



Björn Fagerström (PhD/Prof) 2020-05-28



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ASSAR | Skövde

Framtidens behov och utmaningar

rekonfigurerbarhet och agilitet

OUTLINE



	Från utvärdering av tekniska lösningar till strategisk utveckling	Skandia Elevator, Jerry Olsson & Jonas Larsson
11.00-11.10	Paus	
11.10	Framtidens behov och utmaningar - rekonfigurerbarhet och agilitet	Leif Pehrsson, Tehseen Aslam samt Björn Fagerström Jönköpings Universitet/ EIT Manufacturing North
11.40	PRISUTDELNING Årets teknikstudent & Årets Produktionstekniker	Högskolan i Skövde och IDC delar ut priser
11.55-12.00	Paus	

- INTRODUCTION
- BACKGRUND – THE NEED
- AGILE

Presentation slides in English (most) – But we speak Swedish

Please take contact afterwards in case you have questions

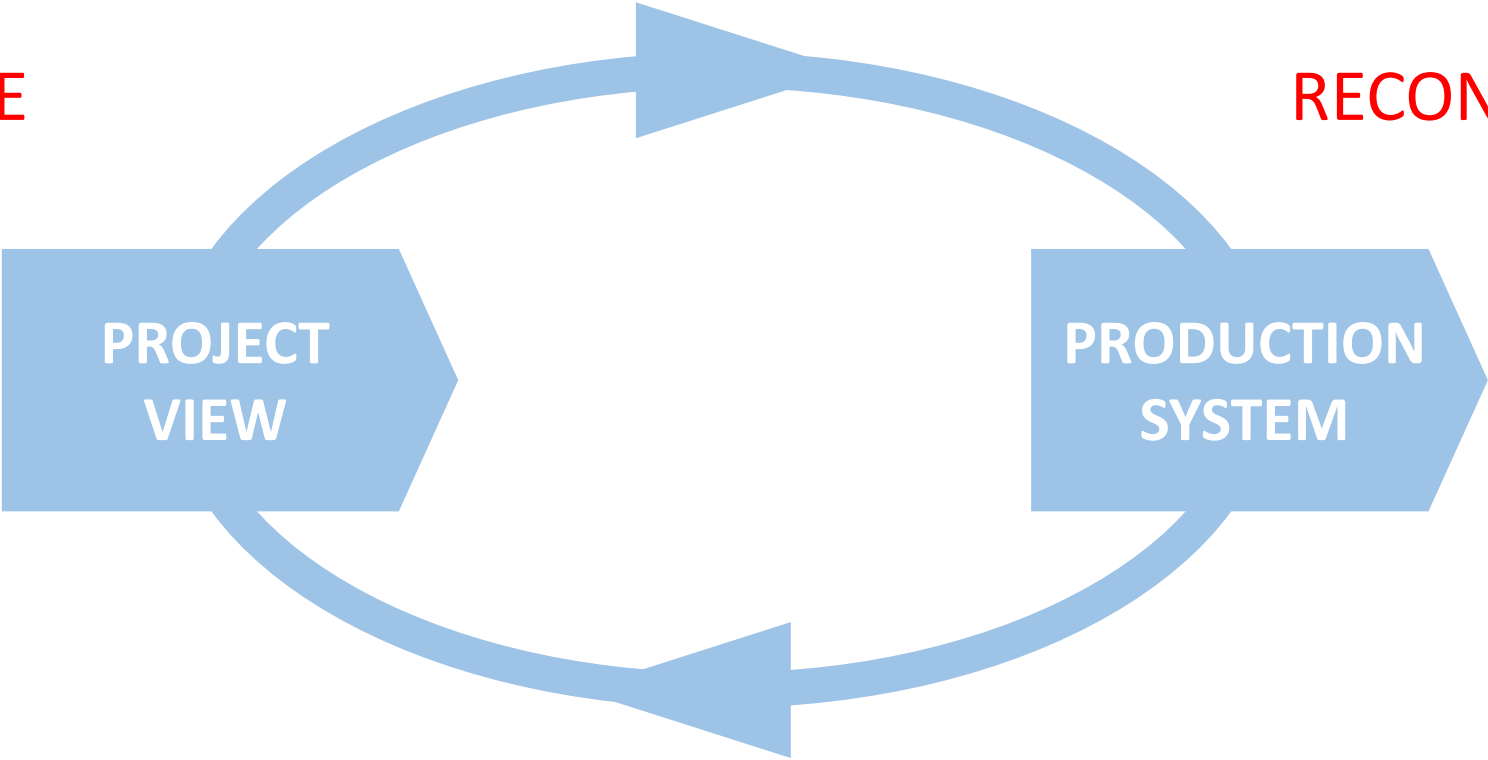


INTRODUCTION

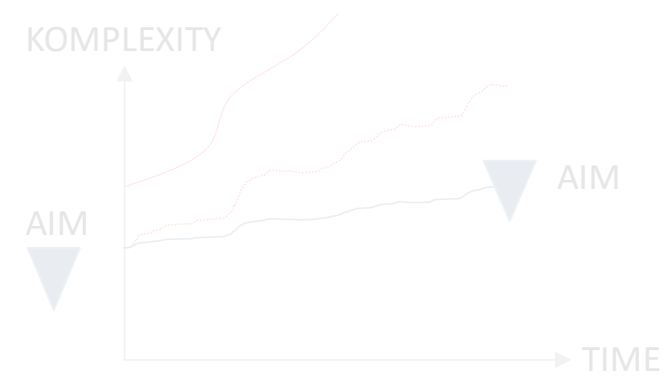
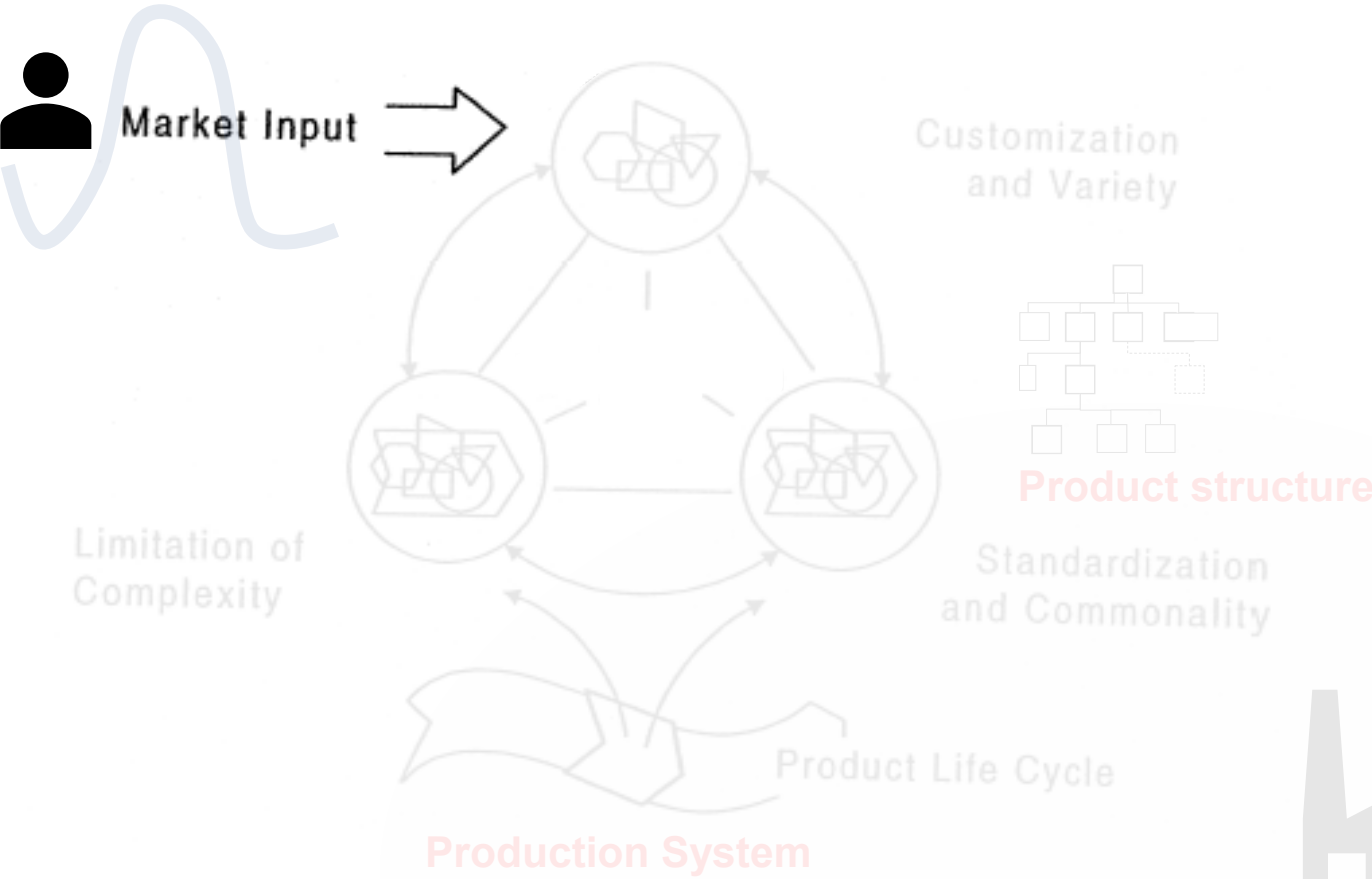
	Framtidsplanering och utveckling för strategisk utveckling	Skandia Elevator, Jerry Olsson & Jonas Larsson
11.00-11.10	Paus	
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AGILE

