

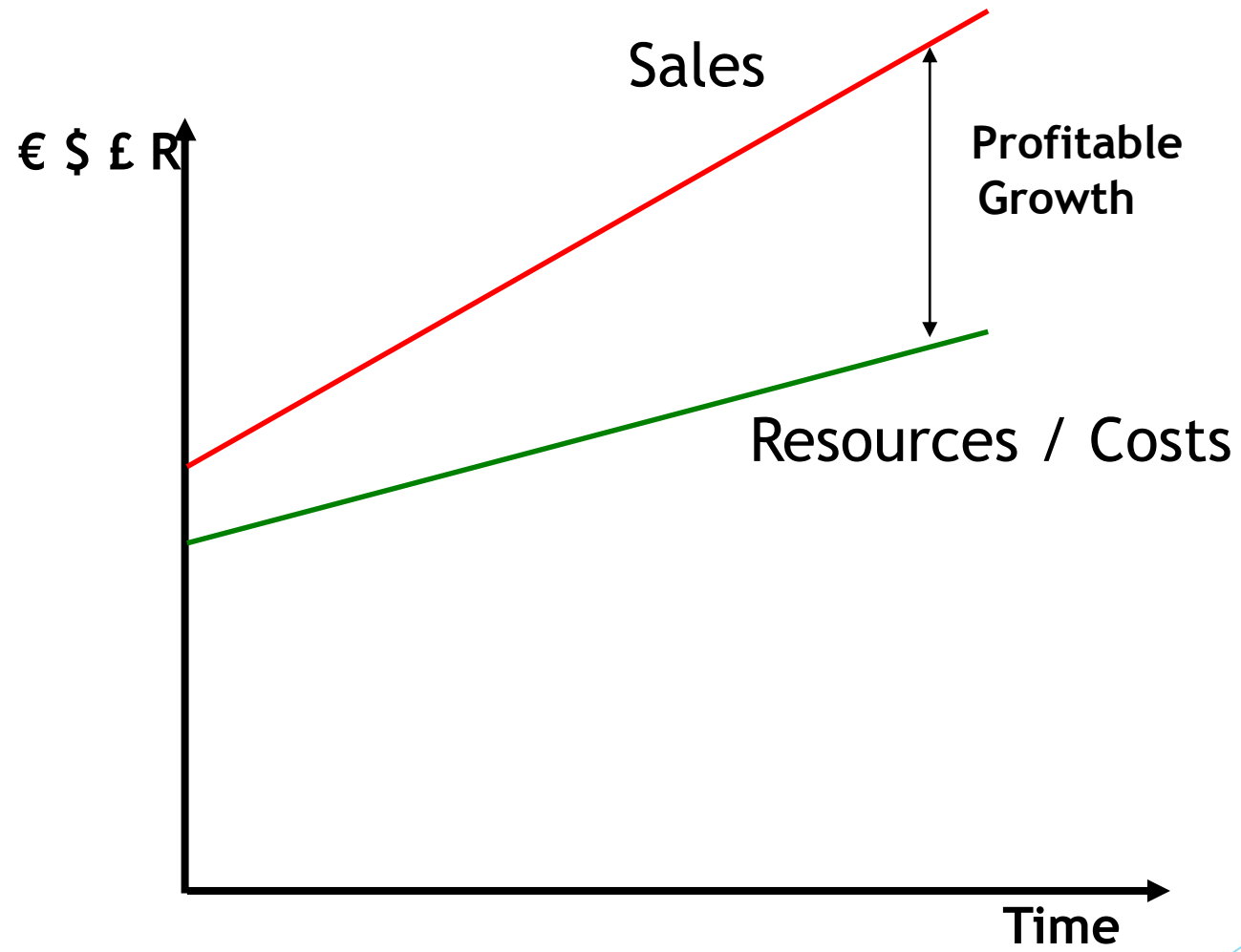
Lean Manufacturing

What does LEAN mean to You?



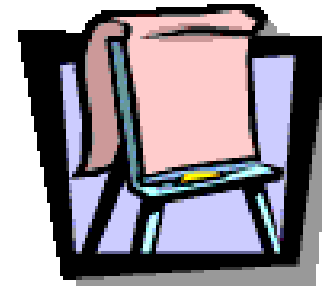
Traditional thinking!





Delivering Profitable Growth through... Creating Value for your Customers

- ▶ If you owned a restaurant, how could you create more value for your customer than competition?

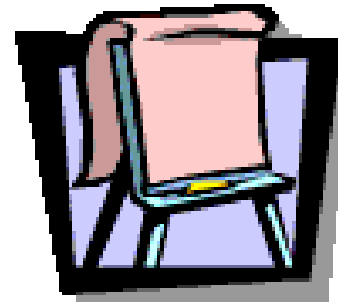


Delivering Profitable Growth through... Value Creation

- ▶ Faster response times
- ▶ Better quality and delivery performance
- ▶ Simplicity and ease
- ▶ Greater accuracy of information
- ▶ Innovative products and services, better aligned to customer needs

Delivering Profitable Growth through... Waste Elimination

- ▶ What would you need to do internally to improve your restaurant business?



