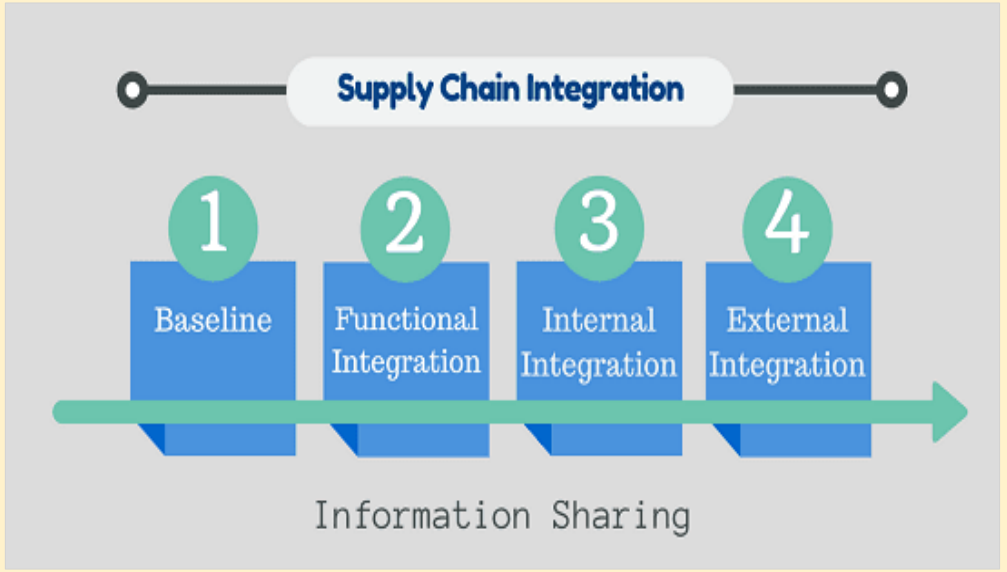
Lecture 9- Outsourcing and Integrating the SC



Dr Andre Samuel andre.samuel@sam.edu.tt http://samuellearning.org/scm.html

Outsourcing

What is it?

- Involves the **procurement of products or services from an outside supplier**
- Make vs Buy decision
- Outsourcing **engages the services of a third-party provider** to complete internal operations

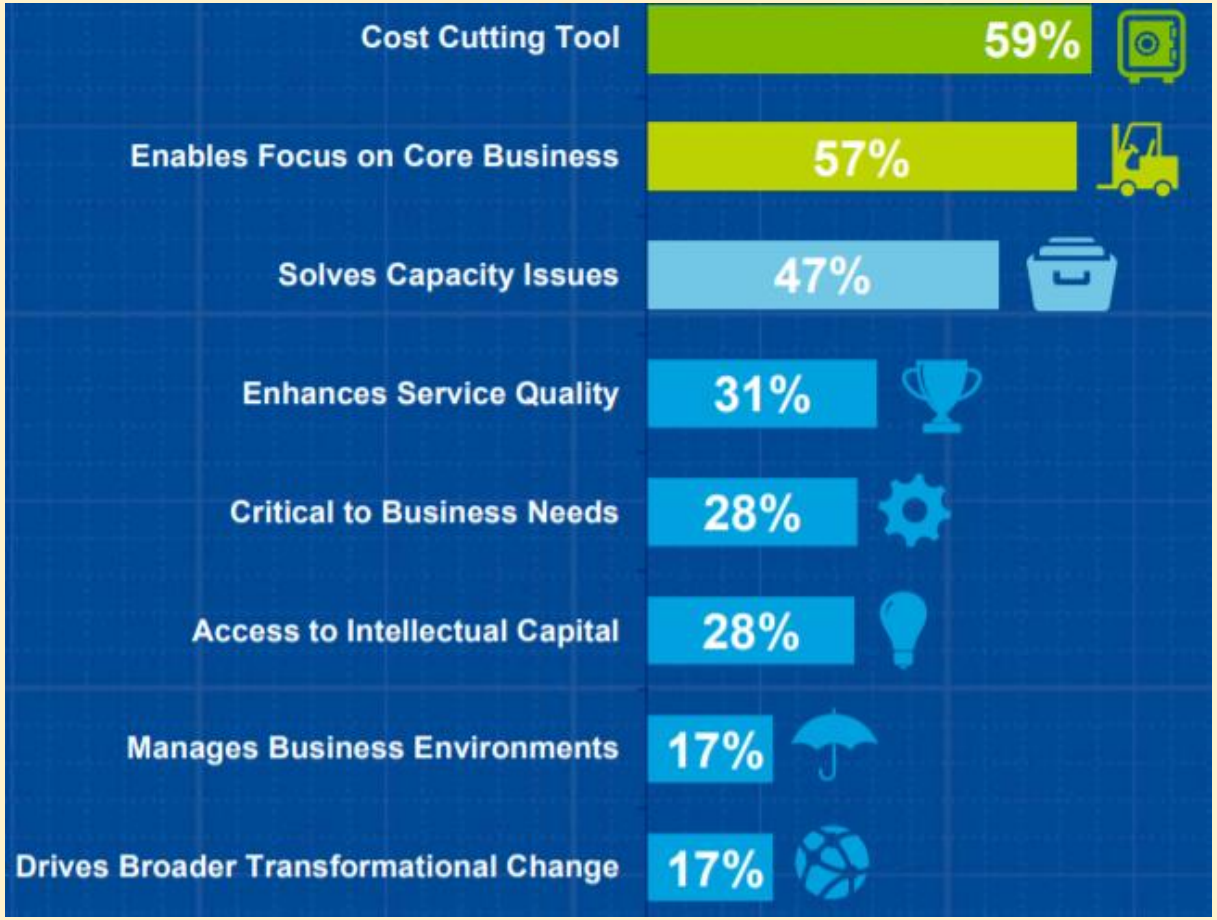
- By outsourcing non-essential operations, the company can direct its focus on its core competencies

Why Outsource?

