Exploring Product Line Opportunities

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Abstract

Many companies struggle to benefit from similarities between products they sell. The challenge is to find these commonalities that can be shared between products, while the product value for different customers is not (too much) compromized.

We will discuss a method understand the playing field both in marketing and technology, and we discuss a process to quickly explore this playing field by workshops and fast iteration over views and considerations.

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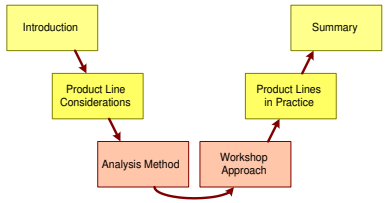
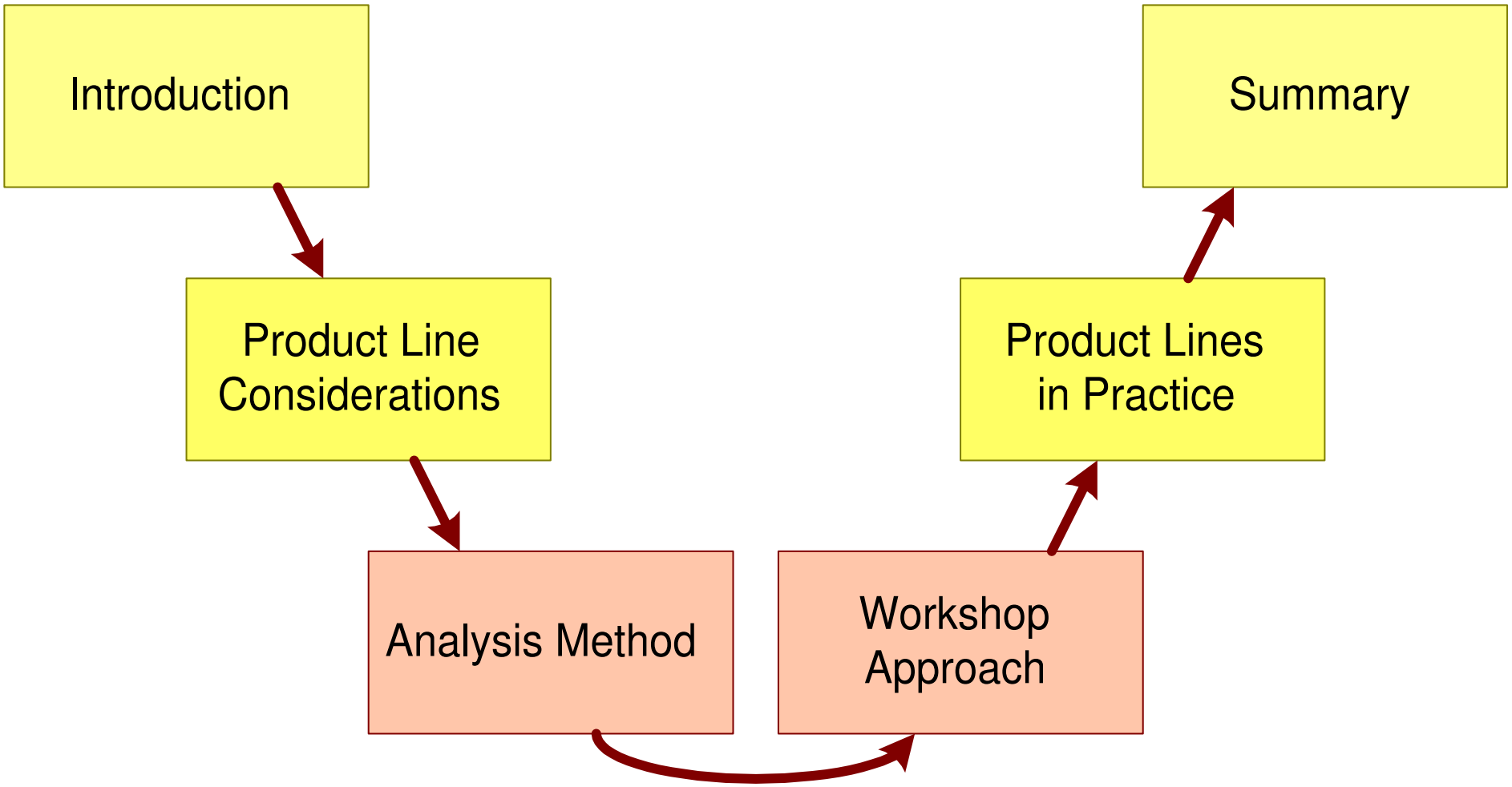
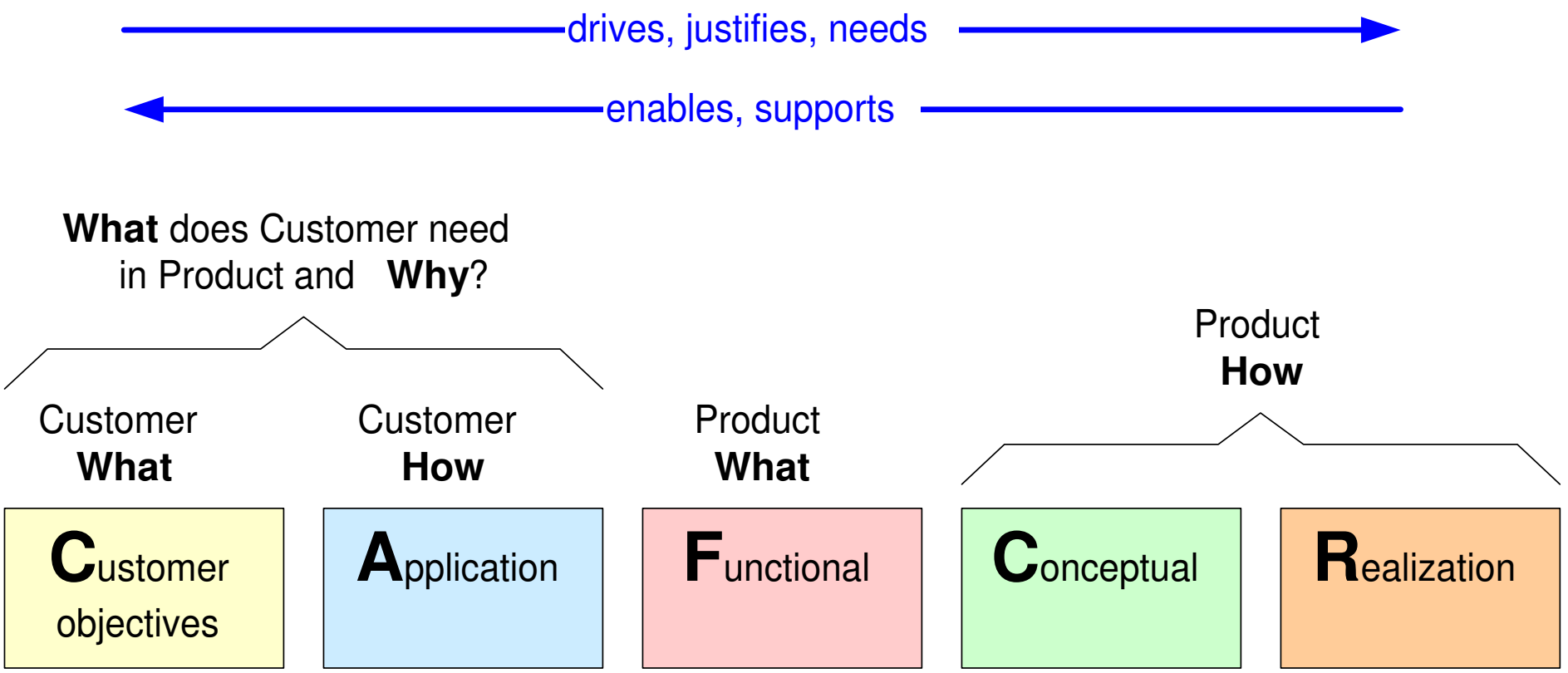


