

Seminario Internacional 
de Management Logístico

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Risk Management
**Gestión de Riesgos
en la Supply Chain**

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Supply Chain Risk Management

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**Seminario Internacional de
Management Logístico**

**10th May 2011 Sheraton Hotel in
Buenos Aires, Argentina.**

- Supply chains of the future
- The changing risk profile of supply chain
- A roadmap to the 'Design Centric Business'
- How to create resilient supply chains

Supply Chains of the Future

- Emerging mega-trends
- Shifting centres of gravity
- Reducing the transport intensity of supply chains
- Peak Oil

Smarter supply chain solutions – responsive and resilient to global uncertainties

Volcanic Ash Cloud



“The impact of the ash cloud has been felt over the economy for the first time, with manufacturing companies warning that they will have to shut down production because of a shortage of components. Airbus said that its wing assembly facility in North Wales would have to slow or shut down production within days if the airspace did not re-open”.

“The impact of the globalised nature of industry has affected Nissan. Two factories in Japan will stop production of cars from today after running out of a key component sourced from Ireland”

“The closure of airspace is estimated to be costing the European economy about £400m a day in lost productivity”

Geopolitical Risks



The Suez Canal, which is controlled by Egypt, carries approximately 1.8 million barrels of oil per day and the Sumed pipeline, which runs through Egypt, also carries 1.1 million barrels per day. Based on fears of transport disruptions, oil prices briefly approached \$100 per barrel.

'Bomb' scare as ink cartridge grounds cargo planes

Cargo planes in the US have been grounded after reports of a 'suspicious' ink cartridge being discovered on a plane in London.



Wintry Disruptions ... Again!



More snow and freezing weather has delayed trains and closed schools, roads and airports

Travel chaos hits UK after more heavy snow

Big Freeze could cost UK economy more than £6bn

Guardian 1/12/2010

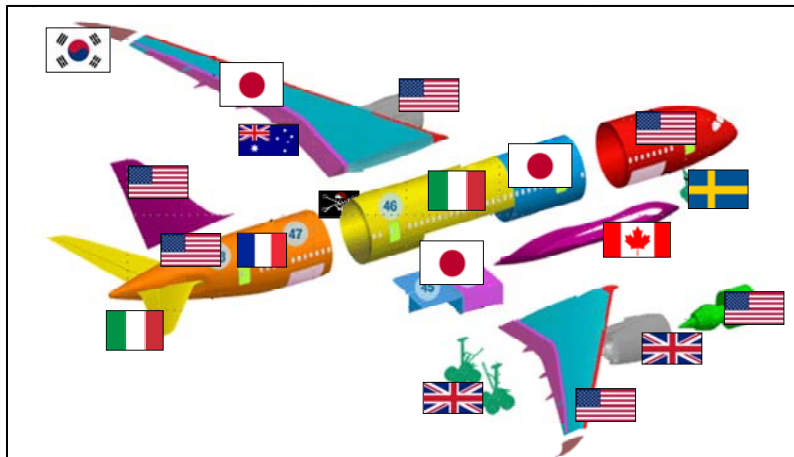
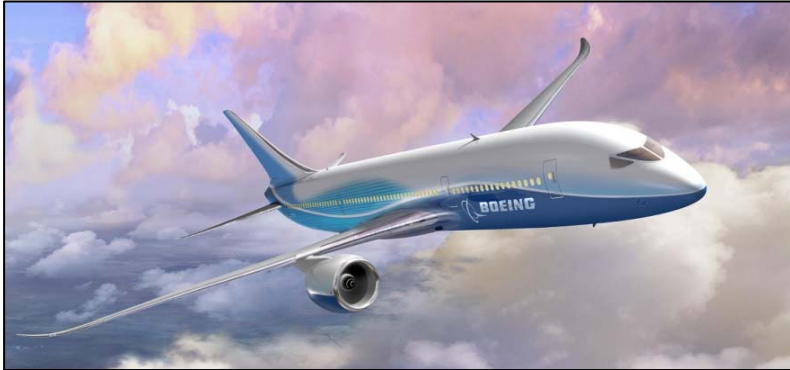
Why are today's supply chains more vulnerable?

- The trend towards **just in time** and **lean** practices
 - **efficiency** rather than **effectiveness**
- The trend towards **reducing costs**
 - **globalization**, more **complex** and longer supply chains
- The trend towards **economies of scale**
 - **centralized** distribution and manufacturing
 - **lower costs**, but also **less flexibility**
- The trend towards **outsourcing** of non-core business activities
 - **loss of control** when it is most needed
- The trend towards **consolidation** of suppliers
 - increased potential for **wider impacts** of disruptions

Supply chain risk is systemic

- The biggest risk to business continuity may lie outside the company in the wider supply chain
- The complexity and inter-connectedness of modern supply chains increases their vulnerability to disruption
- Environmental risks are outside our control, but systemic risk is created through our own decisions

Boeing 787: An Outsourcing Nightmare!



- Almost entirely outsourced design and production to suppliers around the world.
- Complex highly innovative technology challenged suppliers who encountered several problems and subsequent delays! that had financial consequences that ran into billions!
- Paradox: decision to outsource was to speed up time-to-market by creating a more flexible SC capable of responding rapidly to customer demand.

Whilst companies may outsource the execution of an activity they should never outsource its control

Mattel: Risk in the Extended Supply Chain

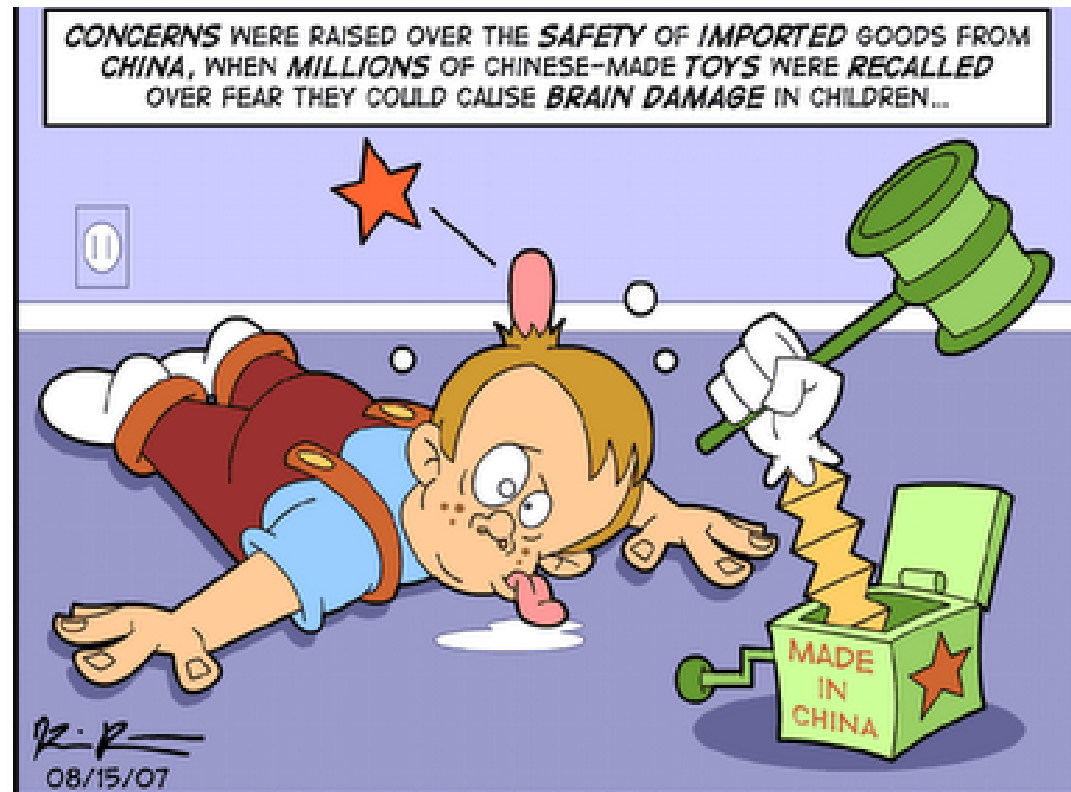
“Mattel, the world’s biggest toymaker, yesterday said the recall of more than 21m toys because of design flaws and potentially dangerous levels of lead paint in products made in China had hit profits and sales and suffered a charge of \$40m, because of product scares and delayed shipments

Challenges when key business processes are outsourced.

