

Smarter Solutions for Retail:

Optimal Replenishment Model

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Supply Chain Visibility and Optimization for a smarter planet



Agenda



1

Bisuness Issues

2

Transformation Enablers

3

New Replenishment Model

4

Implementation Approach

5

Benefits Delivered

6

References

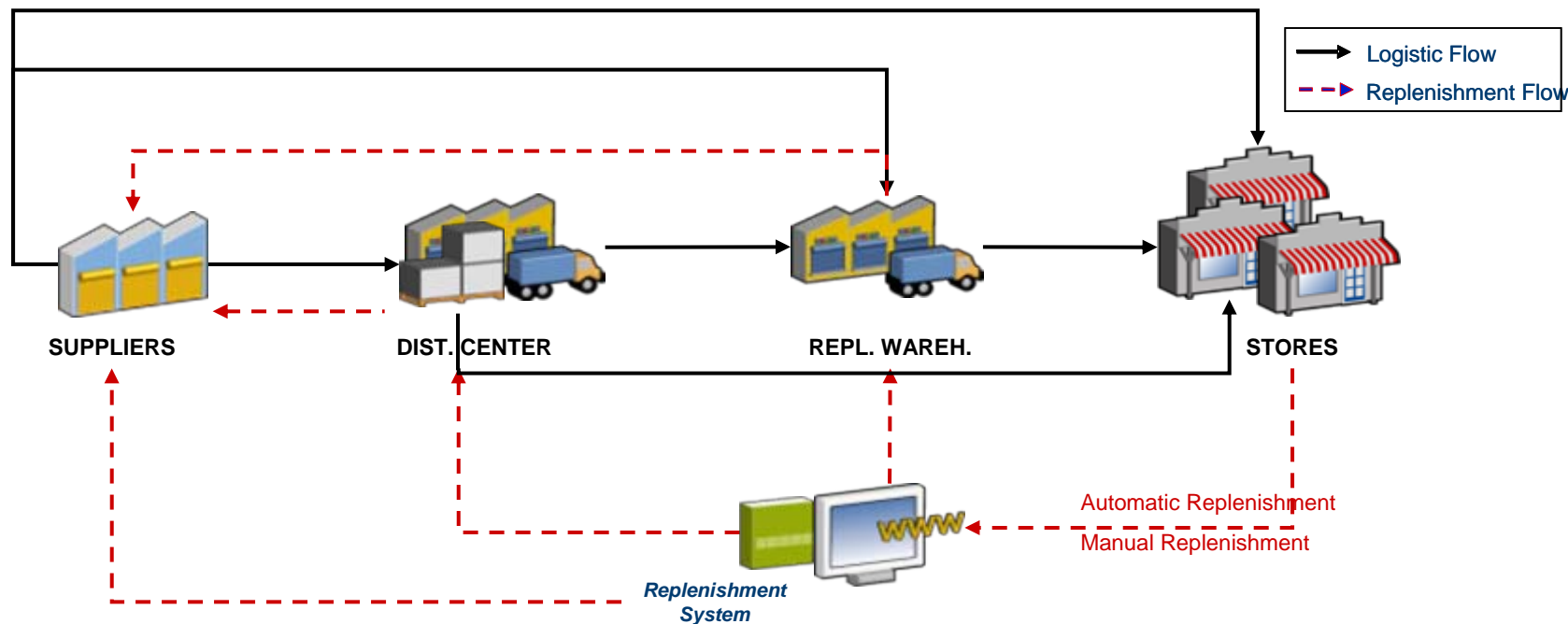


Retail

1. Business Issues Map:

Traditional Supply Chain Replenishment model: Issues and Volume

Average retailer:
 80.000 products / 500 stores / 10 DCs = 400 Million Decisions daily
 3% of total sales profitability



