2007年
한국 SCM 대상

'정보 공유 시스템을 통한 협업성과 향상'

롯데쇼핑㈜ 롯데마트

2007. 11. 6

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LOTTE Mart

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v Introduction

LOTTE Mart

■ LOTTE GROUP

- The Affiliate Companies : 44 Companies
- LOTTE Group's Total Sales in 2006 : USD 31 Billion

■ LOTTE Shopping co., LTD

- 89th rank retailer in the world (2006) by NRF survey
- 1st rank retailer in Korea (2006)

	LOTTE Mart	DEPARTMENT STORE LOTTE	LOTTE super
Major Types	Hypermarket	Department Store	Supermarket
Sales (2006)	USD 3.6 bill	USD 5.6 bill	USD 0.5 bill
	• 3rd Largest in Korea • 53 Stores	• 1st Largest in Korea • 24 Stores	• 2nd Largest in Korea • 52 Stores

vProject Background

LOTTE Mart

Why? Still VMI is not effective?

- A lot of pilot projects have … gave various improvement/ de… o other manufacturers with unkno…
- Through the VMI pilot … ery service and on shelf availability. H… e in inventory level that we exp…
- We thought that such re… ppropriate model could have been ref… .
- Moreover, Project team ord… value added process in supply chain.
- At this point, Johnson & Jo… ment and organized a task force pro… dation of reasonable CPFR in long te…
- Project team agreed to u… solved current issues more systen…

Pilot test was successful but not extended to other manufacturers

Performance of delivery service and on shelf availability were good but inventory level was not good as we expected.

Don't have an appropriate VMI model for Korean environment(Especially Store level)

Have a sympathy between Lotte mart and Manufacturers to reduce wastes

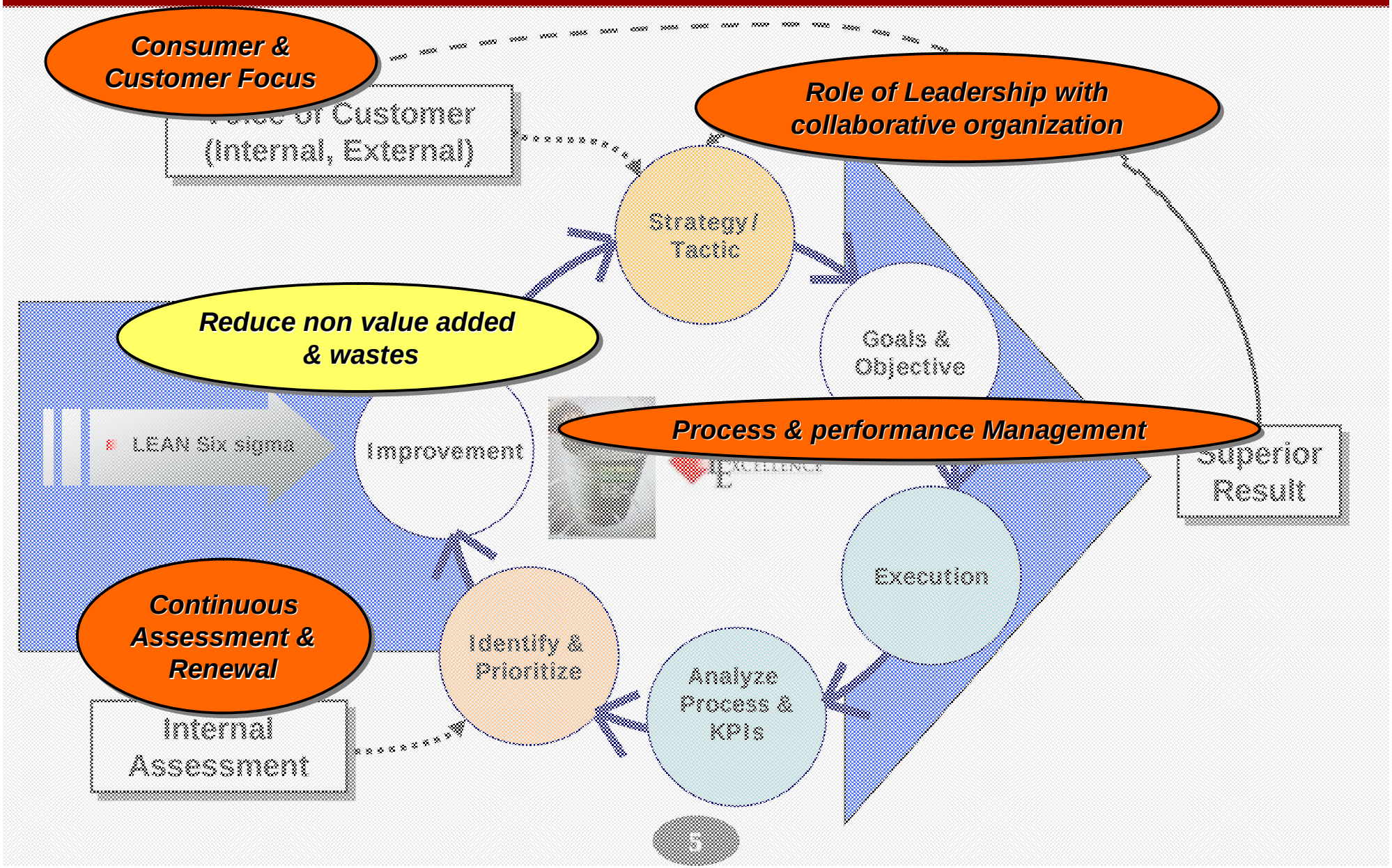
Project team have organized and had a short/medium/long term strategies

Project team agreed to use Lean six sigma tool to improve this VMI process

vProject Roadmap

LOTTE Mart

How do we implement this project more efficiently / effectively?

