

# Evolvable Product Families; What and Why?

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## Abstract

Product lines or product families are used to serve a broad market with a limited development investment. In theory this is easily said, in practice managing product lines effectively turns out to be significant challenge. In this paper we clarify when platform strategies towards product lines make sense. Crucial for success is scoping of product line and the shared assets.

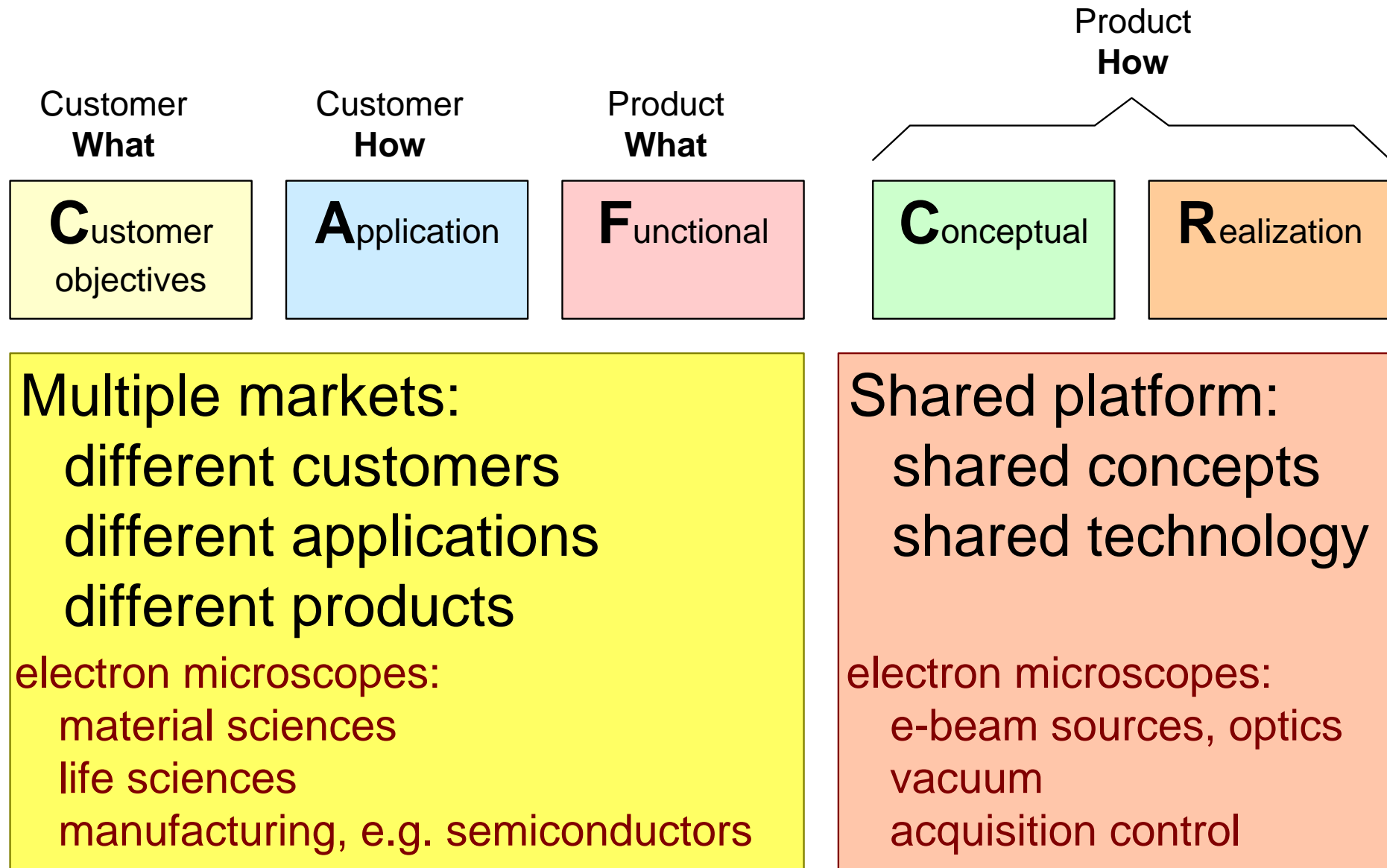
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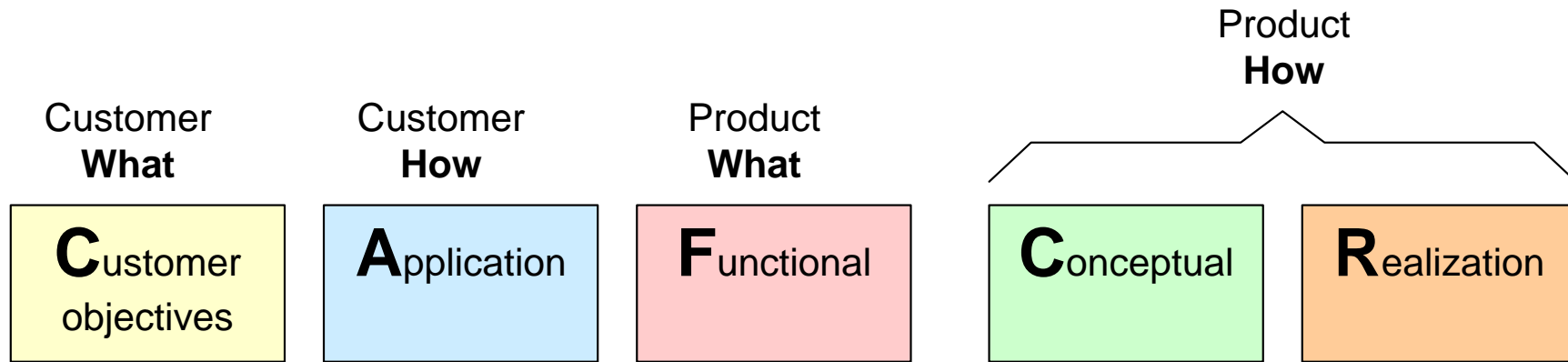
August 16, 2025  
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logo  
TBD

