

Design Catalogues for Microsystems Engineering

Background

Microsystems development is expensive and time consuming. The interdisciplinary nature, complexity and heterogeneity of these products present the problem of bringing them fast to the market. Combining the required expertise efficiently to offer the customers solutions to their problems in an economically acceptable manner is a challenge.

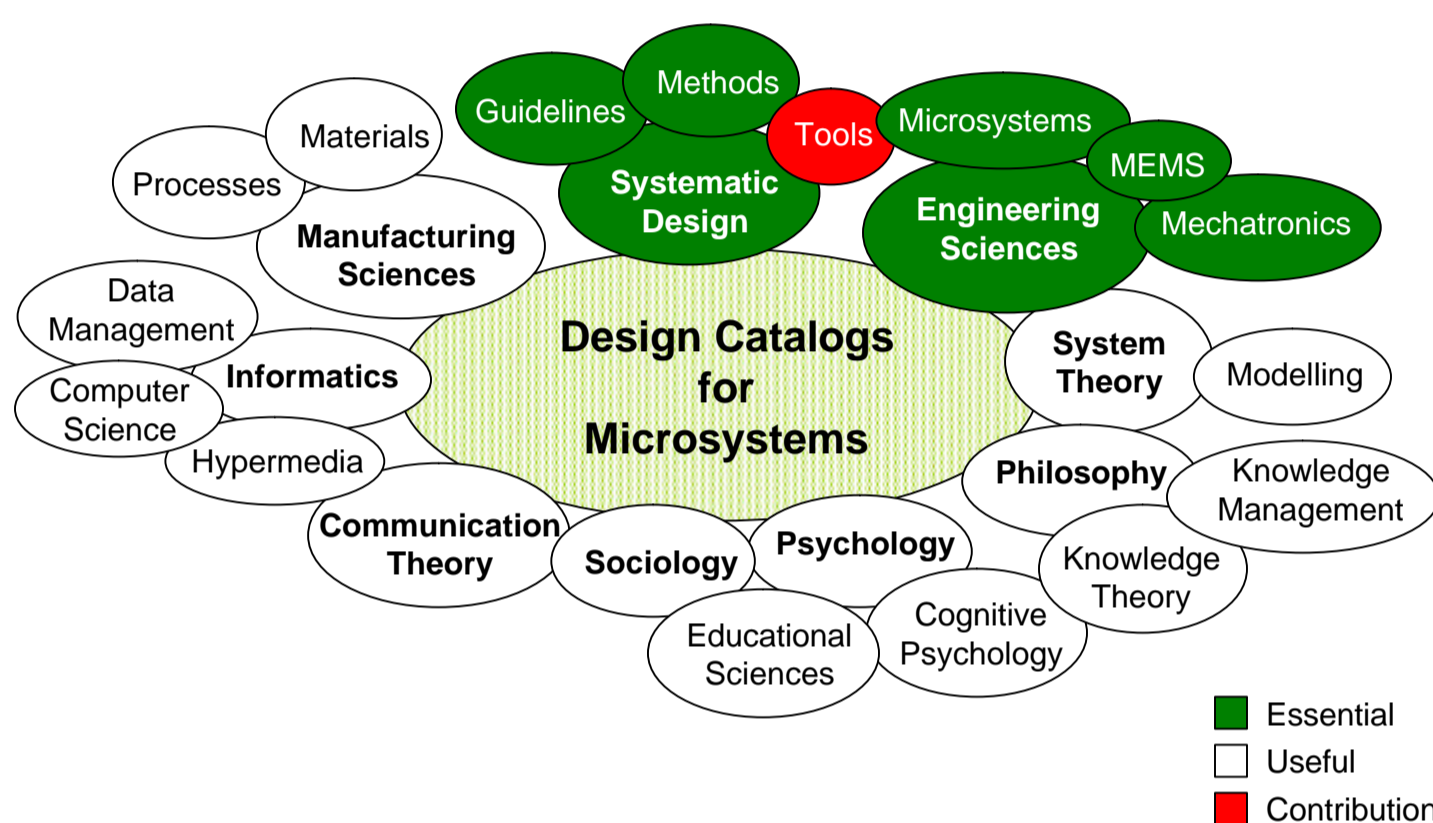
Problem Statement

To reduce microsystems Time To Market by speeding up the design process with dedicated integrative design tools.

Goal

To reduce microsystems TTM by supporting designers in the conceptual design phase through a centralized source of solutions to design problems in the form of design catalogues.

Theoretical Foundation and Contribution



Hypotheses

Implementing design catalogues in microsystems conceptual design will speed up the whole design process.

Speeding up the design process will reduce the time to market of new microsystems.

Research Questions

How can heterogeneous knowledge be integrated in design catalogues?

How can design catalogues content be represented in a comprehensible form to designers with different professional and methodical background?

Research Approach

Descriptive Study I

Identify frequent microsystem design problems that influence design time and how they affect it.