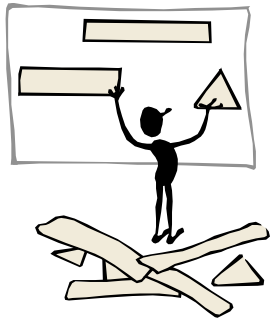


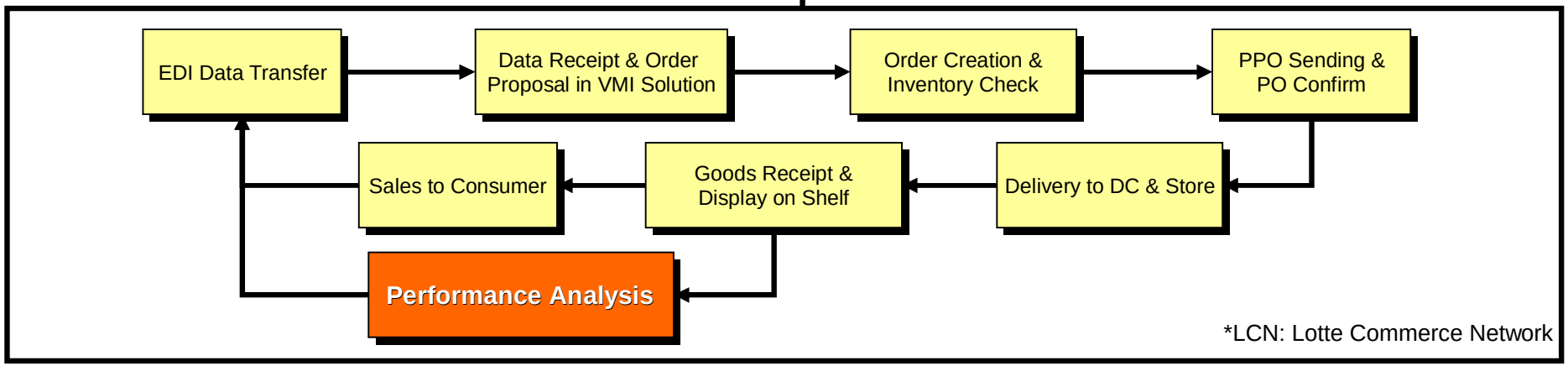
v Business Case

LOTTE Mart

SIPOC

Supplier	Input	Process	Output	Customer
LCN*	Data (Inventory, Sales, Master)	Order & Delivery	Sales	Lotte Mart
Solution Provider	EDI		Stock Holding Day	Johnson & Johnson
ERP Provider	VMI Solution		On Shelf Availability	
3PL	ERP		Case Fill Rate	
J&J, Lotte Mart, LCN	Vehicles			
	Resources			





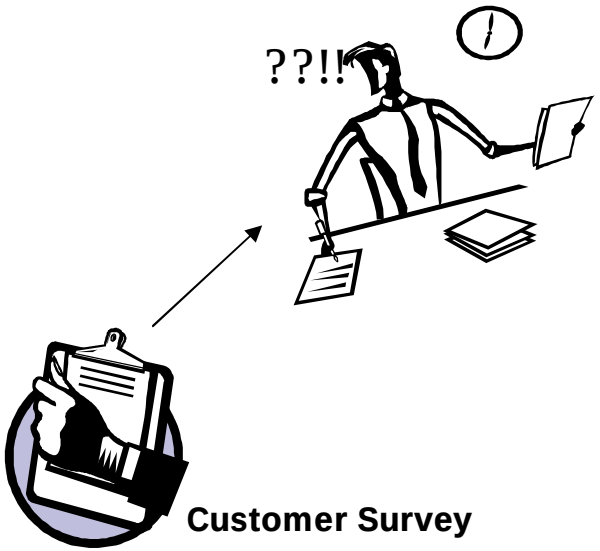
v Business Case

LOTTE Mart

VOC & CTQ

Voice of Customer

Unreasonable inventory results & much work load in analyzing data



Customer Survey

Causal Driver

- No clear setting of VMI KPIs
- No clear understanding of VMI internally & externally
- No proper resources & organization
- No Information Tool & method
- No Information sharing process
- No standard of procedure in information sharing & communication
- No classifying information types

Critical to Quality

- Mutually agreed on KPIs
- Qualified & quantitative KPIs
- Realistic KPIs that reflect store level VMI
- Assign right place & person
- Common information between two companies
- On time information sharing
- Accurate information
- Enough & various information resources
- Synchronized information
- Easy to access information including KPI results

v Current Process Measurement

LOTTE Mart

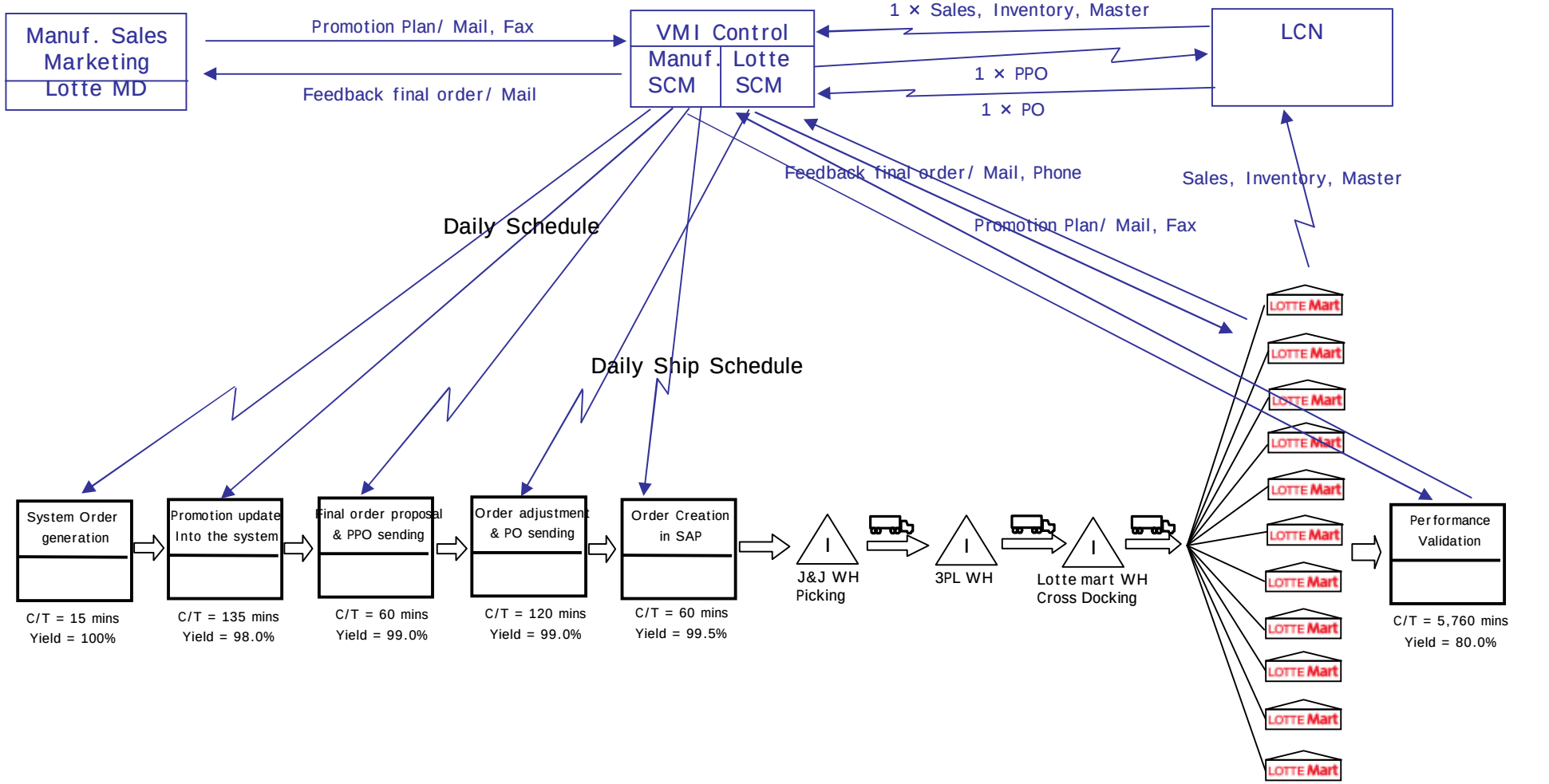
Prioritization Matrix

Critical to Quality	Sales Increase	Inventory Reduction	On Shelf Availability	Delivery Service	Score
	9	7	5	3	
• Mutual agreed KPIs	1	5	3	9	86
• Qualified & Quantitative KPIs	9	3	1	3	116
• Realistic KPIs that reflect store level VMI	5	7	7	7	150
• Assign right place & person	3	5	1	1	70
• Common information between two companies (Same KPIs)	5	9	5	5	148
• On time information and Data sharing (POS, PPO, PO, Promotion)	1	7	3	3	82
• Accurate information (99%)	5	5	9	5	140
• Enough & various information resources (Retailer/Manufactures)	7	3	5	1	112
• Consolidated & synchronized information	5	9	9	5	168
• Easy to access information including KPI results	5	3	9	3	120

