

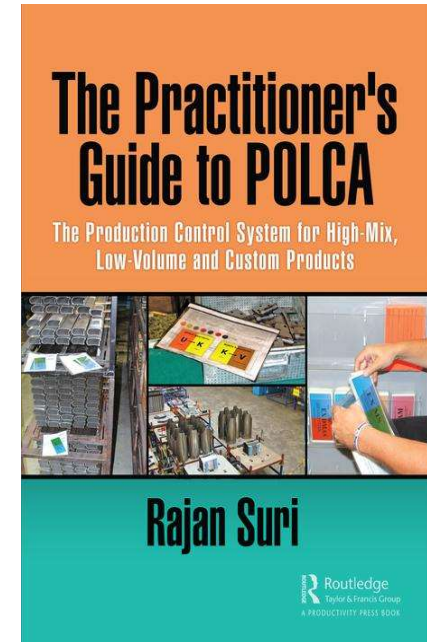
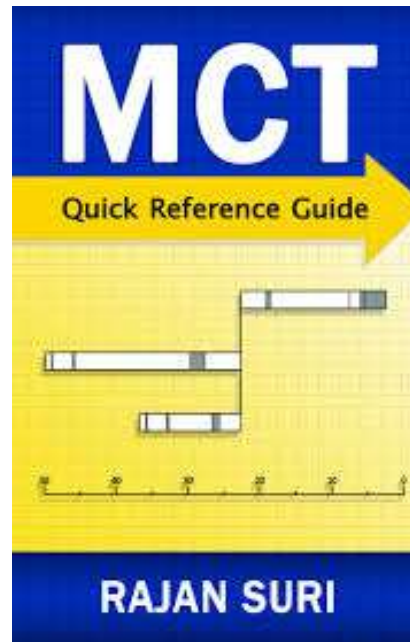
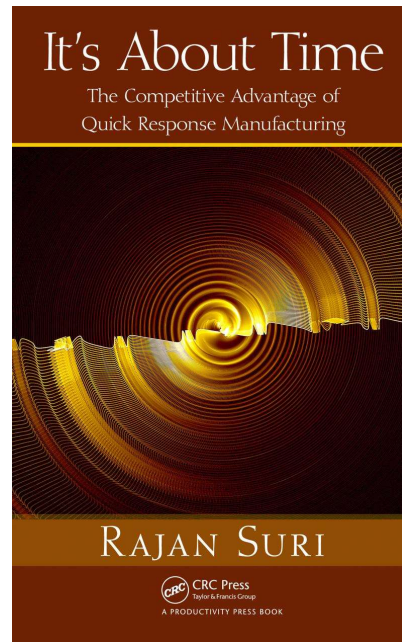
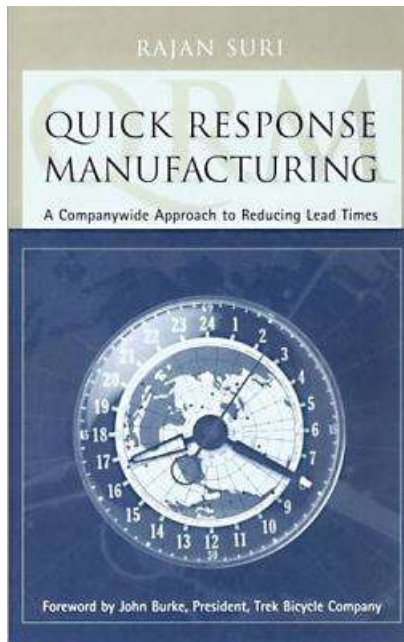
Quick Response Manufacturing

What is Quick Response Manufacturing?



- Strategy based on "Time-based competition" that stresses speed as a competitive advantage.
- Company wide strategy focused on manufacturing, but also applicable to administration, product development, ...
- Specially developed for companies with high mix/low volume and custom made products.