RECONFIGURABILITY



PRODUCT STRUCTURE PRODUCTION SYSTEM

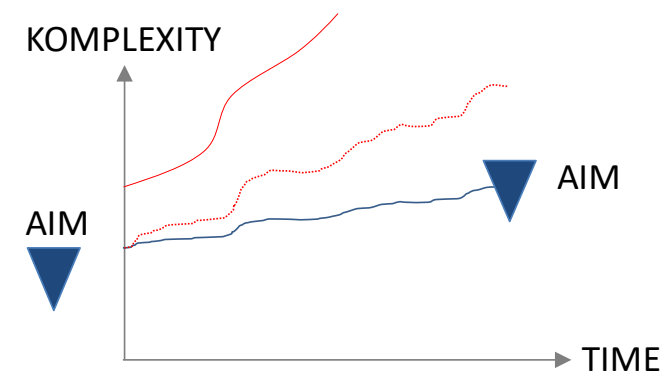
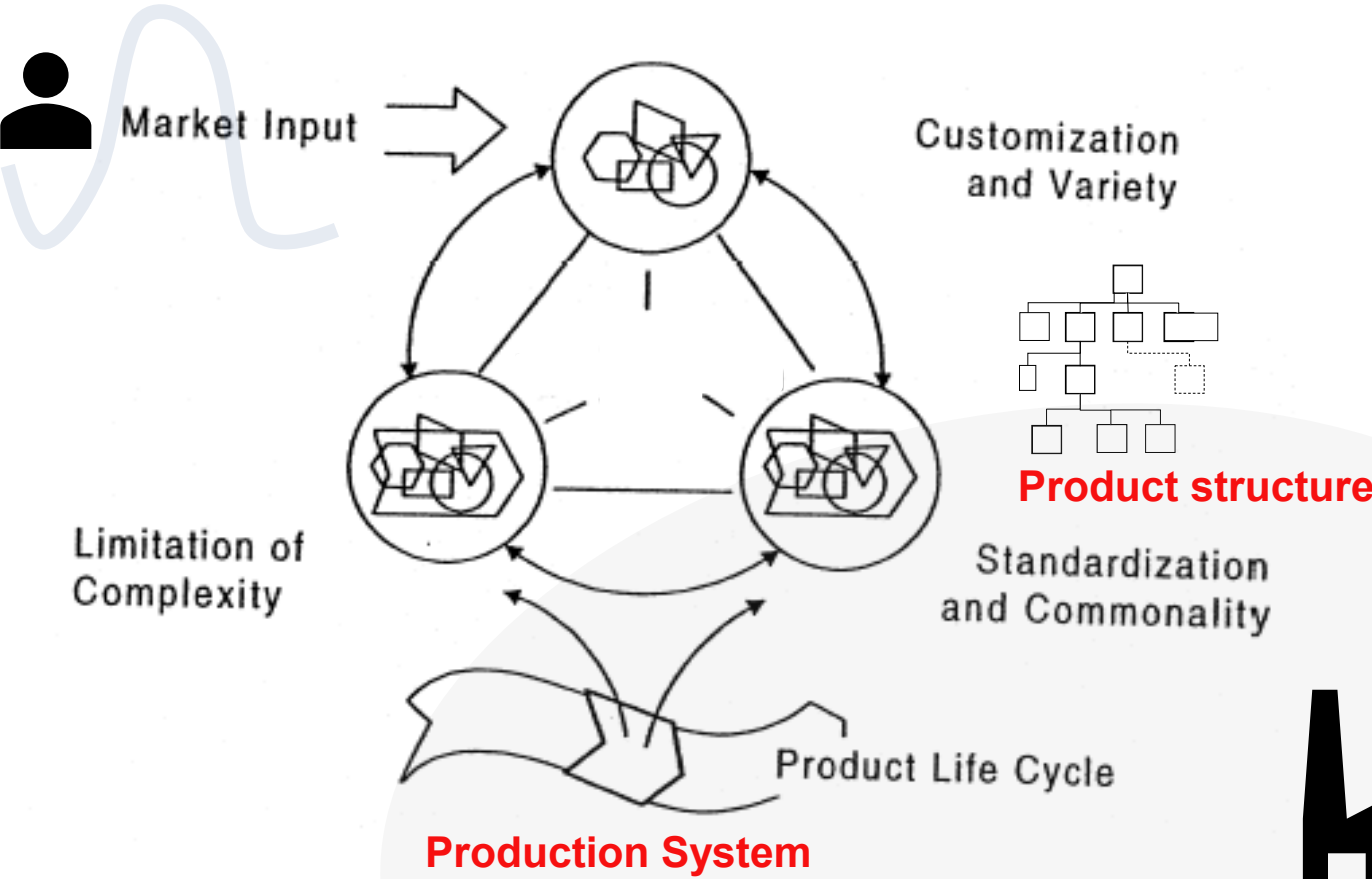


Complexity increase (time), target to have ha robust and modular structure with less complexity growth

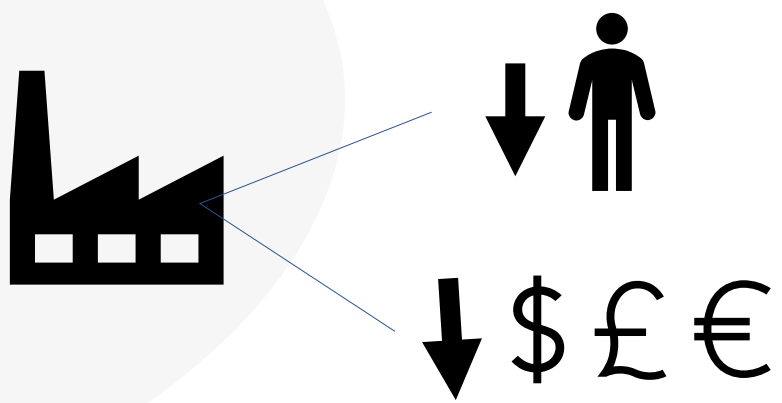


Miller T.D., "Modular Engineering", Technical University of Denmark, PhD Thesis #9, Copenhagen , 2000.

PRODUCT STRUCTURE PRODUCTION SYSTEM

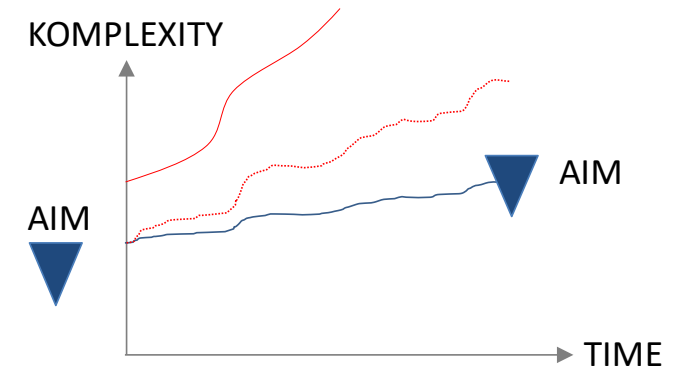
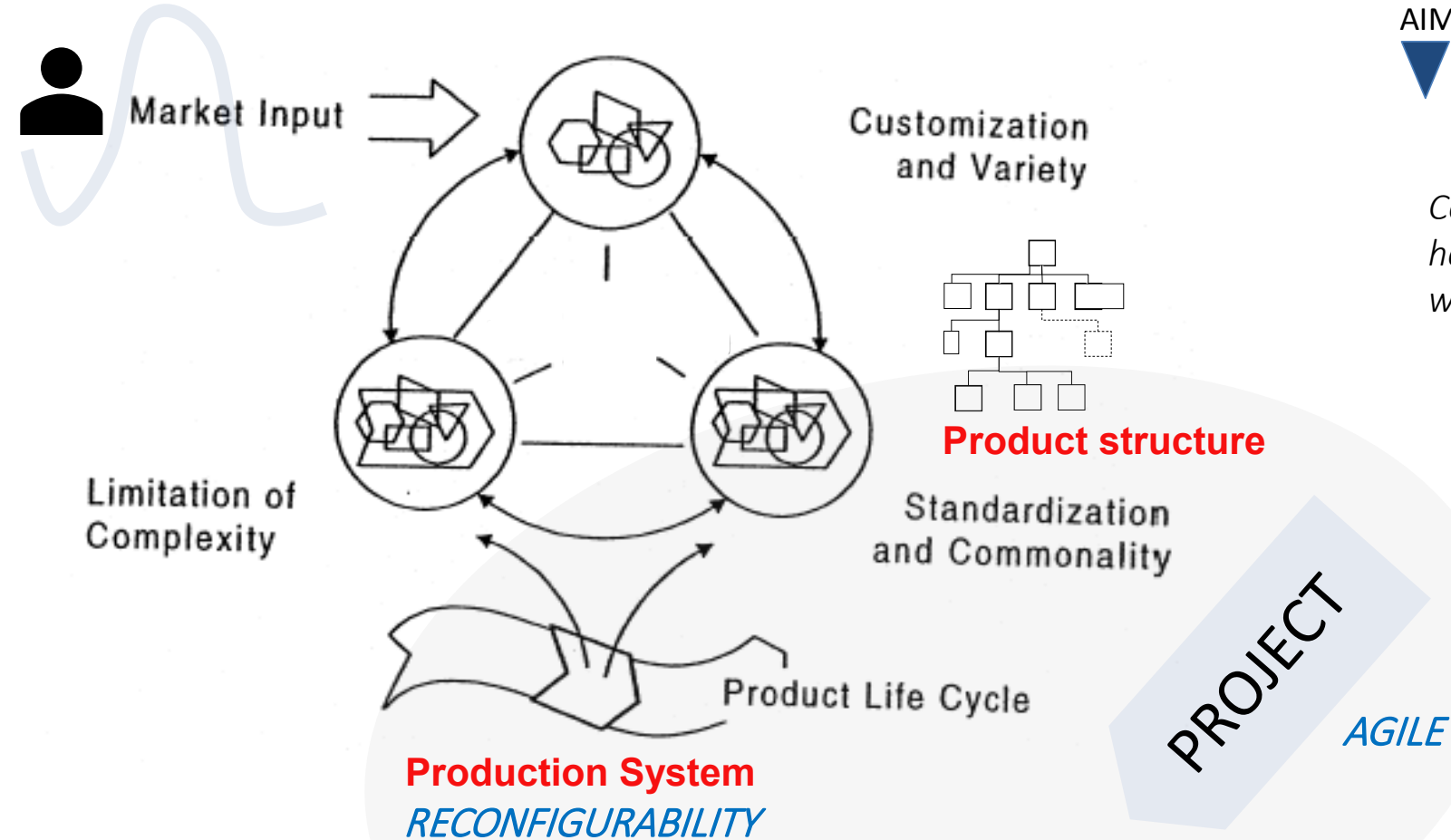


Complexity increase (time), target to have a robust and modular structure with less complexity growth



Miller T.D., "Modular Engineering", Technical University of Denmark, PhD Thesis #9, Copenhagen , 2000.