Pressure to reduce stock without integral vision

Promotional activity not integrated in logistic model

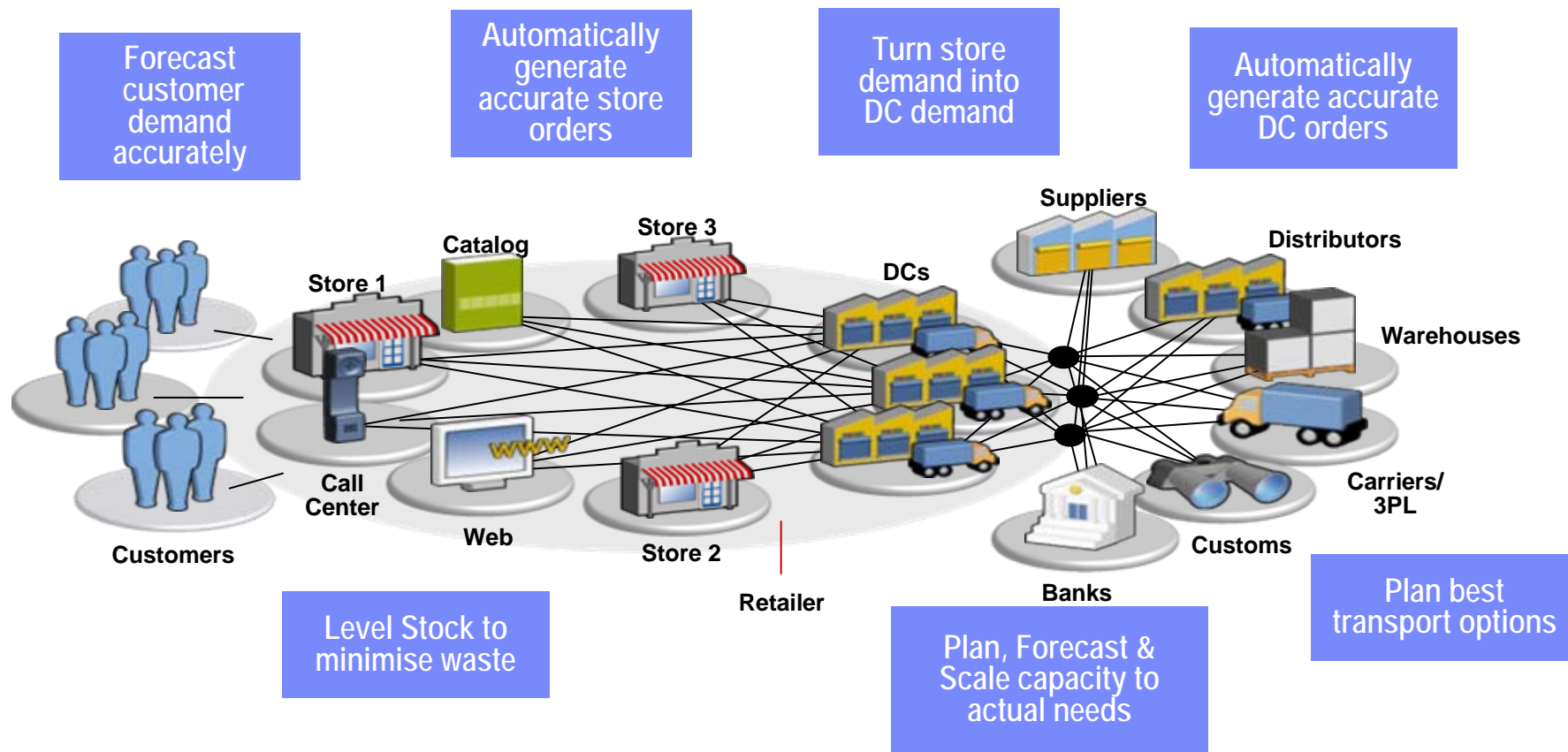
Complex operations and planning in DC and WH

High proportion of manual replenishment

Planners focus on problem solving

Logistics responsibilities spread across departments

1. Pressure in SC for 50 years: Still room for improvement



Incremental improvements dried out.
Supply Chain Transformation towards integration is required for significant leap.

2. Transformation Enablers: Unprecedented power allows Supply Chain Integration

DIAGNOSE



OPTIMIZE



ILOG C-PLEX Optimization Engine

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1. Premisas Generales Adoptadas

Conjunto del Stock de Compañía Analizado

Stock Actual Compañía CD+Tienda 19/07/09 (K€)

Total Stock Compañía (37 días)

115.332 (K€)

Conjunto Stock Analizado -31% Reducción Potencial

El foco del análisis se ha centrado en el valor de stock actual comprendido en los distintos escenarios seleccionados.
*Ejemplo por tanto una parte del stock de compañía que no ha sido analizado.