Delivering Profitable Growth through Waste Elimination

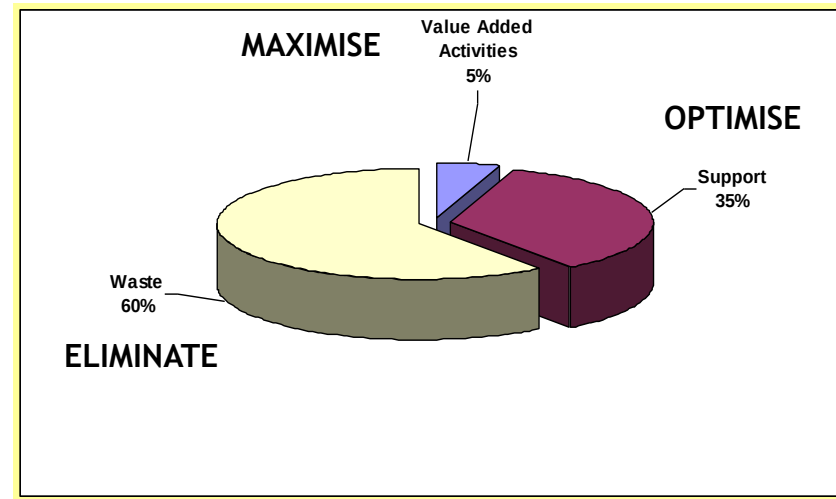
- ▶ Removal of all blockages, delays and errors
- ▶ Managed costs
- ▶ Removal of all unnecessary activities
- ▶ Ensuring that every activity is performed right first time, every time

The Lean Thinking “Myths”

- ▶ “Lean” only applies to Manufacturing Companies
- ▶ “Lean” only applies to making cars
- ▶ “Lean” is about Japanese Culture
- ▶ “Lean” is about Cutting Costs.

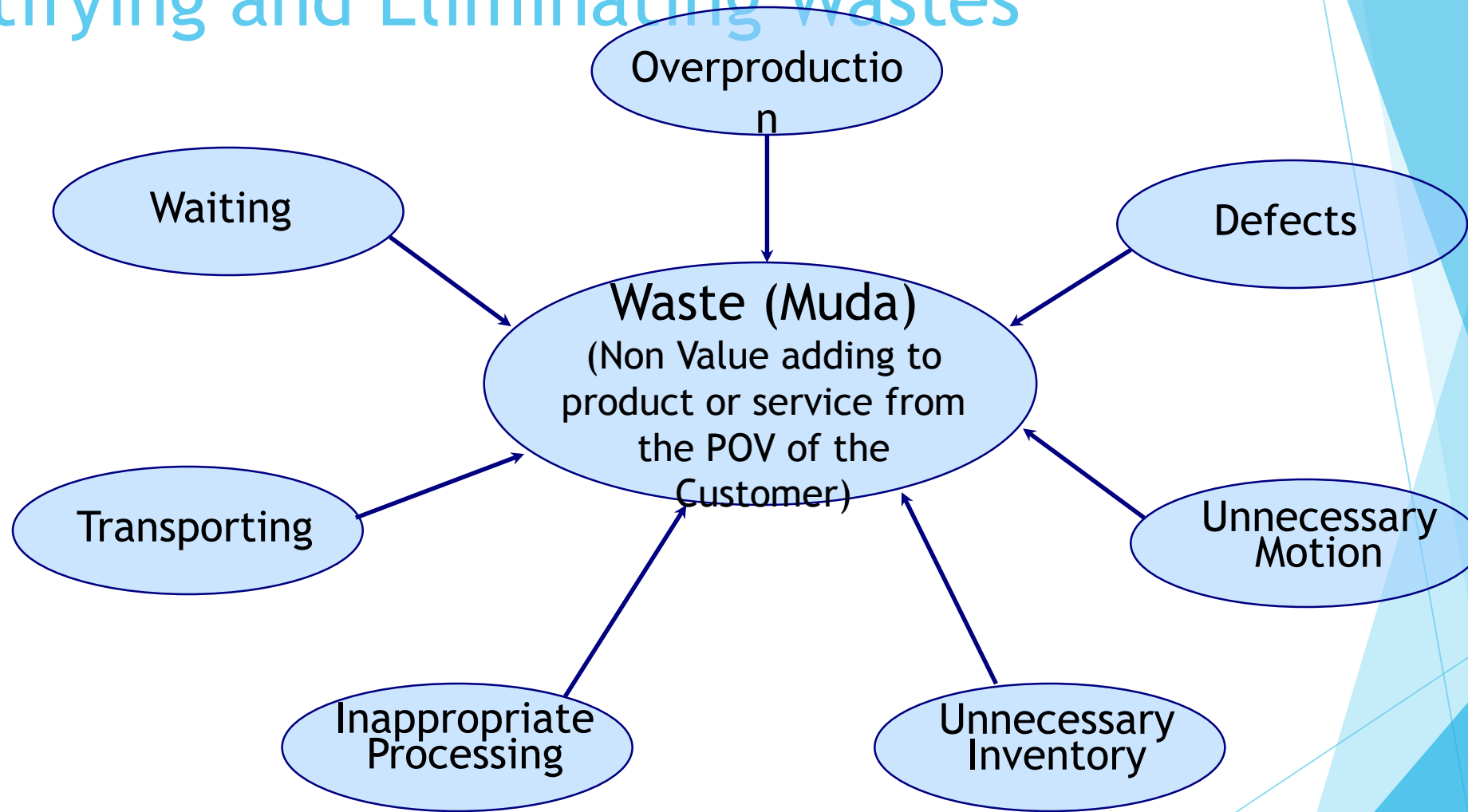
Lean Thinking - A Definition

Lean Thinking involves using *less* of everything - capital, inventories, time, human effort - across all aspects of production and service delivery.

