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UK/US SHINGO SUMMIT

2009

HEICH MANDISER 8-9TH JUNE

# Creating a Lean Supply Chain

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The Manufacturing Institute



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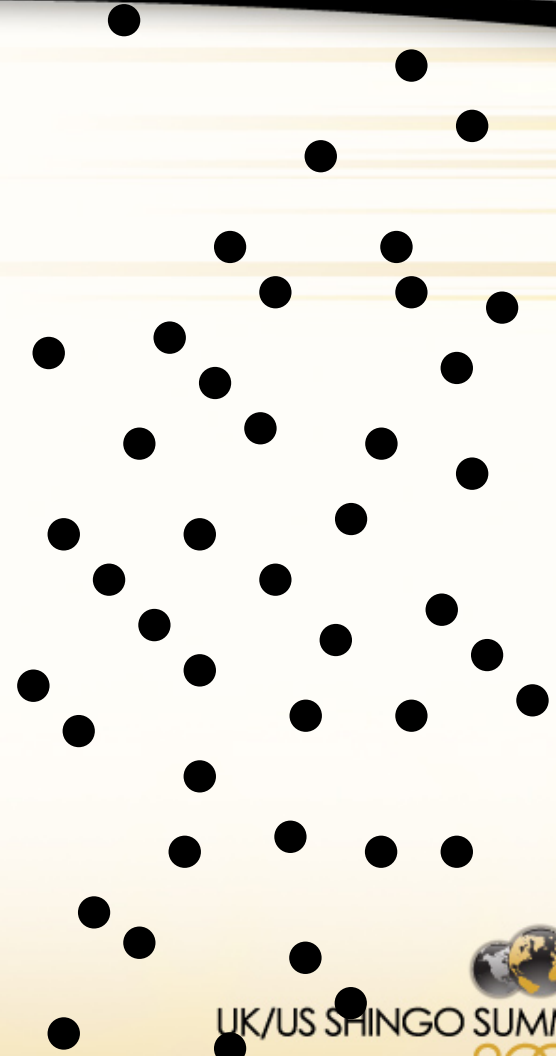
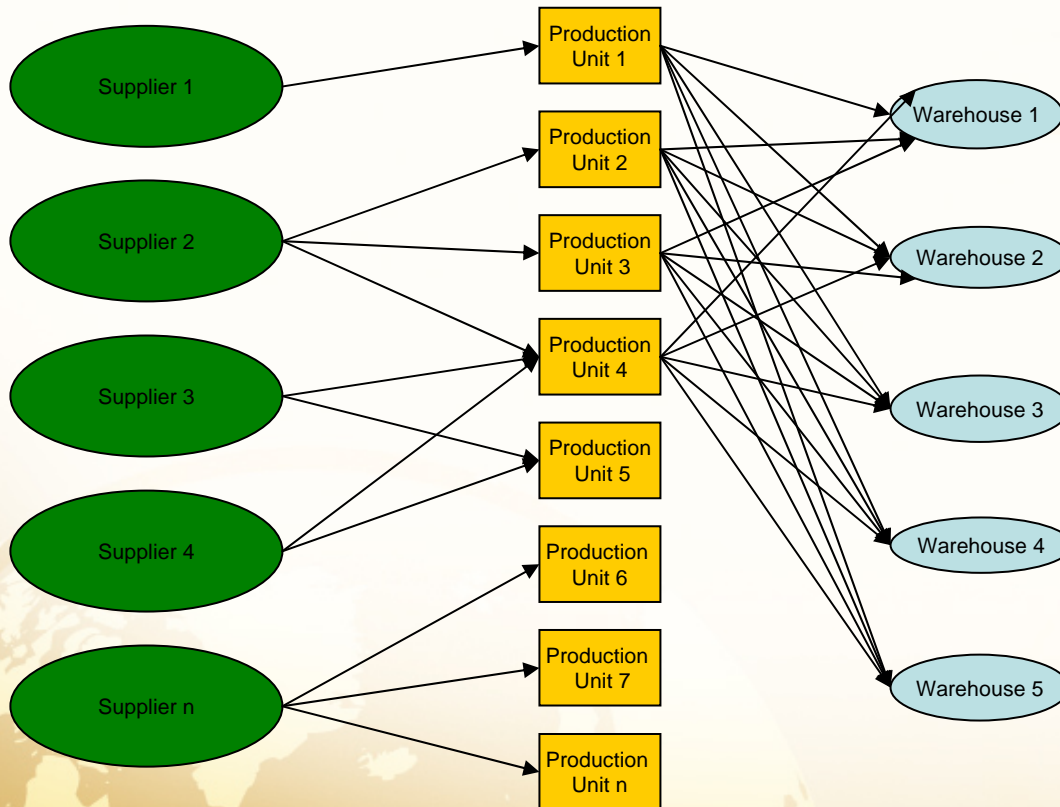
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# Traditional approach to supply chain

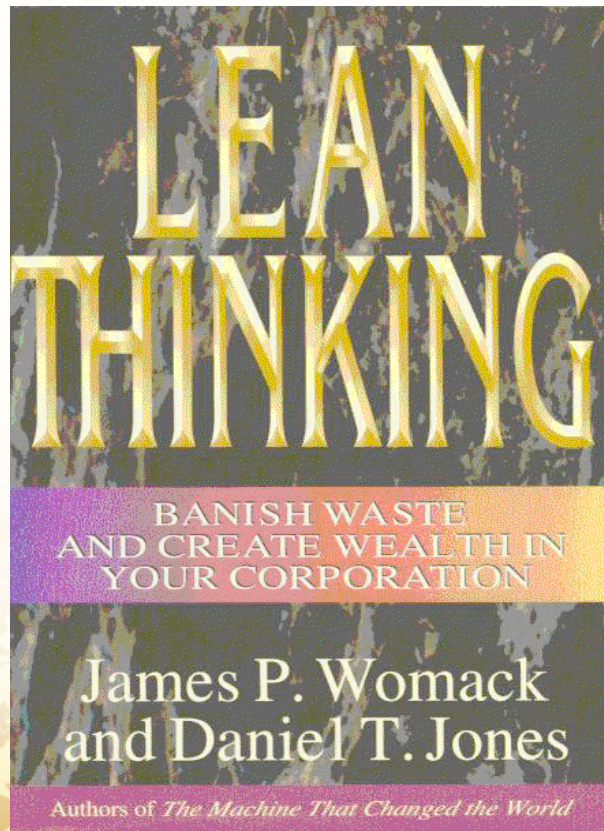


“If the only tool you have is a hammer, then everything looks like a nail”

