

# Balancing Process and Content; Understanding Architecting in relation with Other Processes

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The automotive domain is quite demanding. Trucks and Cars have to be highly dependable (e.g. safe and reliable), and to operate in wildly varying conditions (from harsh environments such as deserts up to extreme winter weather). The life time of the vehicles is decade(s). The production volume demands mass production and well tuned supply chains to operate in a competitive environment. More and faster market and technology changes come on top of all these demands.

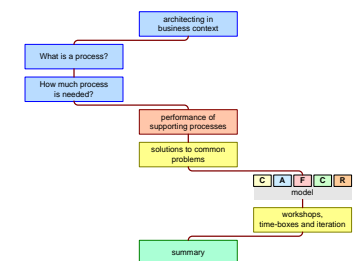
Partial solution to this demanding environment is an intricate set of processes. Good processes are crucial. Unfortunately, processes can also hamper the business, for instance by focusing so much on form that content gets lost.

Architecting is an activity that delivers content (needs analysis, requirements, design concepts, design decisions). Architecting can benefit a lot from good process interaction, reversely it can suffer tremendously from lack of process or overkill of process.

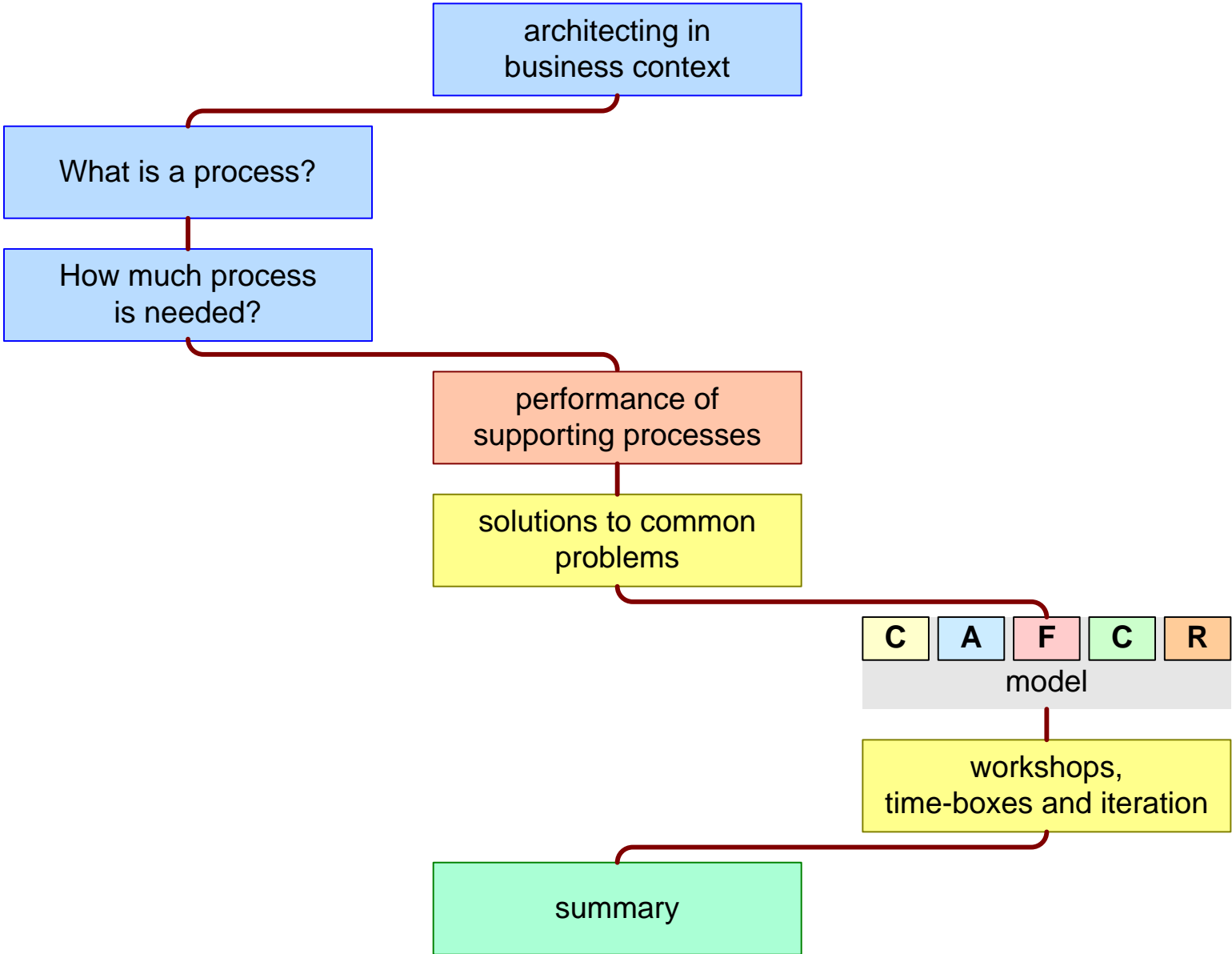
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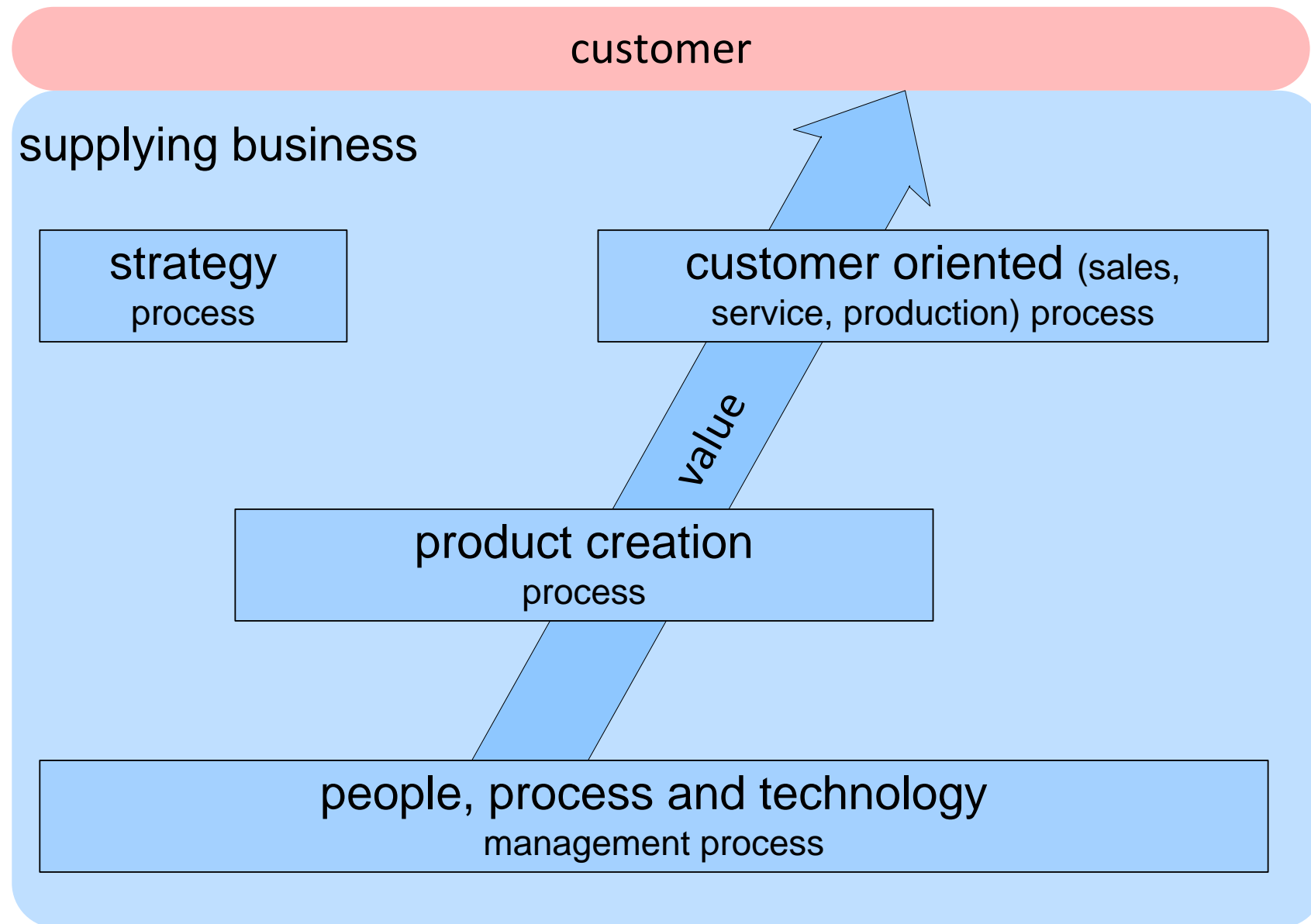
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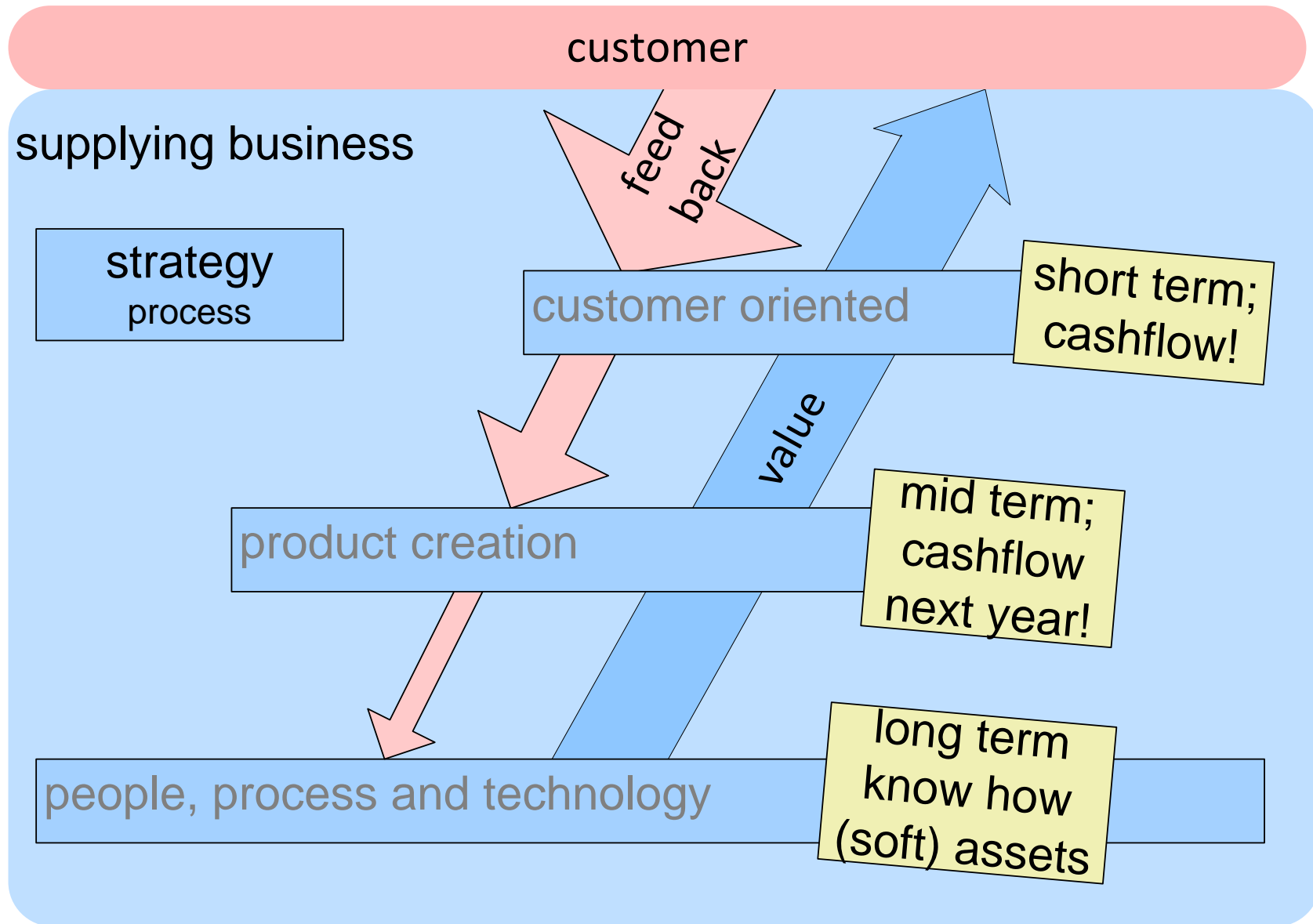
# Figure Of Contents™