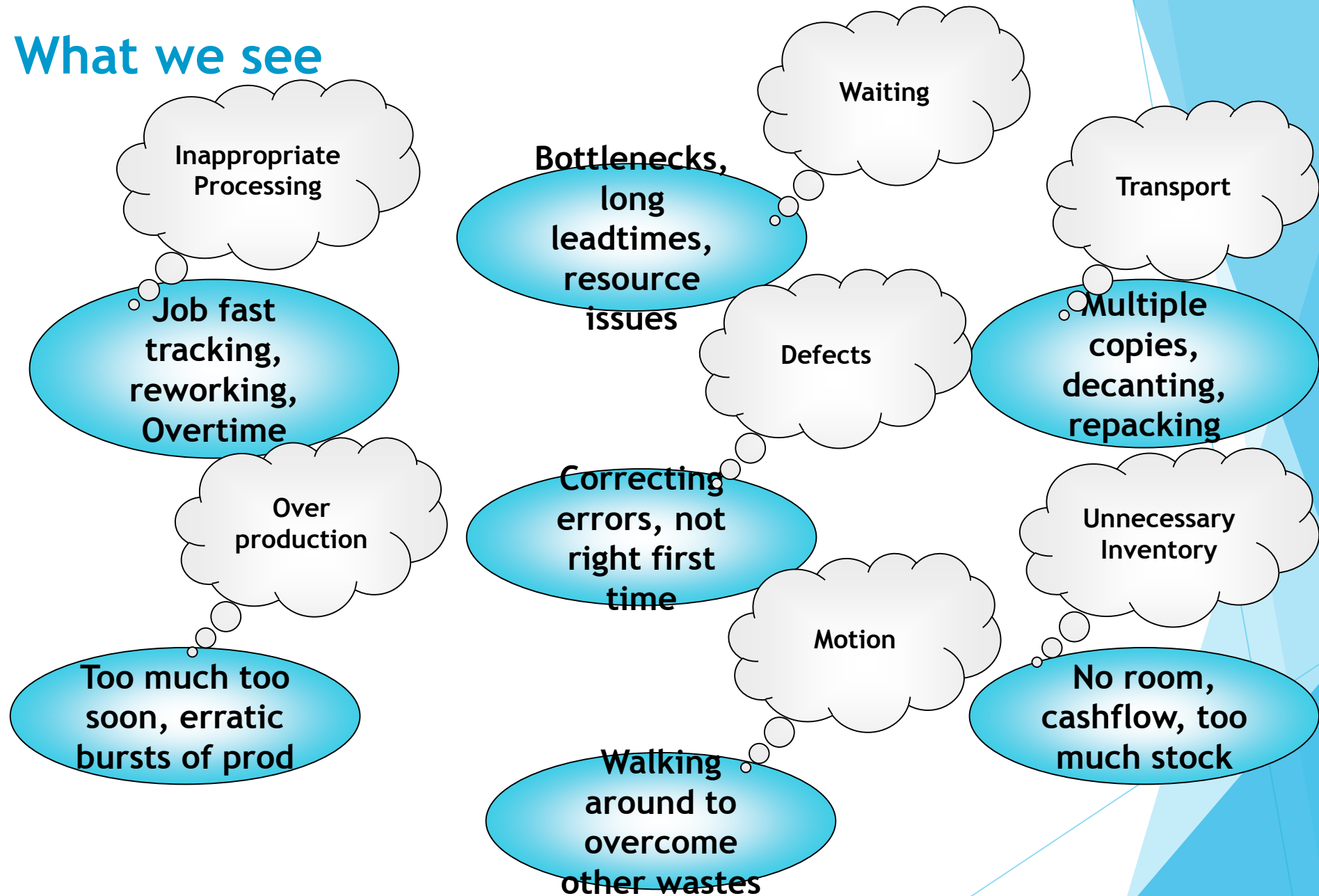


It focuses on the identification and elimination of waste in all processes so that all activities throughout the supply chain add value to the customer

