

***SCM 4 ECR SYMPOSIUM 2011***

***Self-scan checkouts and the  
impact of shrinkage in consumer  
goods supply chain***

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- ▶ Shrinkage and its causes
- ▶ The financial effects of shrinkage in present
- ▶ Policies and strategies for dealing with shrinkage
- ▶ Experiences and Practices: New technologies used in self-scan checkouts

# **The cause of shrinkage**

*Introduction to shrinkage*



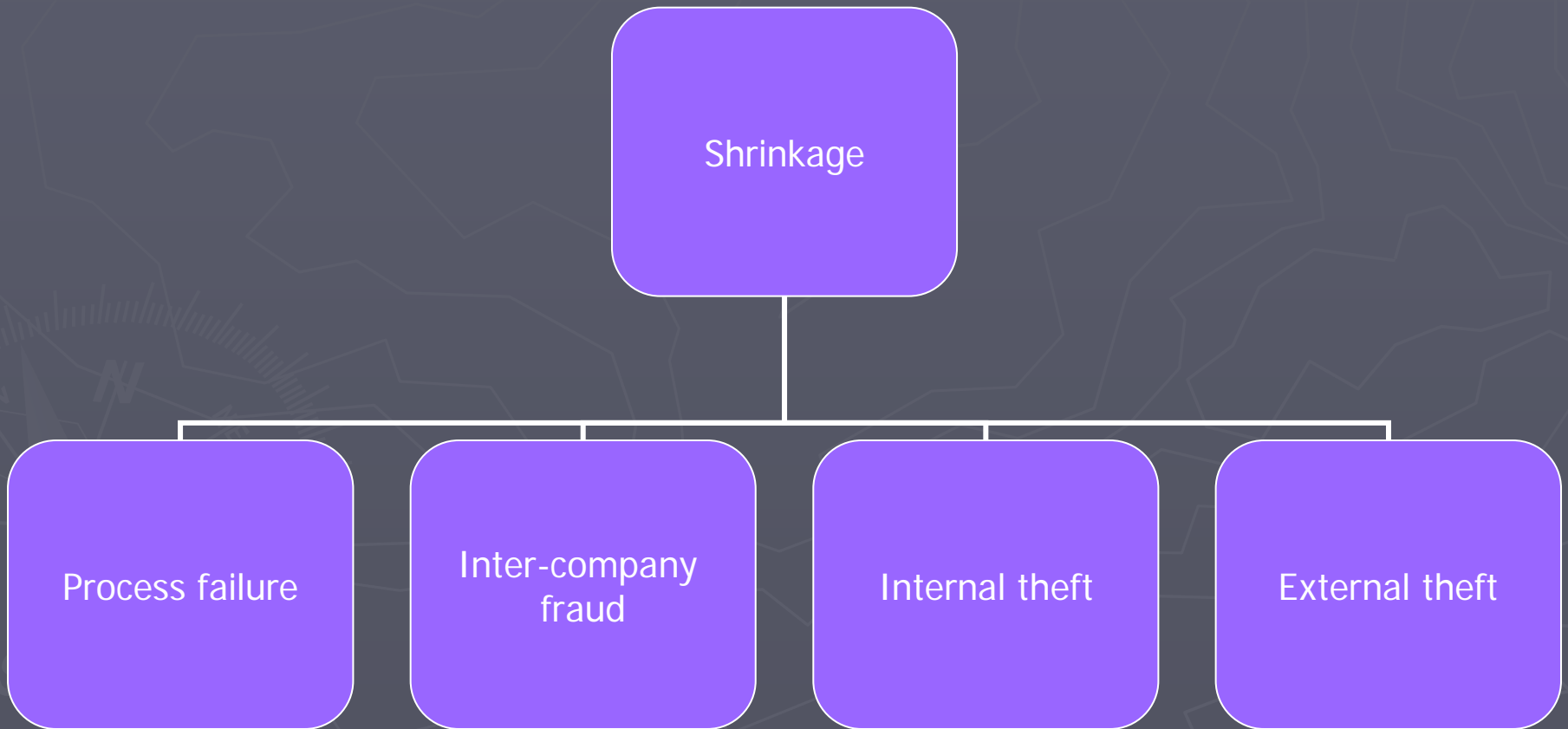
# What is shrinkage?

*“A reduction in inventory due to shoplifting, employee theft, paperwork errors and supplier fraud.”*

# Causes of shrinkage

- ▶ Damage in transit or in the store.
- ▶ Administrative errors such as shipping errors, warehouse discrepancies, and misplaced goods.
- ▶ Cashier or price-check errors in the customer's favor.
- ▶ Vendor fraud.
- ▶ Perishable goods not sold within their self life.