In past organizations reputation was under company control but now risk resides across an extended supply network

In the case of the lead paint problem, the source was not even an immediate supplier it was a 2nd tier supplier that supplied paint to the 1st tier supplier

Financial Times 13/02/2008



Toyota: Don't Lean too far!



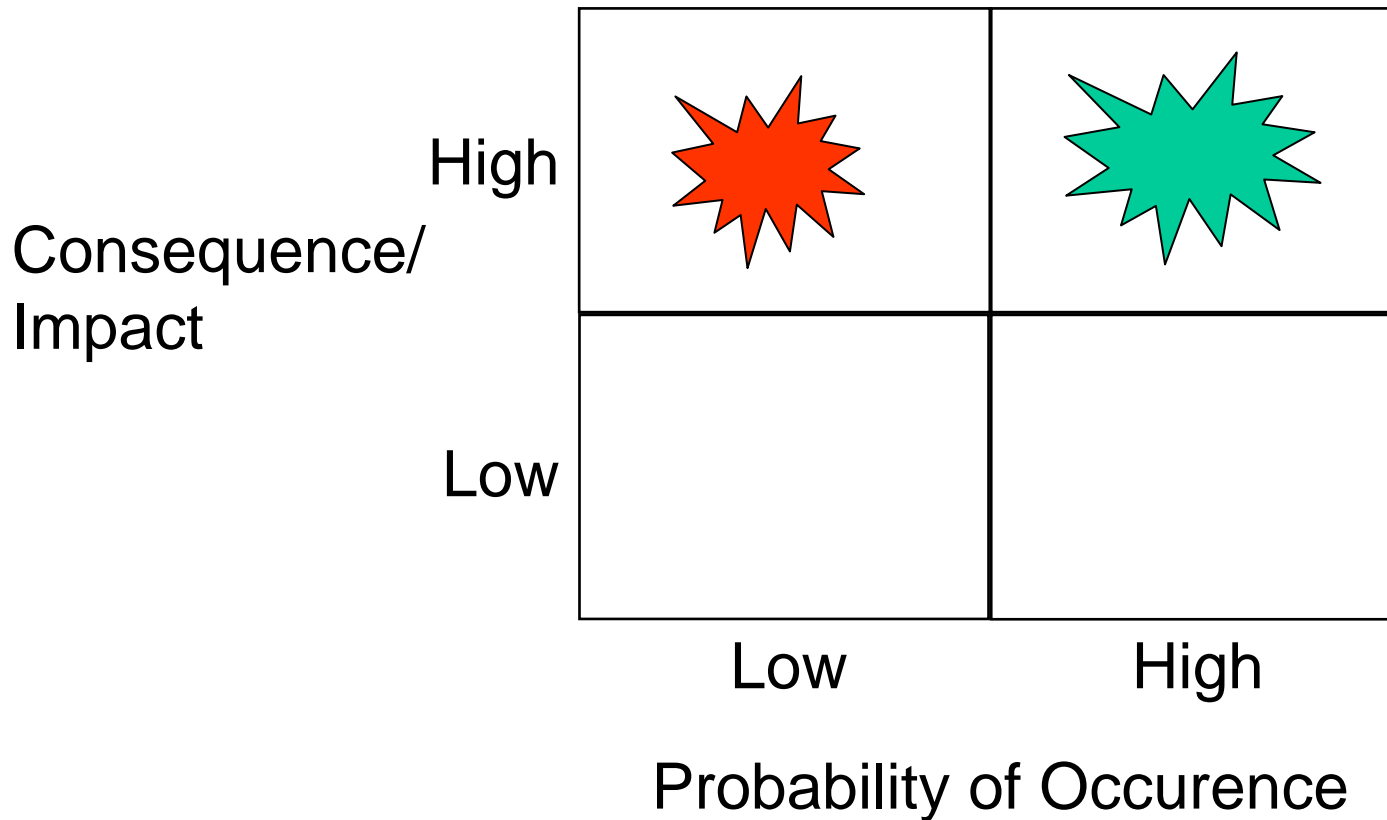
A victim of its own success, lack of visibility of potential risks in 2nd & 3rd tier suppliers, it failed to control the complex extended enterprise it came to depend on!

“The identification and management of risks within the supply chain and risks external to it through a coordinated approach amongst supply chain members to reduce supply chain vulnerability as a whole”.

“Avoiding the loss of customer confidence and the erosion of shareholder value resulting from supply chain disruption.”