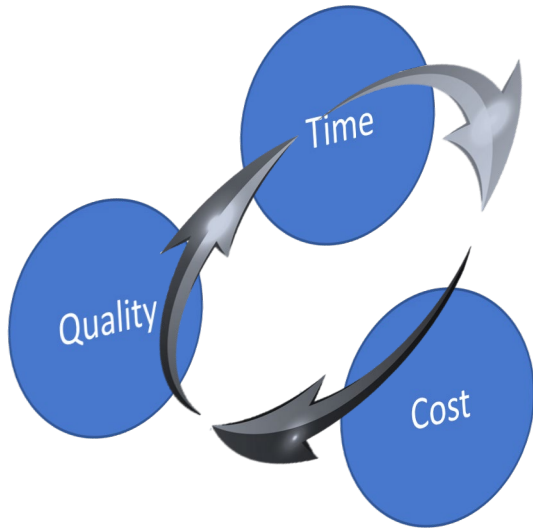
PROJECT VIEW



Complexity increase (time), target to have a robust and modular structure with less complexity growth

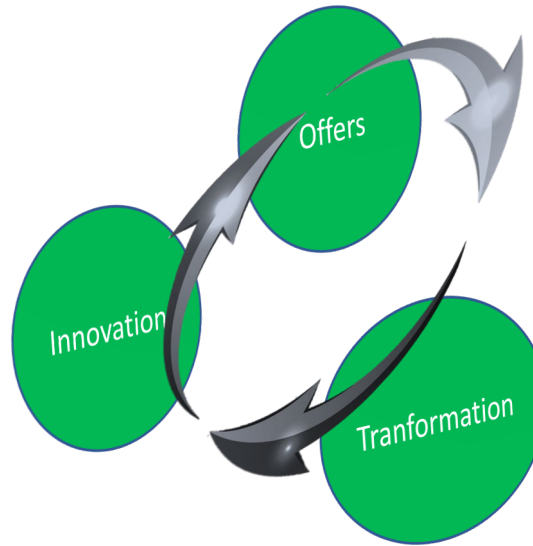
- Why Agile approach ?
- Some information will follow on later slides

MANAGE “old” and “new” simultaneously



Operational Excellence Dimension

Still to be managed



Innovative Dimension

Crucial for survival

Increased change pace
Current structures obsolete

- Transformation competence needed now
- Increased number of people in the organization focus on transformation/innovation
- Number of project in a company increase
- Thus, the project management capability will be a success factor!

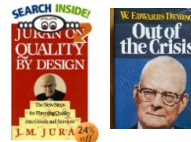
NEW DEMANDS

EVOLUTION...

< 60s Cost



< 70-80s Quality



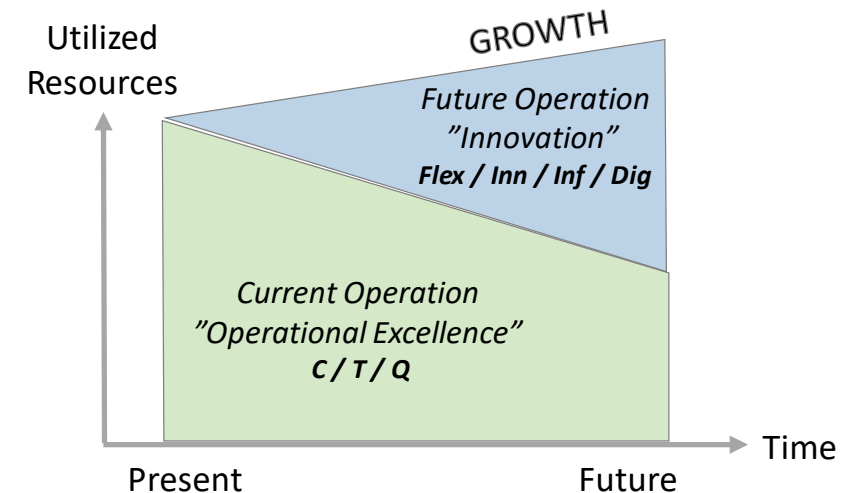
< 90s Time



< 2000s Continuous adaption to new conditions (Agility – Flexibility)



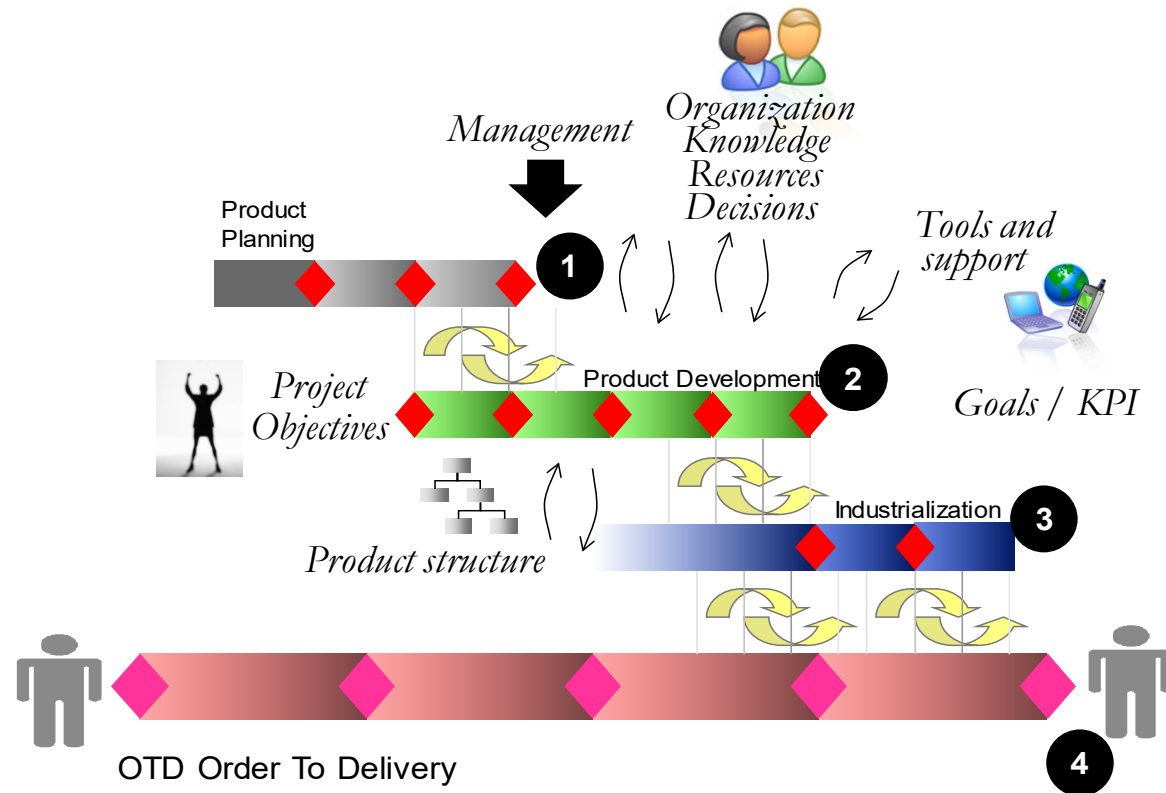
< 2005s Information & Digitalization



Partly from "Ln Grwth, Sven Ohde, 2007"