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Minimizar

$$\sum_{i \in I} CSP \cdot pedido_i + \sum_{i \in I} CLP \cdot pedido_i^2 + \sum_{i \in I} vcTen \cdot stock_i + \sum_{i \in I} v_pRot \cdot d_i StockPoi_i + \sum_{i \in I} precioVar_i \cdot c \cdot Pedido_i$$

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Objetivos de Proyecto

Resumen Ejecutivo – Global Compañía

Niveles de Stock Actuales vs Propuesto (VALOR)

115.332 (K€)	35.944 (-31%)	79.388 (K€)
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- H4 - DIRECTO SUPER CAN
- H3 - DIRECTO SUPER PEN
- H4 - DIRECTO CASH CAN
- H3 - DIRECTO CASH PEN
- H4 - OHT CAN TIENDA
- H3 - OHT PEN TIENDA
- H4 - SECO BR CAN TIENDA
- H3 - SECO BR PEN TIENDA
- H4 - SECO MR CAN TIENDA
- H3 - SECO MR PEN TIENDA
- H4 - SECO AR CAN TIENDA
- H3 - SECO AR PEN TIENDA

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Stock Analysis (DIOS Example)

Class	No. of batch days	Cumulative usage values	No. of SKUs	DIOS results			Actual values			Potential Savings
				Batch value	Safety value	Stock value	No. of batches	Batch value	Stock value	
1	1	97302	1	12 8100 9848	16678	0	0	3375	19177	1229

SKUs List (DIOS Example), Selection: SKUs List (DIOS Example), Selection: unnamed, Class: 1

SKU Number	Forecast Horizon	Forecast Series	Service Level (%)	Actual LT (days)	DIOS LT (days)	Actual stock (qty)	DIOS stock (qty)	Actual safety (qty)	DIOS safety (qty)	DIOS overage (qty)	DIOS overage (val)
6640758140	4	0.000.000.000.00	97.00	42.86	34.29	2841.00	2059.00	500.00	1459.00	182.00	1228.50

ESCUENARIO A3: ALTA ROTACIÓN SECO – PENÍNSULA, TIENDA

Porcentaje de Ahorro

- G4 - SECO BR CAN
- H4 - SECO MR CAN
- B4 - SECO MR CAN
- G3 - SECO BR PEN
- B3 - SECO MR PEN
- G3 - DIRECTO CASH PEN
- H3 - DIRECTO SUPER PEN
- H4 - DIRECTO SUPER CAN
- E4 - CHARCU CAN
- G3 - OHT PEN
- E3 - CHARCU PEN
- G4 - DIRECTO CASH CAN
- D4 - OHT CAN

