- Based on comprehensive literature review 11 components of a Lean PD system were identified and described in detail

4 INTERDEPENDENCIES
- Pairwise interdependencies of the components were described qualitatively and quantitatively using a cause-effect matrix

5 HYPOTHESES
- Based on the interdependencies of the components hypotheses on the most efficient order of introduction were formulated

6 SURVEY DESIGN
- The hypotheses were translated into an online-survey asking for:
  - General information on the introduction process
  - The company's maturity level for each component
  - The perceived usefulness and difficulty of implementation for each component
  - The order of introduction the company has chosen

7 DATA GATHERING
- The survey was distributed to product development managers, project leaders, and development engineers, mainly in Germany and the US
- More than 110 participants
- Companies responding are mainly from automotive, electronics, aerospace and industrial equipment sectors

8 LEAN INNOVATION ROADMAP
- Data gathered through the survey is currently being analyzed to test the hypotheses on the introduction of Lean in Product Development
- Based on the analysis, recommendations for the introduction process of Lean PD will be derived

HOW CAN LEAN PRINCIPLES BE SUCCESSFULLY IMPLEMENTED IN PRODUCT DEVELOPMENT SYSTEMS?