Assessing and mitigating risks of engineering programs with lean management techniques - DTU Orbit (25/12/2018)

Assessing and mitigating risks of engineering programs with lean management techniques
This paper investigates the use of lean management techniques as a risk mitigation approach for large-scale engineering programs. The key research questions are how lean best practices with the highest risk mitigation potential are identified, how the most relevant lean best practices for a specific program are identified and how the effort for implementation of these lean best practices is estimated.

Large-scale engineering programs have as results usually complex technical products or systems such as airplanes, satellites (GPS) or software programs, immense infrastructure efforts like the construction of a new airport, highway or bridge, or combine elements of both technology and infrastructure. The benefits they deliver are therefore immense and sometimes even groundbreaking, defining new levels of capabilities. But their sheer size and the built-in complexity also manifest themselves in higher risks, which can lead to significant cost-overruns and large delays in schedule [Oehmen et al. 2012, Cantarelli et al. 2010, Flyvbjerg et al. 2003, GAO 2006].

Program success depends on four dimensions: delivery capability, organizational capability, marketing capability and innovative capability [Shao and Müller 2011, Shao et al. 2012]. To incorporate these capabilities and to manage the obviously difficult entity of a program, a variety of standards and guidance books have been published. The two most prominent ones are Managing Successful Programs (MSP) and The Standard for Program Management by the Project Management Institute (PMI), that both include Risk Management as a focal activity [MSP 2011, PMI 2013].

General information
State: Published
Organisations: Department of Management Engineering, Production and Service Management, Engineering Systems Group
Contributors: Fritz, A., Oehmen, J., Rebentisch, E.
Number of pages: 10
Publication date: 2014

Host publication information
Title of host publication: 13th International Design Conference - Design 2014
Publisher: Design Society
Research output: Research - peer-review › Article in proceedings – Annual report year: 2014