Identifying and Eliminating Wastes



What we see



Over Production



**3 Warehouses
35kt of finished stock**



Unecessary Inventory

Defects



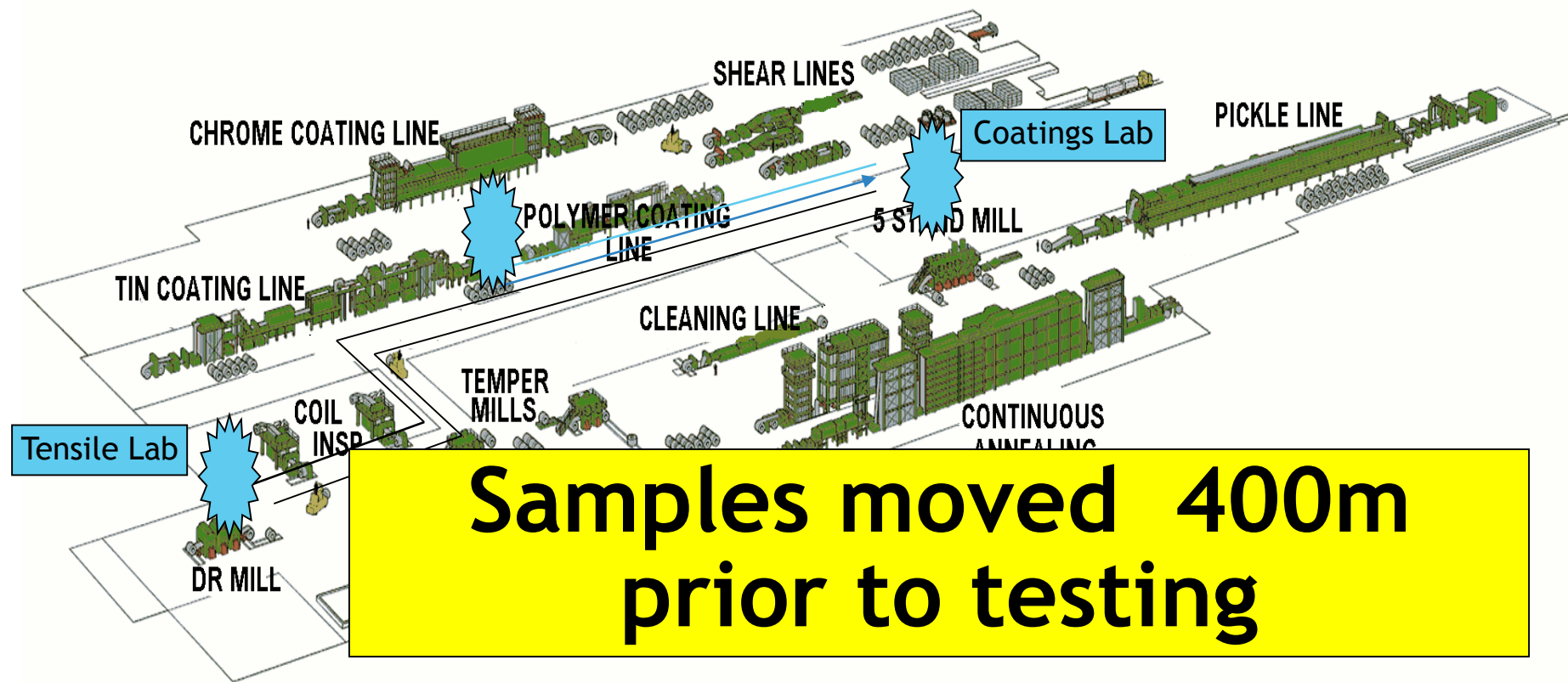
**800t pwk Switched from
original order**



Unnecessary Motion



Unnecessary Motion



Inappropriate Processing



**3 Coil Re-work lines
Throughput: 3kt per wk**

Transporting



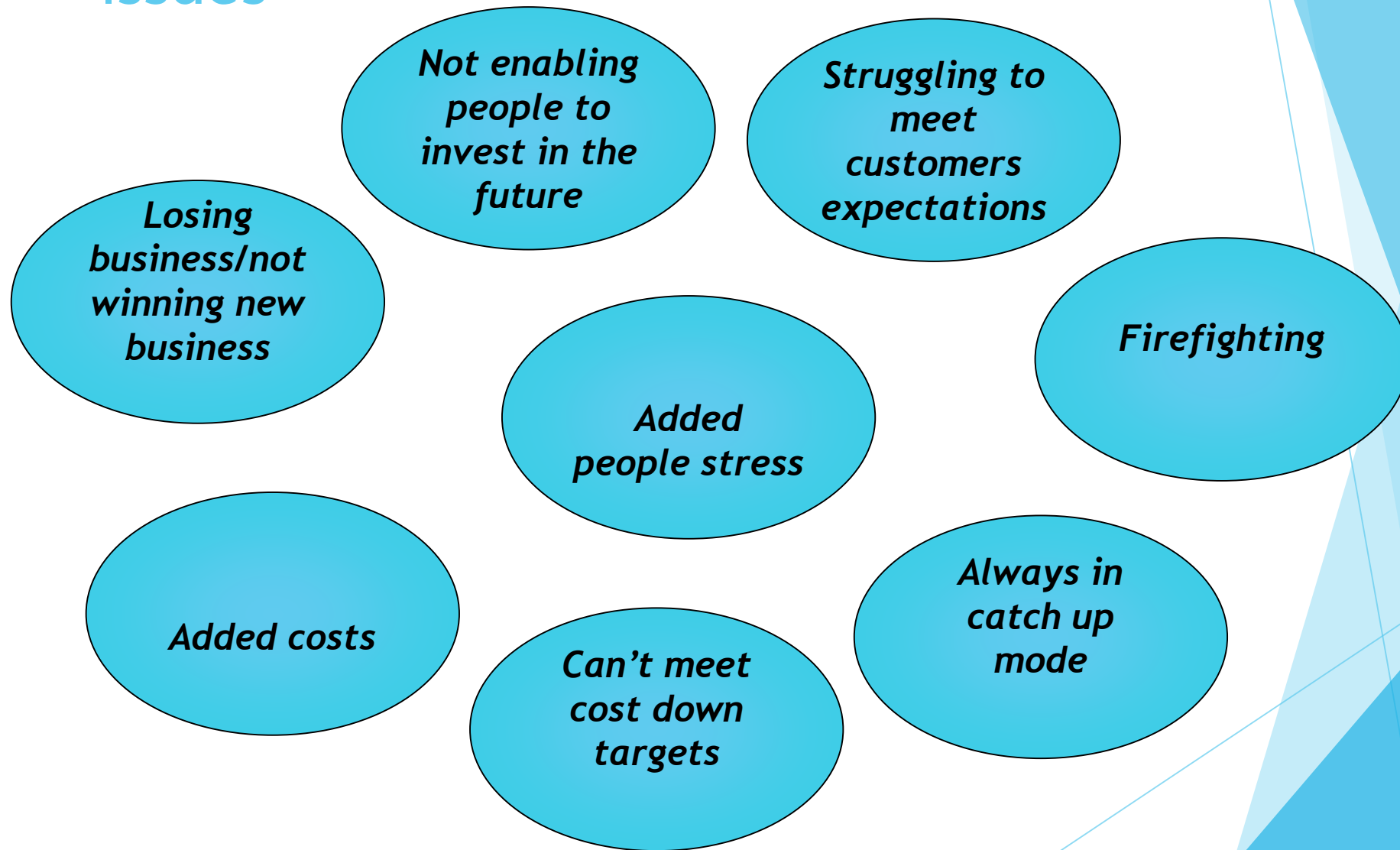
A coil that is RFT has 25-30 transport steps. A rework coil can have >45 transport steps.