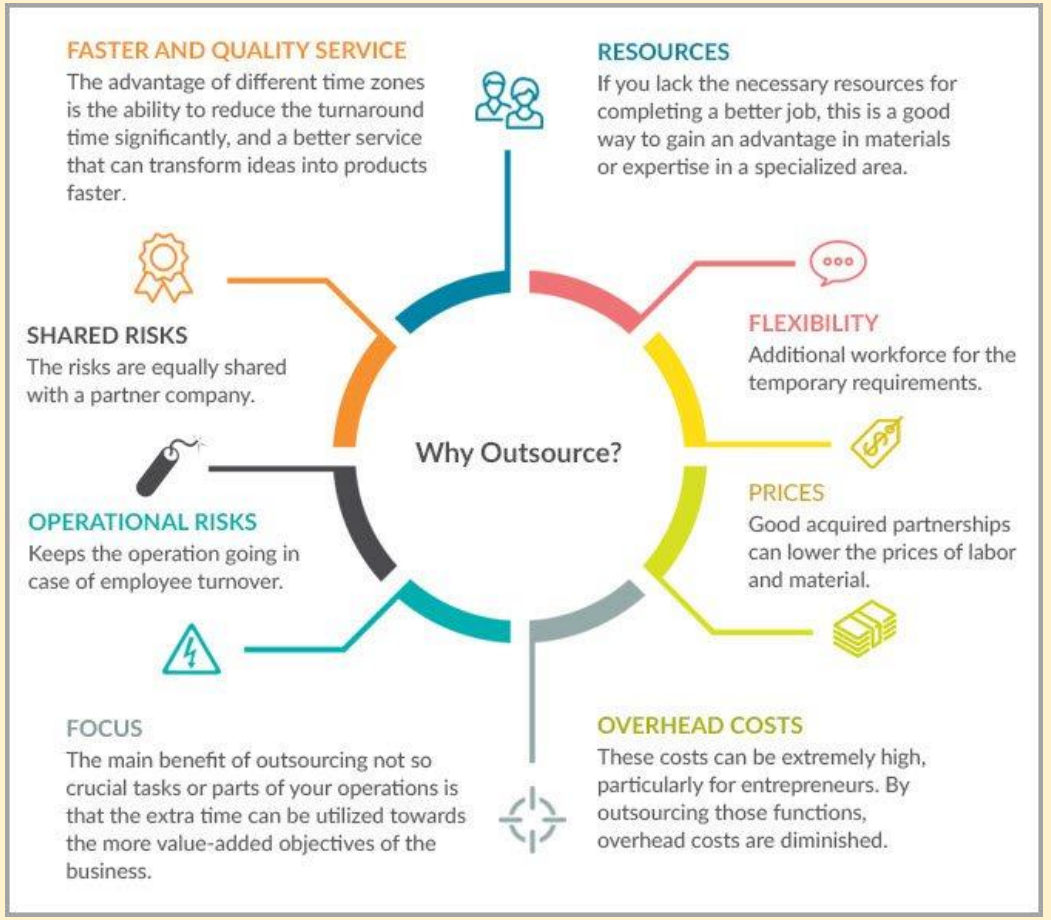
- **Re-engineering supply chain processes** forces companies to focus on outsourcing all non-core activities and development of a global supply network
- The company can direct its **focus on its core competencies**
- **Frees up management time** which can be utilized for managing the supply chain end-to-end

Christopher(2016)

Why Outsource?



Deloitte (2016)



Park (2017)

Supply Chain Management Outsourcing

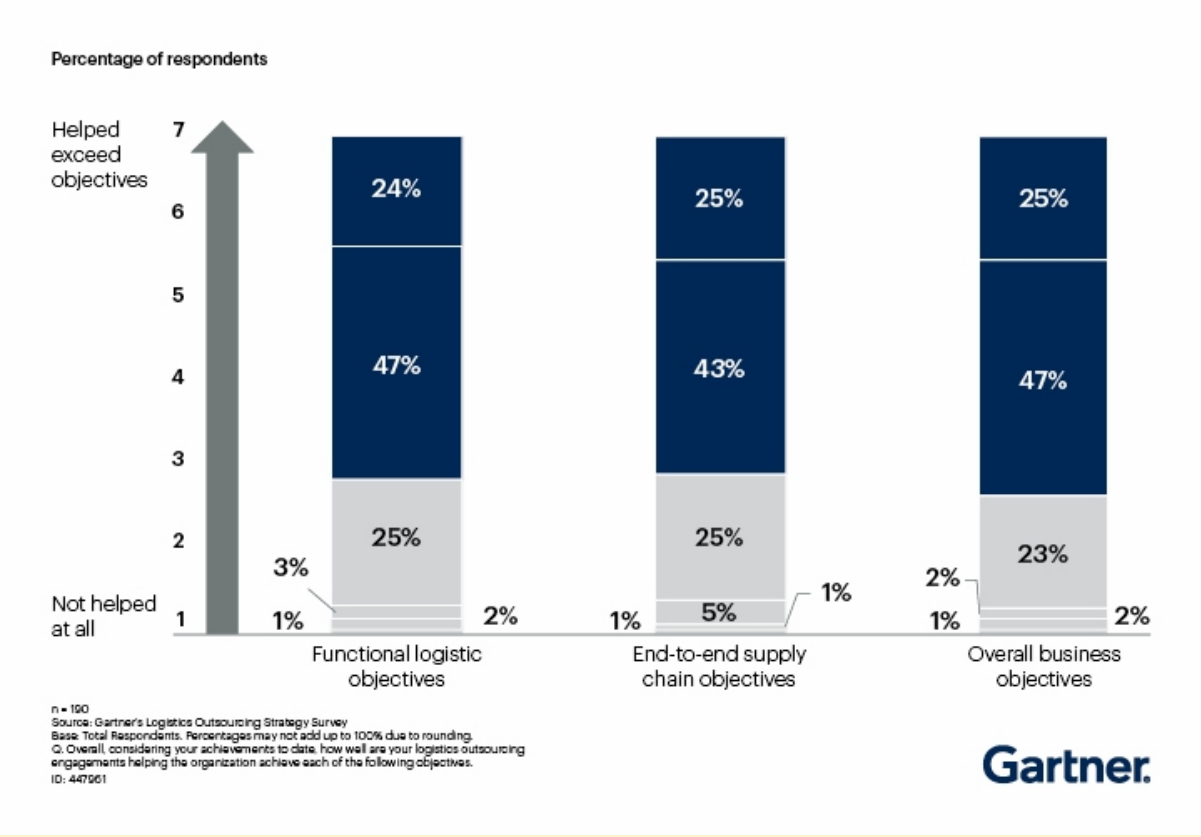
- SCM outsourcing is **allowing another company to be part of the process that sees the product go from development to consumer**
- SCM outsourcing usually **does not involve outsourcing production to another company** in a country where production costs are cheaper.
- SCM outsourcing will **use other firms that specialize in supply chain management and logistics** in order for them to handle the company's distribution needs, with domestic **transportation, warehousing and freight forwarding**

Supply Chain Management Outsourcing

- Gartner suggested that 85% of supply chain managers expect their **outsourcing budgets to grow by 5%** (Gartner 2019)
- Today, **more businesses rely on third-party logistics providers** (3PLs) for functions including packaging design and management of company-owned assets

Extent to Which Logistics Outsourcing Is Helping the Organization Achieve Objectives

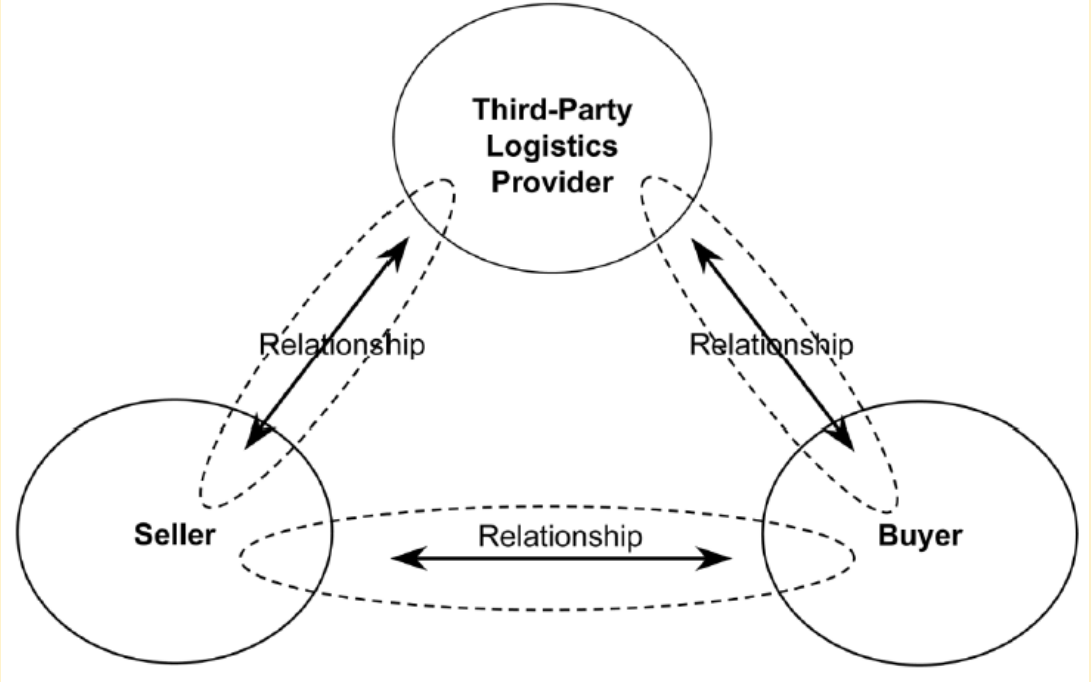
- Approximately 70% of respondents stated that functional, end-to-end (E2E) supply chain and overall business objectives have been met or exceeded with the help of logistics outsourcing counterparts, such as third-party-logistics providers (3PLs)



