



Hindustan Lever

**Supply Chain Planning
Implementation Experience**

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Company Overview

➤ Corporate Purpose

*Our purpose is to meet the
everyday needs of people everywhere –
to anticipate the aspirations of our
customers and consumers and to
respond creatively and competitively
with branded products and services
which raises the quality of life*



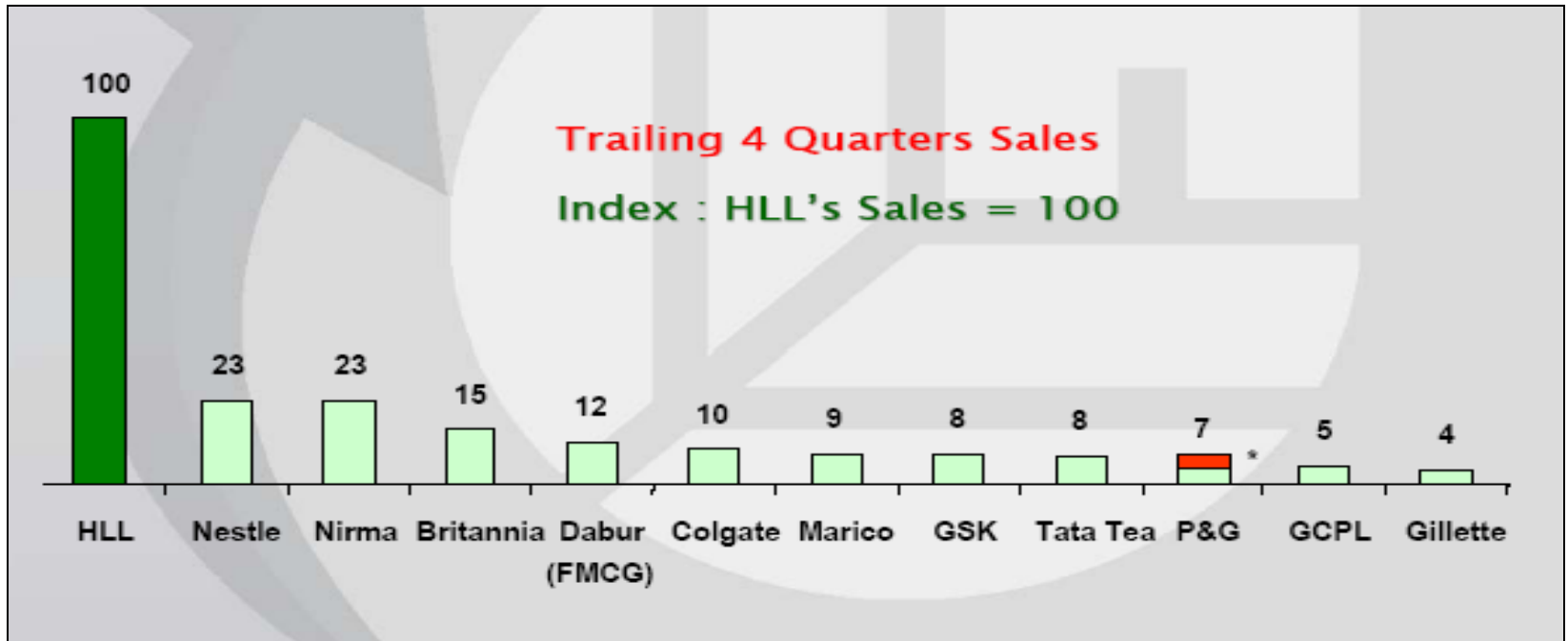
Company Overview: Unilever

- **Unilever's mission : Add **Vitality** to life**
 - *We meet the everyday needs for nutrition, hygiene, and personal care with brands that help people feel good, look good, and get more out of life.*
- **World wide turnover of €42 bn with a presence in over 100 countries**
- **Everyday, 150 m people choose our brands**



