

Buskerud University College: Program Systems Engineering

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Abstract

The focus of the Systems Engineering program of Buskerud University is on multi-disciplinary design fitting in the market and application needs and usable in industrial engineering processes. The research agenda focuses on reliability in rough circumstances and on innovation or agile architectures. As application domains the research will focus on system and supply industry as present in Kongsberg, such as sub-sea.

This is a rather preliminary agenda, under discussion with the Buskerud stakeholders.

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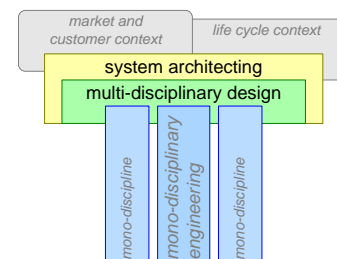
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June 23, 2016

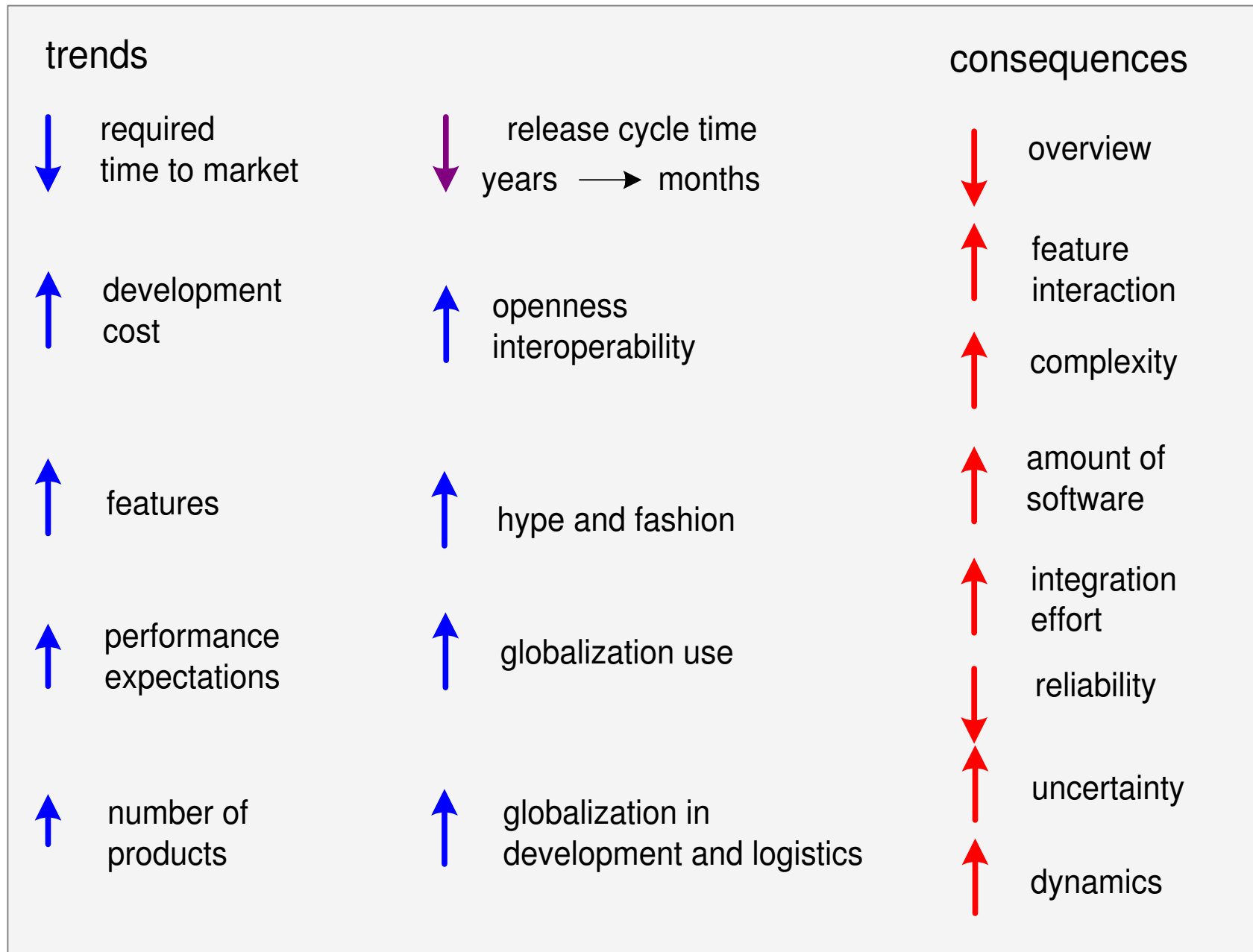
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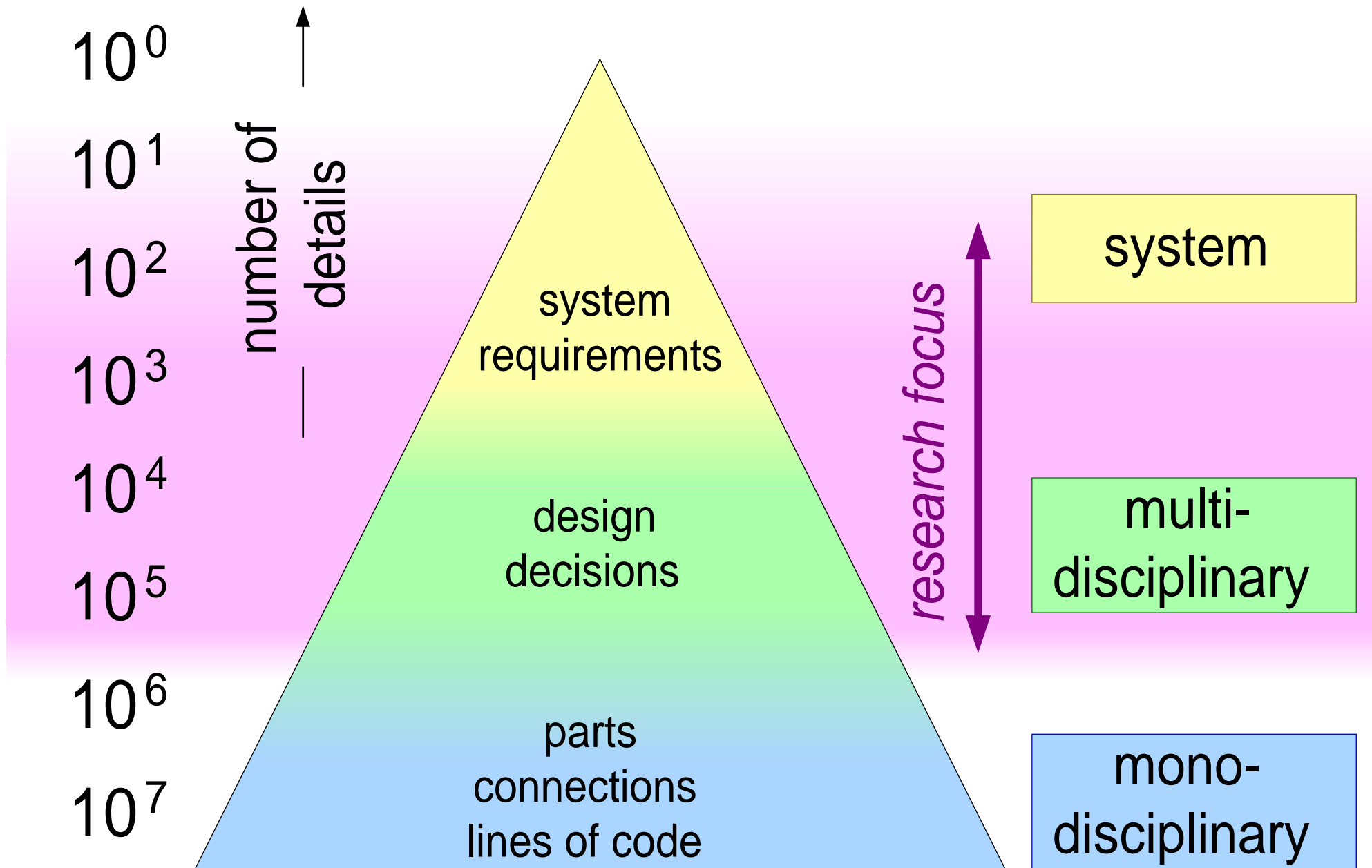
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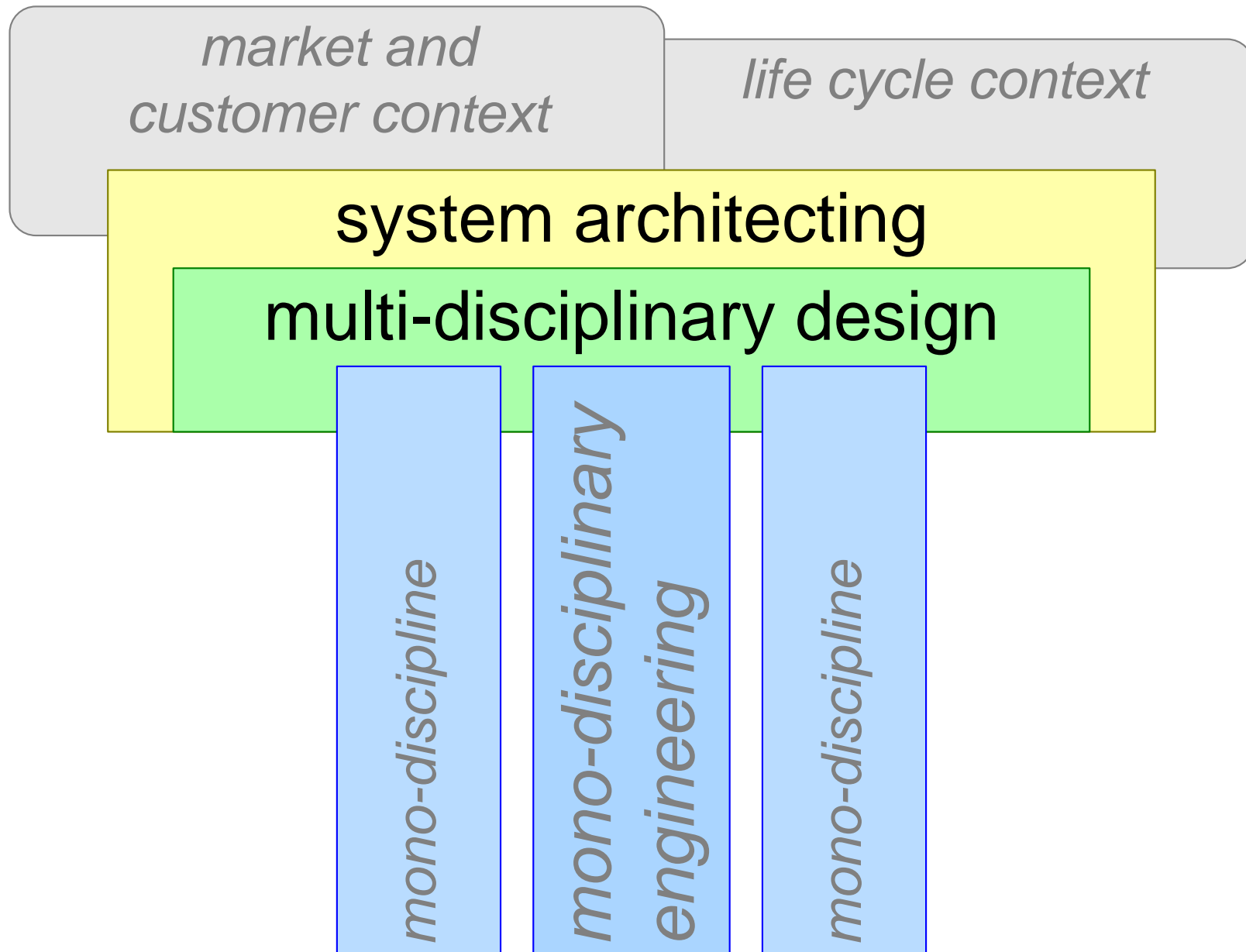
Today's Industrial Trends