# Supply Chain



# Lean Thinking.....



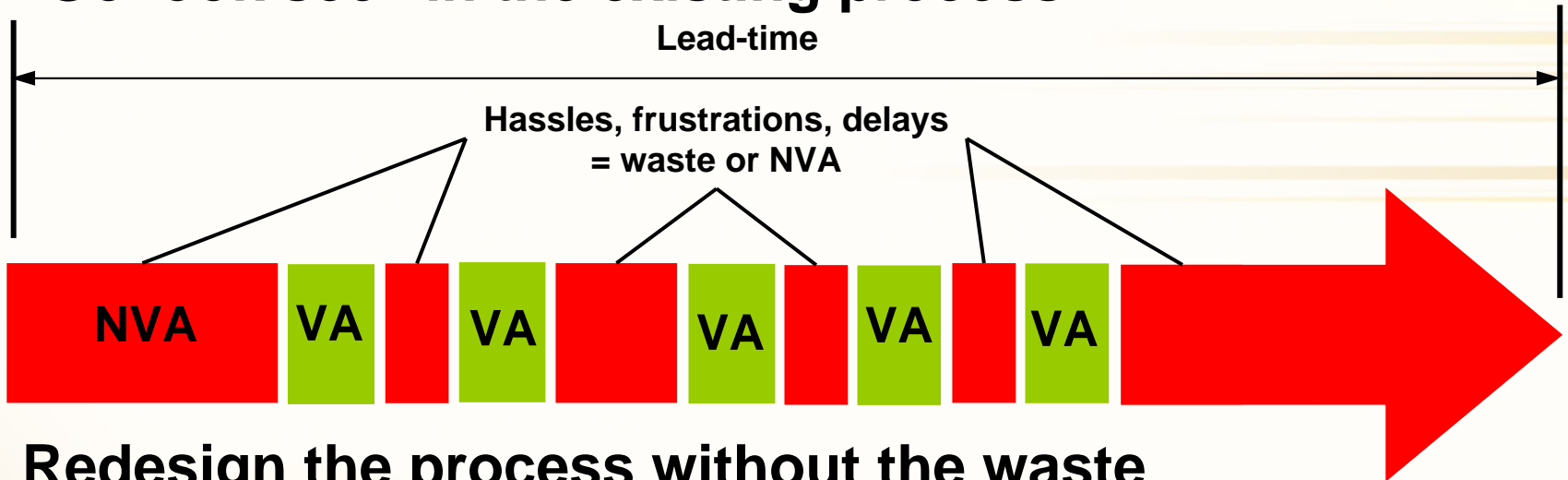
## Five fundamental steps

- Rediscover (customer) value
- Design the value
- Flow the value
- Pull the value
- Perfect the value

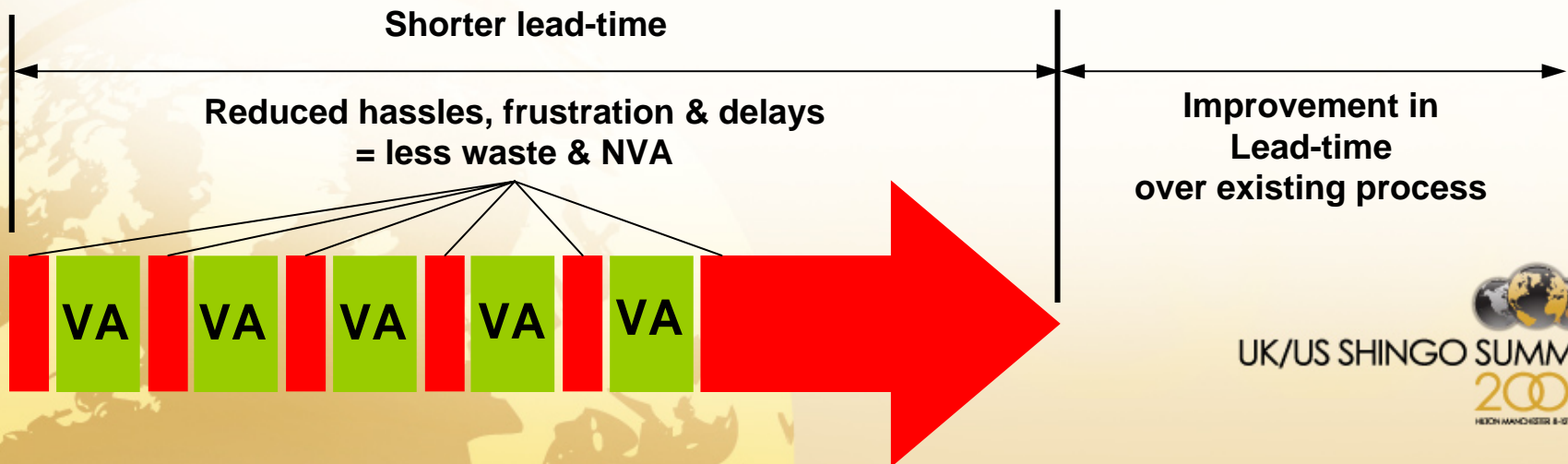
**“There is only one boss-the customer. And he can fire everybody in the company, by spending his money somewhere else”  
Sam Walton**