Source: Gartner (December 2019)

Third Party Logistics (TPL) Providers

- Triadic form of relationship covering seller, buyer and TPL
- An agent middlemen in the logistics channel
- The shipper and TPL enters into an agreement for:
  - Specific services
  - At a specific cost
  - For a time horizon



Bask 2001

TPL's Value Adding Service

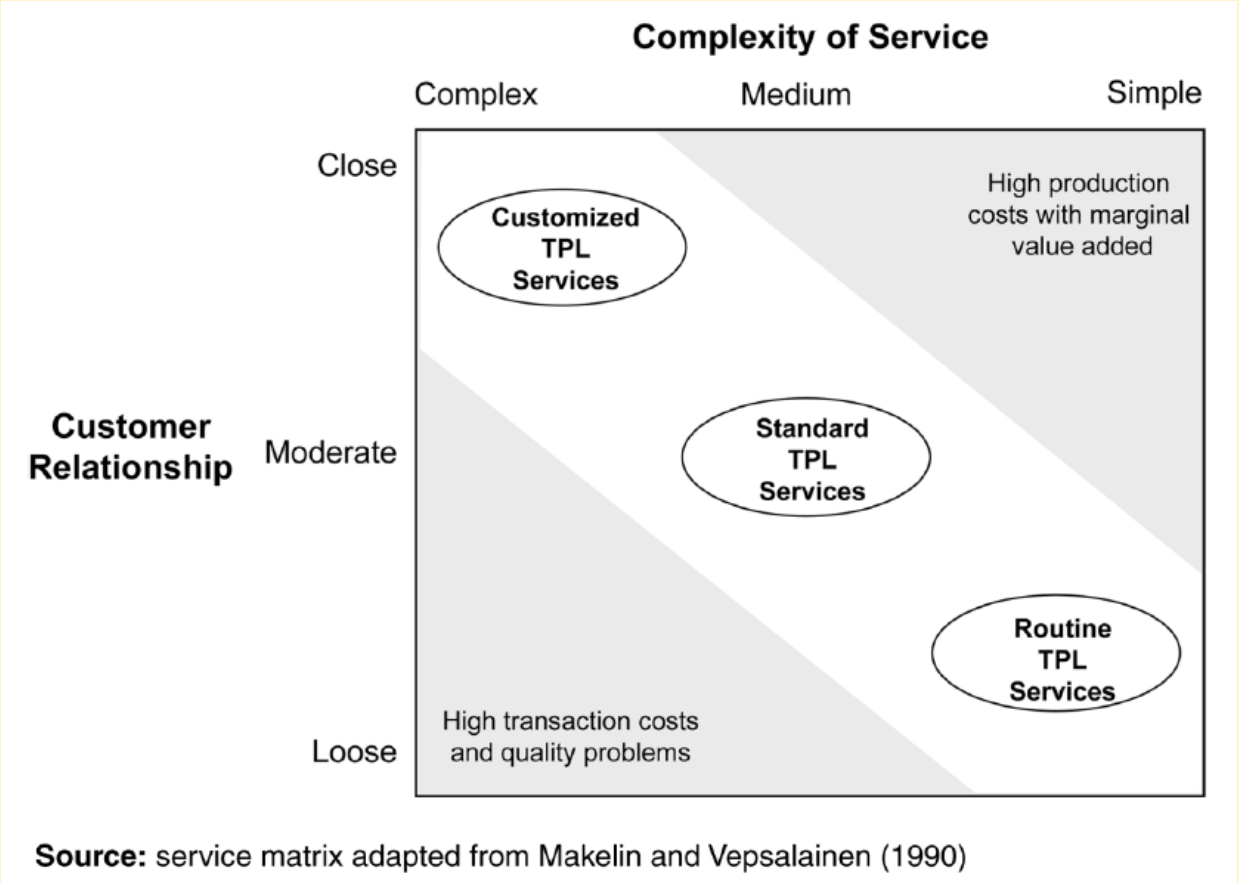
- Transportation
- Terminal Activities
- Warehousing
- Forwarding
- Packaging
- Manufacturing
- Distribution
- Information Processing

Services Provided by 3PLs

Service Category	Basic Service	Some Specific Value-Added Services
Transportation	Inbound, outbound by ship, truck, rail, air	Tendering, track/trace, mode conversion, dispatch, freight pay, contract management
Warehousing	Storage, facilities management	Cross-dock, in-transit merge, pool distribution across firms, pick/pack, kitting, inventory control, labeling, order fulfillment, home delivery of catalog orders
Information technology	Provide and maintain advanced information/computer systems	Transportation management systems, warehousing management, network modeling and site selection, freight bill payment, automated broker interfaces, end-to-end matching, forecasting, EDI, worldwide track and trace, global visibility
Reverse logistics	Handle reverse flows	Recycling, used-asset disposition, customer returns, returnable container management, repair/refurbish
Other 3PL services		Brokering, freight forwarding, purchase-order management, order taking, loss and damage claims, freight bill audits, consulting, time-definite delivery
International		Customs brokering, port services, export crating, consolidation
Special skills/handling		Hazardous materials, temperature controlled, package/parcel delivery, food-grade facilities/equipment, bulk

