

Overview of case studies: Singapore



Case study: NTUC FairPrice
(March 2011)

Summary

- Example of application of the ISO methodology
 - NTUC FairPrice: Supermarket retailer
- Credits
 - SPRING Singapore Project team: Ms. Susan Chong, Director, Special Projects, Mr. Phua Kim-Chua, Head, Standards Division
 - Information Technology Standards Committee, Singapore: Ms. Ho Buaey Qui, Executive Secretary
 - Nanyang Technological University, Ms. Pauline Ping Ting Ting (MBA student), Mr. Preetesh Deora (MBA Student)
 - Mr. Reinhard Weissinger, ISO, Manager, Research, Education, and Strategy

The Company – 1

- NTUC FairPrice Co-operative Ltd was founded by the labour movement in Singapore in 1973
- Now: Singapore's largest supermarket retailer with more than 100 supermarket and hypermarkets, and a share of over 50% of the market
- Sales in 2010: Over SGD 2.2 billion, net profits: over SGD 130 mill.
- Over 7'000 employees
- Motto: «Service from the Heart» with a corporate vision: «To be Singapore's Leading World-Class Retailer with a Heart»

The Company – 2

- Key business functions of NTUC FairPrice are: Procurement, Warehousing/Distribution, Retail.
- Other functions include Finance, Information Systems, Human Resources
- NTUC Fairprice's primary distribution/warehousing system are:
 - a wholly owned Fresh Food Distribution Centre and
 - a centralized warehousing and distribution company, Grocery Logistics of Singapore Pte Ltd

Attitude towards standardization

*‘As a trusted supermarket retailer in Singapore serving our customers for more than 30 years, **maintaining high quality standards and adopting best international practices** are integral to FairPrice's promise to deliver quality products at best value and service to our customers.*

*To be able to **measure and quantify how our adoption of standards has helped our organisation and our customers is invaluable** as it helps us to clearly identify areas that we have done well, areas that we can further improve upon and to also identify gaps that we need to bridge.*

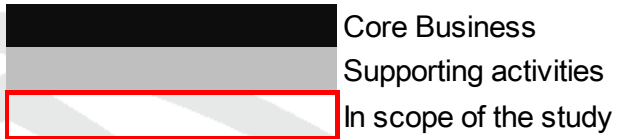
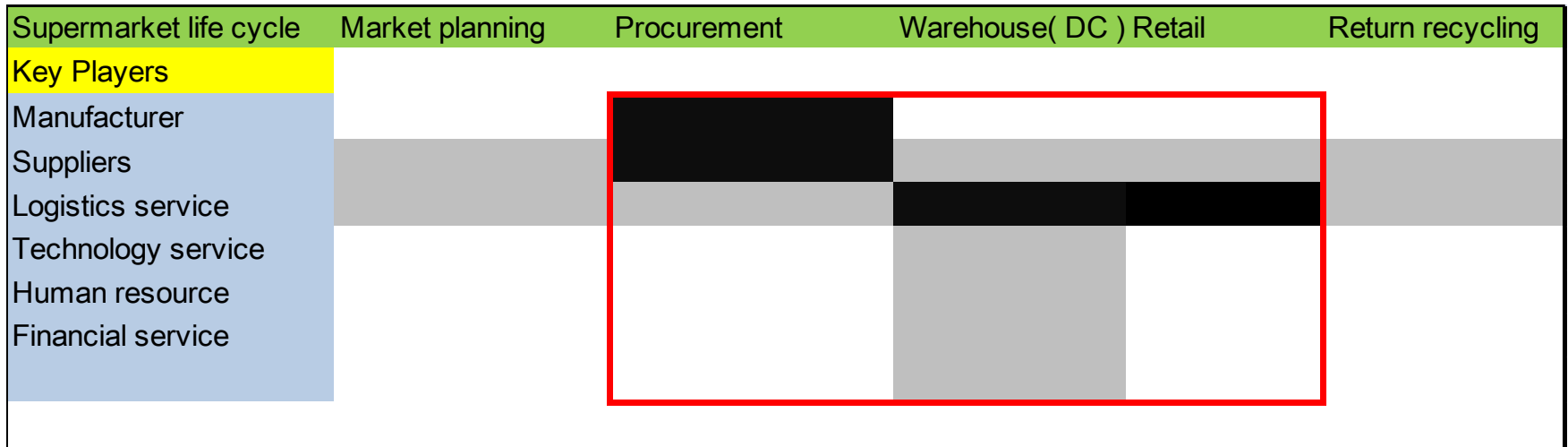
*Similar to how we conduct surveys and gather feedback to further improve our service offerings to customers, **the ISO Pilot project gives us the tools to measure how our implementation of standards have impacted our organisation as a whole.**“*