Rajan Suri – books



Focus on efficiency



1. To shorten our lead times we have to improve our efficiency.

- True
- False

Idling resources are wasting money



2. To get jobs out fast, we must keep our machines and people busy all the time.

True

False

Delivery reliability



3. We must place great importance on "on-time" delivery performance by each of our departments and by our suppliers.

- True
- False

Teamwork



4. We can implement QRM by forming teams in each department.

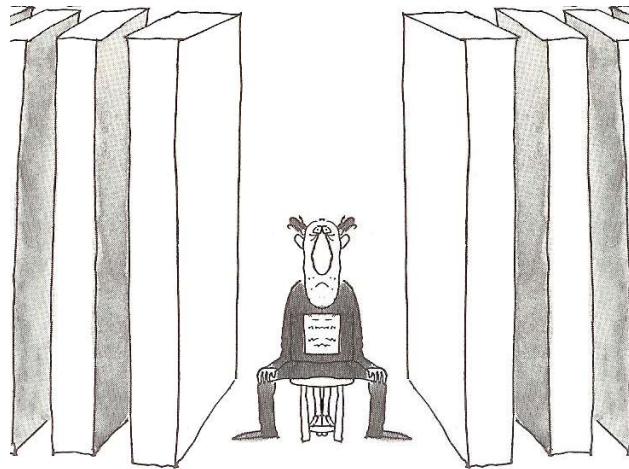
- True
- False

A quick start

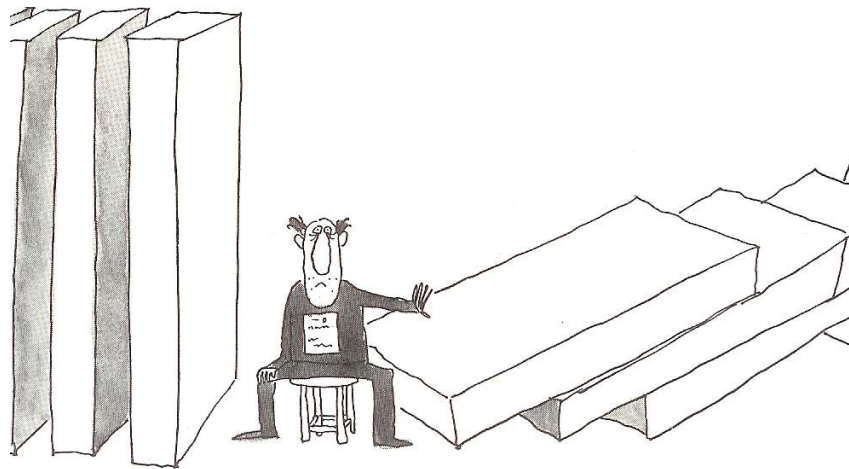


5. The sooner we start, the sooner we will be ready.

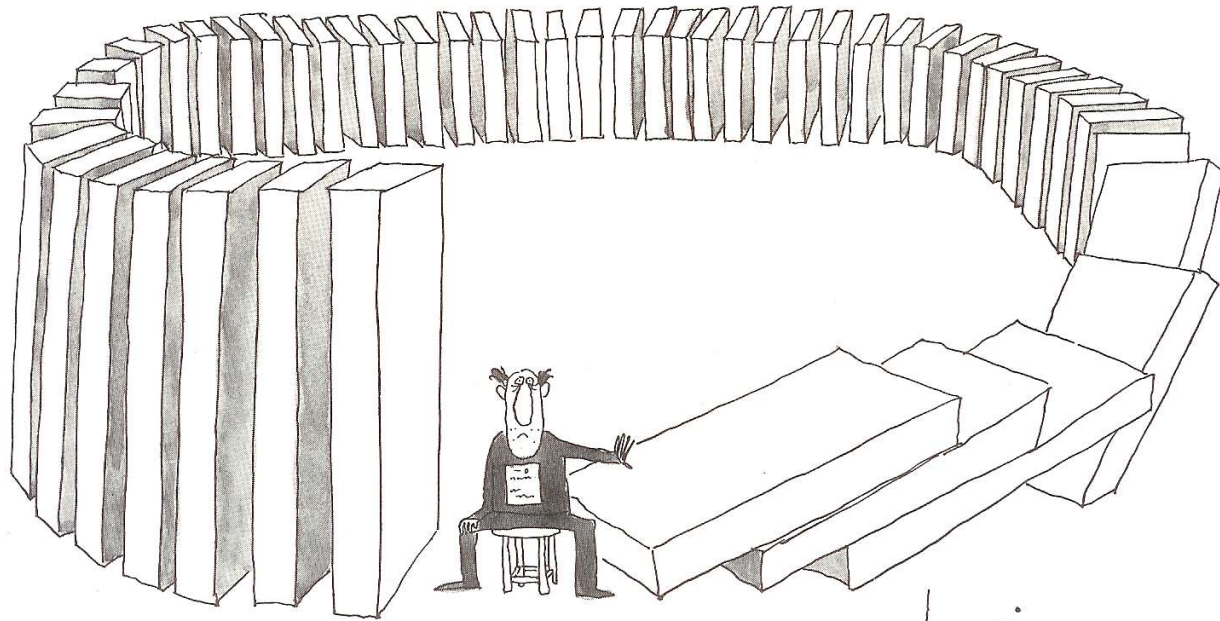
- True
- False



driving industry by technology



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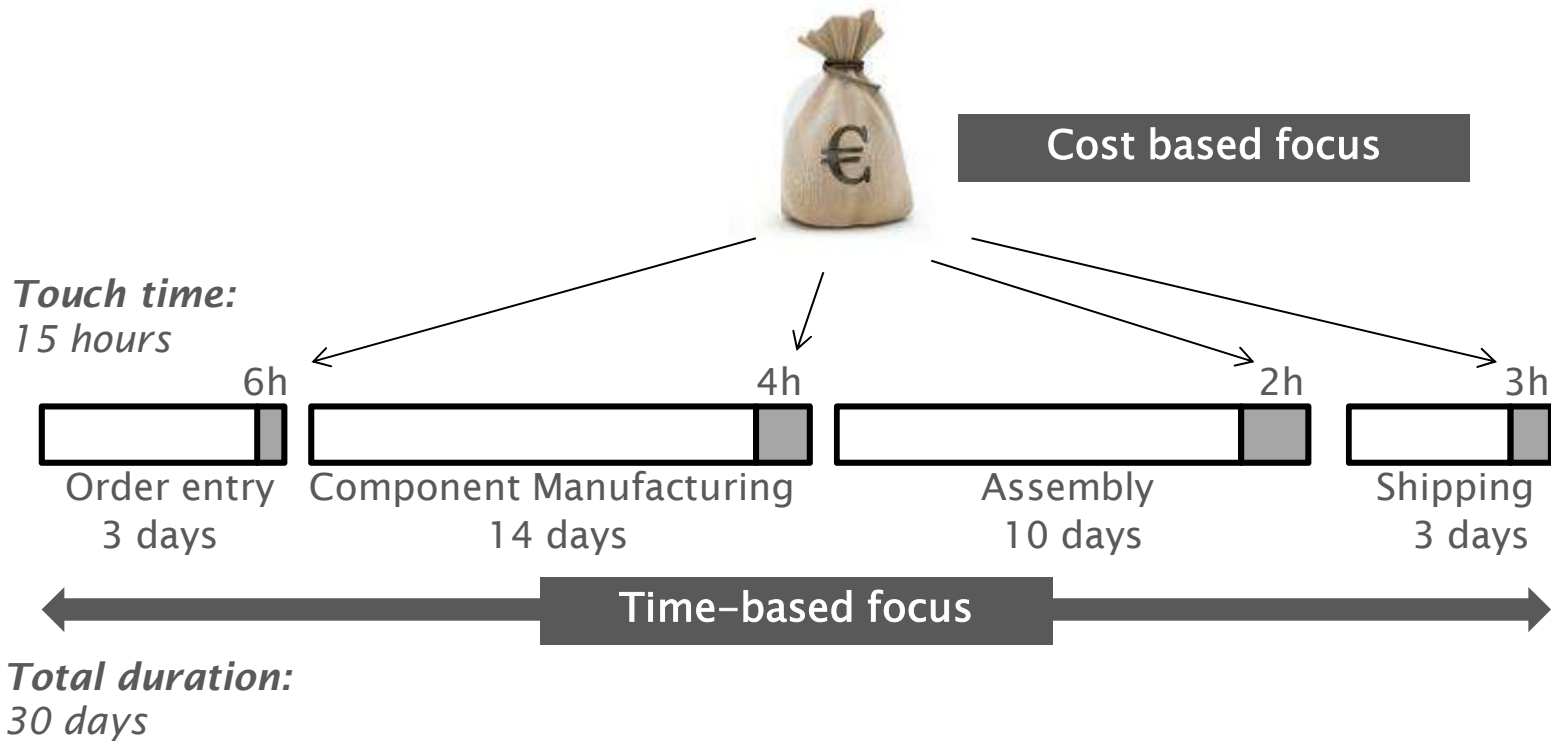


Kevin
27 Dec 76
N York



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Time versus cost



It is not this



Work
faster

It is this



Collaborate
better

Review Quiz Question



Misconception

"To reduce our lead times, we need to improve our efficiency."

QRM Principle

Find new ways to finish a job with the primary focus on shortening the overall lead time.

Challenge: a shift in management thinking

Cost based focus



Time-based focus

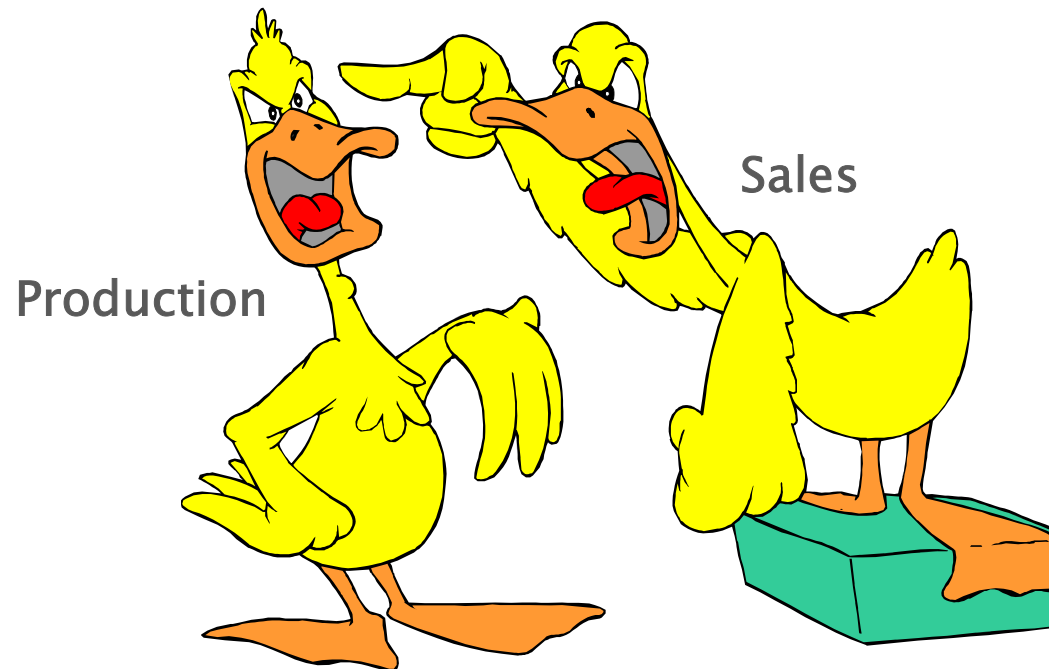
Exercise

If your lead times were 90% shorter...

- What could you reduce / eliminate?
- What would this mean for your customers?
- What would this mean for you and your team?

Think also about less obvious examples!