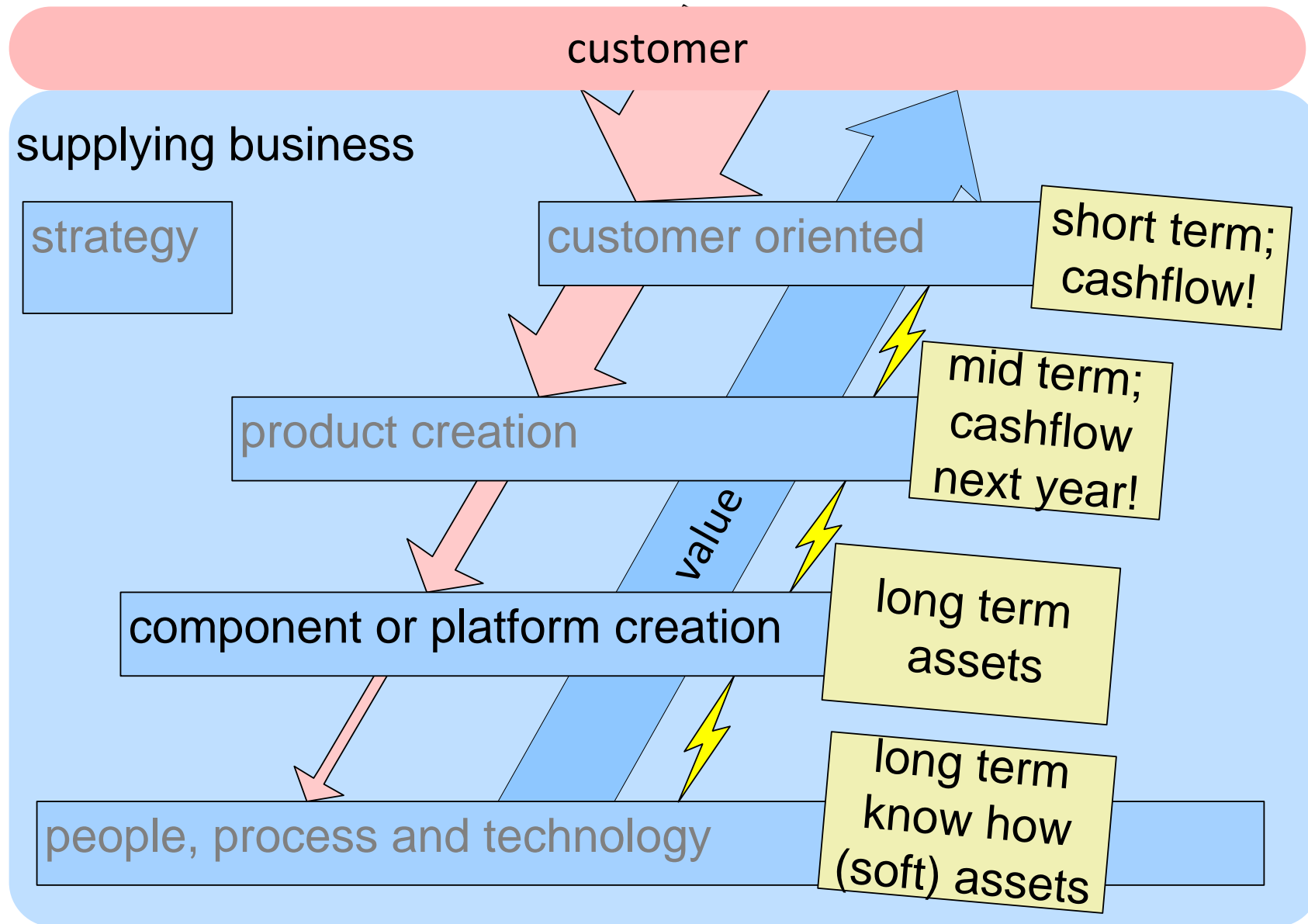
# Simplified process view



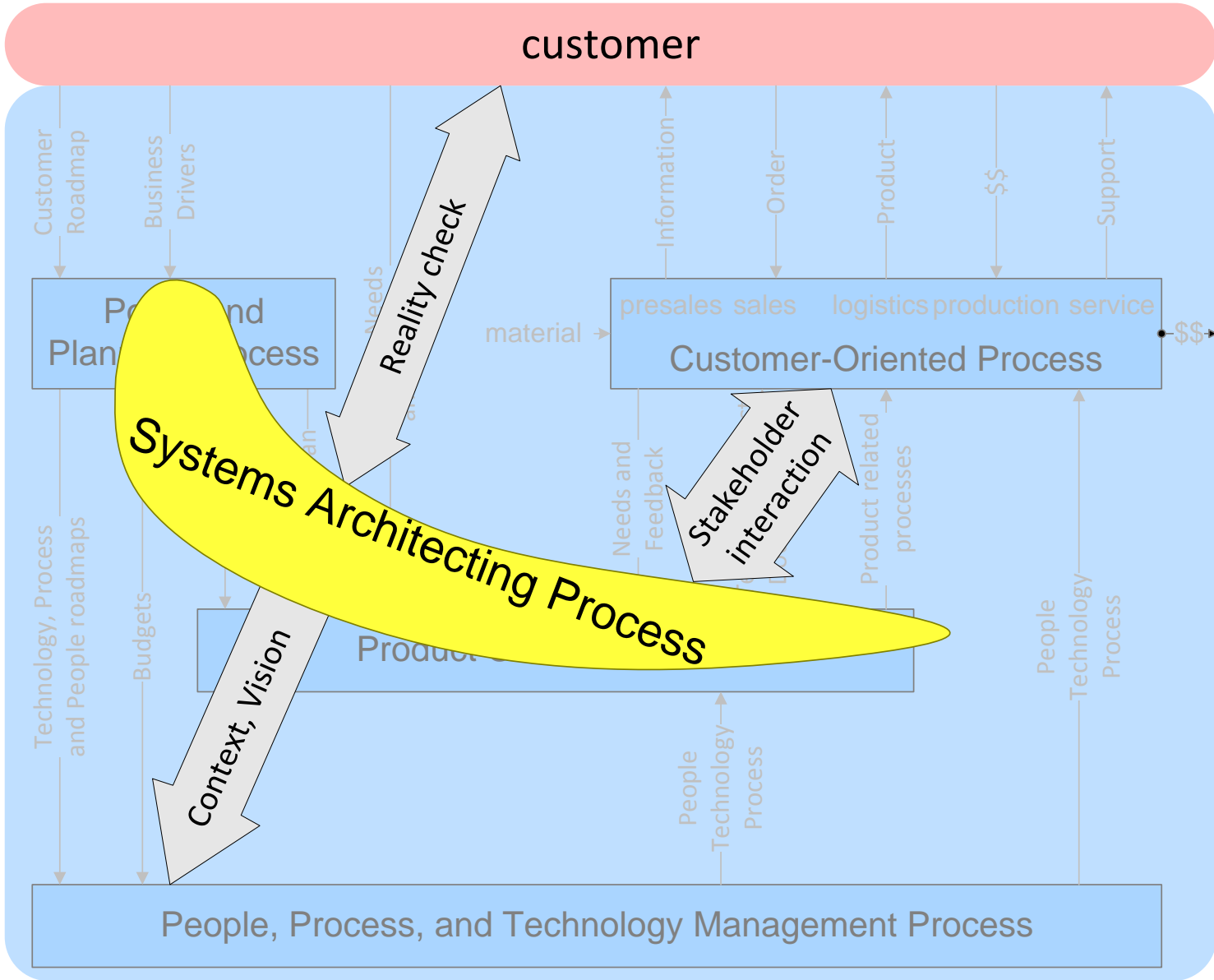
# Tension between processes

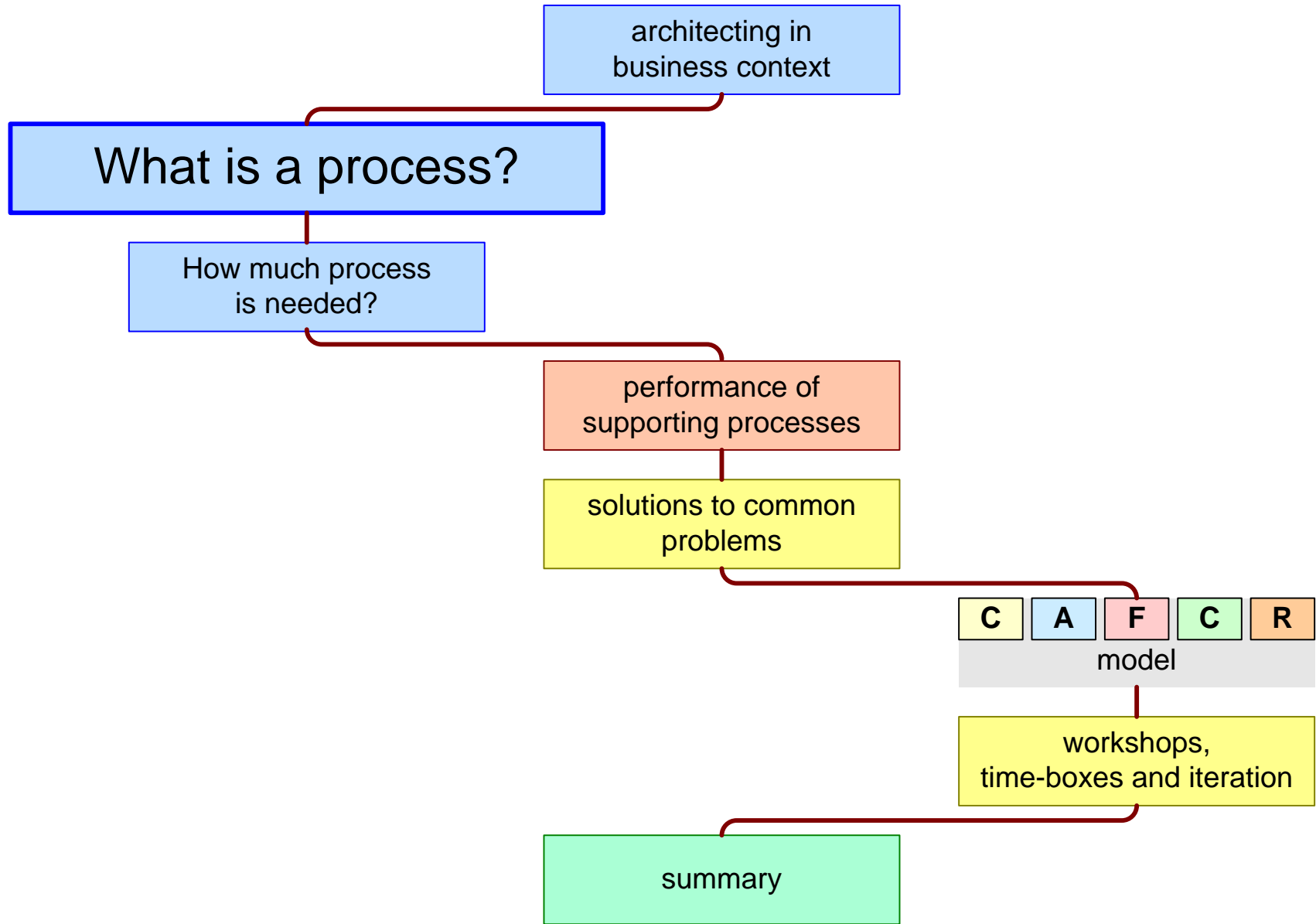


# Platform strategy adds one layer



# System Architecture Process in Business Context





**Purpose** What is to be achieved and why

**Structure** How will the goal be achieved

**Rationale** What is the reasoning behind this process

**Roles** What roles are present, what responsibilities are associated, what incentives are present, what are the criteria for these roles

**Ordering** What phasing or sequence is applied

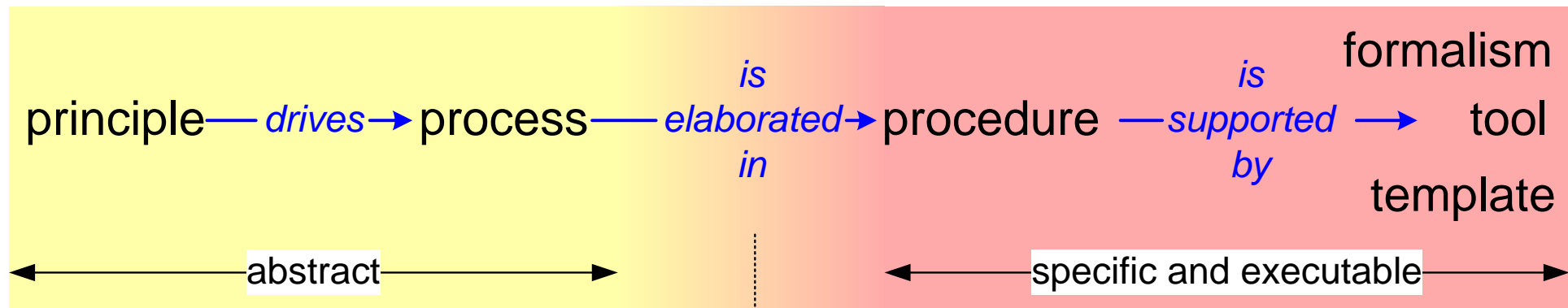
## *Definition of a Process*

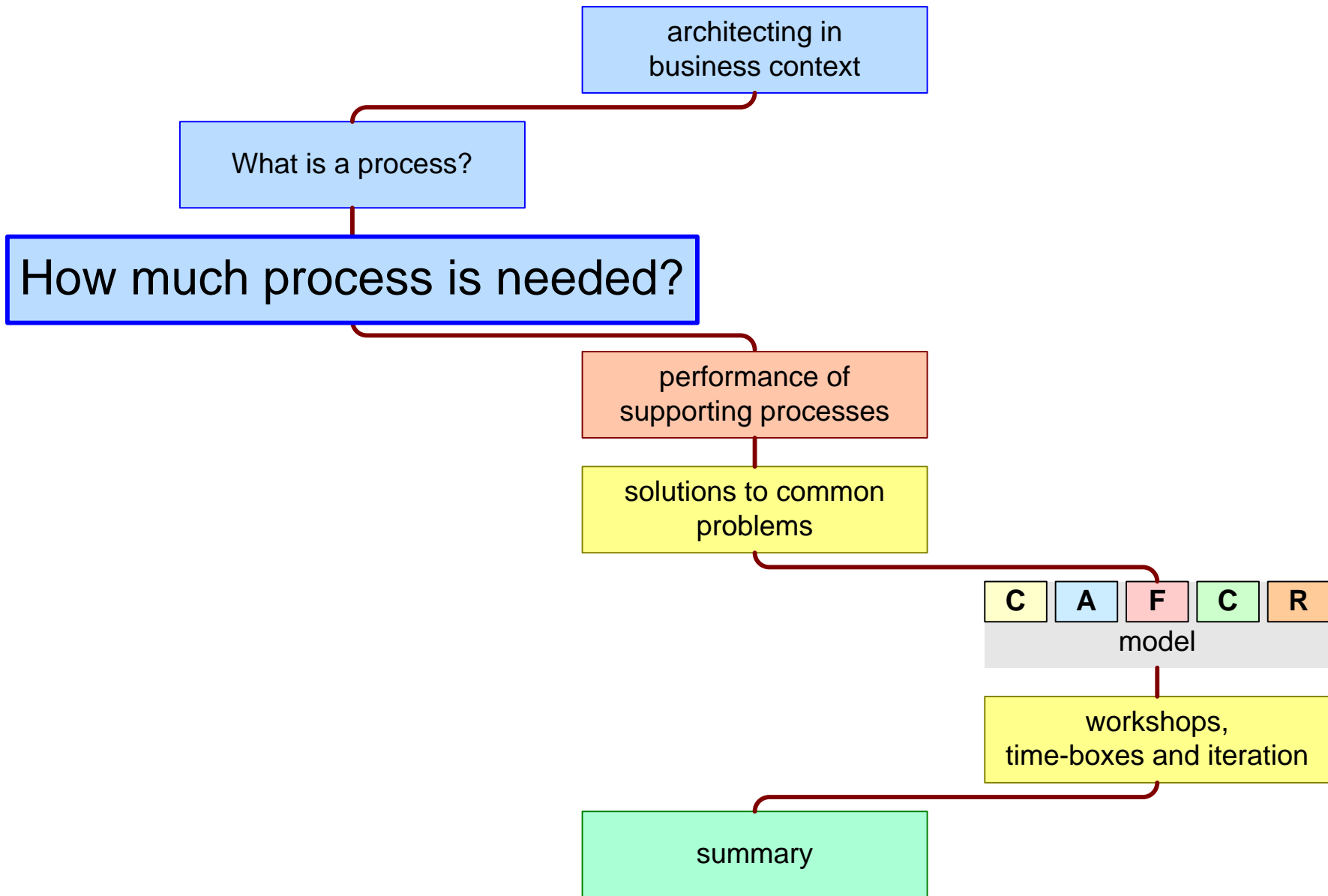
"A process is an activity which takes place over time and which has a precise aim regarding the result to be achieved.