Waiting



**233 days in stock
(oldest coil 656 days)**

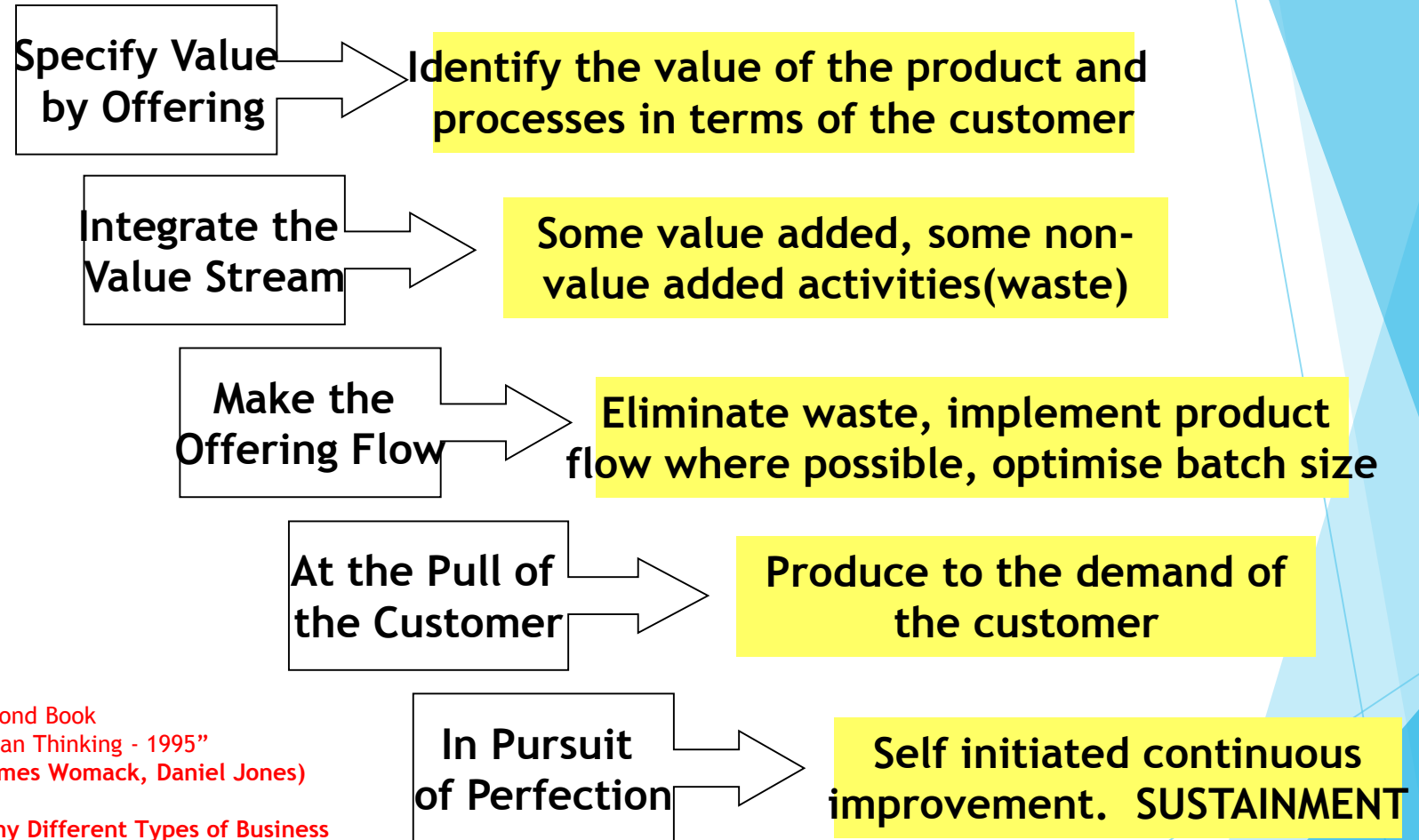
Typical impacts of living with these issues