# Analysis of Elements

“Go look see” in the existing process



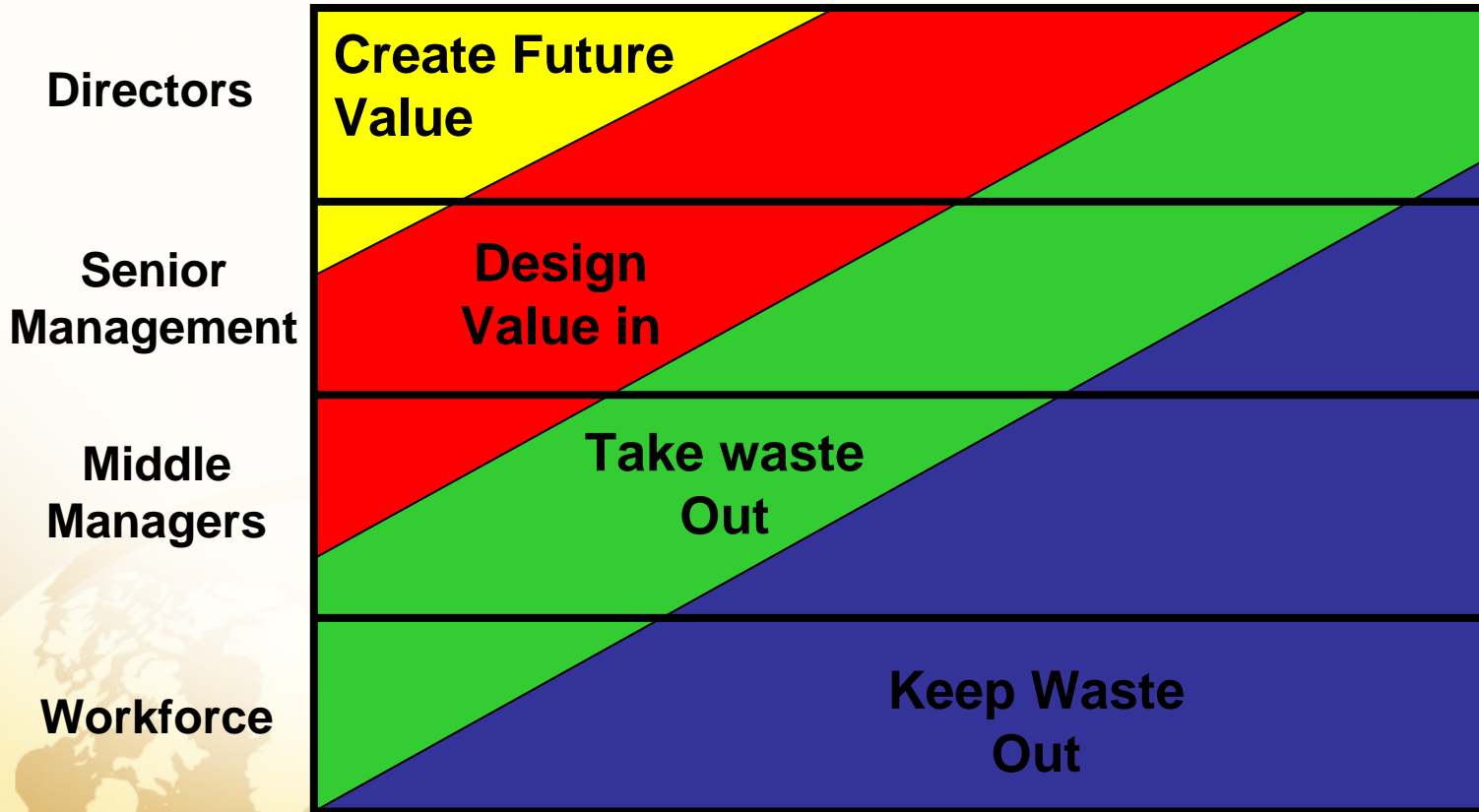
Redesign the process without the waste



# Break through thinking



# TMI PS Model “Principals, Systems, Tools”



# VSM, the supply chain transformation tool

- The transformation technique to identify how to achieve the objectives
  - Rediscover customer value
  - Design value into the process
  - Work out how to make the value flow
  - Work out how to pull the value
- Typically
  - Productivity increases by up to ~15%
  - Asset effectiveness OEE improvement ~10%
  - Working capital reduction ~20%
  - Reduced leadtimes ~20%

Information flow = Why

Material Flow = What

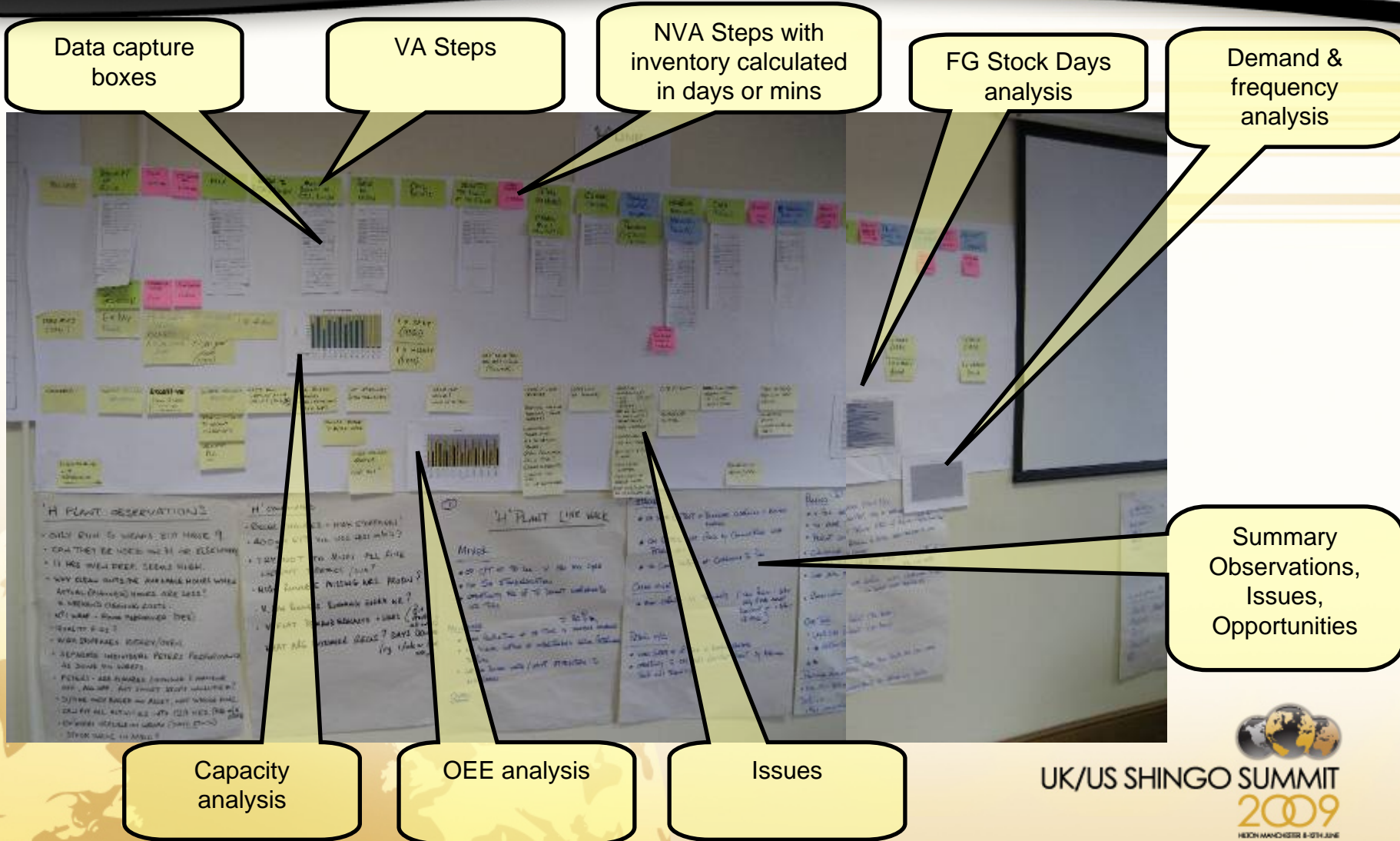


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# Understanding value flow



# VSM Big Picture Map

Process

Activity Step  
VA + Necessary  
NVA

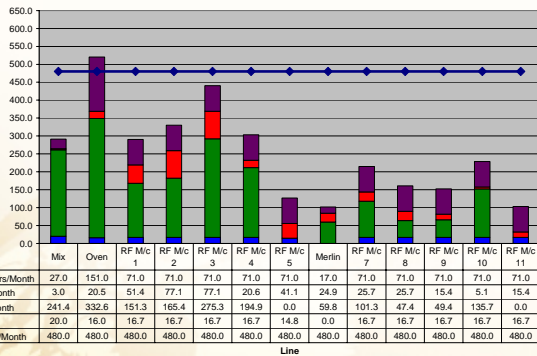
Wait Queue  
WIP or Stock  
Locn & Hours