Risk = probability of occurrence x consequences

The risk management challenge

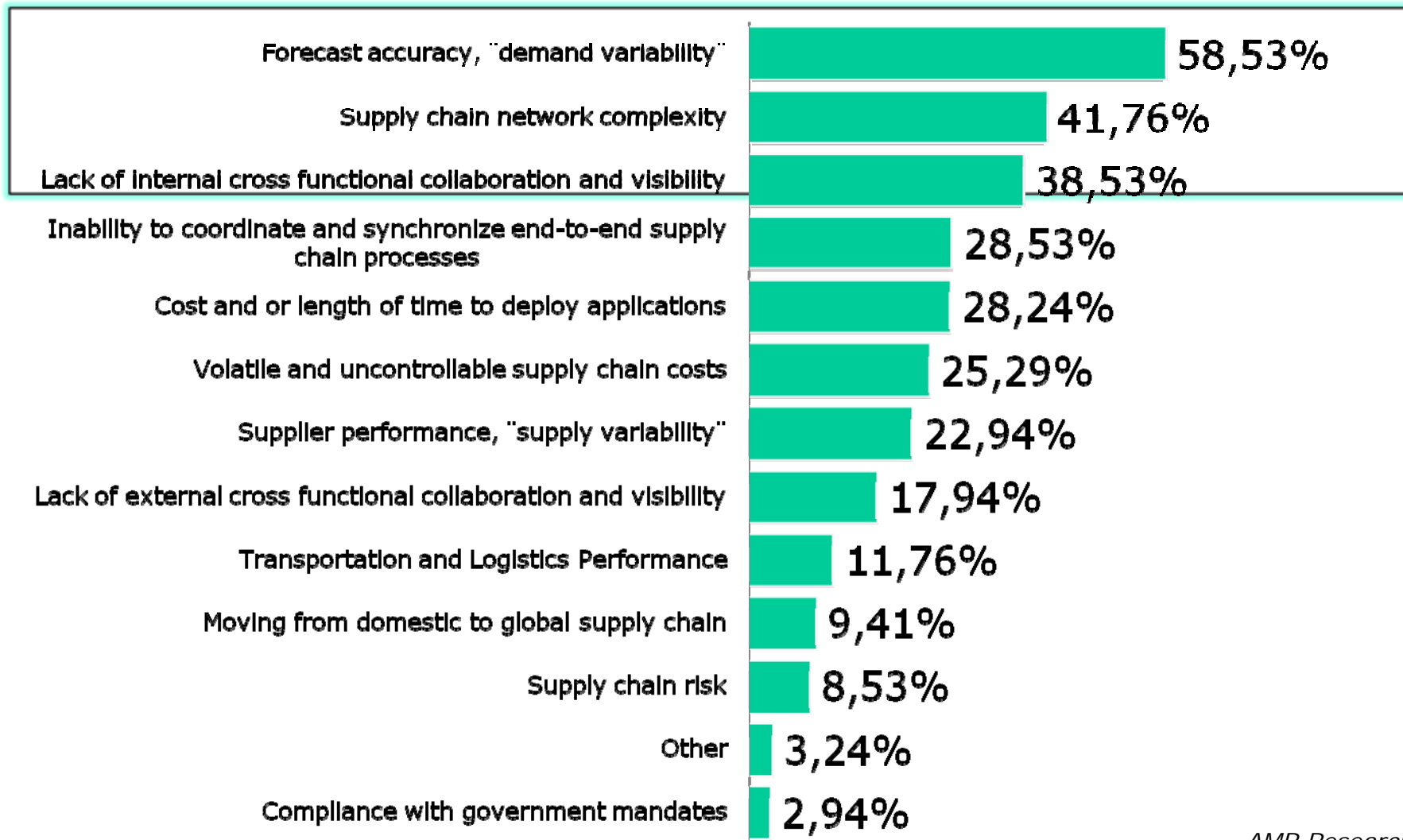


- Where can we reduce the probability?
- How can we reduce the consequence?

Competing in turbulent markets

- Product and technology life-cycles are shortening
- Competitive pressure forces more frequent product changes
- Supply chain 'chaos' created through self-imposed actions
- Forecast-based management no longer viable : forecast for capacity, execute against demand

Obstacles to Achieving SCM Goals



Designing the supply chain from the customer backwards

- Traditional supply chains are production driven
 - Designed to optimise production flows
 - Often based on 'lean' thinking
 - Functional orientation rather than integrative
 - Cost rather than responsiveness has been the driver

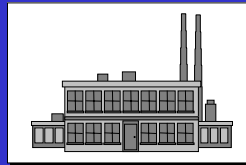
Demand signals drive business today...

THEN

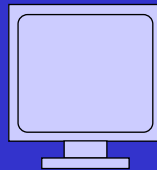
20th Century "PUSH"

"Keep the factory full"

Physical
asset based



Technology
driven



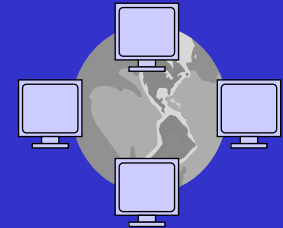
Vertically Structured

NOW

21st Century "PULL"

"Give them what they want"

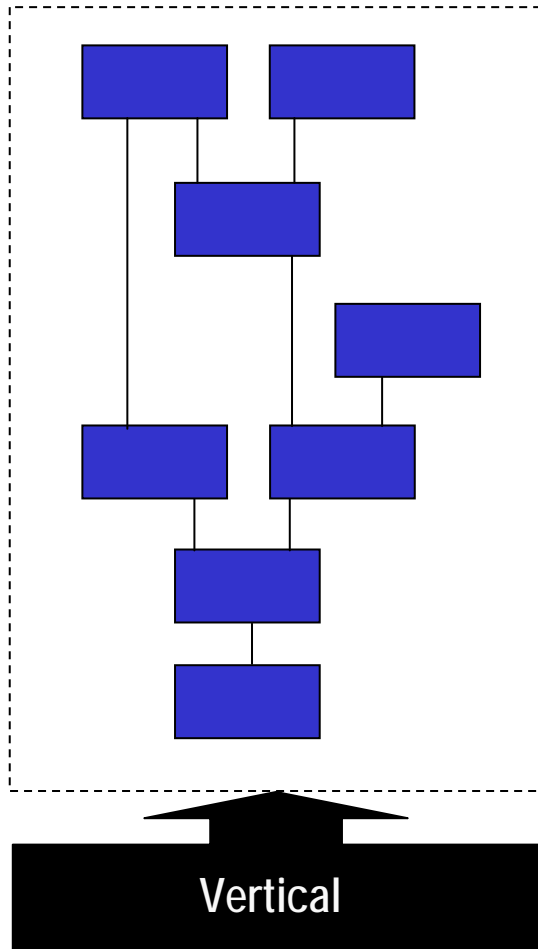
Customer &
information led
Opportunity
driven



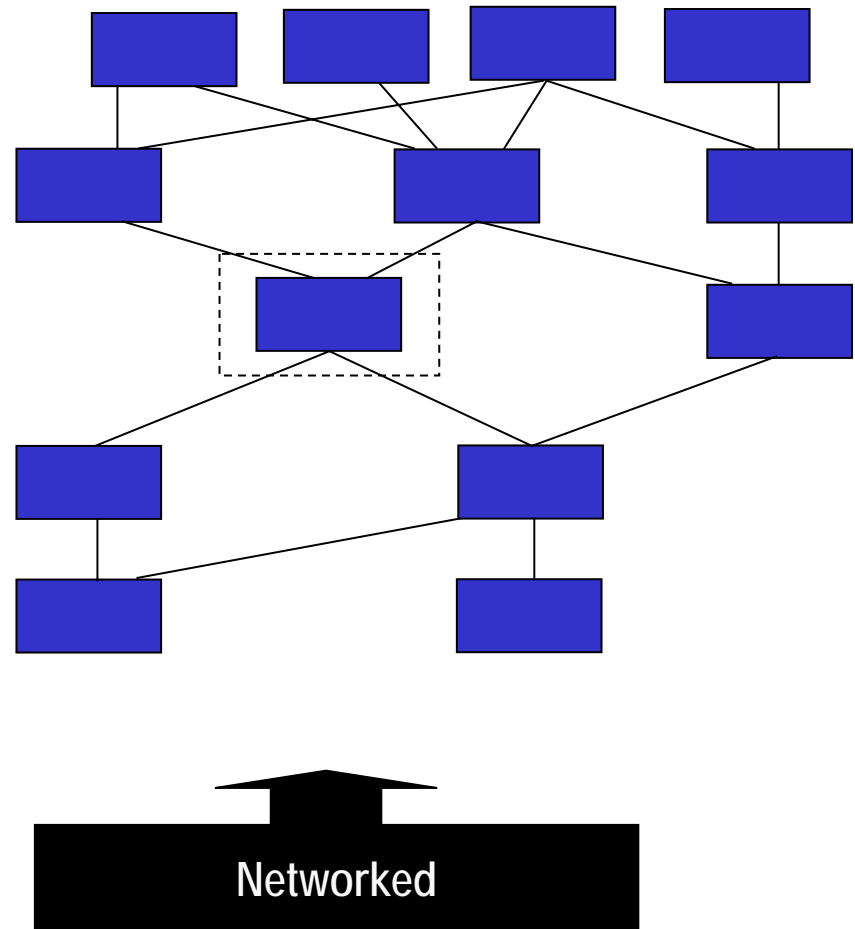
Networked

Risk in the Supply Chain: Where is the weakest link?