Mr Gerry Lee, MD (Business Groups) NTUC FairPrice

Attitude towards standardization

- NTUC FairPrice is a strong believer in standards and has been involved in the development and the implementation of standards in Singapore for more than 10 years
- It is certified against HACCP (Hazard Analysis and Critical Control Points) and ISO 9001: 2008
- It has won several awards in recent years in the fields of food safety, customer satisfaction, most trusted brands, green business practices

Value Chain



Source: <http://www.slideshare.net/smebro/wal-mart-value-chain-analysis-by-sandro>

Scope of the assessment

Business functions: Key Value Chain Components

1. Procurement

- Central Procurement Division

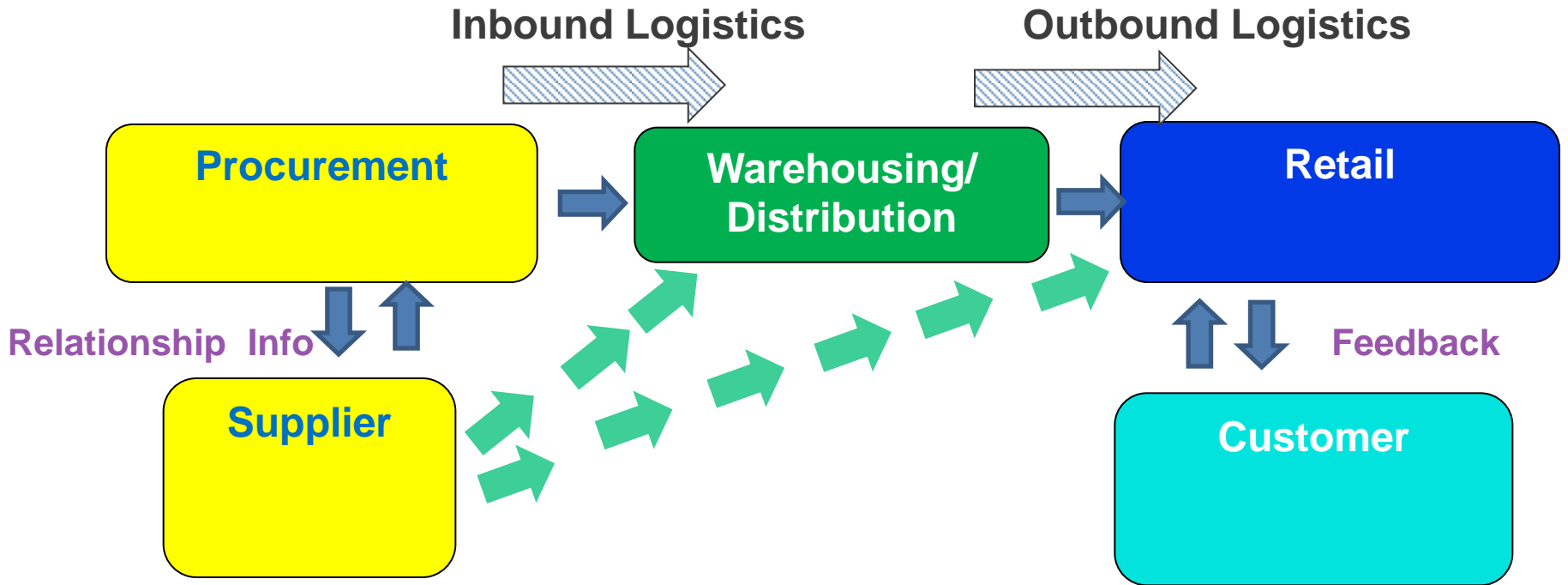
2. Distribution –Inbound & Outbound Logistics

- Grocery Logistics of Singapore (GLS)
- Fresh Food Distribution Centre (FFDC)

3. Food Retail Outlets

- Fairprice Supermarkets
- Fairprice Finest
- Fairprice Xtra (Hypermarket)