Pick Parts

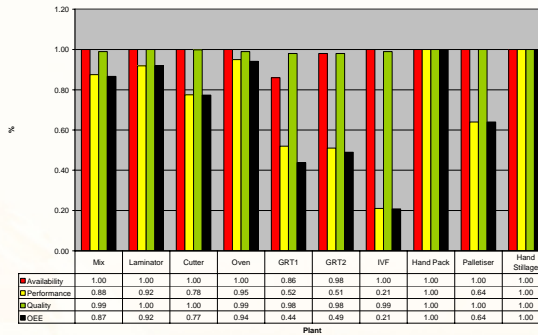
Move to line  
footprint

Line  
Footprint  
0.5 Hours

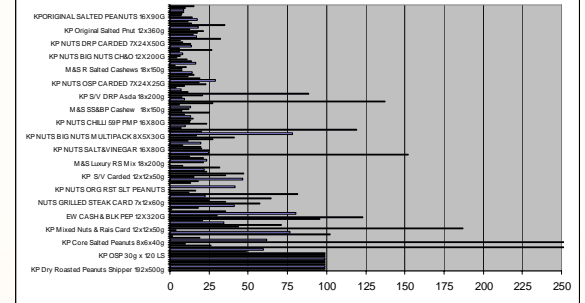
P Plant 2007 EPE 4 Capacity Analysis



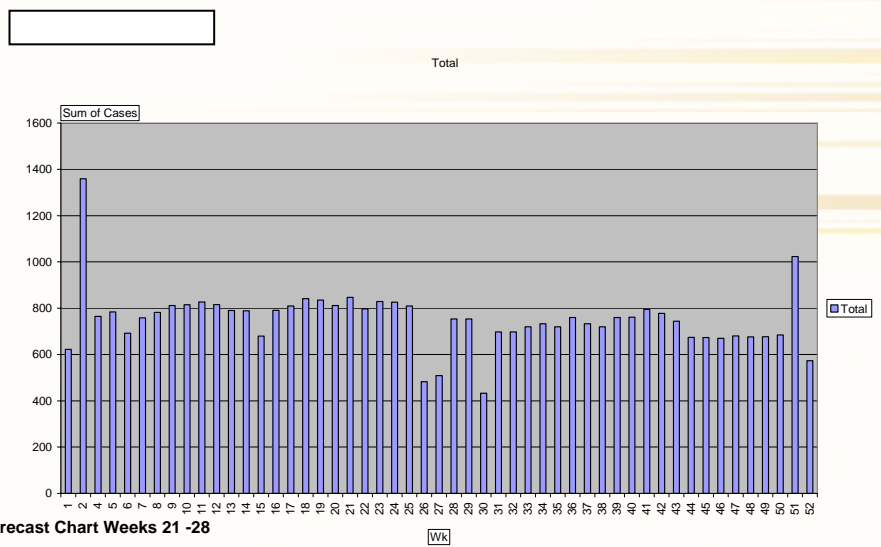
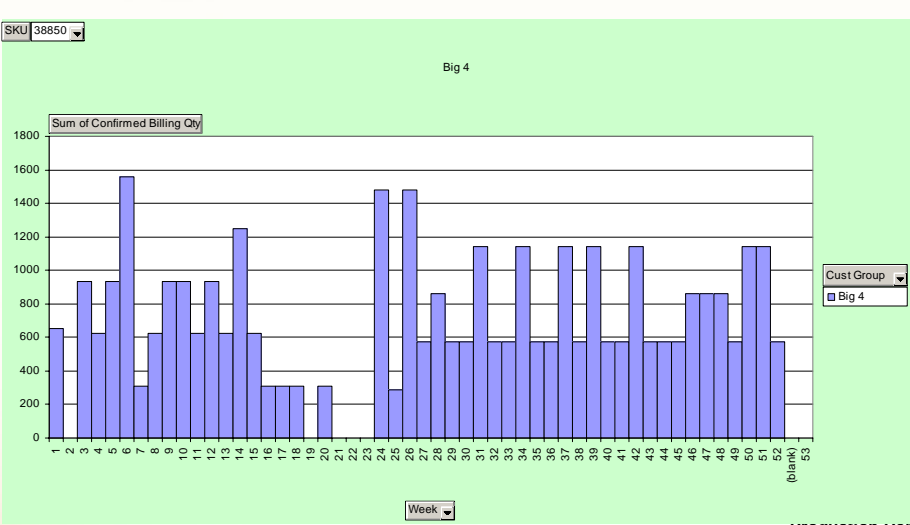
H Plant OEE



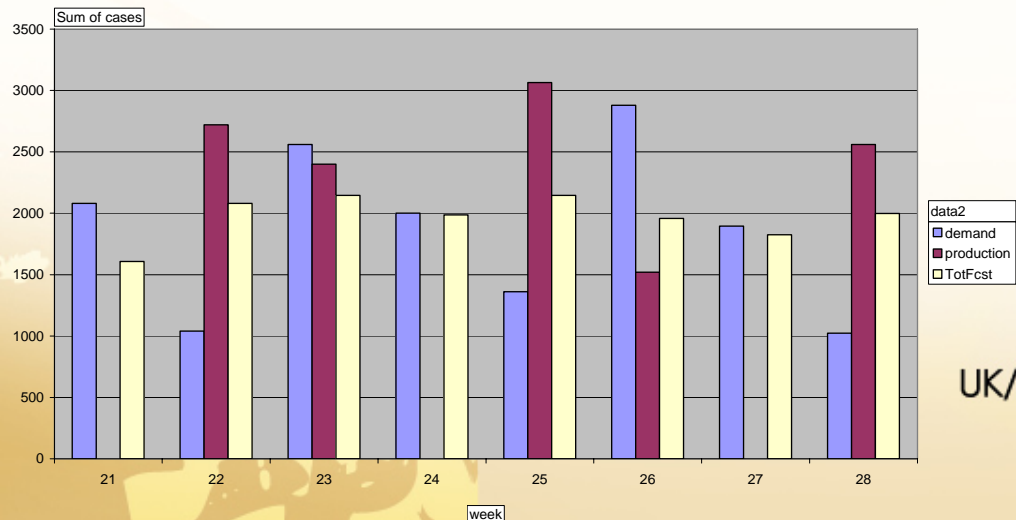
Days stock wk 43 2007



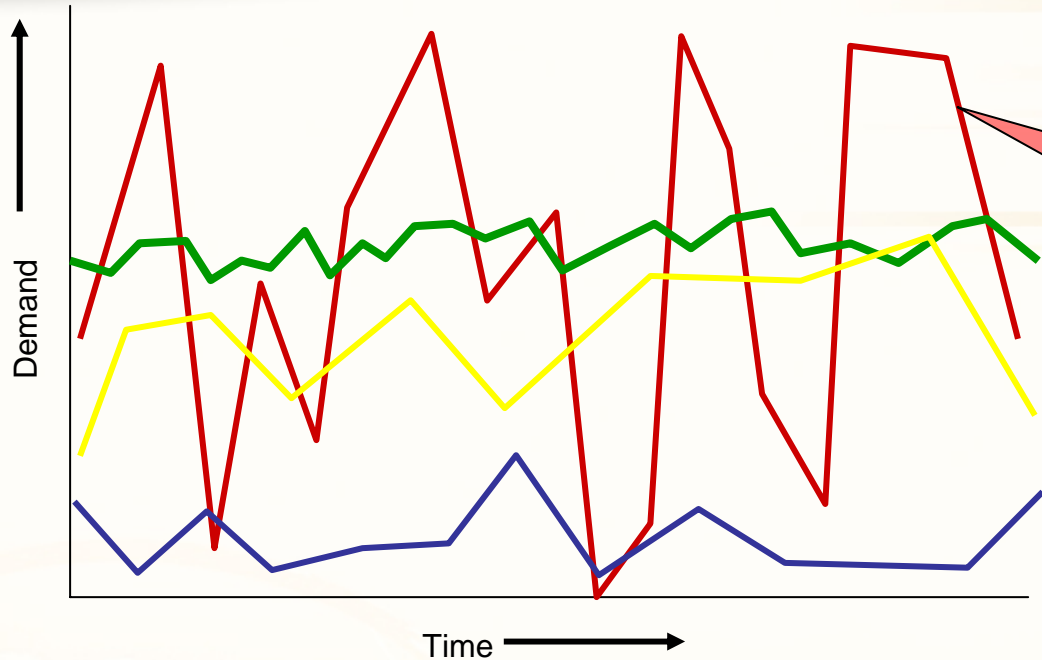
# Understand your customers demand signals