# Multiple Markets



# Complementing Systems for Same Market



**Single market:**  
different stakeholders  
different applications  
interoperable products

health care, e.g. cardiology:  
analysis  
diagnosis  
treatment  
administration

**Shared components:**  
shared concepts  
shared technology

health care, e.g. cardiology:  
patient support  
patient information  
image information  
storage & communication  
user interface

# Scope Analysis

## *market segmentation*

Customer  
**What**

Customer  
**How**

Product  
**What**

**C**ustomer  
objectives

**A**pplication

**F**unctional

market taxonomy  
customer classification  
stakeholder classification  
inventarization applications  
inventarization  
functions  
features  
performance

## *synergy analysis*

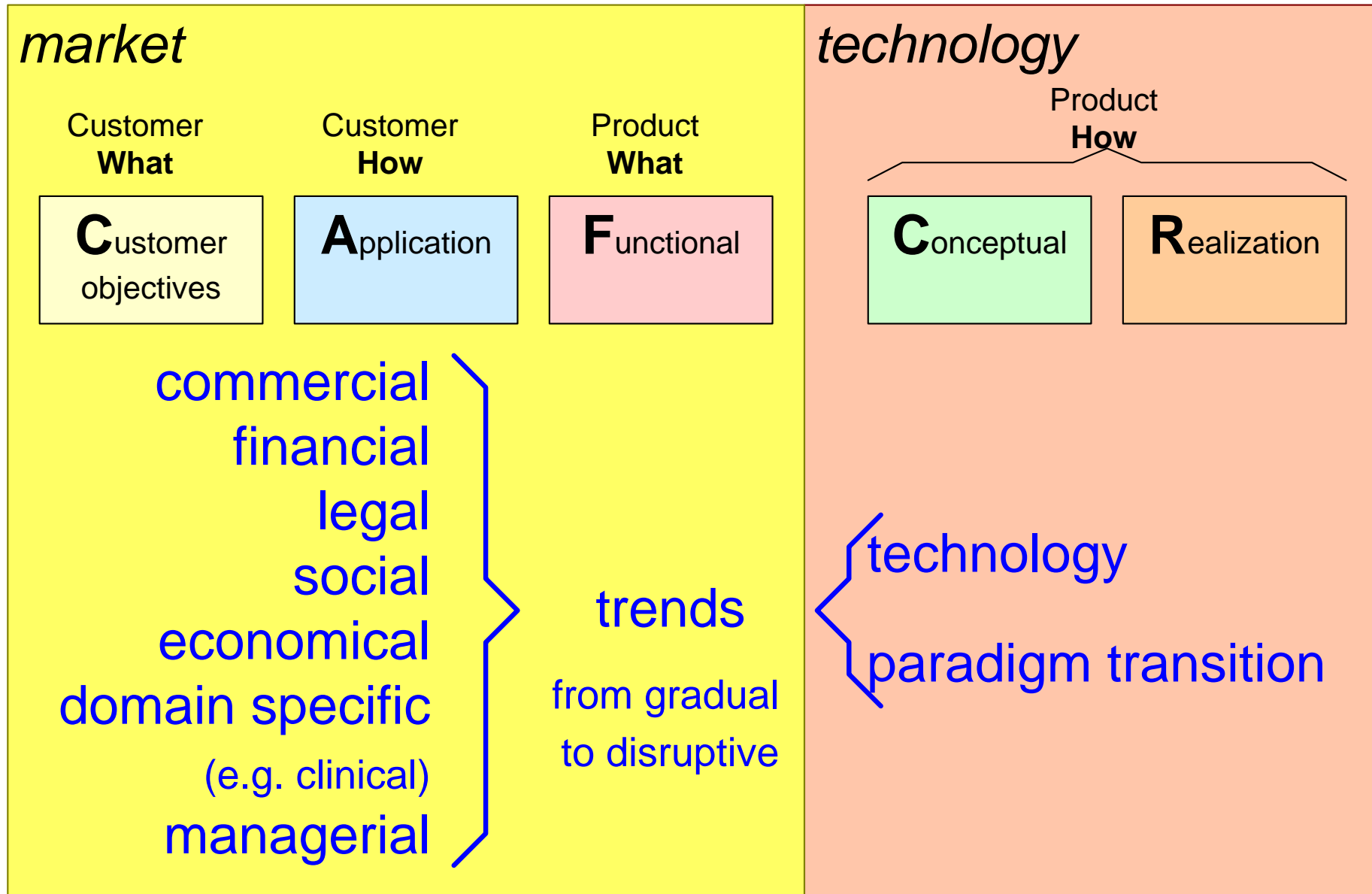
Product  
**How**

**C**onceptual

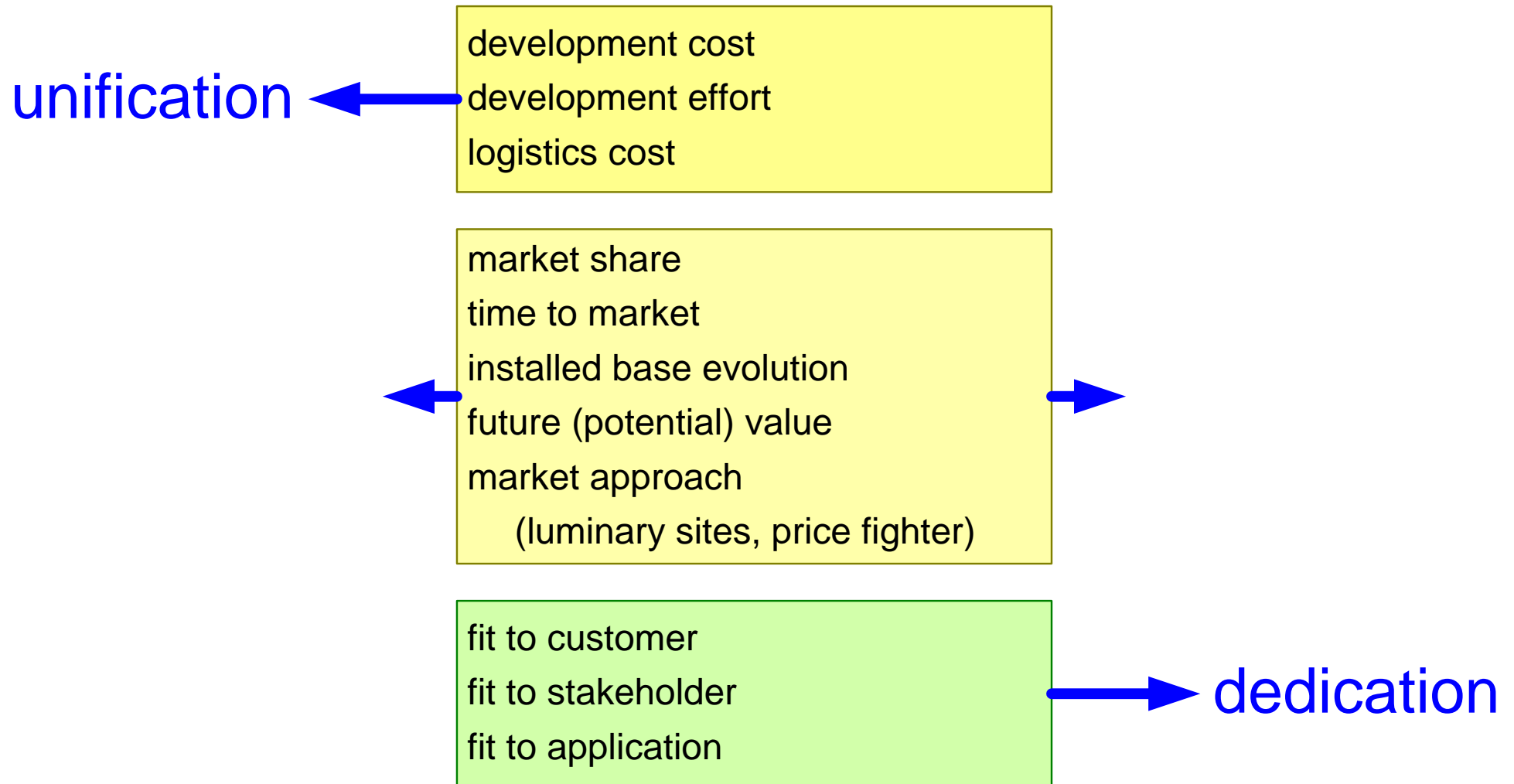
**R**ealization

shared functionality  
analyse characteristics  
analyse differentiators  
functionality  
characteristics

# Roadmapping: Impact of Future



# Criteria and Forces for Synergy



# Possible Levels of Sharing

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## *intangible assets*

vision, objectives

specifications, interfaces

designs, concepts

processes

## *tangible assets*

realized components

integrated (sub)systems

test suites

tools

infrastructure

*Not everything that can be shared should be shared!*

# Reuse is needed ... as part of the solution

## trends



features



performance expectations



number of products



release cycle time  
years → months



openness  
interoperability

## consequences



feature interaction



complexity



amount of software



integration effort



reliability

## solutions



new methods  
new tools



hardware performance



new software technology



new standards



reuse