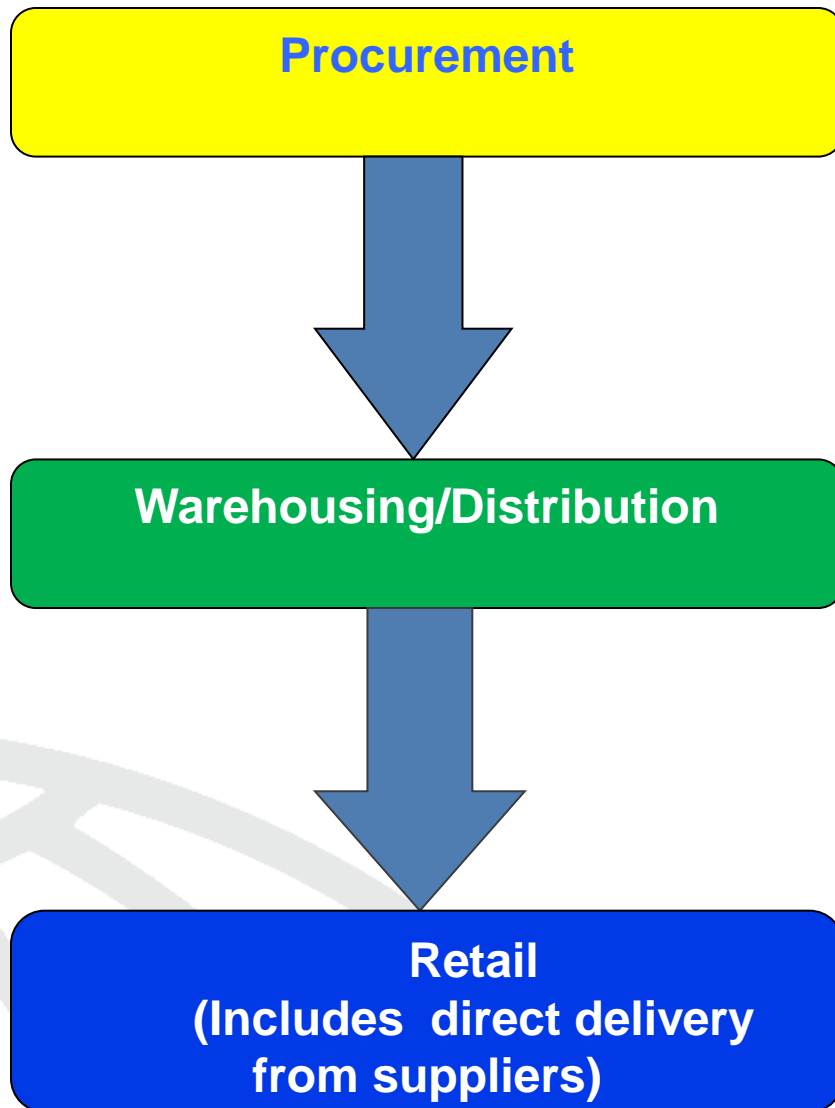
Process Flow



Key standards applied by NTUC

1. Cold Chain Management - Chilled Pork
(TR 20 : 2005 followed by SS 552:2009)
2. Cold Chain Management - Milk and Dairy Products (TR 2 : 2000 followed by SS CP 95:2002)
3. Pallet Standard : ISO 6780:2003 and SS 334: 2010
4. Carton Barcode standards
 - ❖ Primary barcodes
 - 1) EAN 13
 - 2) ISO/IEC 16390: 2007 (or ITF i2of5)
 - 3) ITF-14

Business Functions and related standards



Suppliers of milk, dairy & chilled pork to comply to following standards :

- Cold chain management for milk and dairy
- Cold chain management for chilled pork

Standards required for suppliers to :

•Fresh Food Distribution Centre

- Cold chain management for milk and dairy (butter & cheese only)
- Standard Pallet (local suppliers)
- Carton Barcode standards

•Central Warehouse/Distribution Centre

- Standard Pallet (local suppliers)
- Carton Barcode standards

Standards required for direct delivery :

- Cold chain management for milk and dairy
- Cold chain management for chilled pork

Warehousing and Distribution



Receive supplies from suppliers

- 95% of supplies come on pallets in trucks
- About 1800 pallets (about 60000 cartons) per day are received at GLS
- Receiving is done on dedicated area called "receiving bays"
- In case of non-conformance of suppliers to the cold chain management standard, the case is resolved and reported to Procurement

Checking and arranging pallets in warehouse

- Dedicated staff at DC check the quantity of pallets/ cartons
- Arrange pallets in the warehouse- dedicated space / location for each product category and brand

Inventory management and Storing of stocks

- At FFDC, several quality measures are put in place such as temperature control and humidity control to ensure quality, safety and freshness of food products
- At GLS, the DC is kept at normal room temperature as it deals with non-perishable goods