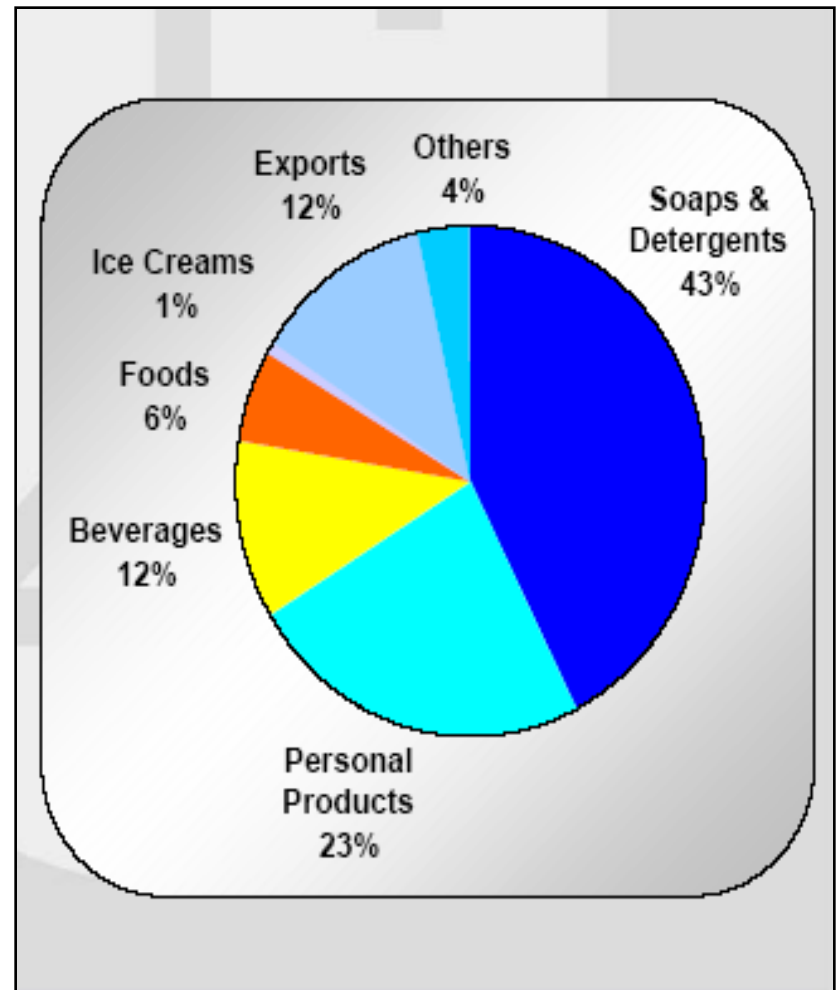
Company Overview: Hindustan Lever

- **India's largest CPG company**
 - 4 times bigger than the next largest player
- **Touches the lives of 2 out of 3 Indians**



Company Overview: Hindustan Lever

	\$ Mn
Turnover	2,190
Operating Profit	470
Operating Margin %	21.3%
Net Profit (bei)	390
EPS	20c
Surplus Cash Generated	380
EVA	310
Market Capitalisation	5,325