The concept of a process is hierarchical which means that a process may consist of a partially ordered set of subprocesses."

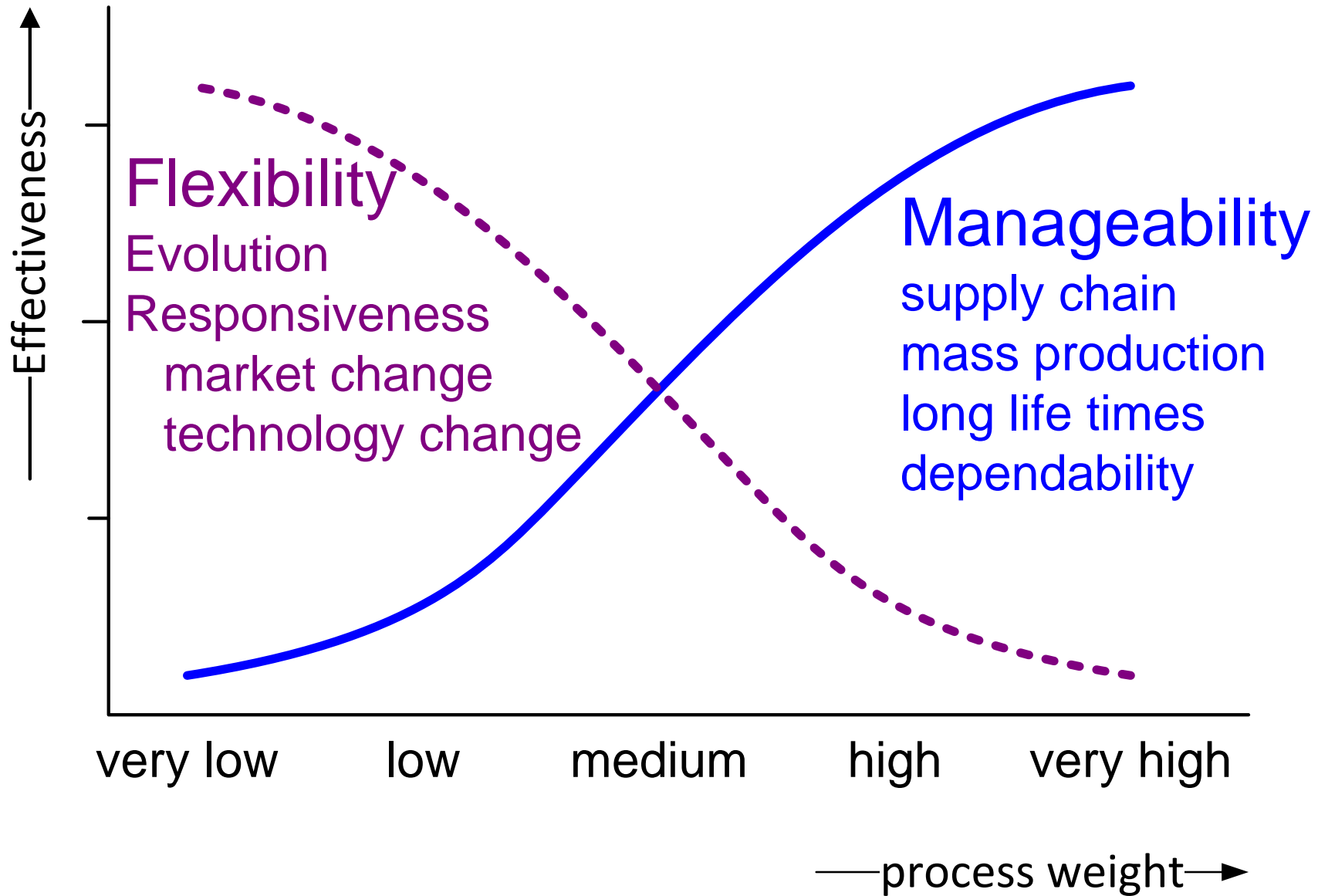
"Method Integration; Concepts and Case Studies" by Klaus Kronlöff

# A process within an abstraction hierarchy



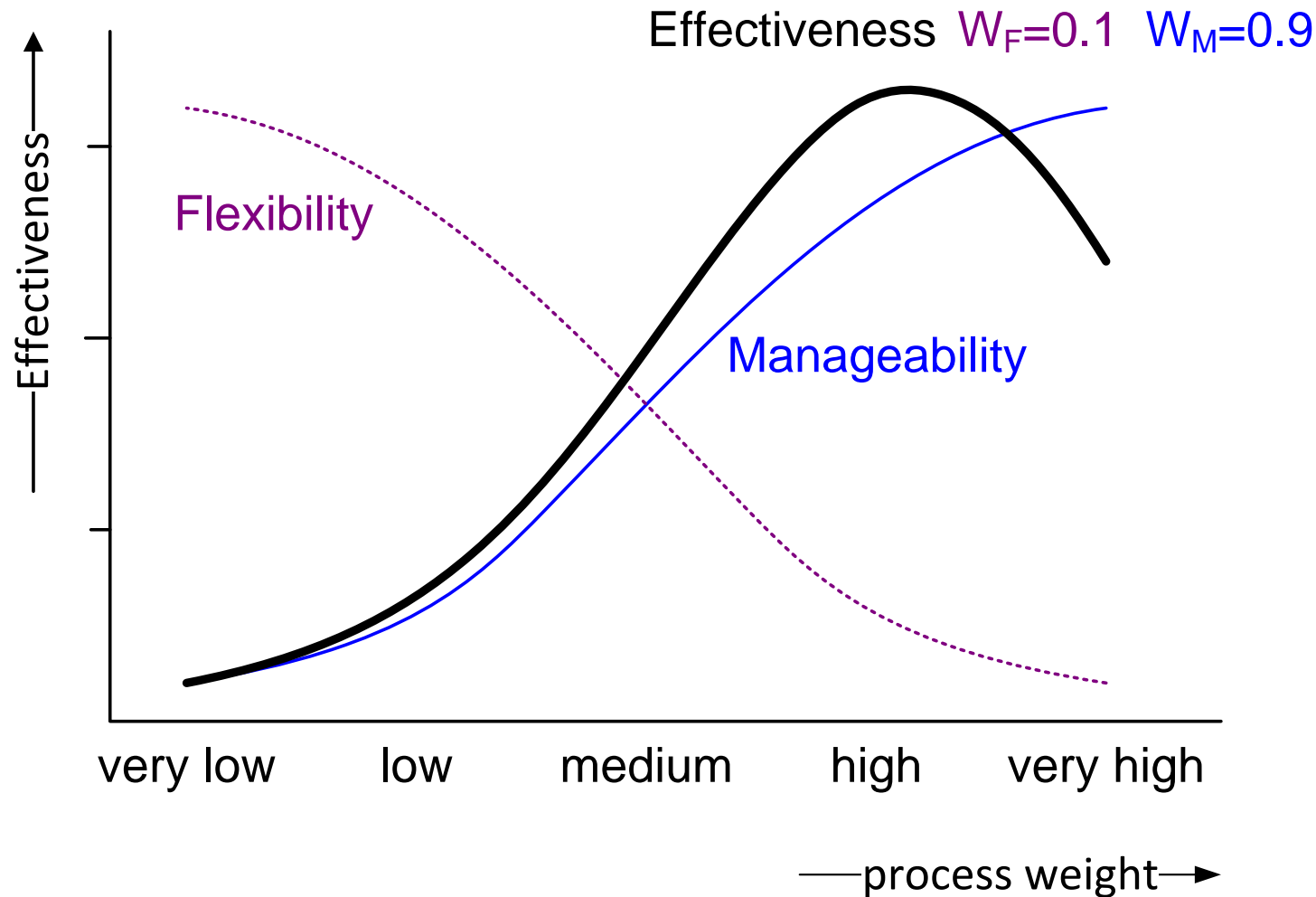


# Effectiveness(Flexibility, Manageability)



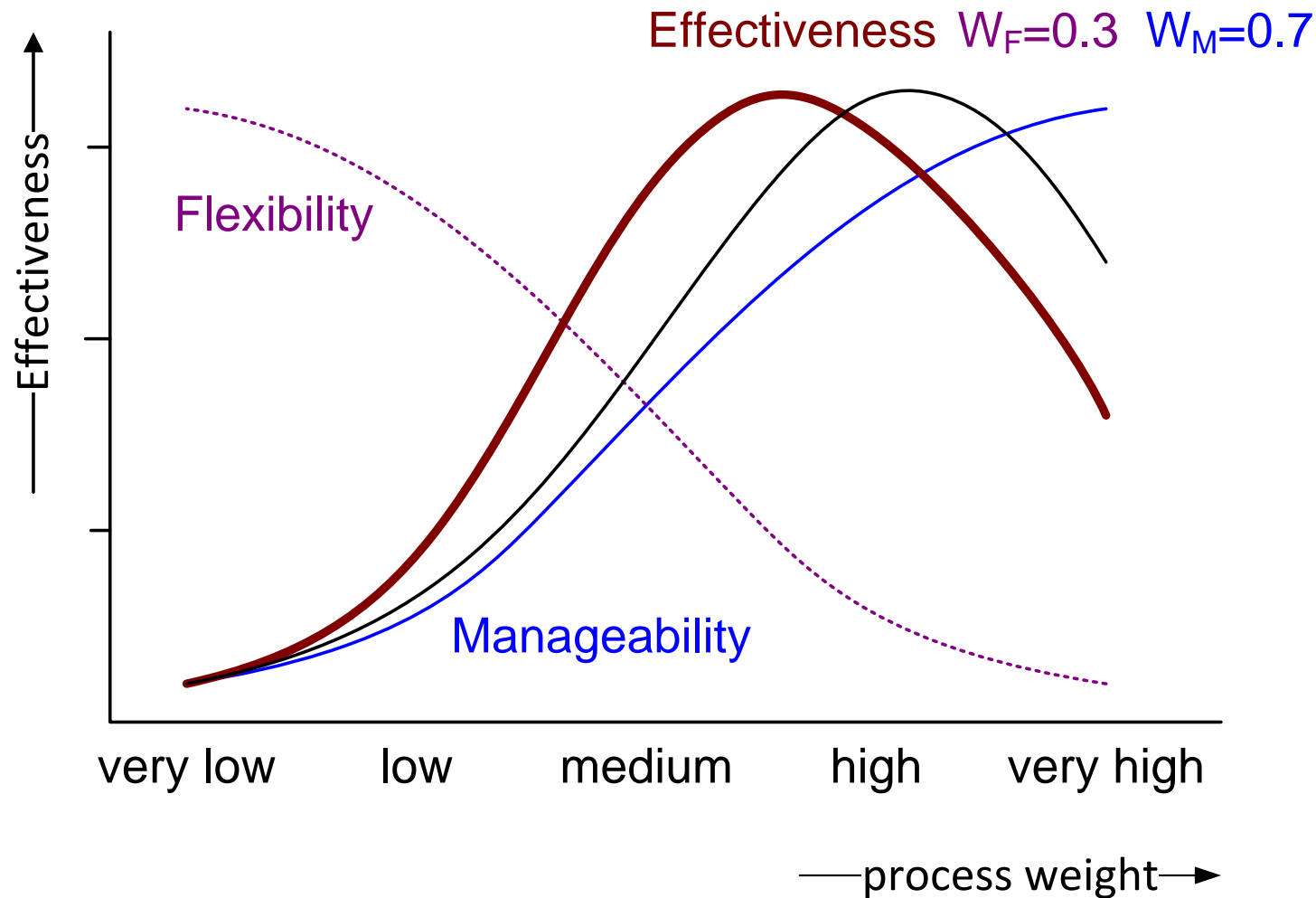
# Effectiveness in Defense, Aerospace, Automotive