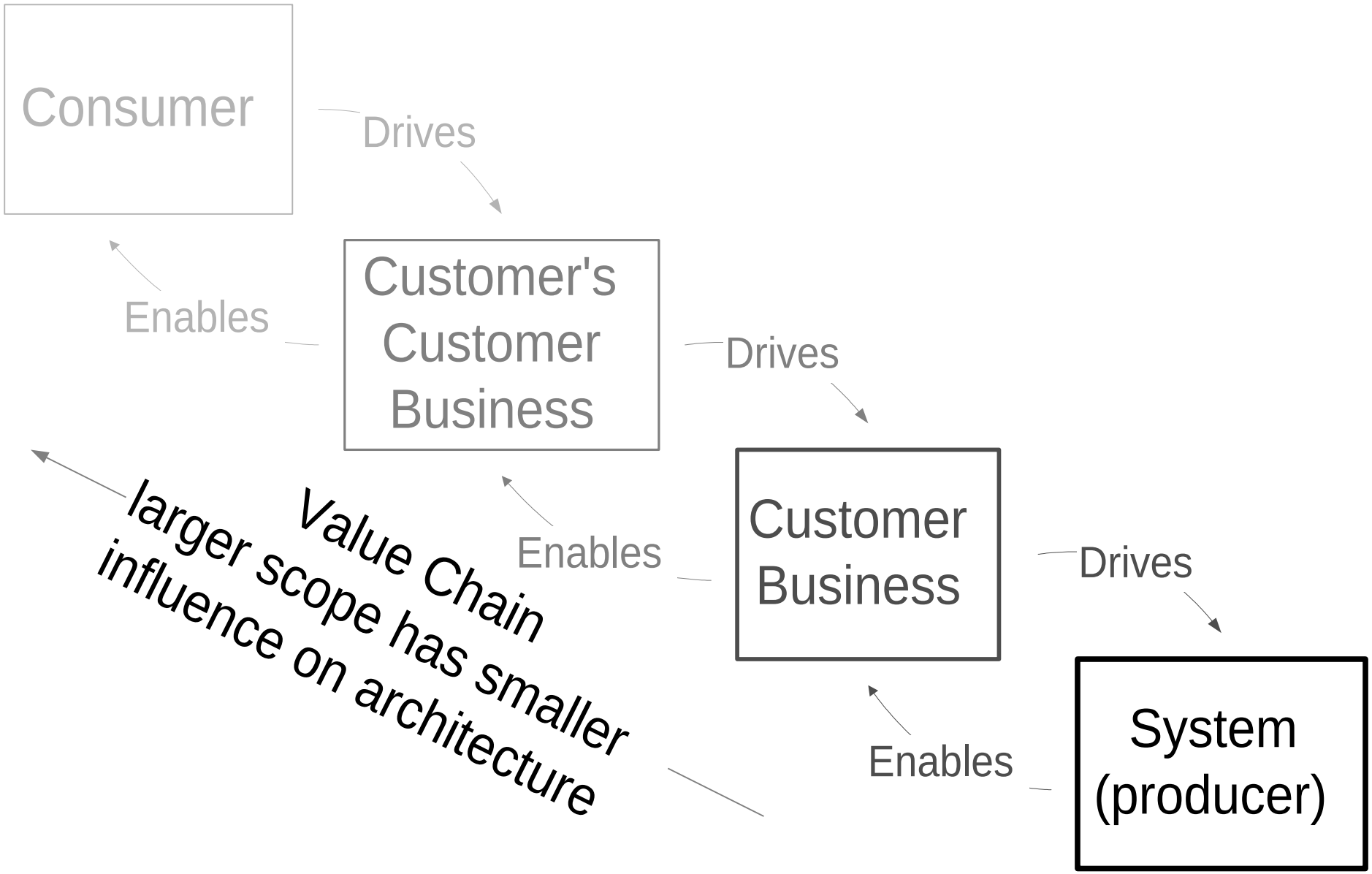
Figure Of Contents™



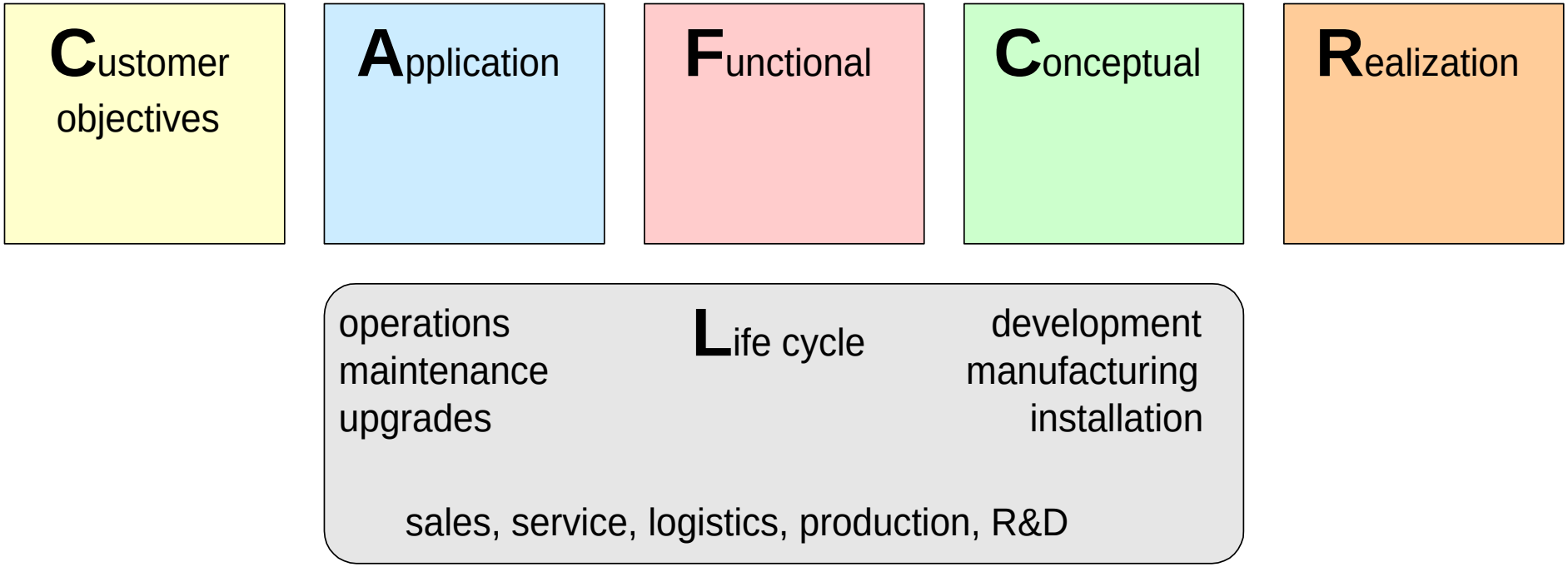
The “CAFCR” model



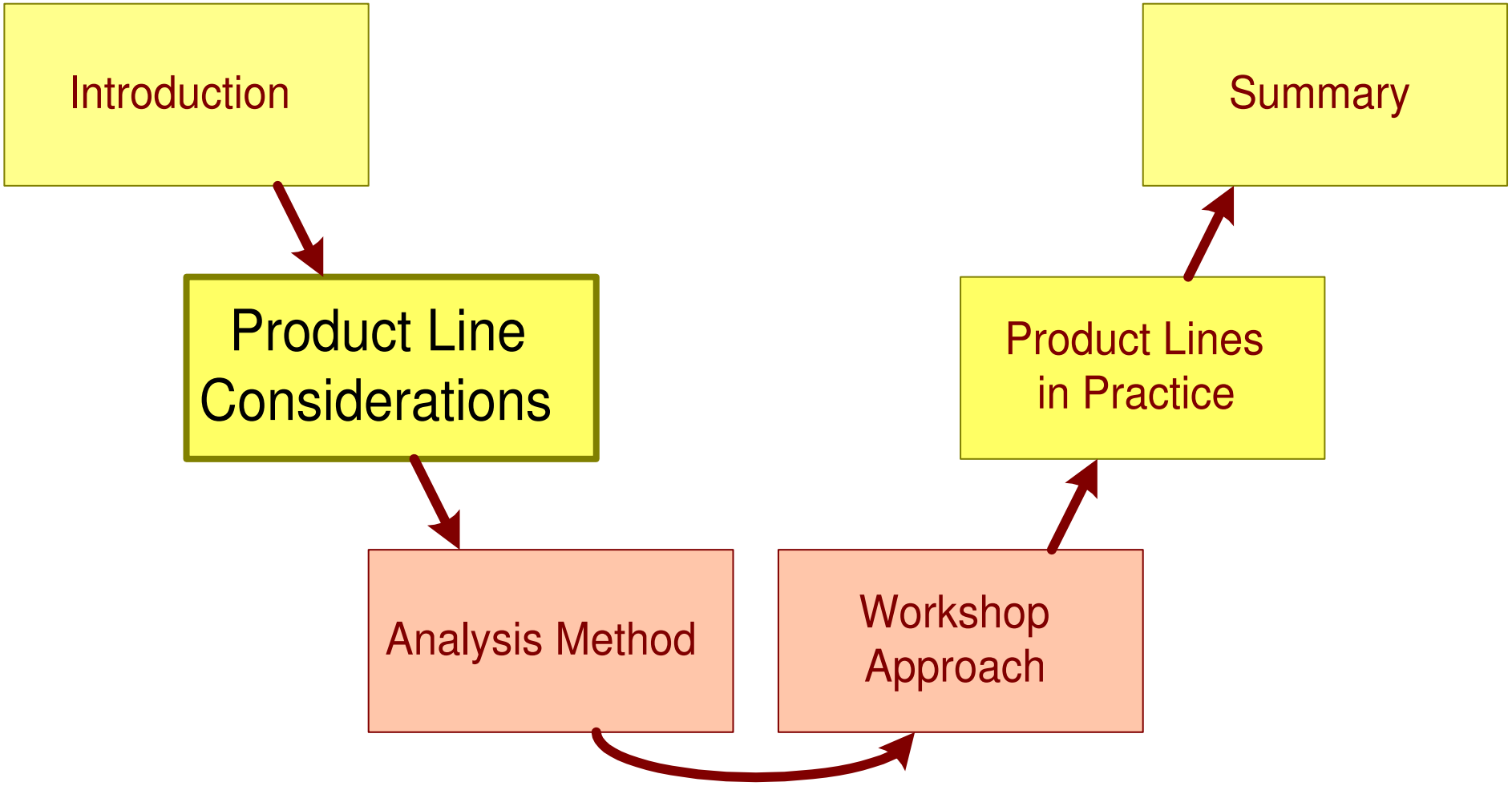
CAFCR can be applied recursively



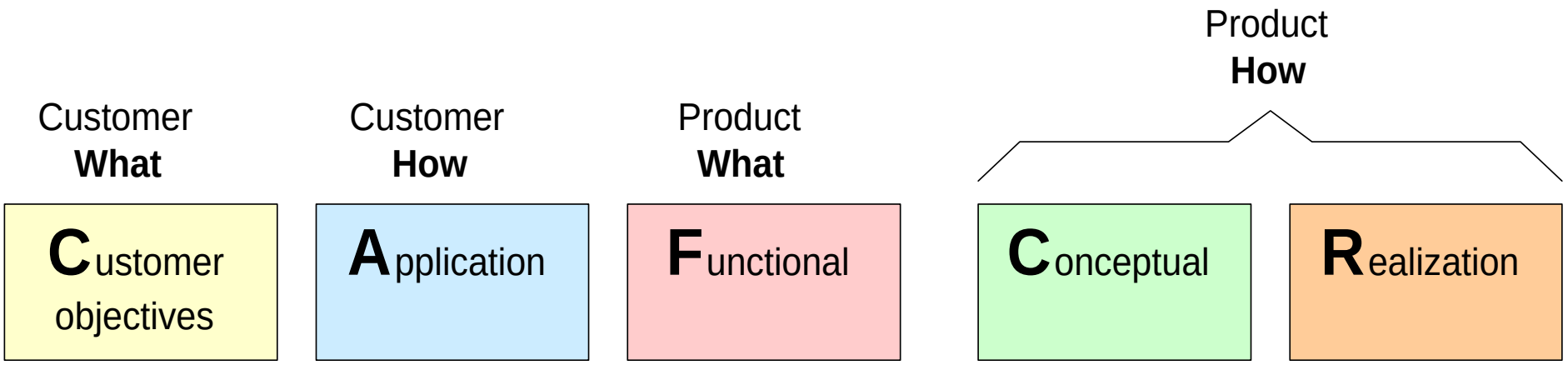
CAFCR+ model; Life Cycle View



Product Line Considerations



Multiple Markets



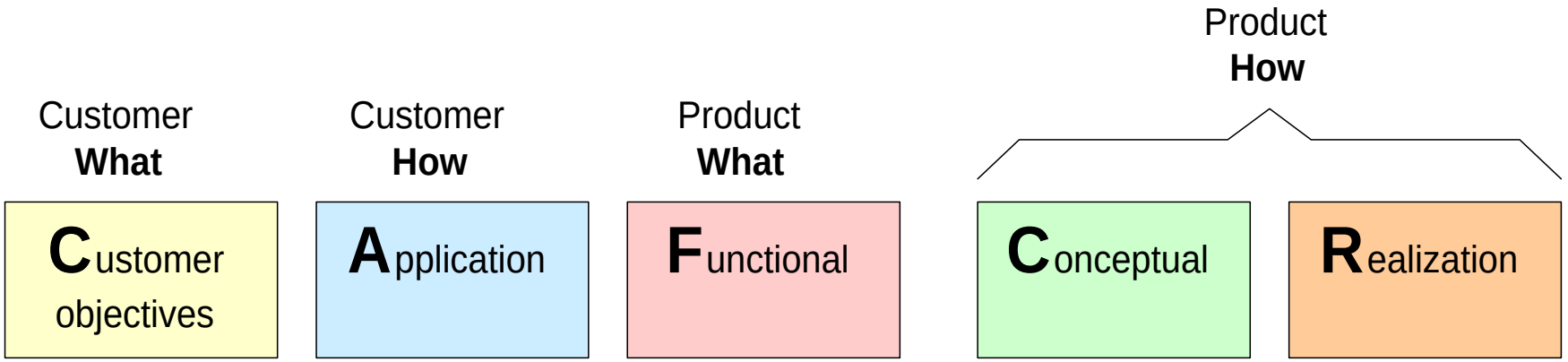
Multiple markets:
- different customers
- different applications
- different products

electron microscopes:
- material sciences
- life sciences
- manufacturing, e.g. semiconductors