Company Overview: Hindustan Lever

Leadership across categories



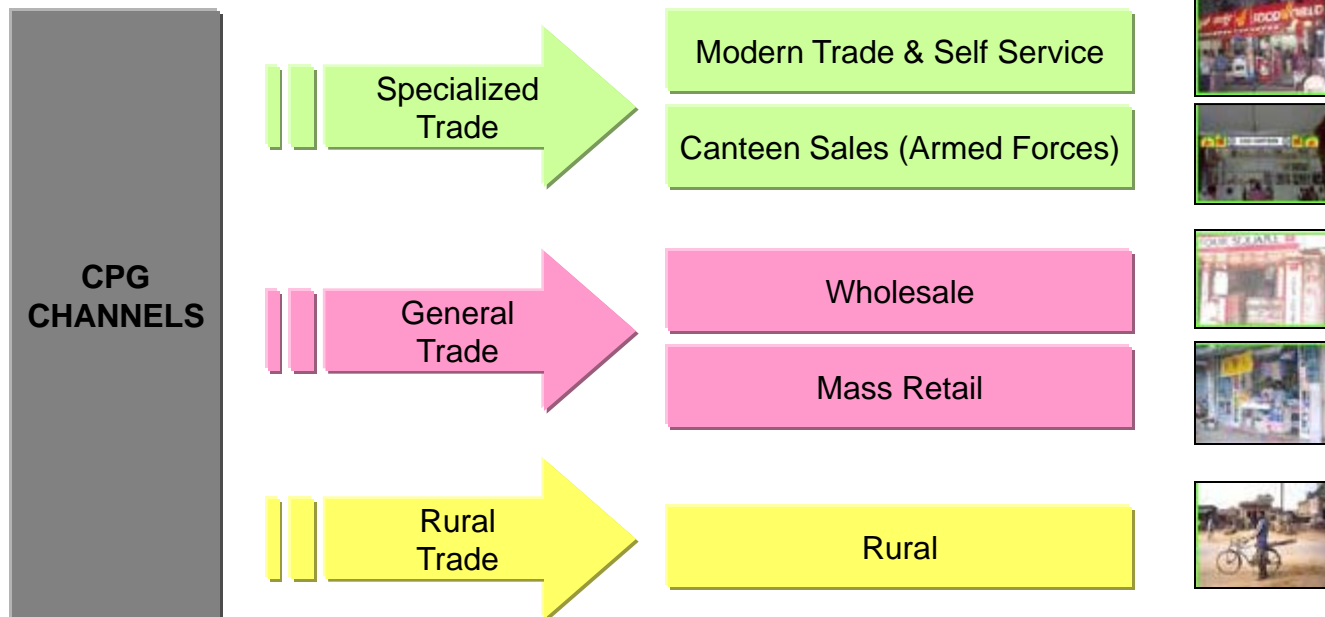
Indian Marketplace

> Urban

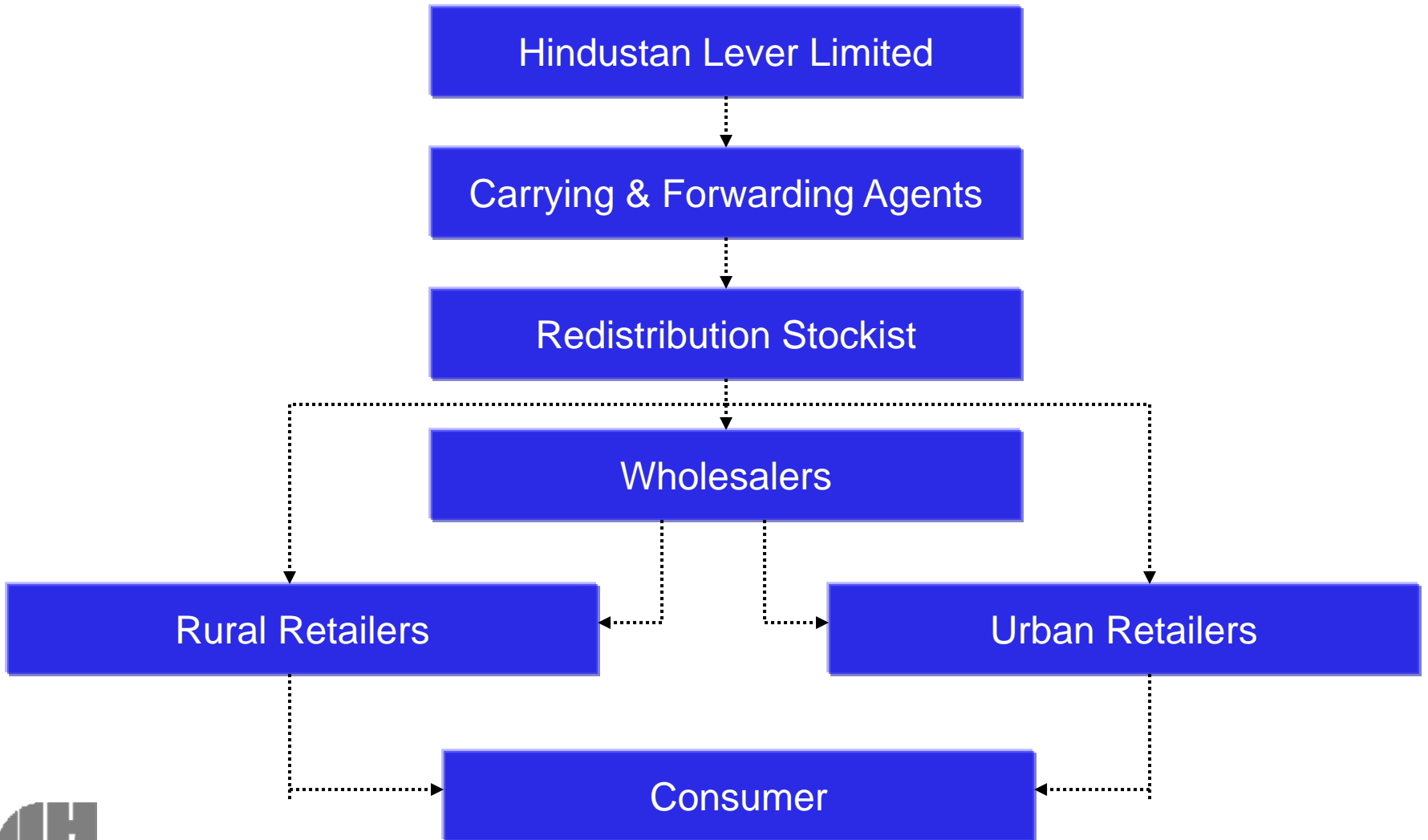
>> Cities/Towns 3700 Outlets 1.5 million

> Rural

>> Villages 627000 Outlets 3.6 million

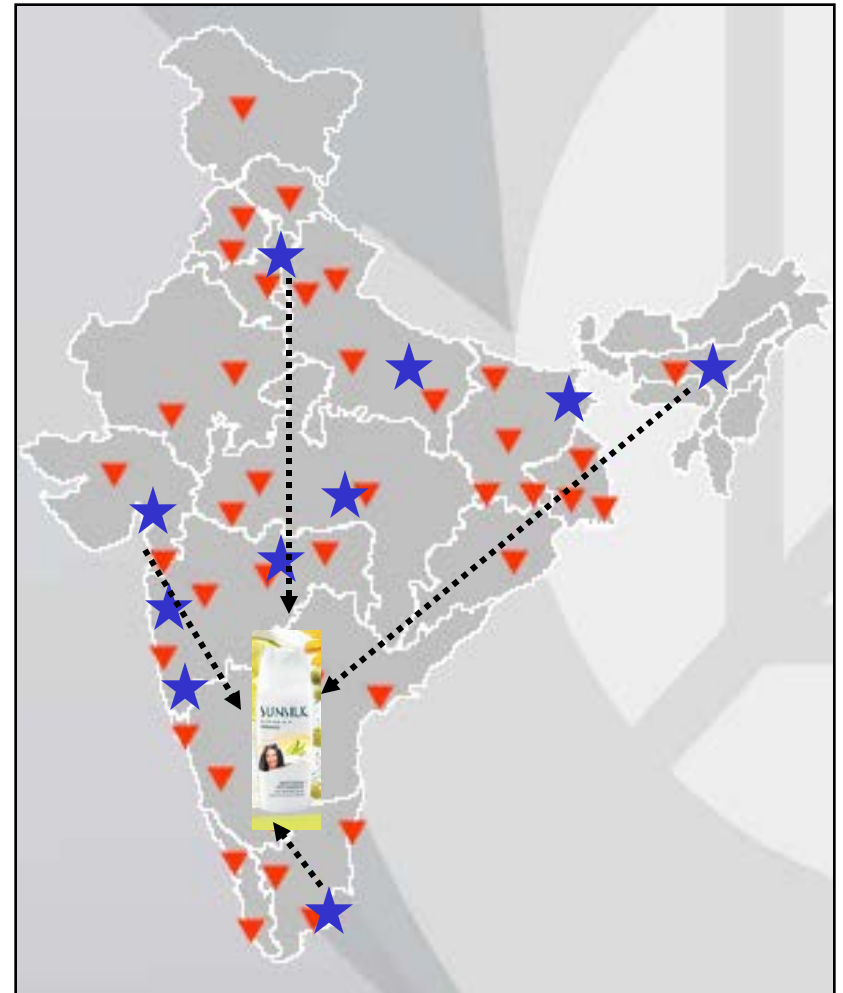


Distribution Network



HLL Supply Chain Environment

- 2000 + supplier and associates
- Urban Direct Coverage – 1 Mln outlets
- Rural coverage of 50000 villages
- 45 C&FAs
- 7000 Stockists
- 80 company factories
- 150 outsourcing units



Supply Chain Challenges

➤ **Market & Competition**

- Need for flexibility & responsiveness

➤ **Product Complexity**

- Over 500 SKUs in Home & Personal Care (+ 300 in Color Cosmetics)

- Range from high volume (>200000 TPA) to low volume (< 2 TPA)