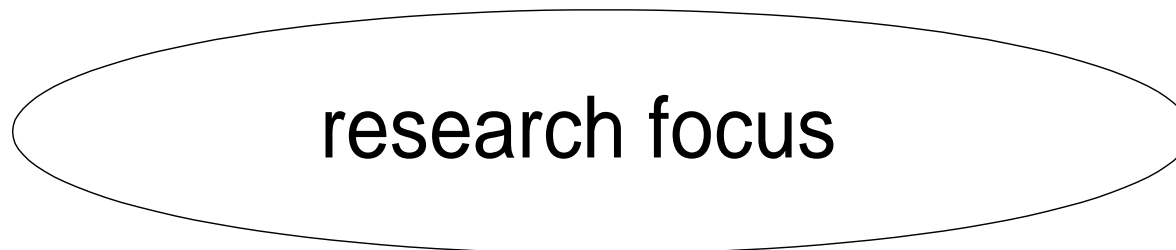
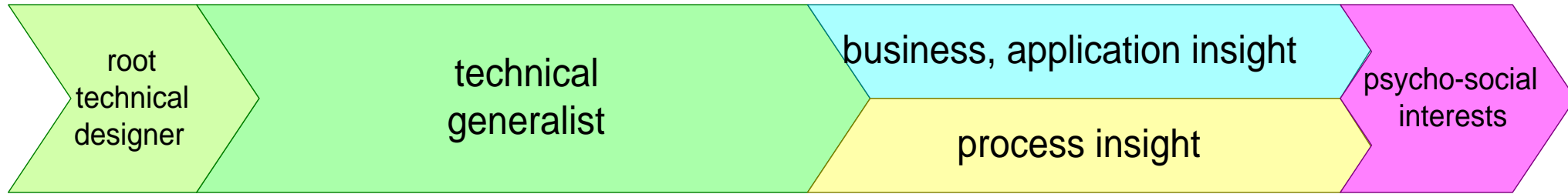
SE: address the gap between System and Realization



SysEng = SysArch + Multi-Disciplinary design

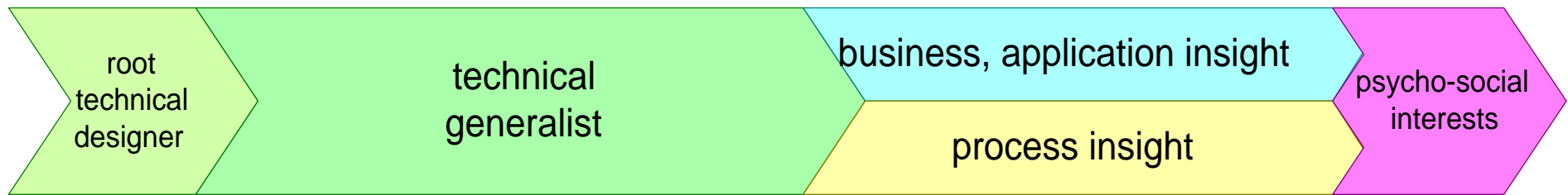


Focus of Buskerud SE program



how much "depth" technical research and education do we want to offer;
How do we want to position *embedded* and *mechanical* engineering?