Prepare and ship orders to retail stores

- Orders are received through IT system
- Orders are prepared and shipped on every day basis
- Use of trucks and roll cages to delivery orders to individual retail stores

Estimated Savings from Standards

Summary of impact of Standards across different Business Functions at NTUC FairPrice

In SGD

Standard	Procurement	Distribution Centre		Retail	Total
		Grocery Logistics of Singapore (GLS)	Fresh Food Distribution Centre (FFDC)		
Cold Chain Std. Milk & Dairy	7,613	-	31,613	102,451	141,677
Cold Chain Std. Chilled Pork	18,935	-	-	622,704	641,639
Standard Pallet	-	713,600	-	-	713,600
Carton Barcode	-	3,064,551	-	-	3,064,551
TOTAL	26,548	3,778,151	31,613	815,156	4,516,467

Key Impact on Warehouse/Distribution Function

Impact of Standard Pallet & Carton Barcode Standards on Processes

- Increase in Productivity
 - Manual handling of goods by Fairprice replaced by forklifts
 - No more purchase, sorting , storage & maintenance of pallets
 - With automated sortation for 60% of throughput, QC activities increased
- Lower operational costs
 - Lower no of stock takes needed with improved accuracy
 - Lower no of assets to be purchased for moving pallets
 - Less processing of damaged goods with reduction in damage cases

Impact of CC Milk & Dairy on butter & cheese handled by FFDC

- Better handling along supply chain to retail leading to
 - Less returns handled from FFDC and Retail Outlets
 - Less handling of customer return cases
 - Less processing of product write offs

Key Outcomes from Standards for Warehousing/Distribution Process

Warehouse/Distribution Manpower maintained despite 50% increase in number of retail outlets served

Optimised number of Goods Delivery Bays and Warehouse/Distribution space in land scarce Singapore

Quality of butter and cheese maintained throughout supply chain contributing to growth of fresh specialty foods and development of new target markets

Benefits from Standards by Function

Distribution Centre (SGD 3.8m)

1.
Annual
Benefits
- Carton
Barcode

Operational efficiency

Accuracy increased from 85% to 97%

Order fulfilment lead time improved by 38%(9 hrs) from 24 hrs for 65 stores to 15 hrs for 98 stores in 2009

Staff productivity improved 50% with the introduction of carton barcode and later, by another 50% with the automated sortation system

Manpower

Manpower savings of 50 men to handle same volume of cartons as automated sortation system

83% reduction in manpower(4400) required for stocktaking which has been reduced from 3 to 4 a year to 1 per year with increased accuracies

Benefits from Standards by Function

Distribution Centre

1.
Annual
Benefits-
Carton
Barcode

Asset
Utilisation

18% reduction in leasing costs for space to handle the same volume of cartons if there is no automated sortation system

58% reduction in cost of PED Fork Lifts & 35% reduction in cost of Reach Trucks

Operational
Cost
Reduction

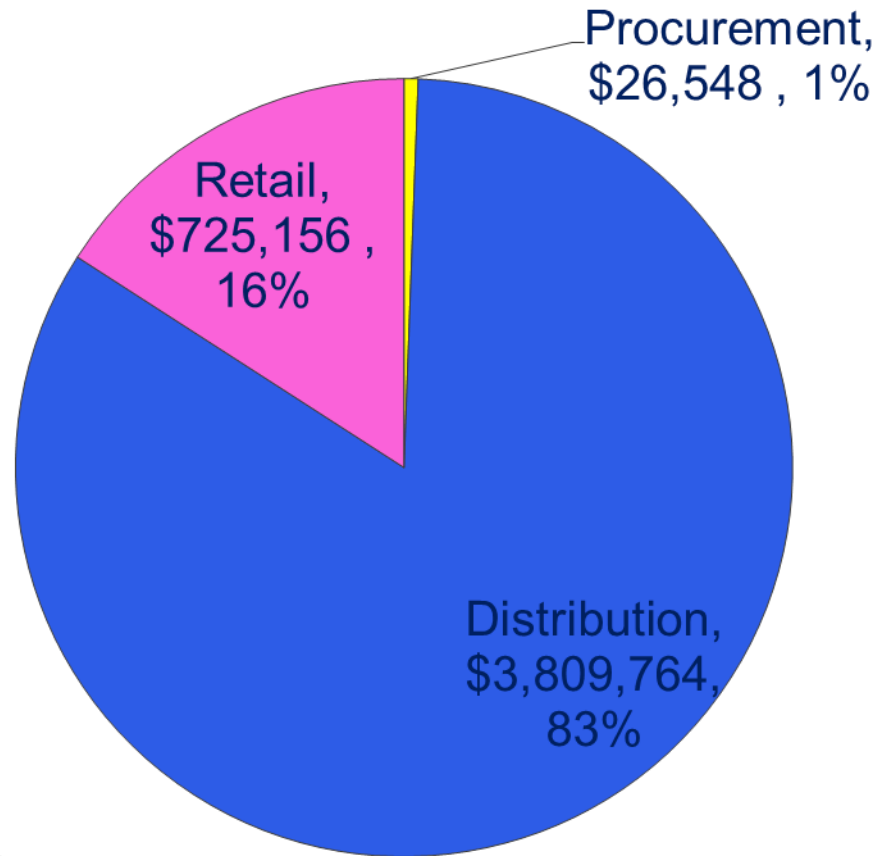
No of incidents of damage decreased from 100 incidents per week to 20 incidents per week resulting in 87% reduction in the damage rate per week and a reduction of 2 headcounts handling damage incidents