➤ **Channel Complexity**

- Fragmented Trade

- Emerging Modern Trade

- Rural Channels

➤ **Locations**

- Over 80 manufacturing units & 45 sales depots across the country

➤ **Fiscal & Regulatory**

- Significant fiscal benefits which decide sourcing strategy



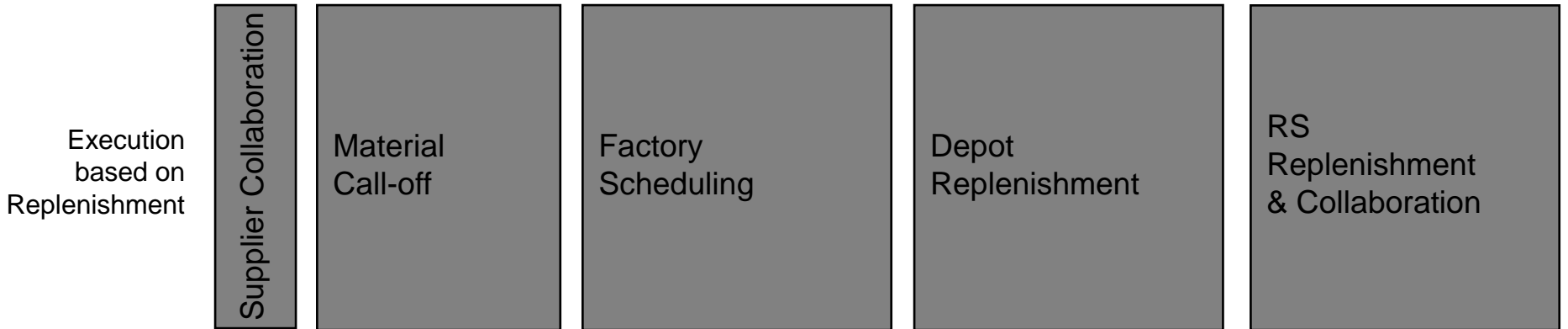
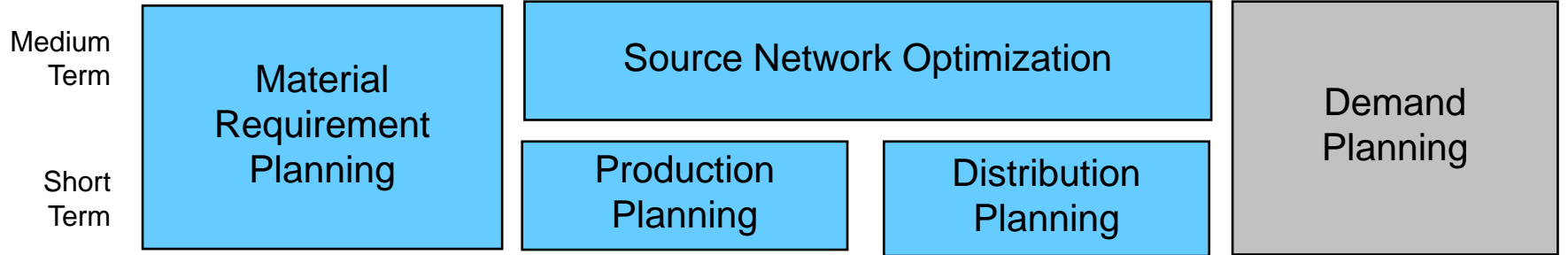
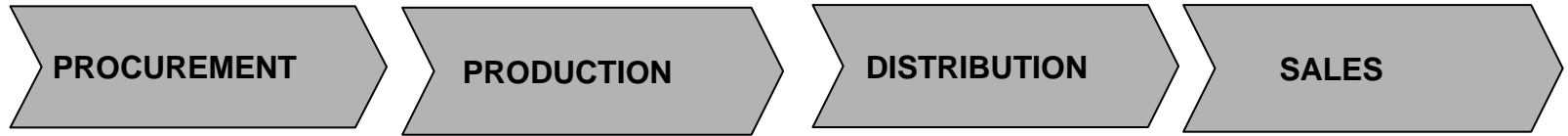
Integrated Supply Chain: Vision

- **Continuous replenishment based on consumer off-take**
 - *“Make today what was sold yesterday”*
 - Reduce end to end cycle times
 - Shorter Time to Market
- **Project LEAP: Major supply chain initiative in 2001**
 - Improvement in customer service levels
 - Reduction in inventory
- **Barriers**
 - Inability of the tools to handle the complexity in the supply chain
 - Scheduling and Optimization
 - Supply Chain Visibility

“Business process changes leveraging on the best IT solutions”



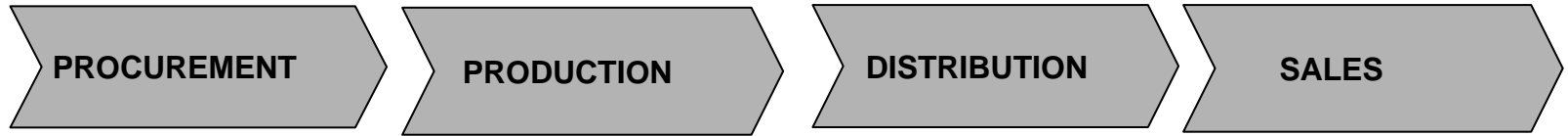
Supply Chain Solutions



Transaction Processes



Supply Chain Solutions



Medium Term

Adexa
SCP

Adexa COP

Demand
Planning

Short Term

Adexa
COP

Adexa
SCP

Supplier Net (Extranet)