$$\text{Effectiveness} = \text{Flexibility}^{W_F} * \text{Manageability}^{W_M}$$

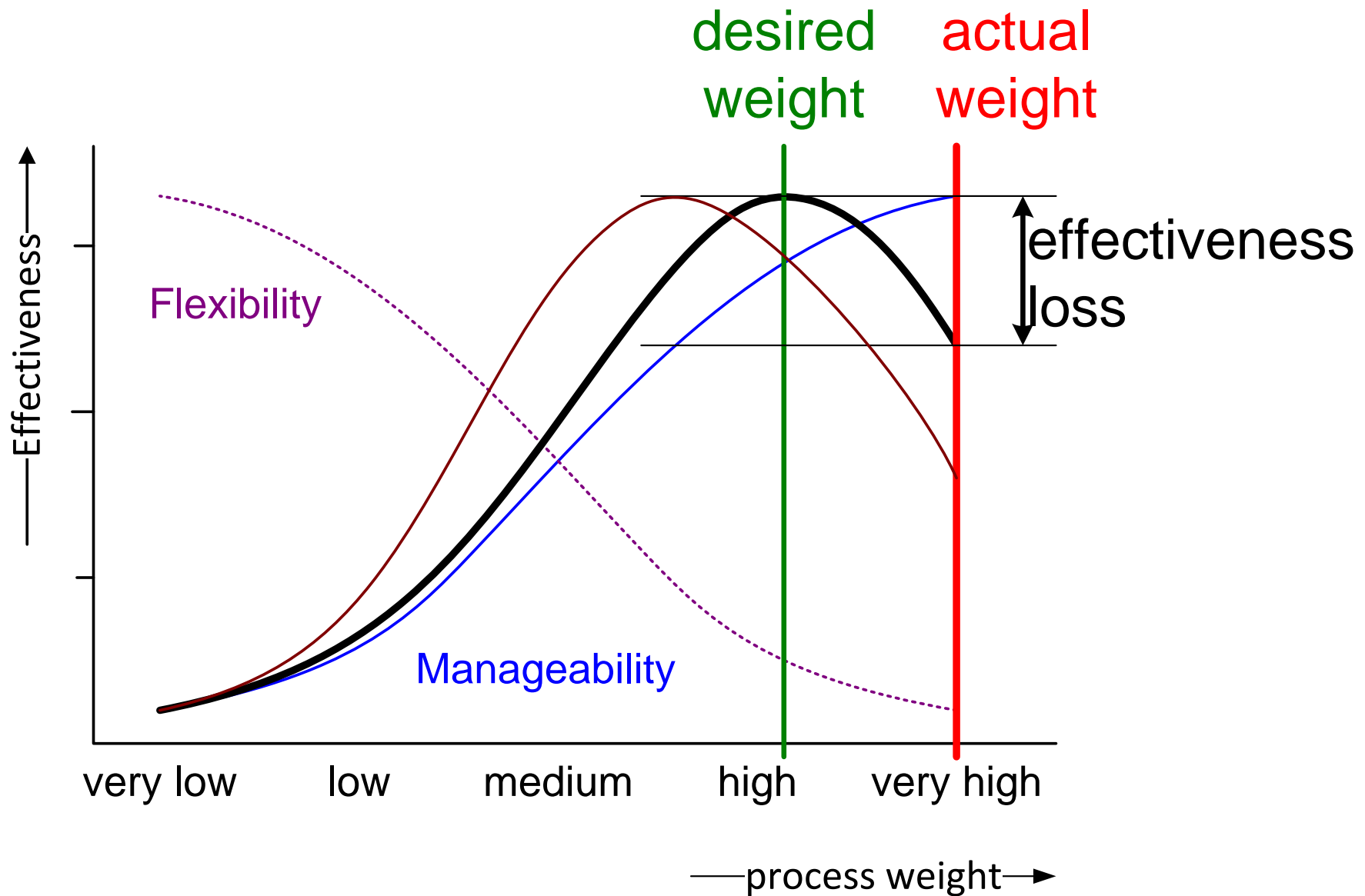


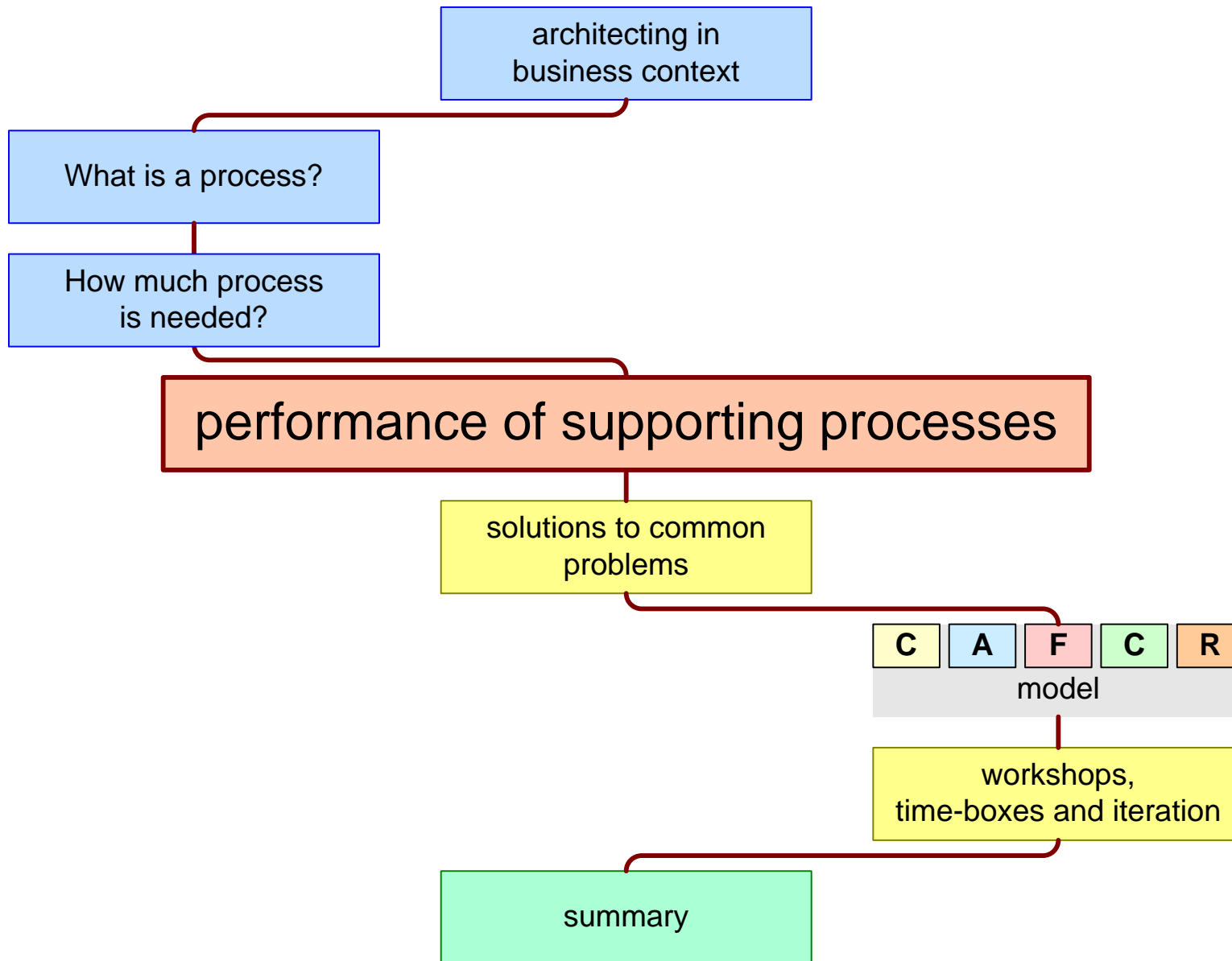
# If Balance Shifts

$$\text{Effectiveness} = \text{Flexibility}^{W_F} * \text{Manageability}^{W_M}$$

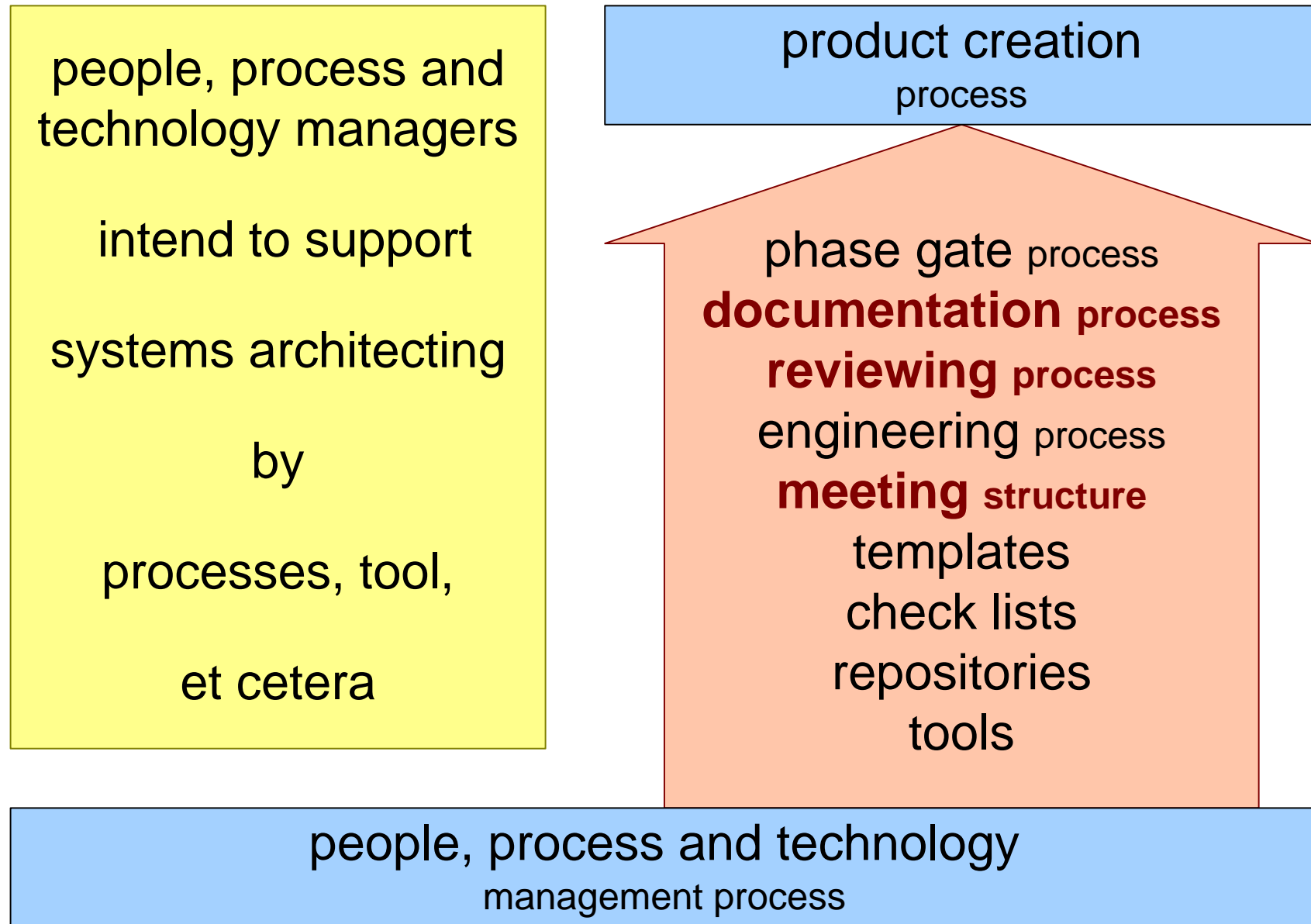


# Typical Situation in Defense





# Supporting Processes for Architecting



# How effective are these Processes?

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How many hours per week do you sit in meetings?

How many hours per week does the system architect spend on writing documentation?

How satisfied are the consumers of documentation?

How easy can information be found?

How up-to-date is the information?

How timely is documentation available?

What is the quality of the review process?

Does the system architect feel supported by the processes at all times?

# Common Problems

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large monolithic documents

late, not up-to-date, time consuming to review and update

system architects spending 70%+ of time in meetings

ineffective reviews

too many reviewers, lack of ownership, too little time and attention, form rather than content

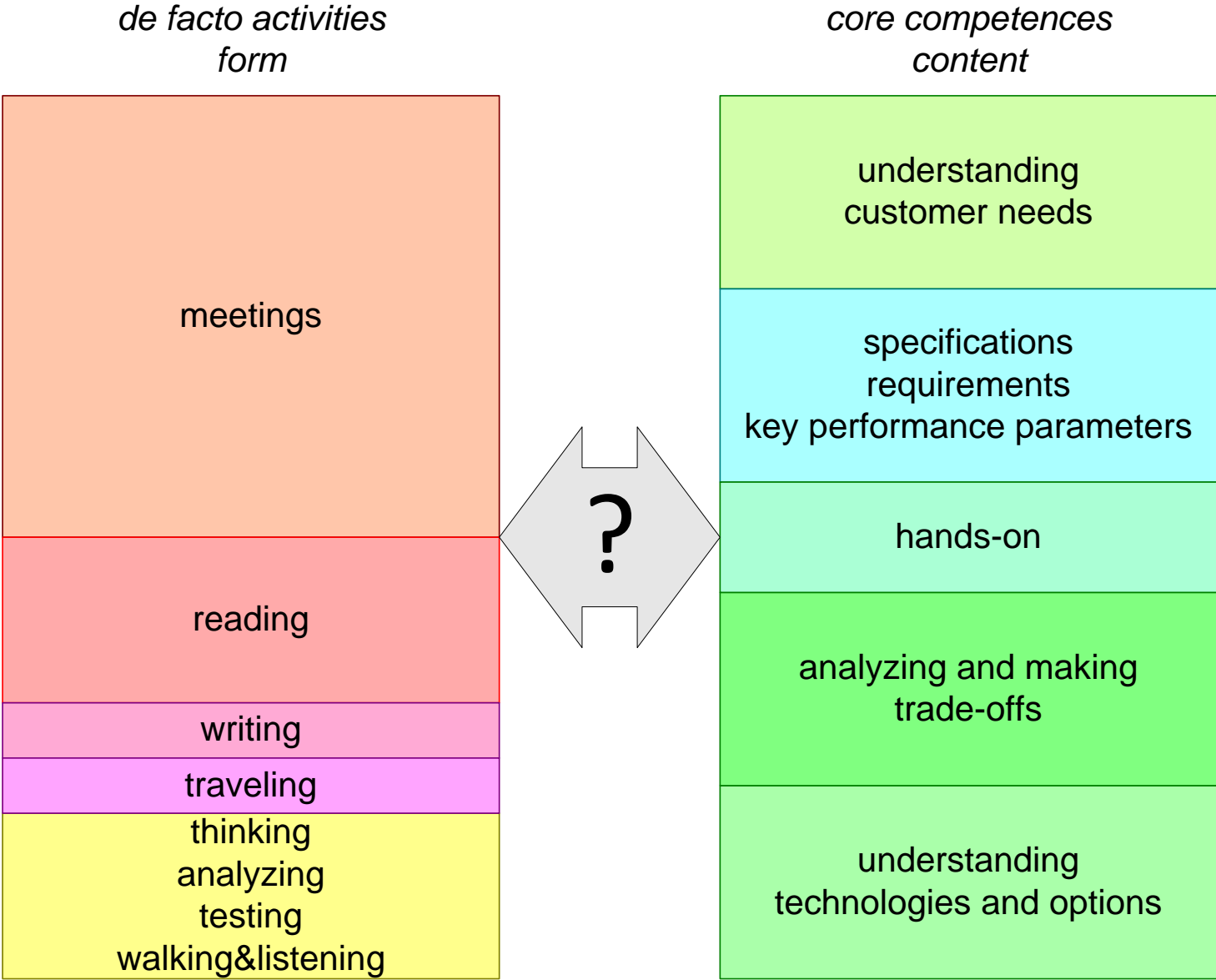
noise generation due to too much prescribing templates or frameworks