PRODUCTDEVELOPMENT OCH PRODUCTION

PRODUCT PLANNING AND INDUSTRIALIZATION



EFFECTIVENESS

EFFICIENCY



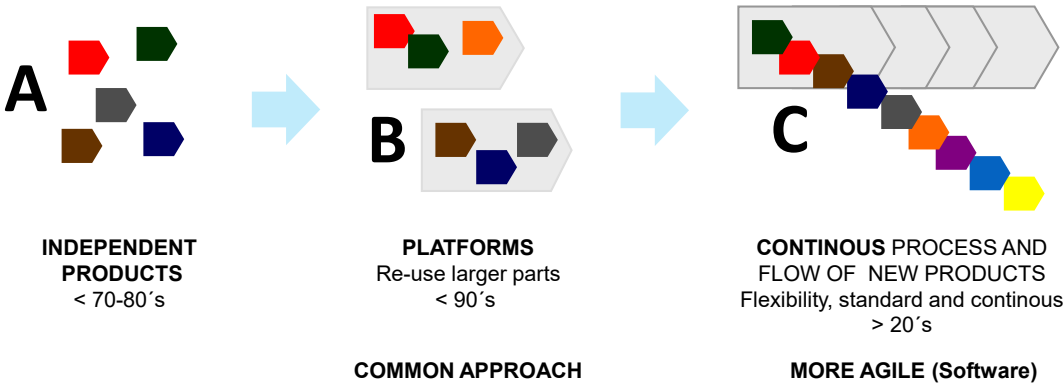
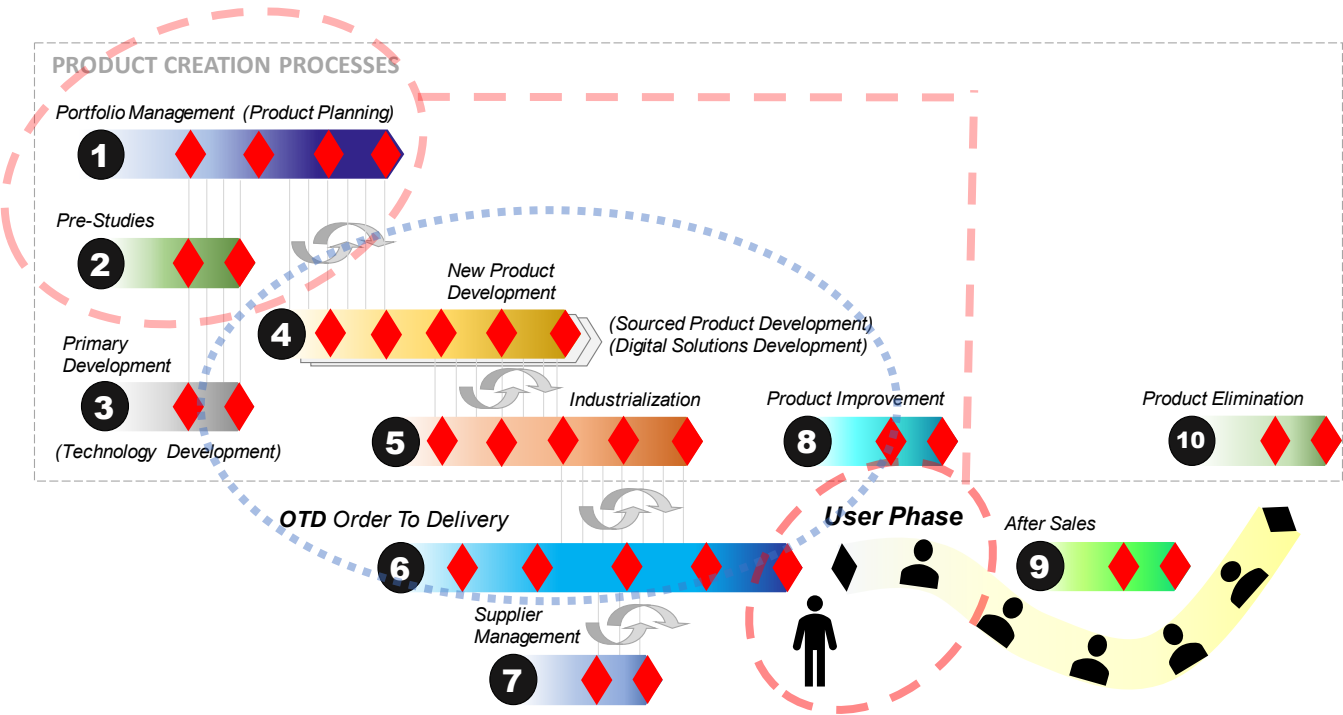
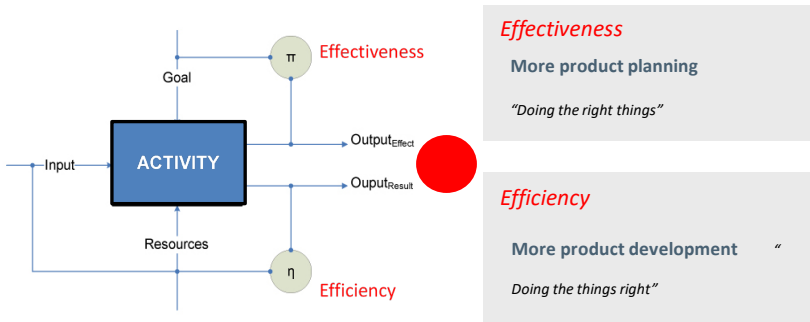
EFFECTIVENESS

- Product Planning
- Customer Journeys
- Market penetration / end effects
- Important input to NPD



EFFICIENCY

- Product development
- Industrialization
- Ran-Up production
- Deliver the agreed result (Q/T/C) within budget

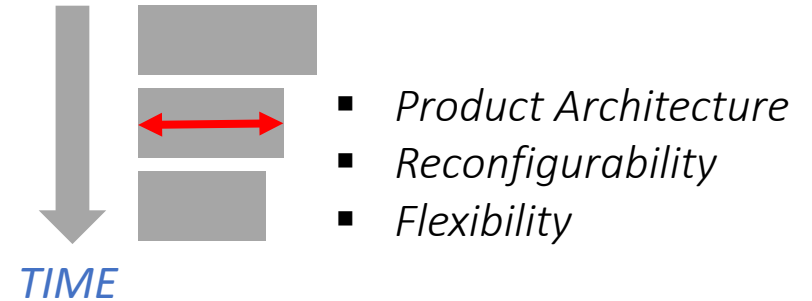


MARKET INTRODUCTION APPROACH

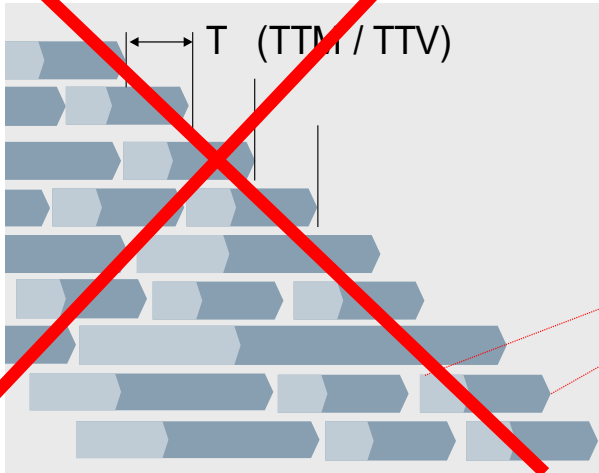
~~TTM~~

TTV

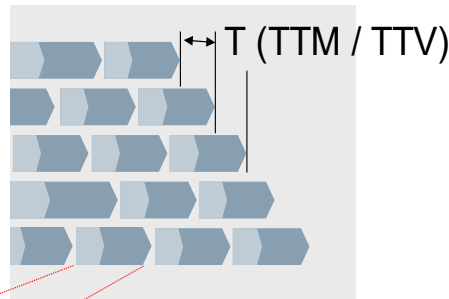
SHORTER TIME IN
THE MARKET



Overloaded portfolio



Balanced portfolio



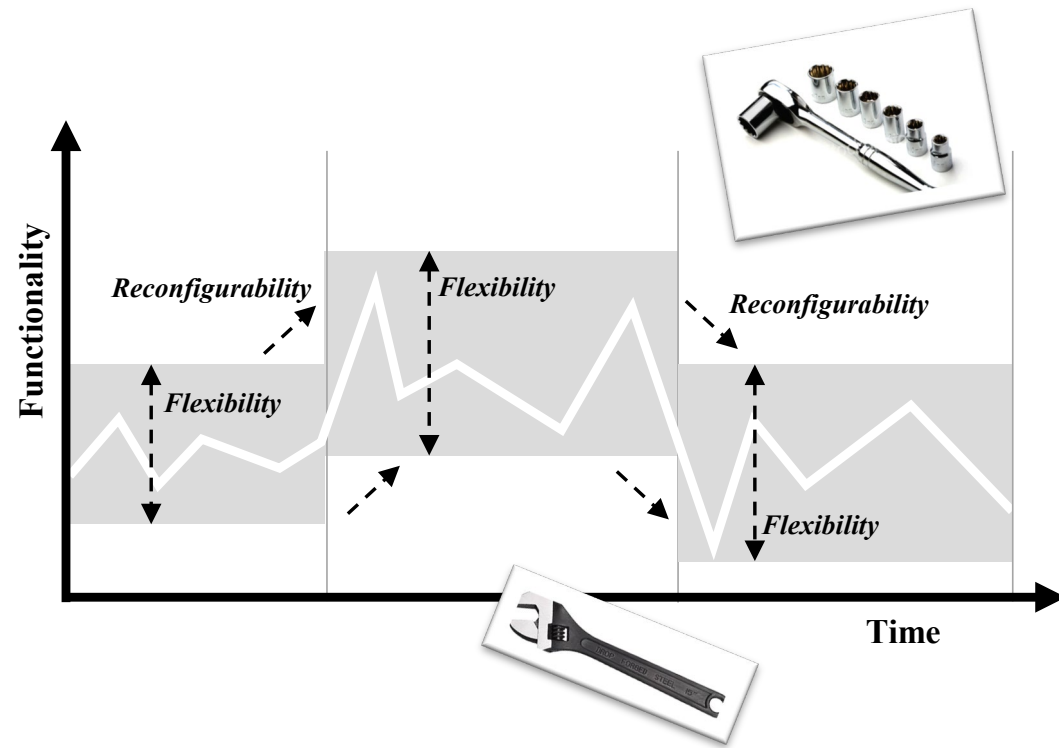
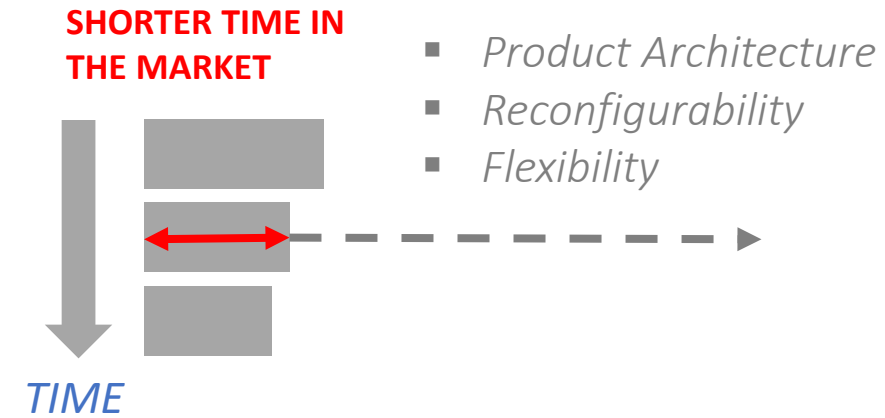
Fewer projects
with more attention
= reduced Lead Time

INCREASED COST OF DELAY!