Examples of waste in service and support

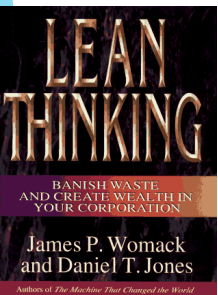
Waste	Examples
Over Production	Training too many people; writing reports no-one ever reads
Defects	Information not right first time every time, often causing problems to surface elsewhere in the process
Unnecessary Inventory	Having more clients than can be managed at one time
Inappropriate Processing	Using methods or technology that is not the simplest solution. Variation in the application of standards
Unnecessary Motion	People having to move around a lot to do their job
Unnecessary Transportation	Moving information around, but not doing anything to it or with it
Delay	When information comes to a complete stop, extending lead-times

Principles of Lean



Second Book
"Lean Thinking - 1995"
(James Womack, Daniel Jones)

Many Different Types of Business
Success followed the SAME Principles



Specify Value
by Offering

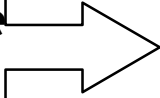
What is Value?



- ▶ How do these offerings differ?
- ▶ What are the benefits to the various stakeholders of the product?

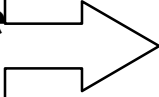
Manufacturer
Supplier
Sales (Nightclub)
Customer

Specify Value by Offering



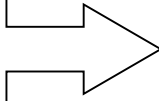
- ▶ What do your customers value today?
- ▶ Will that value change over time? Give examples
- ▶ Do you always achieve what they want? If not, Why?

Specify Value
by Offering



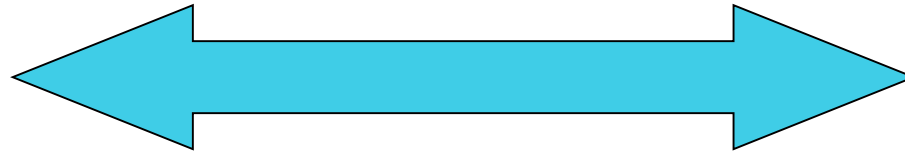
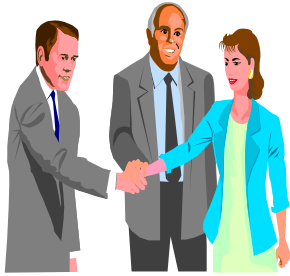
"Value Criteria"	Rank	Company XX Performance Vs								
		Your Expectations			Our Competitors			Your best Other Supplier		
		Better than	Same as	Worse than	Better than	Same as	Worse than	Better than	Same as	Worse than
Innovation	5	✓			✓				✓	
Reliability	2		✓		✓				✓	
Speed	1			✓	✓					✓
Price	4		✓		✓				✓	
Support	3		✓		✓					✓

Integrate the
Value Stream



What is YOUR Value Stream

What is Your Value Stream ?



Bottom
tier
Supplier

Consumer

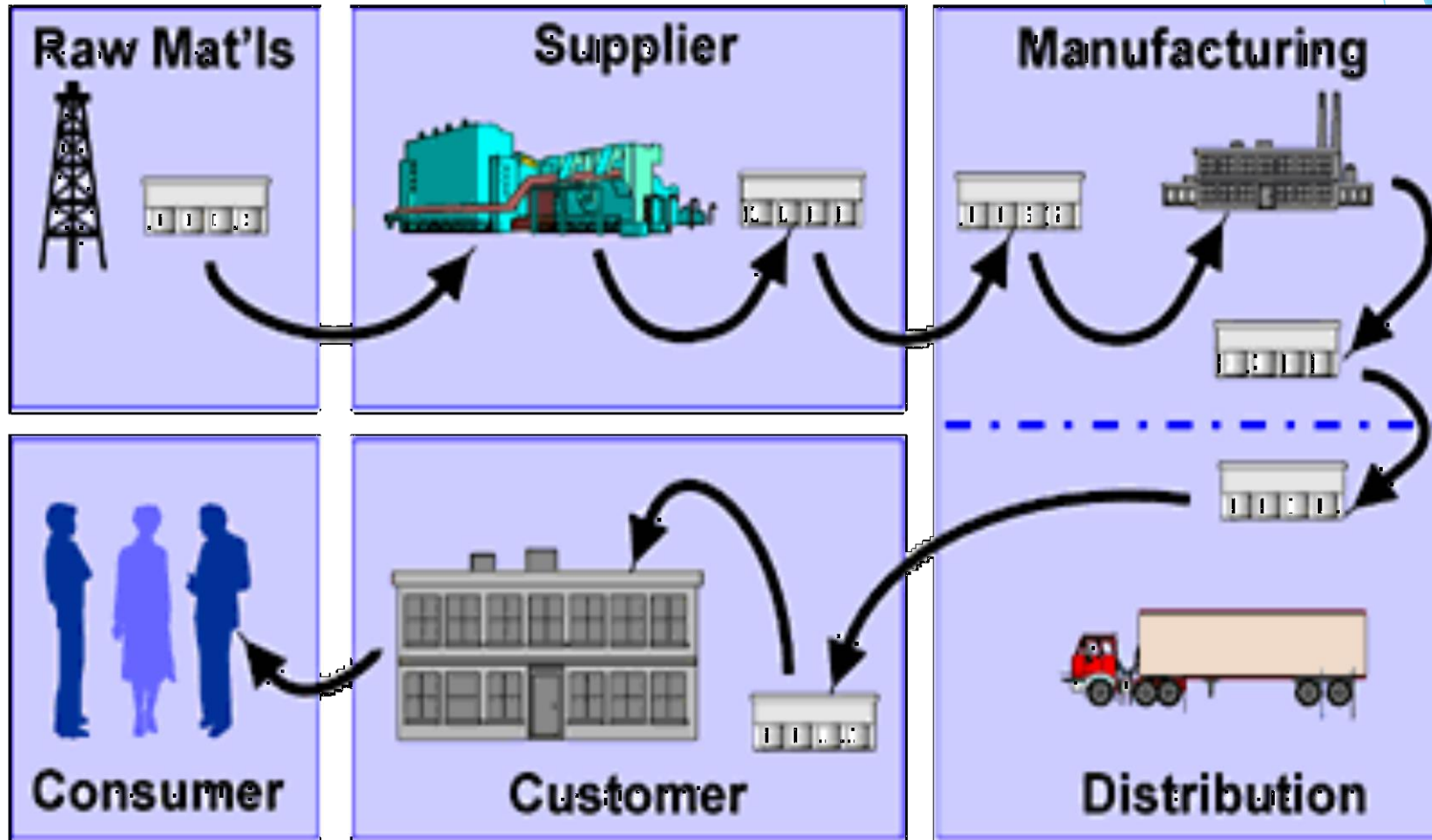
There are two types of activity in a value stream:-