Material
Call-off

Factory
Scheduling

Depot
Replenishment

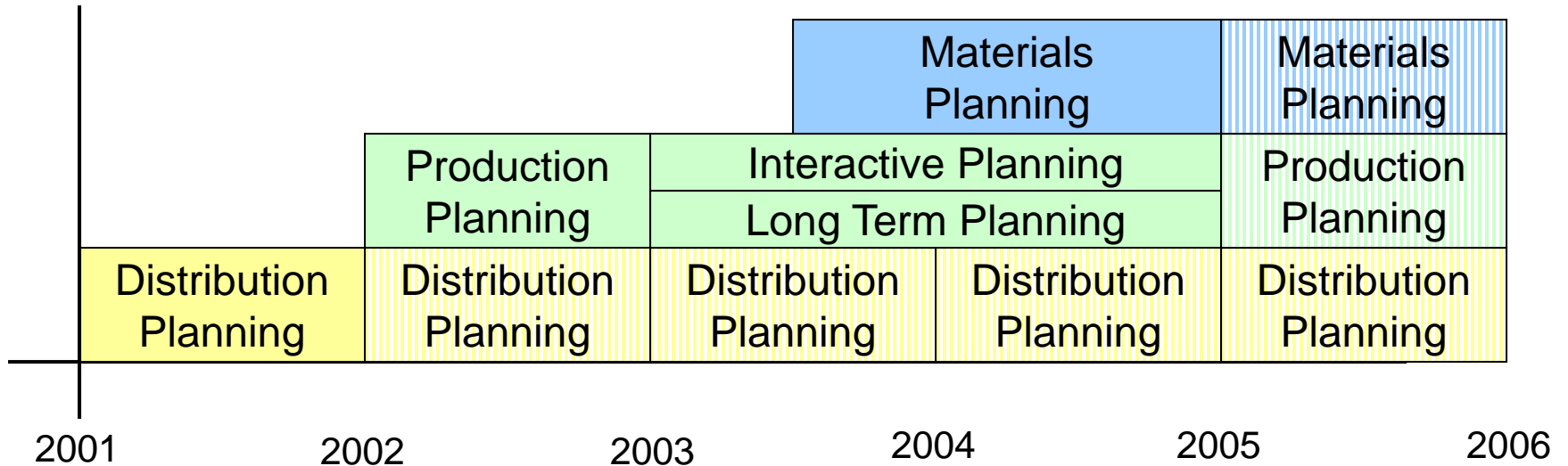
RS Net
(Extranet)