Detailed Descriptive Study

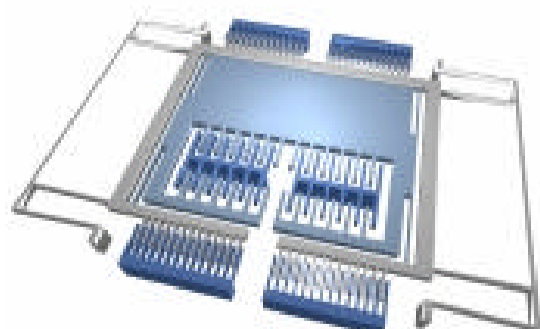
Study the Theory of Integration of heterogeneous Knowledge to find a way to structure adequate classifying criteria for the most frequent microsystem design problems.

Collect and document known and proven solutions to these design problems.

Prescriptive Study

Build the solutions, solutions characteristics and remarks sections of the catalogues that should support designers with different professional background to solve design problems systematically.

Develop a computer interface for the design catalogues and evaluate its functionality.

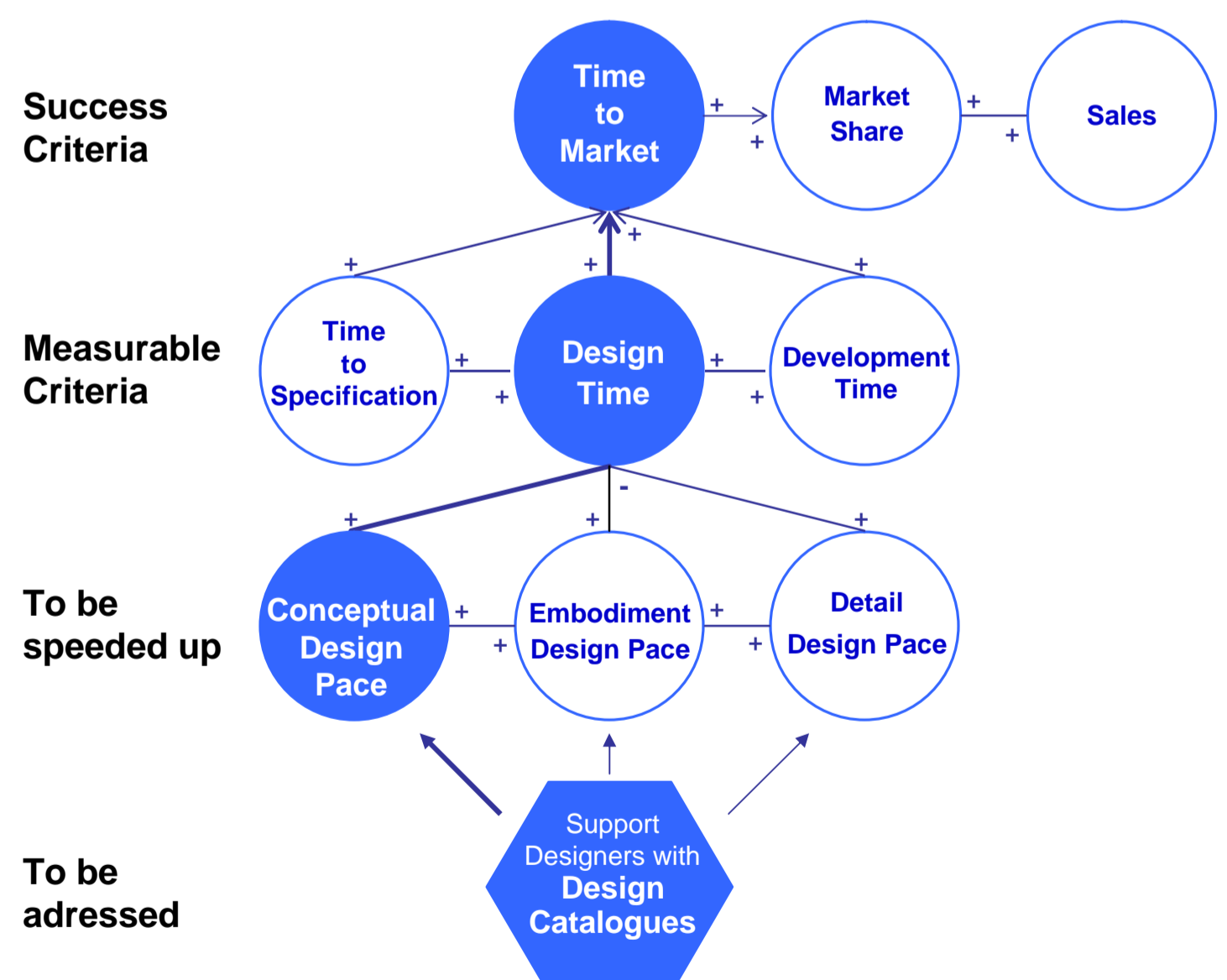


Acceleration sensor
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Expected Results

Computer-based design catalogues for microsystems engineering with an innovative search interface for the classifying criteria of heterogeneous content.

Impact Model



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