v Current Process Measurement

LOTTE Mart

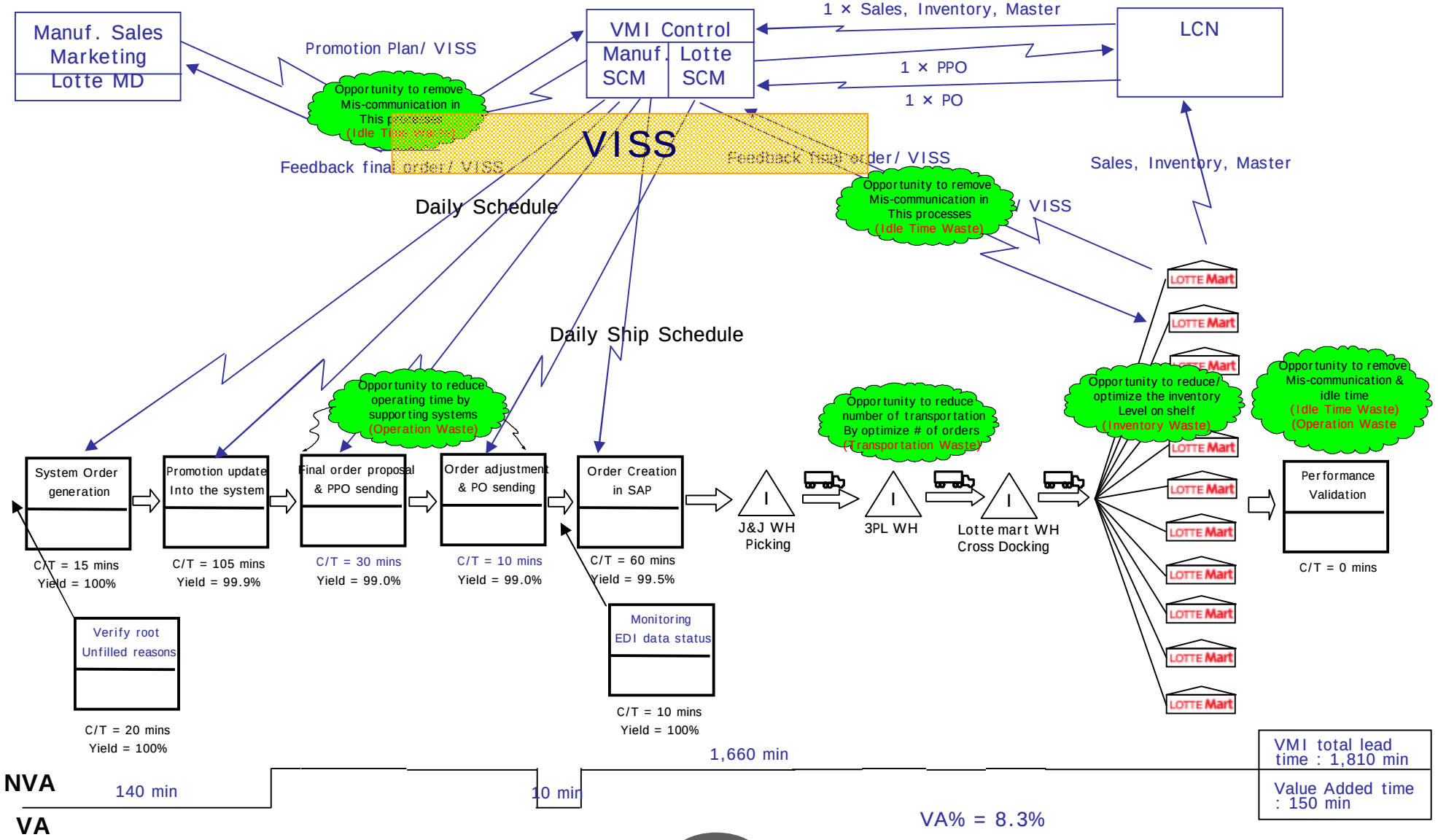
Current Value Stream Mapping



v Current Process Measurement

LOTTE Mart

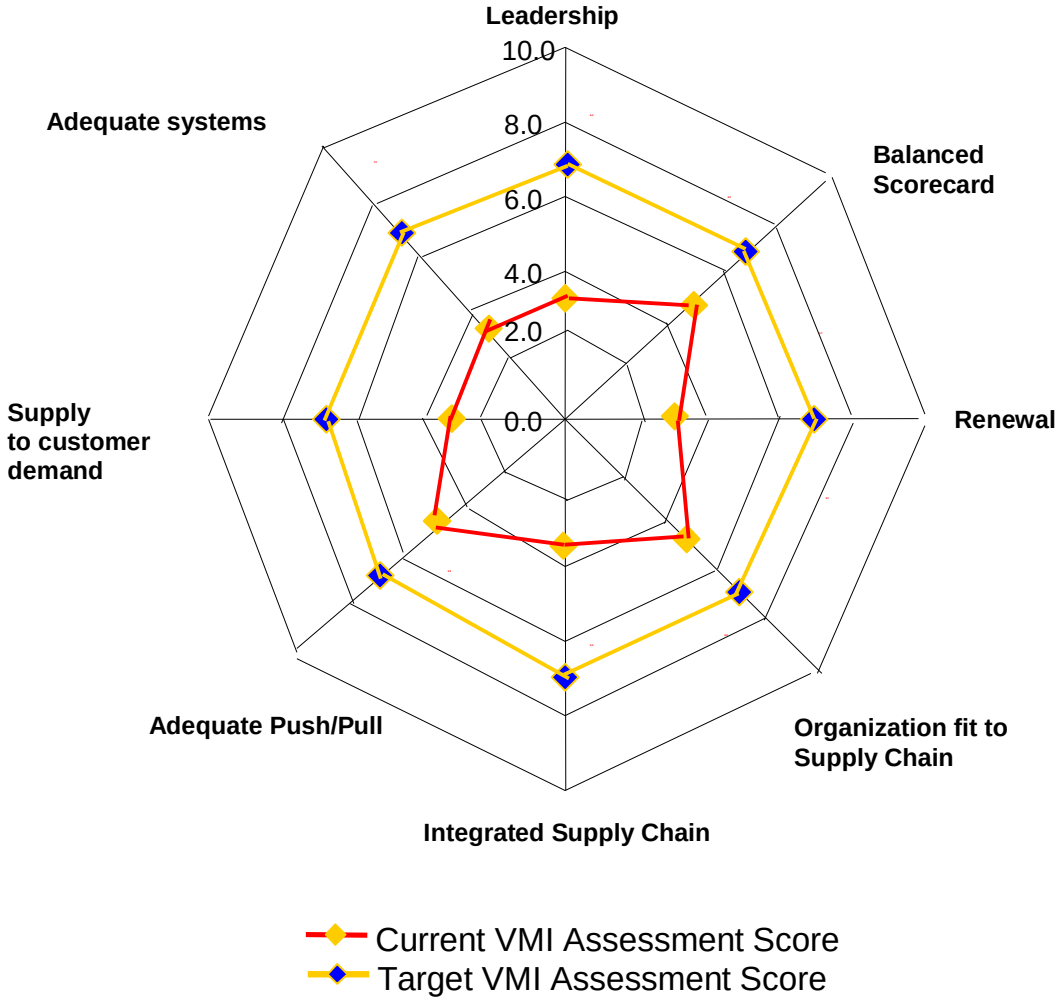
Future Value Stream Mapping



v Current Process Measurement

LOTTE Mart

Self Assessment



Drivers	VMI Assessment Score	Target
Leadership	3.4	7.0
Balanced Scorecard	4.7	7.0
Renewal	2.7	7.0
Organization fit to Supply Chain	4.6	7.0
Integrated Supply C hain	3.8	7.0
Adequate Push/Pull	5.0	7.0
Supply to customer demand	3.5	7.0
Adequate systems	3.5	7.0
Avg.	3.9	7.0