Effect of long lead times



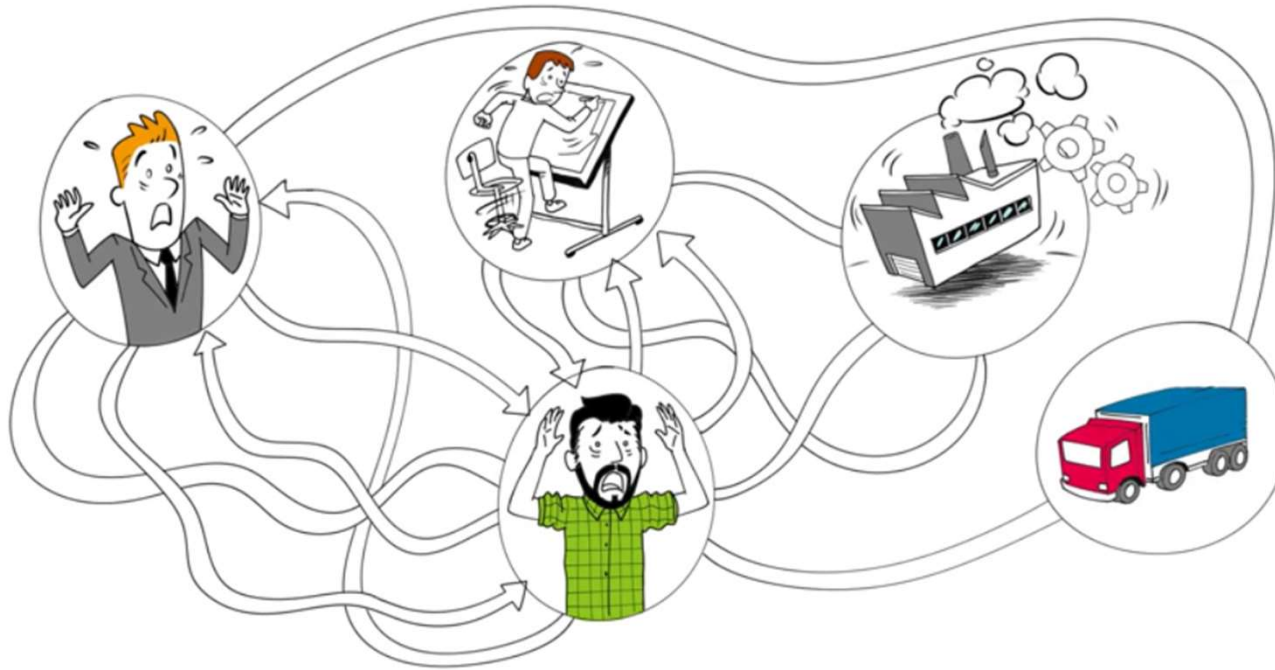
Phoenix Products: Planning before QRM



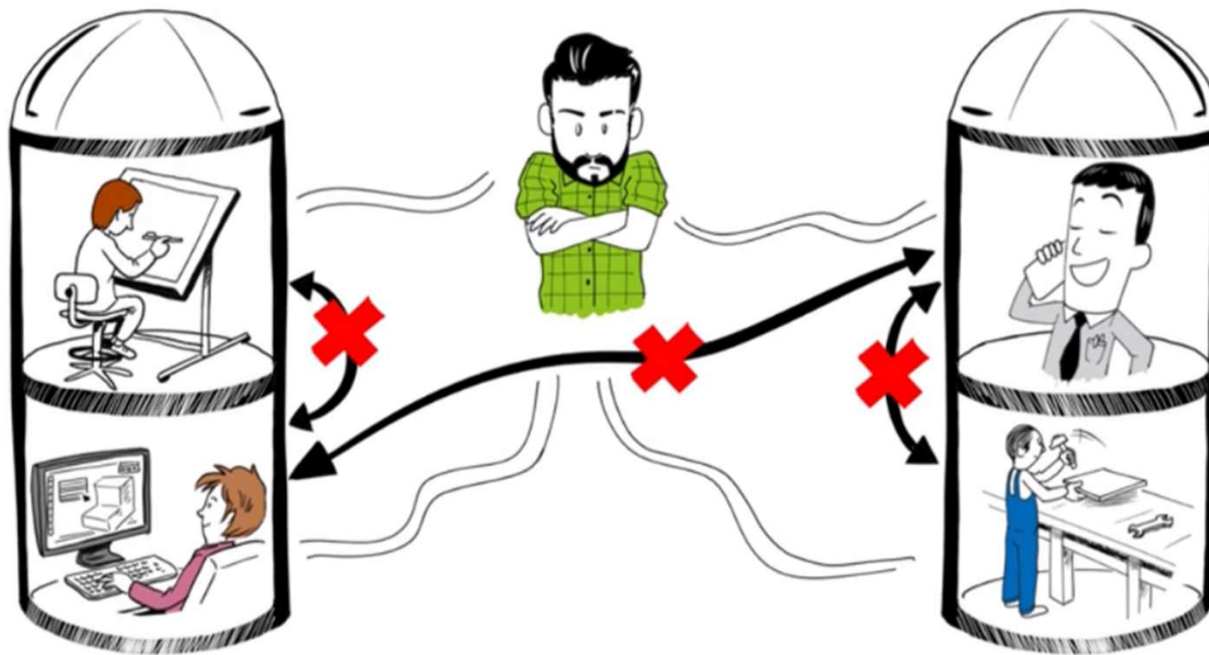
Phoenix Products: Planning after QRM



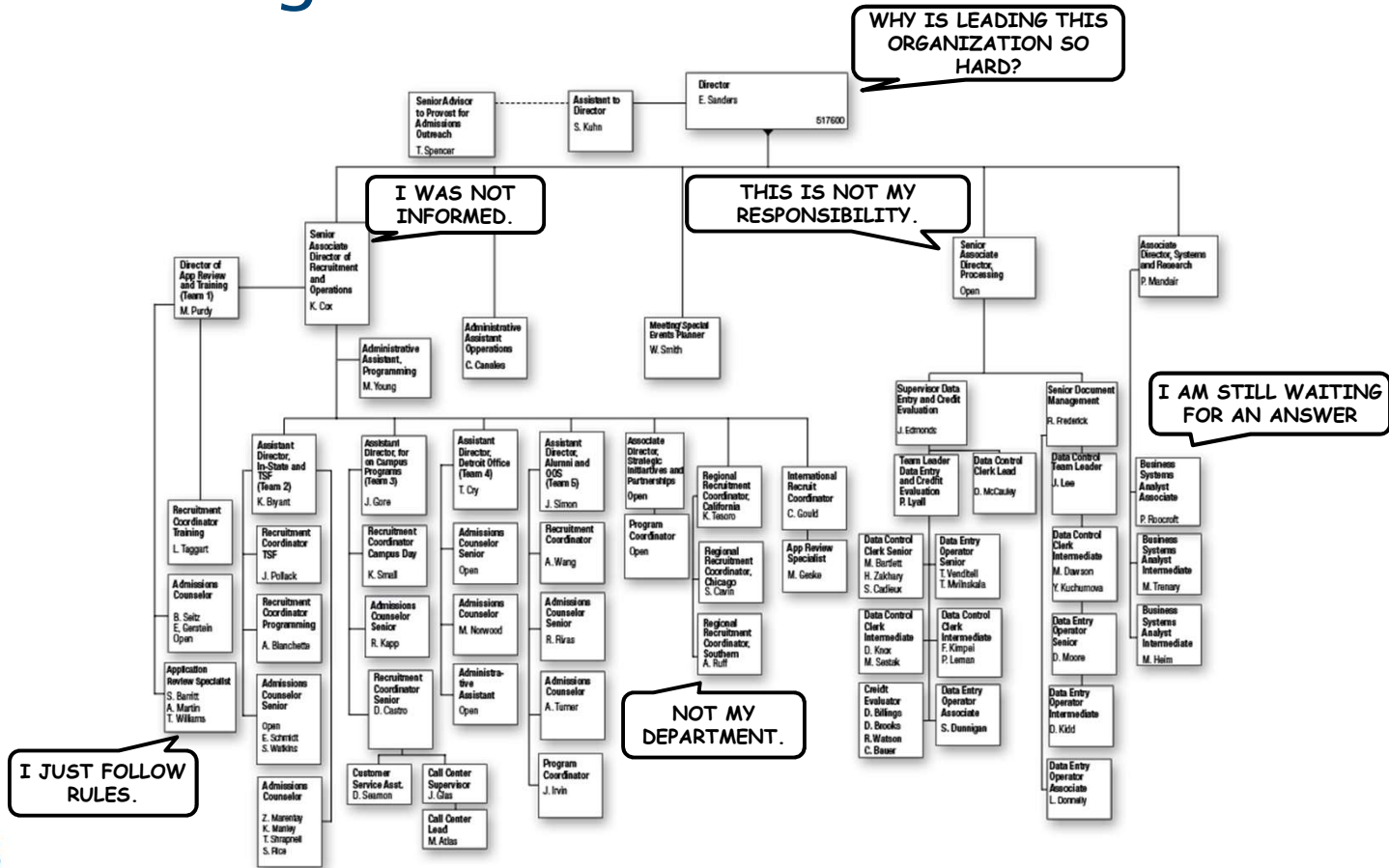
Why does it take so long?