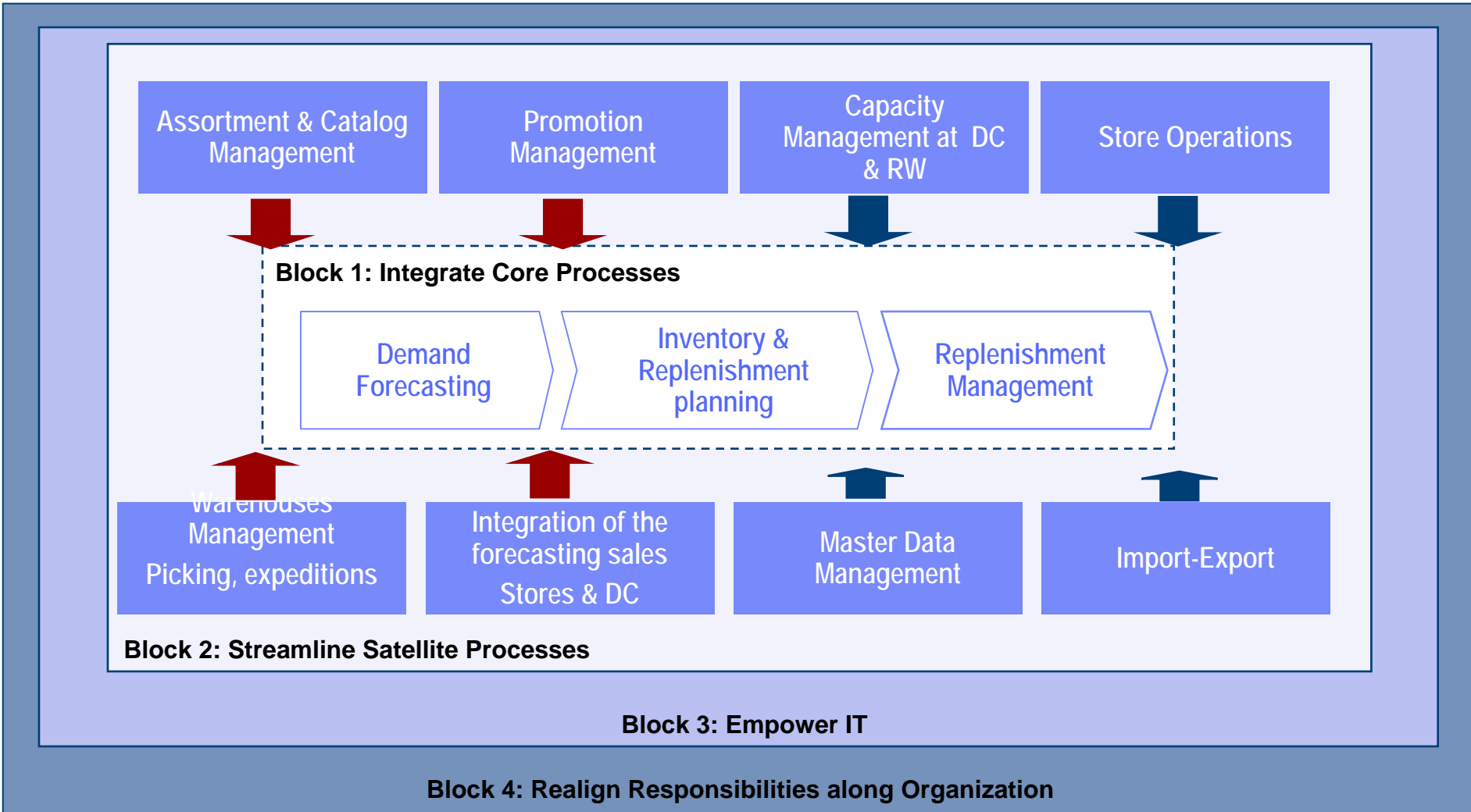
VALORES

	SUPER	CASH	TOTAL
Valor Actual, Demanda Actual	128.0556		128.0556
Min. Dem. Demanda	3020		3020
Stock Actual	4.132	12.3	799
Stock Propuesto	2.819	8.4	2897
Stock Propuesto	1.361	4.1	215
Ahorro	1.315	3.9	482
	9.1	1.777	4.6