Shared platform:
- shared concepts
- shared technology

electron microscopes:
- e-beam sources, optics
- vacuum
- acquisition control

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**
Customer objectives	**A**pplication	**F**unctional

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

synergy analysis

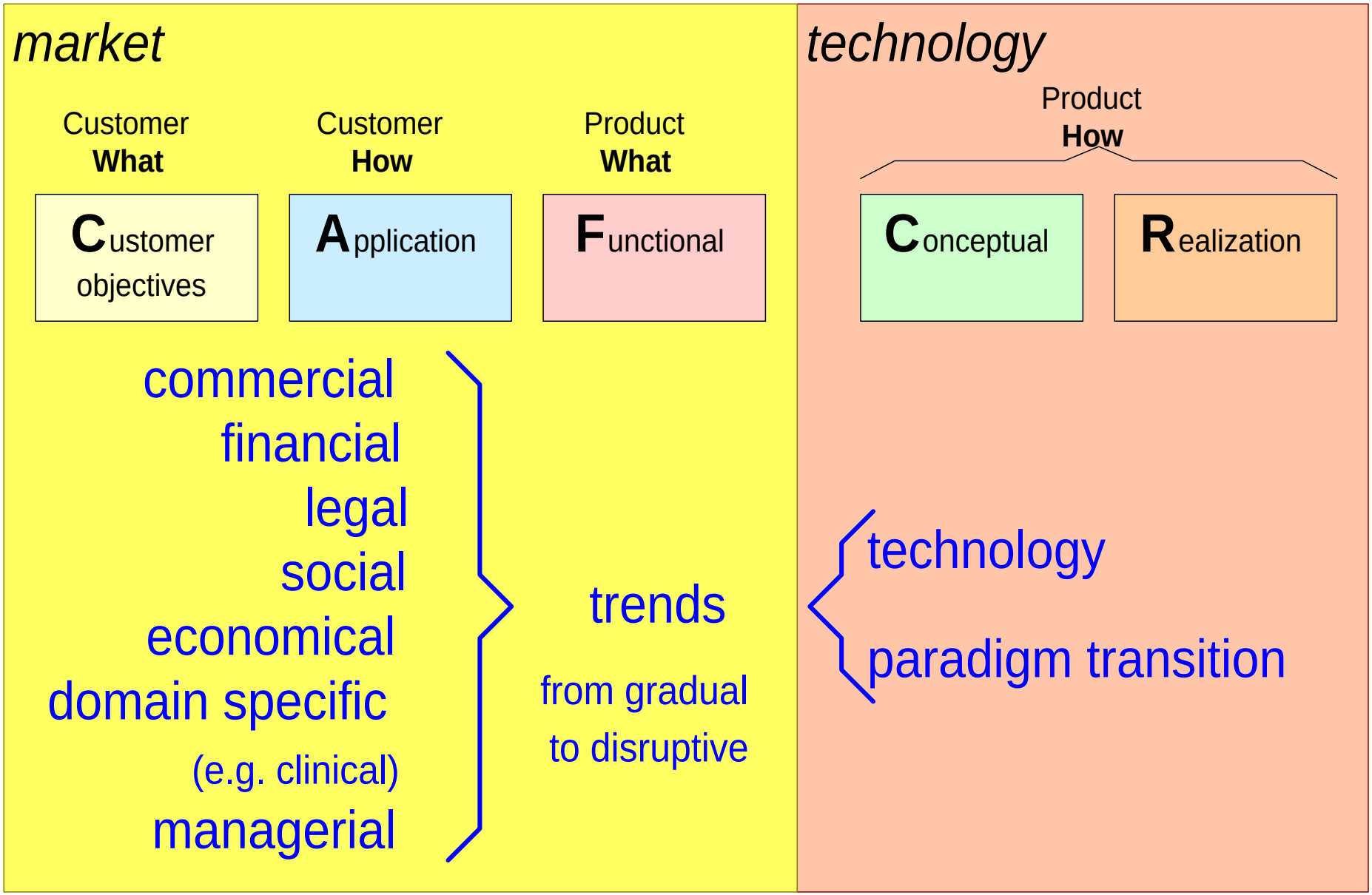
Product **How**

Conceptual	**R**ealization

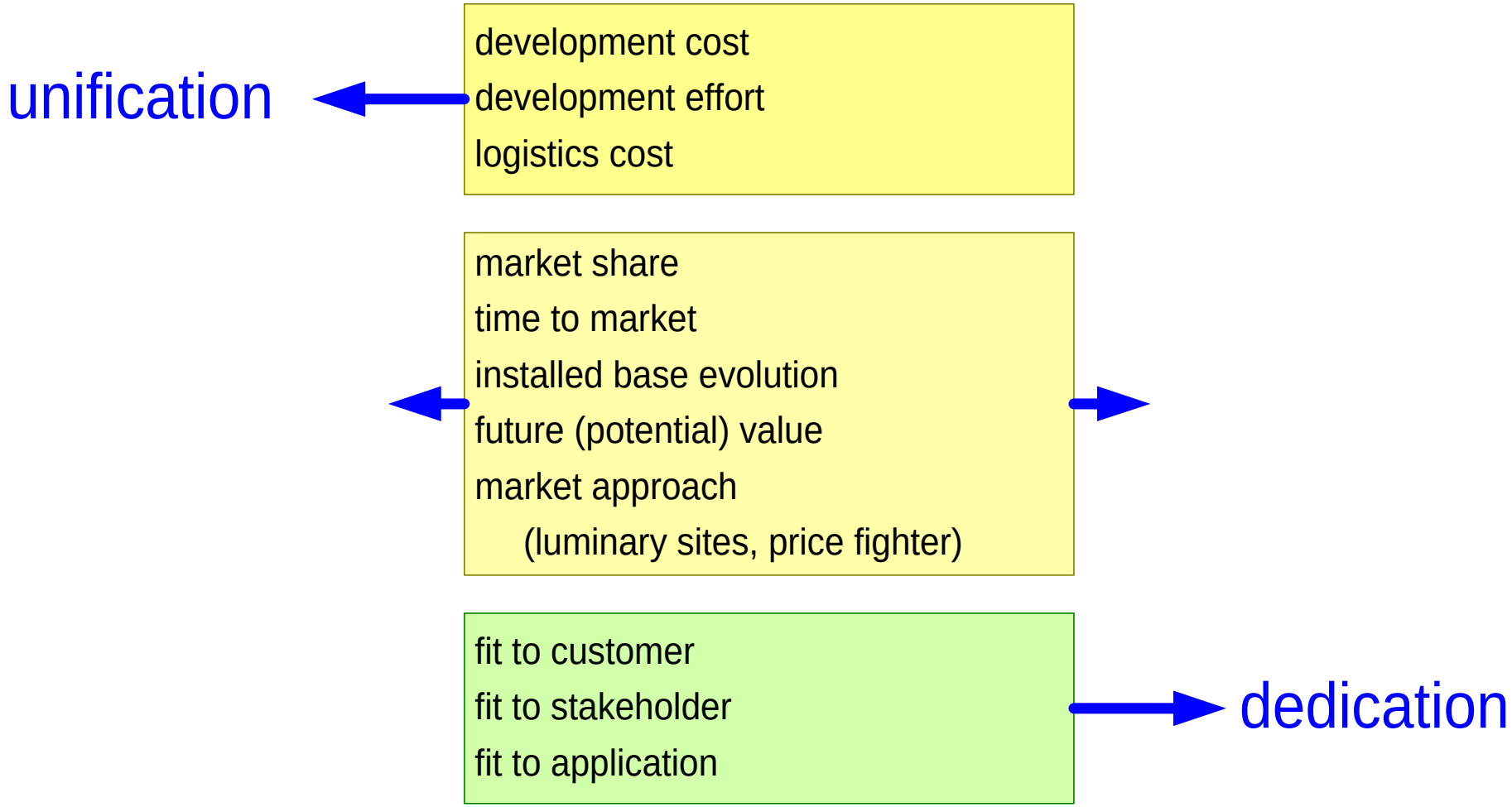
shared functionality
- analyse characteristics

