Technical University of Denmark
Department of Management Engineering

Engineering Systems Group

Improving Quality and Productivity in Construction by Reusing Similarities in Products, Processes and Organizations

Baris Bekdik, Industrial PhD project

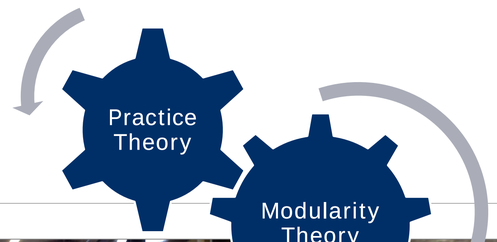
Relevance – challenges, problem or opportunity?
This research seeks to improve quality and productivity in the fragmented project based environment of the construction industry, by exploring how similarities in products, processes and project organizations can be leveraged in construction projects. Thereby variability is reduced and familiarity of the applied solutions is increased. The research combines literature on Practice Based Theory, Modularity and System Deliveries and Building Information Modelling to achieve effective project delivery.

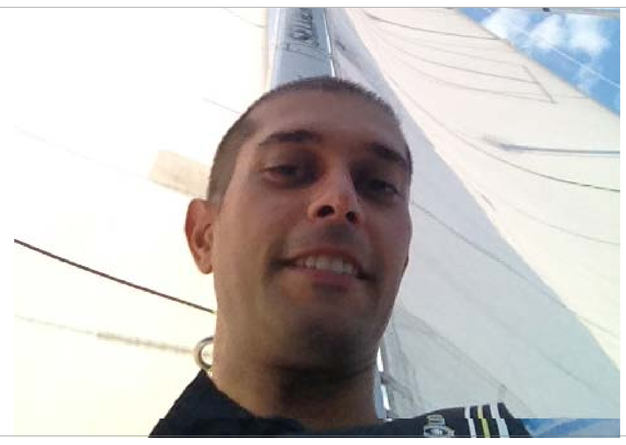
Research question?
How could product, process and organizational modularity form a basis for standardized works and solutions to improve the productivity and the quality in Project Based Productions (PBP) and organizations?

Conceptual model/theory
It is intended to generate a dual conceptual framework combining the modularity of product, process and organization on the one hand and learning practices on the other. This will create synergies between the two areas of insight so that strategies for developing efficient, learning project based organizations based on modularity can be designed and implemented. Finally working up a set of standard solutions and configurable solutions for the purpose of increasing productivity and quality in the construction process is intended.

Method
The data is collected using qualitative methods (that is through participation, observation, interviews, focus groups, workshops and various experimental methods) to create a modular understanding of process and organization parallel to the (already exiting) modular understanding of the product (the object of construction). An analysis of the modular composition of both the project process and the organization of MT Højgaard will be reached through presence at a construction site and at the BIM department in the main office respectively.

Expected results
- Deeper understanding of Project Based (PB) organizations with the combination of product, process and organization modularity and practice based theories perspective.
- A description of a conceptual framework using modularization and standard solutions for unique productions.





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Funded by:
Industrial PhD Programme, Ministry of Science, Innovation and Higher Education,
Knud Højgaards Fond & MTHøjgaard

Start and completion date:
15 July 2013 to 15 July 2016

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