Production Demand Forecast Chart Weeks 21 -28



# Understanding customer demand - Why is Value Stream Identification so important?



Your suppliers see this pattern for all products

- We don't tend to see the demand as separate streams
- Result
  - Plan everything around the red stream

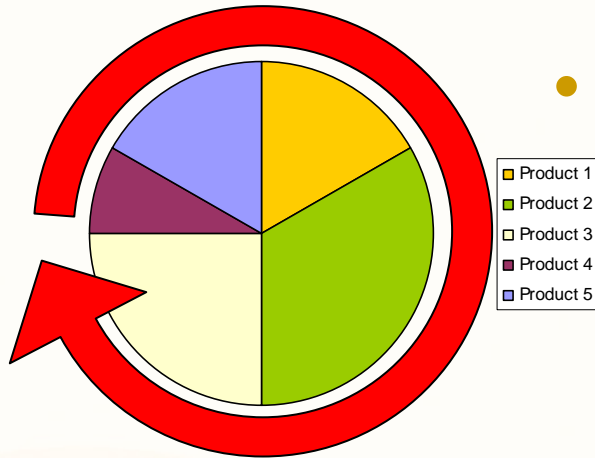


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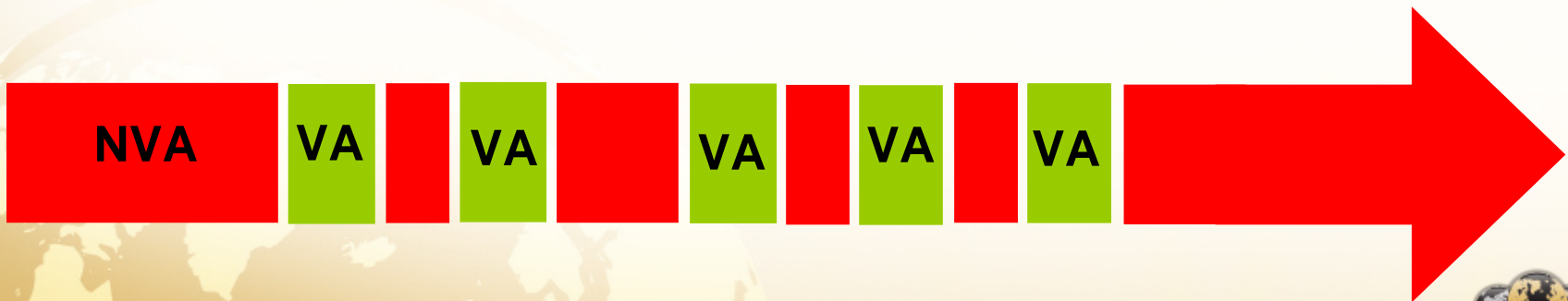
# “EPE” the key to understanding supply chain responsiveness and flow

- EPE, the rate at which you cycle through your products

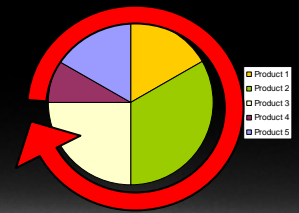


- The more frequent the EPE

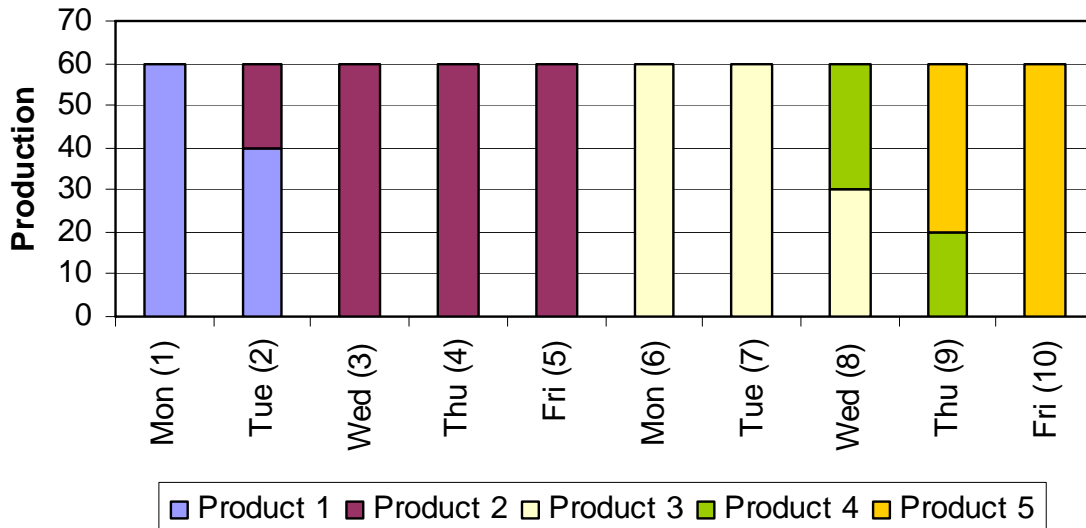
- Faster the flow
- Faster response
- Less inventory
- More problems need to be solved



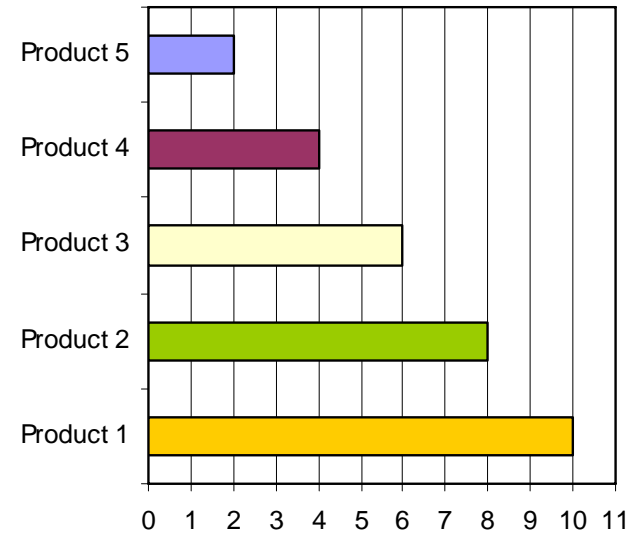
# EPE, 10 days (or 2 weeks)



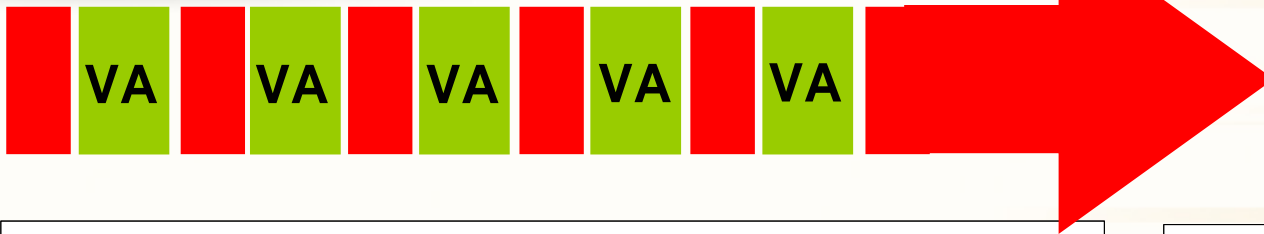
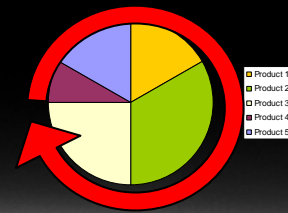
EPE 10 days