Execution
based on
Replenishment

Mfg/Pro eB



Supply Chain Initiative: Road Map

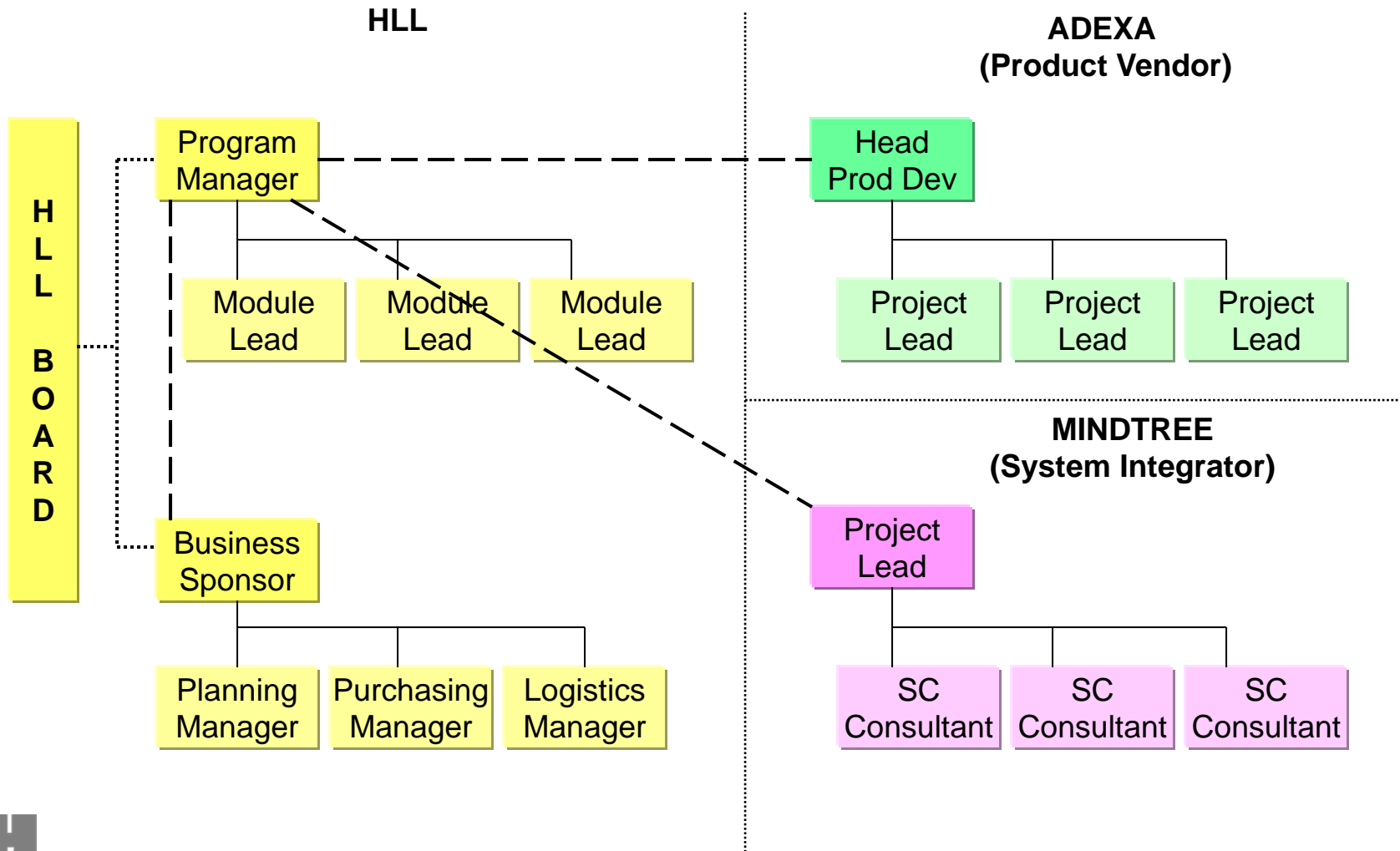


Adexa Supply Chain Planner

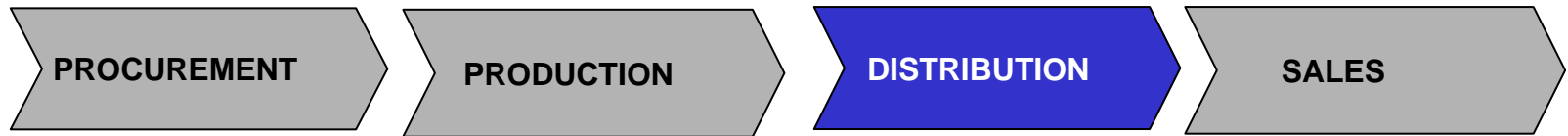
Adexa Collaborative Operations Planner



Supply Chain Initiative: Resourcing



Distribution Planning



› Business Process

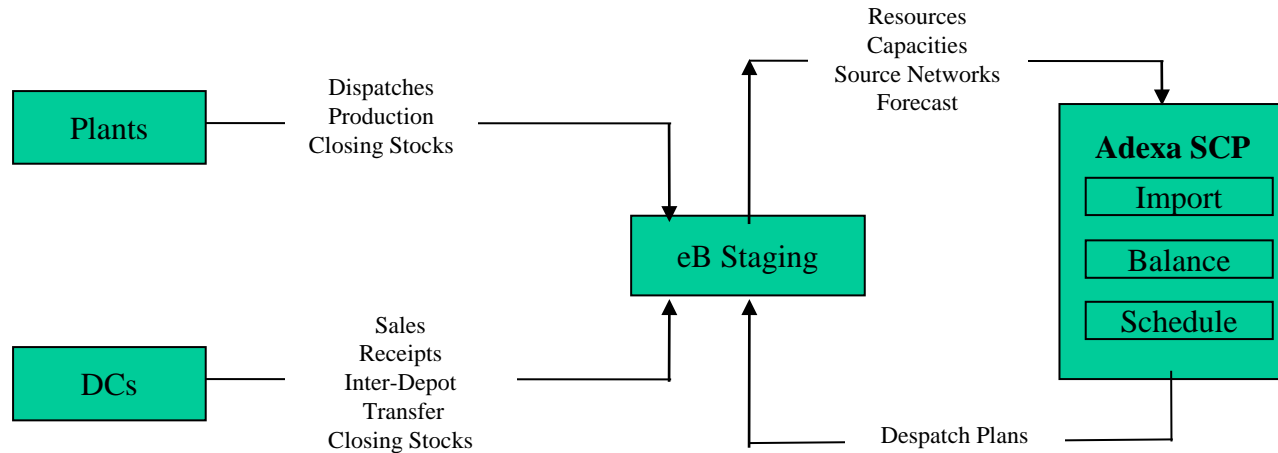
- ›› Daily Replenishment from source to distribution centers

› Solution

- ›› Replenish to a norm based on forward demand
- ›› Equalization of service levels
 - Used in case of supply shortages
- ›› Balance demand and supply
 - Transportation problem solve for least cost distribution
- ›› Truck planning
 - Build full truck loads
 - Routing through intermediate points for less than truck load scenarios



Distribution Planning



Activity Chart

	Wk n-1			Wk n						
	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu
Inputs Considered	Load latest Depot & Factory data	Load latest Depot & Factory data	Load latest Depot & Factory data	Load latest Depot & Factory data	Load latest Depot & Factory data	Load latest Depot & Factory data	Load latest Depot & Factory data	Load latest Depot & Factory data	Load latest Depot & Factory data	Load latest Depot & Factory data
	Previous days production plan	Previous days production plan	Previous days production plan	Previous days production plan	Previous days production plan	Previous days production plan	Previous days production plan	Previous days production plan	Previous days production plan	Previous days production plan
	Latest Sourcing Percentage			Latest Sourcing Percentage					Latest Sourcing Percentage	
Key Activity	Run SCP	Run SCP	Run SCP	Run SCP	Run SCP	Run SCP	Run SCP	Run SCP	Run SCP	Run SCP
Impact	Daily Dispatch Indents	Daily Dispatch Indents	Daily Dispatch Indents	Daily Dispatch Indents	Daily Dispatch Indents	Daily Dispatch Indents	Daily Dispatch Indents	Daily Dispatch Indents	Daily Dispatch Indents	Daily Dispatch Indents



Adexa Supply Chain Planner

- **Ability to model a multi-tiered supply chain**
 - Plant, Warehouses and DCs
- **Choice of parameters to fine tune planning logic**
 - Order quantities
 - Balance Order
 - Sourcing percentages
- **Business Plug-in rules**
 - Method selection
- **Ability to script specific business requirements**
 - Truck planning using weight and volume

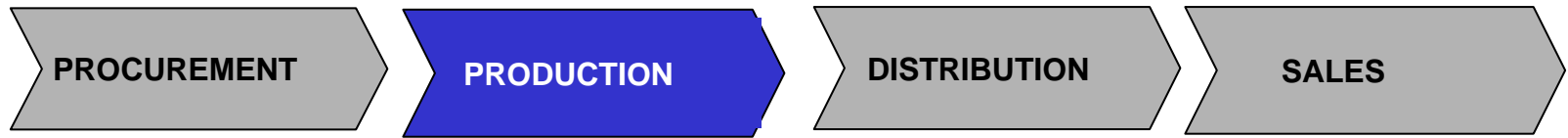


HLL Supply Chain Planner Model Sizes

Category	Commodities	Locations	Demands	Resources	Size	Solve time
Oral	45	93	100,000	40	987 M	22 min
Hair	119	92	200,000	64	1503 M	32 min
Skin	166	92	300,000	125	1634 M	37 min
Color	233	93	500,000	33	2657 M	57 min
Fabric Wash	180	128	160,000	197	1215 M	29 min
Personal Wash	89	130	100,000	172	842 M	25 min