Benefits from Standards by Function

Distribution Centre

2. Annual Benefits - standard pallet	Operational efficiency from standard pallet	77% reduction in manhours (42,240) on checking, receiving and arranging supplies on pallets 50% reduction in manhours(4,224) used for sorting pallets 50% reduction in manhours (422) due to better information transfer
	Improved asset utilisation	77% reduction in no. of receiving bays 31% reduction in cost of pallets owned 5 figure reduction in cost of warehouse space used to store pallets
3. Annual Benefits - CC Milk & Dairy (Butter & Cheese) at FFDC	Improvement in Operational efficiency:	88% reduction in non conformance cases 92% reduction in customer return cases
	Cost reduction	5 figure reduction in write off cost of products

Annual Benefits by Function (Assuming all standards implemented at same time)



GLS = Grocery Logistics Singapore

Overall Annual Benefits from Standards

1. SGD 4.5m benefits derived from the implementation of the 4 standards

2. Annual benefits ranged from SGD142 k to SGD 3.1m

3. Annual benefits from

- carton bar code standards at SGD 3.1 m
- standard pallet at SGD 714 k
- milk and dairy at SGD 142 k
- chilled pork at SGD 642 k

4. Cold Chain Management Standards assisted growth in revenue from

- Chilled pork - revenue grew by 22% from 2005 to 2009
- Milk and dairy – revenue doubled from 2003 to 2009.

5. Benefits from cold chain management standards were mainly health and safety benefits & contributed to the more than double revenue growth of fresh foods from 2003 till 2009

**Thank you in particular to the ISO staff
facilitating the pilot**

Mr Reinhard Weissinger

ISO Manager
Research, Education, and Strategy

Dr Daniele Gerundino

ISO Strategic Adviser
to the Secretary-General

Thank you for your attention!



<http://www.iso.org>

REFERENCE SLIDES

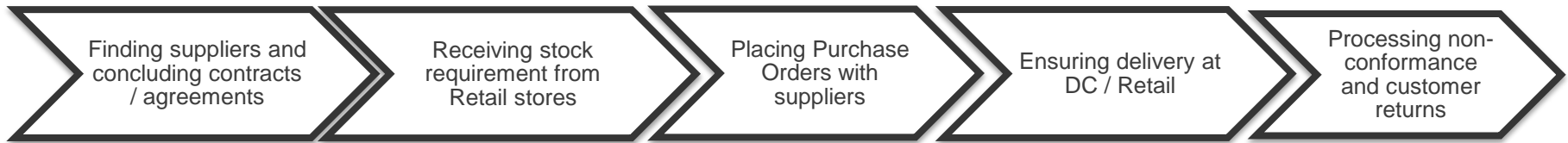


Key value drivers for NTUC

- 1) Quality of Product and Process
- 2) Quality and Safety Compliance
- 3) Partnership with suppliers
- 4) Efficiency of Process
- 5) Efficiency of Asset Utilisation
- 6) Sales effectiveness

Procurement

Milk and Dairy & Chilled Pork



- Suppliers need to meet several product-specific quality requirements
- Limited number of suppliers for each product category depending on various market factors

- IT enabled
- Stock requirement received from DC also on basis of their inventory management systems- when stocks reach re-order level

- IT enabled
- Use of SAP to track purchases and invoices and corresponding payments

- Perishable products such as chilled pork and milk and yoghurt delivered directly at stores
- Other products such as butter and cheese and non-perishables are delivered at DC