Educational Focus



Buskerud, ESI course offerings

third party offerings for technical electives

third party offerings for leadership electives

Stevens course offerings

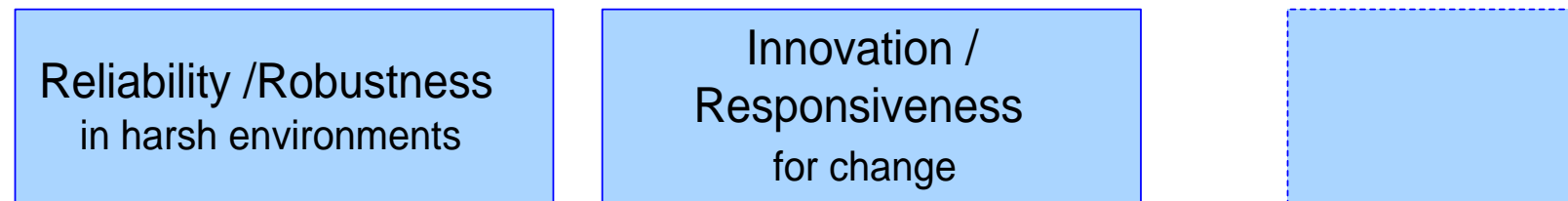
Buskerud technical course offerings (embedded, mechanical engineering)

Preliminary Buskerud Research Agenda

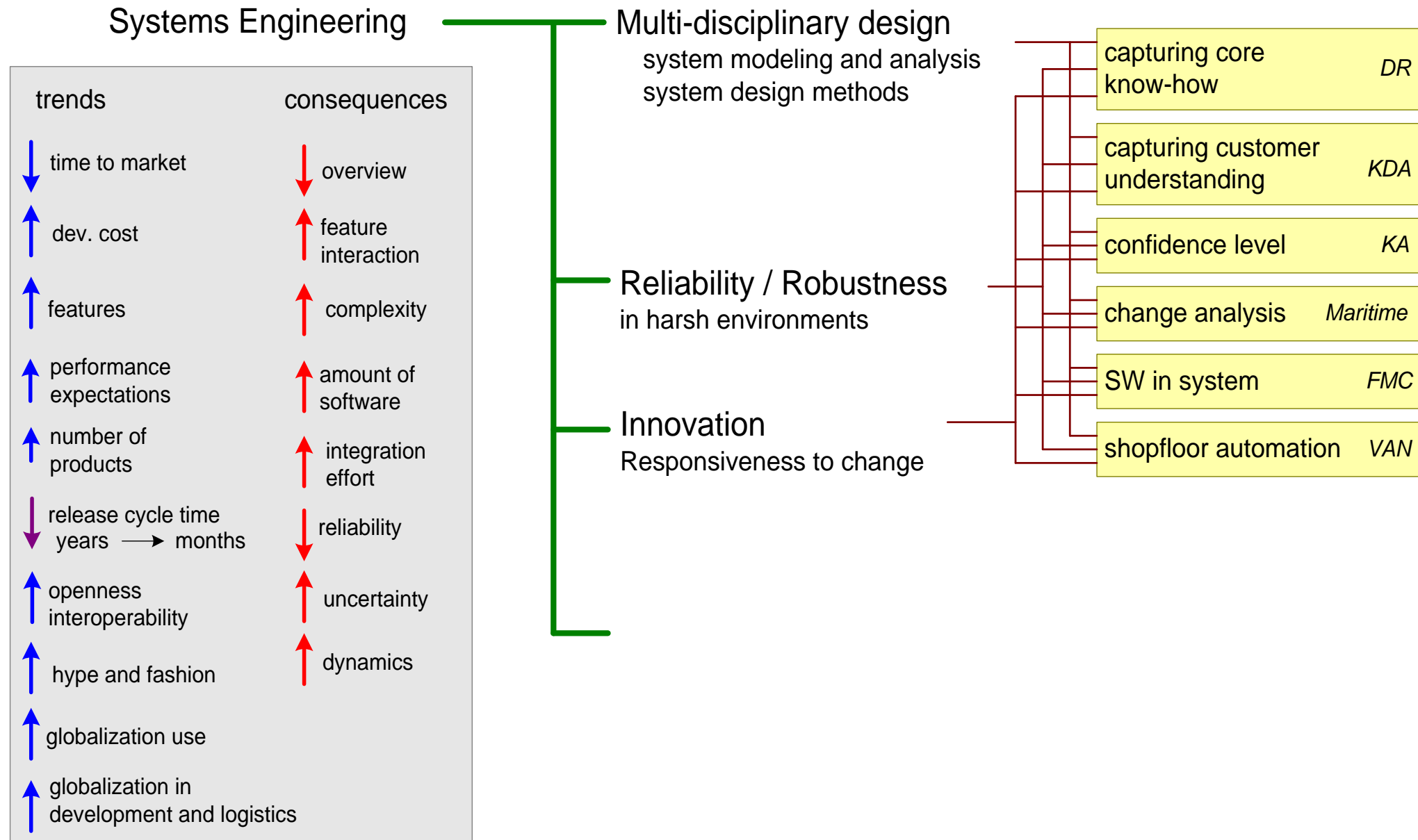
intended
dissemination
and research
partners