Production Planning



› Business Process

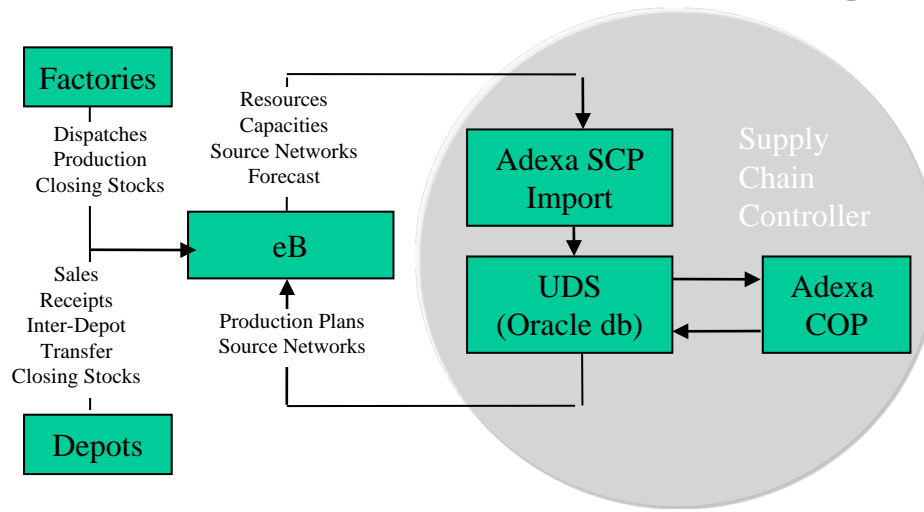
- ›› Weekly production planning for own and sub-contract manufacturing locations

› Solution

- ›› Mixed Integer Linear programming model
- ›› Optimal sourcing based on total supply chain cost
- ›› Modeling of demand penalties, safety cost violation cost and inventory carrying cost
- ›› Inbound and outbound costs and fiscal benefits
- ›› Factory batch sizes
- ›› Time fences
- ›› Real life constraints



Production Planning



Activity Chart

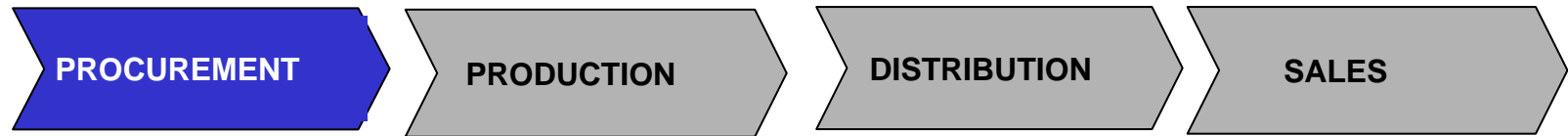
	Wk n-1				Wk n				Wk n+1									
	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu
Inputs Considered	Review Master Setups	Load latest Depot & Factory data Depot-wise demands						Review Master Setups	Load latest Depot & Factory data Depot-wise demands									
Key Activity		Run COP	Review Plans	Collaborate with Factories				Run COP	Review Plans	Collaborate with Factories								
Impact					Firm Production Plan				Tentative Production Plan									
Impact														Firm Production Plan				

Adexa Collaborative Operations Planner

- **Unique Multi-site optimization requirements**
 - Cost optimal sourcing
 - Complexity of fiscal benefits
- **Constraints**
 - Batch sizing
 - Mixed Integer LP solve
 - Freeze production and despatch
 - Time fencing of plans
- **Long term manufacturing strategy**
 - Fixed cost, Resource and Site level modeling
- **Close partnership with Adexa Development Centre, Toronto**
 - To meet unique requirements of a multi-site CPG company
 - Engagement has been successful
 - Critical business requirements met
 - Technical & Modeling challenges addressed



Materials Planning



› Business Process

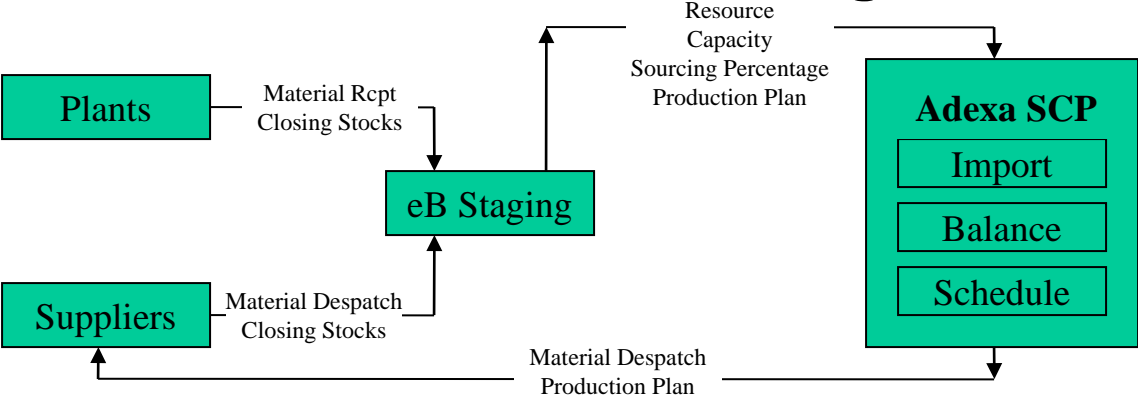
- ›› Weekly materials planning for manufacturing locations based on production plan
- ›› Aid suppliers in planning their production to meet the materials plan