# Where occur shrinkage?



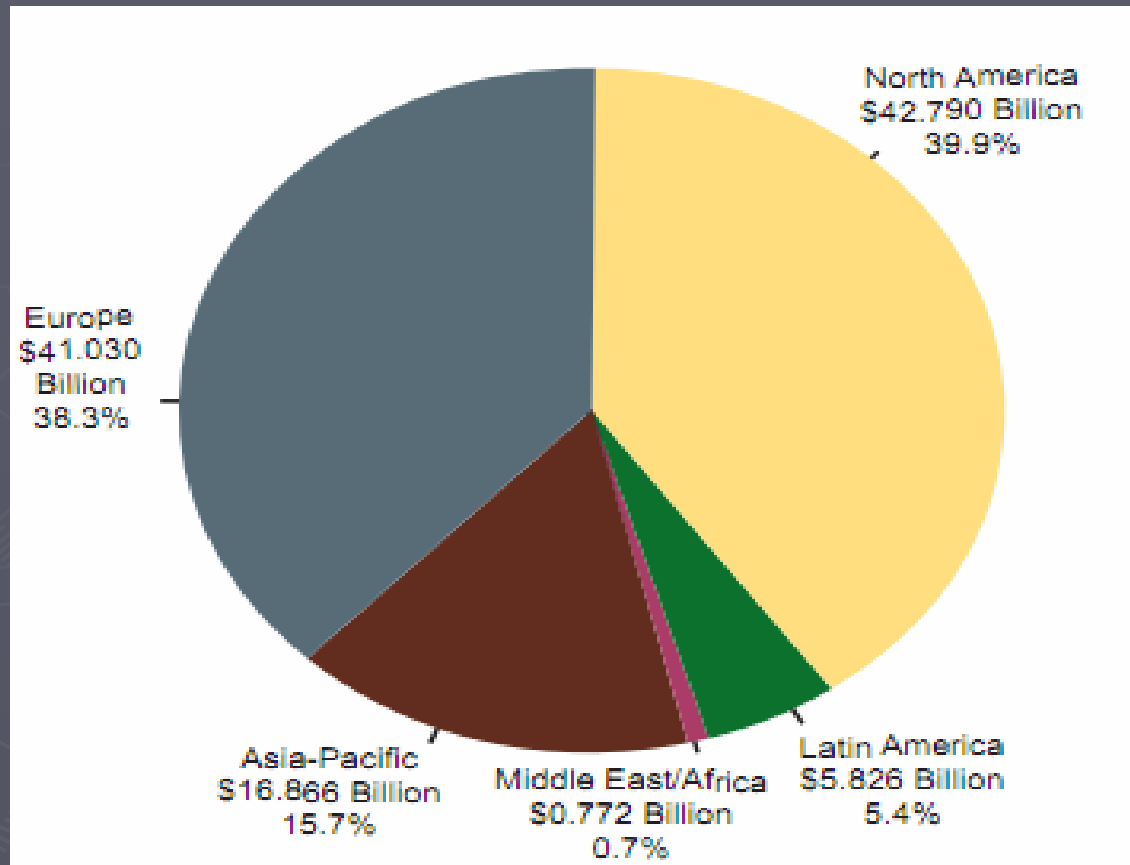
# **The financial effects of shrinkage in present**