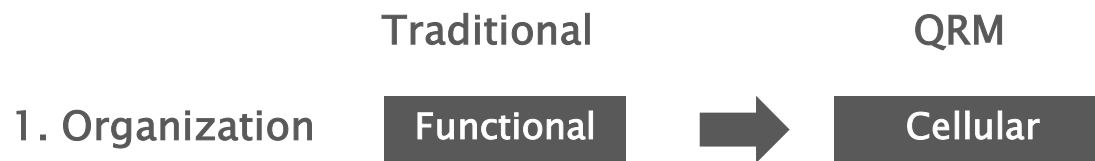
Organizational silos



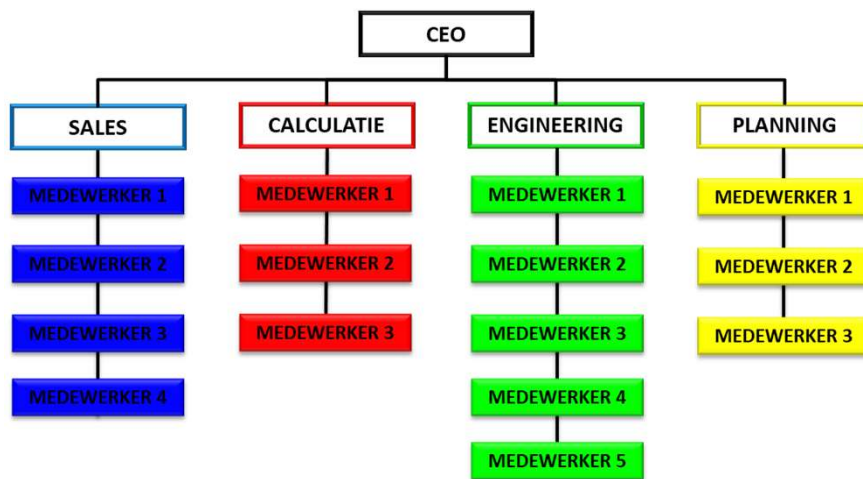
Classical organization



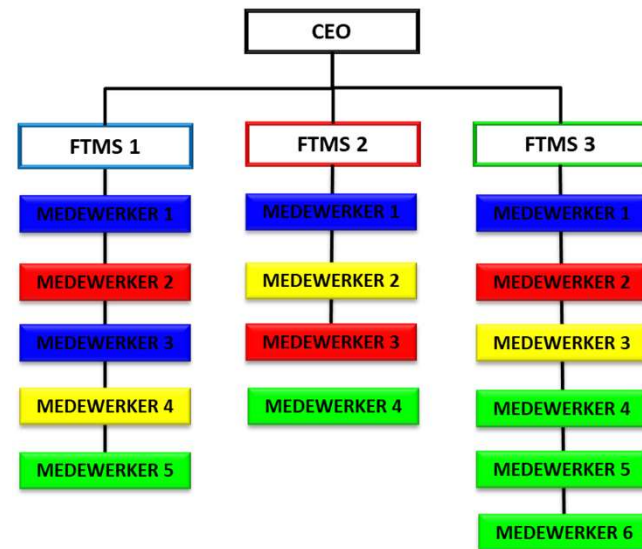
Organizational structure



Functional → cellular organization

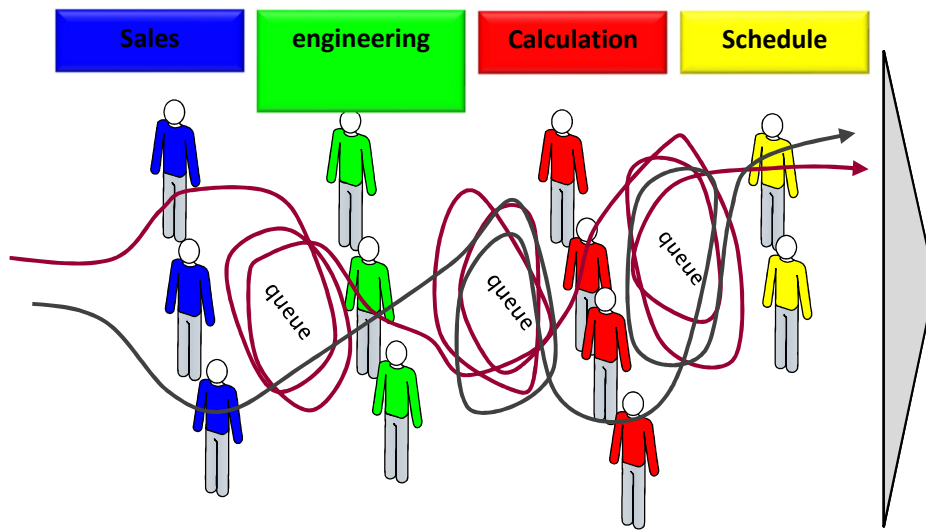


Hierarchical structure with departments based on specialization

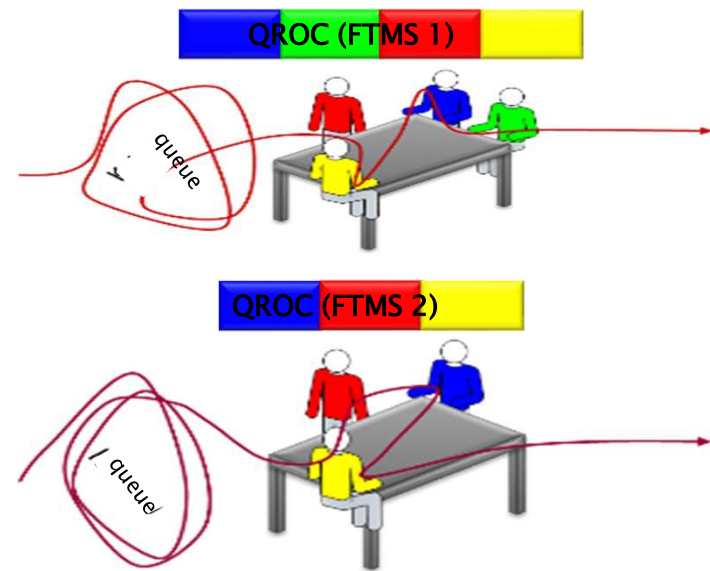


Cellular structure based on segments

Functional → cellular organization

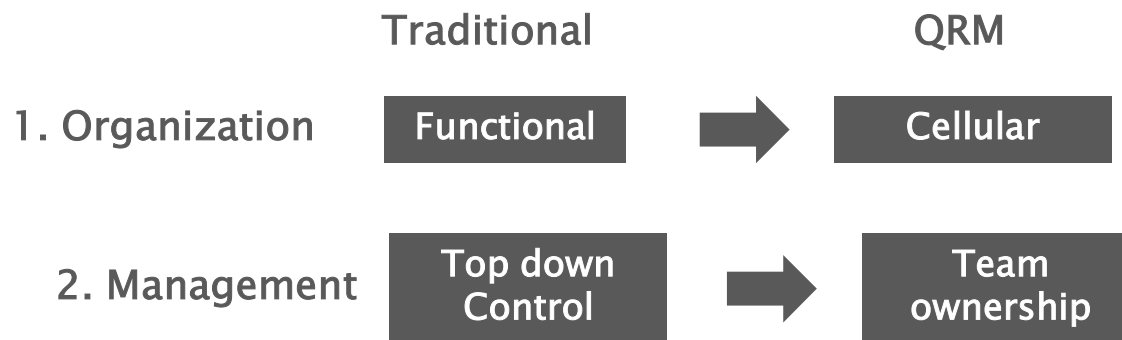


Focus on the functioning of the department



Focus on collaboration and lead time

Organizational structure



Excercise



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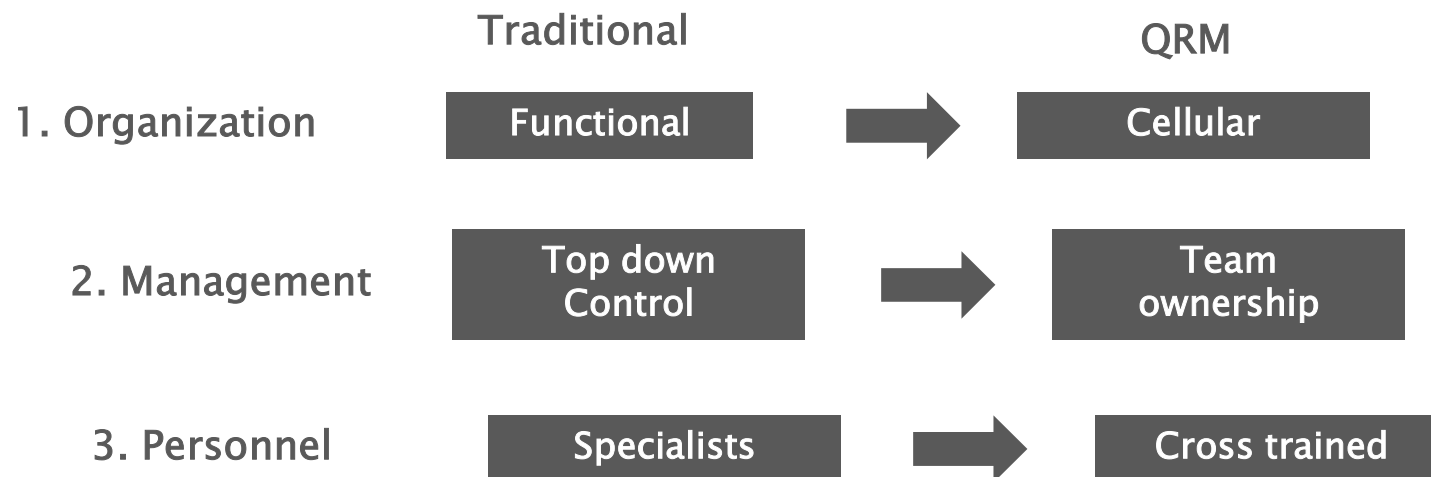
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02/10/2019