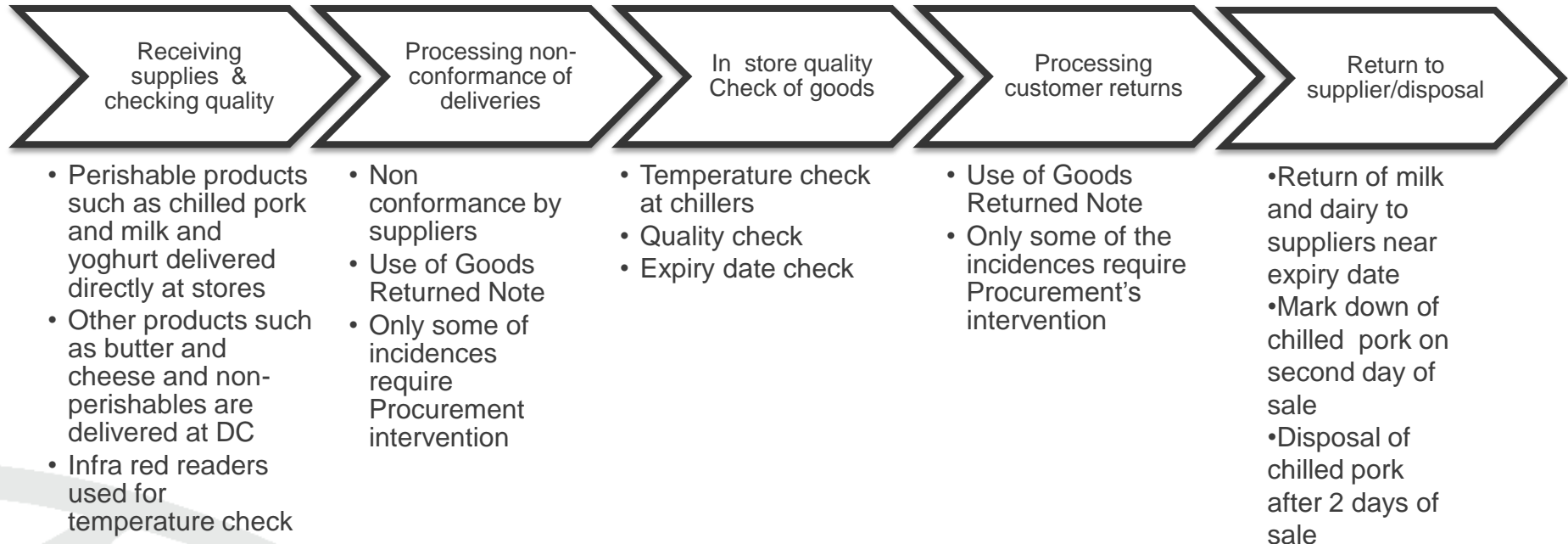
- Non conformance by suppliers
- Customer Returns at Retail stores
- Use of Goods Returned Note
- Only some of the incidences require Procurement's intervention

Benefits from Standards by Function-Procurement

1. Annual Savings as a percentage of the annual buyer's cost:
 - a) 53% through both CC Milk and Dairy and CC Pork with 38% through CC Pork
2. Total Procurement savings over 5 year period for both standards is more than twice procurement manpower costs
3. Annual Efficiency improvements ranged from 50% to 92% :
 - 1) Supplier communications improved by 50% (422 man hours for chilled pork & milk and dairy)
 - 2) Contracting for chilled pork improved by 92% (576 man hours)
 - 3) Quality improved with reduction of customer returns(90 man hours for chilled pork and milk & dairy) and non conformance cases (67 hours for chilled pork and milk & dairy) received from supplier by 75 % to 85%