# The financial effects of shrinkage in 2010

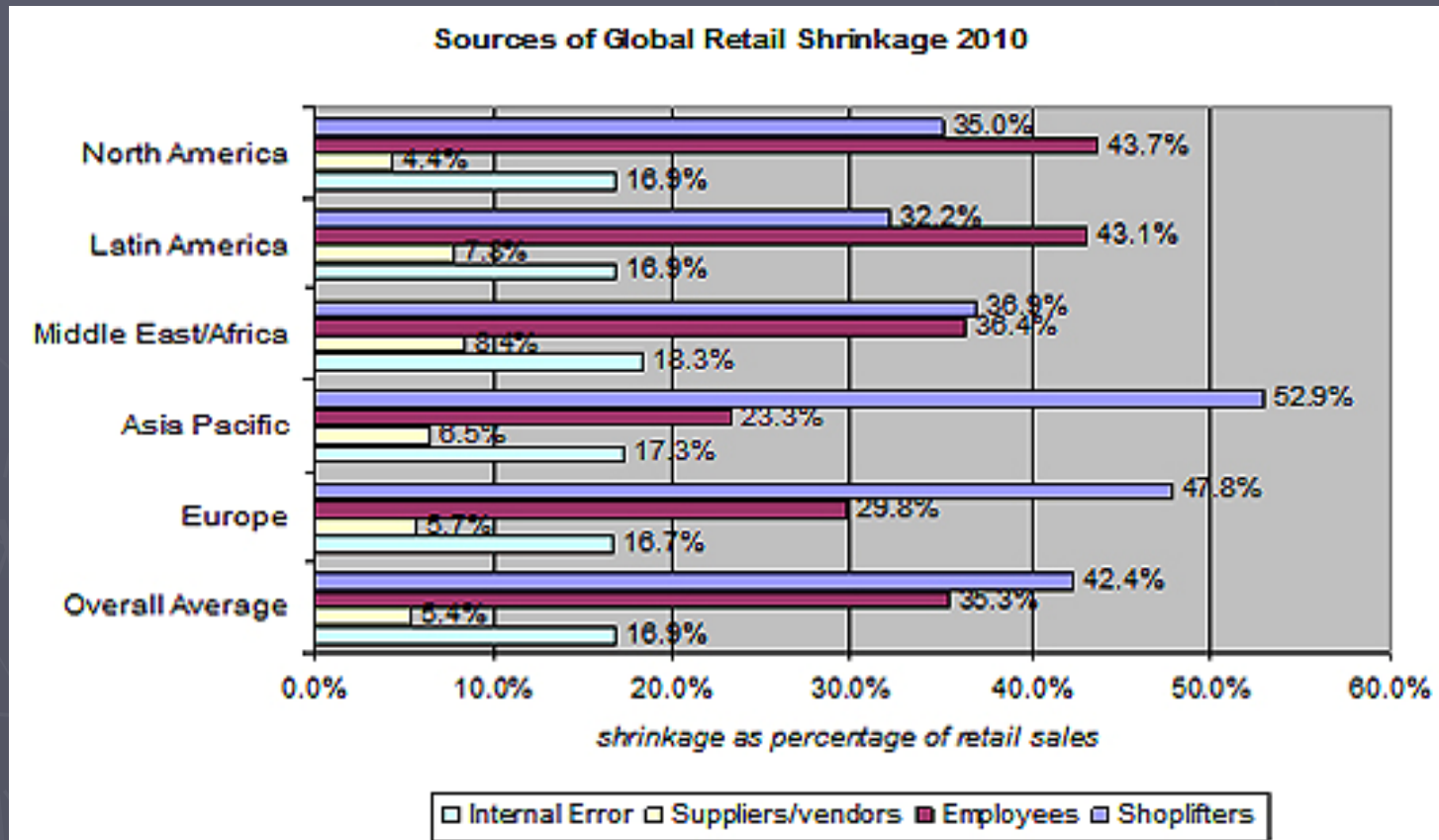
- ▶ Annual global losses:
  - \$107.284 billion
- ▶ Annual losses in USA:
  - \$48.616 billion
- ▶ Annual losses in EUROPE:
  - \$41.03 billion