- Balanced Portfolio
- Shorter Lead Time
- Fewer projects with Higher pace

RECONFIGURABILITY APPROACH

- Istället för att utforma nya produktionssystem för varje produkt är produktionssystemet från början utformat för rekonfigurering till många produkttyper och variationer
- Stegvis anpassning efter kapacitet och function
- Ett modulärt produktionssystem med standardiserade gränssnitt och hög diagnostiserbarhet

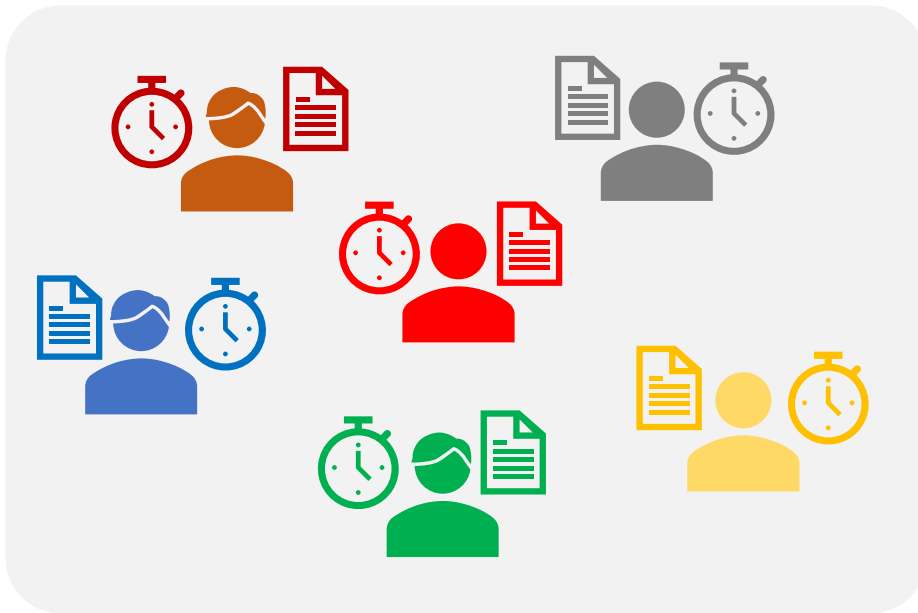


OUTLINE

- INTRODUCTION
- BACKGROUND – THE NEED
- **AGILE**

AGILE is not solely a method – Rather a philosophy

WATERFALL (COMMON)



- Top down approach
- Distribution of work by PM
- Centralized
- Measure individual

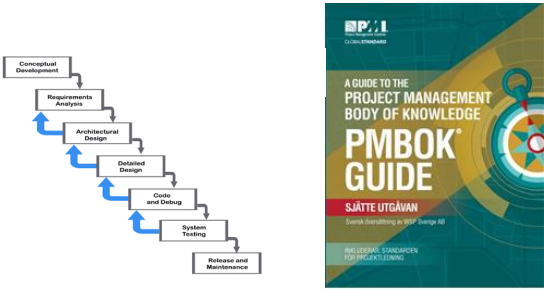
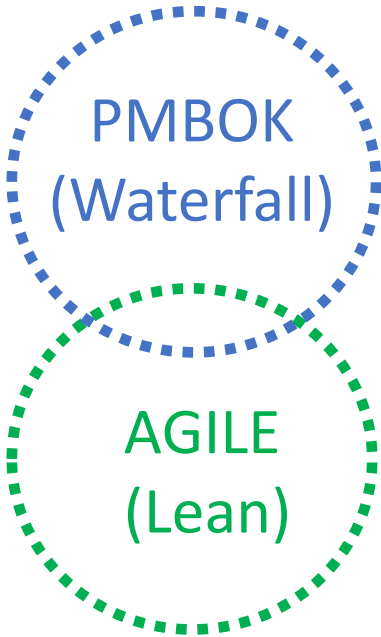
AGILE (intro)



- Bottom Up
- Team effort to define SoW
- Decentralized
- Measure team not individual

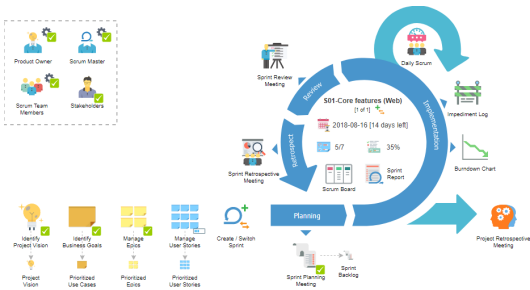
The purpose of this picture was just to introduce Agile and somme differenceies with Waterfall – More will come !

EVOLUTION

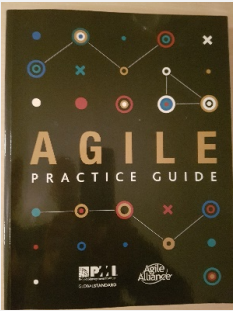
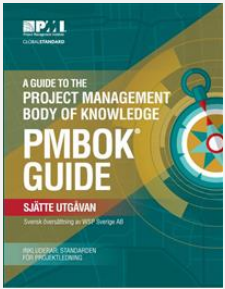


*Our ambition is to
combine these two so*

" 1 + 1 > 2 "



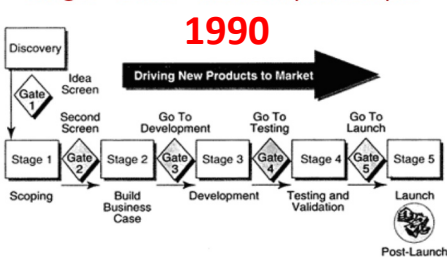
PMI
2017



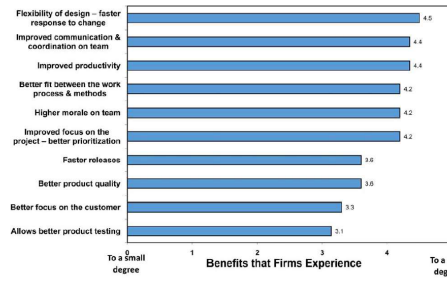
PMI 2017

COOPER 2016

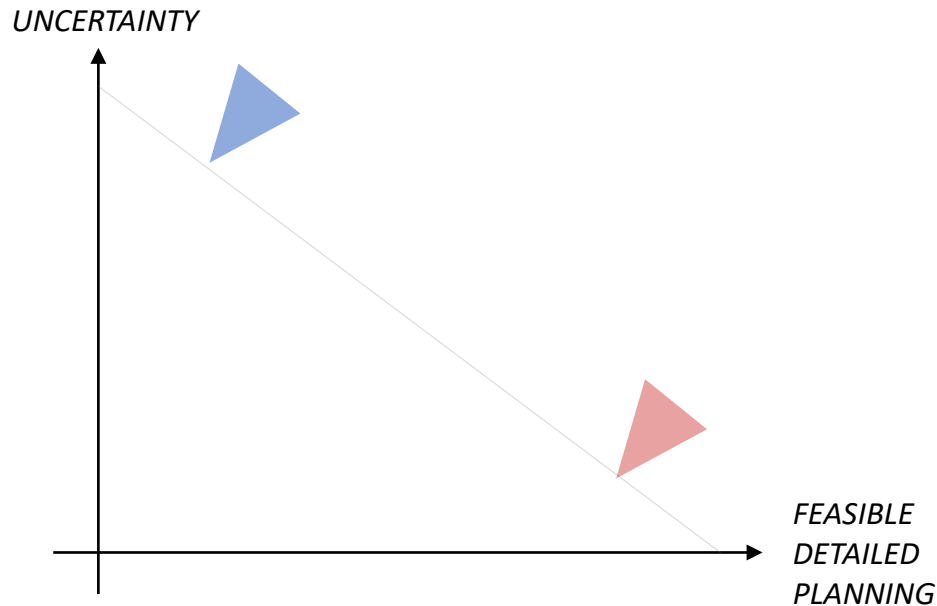
Stage – Gate™ model by R. Cooper



From Experience: The Agile-Stage-Gate Hybrid Model: A Promising New Approach and a New Research Opportunity
Robert G. Cooper® and Anita F. Sommer®



UNCERTAINTY INFLUENCE OUR **PM** APPROACH



AGILE

Uncertainty in requirements, technical solutions, risks, planning, etc.