Lean Company 7 to 10

Average Company 3.9 to 7.3

Traditional Company 1 to 3

* Global Standard in J&J

v Current Process Measurement

LOTTE Mart

Measurement Summary

Voice of customer/
Critical to Quality

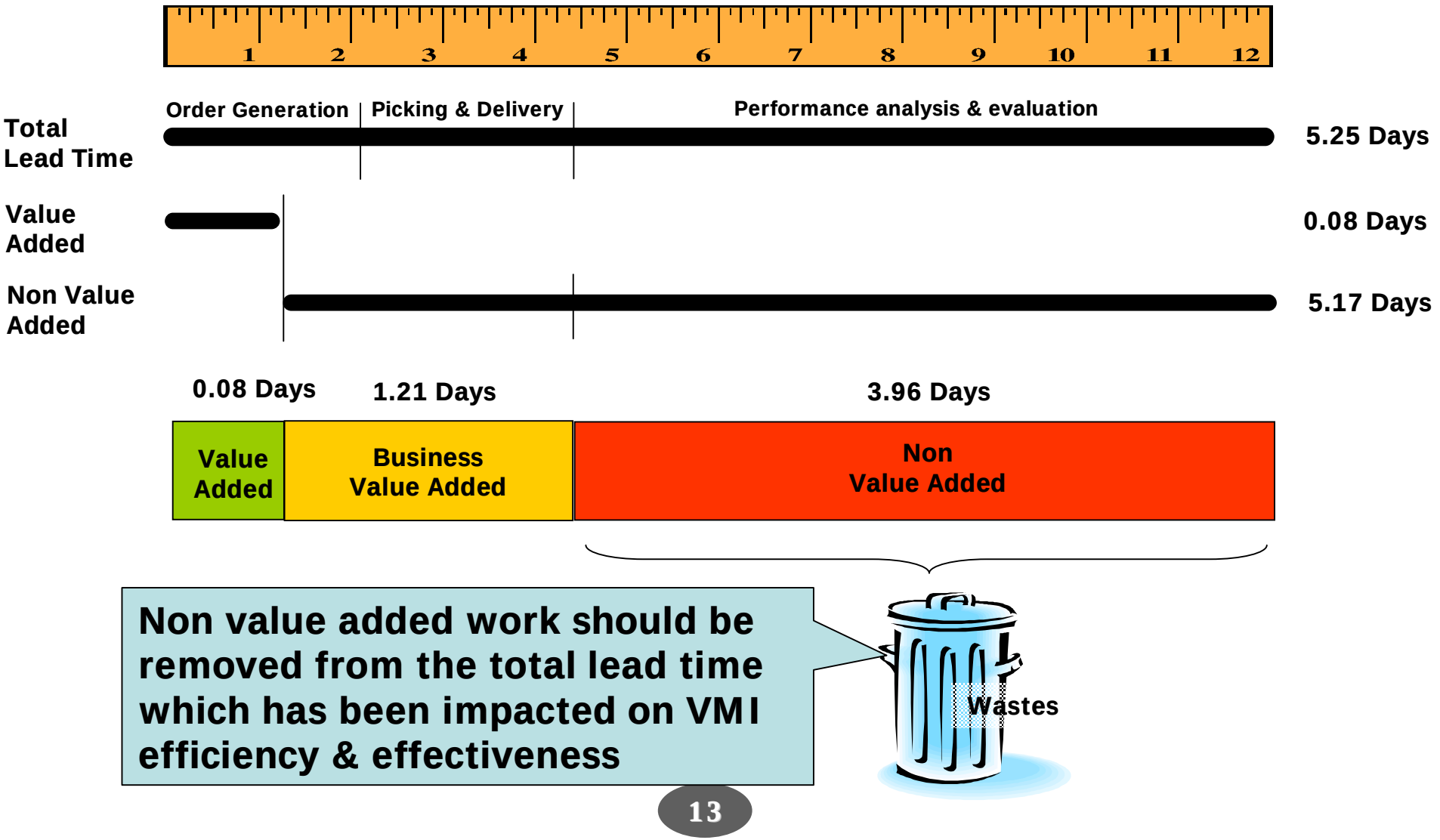
SIPOC
Value Stream Mapping/
Self Assessment

- Common and accurate information is important for VMI
- Synchronized and consolidated information that needs to be managed in one single data pool and window
- Realistic store level VMI KPIs should be realized with mutual agreements between manufacturer and retailer
- Much time has been spent to analyze VMI performance and KPIs that were absolutely non value added work and should be removed out from the process
- Some manual information/data sharing in VMI process which needs to be replaced to electronic data sharing process to enhance data accuracy as well as to reduce mis-communication