analyse differentiators
- functionality
- characteristics

Roadmapping: Impact of Future



Criteria and Forces for Synergy



Possible Levels of Sharing

intangible assets

vision, objectives

specifications, interfaces

designs, concepts

processes

tangible assets

realized components

integrated (sub)systems

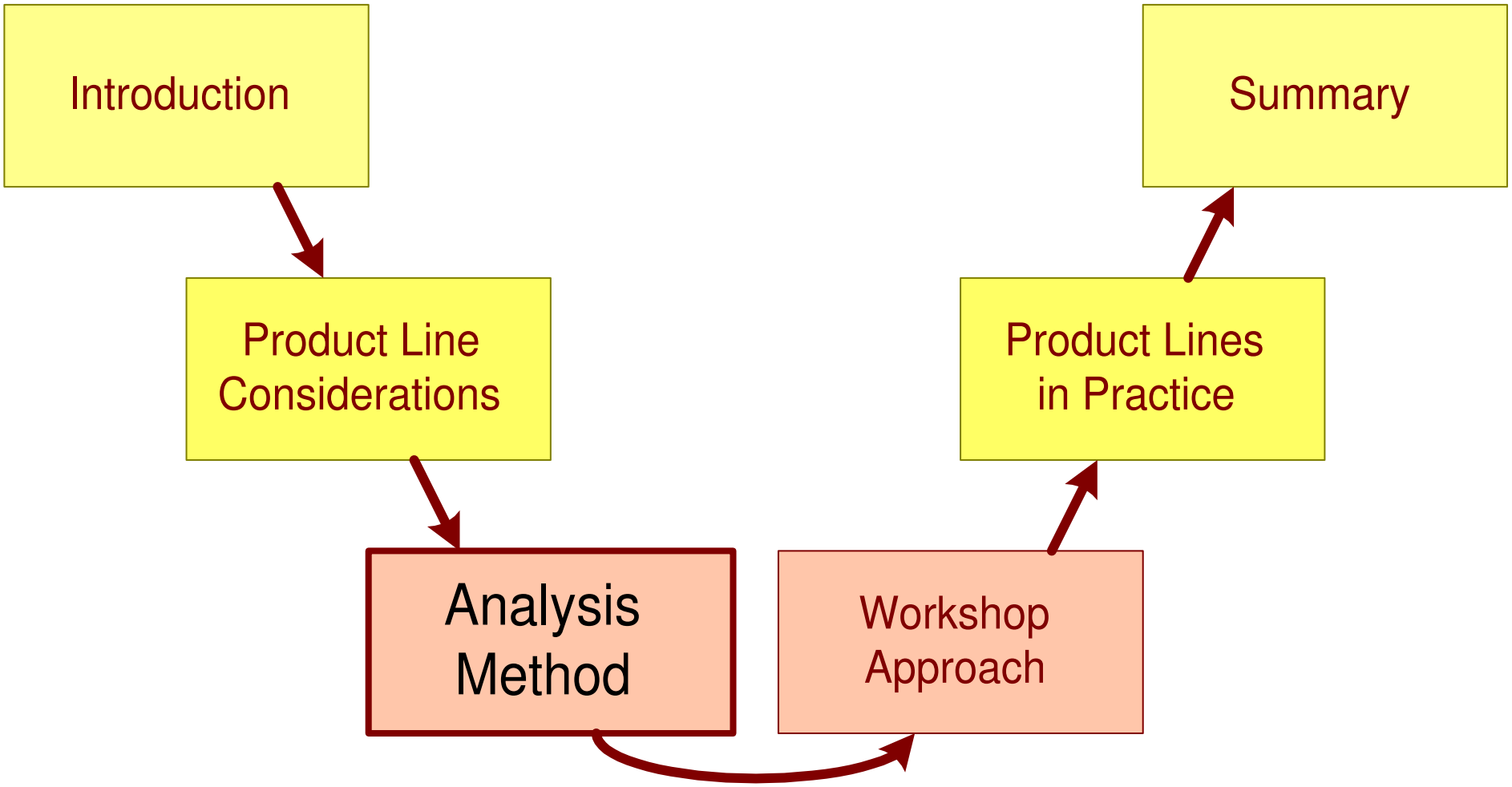
test suites

tools

infrastructure

Not everything that can be shared should be shared!

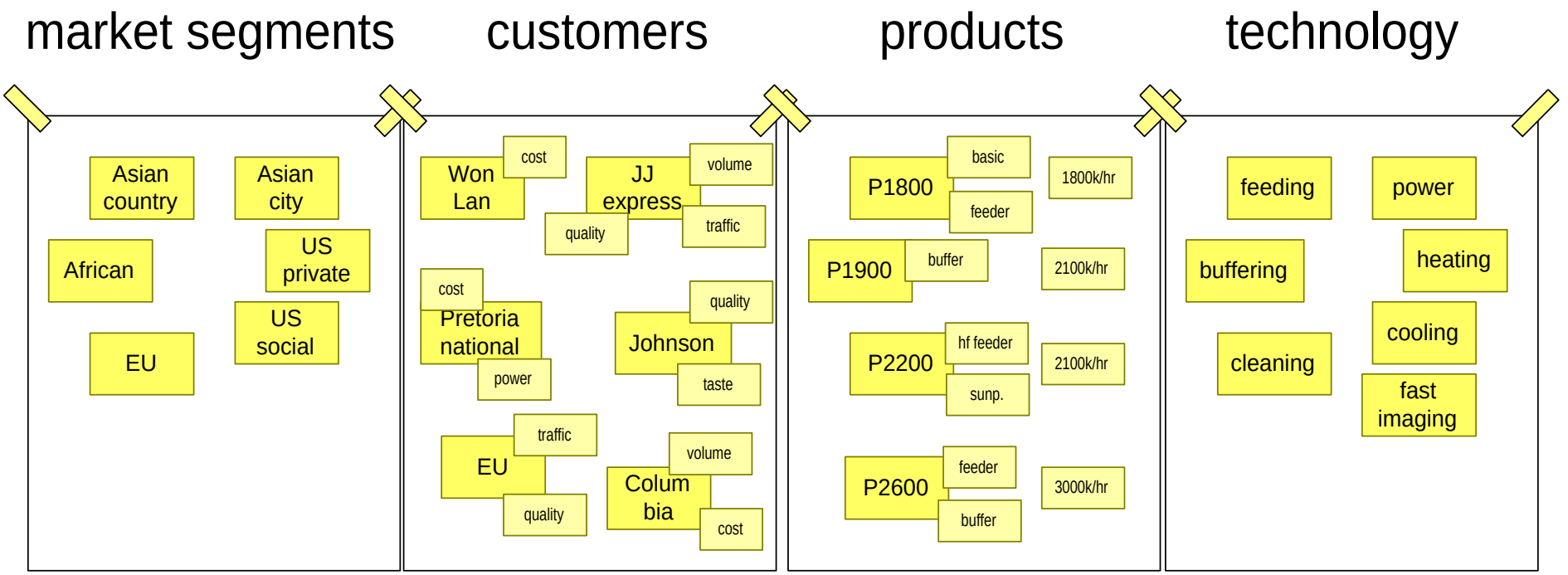
Analysis Method



Approach to Platform Business Analysis

explore markets, customers, products and technologies
share market and customer insights
identify product features and technology components
make maps: market segments - customer key drivers customer key drivers - features features - products products - components
discuss value, synergy, and (potential) conflicts
create long-term and short-term plan

Explore Markets, Customers, Products and Technologies



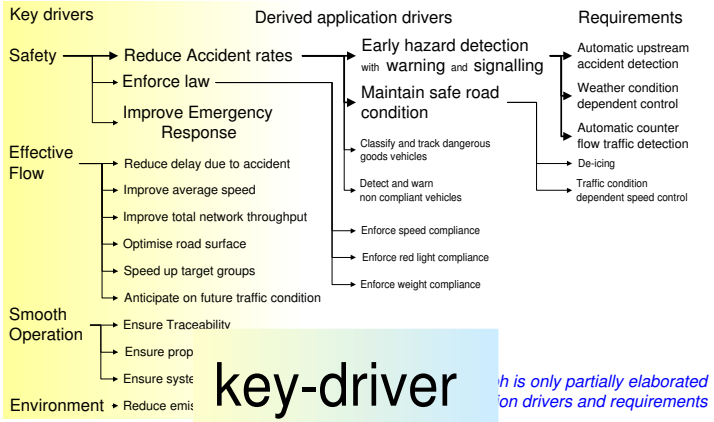
brain storm and discuss time-boxed

Study one Customer and Product

What does Customer need in Product and **Why**?

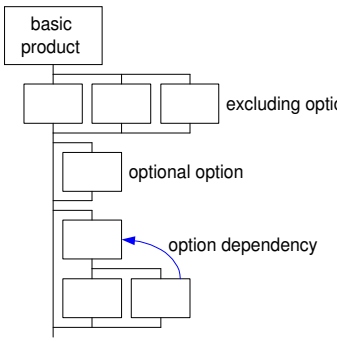
Product **How**

Customer **What**	Customer **How**	Product **What**	Product **How**	
Customer objectives	**A**pplication	**F**unctional	**C**onceptual	**R**ealization

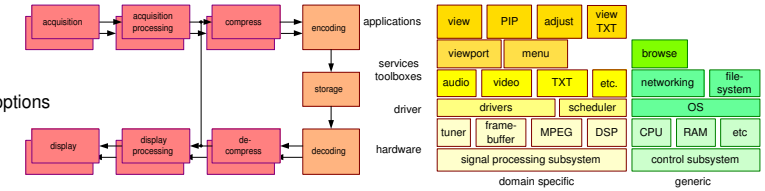


key-driver graph

h is only partially elaborated on drivers and requirements



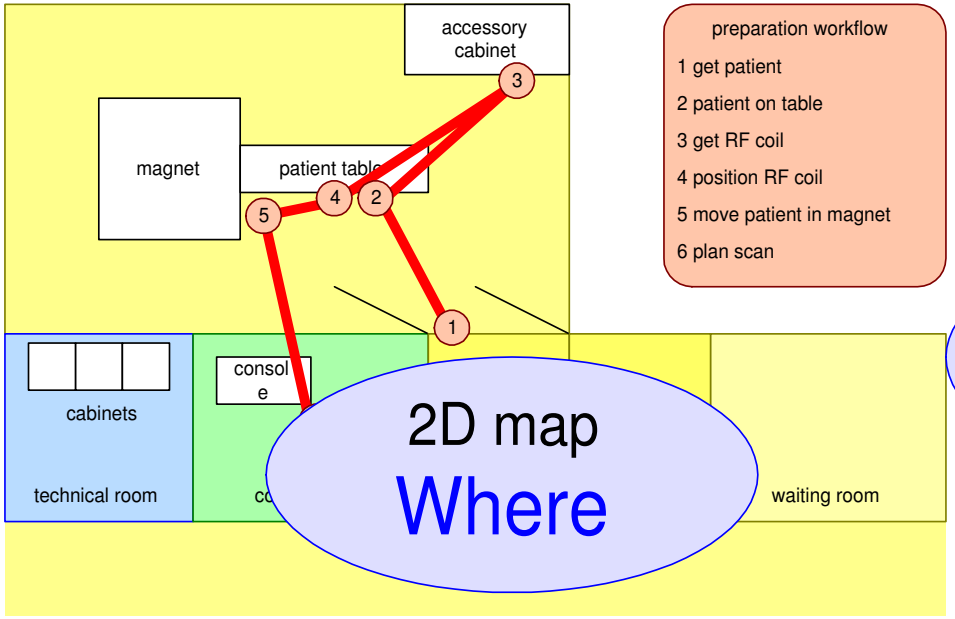
configuration



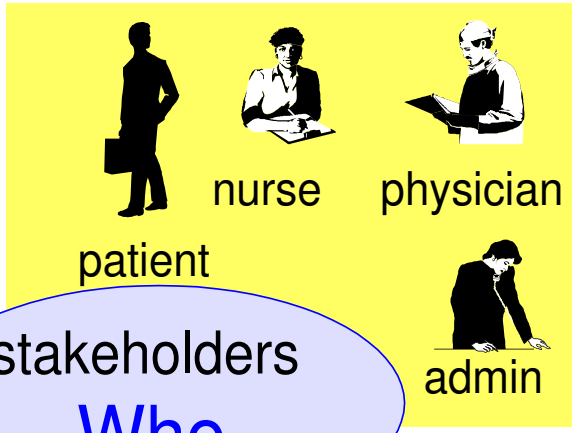
functional model

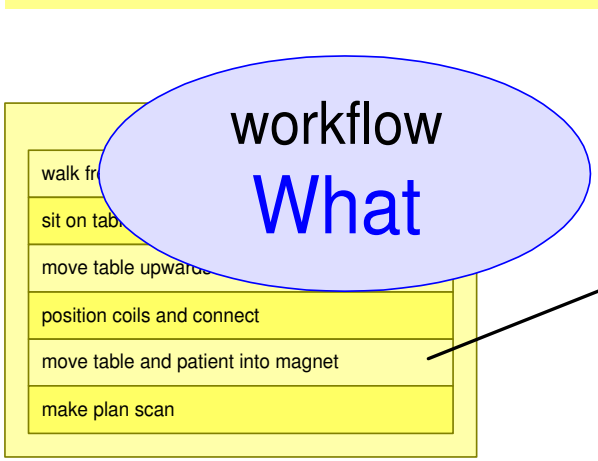
physical model

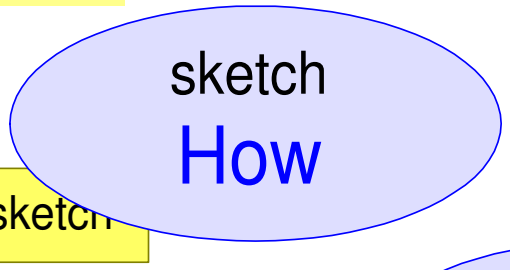
Work Flow Analysis for Different Customers/Applications