Retail

Milk and Dairy & Chilled Pork



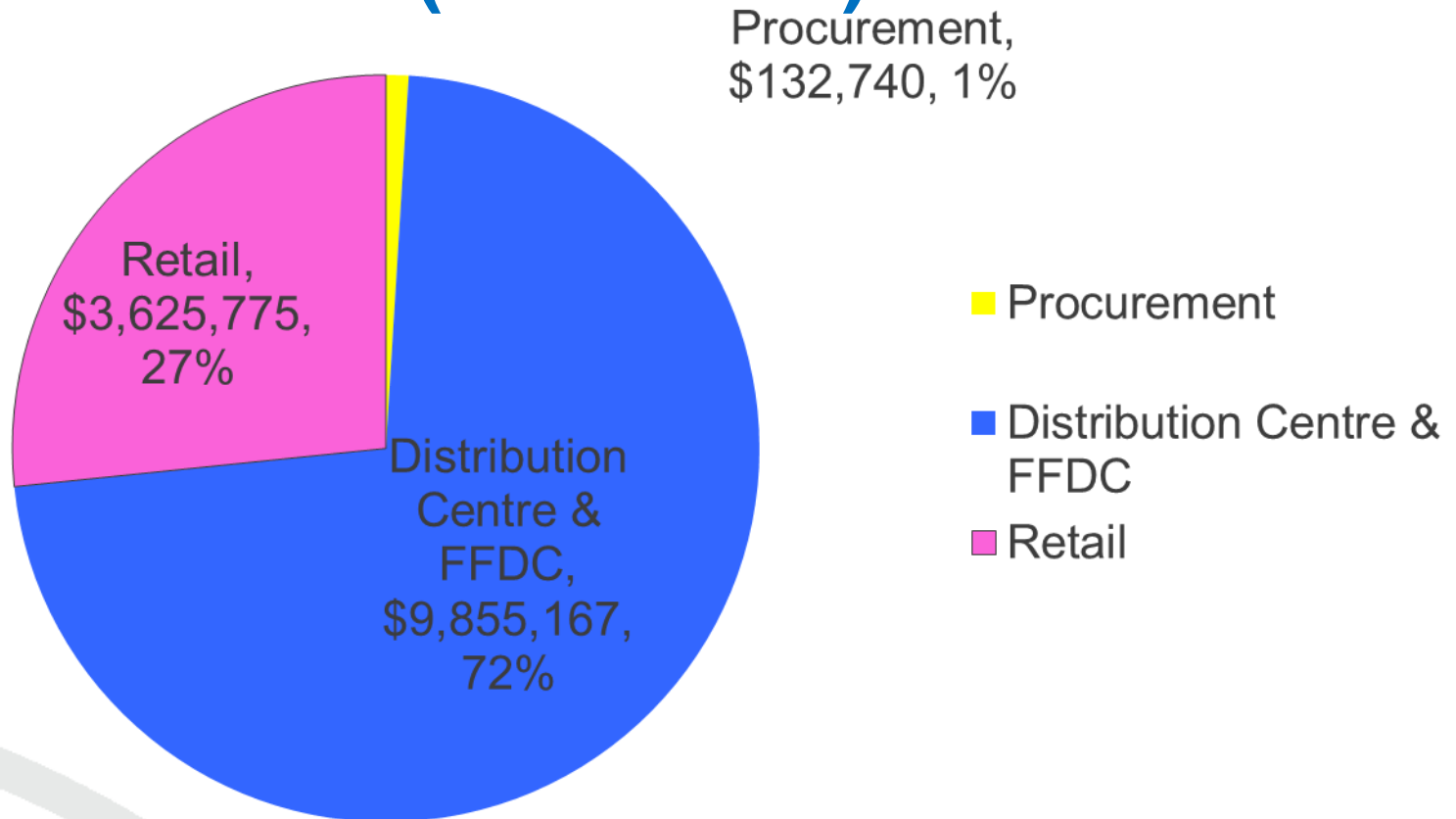
Benefits from Standards by Function- Retail

1. **Company brand image improved with Increased sales, improved customer satisfaction plus product & service quality**
2. **Increased variety of milk and dairy products especially specialty foods**
3. **Increased no of sources of overseas chilled pork suppliers**
4. **Standardized refrigerating equipment optimized retail space for milk and dairy products**
5. **Increased efficiency**
 - a) Reduced man hours for quality checking(33%)
 - b) Reduced time spent on receiving supplies(50%)
 - c) Reduced time spent on disposing pork(50%)
6. **Reduced operational cost**
 - a) Reduced cost of goods returned for milk & dairy(50%)
 - b) Reduced cost of pork disposed (33%)
7. **Increased shelf life of products with assured safety**
 - a) 7 more days for milk & dairy(50% more)
 - b) 1 more day for chilled pork(100% more)
8. **Higher quality**
 - a) Reduced no. of non conformance cases(78% -99%)
 - b) Reduced no. of customer return cases(67%)

Cumulative Benefits by Business Function (1999-2009)