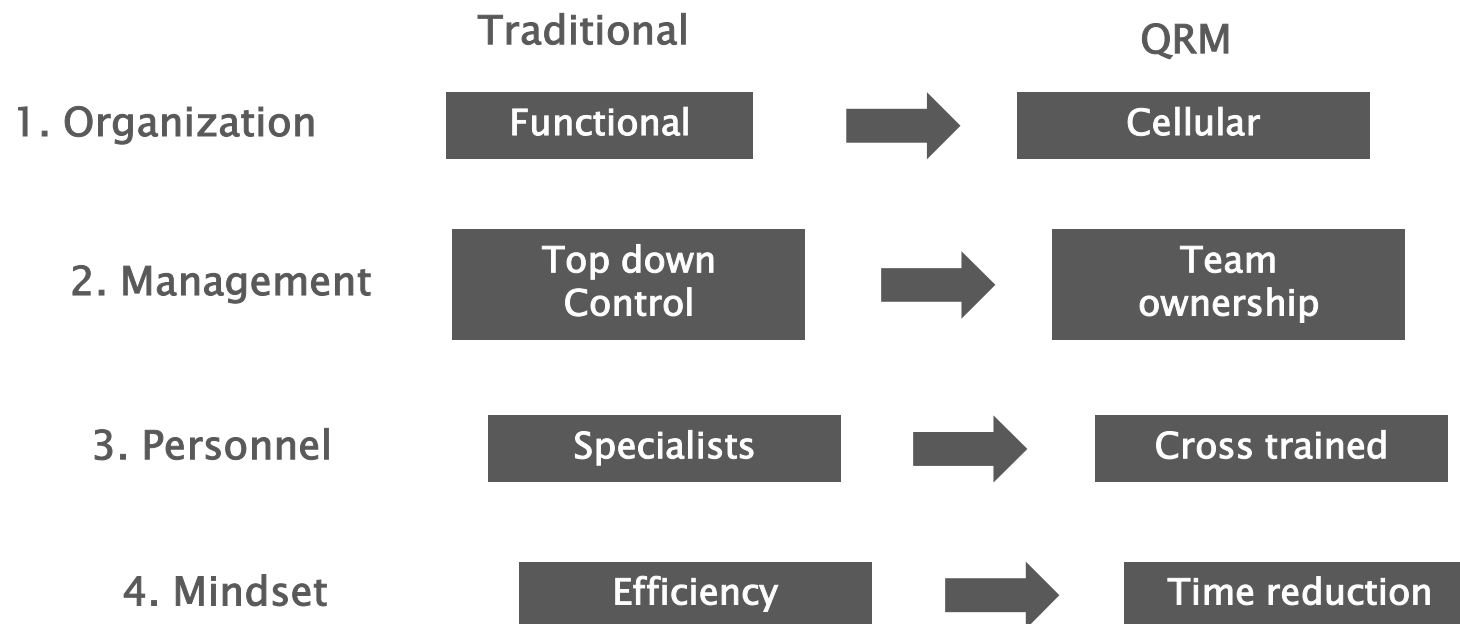
26



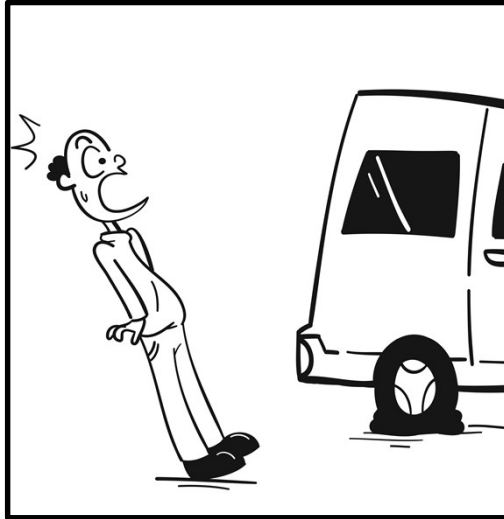
Organizational structure



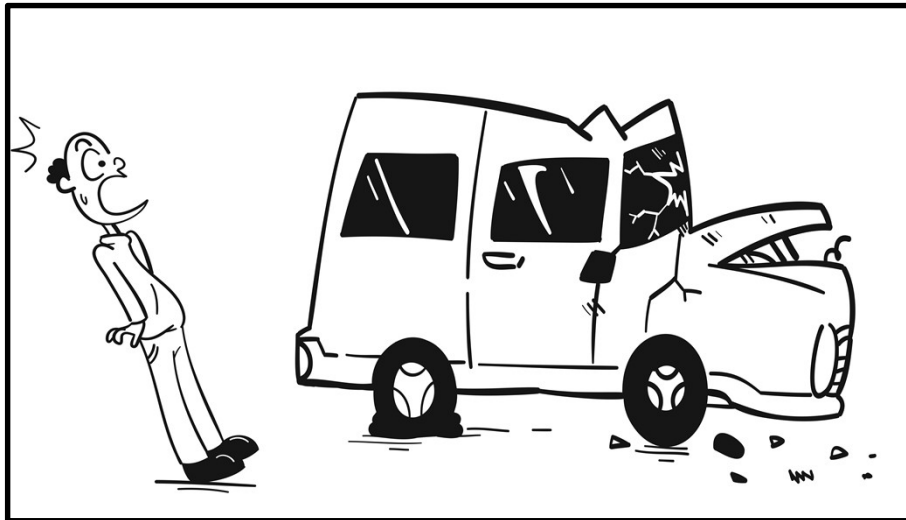
Organizational structure



What is the problem?



What is the problem?



What is the problem?

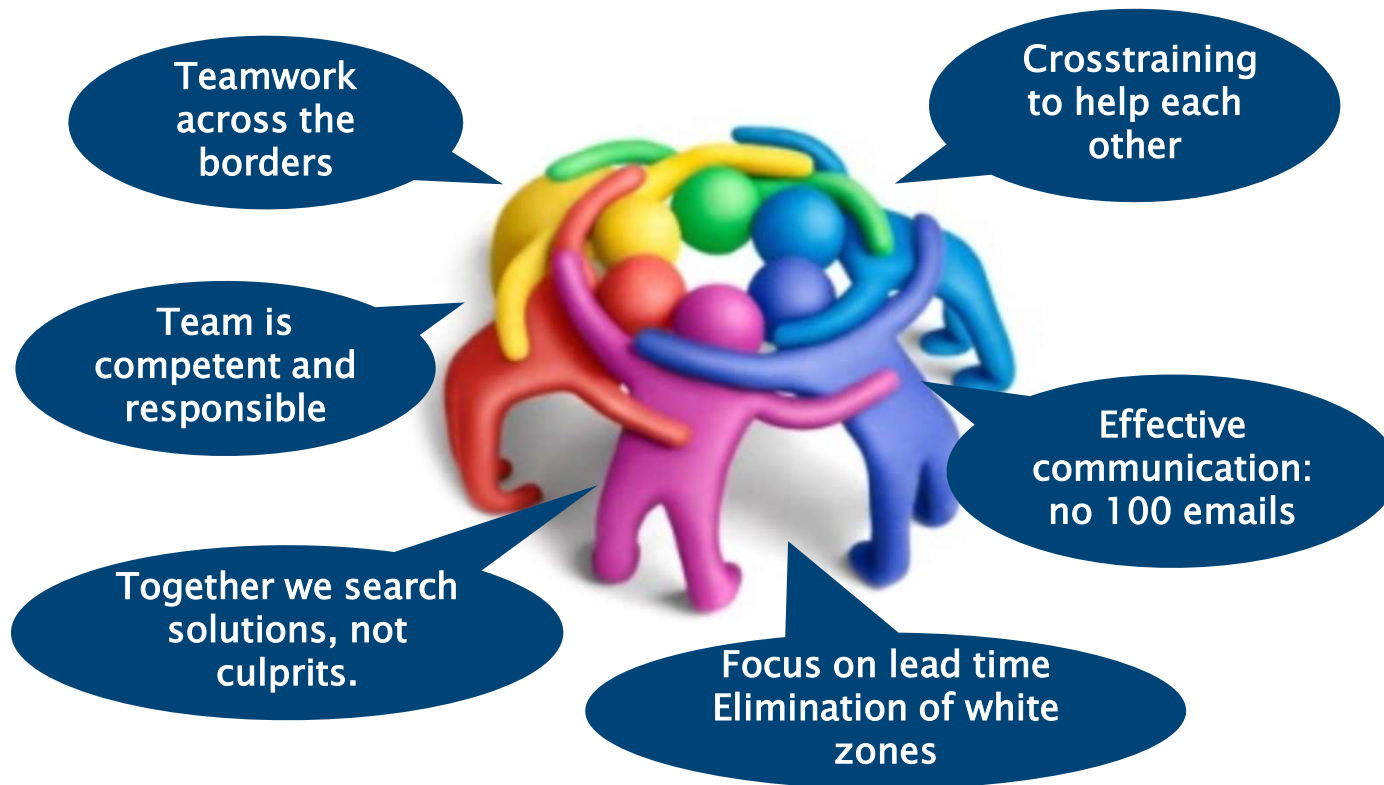


Mindset



Nothing will delay an order!