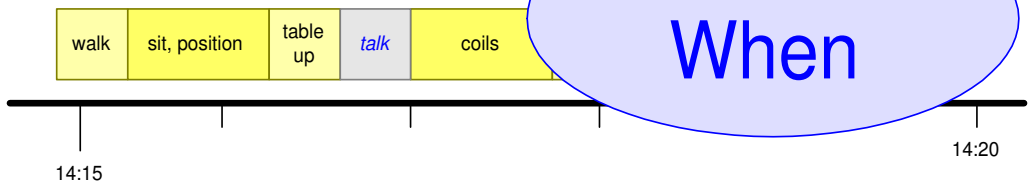


preparation workflow
1 get patient
2 patient on table
3 get RF coil
4 position RF coil
5 move patient in magnet
6 plan scan

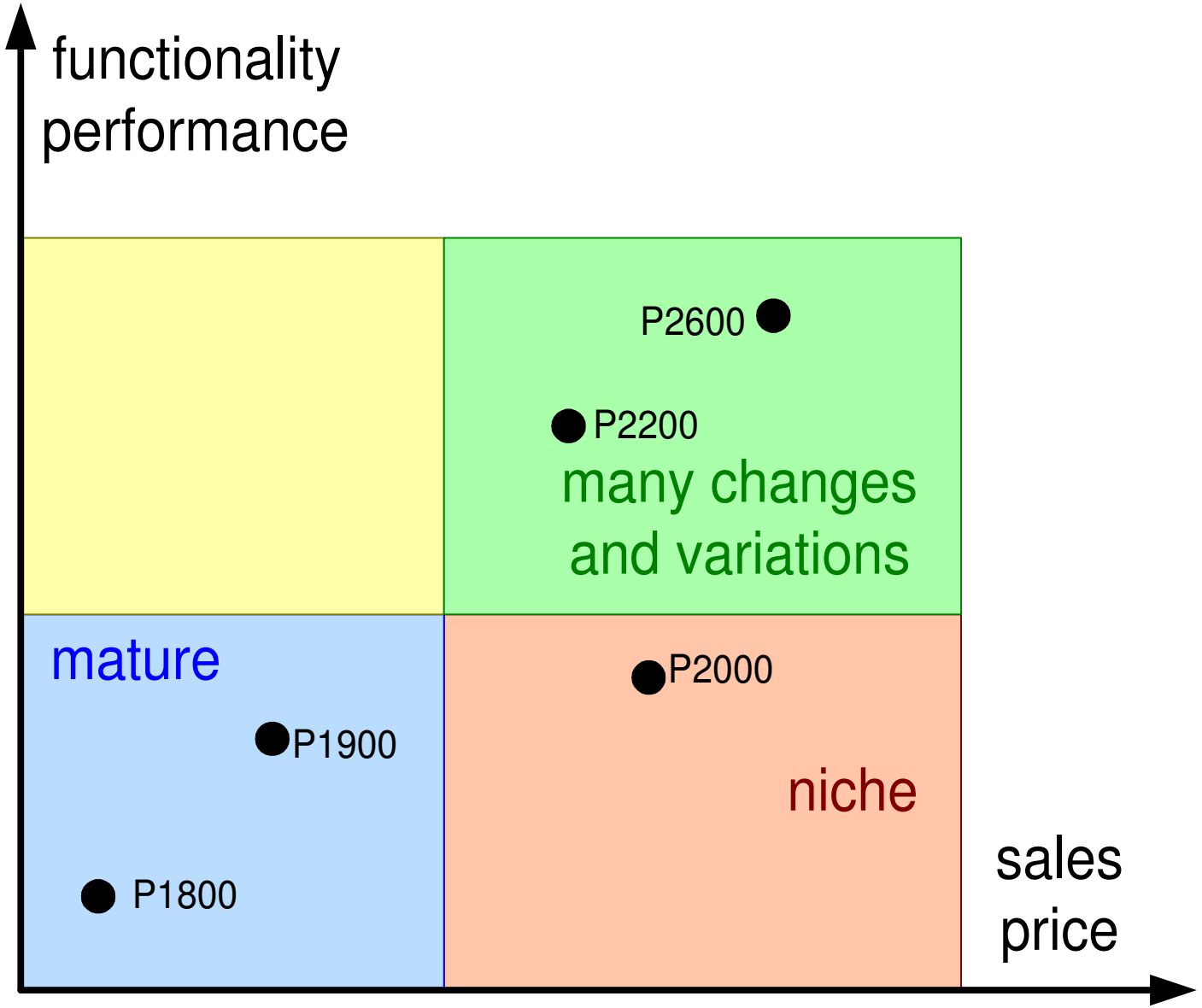




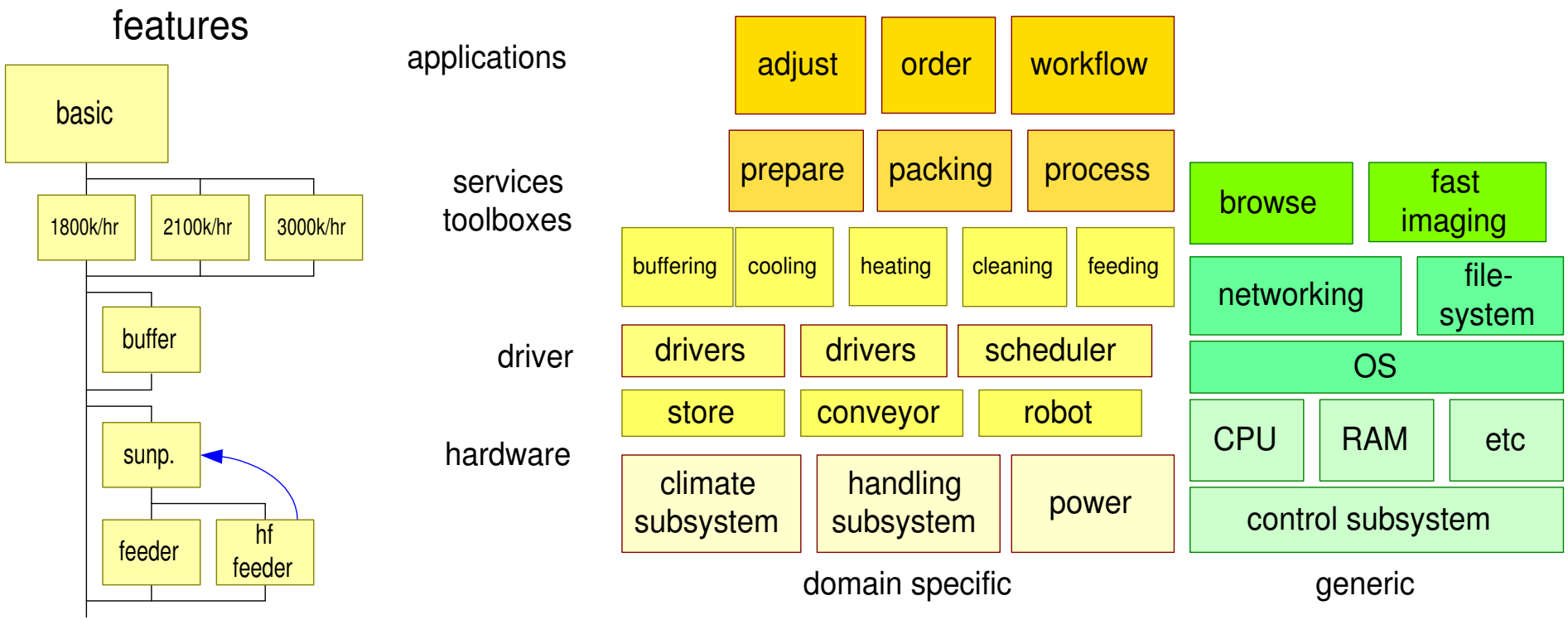




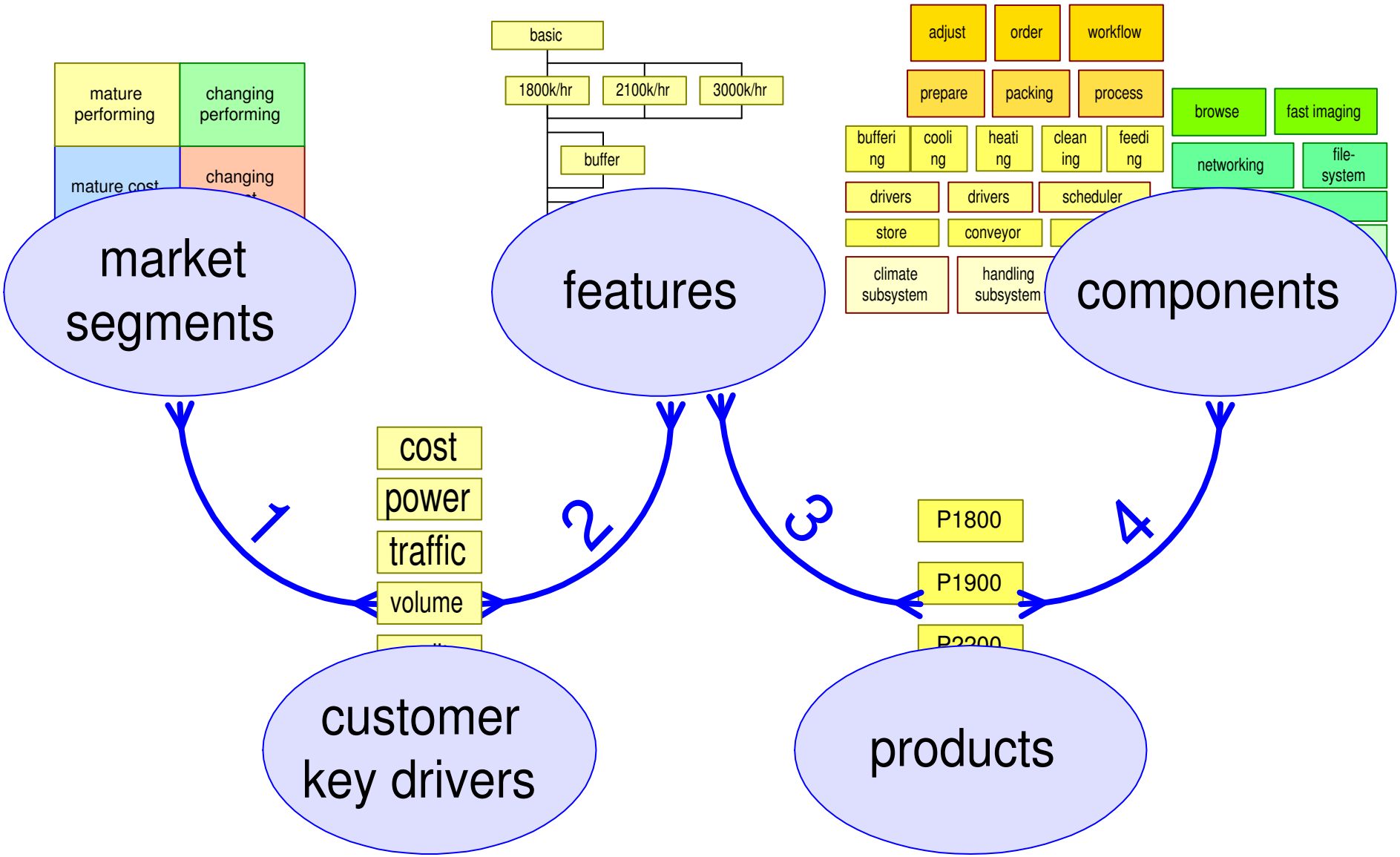
Make Map of Customers and Market Segments