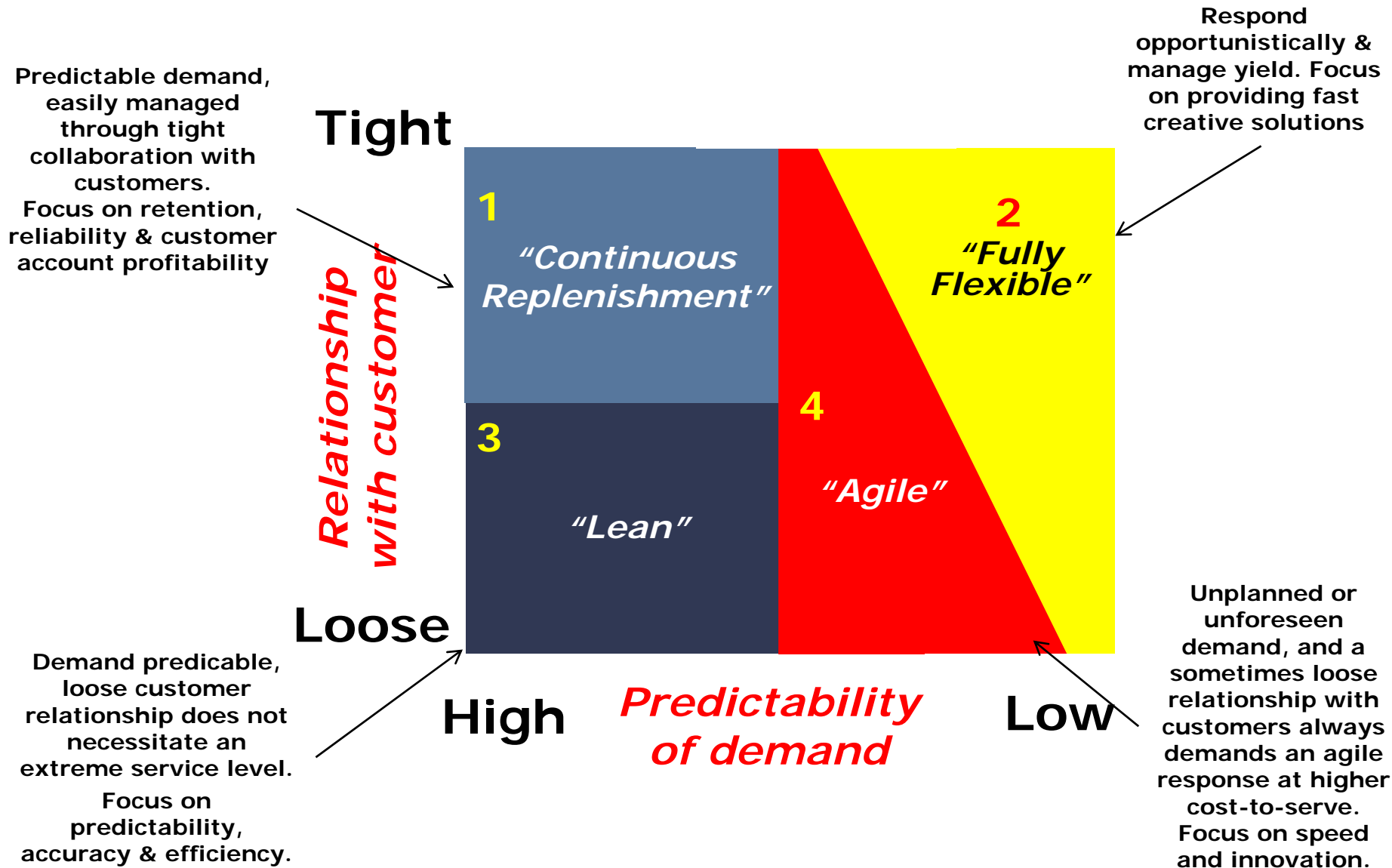
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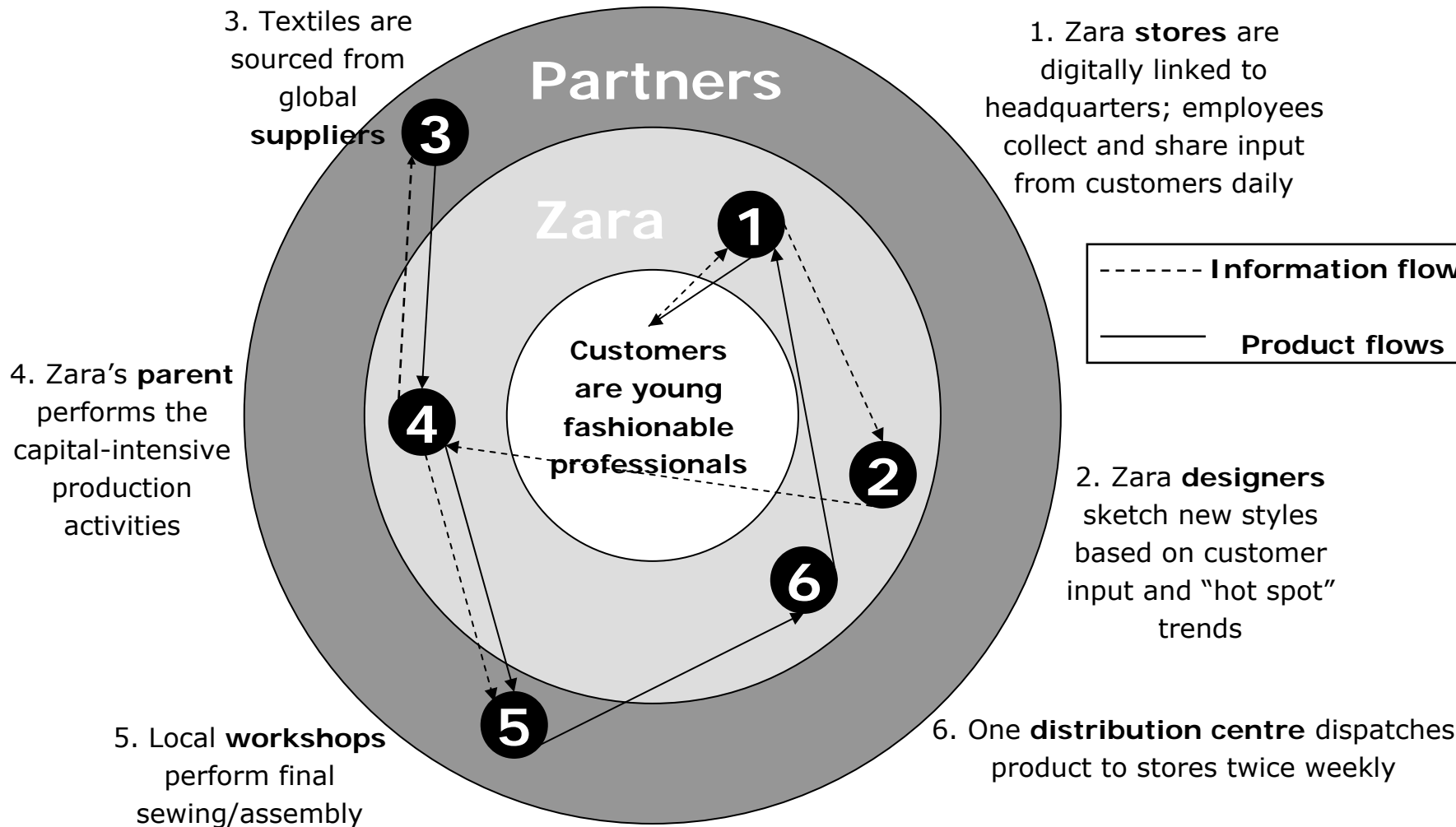