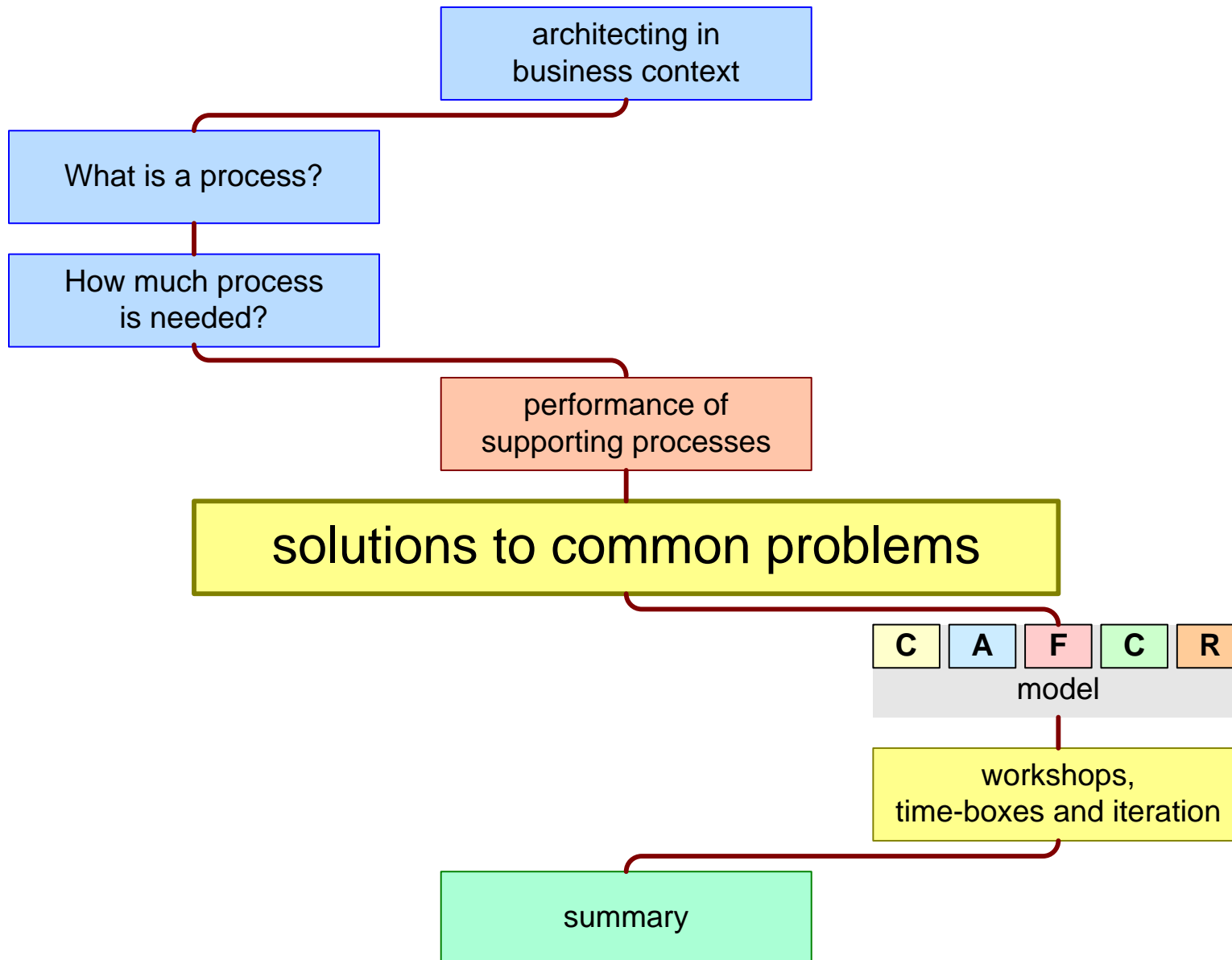
information overload, essentials are hidden