Service Strategies for TPL's

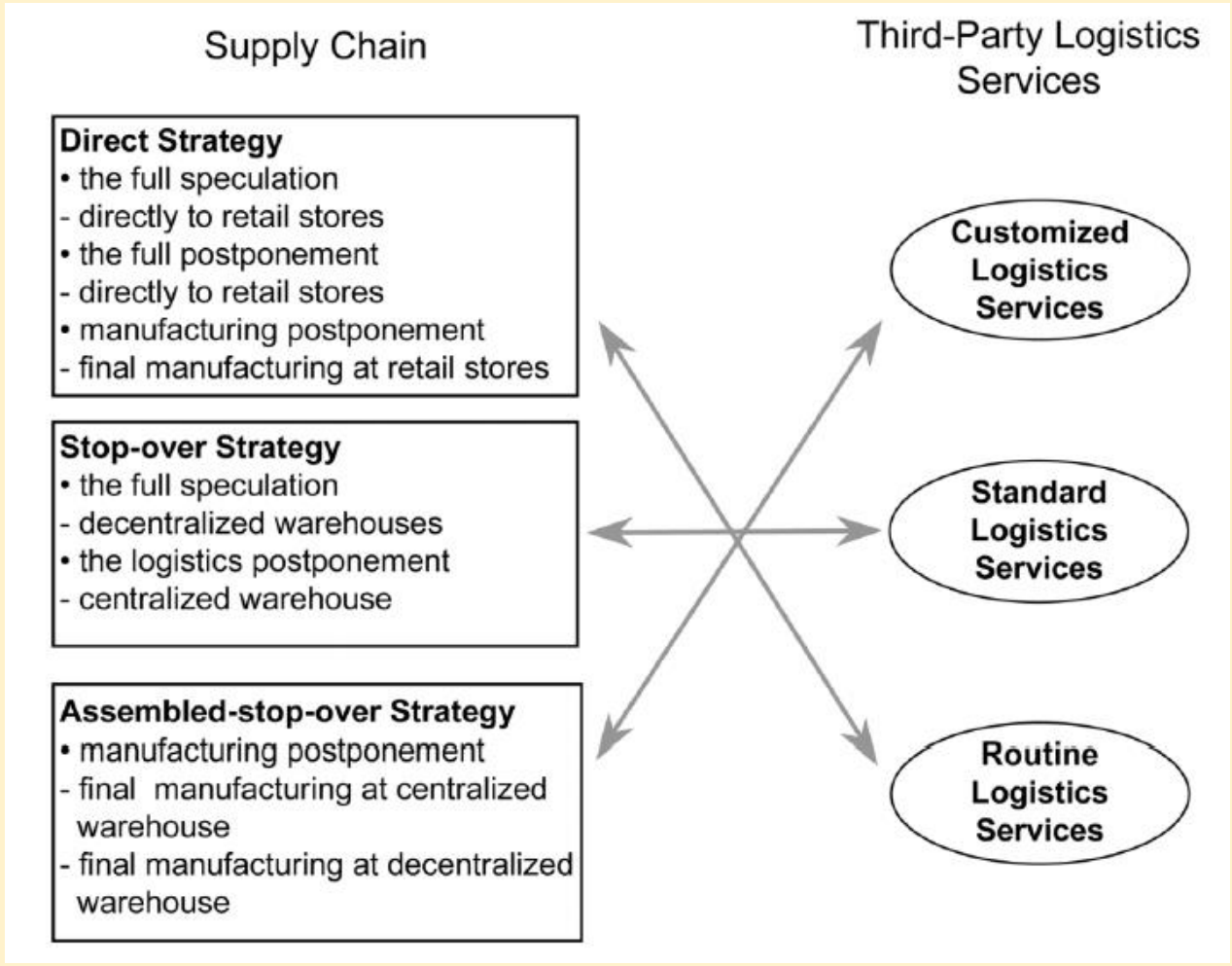
- Routine Services
- Standard Service
- Customized Services



Source: service matrix adapted from Makelin and Vepsalainen (1990)

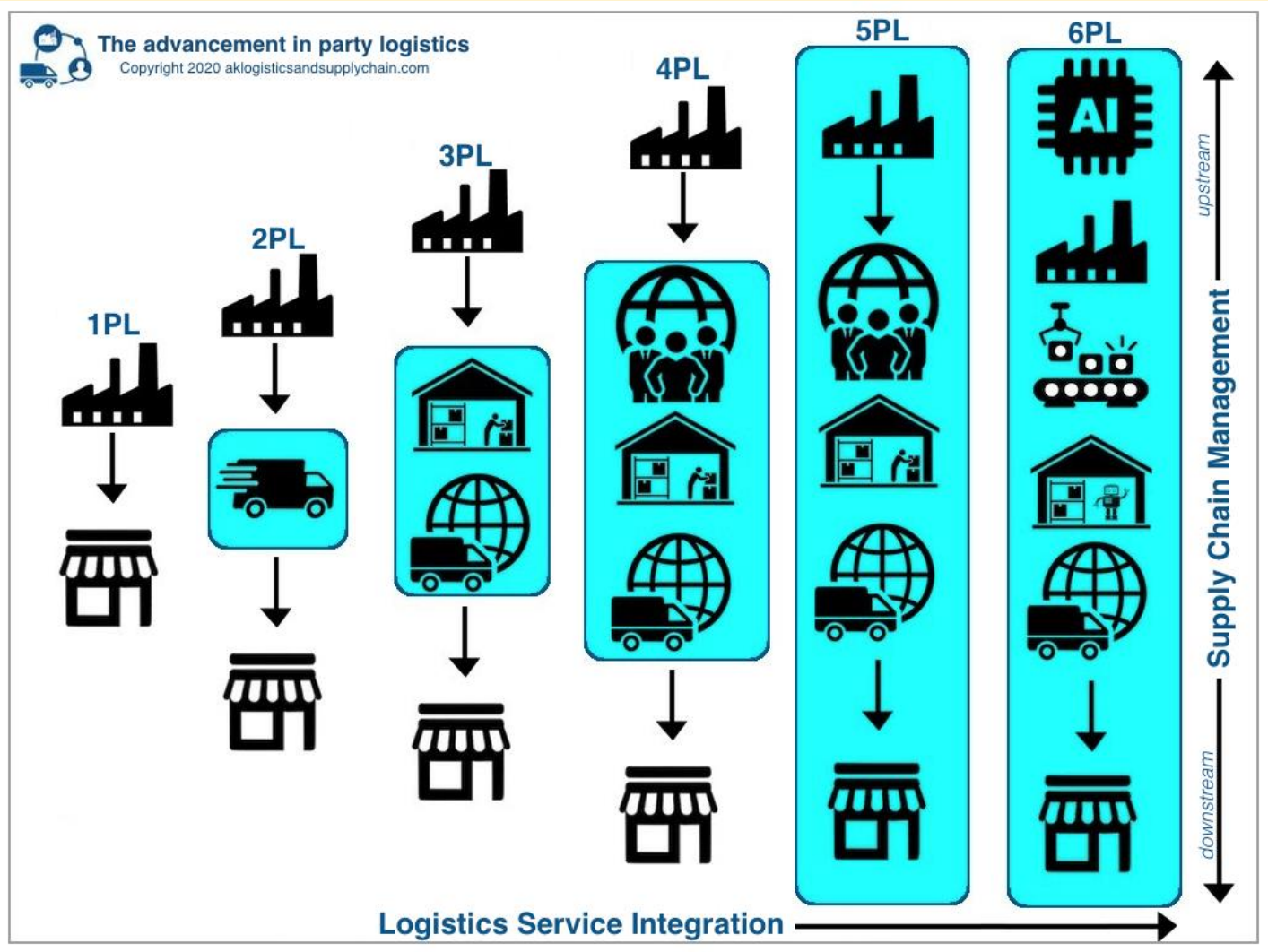
Bask 2001

Matching SC Strategies and TPL Services



Bask 2001

The advancement in party logistics 1PL 2PL 3PL 4P 5PL 6PL



Aklogisticsandsupplychain (2020)

1PL: 1st Party Logistics

What is 1PL? 1PL refers to a company or individual that transports and delivers their own goods, using their own vehicles. There will be no other companies involved in the movement of the goods. For example: a manufacturer makes tools and delivers the tools on their own vehicles directly to shops for sale.

2PL: 2nd Party Logistics

What is 2PL? Probably the one we are all most familiar with, if not the term itself. A 2PL solution involves a company using a separate transport company, a subcontractor, to move their goods. A 2PL logistics provider will be 'asset-based' and will own the means of transport.