1. *Those which add value to the customer*
2. *Those which do not.*

How much of Toyota Cars are built in-house?

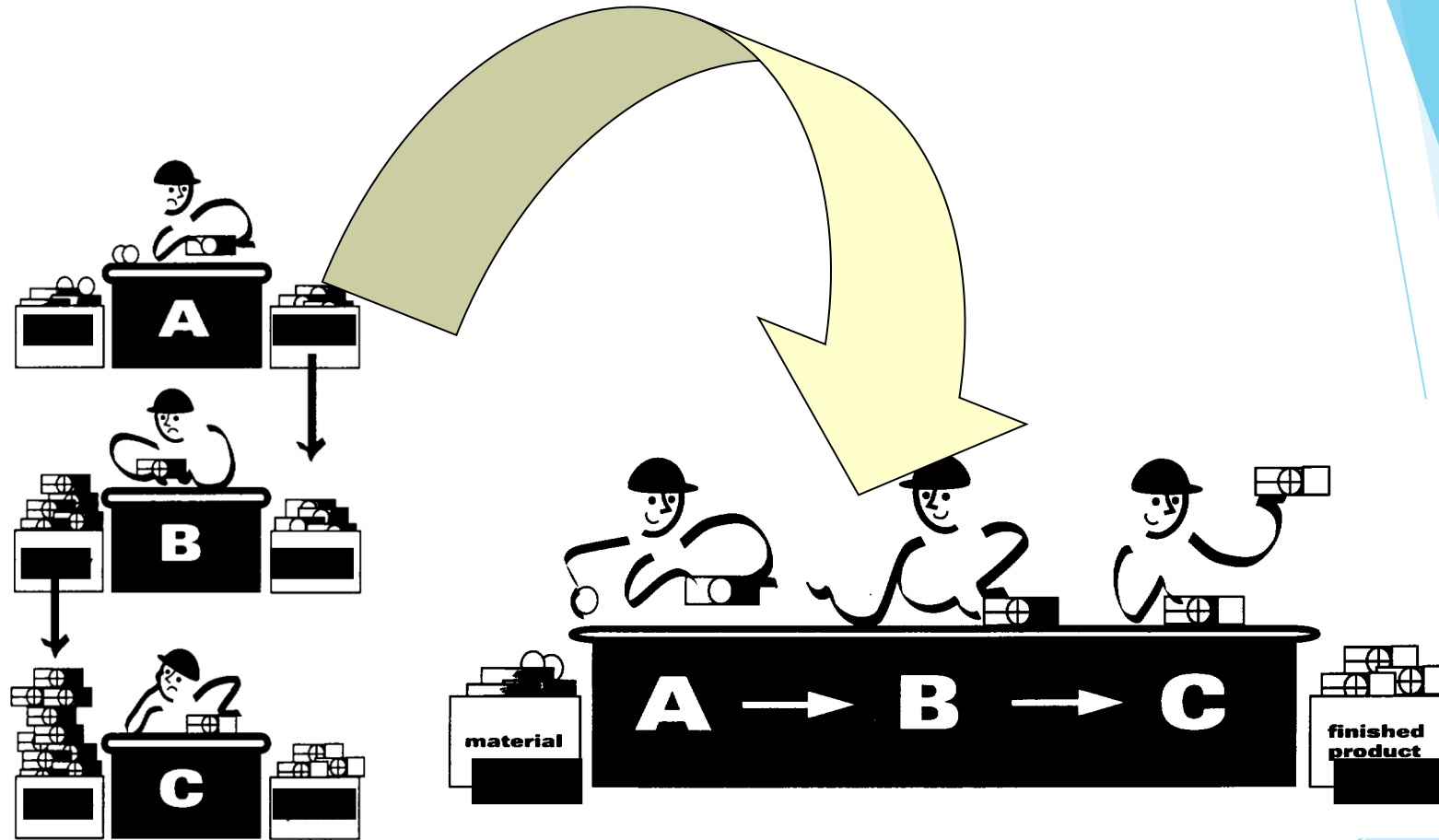
Integrate the
Value Stream

The Entire Value
Stream



Make the
value flow

Lean Thinking Principles

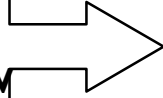


Isolated Islands

Continuous Flow

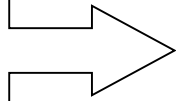
Source: *Learning to See*
by Mike Rother & John Shook

Make the Offering Flow



- ▶ Process Problems
- ▶ Process Bottlenecks
- ▶ Excessive stock - making stuff too early
- ▶ Information not available
 - ▶ Internally and from other parties
- ▶ Not enough resource
- ▶ Improper skills
- ▶ Urgent requests
- ▶ Other priorities

At the Pull of
the Customer



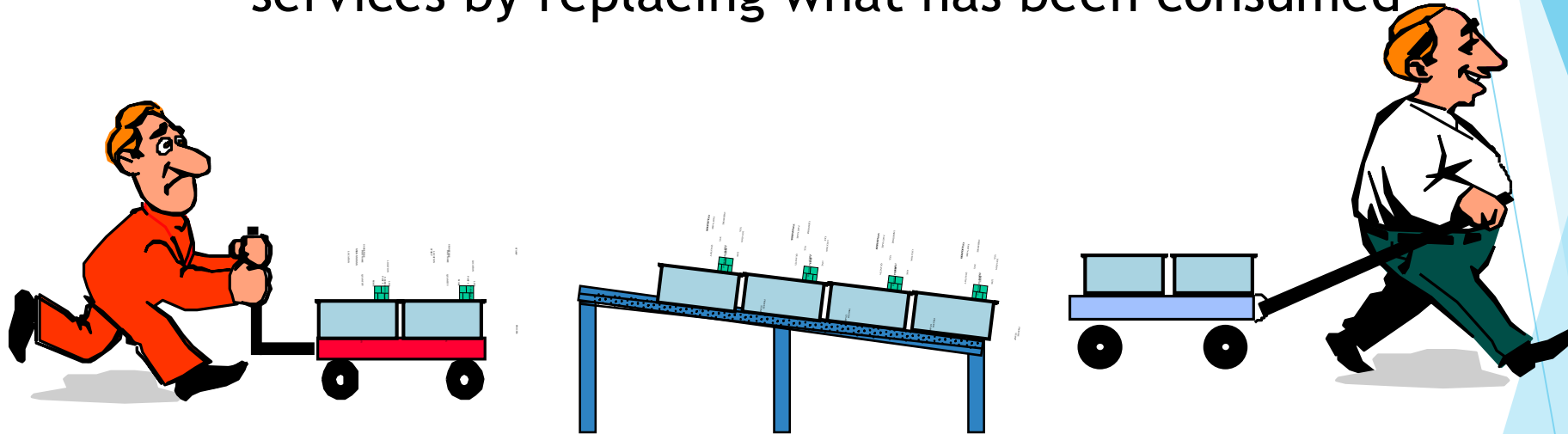
At the pull of the Customer

- ▶ What would be one of the biggest problems, if you run your own restaurant?

At the Pull of
the Customer

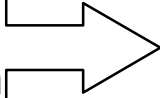
At the demand of the Customer

A method of controlling the flow of products / services by replacing what has been consumed



- What is Needed
- When it is Needed