poorly searchable repositories

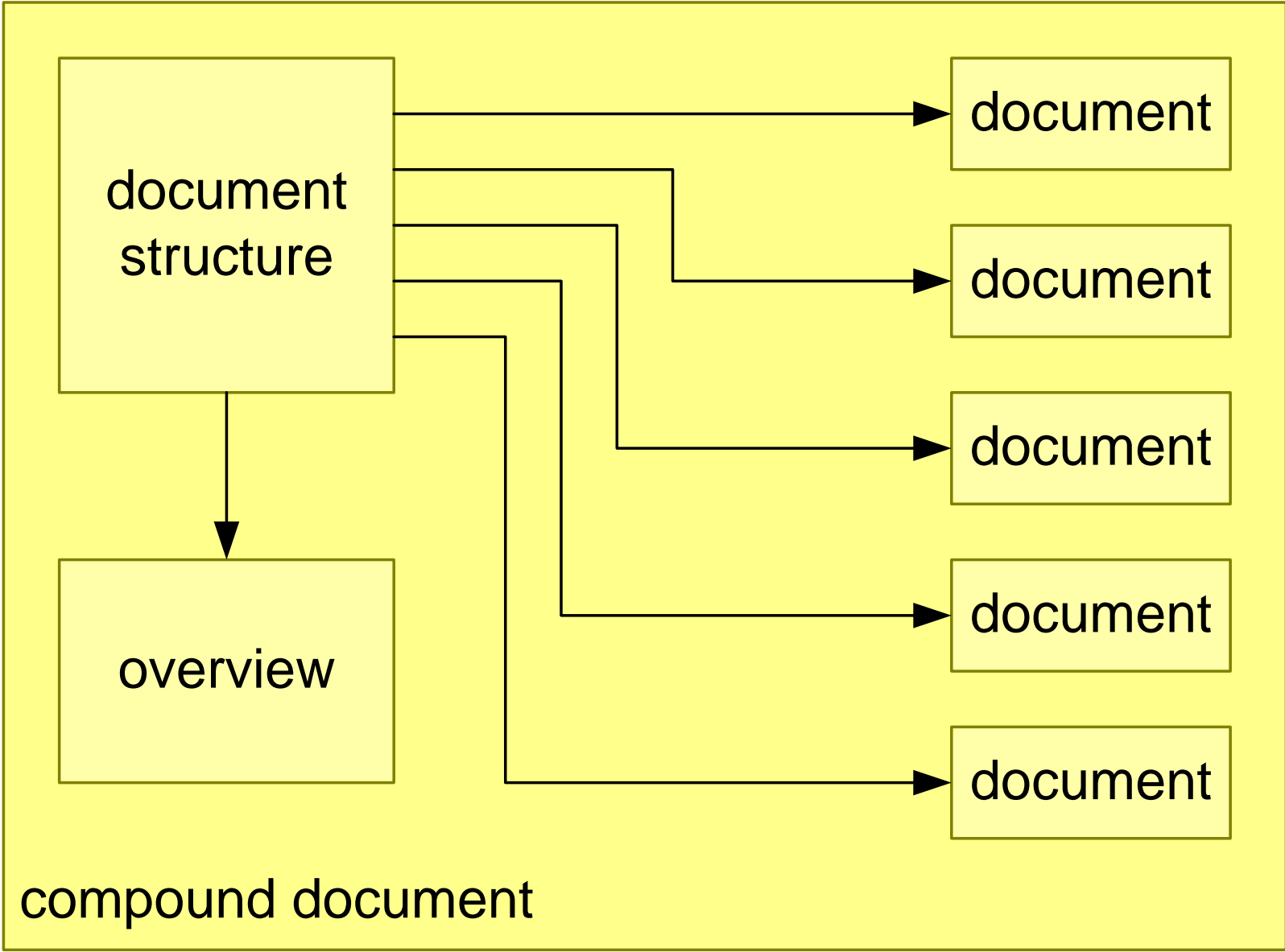
data and information cannot be found

# Balance Form and Content

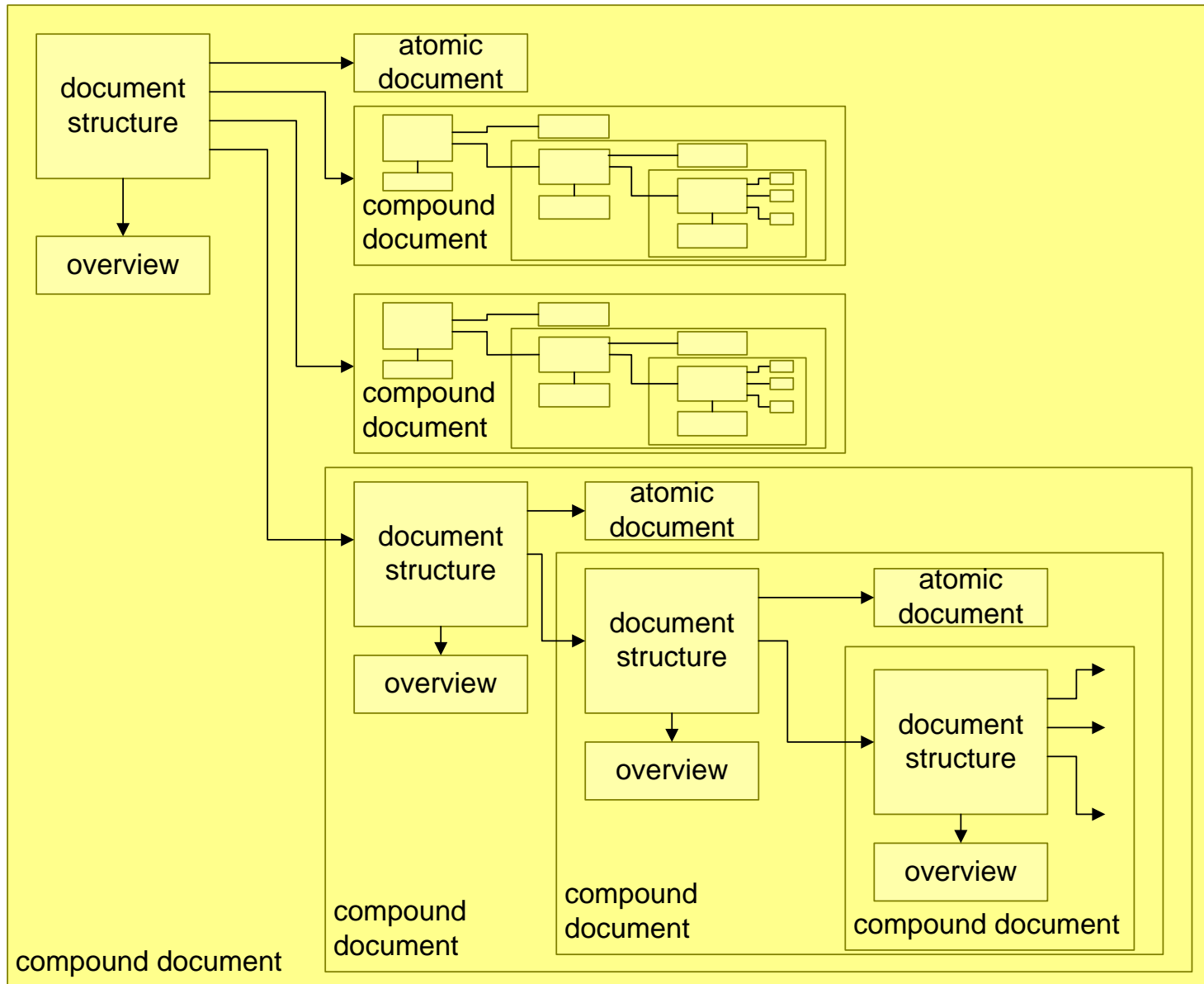




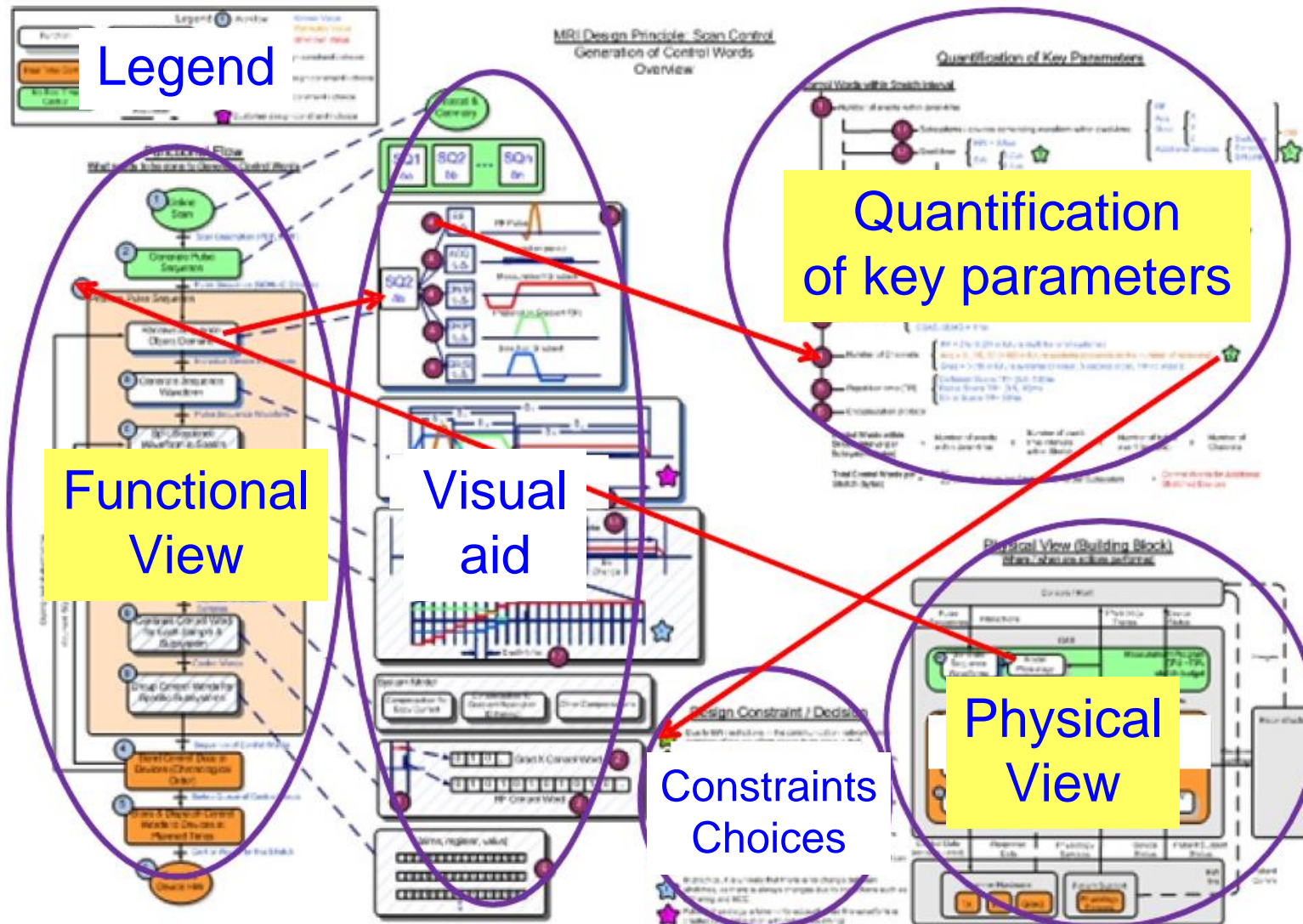
# Design Modular Documentation



# Recursive as "Normal" Designs

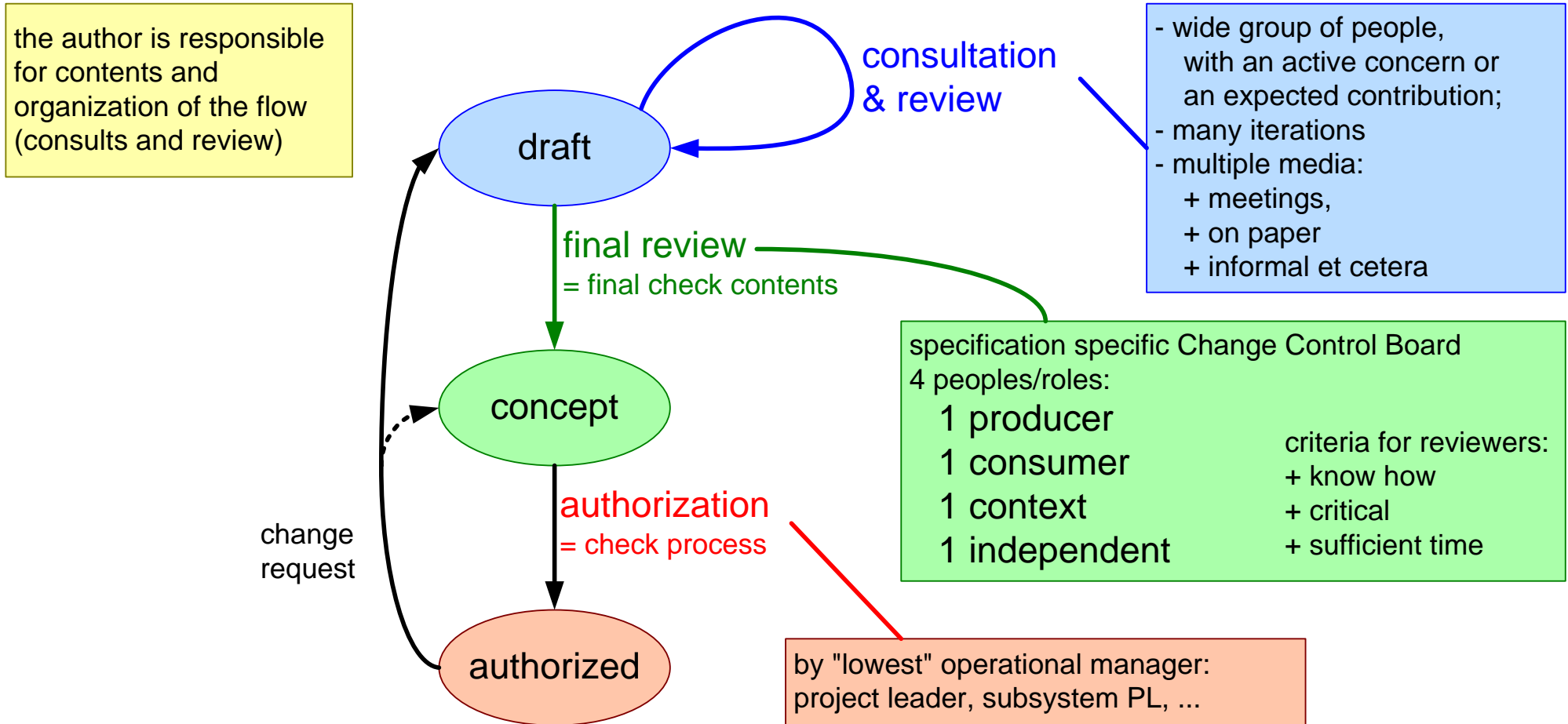


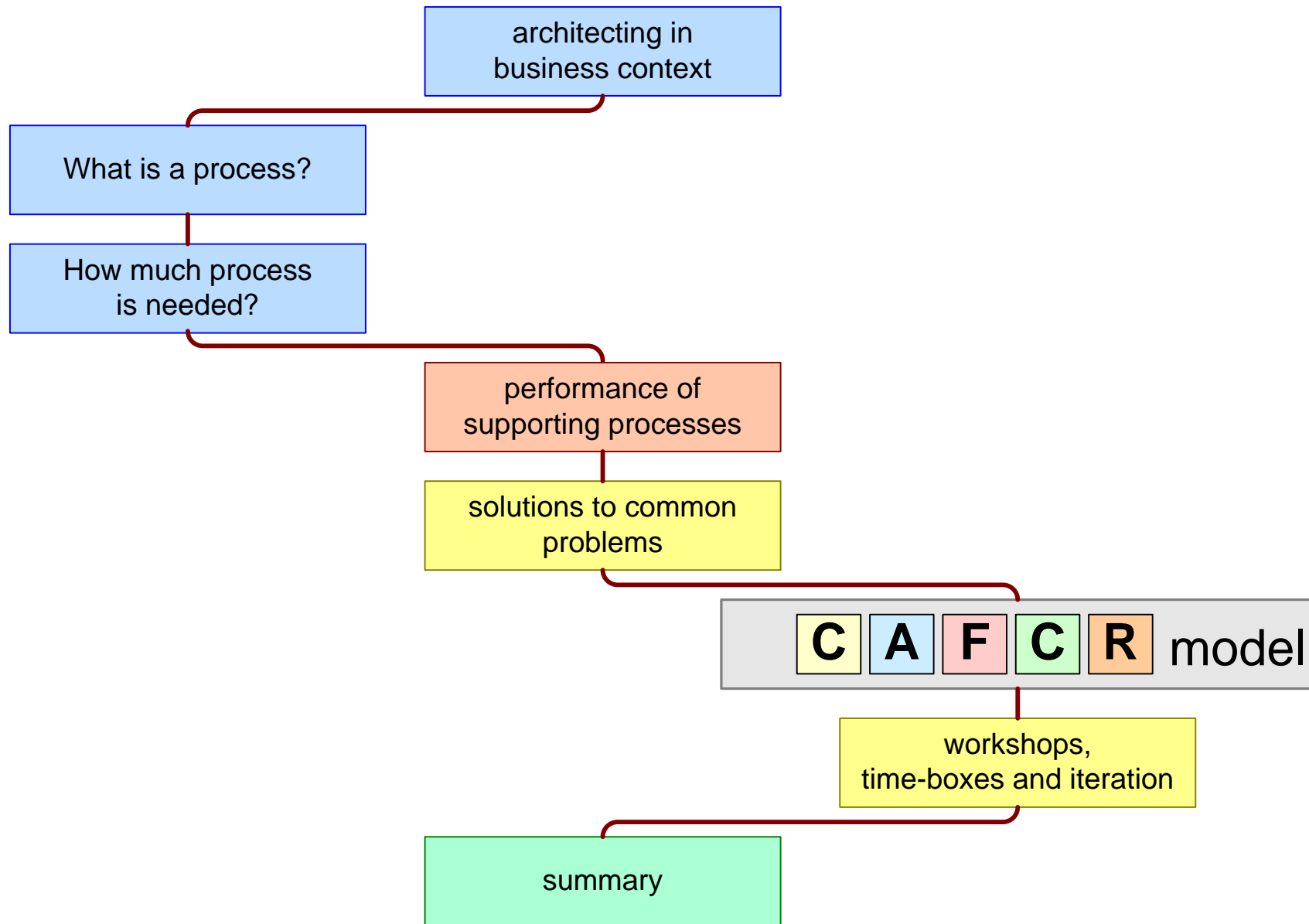
# Documenting with A3's



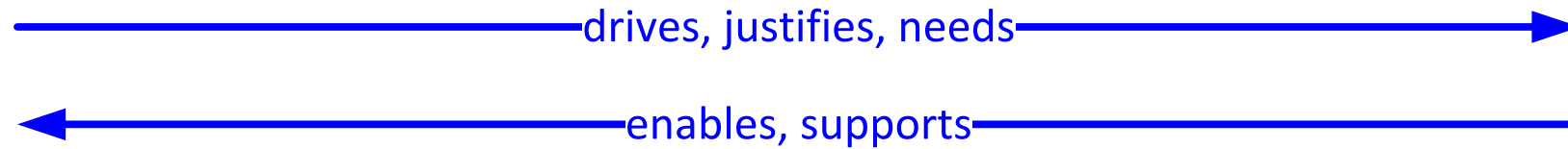
*A3 Architecture Overviews Focusing architectural knowledge to support evolution of complex systems*  
 by: Daniel Borches and Maarten Bonnema, INCOSE 2010