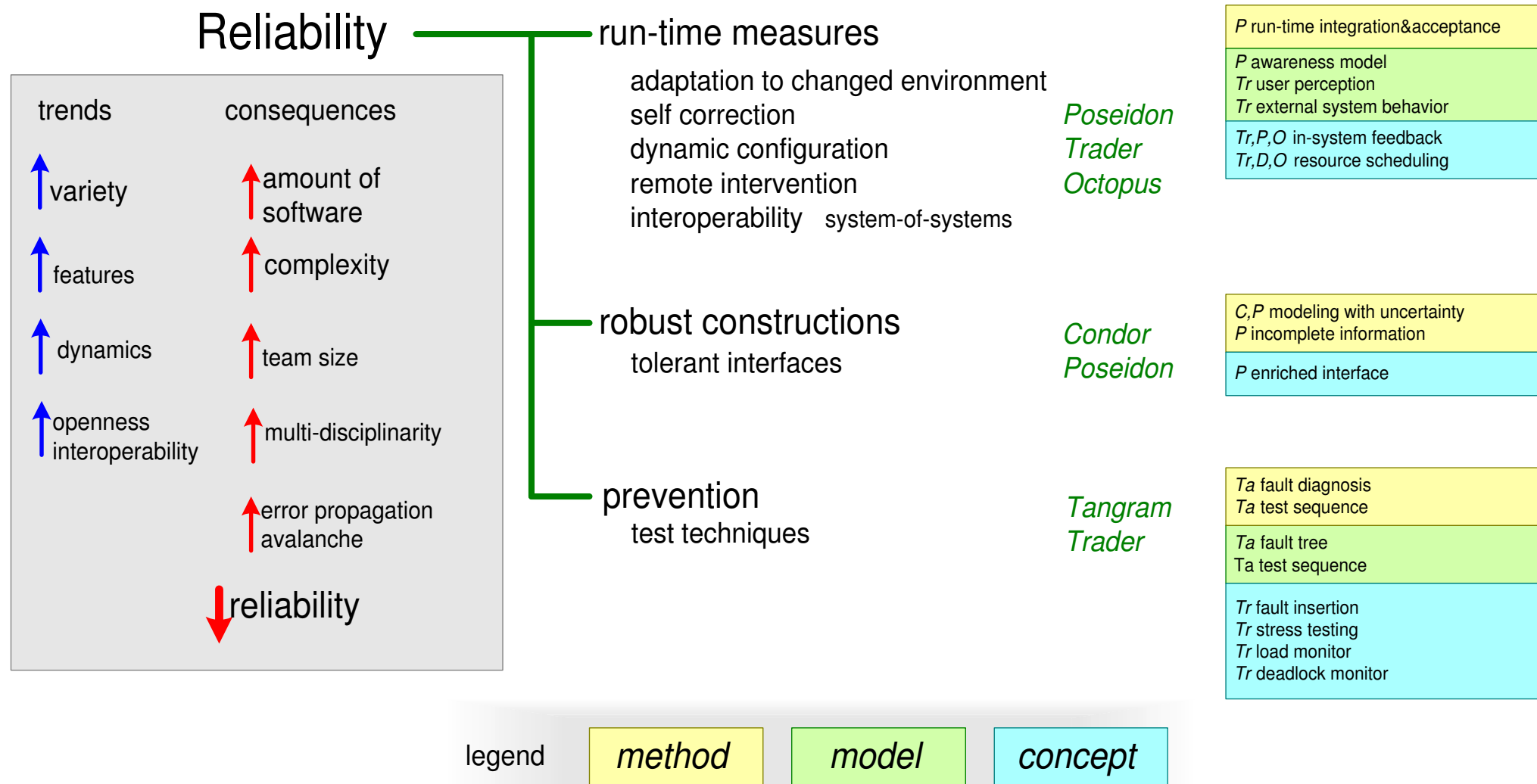
multi-domain
research and
expertise



Buskerud research agenda as graph

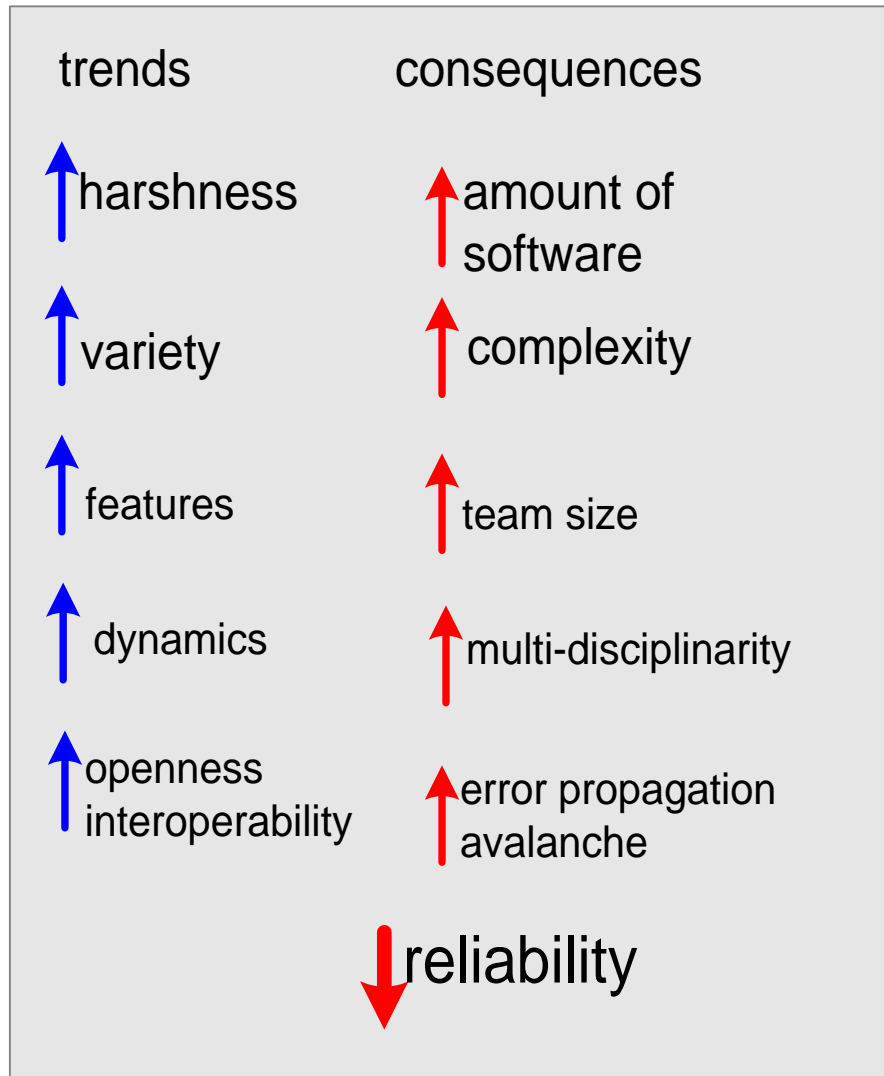


Example of ESI research agenda



Reliability / Robustness