Year of implementation in FairPrice	Savings from standards over time (annual averages calculated over a 5-year period)			TOTAL (per year)
	Procurement	Distribution Centre	Retail	
1999		713,600		713,600
2000	7,613	713,600+31,613	102,451	855,277
2001	7,613	713,600+31,613	102,451	855,277
2002	7,613	713,600+31,613	102,451	855,277
2003	7,613	713,600+31,613	102,451	855,277
2004	7,613	31,613	102,451	141,677
2005	18,935		622,704	641,639
2006	18,935		622,704	641,639
2007	18,935		622,704	641,639
2008	18,935	3,064,551	622,704	3,706,190
2009	18,935	3,064,551	622,704	3,706,190
Total	132,740	9,855,167	3,625,775	13,613,682

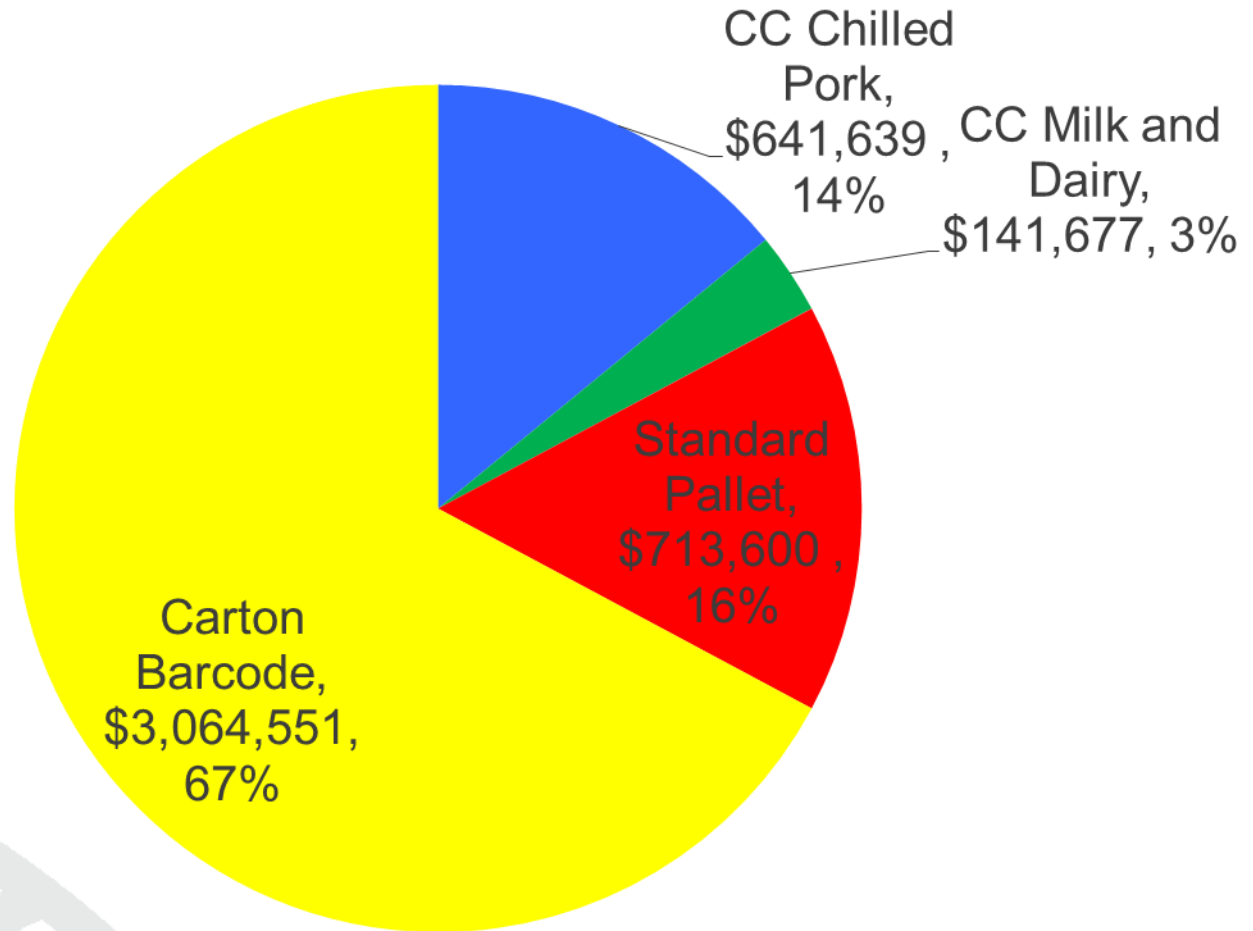
Cumulative Benefits by Business Function (1999-2009)



FFDC = Fresh Food Distribution Center



Annual Benefits by Standard



CC = Cold Chain