Mindset within a QRM-cell



Review Quiz Question



Misconception

"We can implement QRM by forming teams in every department."

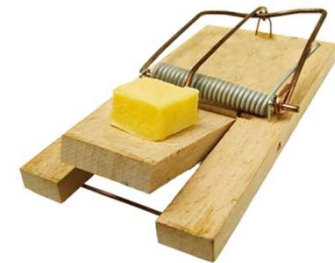
QRM Principles

- Such teams may be useful to initiate process improvements, but their impact on the lead time will be limited.
- To really achieve a breakthrough, the teams have to cross the borders of the departments.

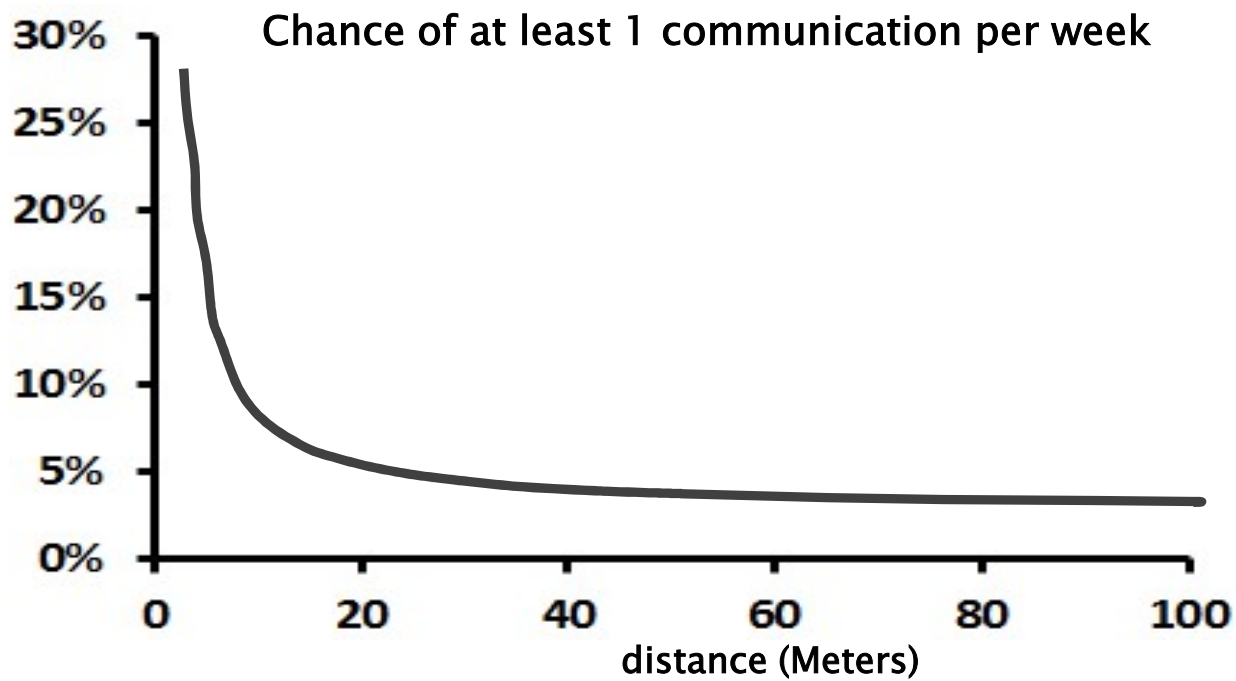
Q-ROC Pitfall

"We can implement cross-functional teams and keep our organizational structure intact."

- A cell is not a mini copy of the company!
- A Q-ROC team should sit together at a location, and report to the same supervisor!



Allen Curve



Case Hansen Industrial Transmissions



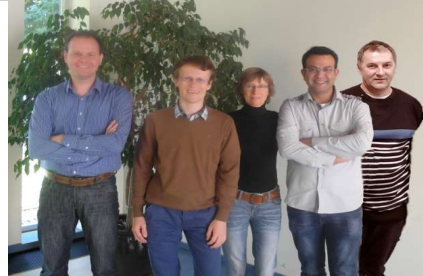
- Staff: +300
- Functions: R & D, Engineering, Production, Assembly, Sales & Service, Finance, HR
- Location: Edegem, Belgium

Source: Hansen Industrial Transmissions

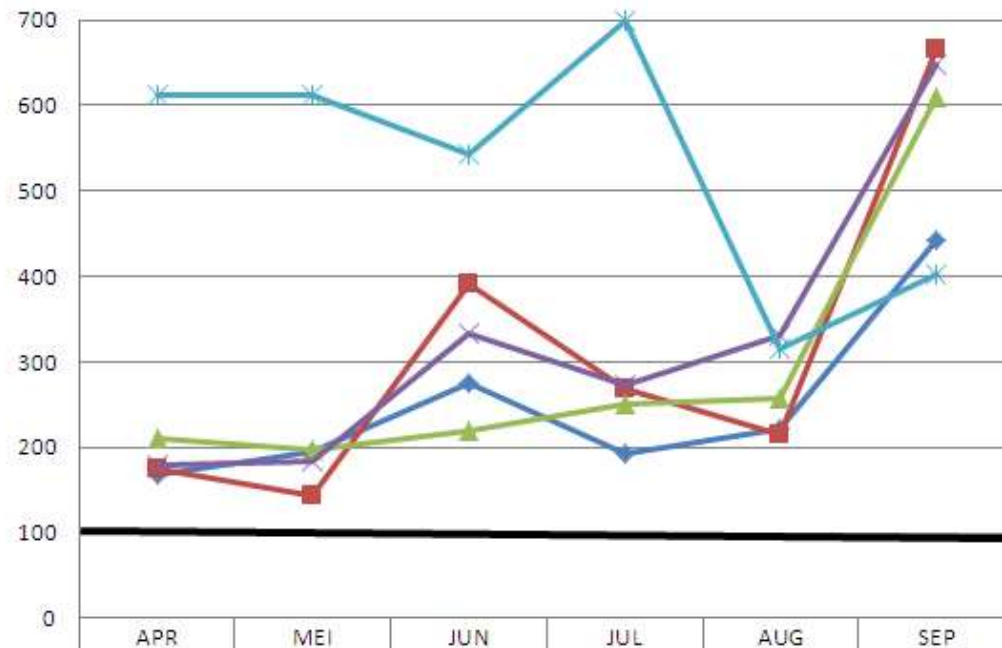


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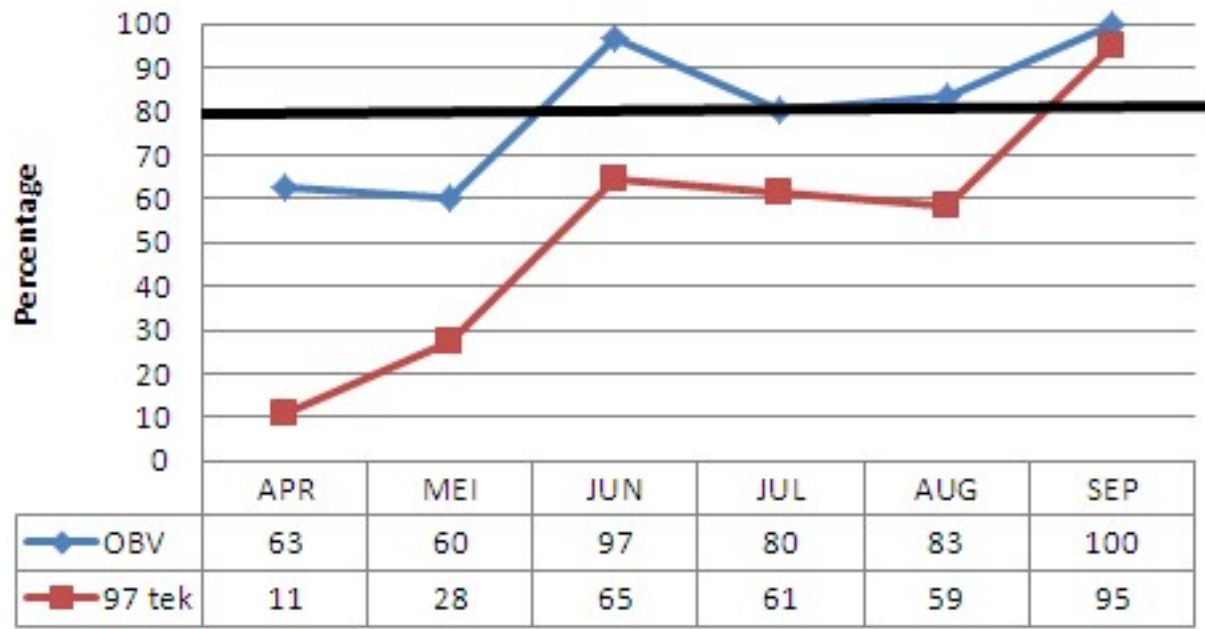
QROC Teams



Lead time improvement



Impact on delivery reliability



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Review Quiz Question



Misconception

“We must place great importance on "on-time" delivery performance by each of our departments and by our suppliers.”