Not "One" Supply Chain , Reduce Complexity

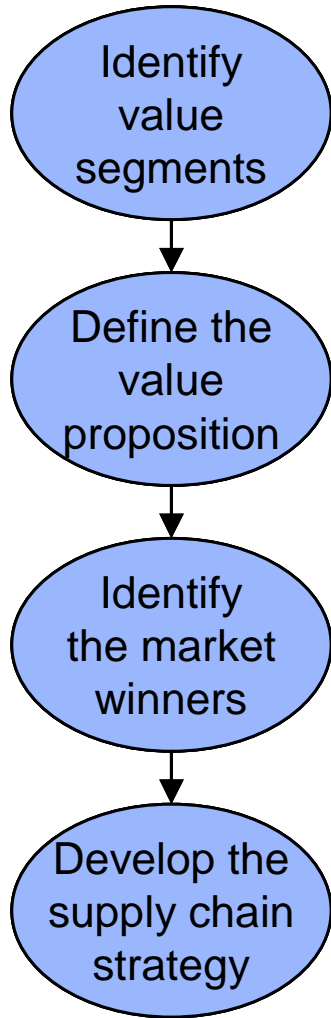


- Demand chain management requires a number of fundamental changes in the way we do things
 - Shifting from a product focus to a customer focus
 - Changing from a functional to a process organisation
 - Substituting information for inventory
 - Making a transition from 'forecast-driven' to 'demand-driven'

Zara's value net design brings fashion to market fast



Demand chain management : linking customer value to supply chain strategy



What do our customers value?

How do we translate these requirements into an offer?

What does it take to succeed in this market?

How do we deliver against this proposition?

What does it take to become 'demand driven'?

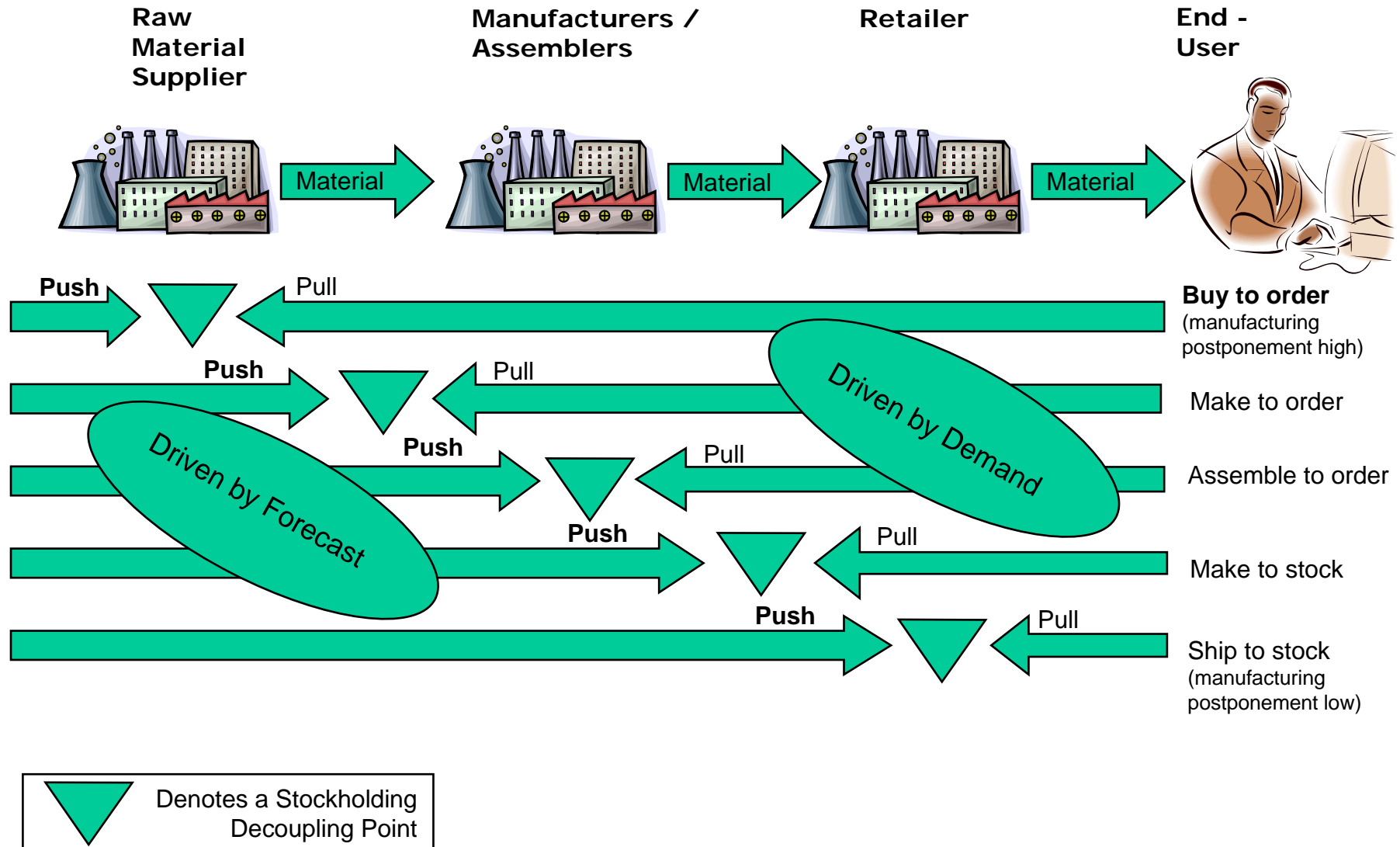
- There are a number of critical principles underpinning demand-driven supply chains
 - The consumer is the start of the supply chain, not the end
 - Increasingly customers are becoming 'co-creators'
 - Markets become fragmented; from mass-markets to 'markets-of-one'
 - **Agility** and **responsiveness** are fundamental requirements

Agility holds the key

Agile supply chains are designed to respond rapidly to unpredictable change. They are based upon a number of principles:-

- Very close connection to final marketplace
- Visibility of real demand
- High levels of synchronicity upstream and downstream
- Organisational focus on processes rather than functions
- Advanced level of collaborative planning with supply chain partners
- Continuous search for time compression opportunities

Strategic inventory and the decoupling point



'New Look Aims to be UK's Answer to Zara'



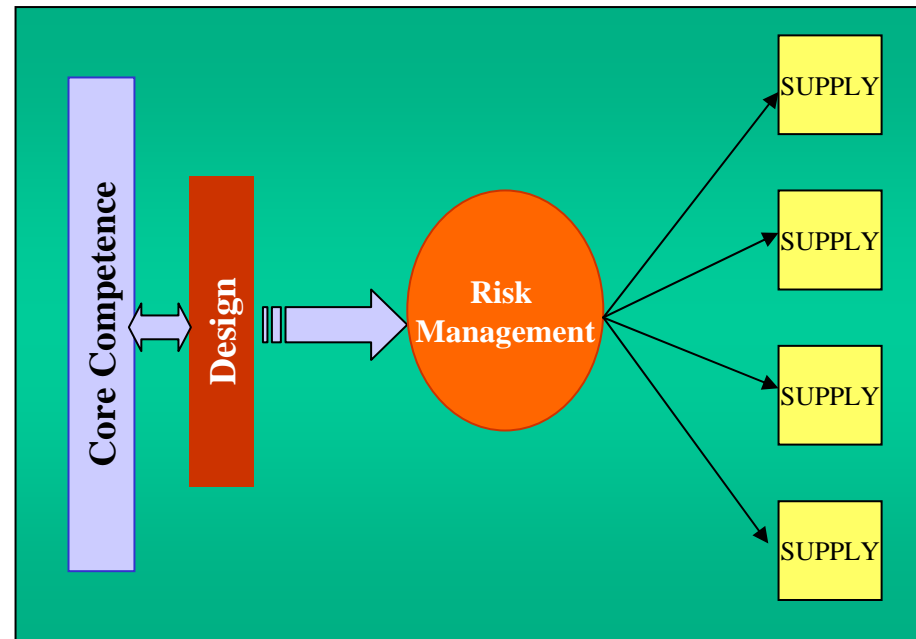
- Transport time in New Look's SC only represents 20% of the end-to-end timeline – biggest time saving opportunity is further back in the chain
- Reduce product development times and plan for shorter lifecycles
- Demand - driven SC