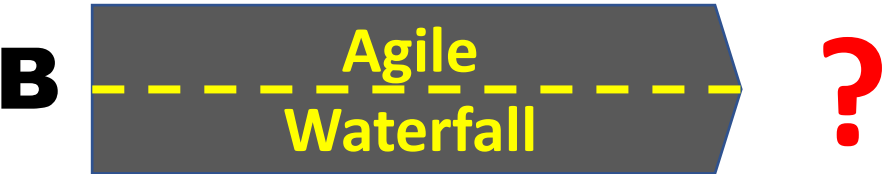
- *Draft planning – Focus on near future*
- *Cost with +/- Targets*
- *Draft / indicative Risks*
- *Collaboration critical*

Enhanced detailing and de-risking will allow for more accurate analyzes

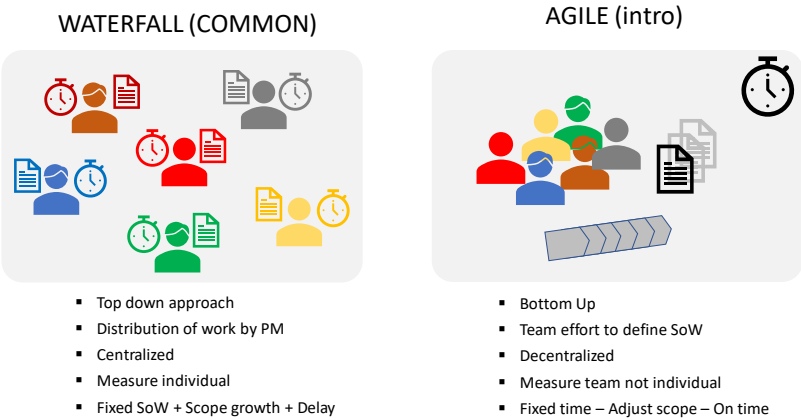
“MORE WATERFALL”

Waterfall assumes known scope

COMBINE AGILE AND W.F.



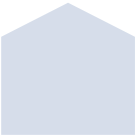
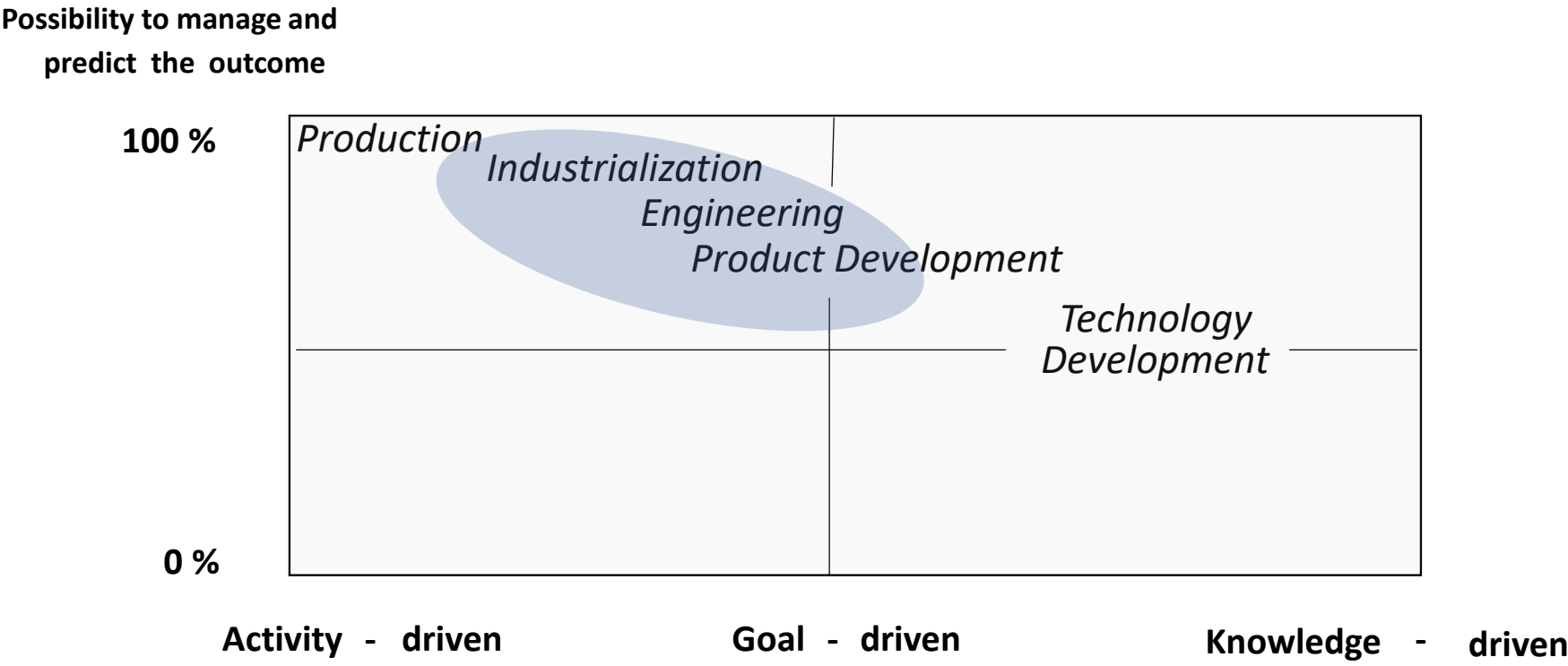
EARLIER SLIDE – HUGE DIFFERENCE



In case the work can be coordinated and an integrated approach NOT required between Agile and waterfall team, then OK

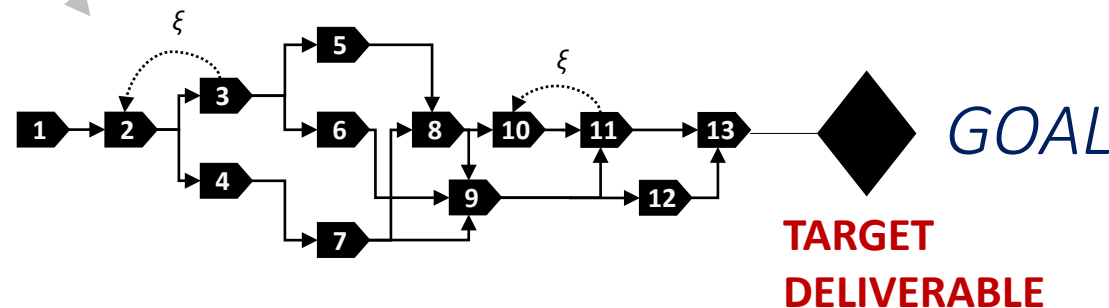
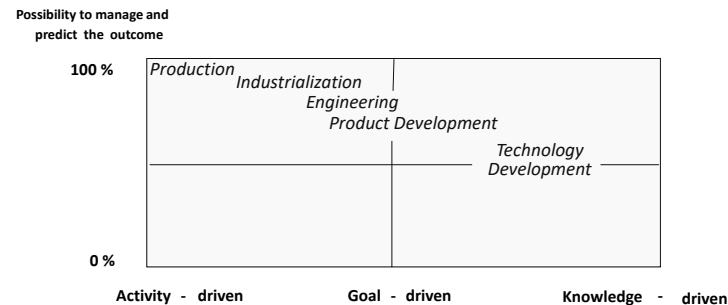
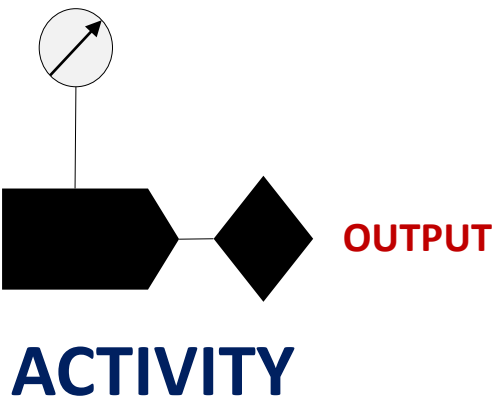
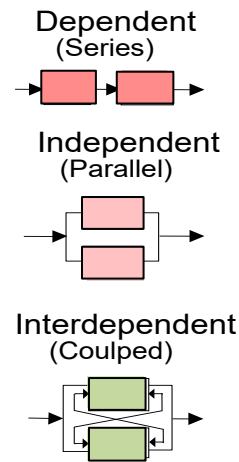
CONTROL AND PREDICTABILITY