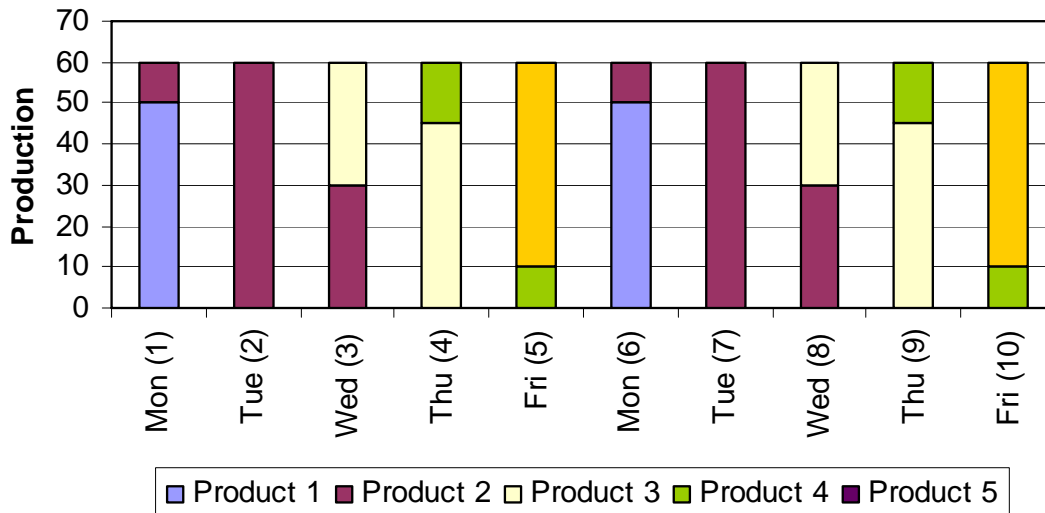
Days of Stock



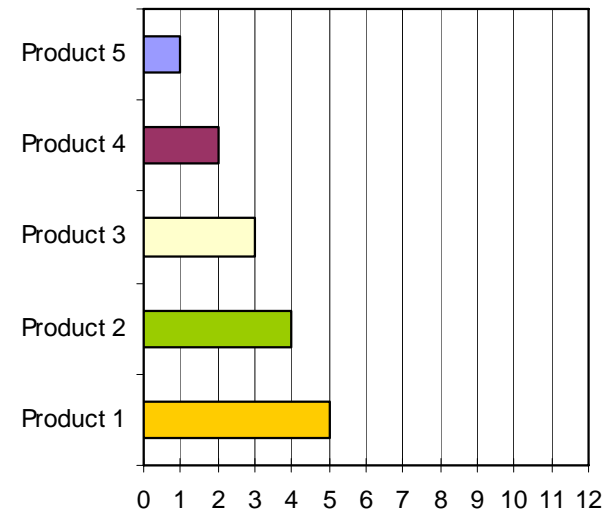
# EPE, 5 days (or 1 week)



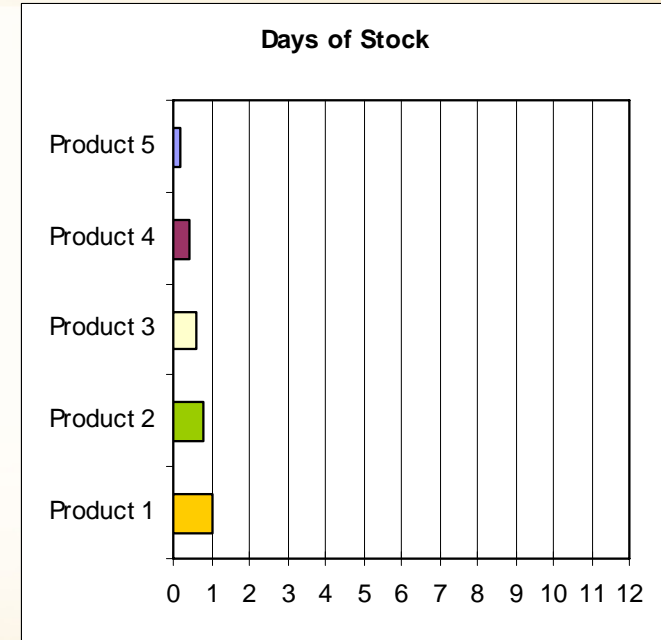
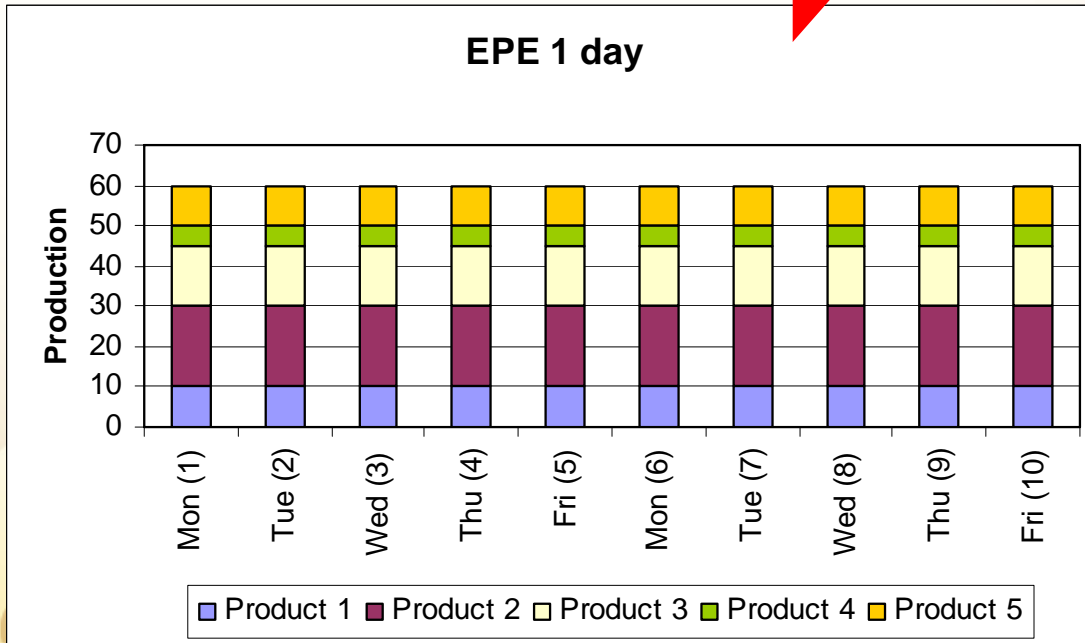
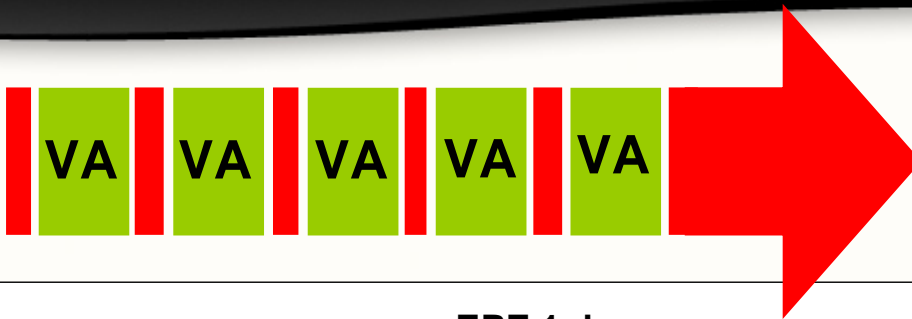
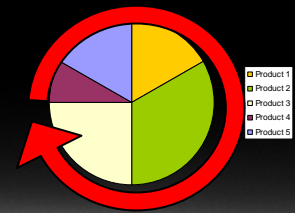
EPE 5 days