in harsh environments



potential research subjects

state of practice:

methods, techniques

patterns

life time testing:

shorten duration

confidence level

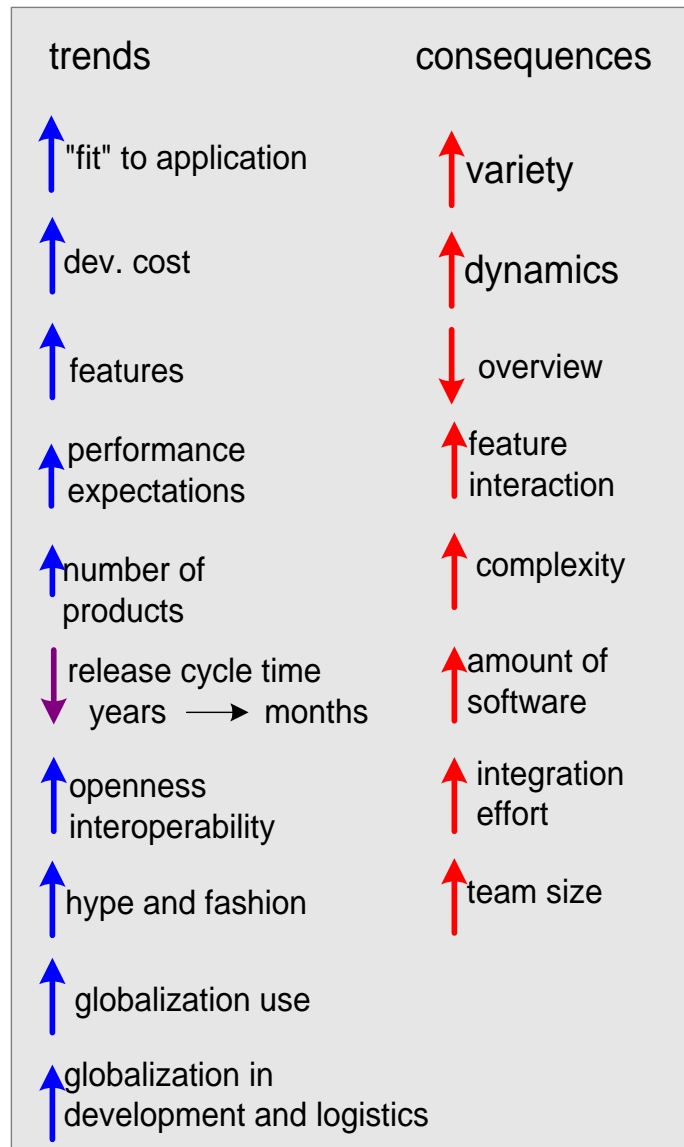
analysis methods:

degree of formality

software and firmware in relation to system

Buskerud Innovation / Responsiveness

Innovation / responsiveness to change



potential research subjects

state of practice:

methods, techniques

patterns

roadmapping:

how much to anticipate

reusable assets:

how to create and use reusable assets in projects

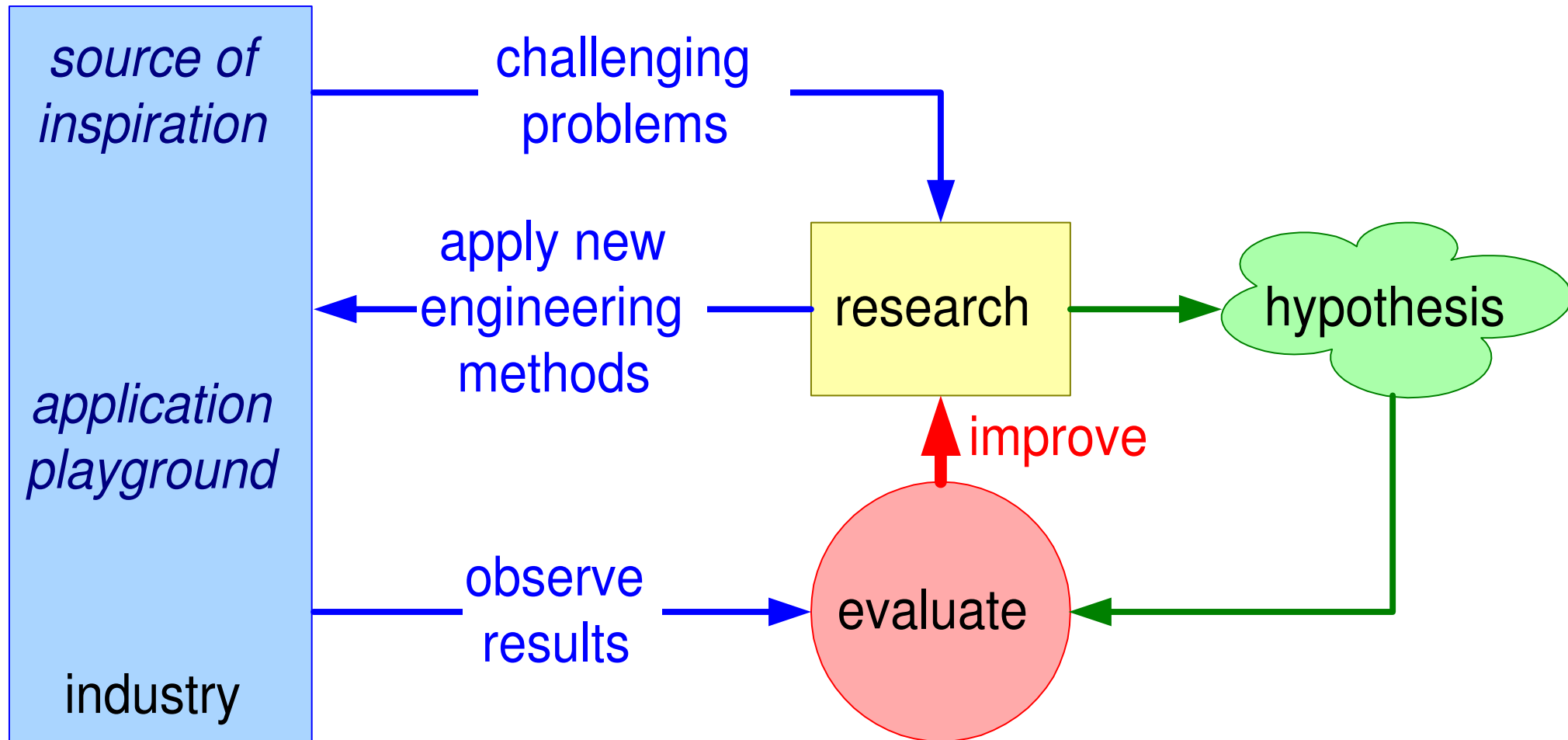
impact on duration, cost of solution, and cost of development

how much to generalize assets

tenders, bidding:

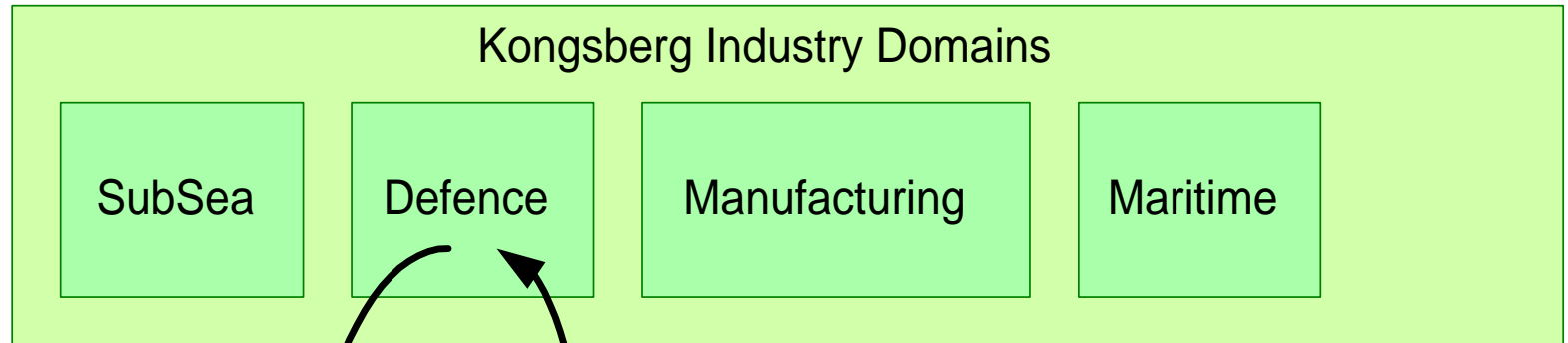
how to improve quality and predictability

Industry as Laboratory



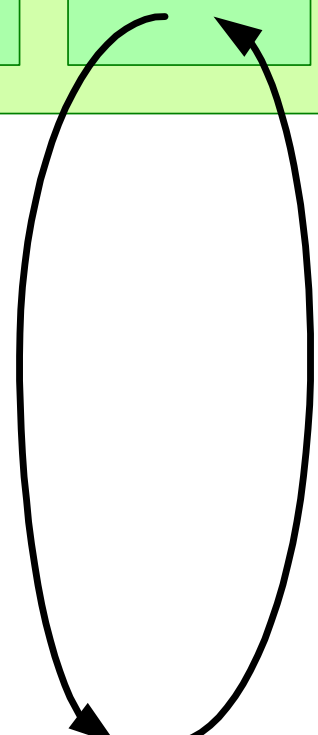
Industry as Laboratory (2)

intended
dissemination
and research
partners

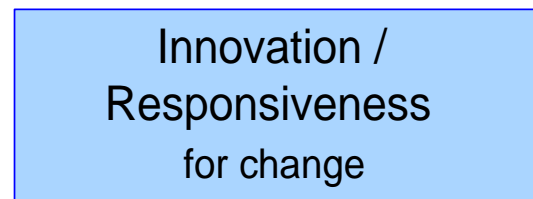
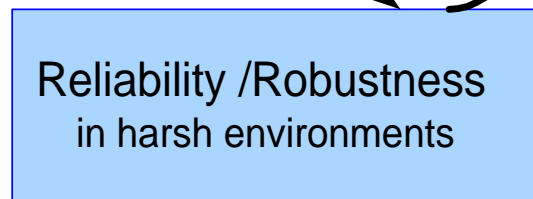


generalization and
consolidation to
facilitate use in
other domains

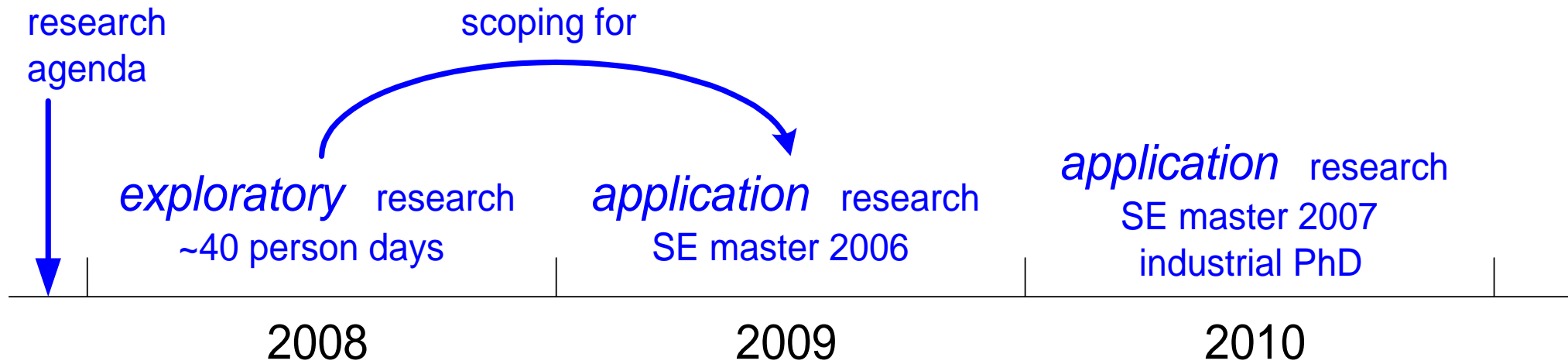
single domain research
focus on industrial problem



multi-domain
research and
expertise



Master Plan Research



Buskerud SE Educational Options