3PL: 3rd Party Logistics

What is 3PL? 3PL was first used in the early 1970's to identify intermodal marketing companies in transportation contracts. Now 3PL is the first solution that includes outsourcing part of the supply chain. A 3PL logistics provider will offer first stage supply chain integration in the forms of:

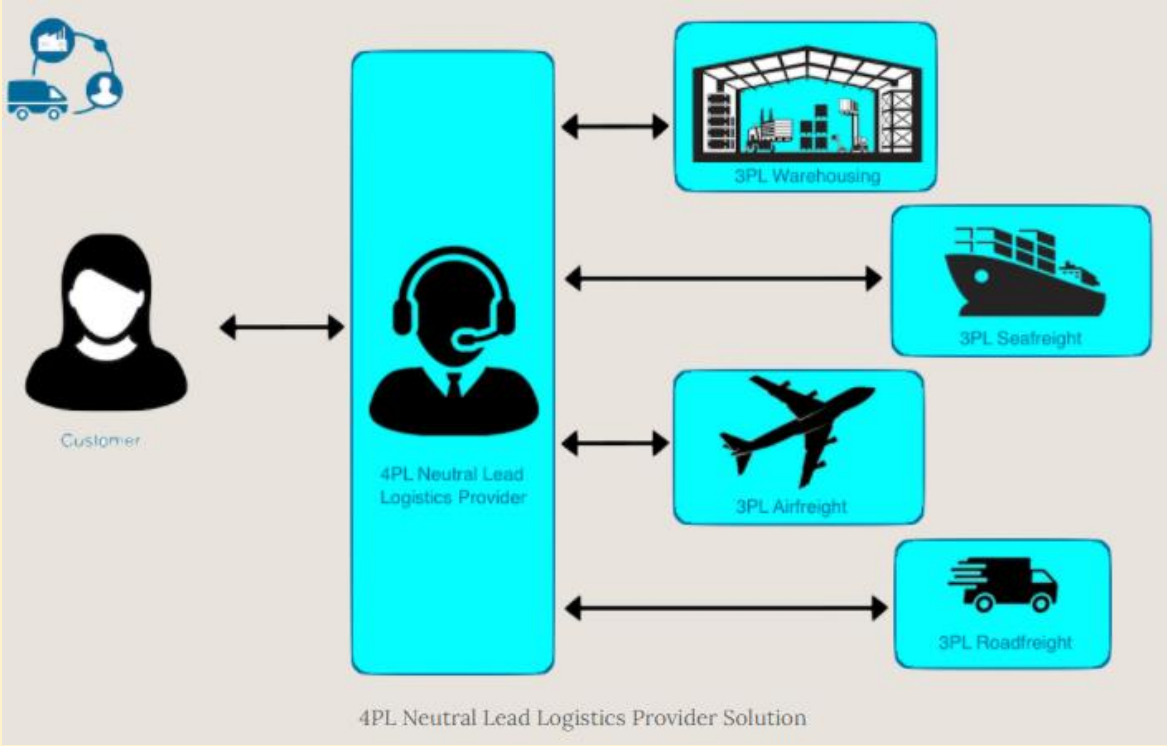
- Transport and freight forwarding
- Warehousing including inventory management and cross docking
- Packaging and labelling

So, a manufacturer can outsource all their transport, storage, packing and distribution of their goods using a single 3PL company. Most 3PL companies are flexible so that you can select to use as many or as few of their services depending on your requirements.

4PL: 4th Party Logistics

What is 4PL? The 4th Party Logistics solution involves an independent, or 'neutral' lead logistics provider, effectively acting as an agent. A 4PL company will liaise and co-ordinate one, or more, 3PL provider companies in order to provide and tailor the best service for the customer. Therefore 4PL will include all the benefits of 3PL providers but also include:

- Project Management, sourcing and negotiation
- Logistics strategy and analytics
- Impartial service advice
- A single point of contact



4PL Neutral Lead Logistics Provider Solution

5PL: 5th Party Logistics

What is 5PL? 5PL involves a fully integrated logistics solution to encompass the whole supply chain from beginning to end through multiple outsourced service providers. The integration must be achieved through the application of IT solutions to provide full visibility throughout the supply chain in 'real-time'. The 5PL logistics provider would need to control the entire supply chain regardless of how many different service providers were involved. With the focus on technology the 5PL solution is best suited to e-commerce.

6PL: 6th Party Logistics

What is 6PL? Still mostly theoretical, 6PL is a fully integrated and partly automated supply chain solution monitored by artificial intelligence (AI), often referred to, as '*artificial intelligence driven supply chain management*'. While the concept is still mostly theoretical, it is evident that the application of AI across the supply chain would give huge technological advancements. For example: an incorporated AI could monitor the whole supply chain using trends, ordering patterns and forecasting models and proactively send instructions upstream. This could automatically trigger goods production, send instruction to deliver stock or highlight anomalies.

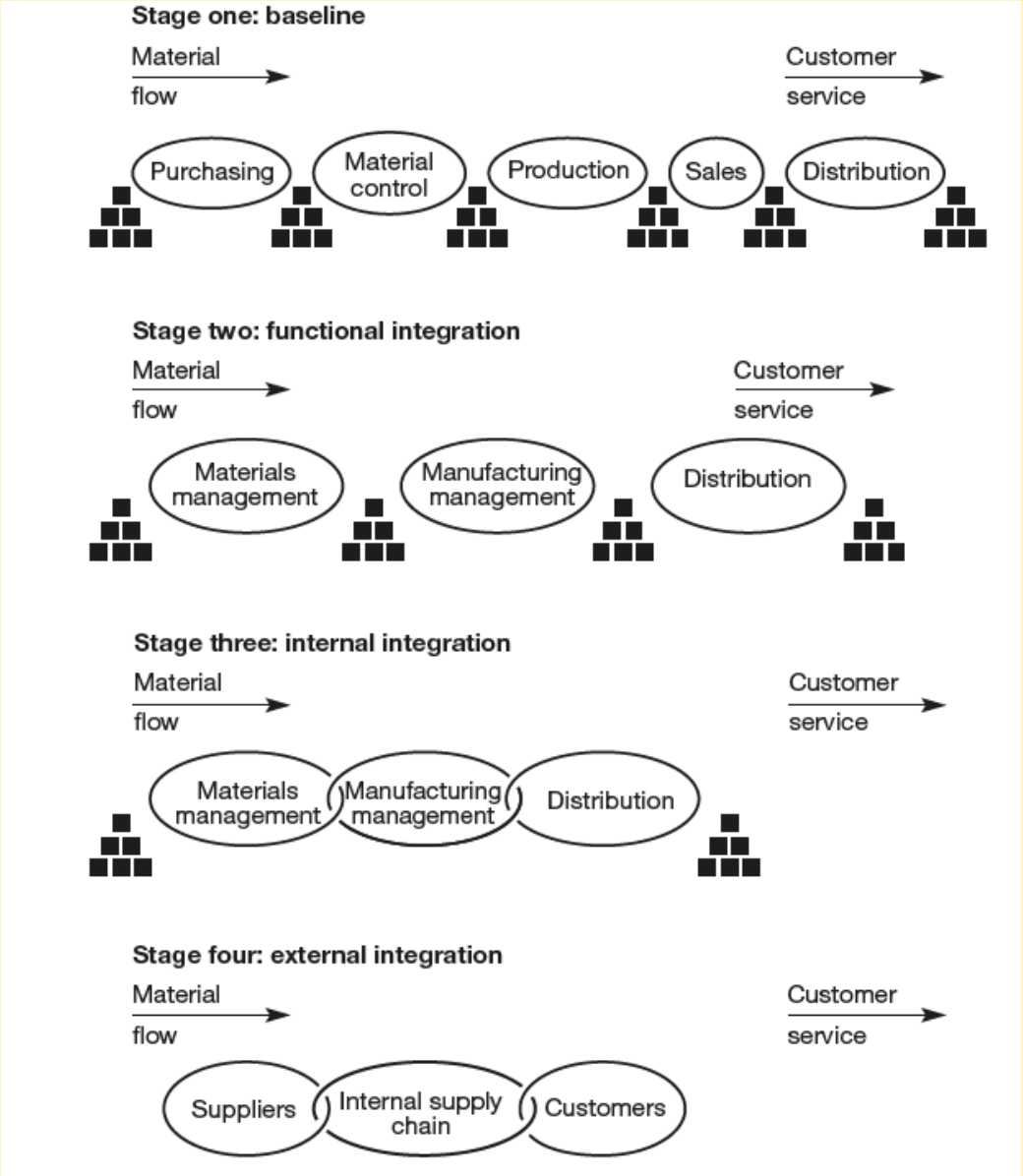
Integrating the supply chain

Supply chain collaboration (SCC)