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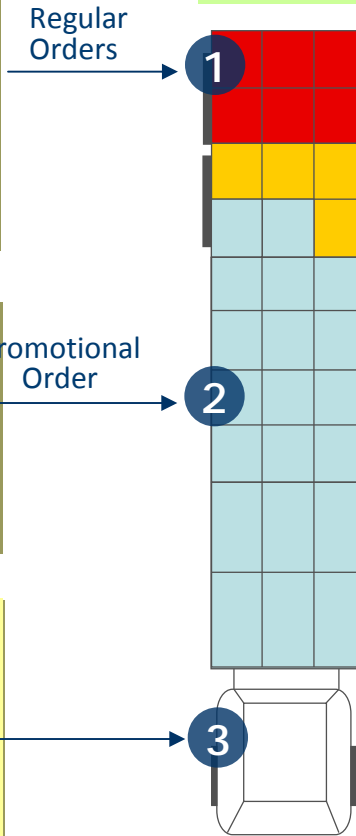
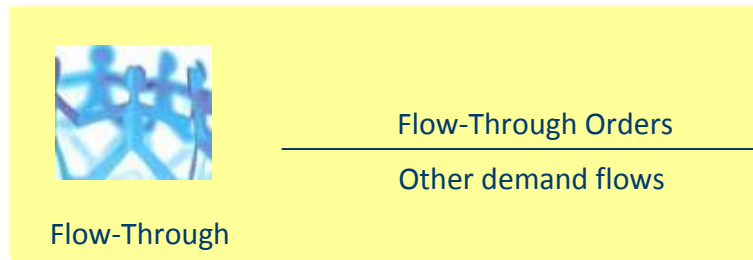
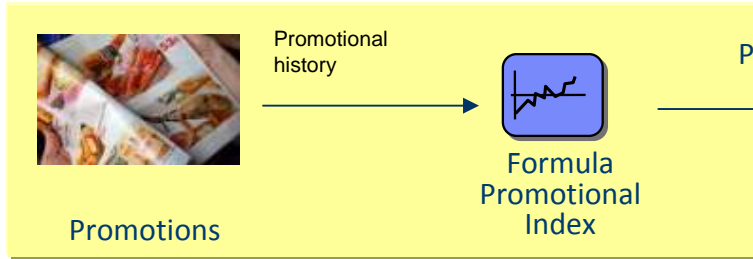
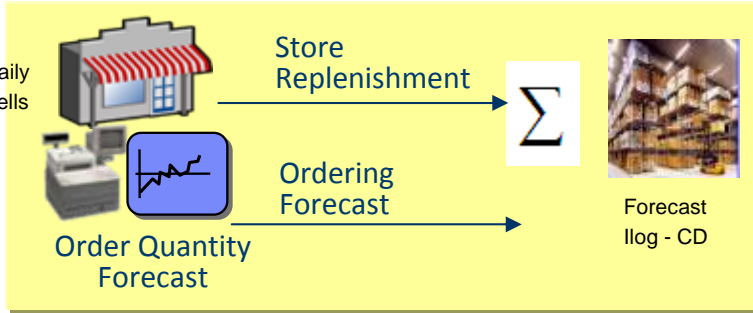
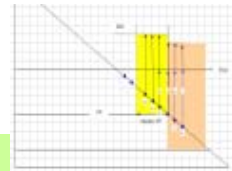
3. New Replenishment model proposition