Identify Product Features and Technology Components



Mapping From Markets to Components



Example Criteria for Determining Value

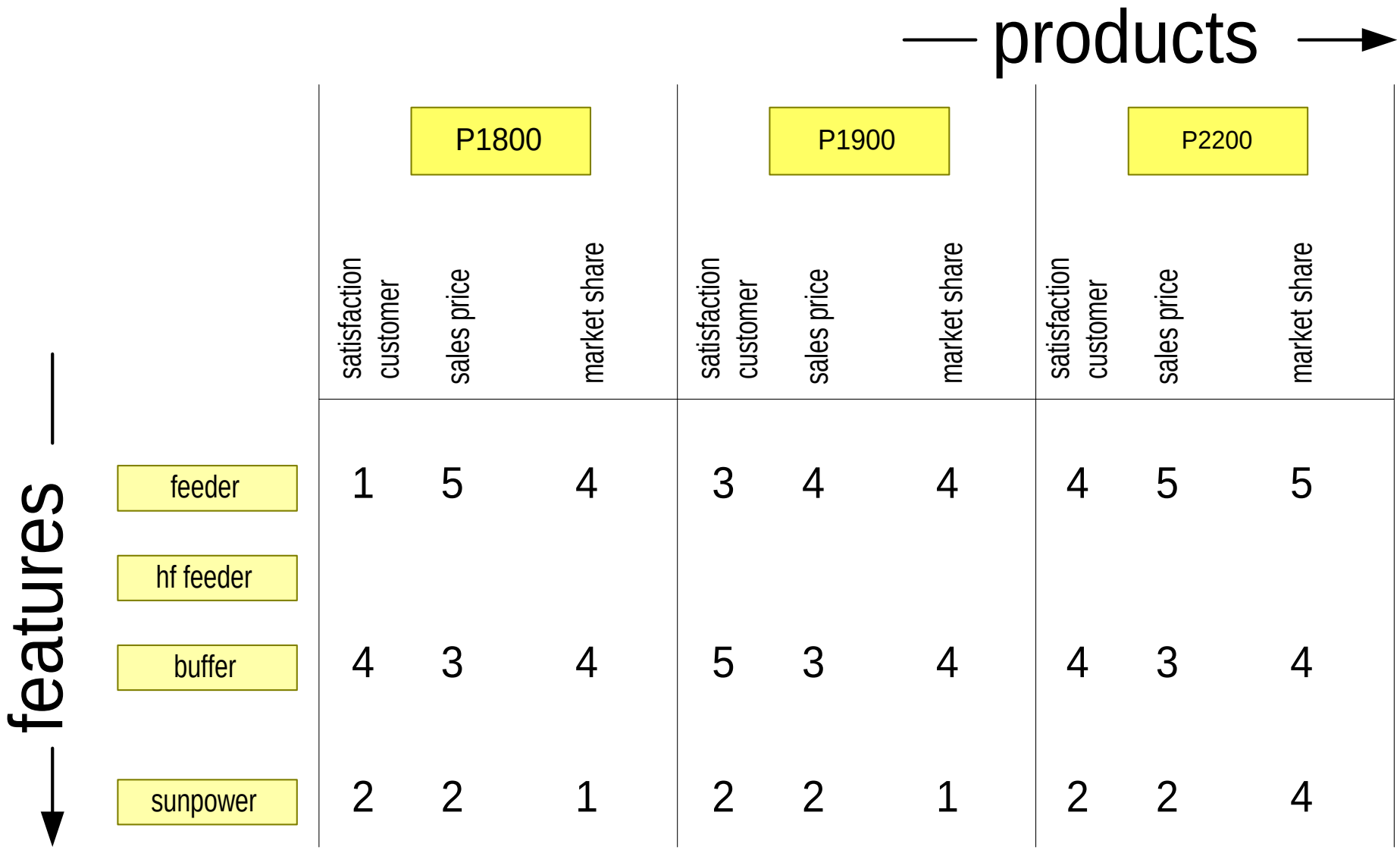
- Value for the customer
- (dis)satisfaction level for the customer
- Selling value (How much is the customer willing to pay?)
- Level of differentiation w.r.t. the competition
- Impact on the market share
- Impact on the profit margin

Use relative scale, e.g. 1..5 1=low value, 5 -high value

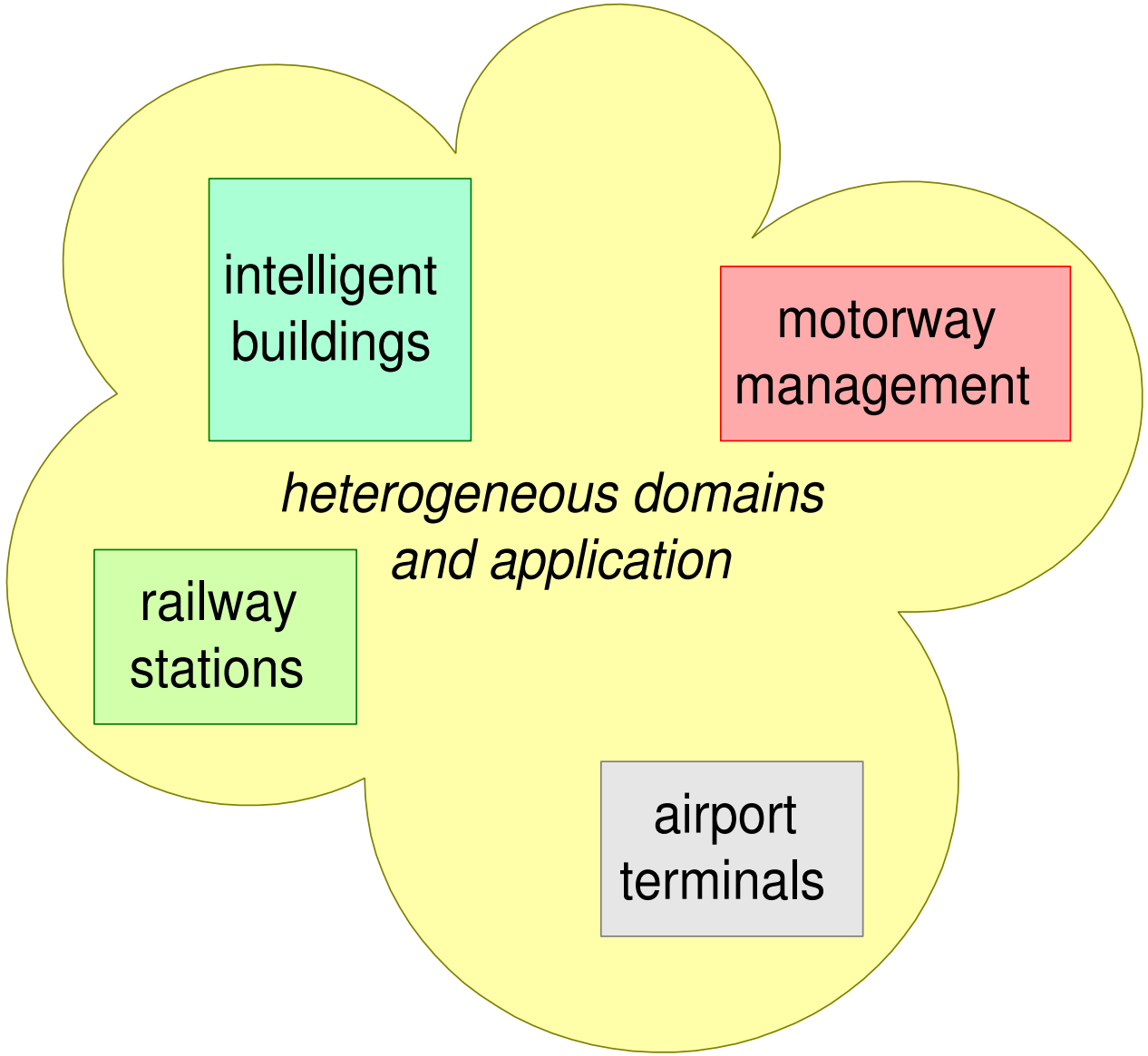
Ask several knowledgeable people to score

Discussion provides insight (don't fall in spreadsheet trap)