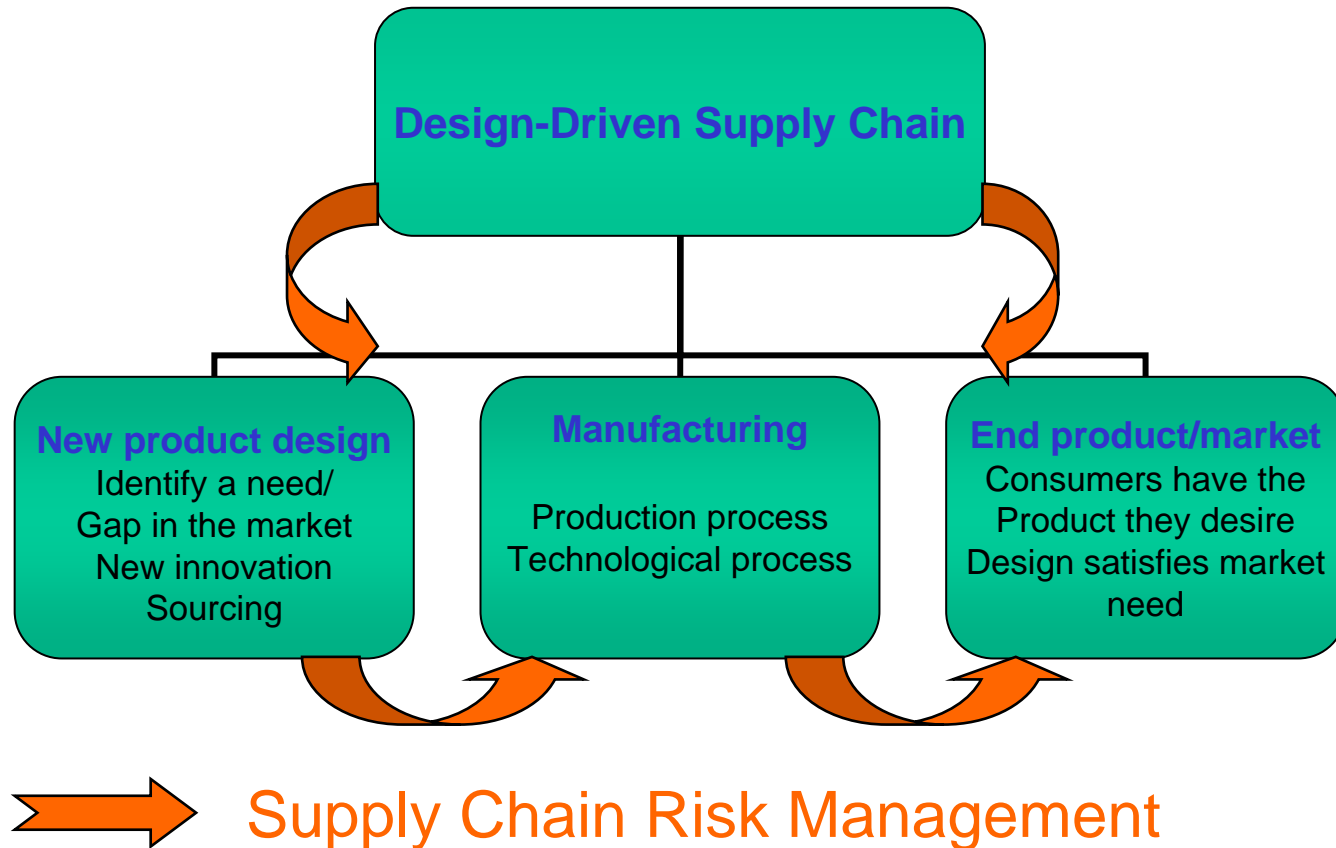


Supply Chain 'begins on the drawing board'

- Design decisions can have significant through-life implications for risk, complexity and responsiveness.
- Design is not just concerned with the appearance and functionality of products, it has an important role in the coordinated efforts of supply chain and in risk management.
- In short life-cycle markets time-to-market is critical and risks can be avoided through better aligning design with the SC and developing design-centric businesses

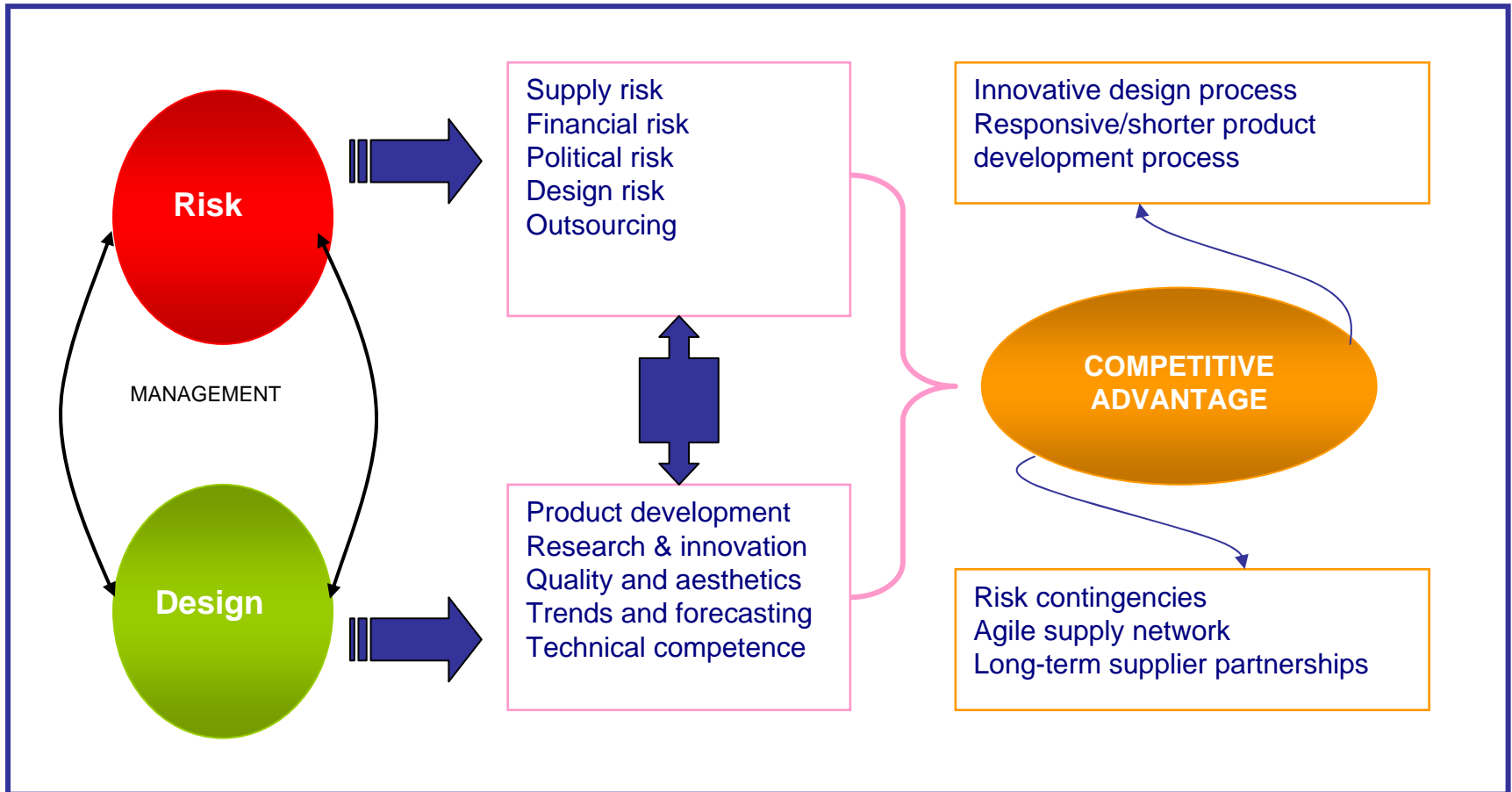
- Postpone a third of their designs to delay manufacturing and launch ranges in different phases – forecast for capacity execute against demand
- Supplier integrated approach, share product knowledge to:
 1. Enhance agility in SC
 2. Mitigate risk in SC
- 'Knitwear Direct' accessing external capabilities
- Per Una – designing fashion focused range