# Light-weight Distributed Reviews

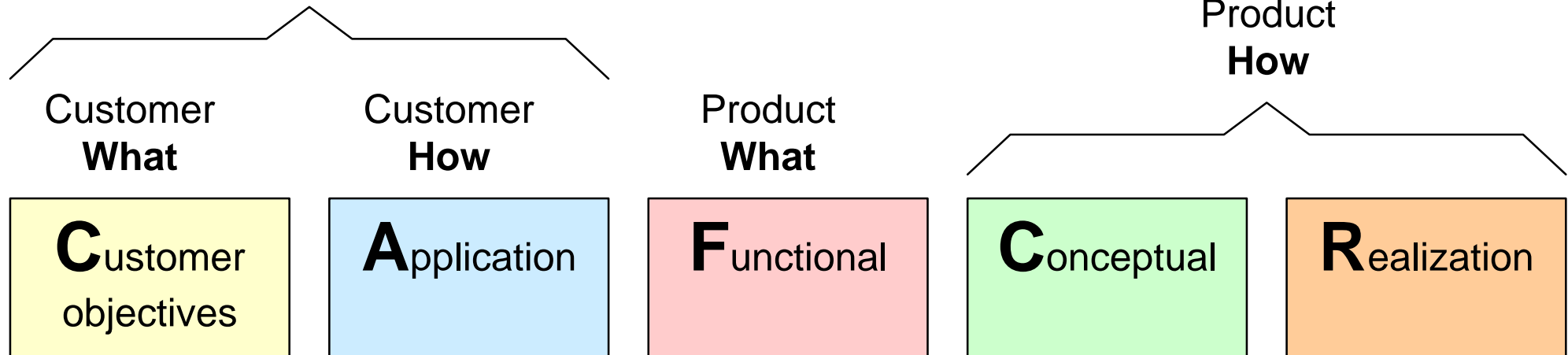




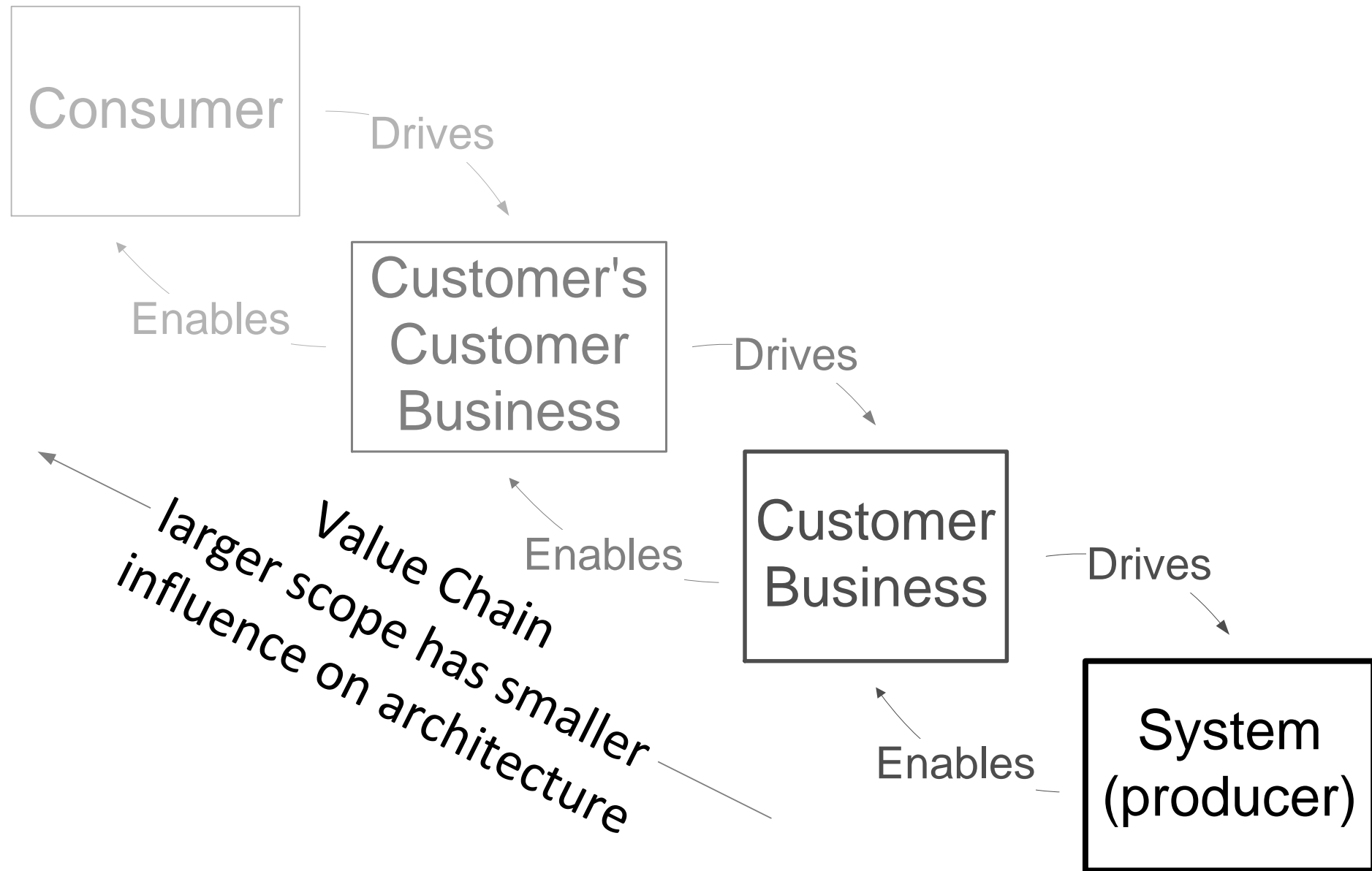
# The “CAFCR” model



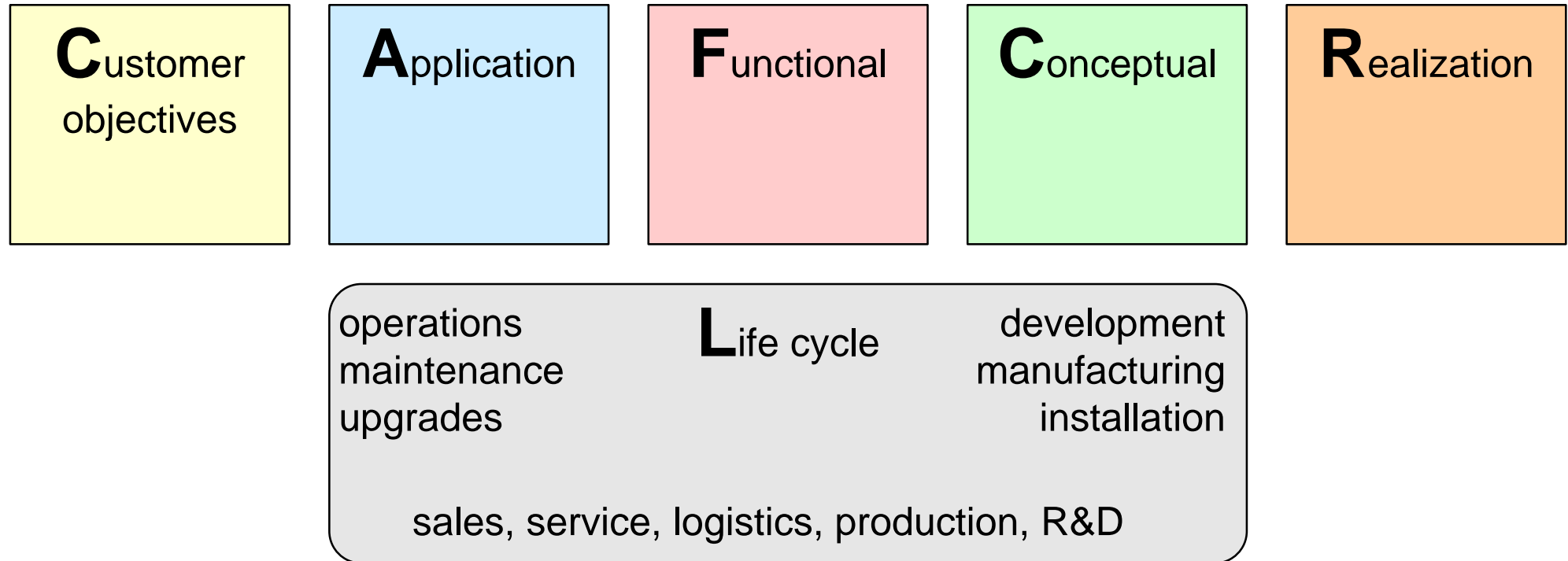
**What** does Customer need  
in Product and **Why?**