QRM Principle

Make lead time reduction the key performance indicator.

Impact of lead time reduction

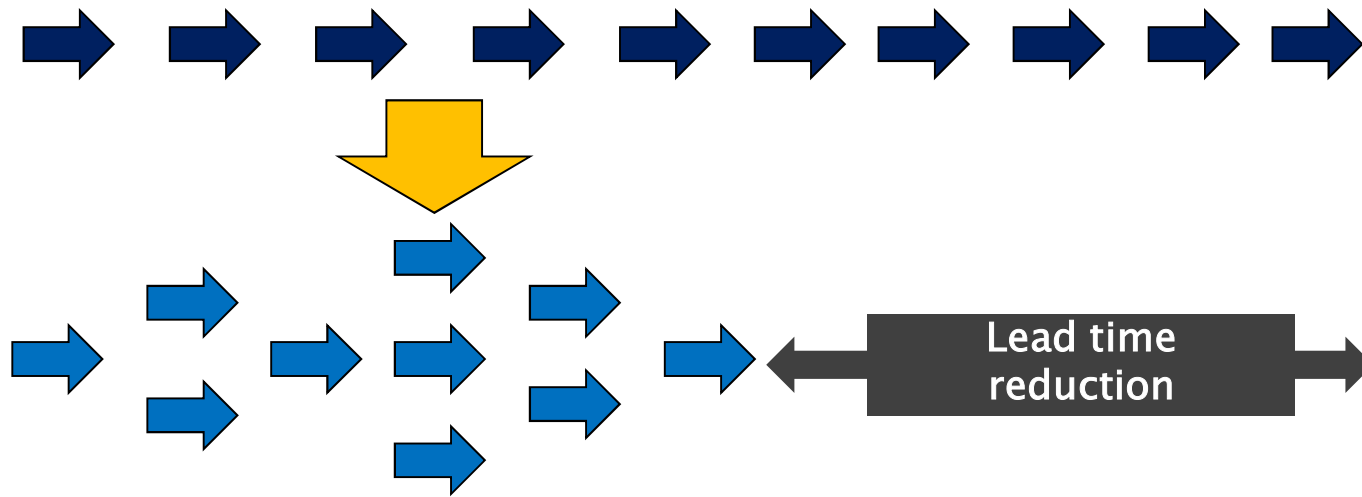
Company	Lead time Reduction (%)	delivery reliability (%)
W	57.1	20 → 97
X	80.0	40 → 95
Y	92.9	40 → 98
Z	93.8	43 → 99

Source: Tubino/ Suri

QRM office operations

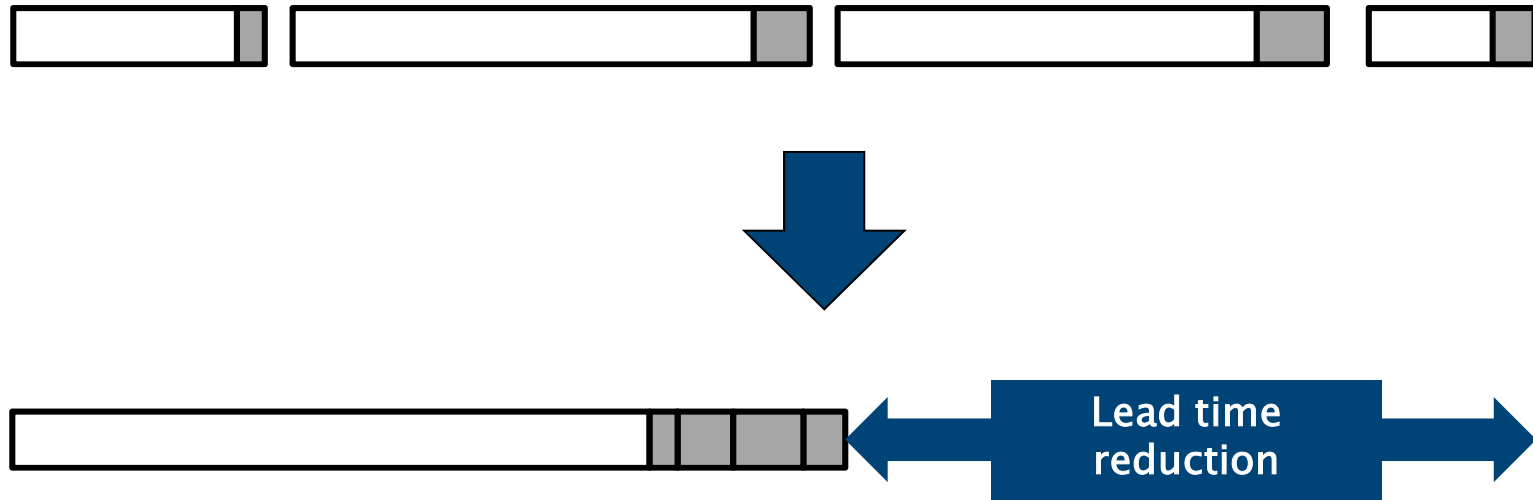
- Rethink all the steps to increase the speed
 - Combining steps (Cross Training)
 - Eliminate steps (FTMS)
 - Continuous flow of work (No batching)
- Eliminate traditional approval and control steps
 - It is OK to put limits on "large" orders.
- Maximize the use of IT systems
 - As much as possible electronic information
 - Avoid external data sources (fax ...)
 - Compatible systems

Sequential → Parallel tasks

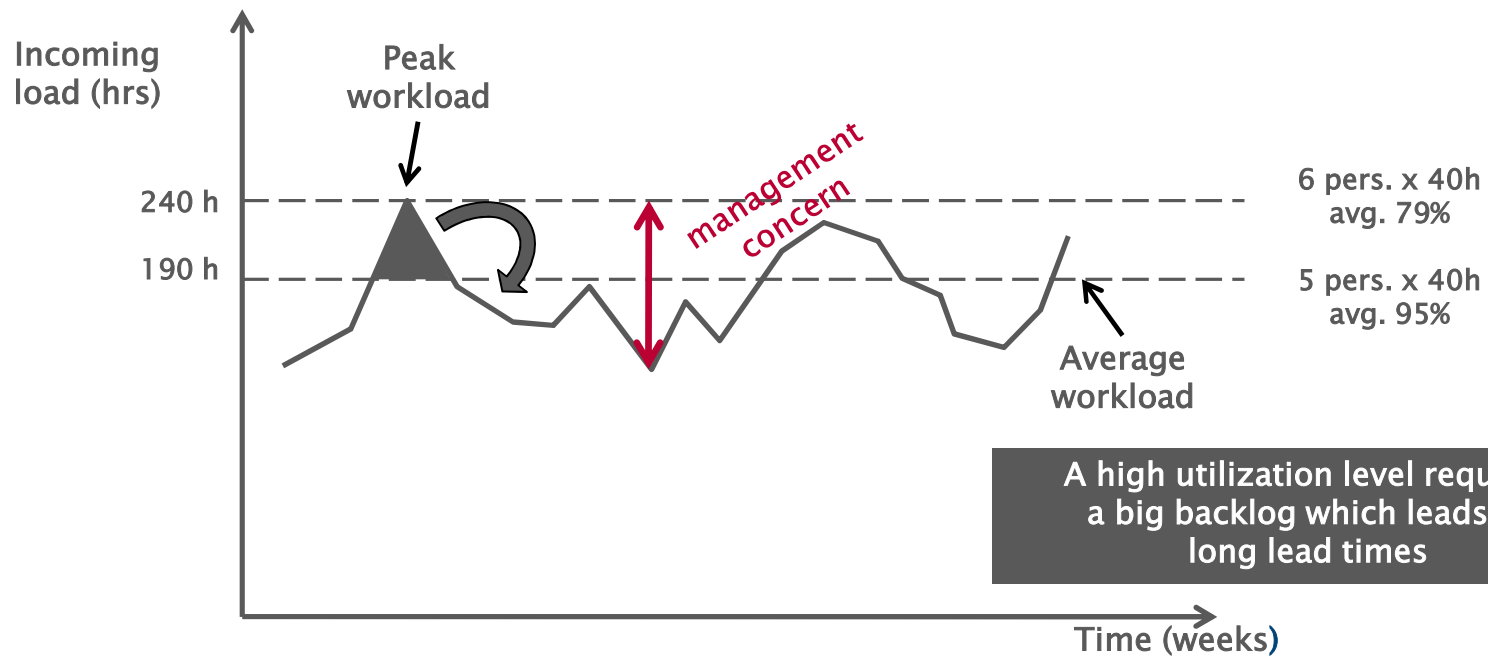


Rearrange sequential tasks into parallel tasks.