v Current Process Analysis

LOTTE Mart

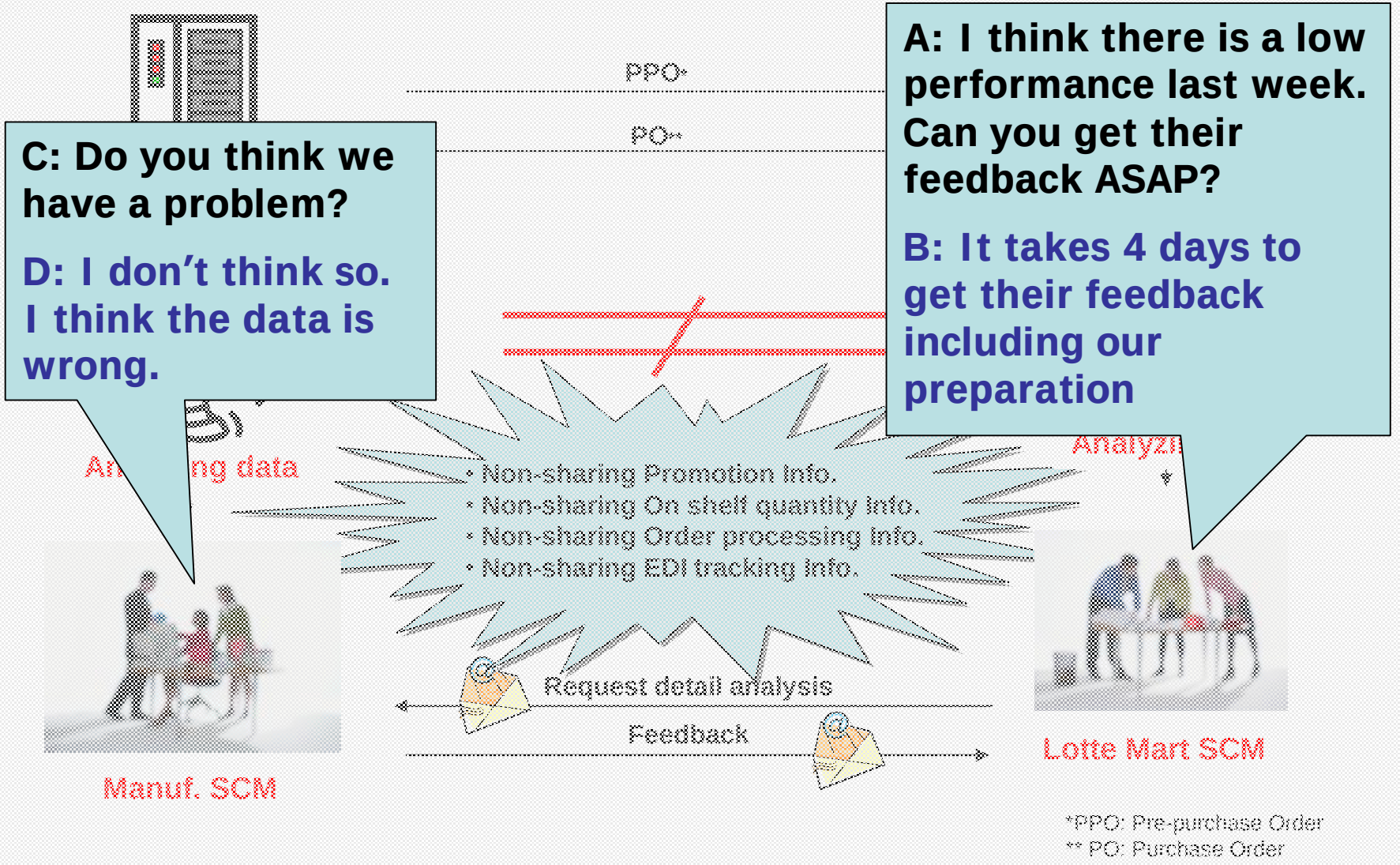
Long Lead Time by non value added work



v Current Process Analysis

LOTTE Mart

No common information/data sharing pool



v Current Process Analysis

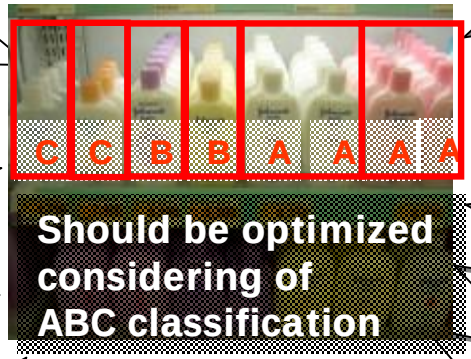
LOTTE Mart

Realistic KPI : Optimizing stock on shelf

Before VMI

A : 0% to 75% sales
B : 76% to 95% sales
C : 96% to 100% sales

After VMI



Should be optimized considering of ABC classification

Both cases, having many inventories to prevent out of stock and having few inventories to reduce inventory, are not the realistic objectives for store level VMI. Subsequently, Having optimized inventories on shelf by ABC classification should be objectives in store level

v Current Process Analysis

LOTTE Mart

Summary of Analysis

- The assessment of performance has been executed manually by 4 days that is the biggest waste in total VMI lead time and should be removed.
- There is no seamless linkage between Manufacturers and Lotte Mart data pool that has been impacted data accuracy as well as reporting appropriate KPI numbers.
- One of KPI, Inventory level, has been measured simply such as just measuring performance versus last period numbers. It made no sense for the store level VMI which needed to be measured differently to optimize on shelf inventory by ABC classification.
- Subsequently it was hard to set up the realistic VMI goal and KPI's, and those had been a bottle neck to improve the process and finally VMI extension to other market was stopped with those reasons.