Aligning Product Design with Risk Management and Supply Chain

- By integrating the management of design and risk such as: supply risk and the product development process, a firm is more effective at responding to risks, planning contingencies to manage risk and developing risk short/long-term risk management strategies.



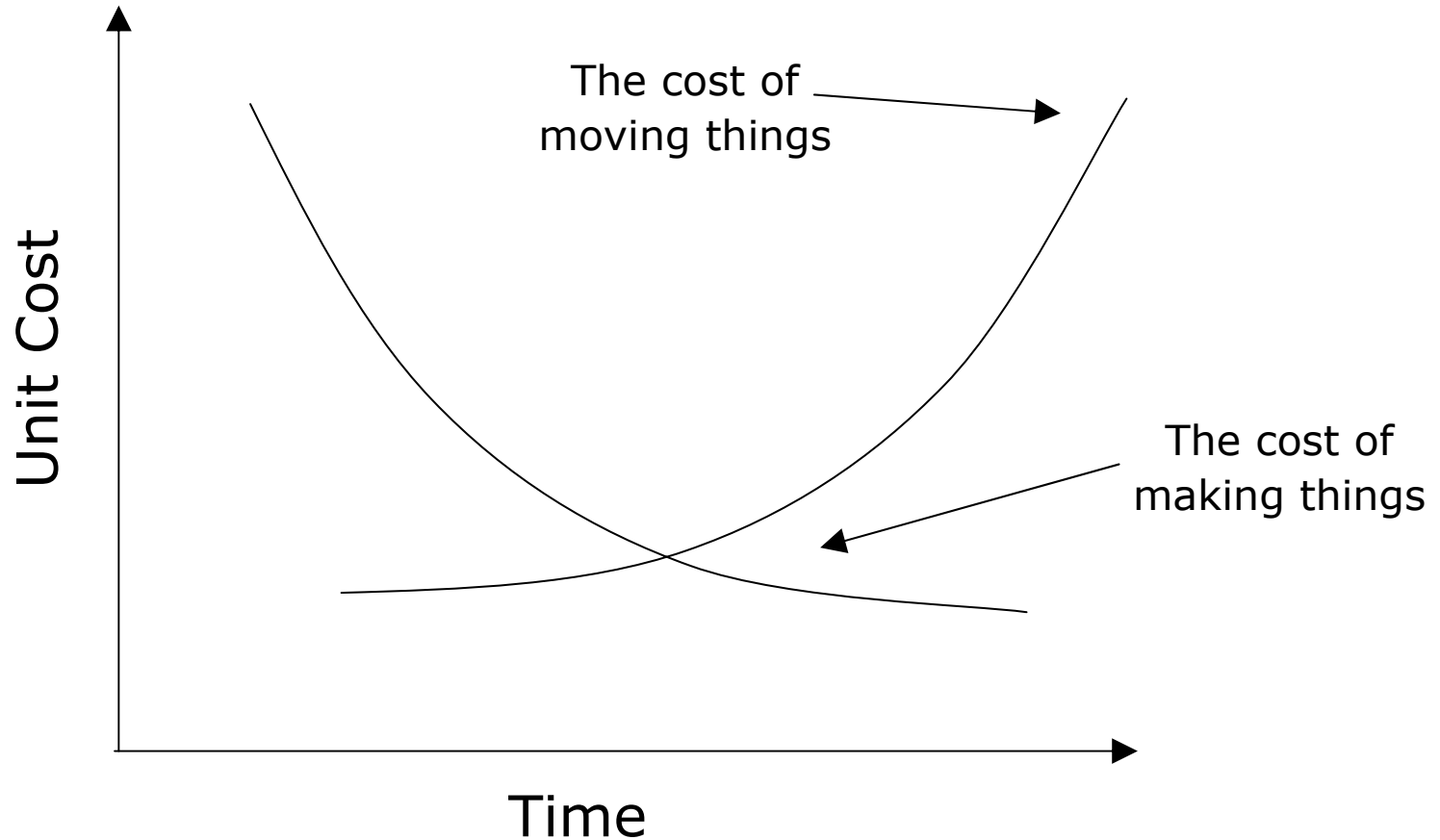
Design decisions can dramatically impact the risk profile of the supply chain

- 80% of costs to the SC are present at the early stages of product design and development
- Product design is often the longest process in the supply chain requiring a number of modifications
- Design is often managed in isolation-poor integration with supply chain
- Business functions are managed in silo's

Design decisions impact cash-to-cash

- More components equals more inventory
- Long replenishment lead times equals more inventory
- Higher levels of variety equals more inventory

The balance of costs is changing



The cost of making things is getting less;
The cost of moving things is getting higher

Recognise the impact of physical design on transport intensity and the carbon footprint

- The physical characteristic of the product and the packaging can significantly impact transport intensity
- Transport intensity is the per unit of transport cost to total end-to-end cost
- Choice of source of supply of components/materials affects the carbon footprint



What a waste of space!