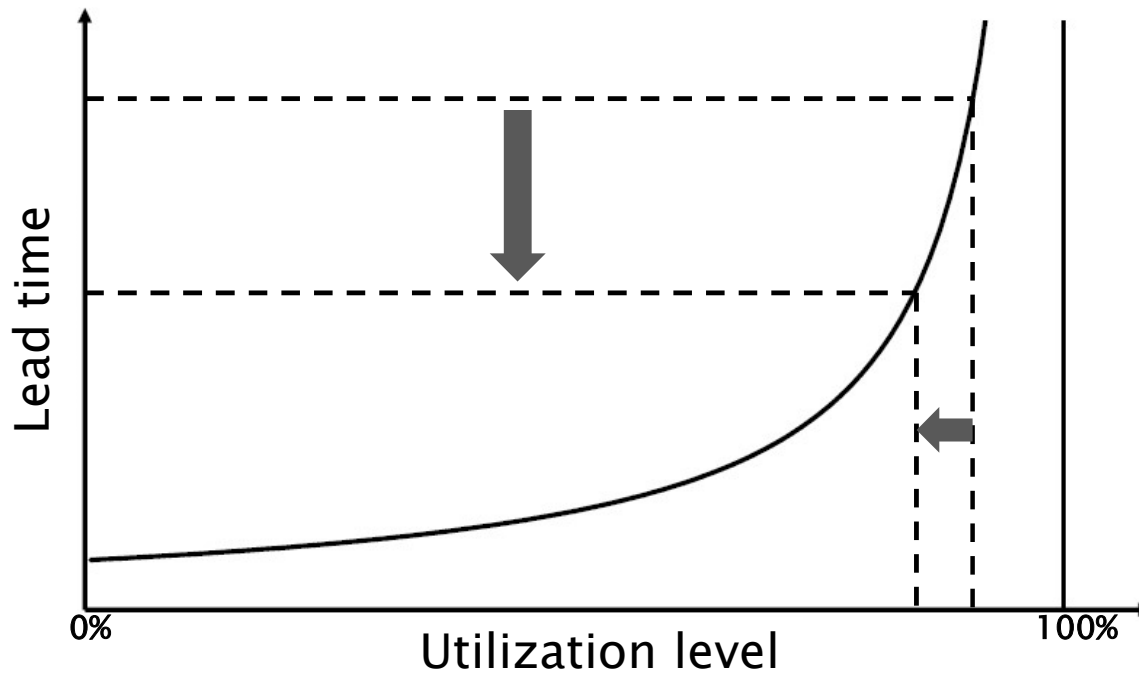
Avoid delays between steps: finish an order at once



Effects of high utilization level



Miraculous effect of spare capacity



Invest in people and machines, not in warehouses!



Simple solution → traffic jams: – 44%



Review quiz



Misconception

“To get jobs out fast, we must keep our machines and people busy all the time.”

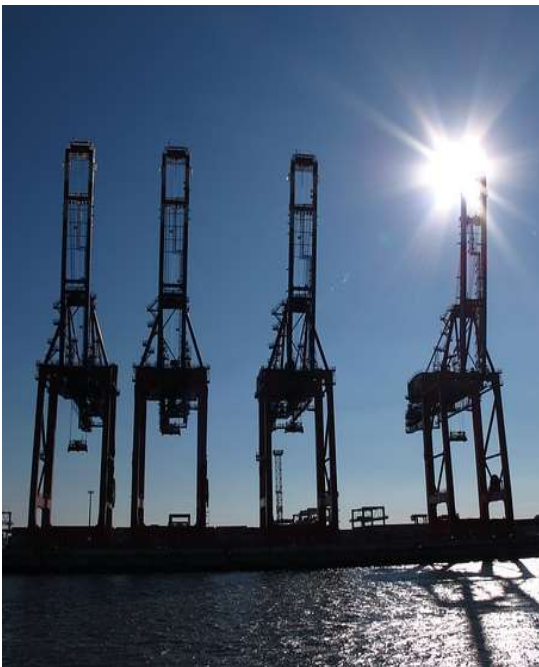
QRM Principle

Invest in strategic spare capacity and seek an occupancy rate of 80–85%!

Challenge

Invest wisely to create spare capacity.

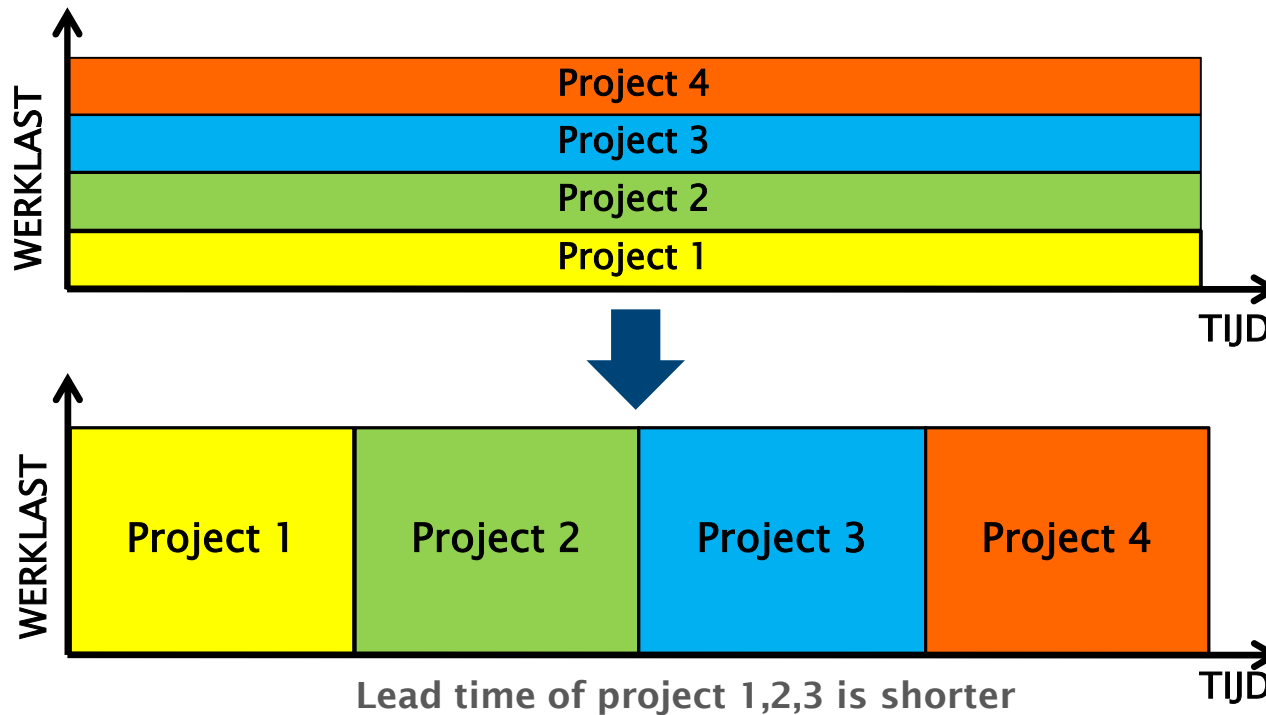
Exercise



- 4 Ships
- 4 Cranes
- Unloading time of 1 ship = 4 business days with 1 crane

What is the best way to unload the ships?

Limit the number of simultaneous projects



Better, more actual specifications for project 2, 3 and 4

Review Quiz Question



Misconception

“The earlier we start, the earlier we will be ready.”

QRM Principle

“The earlier we start, the higher the uncertainty.”

Closing

What do you take away after today?

Which next steps do you see possible
in your company?

QRM Training

- Masterclass Q-ROC Oct. 23 – Rajan Suri
- QRM Institute Silver Course
 - Starting Oct. 3th in Gent (10 evenings)
 - Starting Nov. 6th in Leuven (4 days)