Vision of an Integrated Supply Chain



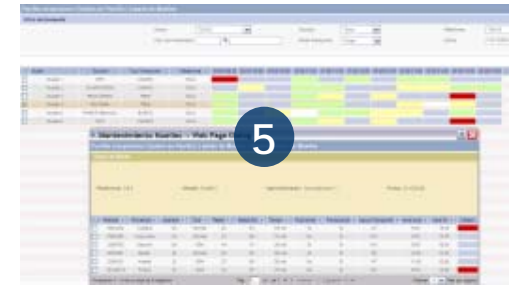
3. New Replenishment model proposition

Optimizing in practical and mathematical terms

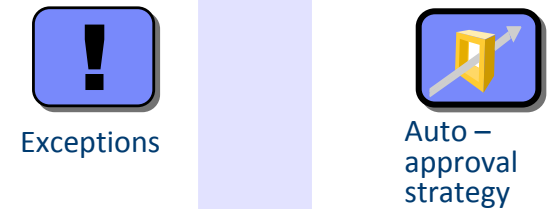


Order Consolidation
Cicle Order
EOQ

4 Integrated Optimization



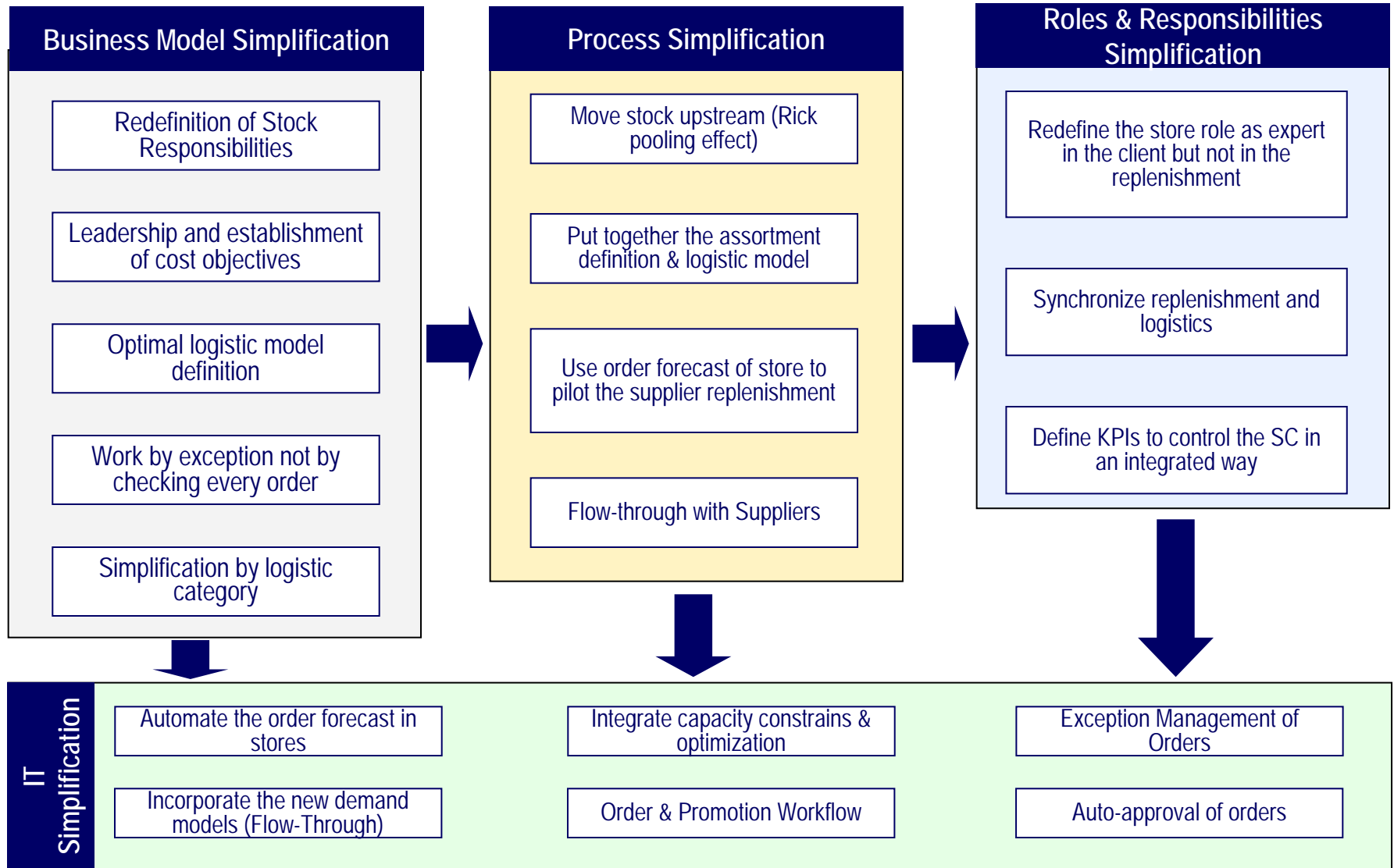
Capacity Constrains



Order Approval

4. Implementation Approach

Much more than implementing technology