Determine Value of Features



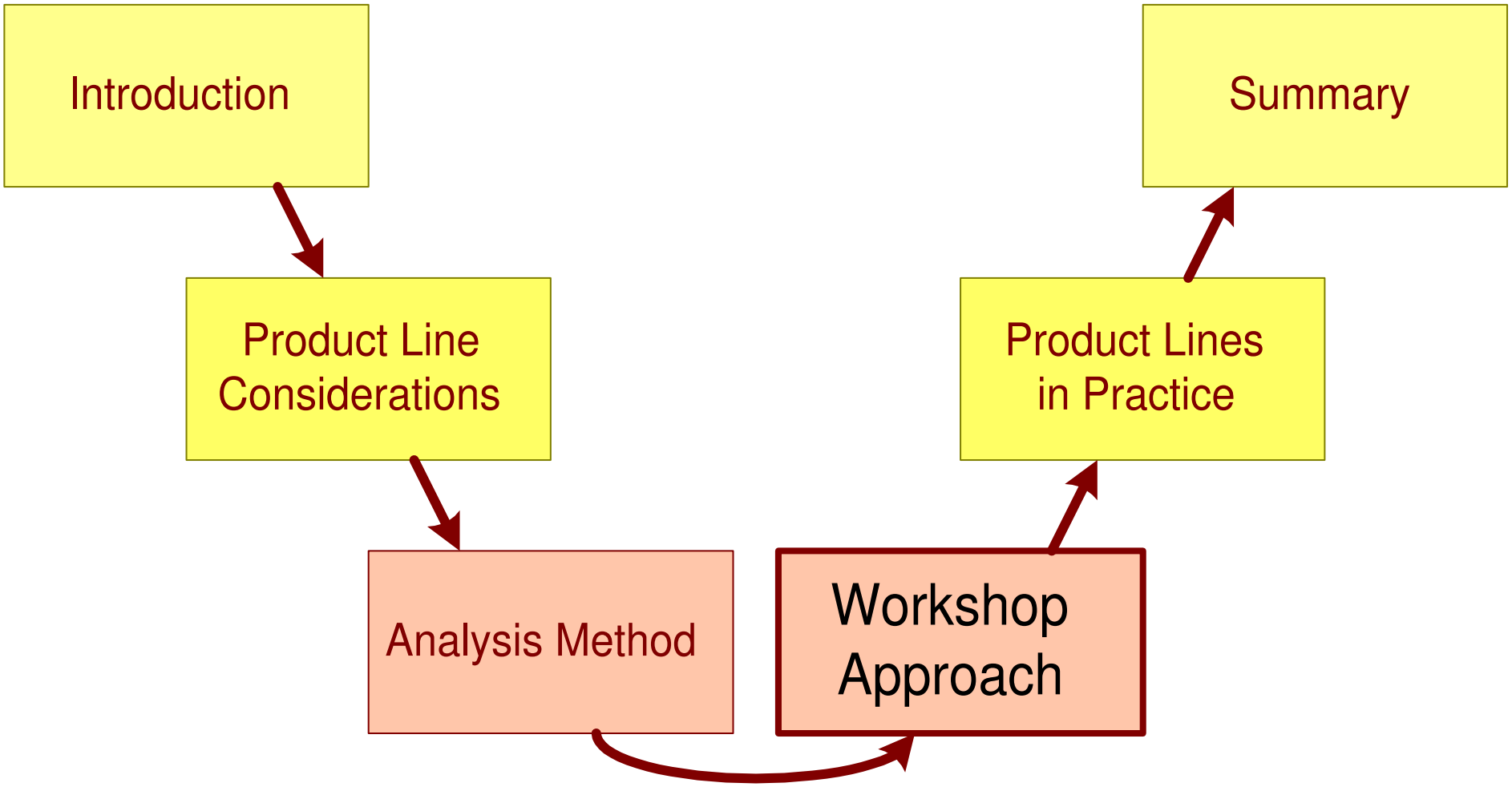
Example Platform Scoping



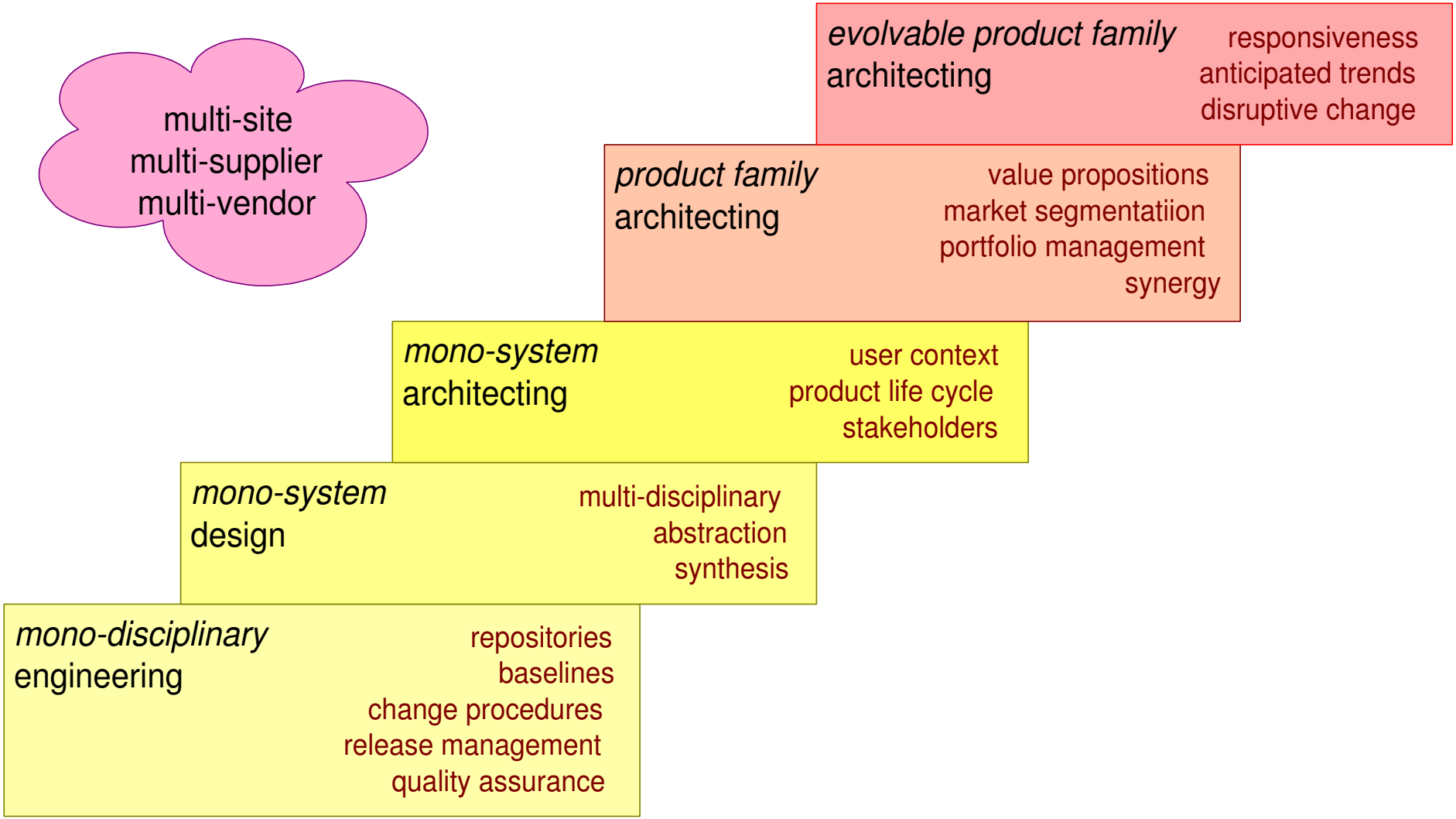
shared core technology

- Closed Circuit TV
- audio broadcasting
- access control
- networking

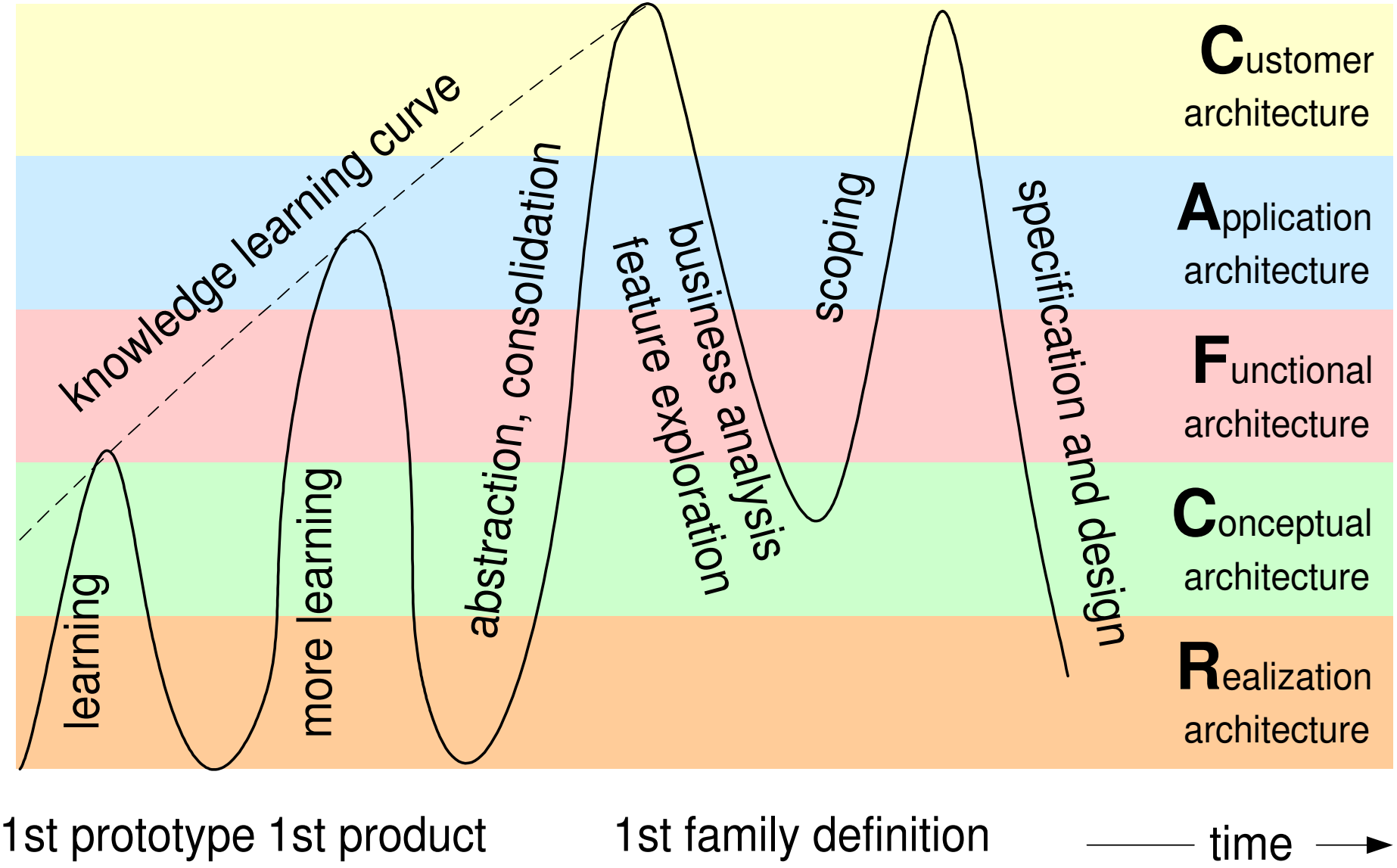
Workshop Approach



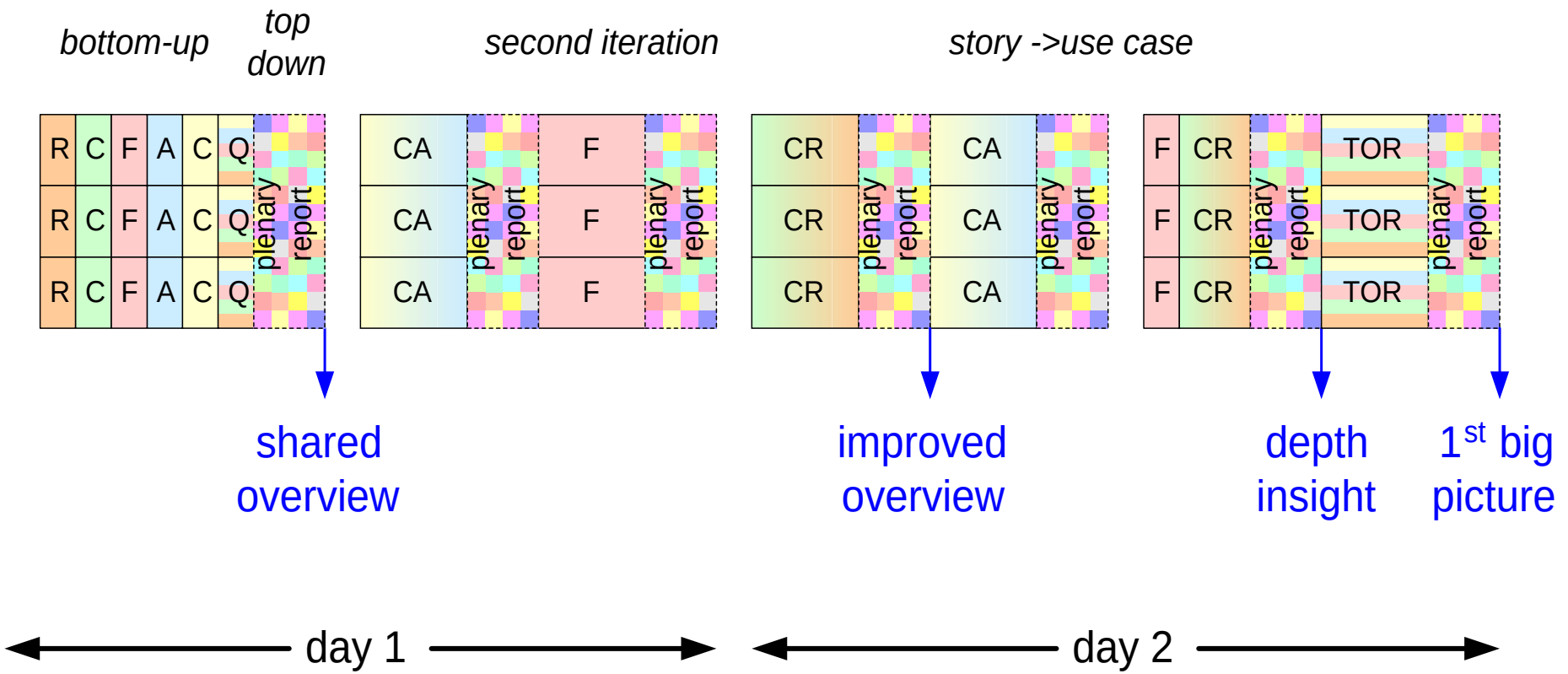
Foundation must be in order



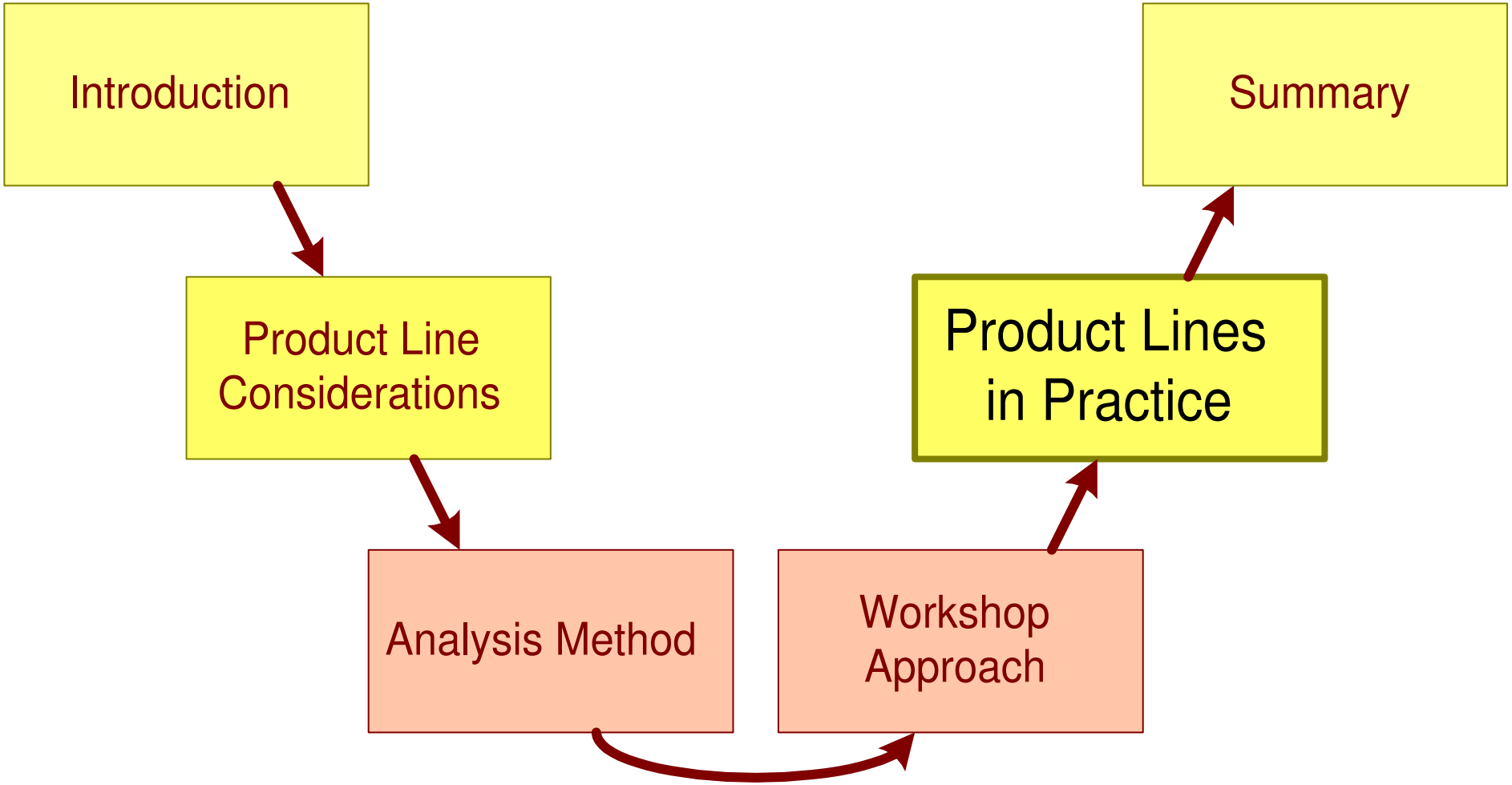
Jojo over Views



Iterations During M&A Course



Product Lines in Practice



Experiences with reuse, from counterproductive to effective

bad	good
longer time to market	reduced time to market
high investments	reduced investment
lots of maintenance	reduced (shared) maintenance cost
poor quality	improved quality
poor reliability	improved reliability
diversity is opposed	easier diversity management
lot of know how required	understanding of one base system
predictable too late	improved predictability
dependability	larger purchasing power
knowledge dilution	means to consolidate knowledge
lack of market focus	increase added value
interference	enables parallel developments