Days of Stock



# EPE, 1 day (every day)



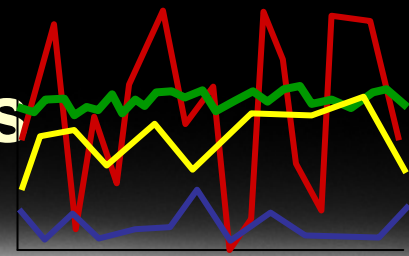
# Perfect Lean

- Producing and supplying at exactly the same rate as market demand
- Impossible?
  - Infinite expensive resources to meet unpredictable & variable demand
  - Small quantities in process industries seem impossible to achieve



- Economies of repetition

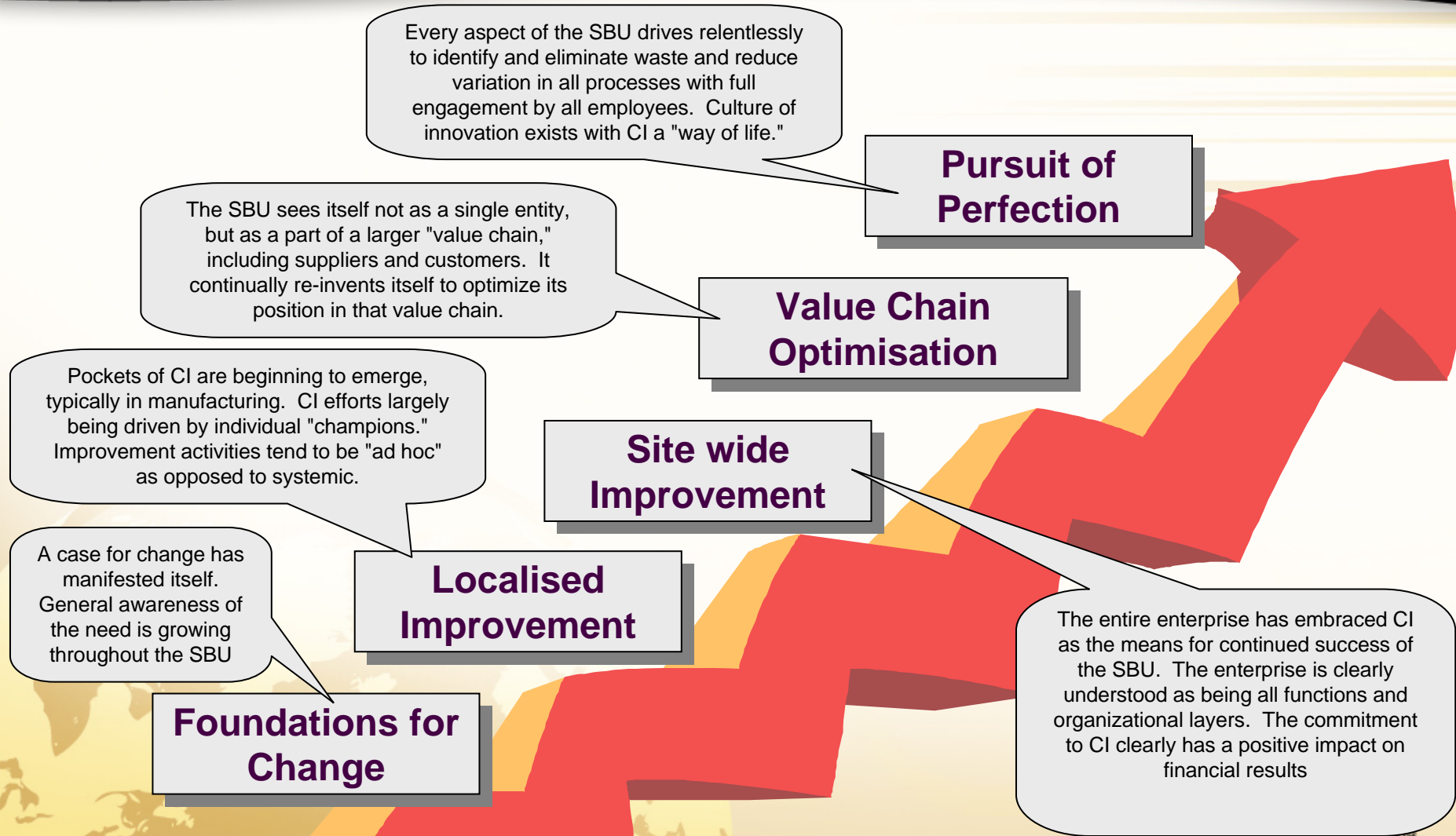
# Using the 4 Ps to design the systems around the customer



People	Parts
<ul style="list-style-type: none"><li>•Shift Patterns</li><li>•Skill Levels</li><li>•Level of flexibility required</li><li>•Overall numbers</li></ul>	<ul style="list-style-type: none"><li>•Number &amp; type of products</li><li>•Number &amp; frequency of changeovers</li></ul>
Plant	Process
<ul style="list-style-type: none"><li>•Flexibility requirements</li><li>•Capacity/speed</li><li>•Level of OEE</li></ul>	<ul style="list-style-type: none"><li>•QA philosophy and standards</li><li>•Planning systems and methods</li><li>•Numbers of planning interventions &amp; frequency</li><li>•System intervention level</li></ul>



# Lean Maturity Model – 5 Stages



# Segregate your suppliers

- Supplier rationalisation
- How to deliver best value
- Collaborative approach
- Charter process
- Core values