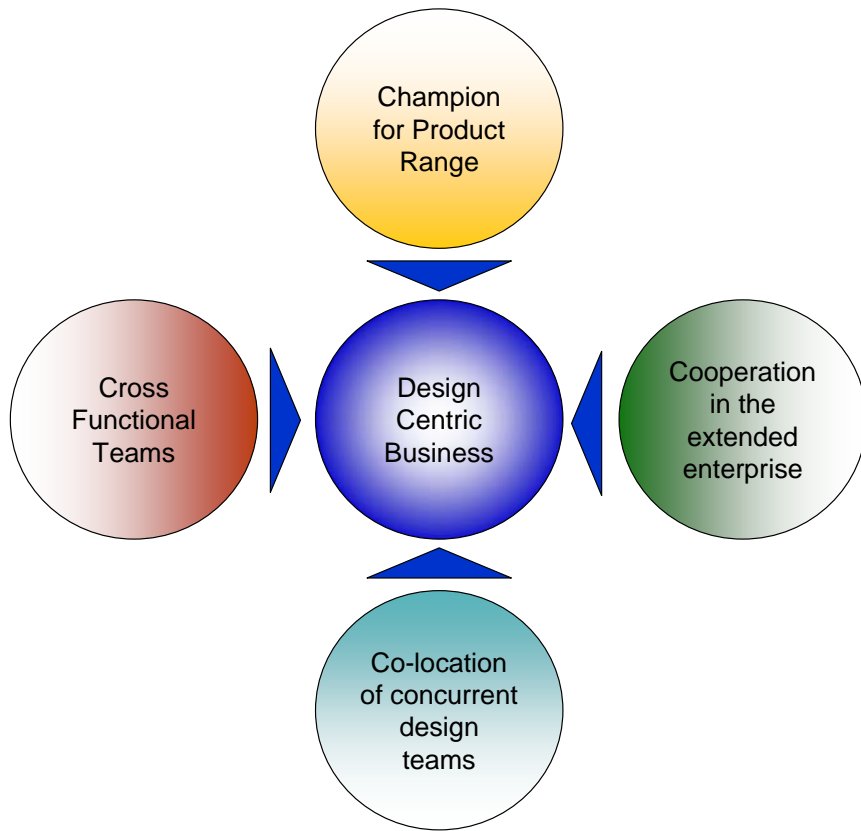




Farmers in Zentsuji, southwest Japan, preparing to pack square watermelons before shipment in refrigeration units. A farmer came up with the idea of optimising transport space and the melons are formed in square glass containers



4C's of A Design Centric Business



- ***Champion for product range:*** Individual takes responsibility for the interface in PD-SC and ensures good visibility between design and supply chain in the extended enterprise. The product champion overlooks the concurrent design process and ensures a match between product architecture and supply chain design.
- ***Cooperation in the extended enterprise:*** internal and external cooperation. Understand implications of PD-SC supply chain design. Focal firm and suppliers cooperate to mitigate PD-SC risks and ensure smooth transition of products through the supply chain to the end customer through ESI at PD-SC.
- ***Cross-functional teams*** which are multi-disciplinary contributing to the product design development process. This will also involve first and second tier suppliers to benefit from ESI.
- ***Co-location of concurrent design teams:*** Physical/virtual co -location of PD-SC design teams with information transfer on a daily basis to ensure the smooth transition of products from drawing board to market.

A Roadmap for the Design Centric Business

From	To	How do we get there?
Design as a stand alone function	Design as part of a cross- functional approach	"T" shaped skills, training, "boundary less" business-organisational change
Supply chain as an after thought – for a design orientated business	Supply chain starts on the drawing board	Supply chain involvement at product design stage
Designers "design"	Designers integrate across the "concept to delivery" process	Designers lead the orchestration of the product development process
Free "unconstrained" design	Constrained design	Range architectures aware of supply chain constraints, possibilities
Design for manufacturing/ assembly	Design for supply chain	Establish appropriate de-coupling points – how far do we make a vanilla product before we stop? Balance design strategy against supply chain impact.

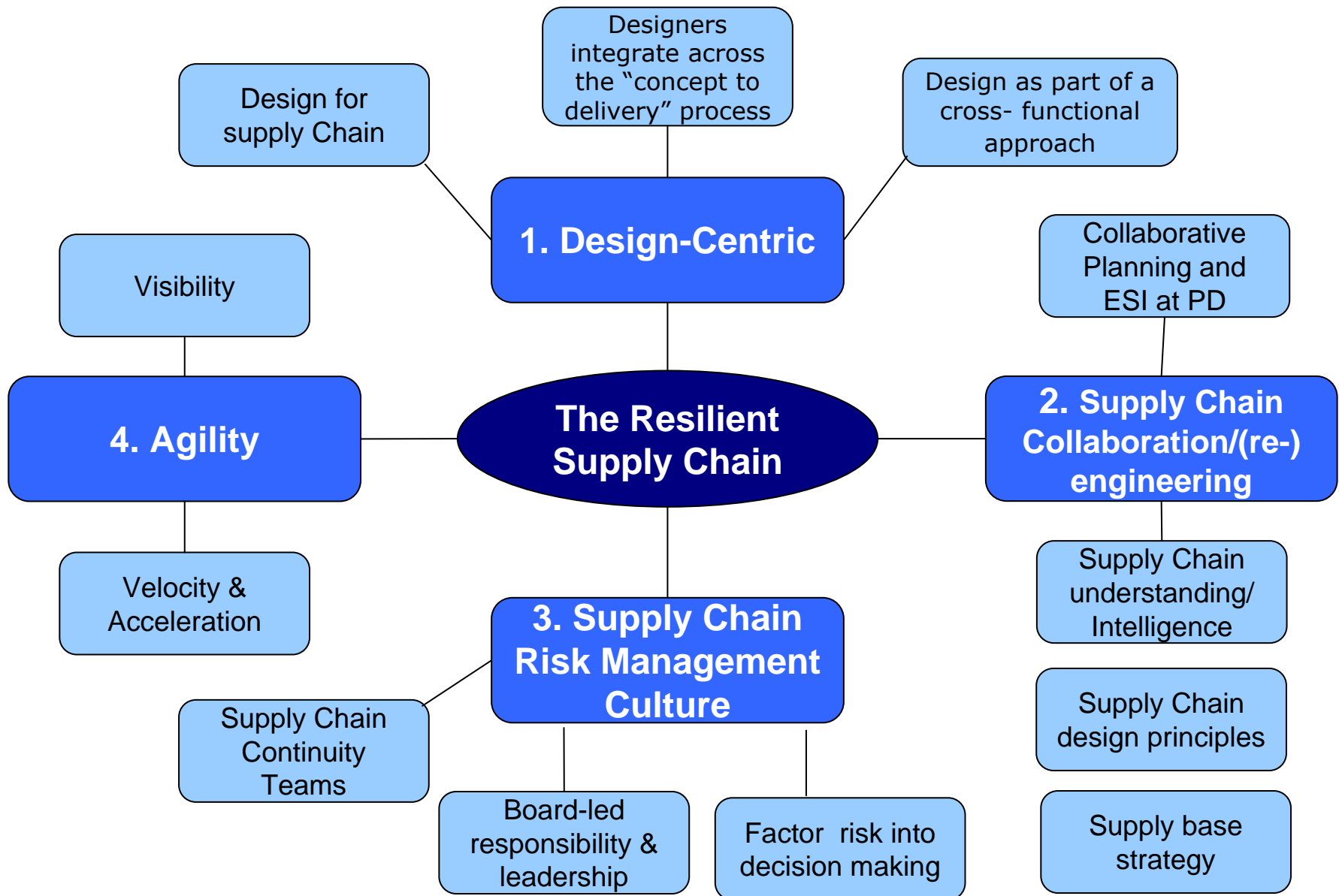
Formalize Design Integration in Supply Chain Risk Management

Robust or resilient?

- A robust process can be defined as “a process able to deal with reasonable variability”
- A resilient supply chain can be defined as “a supply chain with the ability to recover quickly from unexpected events impacting supply chain performance”

A robust process can deal with reasonable variability in input whilst maintaining good control over output variability. It has some resilience but is it capable of recovery from an event that causes exceptionally high levels of variability in input or output requirement?

Creating a Resilient Supply Chain: Strategic Approaches



*“It is not the strongest of the species that survive
nor the most intelligent, but the one most
responsive to change”.*

Charles Darwin

Thank You

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