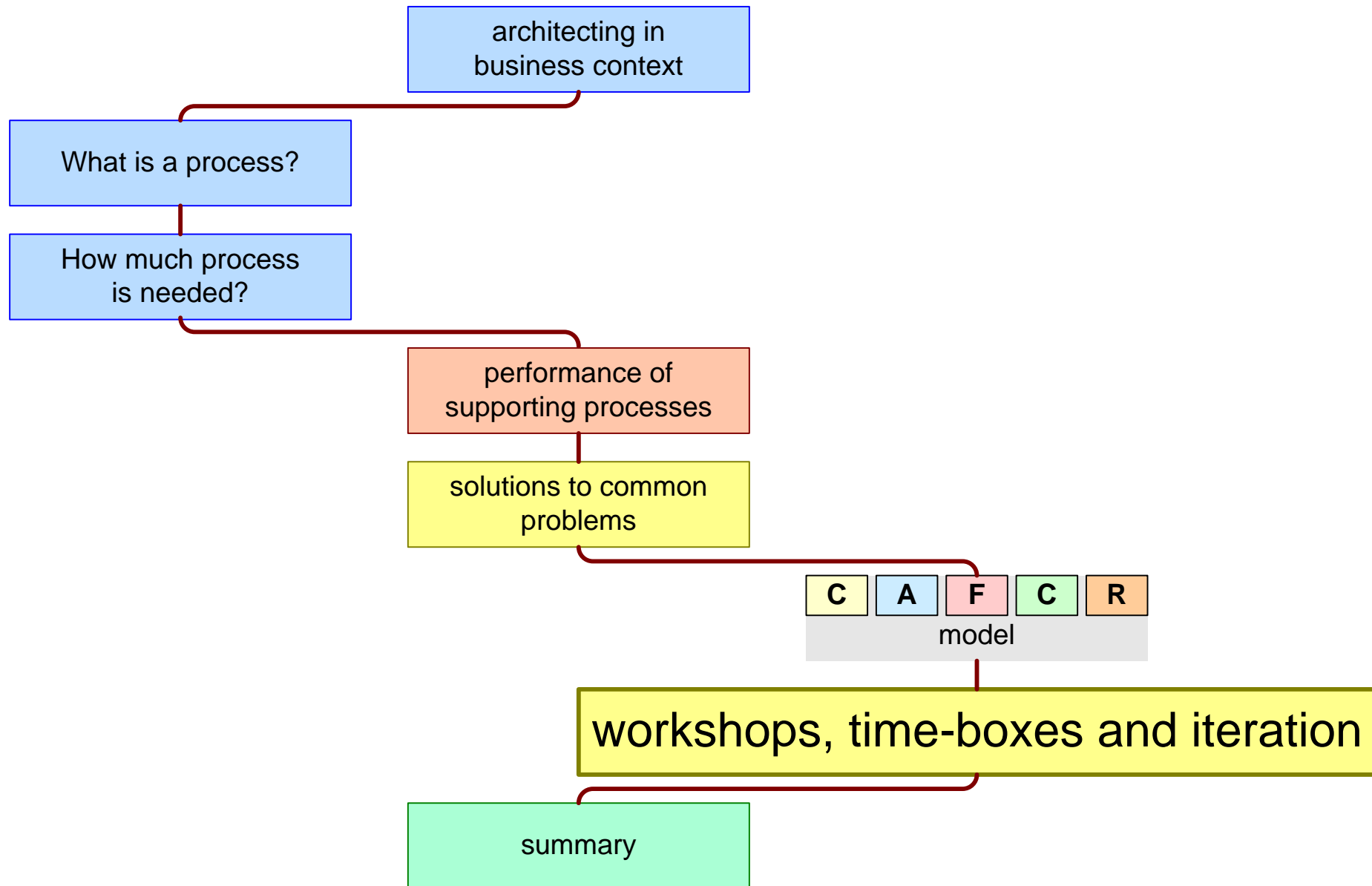


# CAFCR can be applied recursively

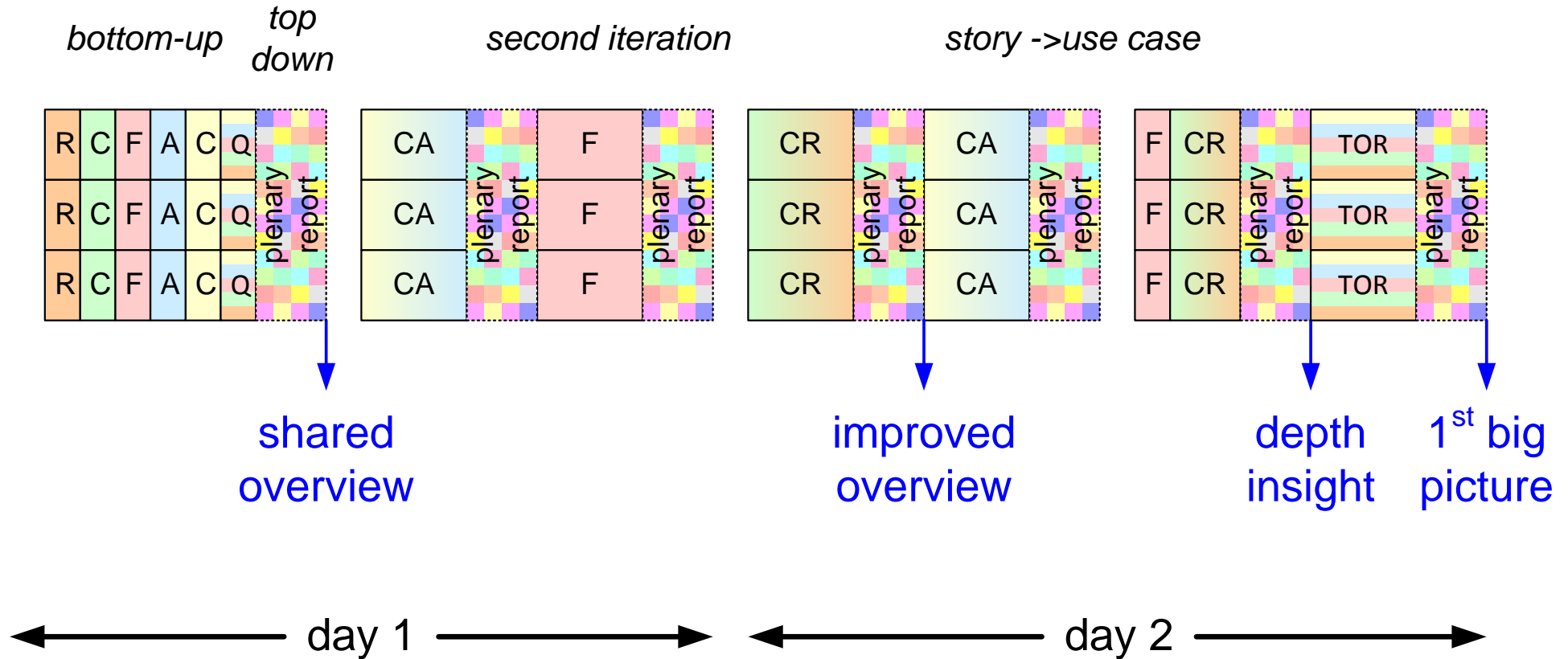


# CAFCR+ model; Life Cycle View

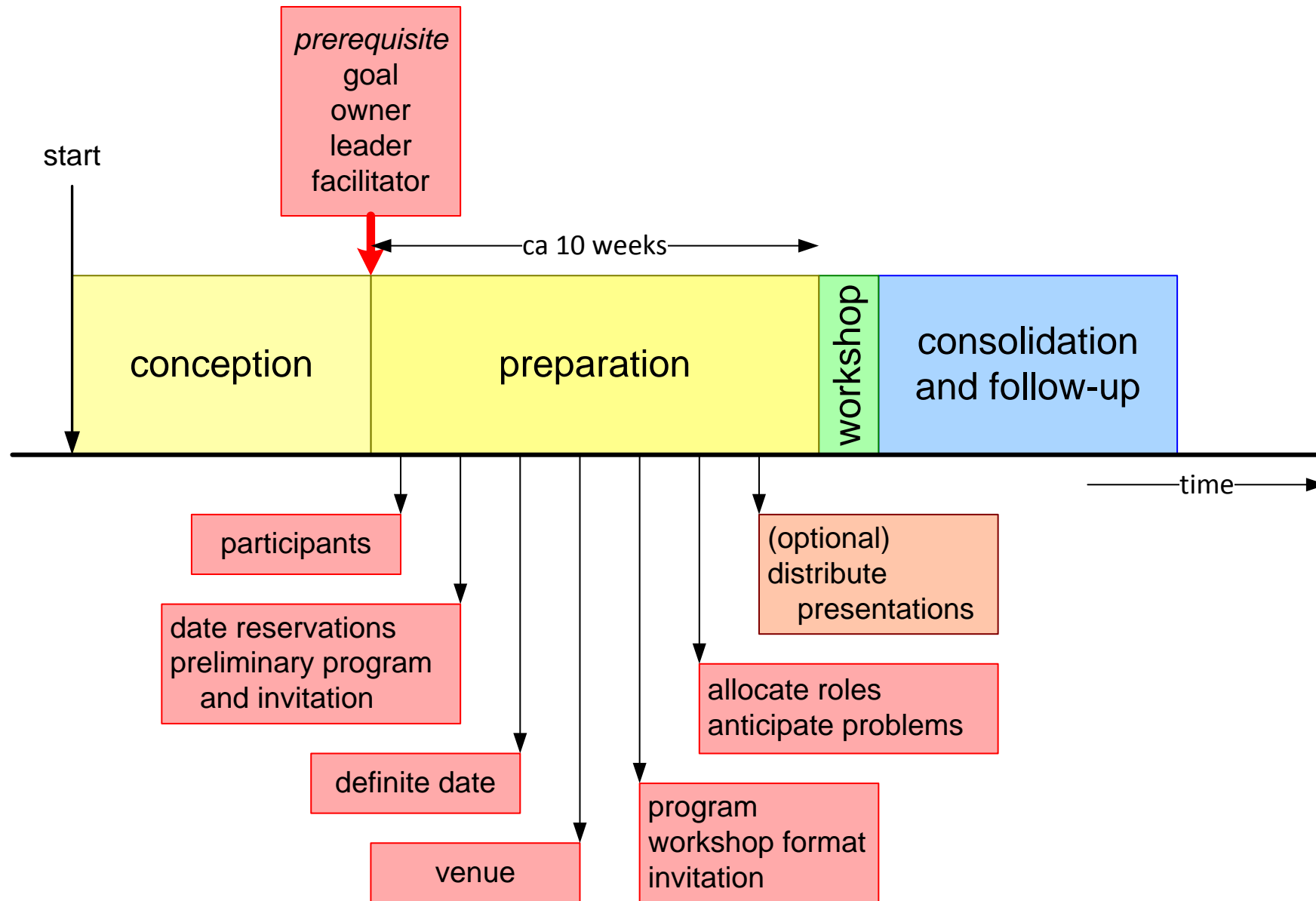




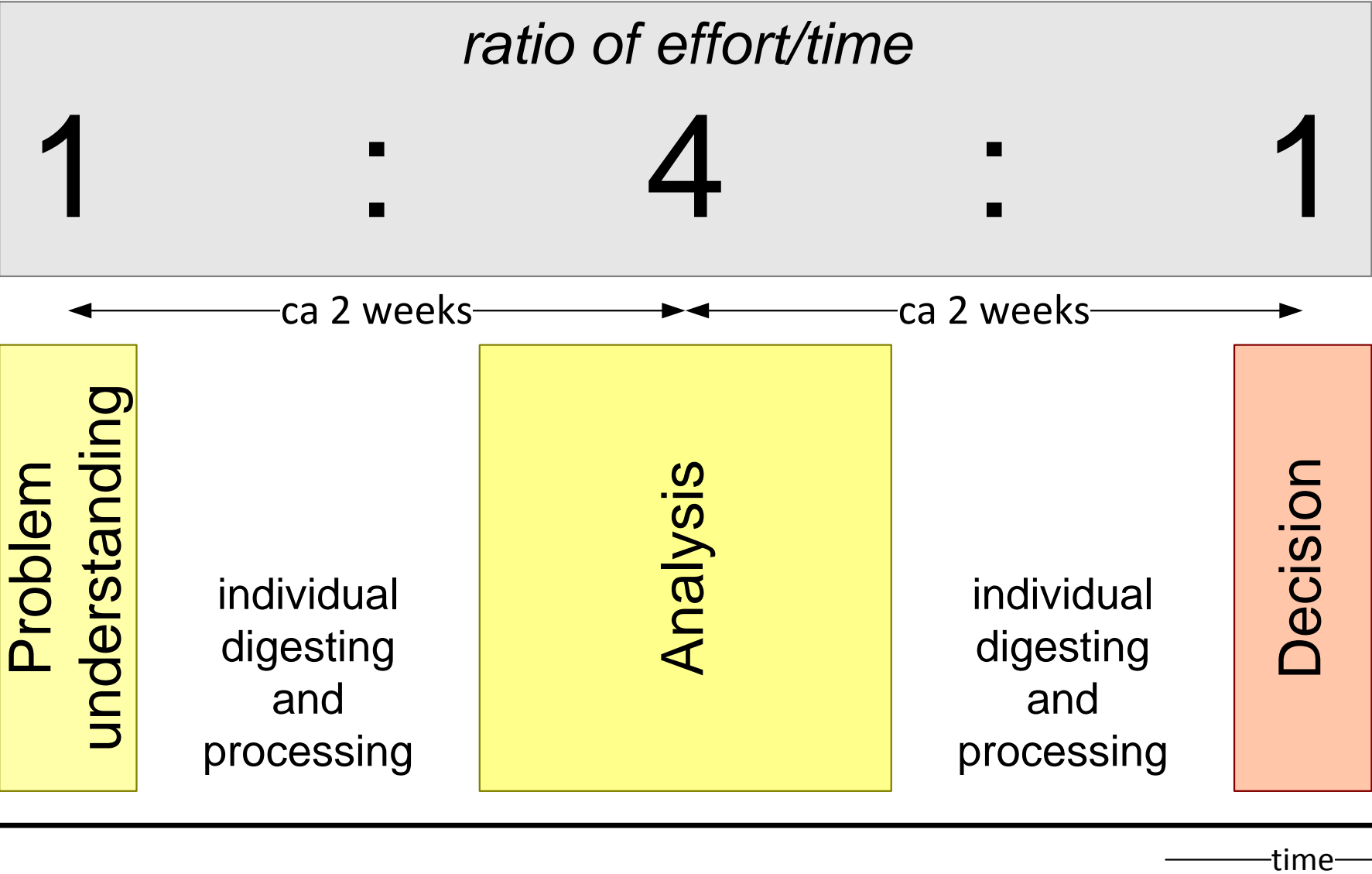
# Time-boxes and Iteration



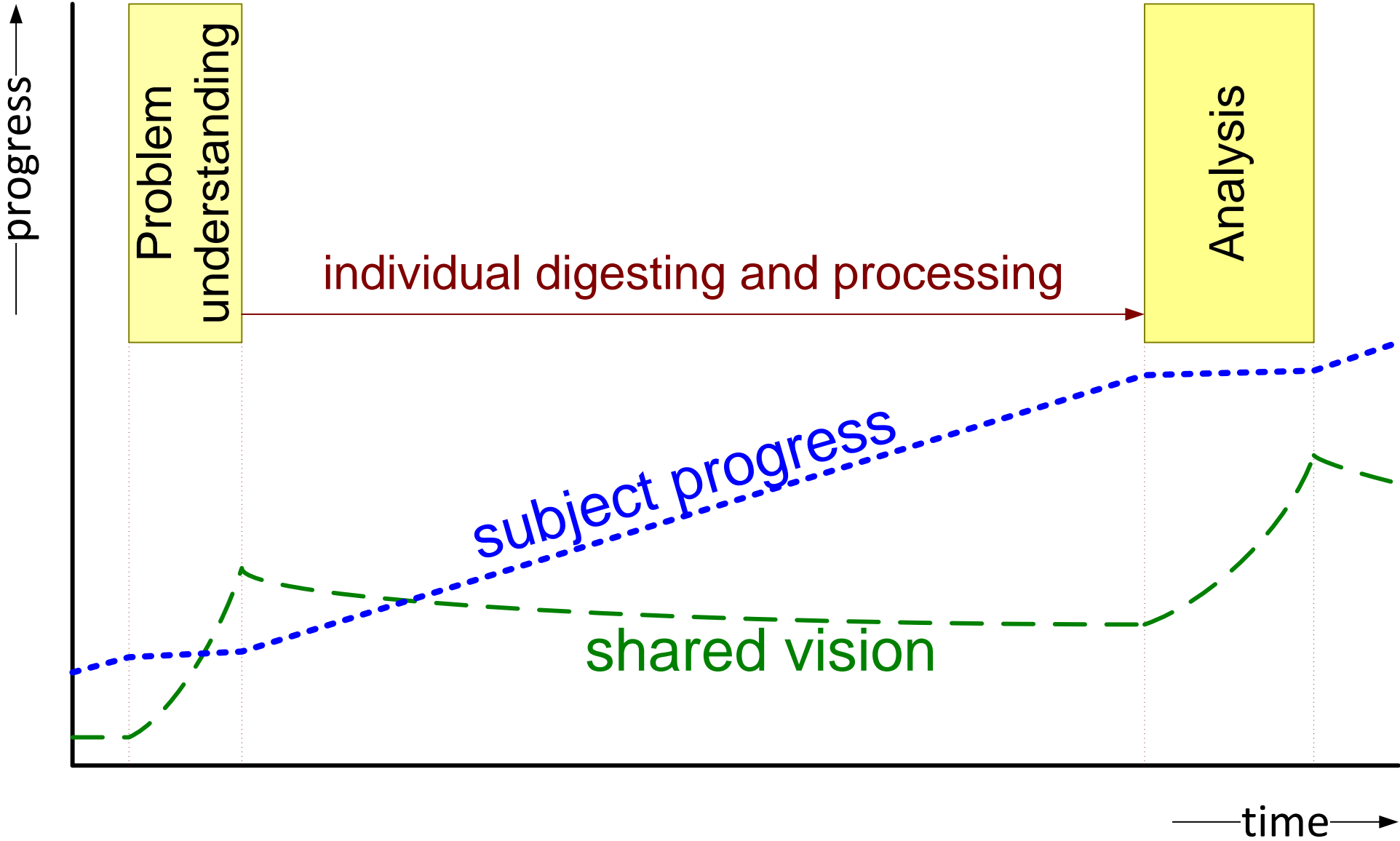
# Workshop timeline



# Sequence of Workshops

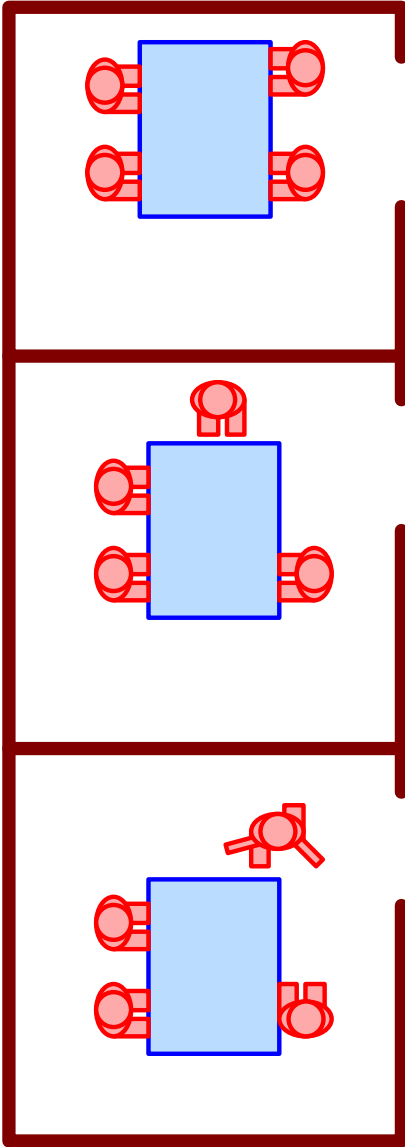


# Most Subject Progress Outside Workshop

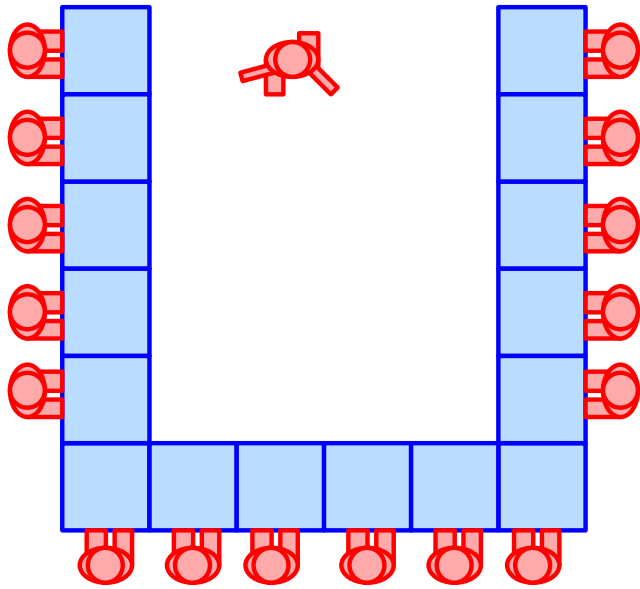


# Venue Requirements

*break-out rooms*



open seating formation  
sufficient walking space  
ask for a room for  $2 * \#participants$



*plenary area*

# Secret Workshop Success Factors

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**active**

>70% of the time active  
short intro, short broadcasts

**focused**

clear scope and goal  
format

**well-prepared**

timely invitation  
seed presentations  
seed questions

**involved participants**

full-time present  
no cellphone  
no e-mail

# Summary