v Improvement & Learning

LOTTE Mart

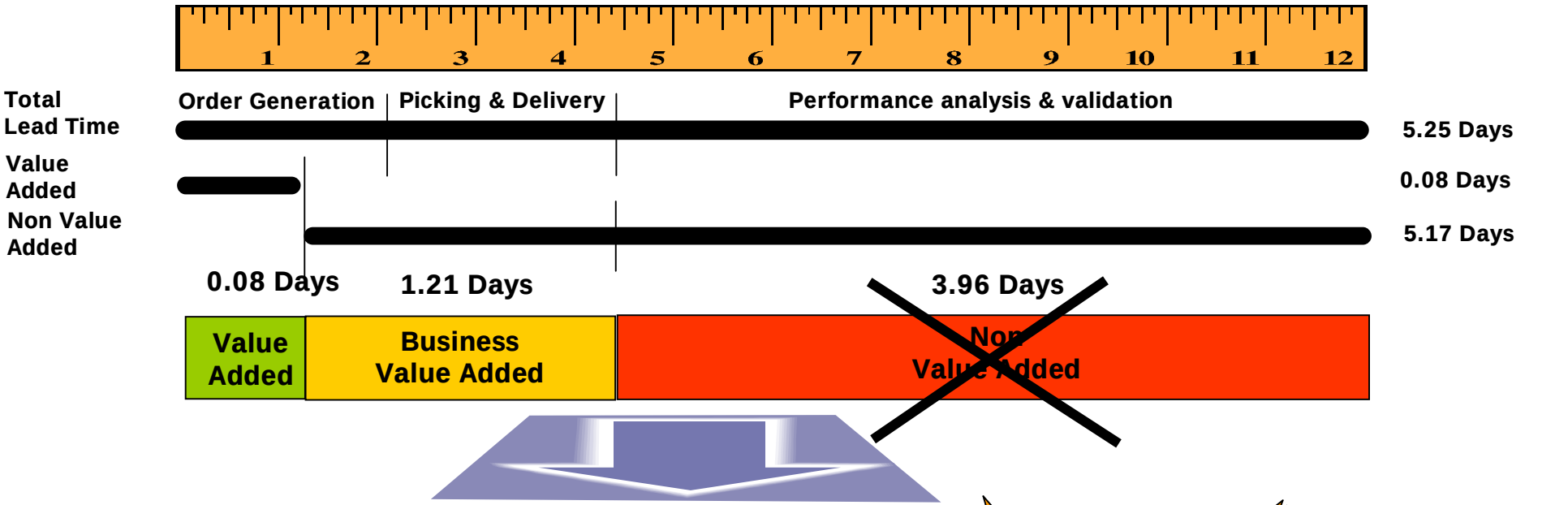
Solution Prioritization Matrix

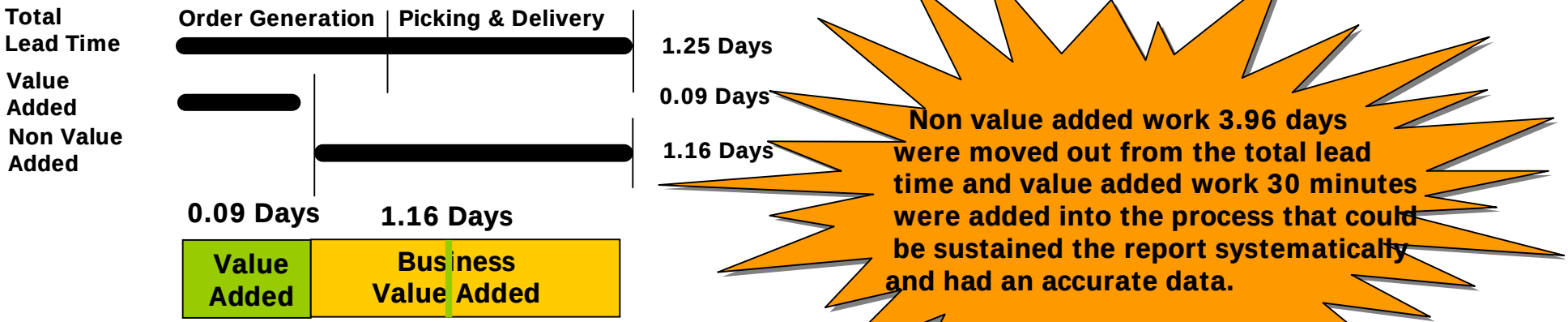
Solution Ideas	Criteria and weight					Sum	
	Easy	Quick	Tech	High impact	Custo mers		
	0.5	0.5	1.3	1.2	0.5		
• To manage inventory assessment separating DC and store level (Store level needs to be aligned with shelf quantities for SKU and store)	3	5	5	5	9	21	3
• Development of tool to calculate by store and shelf information(POG)	1	1	5	5	3	15	
• Set up and sharing the proactive mutual agreement between distributor and manufacturer to manage the inventory and sales more efficiently	1	1	5	3	3	13	
• Development the most effective communication tool	5	5	9	5	9	27	1
• Development of the standard of operating procedure	5	5	5	5	9	22	2
• Promotion plan development and execution that reflected by analyzing and sharing historical promotion data	1	1	5	5	3	15	
• Establishing promotion plan that reflecting not only distributors data but also manufacturer's data	1	3	5	5	5	17	
• In medium term strategy, the category management needs to be in line with VMI that can be establish more strategic analysis the ABC category and better business result	3	1	5	5	3	16	
• More effort needed to minimize non value added work that found in value stream mapping and reducing waste in process	1	1	5	5	3	15	
• Eliminate manual information sharing and add the electronic information sharing that can be speed up communication speed	3	5	5	5	9	21	4

v Improvement & Learning

LOTTE Mart

Reduction of Non Value Added Work





Non value added work 3.96 days were moved out from the total lead time and value added work 30 minutes were added into the process that could be sustained the report systematically and had an accurate data.

v Improvement & Learning

LOTTE Mart

VISS (Vendor Information Sharing System)

C: Last week, We have a low performance. Do you think we have a problem?

D: Yes, we already knew that and we did the right action after discussion with Lotte mart last week

A: I think there is a low performance last week. Can you get their feedback ASAP?

B: You can get such data now from the VISS and we already did the right action last week

Manuf. SCM

Lotte Mart SCM

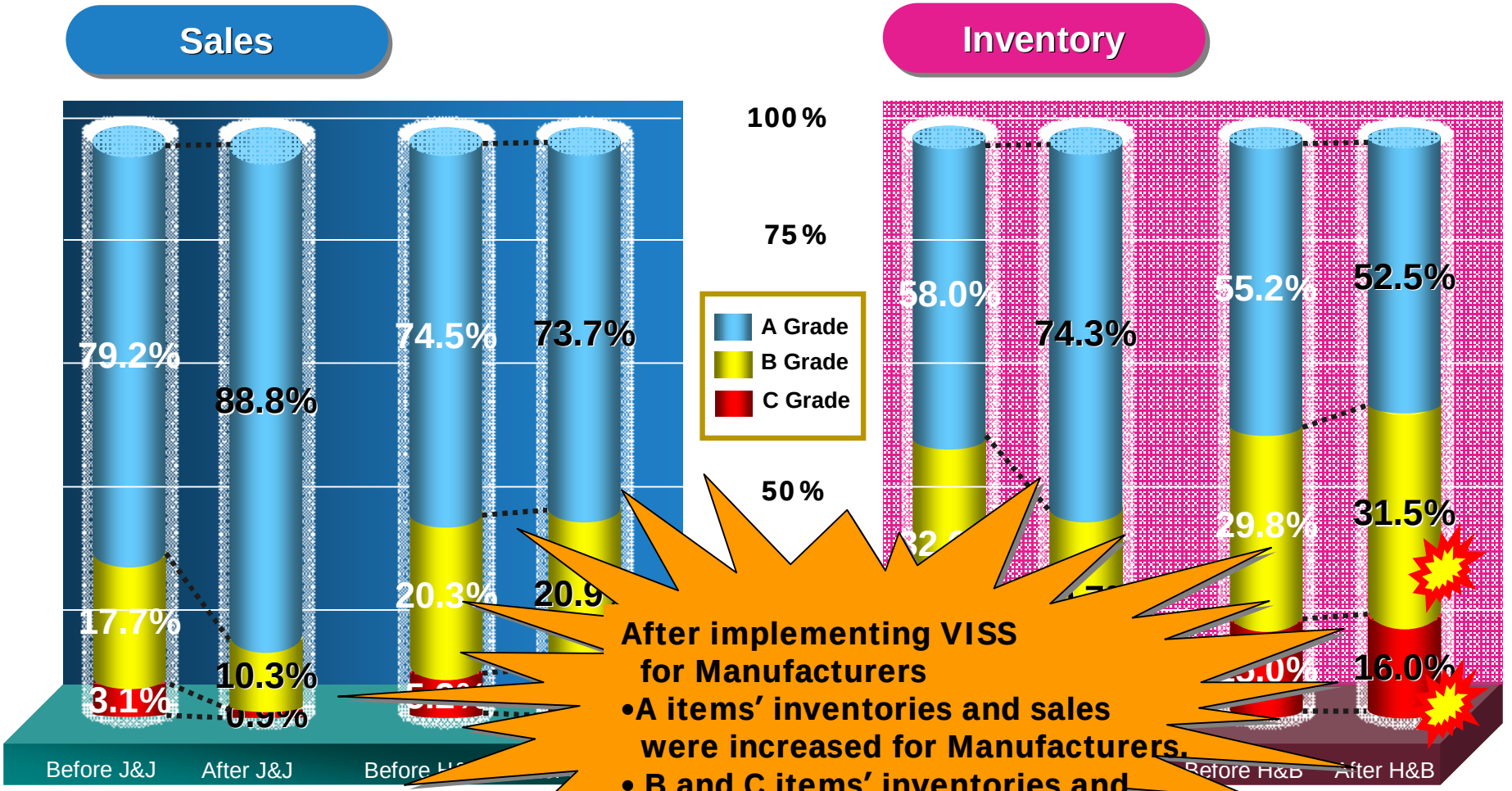
- Sharing Promotion Info.
- Sharing On shelf quantity Info.
- Sharing Order processing Info.
- Sharing EDI tracking Info.

in single server & data pool
& can get a accurate report

v Improvement & Learning

LOTTE Mart

ABC item optimization



After implementing VISS for Manufacturers
- A items' inventories and sales were increased for Manufacturers.
- B and C items' inventories and sales were decreased for Manufacturers.