Supplier Group	Number
Strategic Alliance	8
Core	42
Commodity	6



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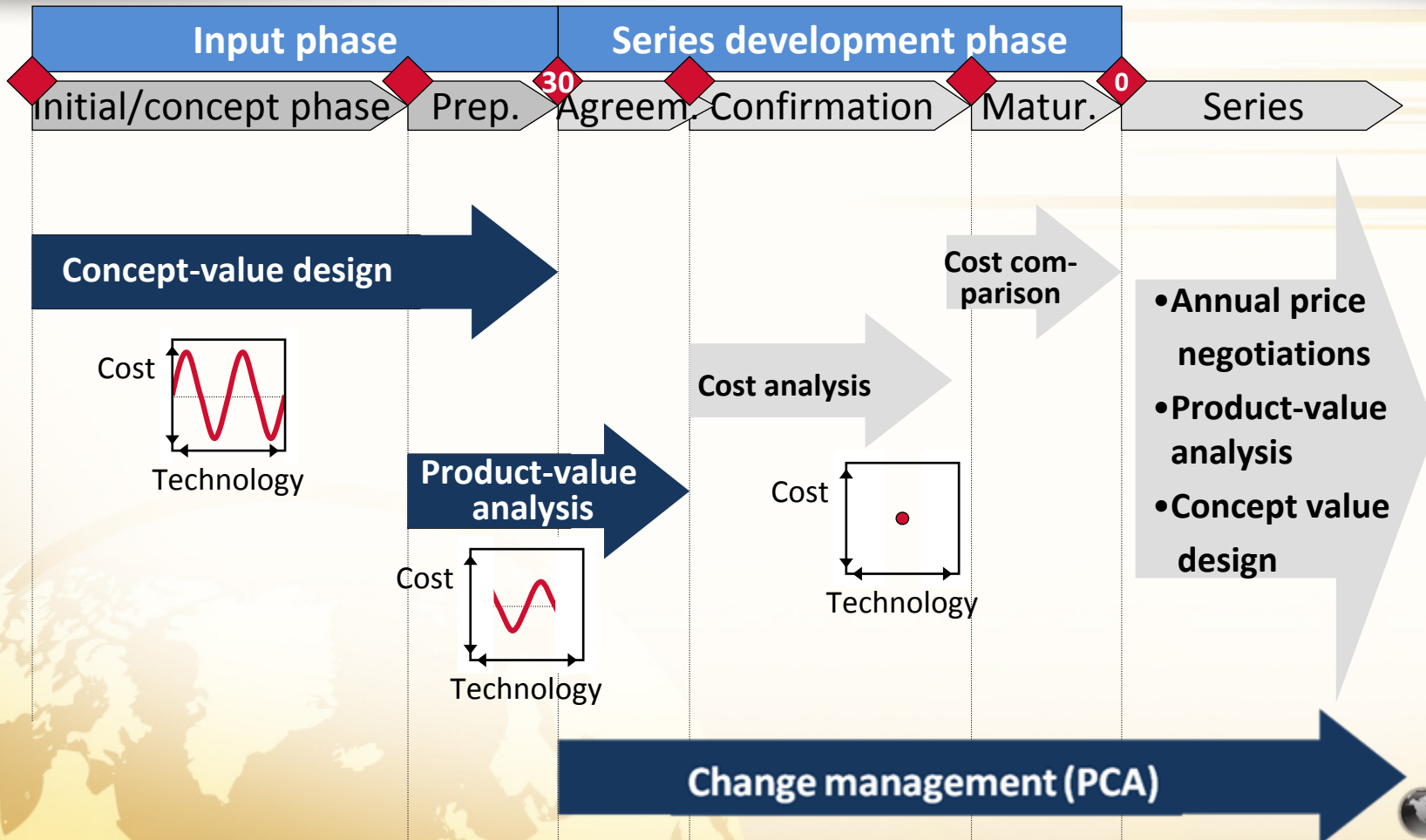
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# Identify the right performance measures

<u>PERFORMANCE METRICS</u>			
Measure	Detail	2004	LAST PERIOD
<b>OTIF</b>	Ex-despatch	<90%	99.03%
	'To Customers Door'	Not recorded	97.34%
	No Failure Events per week	+150	9
	Delivery Fail Pre-notification	Not recorded	88% 😊
<b>Stock Management</b>	Finished Goods Availability	+4% Days Lost	1.34% Days Lost 😊
	No of raw materials suppliers	100	56
	Raw Materials OTIF	Not recorded	97.7
<b>Customer Complaints</b>	Service Complaints per month	24	1 😊
<b>Collaboration</b>	Supplier Charter	None Existent	In place with category measures 😊
	Customer Collaboration	None Existent	22 Customers engaged
<b>Structure</b>	No employed in Supply Chain	0	31

# Cost sensitivity of product



# Taking it to the Supply Chain

- Get your own house in order, maturity steps 1-3
- Build the right model, segregate your suppliers and leverage appropriately
- Do the lean maths
- Select a pilot
- Help them achieve a state of readiness
- Agree a framework agreement
- Prepare thoroughly
- Support them through the process
- Find the right measures and measure performance
- Postponement
- Cost sensitivity
  - Greatest at concept
  - Less at value analysis
  - Least at in production



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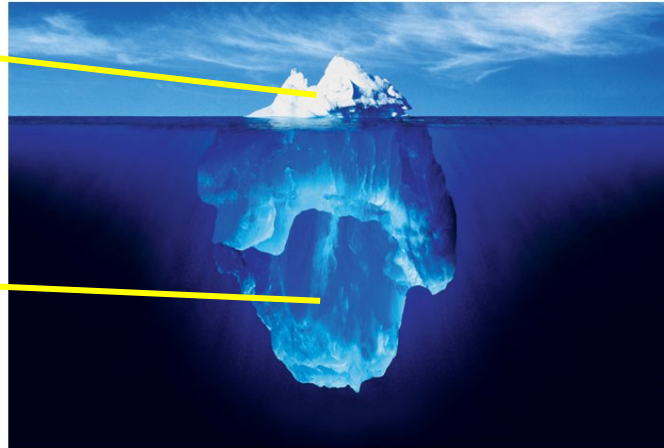
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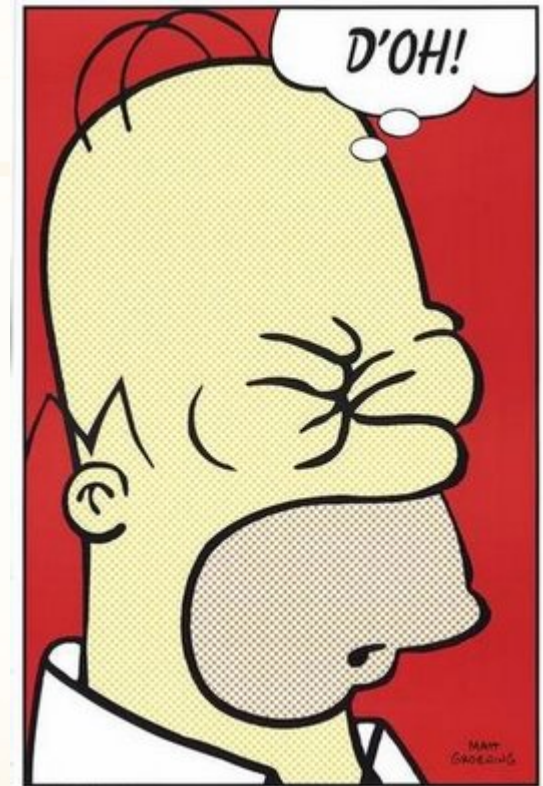
# Tools vs VSM & “break through” thinking

Tools

Principles



- Prioritises improvement activities to return “biggest bang for your buck”
- Collective and agreed improvement plan across the functions not from within them. “The sum of the local optimums is not equal to the global optimum”
- Decisions based on fact not intuition. “In God we trust, all others must use data”
- To take time out and find another way
- Ensures scarce resources are focused on things that will make a difference



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