IMPORTANT
PICTURE



GOAL vs ACTIVITY DRIVEN

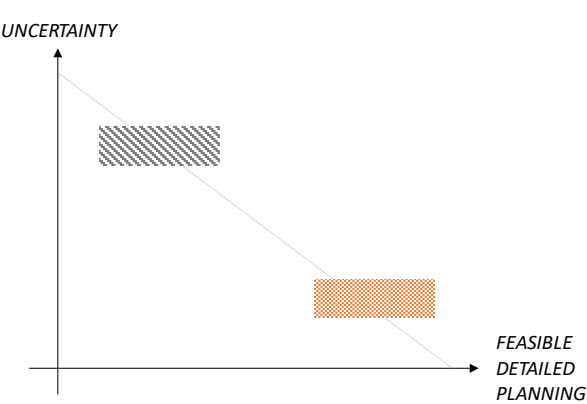
- SEQUENTIAL
- PARALLELL
- ITERATIVE



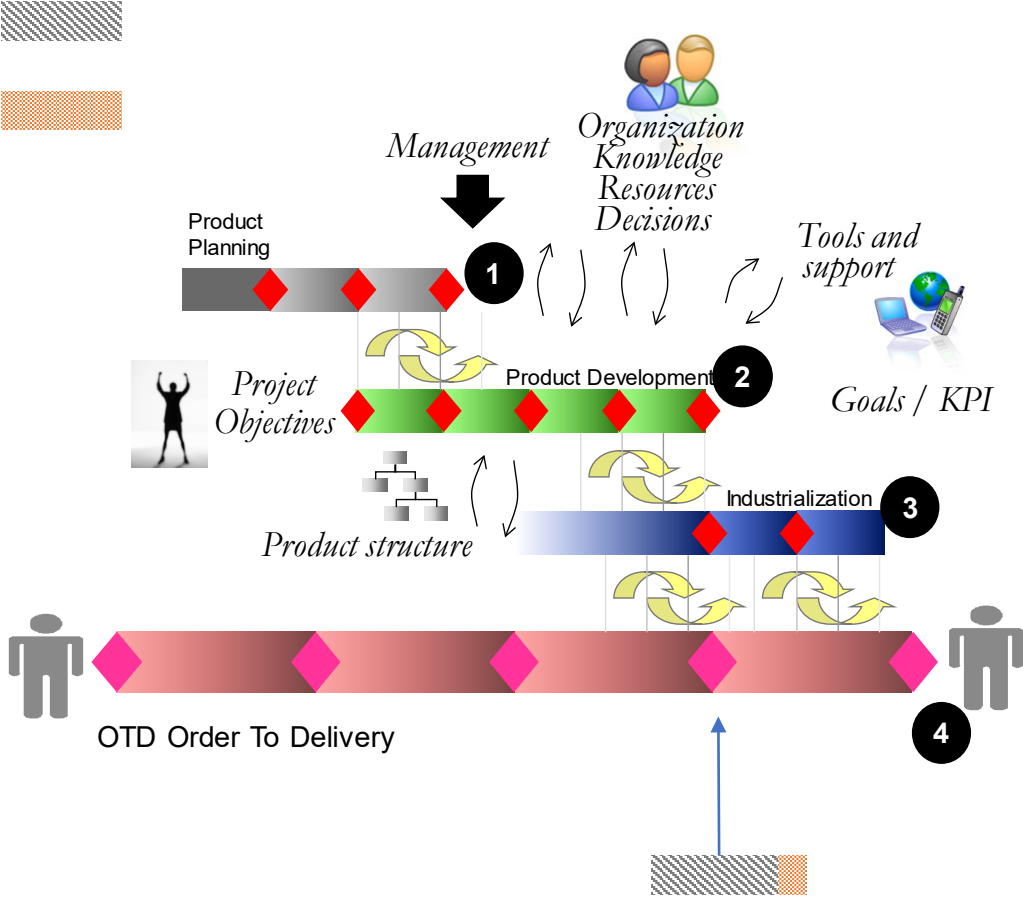
Several task structures possible to reach target.
Replanning critical

AGILE vs W.F.

- More agile way of working
- More traditional way of working



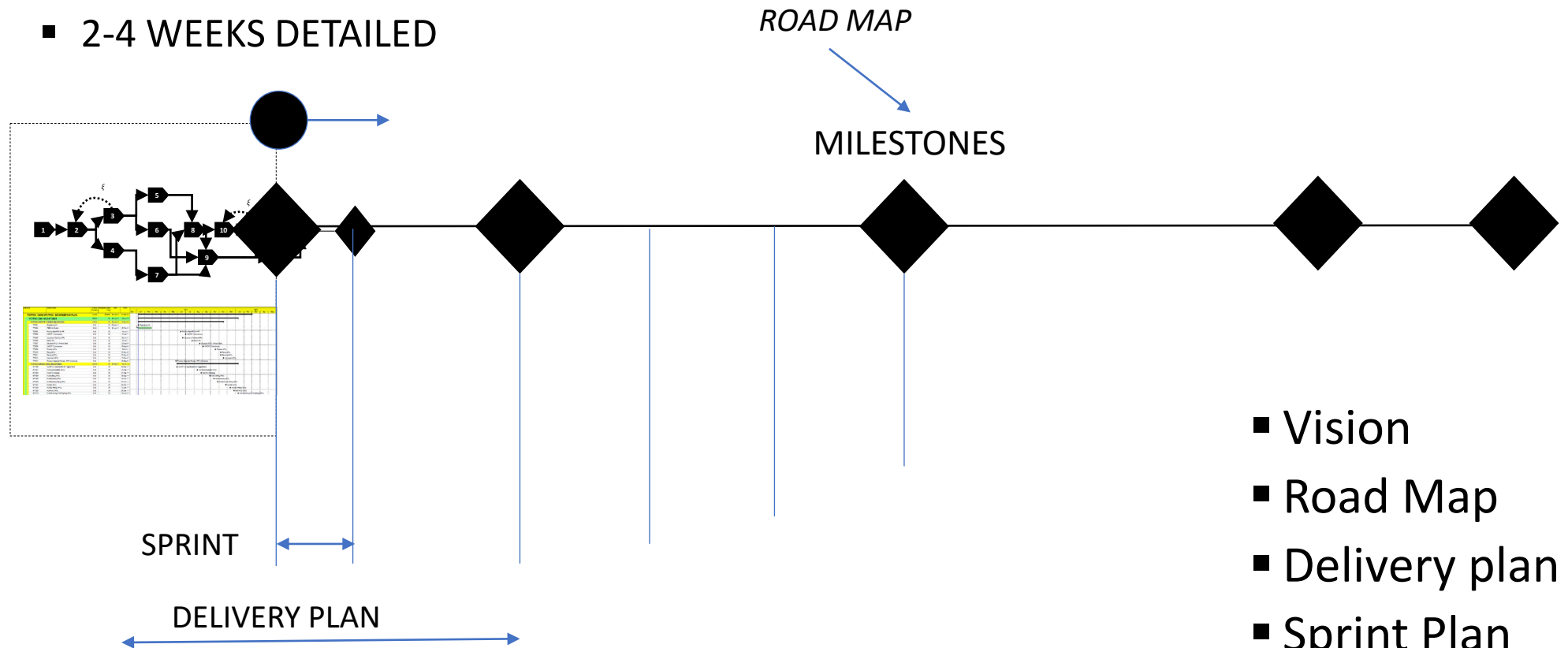
Establish new production system



WE NOW START TO SEE THE PLANNING APPROACH

- ROLLING PLANNING
- 2-4 WEEKS DETAILED

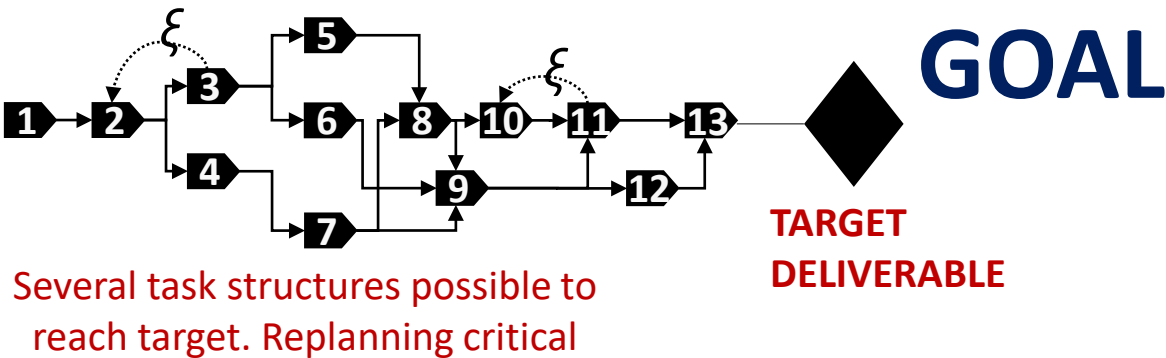
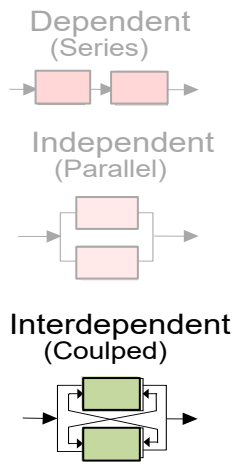
*Only detailed plan for 2-4 weeks
Take into account the learning*



- Vision
- Road Map
- Delivery plan
- Sprint Plan
- Daily Plan

ORGANIZATION FOR ITERATIVE SCOPE

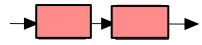
- SEQUENTIAL
- PARALLELL
- ITERATIVE



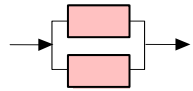
SOME SUPPORT FOR ORGANIZING THE WORK

- SEQUENTIAL
- PARALLELL
- ITERATIVE

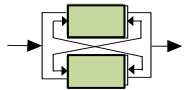
Dependent
(Series)



Independent
(Parallel)



Interdependent
(Coupled)



COORDINATION

- Well defined work package
- Just to send a specification and you know exactly what you get.
- Limited uncertainty