# Retail Shrinkage 2010 By Region (US \$ billions)



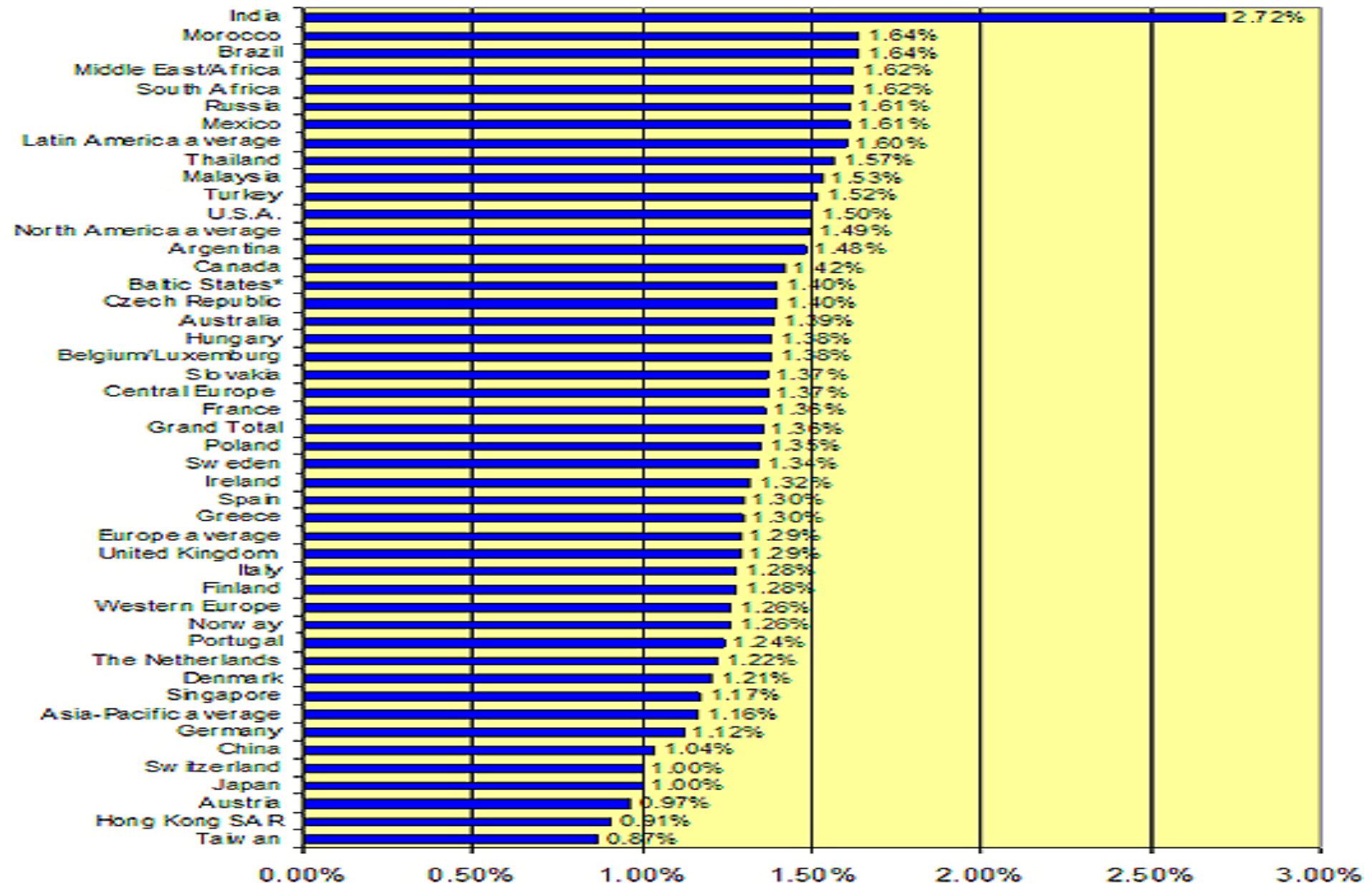
*Source: The Global Retail Theft Barometer 2010*

# Retail Shrinkage 2010 By Region (US \$ billions)




*Source: The Global Retail Theft Barometer 2010*

## Shrinkage Rates 2010 by Country as Percentage of Retail Sales



as percentage of retail sales Source: The Global Retail Theft Barometer 2010

# **Policies and strategies for dealing with shrinkage**

The background of the slide is a dark blue-grey color. On the left side, there is a faint, light-colored graphic of a compass rose with a needle pointing towards the top-left. To the right of the compass, there are faint, light-colored lines representing a topographic map or contour lines.

# Policies and strategies for dealing with shrinkage

- ▶ Receiving
- ▶ Backroom Stock Control & Rotation
- ▶ Controlling Known Loss
- ▶ Pricing Management
- ▶ Management of Physical Inventory

# Strategic Level Factors

- ▶ Establishing Senior Management Commitment
- ▶ Ensuring Organizational Ownership
- ▶ Embedding Loss Prevention
- ▶ Providing Strong Leadership
- ▶ Generating Barometer Management
- ▶ Prioritizing People
- ▶ Prioritizing Innovation and Experimentation