- Creating a seamless, synchronised supply chain leads to:
  - increased responsiveness
  - lower inventory costs
- SCC is a process that promotes customer-supplier intimacy through:
  - inter-organizational co-operation,
  - joint work,
  - openness, inter-company decision making,
  - Information and knowledge sharing
- Source of competitive advantage, through long-term strategic partnerships between firms

Achieving an integrated supply chain

Real competition is not Company against Company
But
rather Supply Chain **against** Supply Chain



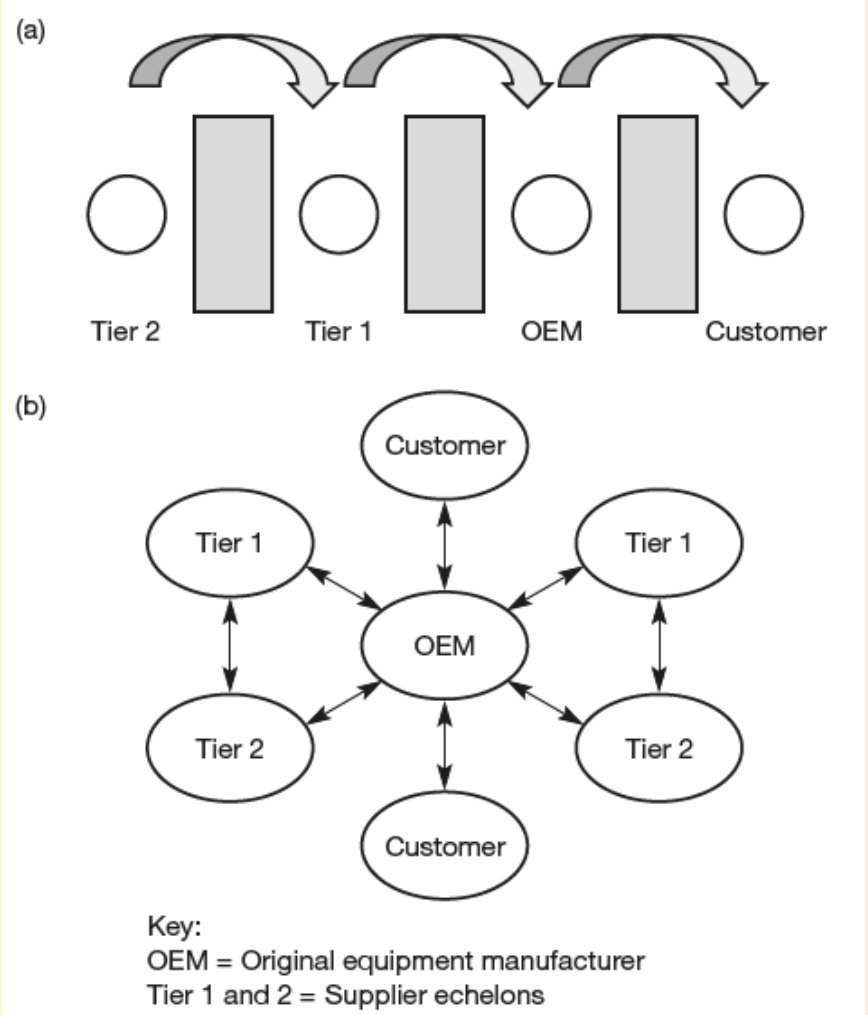
Source: Stevens (1989 cited by Christopher 2016)

Integrating the supply chain

- The vision is **flow logistics** based on end-customer demand
- The supply chain needs to act as a **Synchronised Network**
- Results in:
  - **immediate availability** of products at the point of sale

or

  - **rapid configuration and delivery** of customer-specified products



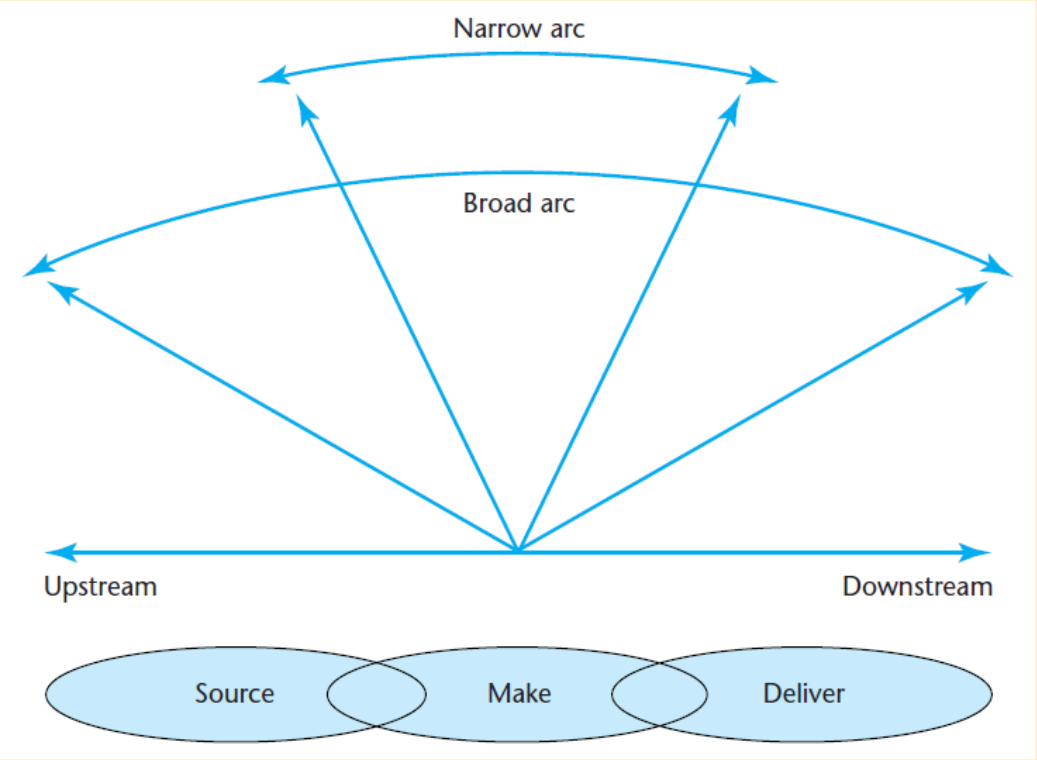
Supply Network (a) Before synchronisation; (b) after sychronisation
Christopher (2016)