› Solution

- ›› Plan material despatch from suppliers based on factory production plans
 - Bill of Material to determine raw material and packing material requirements
- ›› Consider supplier capacity to aid production planning
 - Method selection feature



Materials Planning



Activity Chart												
	Week n-1		Week n						Week n+1			
	Thu		Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Inputs Considered	Production Indents for 3 weeks								Production Indents for 3 weeks			
	SKU-wise Production Schedule for 3 weeks								SKU-wise Production Schedule for 3 weeks			
Key Activity			Run SCP							Run SCP		
Impact			Material Plan						Material Plan			
			Scheduled Orders						Scheduled Orders			



Benefits from Adexa Solutions

➤ **Process Rigor**

- Daily automated replenishment is now well established
- Optimization – Rigorously enforced

➤ **New Business Requirements**

- Flexibility of the system to handle new requirements proven

➤ **Service Level Improvements recorded**

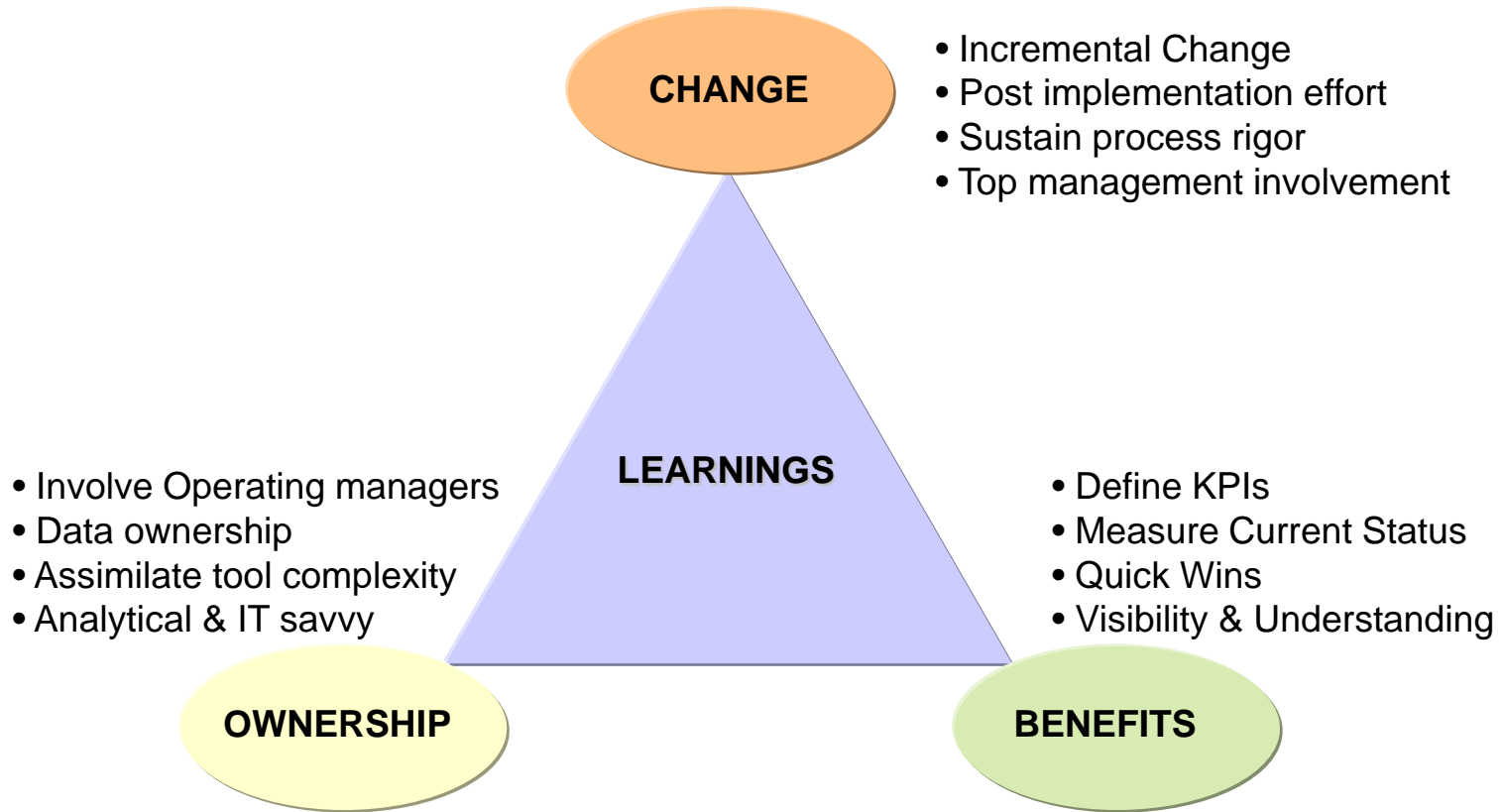
- Service Levels (Availability)
- Supply Chain Cost

➤ **Targeting for next level Supply Chain improvements**

- Service Level in the extended supply chain
- Inventories



Key Learnings



Specific Metrics

➤ **Service level**

- Daily service level tracking
- Fill rates

➤ **Inventory levels**

- Extent of inventory above norm
- Setting up of stock norms

➤ **Supply chain costs**

- Sourcing
- Transportation

➤ **Compliance**

- Process Compliance
 - Extent of changes to Adexa generated plans
- Despatch Compliance
- Production Compliance





Hindustan Lever

**Supply Chain Planning
Implementation Experience**

Overall Planning Cycle

