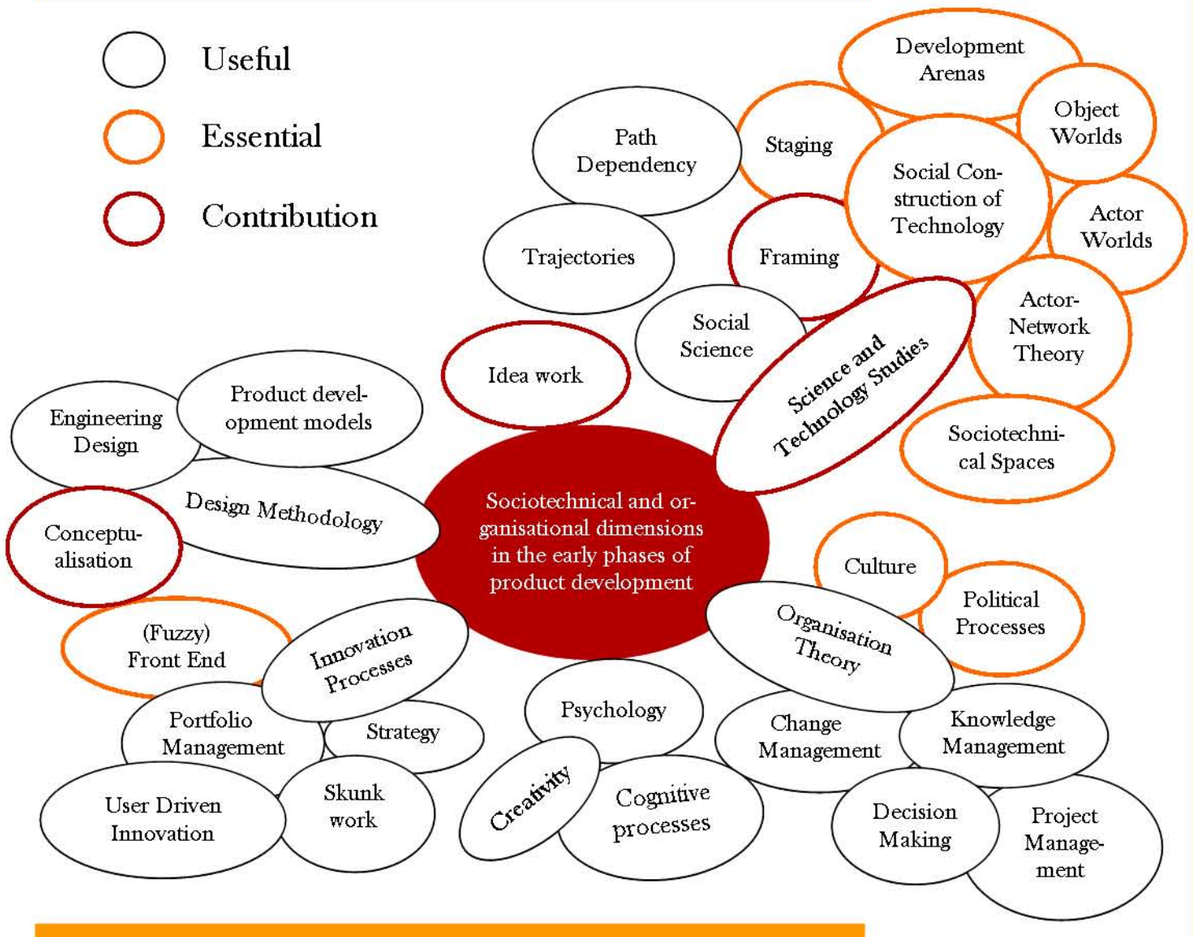
# Sociotechnical and organisational dimensions in the early stages of product development