Digital Supply Chains Ecosystems | PWC Strategy

https://www.youtube.com/watch?v=pdcJJpsOPGw

Arc of SC Integration

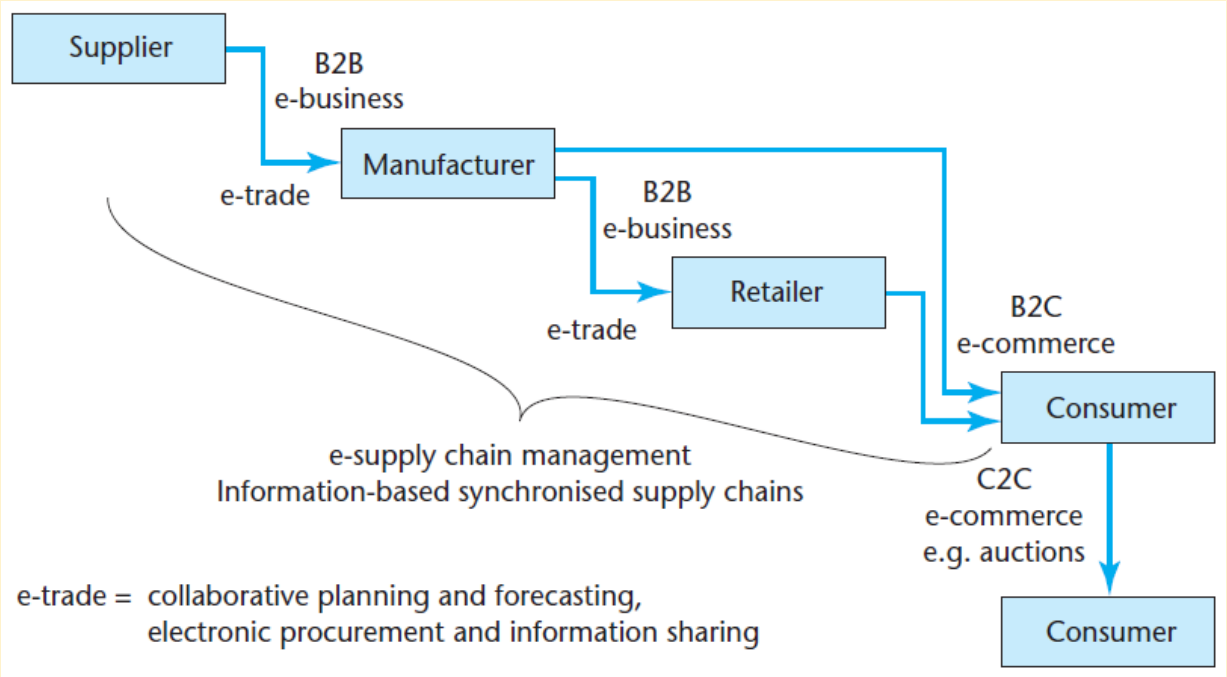
- **Internal- Function to Function**
  - Reduce functional barriers between purchasing, manufacturing and distribution
  - Use Intranets



Arc of Integration
Harrison et al (2012)

External integration

- Traditional done by means of electronic data interchange (EDI)
- Internet technologies to facilitate **B2B transactions** such as:
  - Purchase orders, invoices, order and advanced shipment notices, load tendering and acknowledgements, and freight invoices and payments
- Use of:
  - **Extranets**
  - **e Marketplaces**
  - **e Trade**



e Supply Chain
Harrison et al (2012)

Information sharing: the electronic sharing

- Trading partners are given access to a system with shared information
- **Shared information may include**:
  - point-of-sale data
  - product descriptions
  - pricing
  - promotional calendars
  - inventory levels
  - shipment tracking and tracing
- Uncertainty is reduced - **Visibility**
- Supports independent planning
- Therefore, can access data from customers on sales or product usage
- Enables:
  - alert their suppliers of forthcoming requirements
  - **Continuous replenishment**

Systems for Implementing SC Collaboration

- Efficient Consumer Response (ECR)
- Vendor-Managed Inventories (VMI),
- Collaborative Planning, Forecasting and Replenishment (CPFR)
  - CPFR is considered by many researchers to be the most advanced and the most comprehensive

Collaborative planning forecasting and replenishment (CPFR)

- Enables retailers and manufacturers to jointly forecast demand and schedule production

- It enables trading partners to work together to understand
  - future demand better
  - put plans in place to satisfy such demand profitably

- Trading partners collaborate on:
  - new product planning
  - demand forecasting
  - replenishment planning

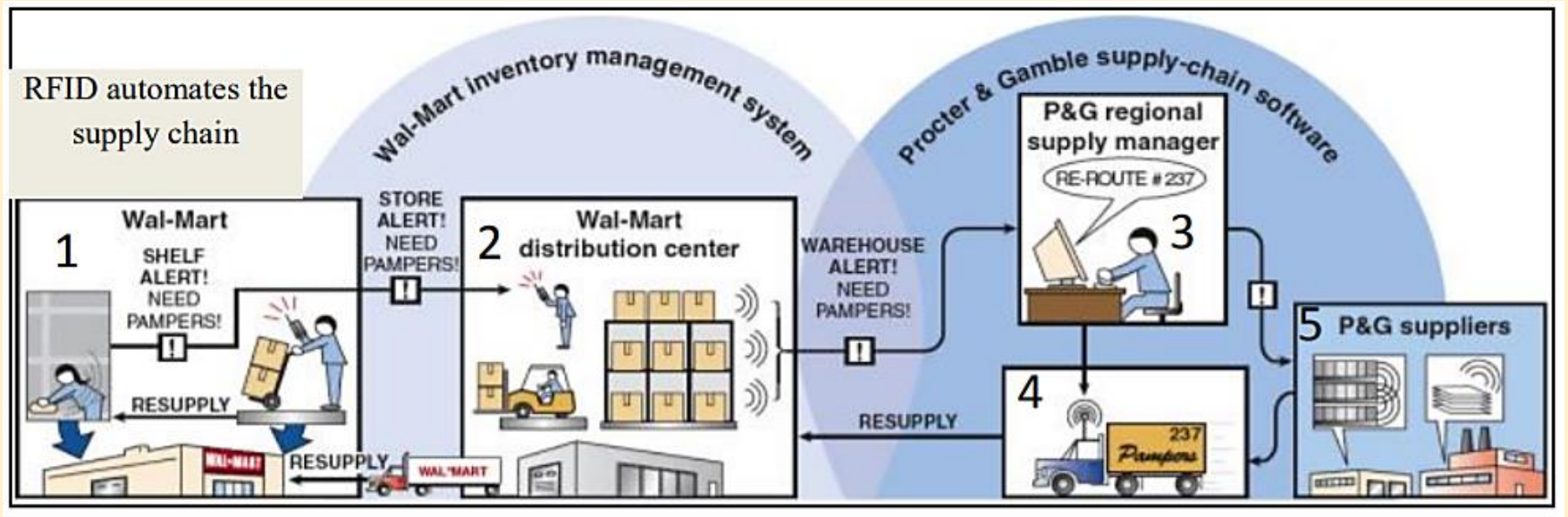
Implementing CPFR

- CPFR is established by an agreement between trading partners to cooperate on strategy, tactics and execution by a resolution of exceptions (Derrouiche et al., 2008),
- Thereby eliminating the supply/demand uncertainty through improved communications/collaborations
- The first CPFR pilot project was conducted by:
  - Wall-Mart
  - Warner-Lambert
  - SAP
  - Manugistics
  - Benchmarking Partners

Replenishment strategies- Walmart

- Joint inventory management;
- Cross-dock operations;
- Effective logistics strategies and product flows;

- Enabling Technologies:
  - **Bar-coding**
  - Other scanning technology- **RFID**