4. Implementation Approach *Implement to Innovate*

1. Information Integration: Demand forecast of Stores

2.- Maximize replenishment volumes by: Cross-docking & Flow-Through

3. Minimize replenishment Cost (EOQ) vs. force stock reduction

4. Promotional stock & replenishment management at the DC Level

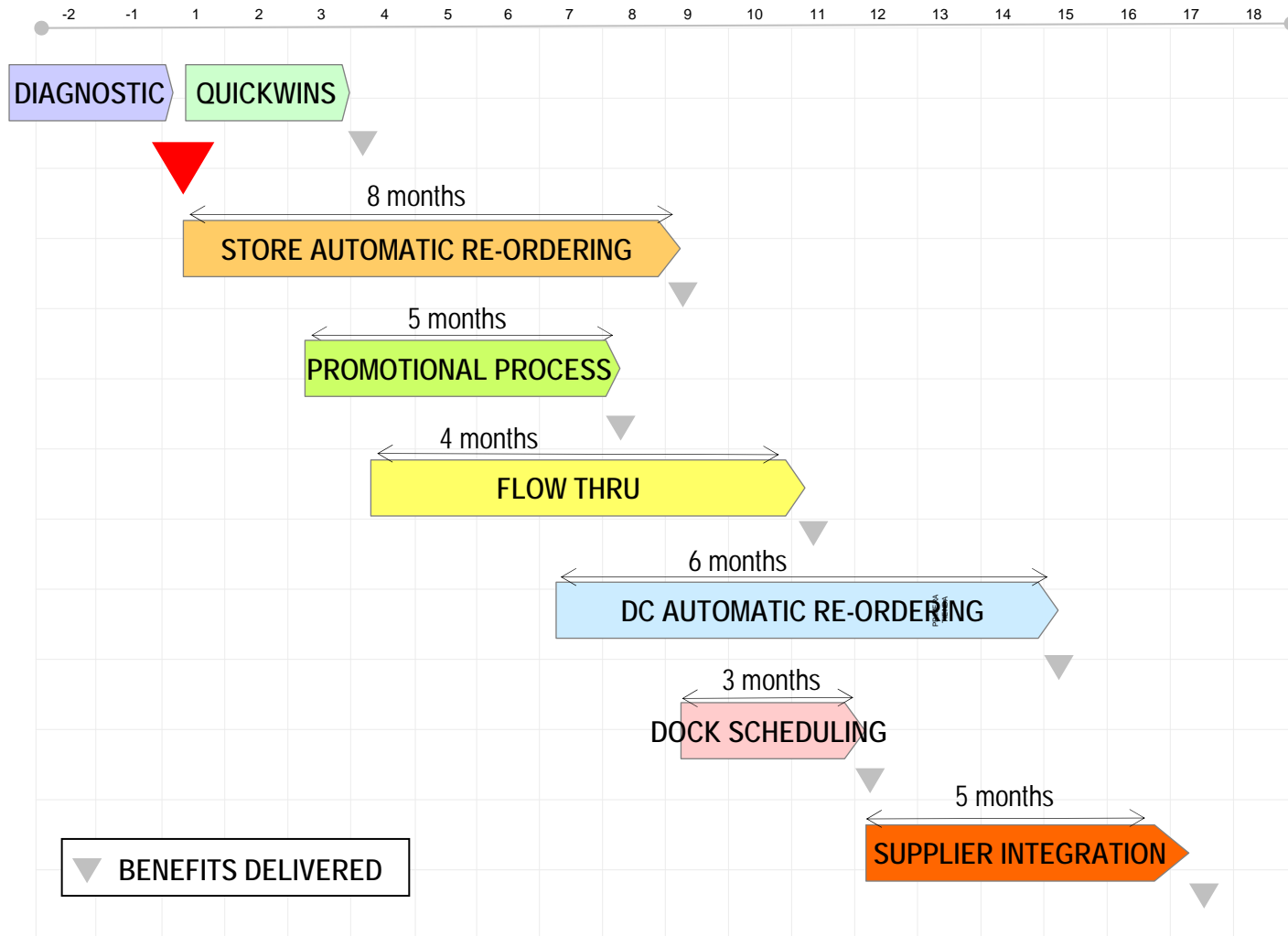
5. Make the replenishment process automatic