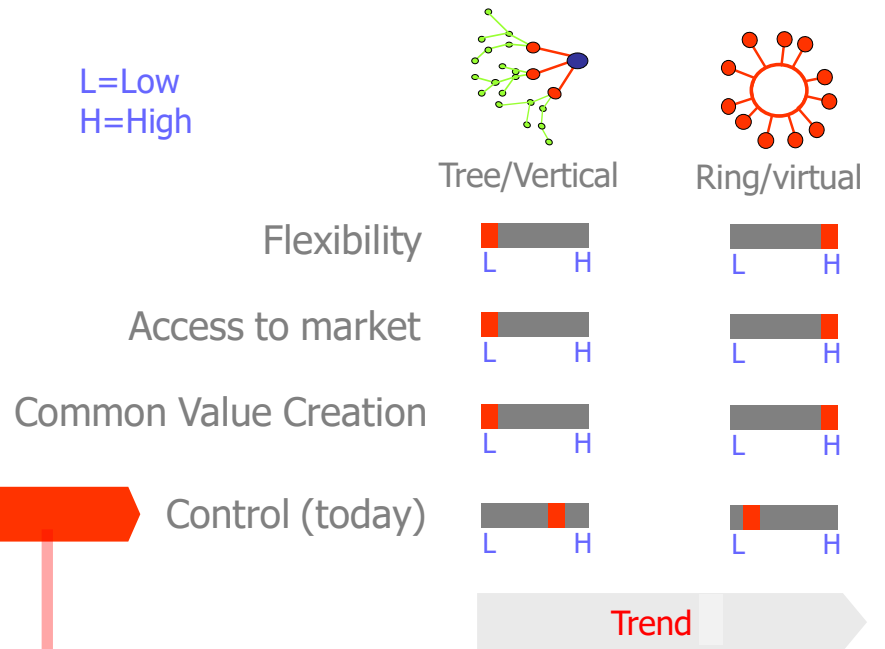


INTEGRATION

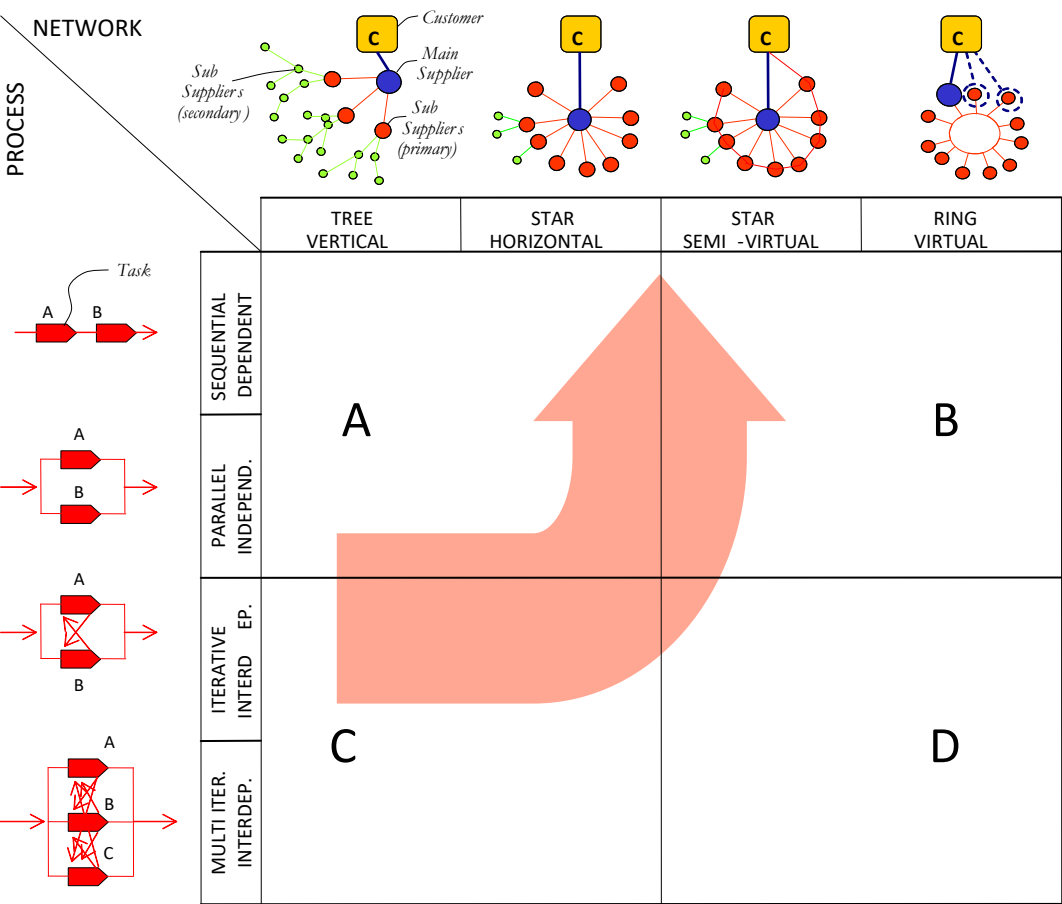
- Uncertainty
- Iterative scope
- Joint effort required



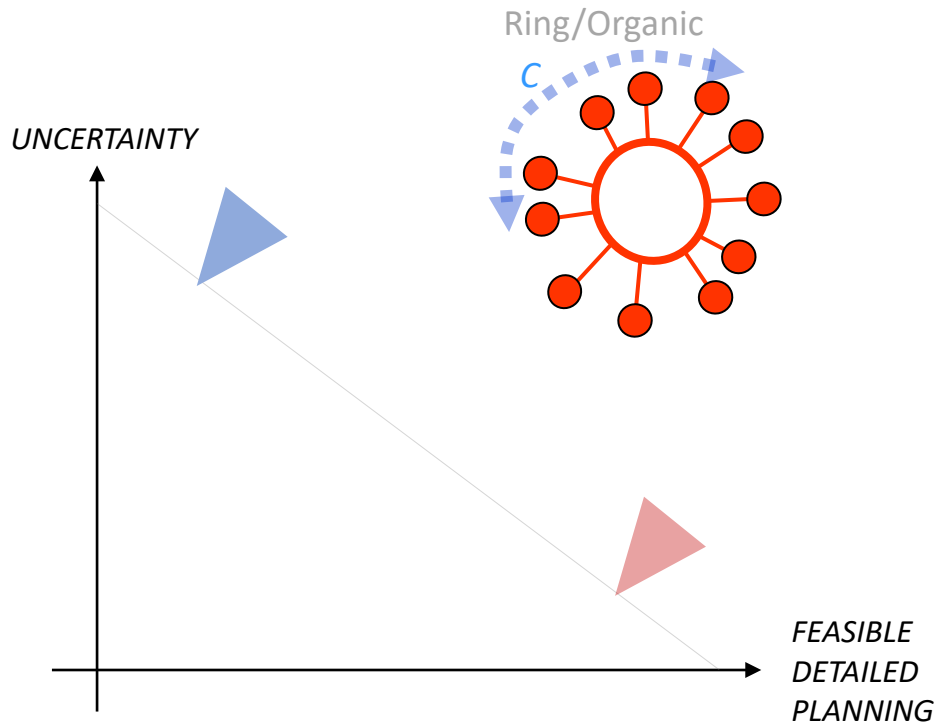
PLANNING/ACTIVITIES vs ORGANIZATION



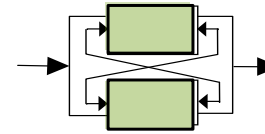
Agile is an approach to maintain control



UNCERTAINTY AND TEAM



Interdependent
(Coupled)



AGILE

- *Ring network / organic*
- *Do not control – Motivate and guide with objectives/targets and frames.*
- *Aim for learning and common understanding*

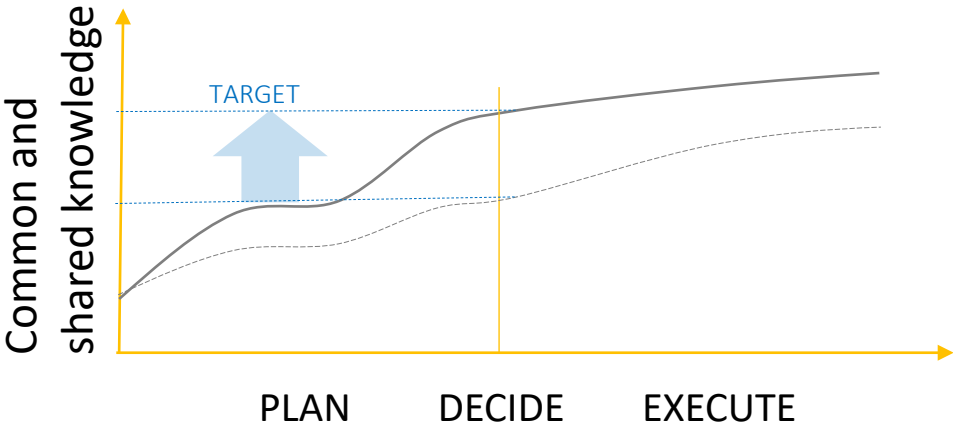
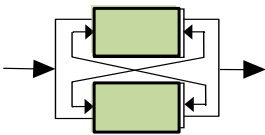
Enhanced detailing and de-risking will allow for a more predictable plan and a “tree structure” will make sense.

COMMUNICATION – COLLABORATION – SHARED VIEW

Cross Functional Collaboration



Interdependent (Coupled)



CONCLUSION

- This was just an introduction!
- But I hope that you are inspired to continue the journey
- Do not mix Agile & Waterfall
- Go all in at least in one pilot project – Prior to concluding anything
- Please take contact as needed!
- Thanks for your attention!

Kurser för yrkesverksamma hösten 2020 - JU

Underhåll för produktionsprestanda, 5 HP

Utveckla din organisations strategi för ett mer proaktivt underhåll

Agil produktionsutveckling, 5 HP

Lär dig att använda agila planeringsmetoder, verktyg och principer för effektivare projekt

Automation - möjligheter och utmaningar, 5 HP

Lär dig tekniker och lösningar för automation och att analysera varför, när och hur du ska automatisera i din verksamhet

För att se hela vårt kursutbud för dig som yrkesverksam
ju.se/yrkesverksam





eitmanufacturing.eu

bjorn.fagerstrom@eitmanufacturing.eu



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