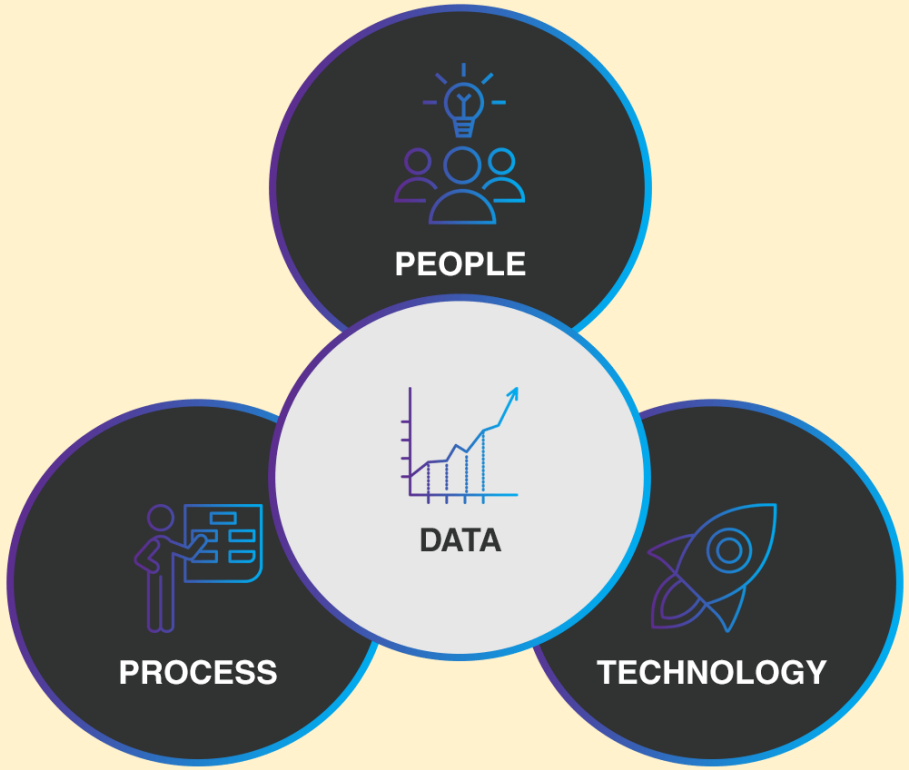
The Way Wal-Mart uses RFID Technology in Managing Its Inventory
Kosasi et al (2014)

CPFR Benefits

- By improving collaboration between buyer and supplier,
- Generated clear visibility
- Customer service is improved
- Inventory management is made more efficient.

Supply Chain Control Tower

- Gartner (2022) defines a supply chain control tower as a concept that results in combining:
  - People, Organization
  - Process
  - Data
  - Technology



Accenture's Supply Chain Control Tower

https://www.youtube.com/watch?v=czPjaPnsFTM

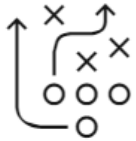
Key capabilities and benefits of supply chain control towers

Real-time, end-to-end visibility

Establish end-to-end visibility across your supply chain with a control tower that correlates data across siloed systems with external event information to provide actionable insights into potential disruptions — all in personalized dashboards — so you can manage the exceptions.

Predictive and prescription decision support

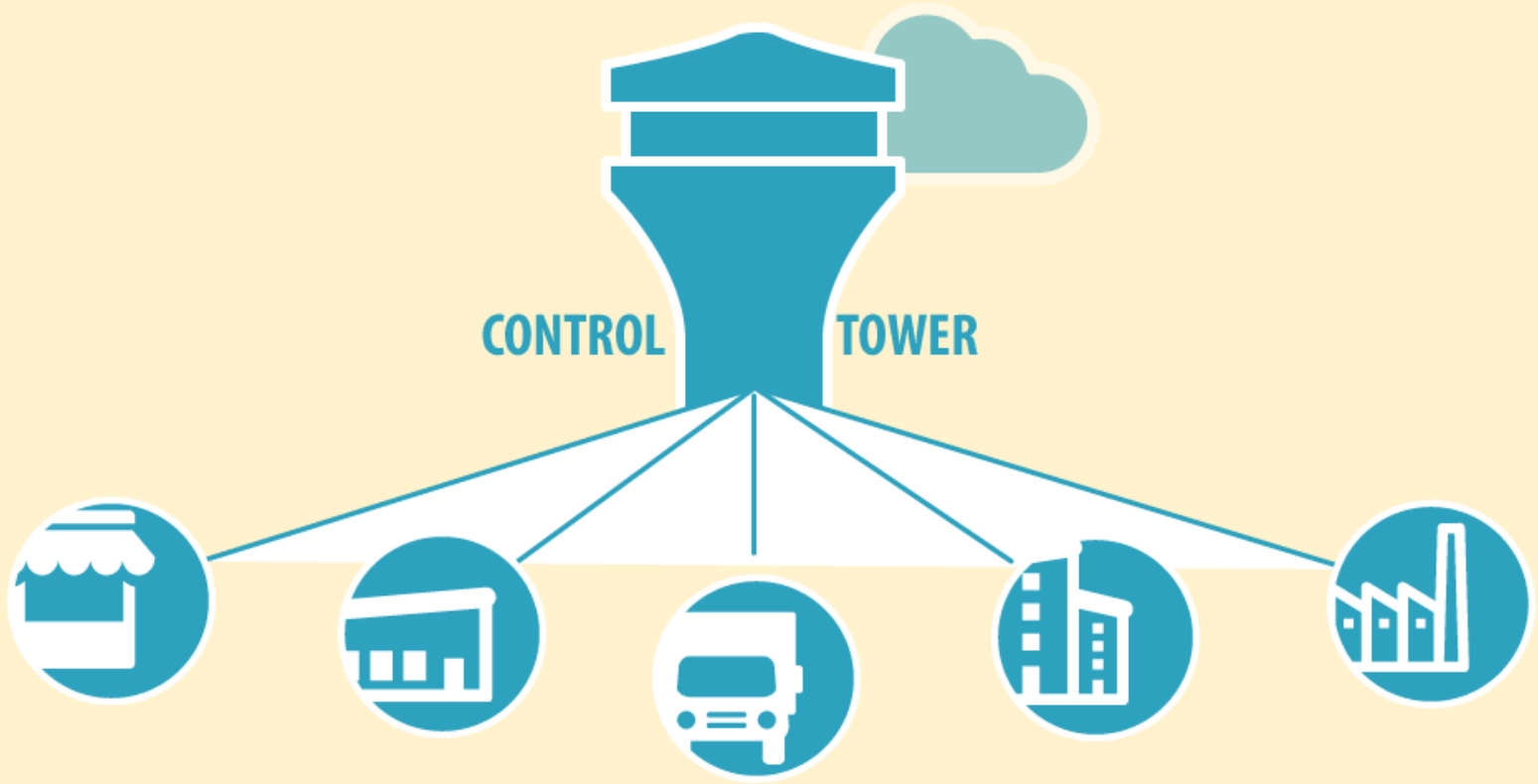
Better predict disruptions and improve resiliency with smart alerts and real-time actionable insights to help you understand the upstream and downstream impact of events on customers and prioritize your response.



Collaborative information sharing

Better collaborate on and manage exceptions across the entire supply chain with AI-powered resolutions rooms and digital playbooks, combined with supply chain applications, that help you quickly respond to unplanned events and hone execution to drive KPI performance.

Stages of Deploying Control Tower



LEVEL 1 VISIBILITY
You have visibility to all the events and milestones you want track across the entire network.

LEVEL 2 ALERTS
You receive alerts based on the SLAs and lead times tagged to all events and milestones, and you collaborate to resolve them in real time.

LEVEL 3 DECISION-SUPPORT
You now execute transactions within the control tower, and the users make decisions based on recommendations from the intelligent agents.

LEVEL 4 AUTONOMOUS
The intelligent agents imbedded in the execution layer run the supply network without human intervention.