6. Massive management of Administrative Parameter

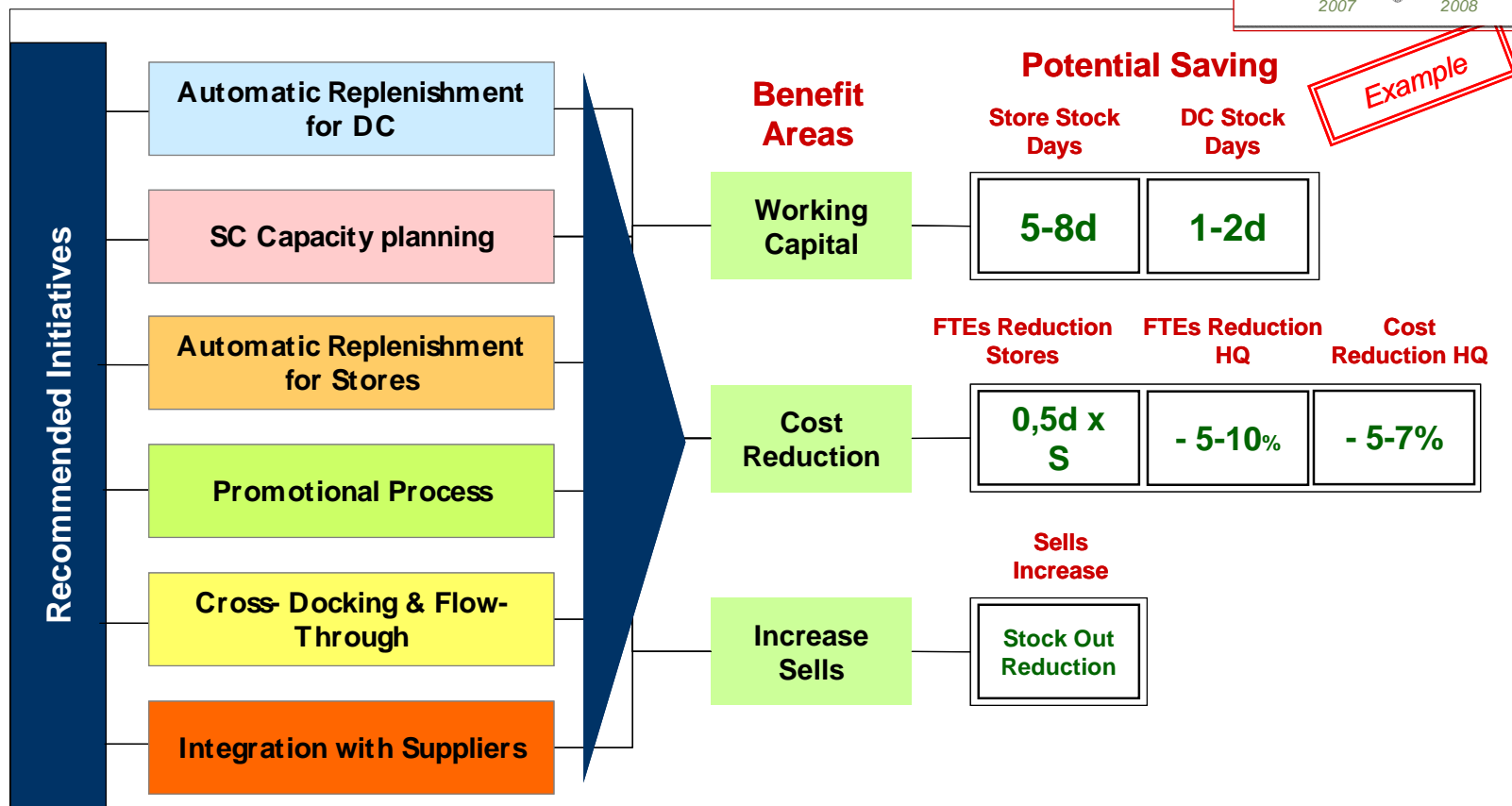
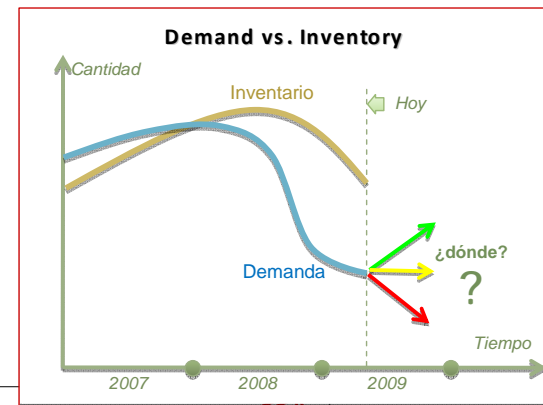
7. Adjust the new organization to be oriented to the new process

4. Implementation Approach

An enterprise transformation not a systems implementation



5. Benefits delivered



6. References