## Background

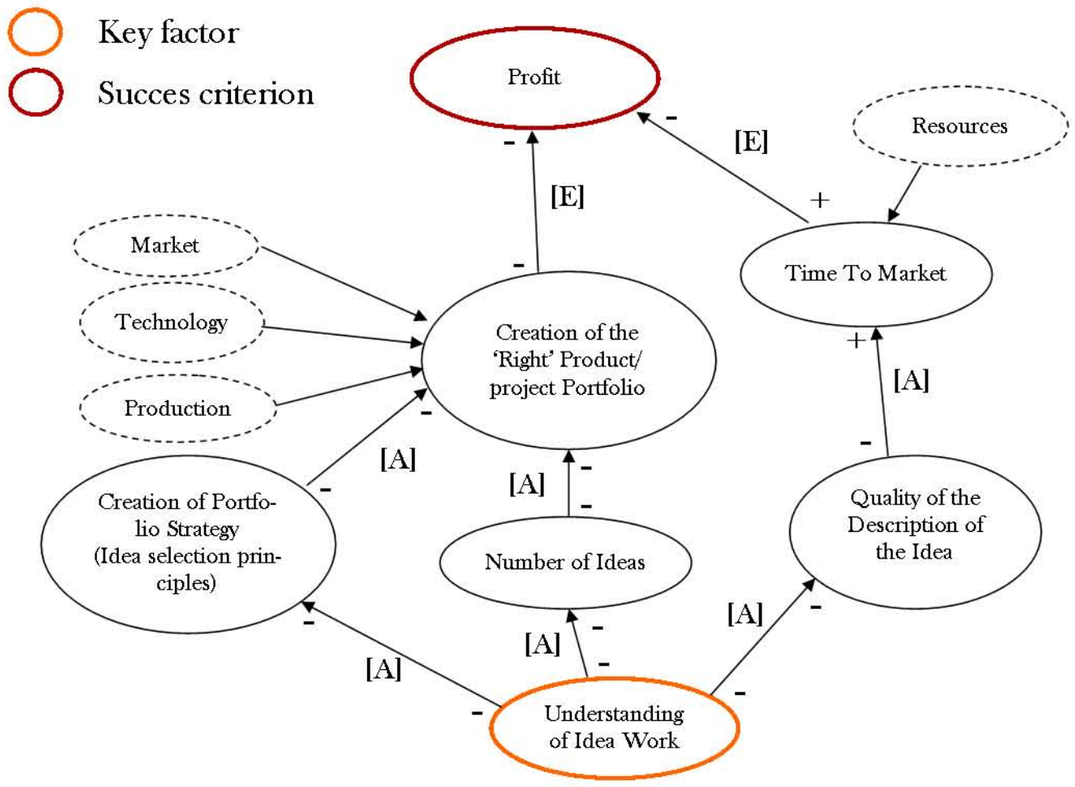
In recent years more and more companies are becoming aware of the significance of the development and selection of ideas to new or improved products in the very early stages of the product development process. Today most of the large and medium sized companies in Denmark are using systematic and formalised procedures in the late stages of the development process, but they are to an increasing extend seeking more concrete approaches in the early phases to handle the work with ideas, where they would like to get a better understanding of the conditions for the work with ideas.

Idea work (idea generation, idea recognition, idea selection and idea development) are happening throughout the entire product development process on different organisational levels. The work with ideas have been tried understood and explained in a range of different fields like psychology, creativity and design methodology (engineering design). In this project focus will be on the work with ideas in the earliest stages of the product development process and will be understood and explained through a socio-technical and an organisation sociological frame.

## ARC model




## Reference model

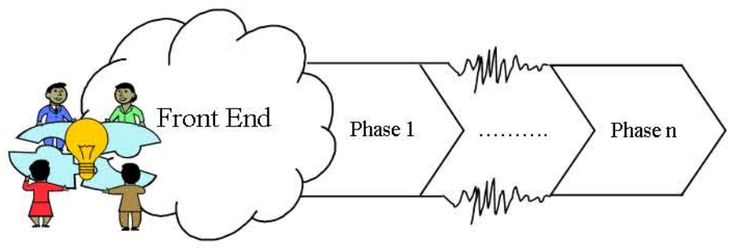



## Research approach

A theoretical literature study will be combined with a concrete empirical analysis. The project will be executed in collaboration with Grundfos management A/S, which will act as the case provider. Two different development projects will be selected as cases for further analysis. The empirical analysis will mainly be based on a qualitative approach including interviews and observation. Subsidiary some workshops will be executed both internally at Grundfos but also outside in an ERFA group. This will help collecting experiences with idea work but also communicate some of the results of the project.

## Project content and questions

In a socio-technical perspective, design and innovation can be considered as a result of the interaction between different actors with different knowledge and views on problems and solutions. In this PhD project the focus for the analysis of the work with ideas will therefore be on the interaction between different actors with different framings. Knowledge and ideas that go into design activities can come from many places like research and technology, product development, production, sales and marketing or directly from the user. In product development a successful innovation will often presume a close interaction between actors from different actor worlds. It is the actors' backgrounds in different disciplines and knowledge domains or different functional or organisational units which create the frames for the actor world.




In this PhD project it is assumed that it is the actor's framings which play a central role in relation to the work with ideas, since it is the actor's framings that shape the ideas. Furthermore it is assumed that ideas can move across these frames. Another assumption is that the actors' interpretation and translation of the history also play an important role in the development of ideas, because ideas can emerge when actors are connecting different tracks like values in the organisation, trends in the society, technology, old products etc.

Research question 1: **Which roles do the actor's framings and awareness of tracks play in relation to the work with ideas in an organisation?**

In an organisation sociological perspective the project's assumption is that a range of different organisational processes and filters exist in the company which are determining for the ideas' success and framing in the company.

Research question 2: **Which form do the organisational processes and filters have and how do they hinder or promote ideas?**

## Expected results

**In the academic field** the original contribution to research should be found in the fact that the work with ideas are explored from a new theoretical perspective taken from the field of Social-Technology Science. The objective of the project is that the analysis should bring us to a better understanding of development of ideas and knowledge from different groups of actors with different framing and references.

**In practise** it is expected that the analysis of the project can contribute to an internal learning process in the case company. And also point out how the work with ideas can be improved and be made more visible in the organisation. Furthermore is it expected that the project will contribute to the development of new approaches in the early work with ideas in product development for use for companies innovative capabilities in general.

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