but integration required	free feature propagation

Successful examples of reuse

homogeneous domain	cath lab MRI television waferstepper
hardware dominated	car airplane shaver television
limited scope	audio codec compression library streaming library

Limits of successful reuse

struggle with integration/convergence with other domains

TV: digital networks and media
cath lab: US imaging, MRI

poor/slow response on paradigm shifts

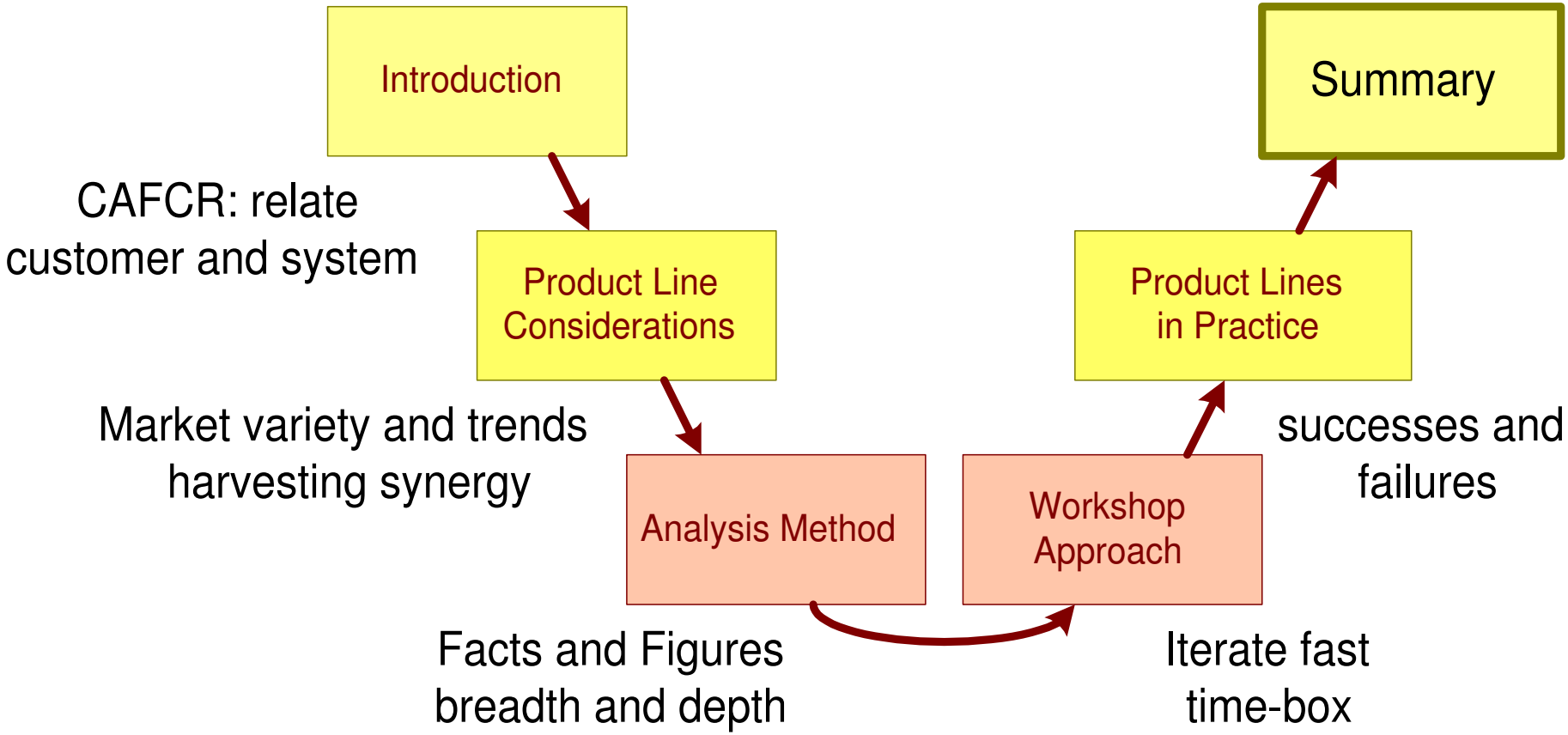
TV: LCD screens
cath lab: image based acquisition control

software maintenance, configurations, integration, release

MRI: integration and test
wafersteppers: number of configurations

how to innovate?

Summary


Introduction
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Product Line Considerations
Market variety and trends harvesting synergy
Analysis Method
Facts and Figures breadth and depth
Workshop Approach
Iterate fast time-box
Product Lines in Practice
successes and failures
Summary

Links

CAFCR background
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