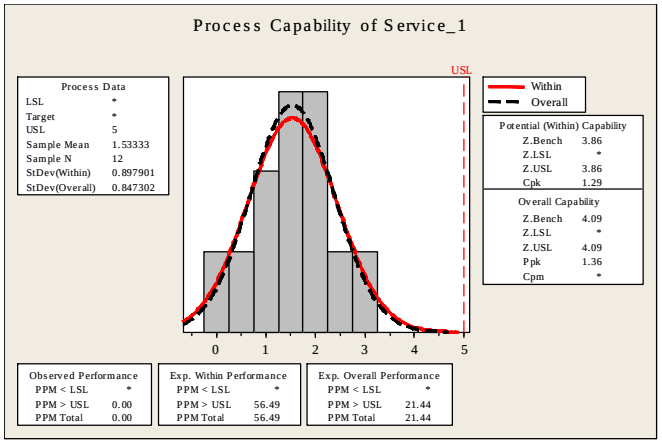
- H&B : Health and Beauty Category exce
- Data Source: Lotte Mart Actual Data (2005

v Improvement & Learning

LOTTE Mart

Process capability & Lean assessment

Process Capability



The sample was displayed by process capability in normal and got a following data

	Before	After
PpK	0.25	1.36
Yield	23%	99.5
Process Sigma	0.75	4.09

Ppk: Process Capability index

Lean assessment

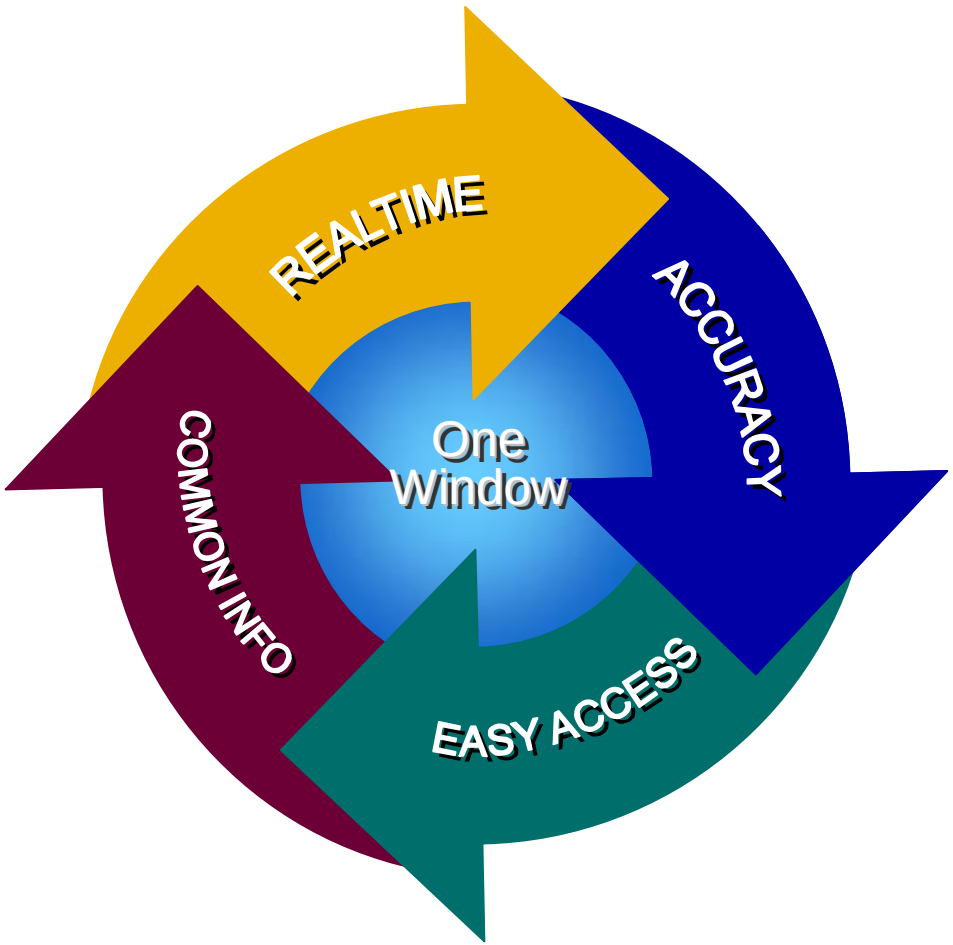
Lean measurement	Previous Result	After project Result
Total VMI Control Lead Time	120 min	150 mins
Total VMI Control Cycle Time	7,560 min	1,810 mins
Value Added %	1.6%	8.3%
Lean Scoring	3.9	4.5

v Implementation of VISS

LOTTE Mart

What is VISS?

VISS means Vendor Information Sharing System

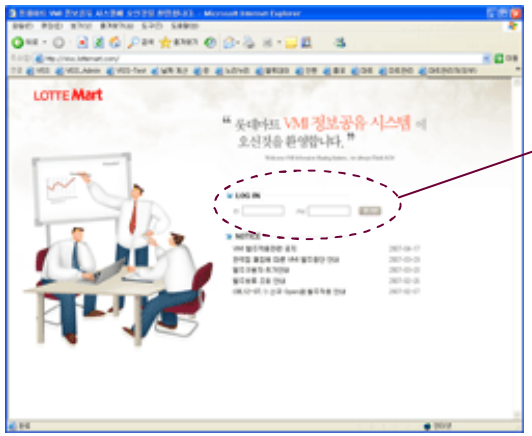


- **VISS provides common view between retailer and vendors (manufacturers) that remove non value added process and increase SCM efficiency from the various information.**
- **VISS improves collaborative capability thru real time data analysis and feedback its result.**
- **VISS is realistic and unique SCM solution that can be synchronize data between retailers and manufacturers**

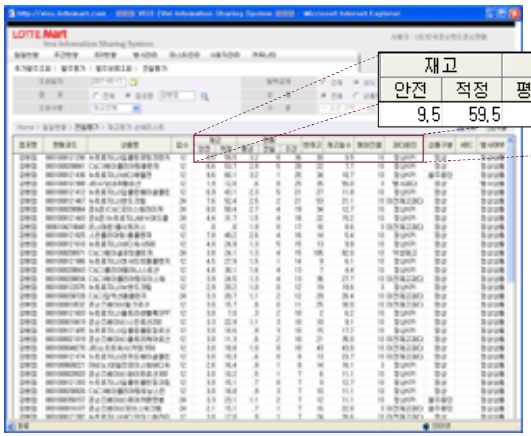
v Implementation of VISS

LOTTE Mart

Process improvement



- Web based
- Easy Access
- User Authority
- High security



재고		판매			현재고	재고일수	매대진열	과다원인
안전	적정	평균	전일	주간				
9.5	59.5	3.2	8	36	30	9.5	10	정상KPI

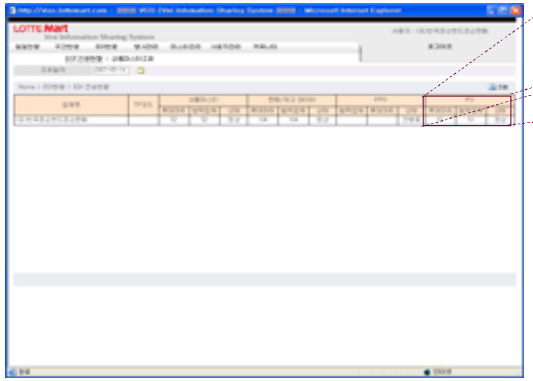
- Real-Time
- Accurate Data
- Common Data