- In the Quantity Needed

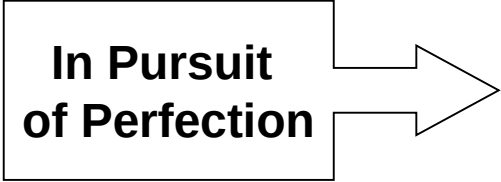
In Pursuit
of Perfection



“Where every activity performed by every person, every machine and every process *adds value* from the point of view of the Customer”

How well do your **PEOPLE, PROCESS and TECHNOLOGY** add value?

**In Pursuit
of Perfection**



LEAN is not just a one-off event but a whole new philosophy regarding the way the business operates:-

Culture

Working practices

Relationships with other departments

LEAN - A better way for People to Work

LEAN Continuous Improvement moves away from Traditional ways of thinking and MUST Involve Everyone if it is to succeed

ICE HOCKEY or BALLET ????

Lean thinking Techniques

- ▶ Waste walk
- ▶ 5s workplace organisation
- ▶ Just in time
- ▶ Quick changeover
- ▶ Visual workplace
- ▶ One piece flow
- ▶ Production levelling
- ▶ Process sequence charts
- ▶ Value stream mapping
- ▶ Team working
- ▶ Coaching skills
- ▶ Plan, do, check, act PDCA
- ▶ Poke yoke
- ▶ Kanban
- ▶ Standard work
- ▶ Take time
- ▶ Problem solving
- ▶ Pull systems
- ▶ Team leadership
- ▶ Total productive maintenance
- ▶ A3 reports