- **Easy Access (Web based)**
- **All data is real time**
- **Users can inquire common, accurate data**

v Implementation of VISS

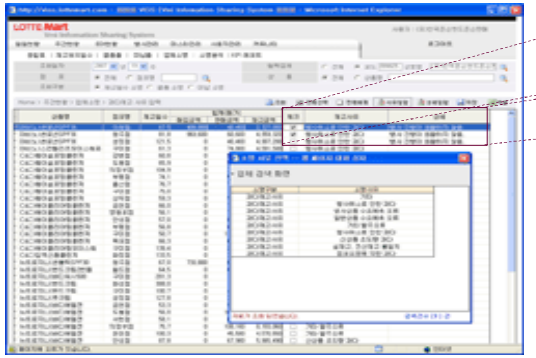
LOTTE Mart

Non value added / Value added



PO		
롯데마트	협력업체	상태
51	51	정상

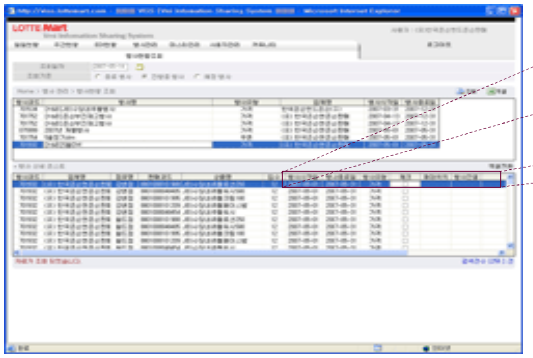
- EDI Tracking
- PPO/PO Status



체크	재고사유	상세
☑	행사해소로 인한 과다	행사 진행이 원활하지 않음.
☑	행사해소로 인한 과다	행사 진행이 원활하지 않음.

- KPI Warning
- Real-Time feedback
- Easy feedback

- Reduce Non value added process
- EDI tracking and feedback are real time
- Promotion data also shared before promotion execution



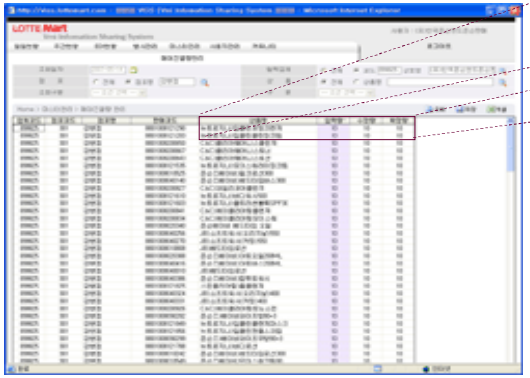
행사시작일	행사종료일	행사유형	체크	매대위치	행사진열
2007-05-01	2007-05-31	가격	☐		

- Promotion data
- On shelf information

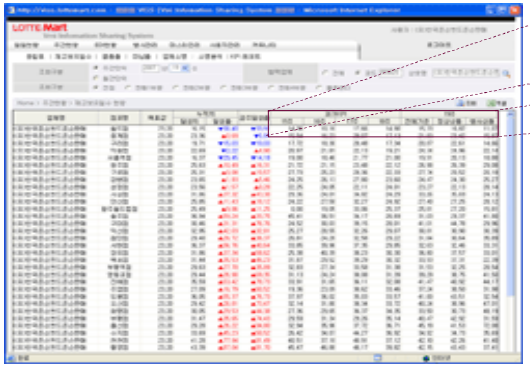
v Implementation of VISS

LOTTE Mart

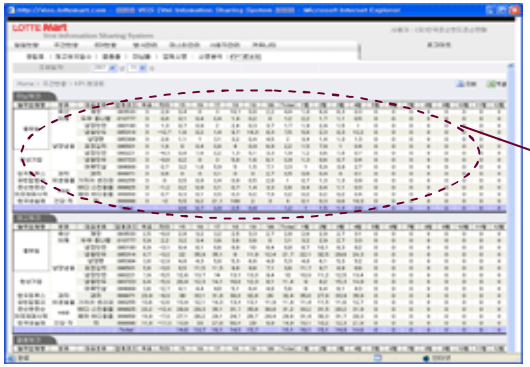
Inventory optimization



- **ABC classification**
- On shelf quantity
- Collaborated system setting



- Self Assessments
- Adjust next orders
- Inventory optimization



- KPI reporting from the system
- Synchronized analysis

- **ABC classification is managed**
- **Inventory is managed consider of on shelf quantity**
- **On shelf information is shared with two companies**
- **One single assessment is executed and reviewed**

v Implementation of VISS

LOTTE Mart

Documentation of Standard of Operating Procedure

Critical to Quality

- Mutually agreed on KPIs
- Qualified & quantitative KPIs
- Realistic KPIs that reflect store level VMI
- Assign right place & person
- Common information between two companies
- On time information sharing
- Accurate information
- Enough & various information resources
- Synchronized information
- Easy to access information including KPI results

Master Data
- **Products**
- **On Shelf**
- **Store**

KPI
- **Agreed Target**
- **Assessment result**
- **Feedback & Report**

Inventory
- **On shelf**
- **Max/Minimum**
- **Optimize**

Order generation
- **Regular**
- **Promotion**
- **Urgent**

v Summary

LOTTE Mart

- We, Lotte Mart and Manufacturers, had a partnership thru commitment by setting up a short/mid/long term strategy on the LEAN Six sigma roadmap.
- Through this project, our team reduced the wastes and lead time by implementing VISS that could be increased speed and productivity in the whole supply chain process.
- For the optimization of inventory on shelf, determining collaborated and synchronized inventory level was important by ABC item classification that should be managed systematically.
- Project team have a confidence to go forward to the long term strategy because we overcame such a complicated market environment by implementing collaborated team work.
- We hope that VISS case would be helpful to other companies if they really want to enhance the communication between retailers and manufacturers for ECR.

vProject Roadmap

LOTTE Mart

VISS Project Strategy & Scope

	Short Term 2006-2007	Mid Term 2007-2008	Long Term 2008-2009
LEAN Strategy	• Lean self assessment • Organization & structure • Lean strategy • Value Stream Mapping • Project team working • Monitor KPIs	• Documentation • LEAN evaluation • New VSM & Map • Continuous improvement	• LEAN evaluation • New VSM & Map • Redesign the new process • Continuous improvement
Specific Actions	• Reduce wastes & non value added work • Development new VMI process(SOP) • Development information sharing system(Web) • Set up new VMI KPIs (For store level)	• Continuous reduce value added work • Enhancement information sharing system(Web) • Systematic optimization of shelf display level	• Lean environment • Align with forecast & production • Realize CPFR through the whole Supply Chain
Project	• VISS Basis (Vendor information sharing system) - Collaborative Replenishment	• VISS Forecasting (Align with category management & promotion) - Collaborative forecasting	• VISS Planning (Enlarge & enforce real-time co-work) - Collaborative planning

Thank you