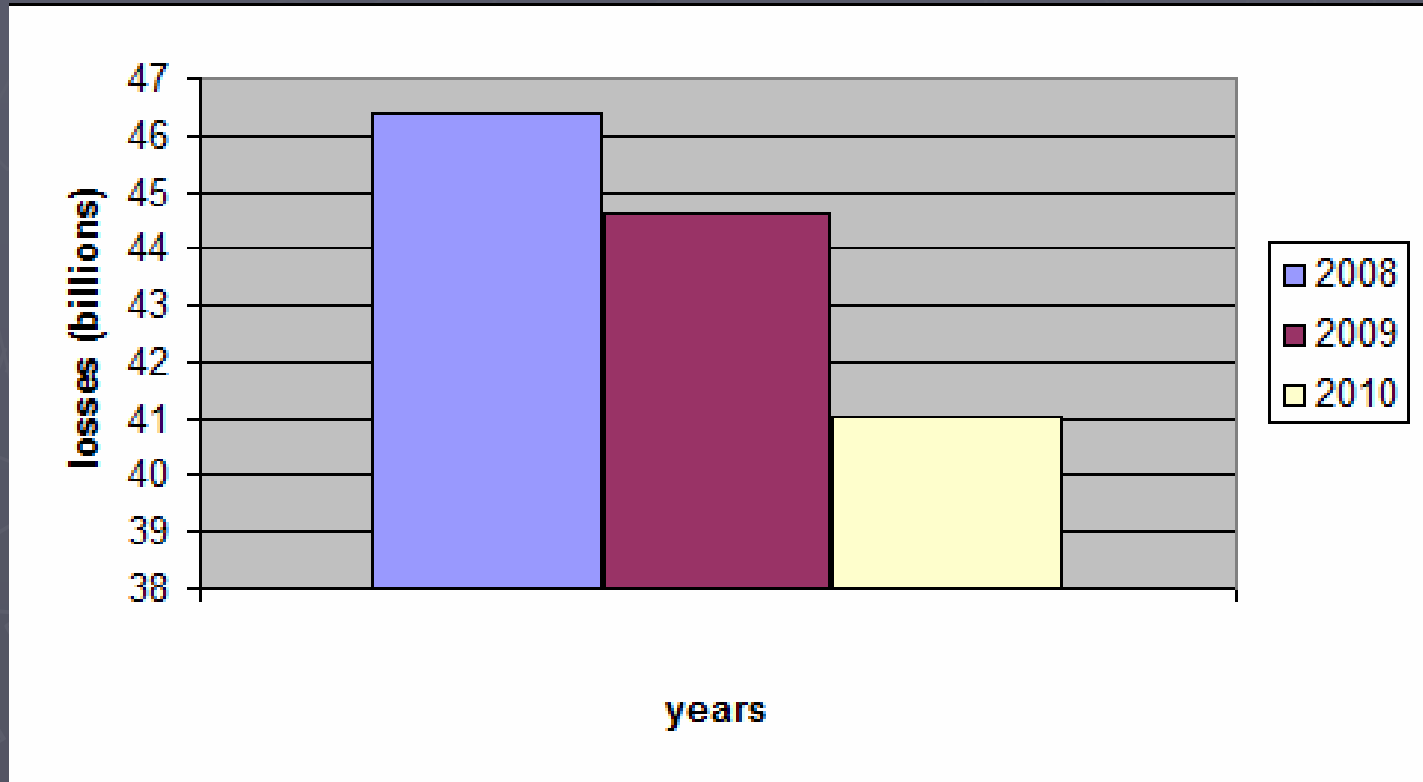


# **Experiences and Practices: New technologies used in self-scan checkouts**

# Create Store Management Responsibility

- ▶ Provide the tools and the data
- ▶ Give them training and stability
- ▶ Incentives
- ▶ Listen to them
- ▶ Make them accountable

# Evolution of shrinkage in the last years in Europe (billions)



*Source: The Global Retail Theft Barometer 2010*

# **New technologies used in self-scan checkouts**

- ▶ Return on Investment Retail Survey
- ▶ Closed Circuit Television
- ▶ Electronic Article Surveillance
- ▶ Data Mining
- ▶ Developing Direct and Indirect Measures of Value
- ▶ **Self-scan checkouts**

# Return on Investment Retail Survey

## Example Worksheet – source ECR Europe

Cost of Intervention	€ 300,000
Number of Stores	4
Expected Impact on Sales	1.5%
Current Rate of Shrinkage	3%
Proposed Shrinkage Saving (%)	20
Discount Factor (DF)	12%
Expected Sales Growth	2%

### Present Value Table (12% DF)

Year 1	0.893
Year 2	0.797
Year 3	0.712
Year 4	0.636
Year 5	0.567

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Store Sales	€ 10,000,000	€ 10,350,000	€ 10,712,250	11,087,179	€ 11,475,230	
Original Cost of Shrinkage	€ 300,000	€ 310,500	€ 321,368	€ 332,615	€ 344,257	
New Cost of Shrinkage	€ 240,000	€ 248,400	€ 257,094	€ 266,092	€ 275,406	
Shrinkage Saving	€ 60,000	€ 62,100	€ 64,274	€ 66,523	€ 68,851	€ 321,748
Additional Profit Improvement	€ 37,500	€ 38,813	€ 40,171	€ 41,577	€ 43,032	€ 201,092
Maintenance/Running Costs	-€ 10,000	-€ 10,200	-€ 10,404	-€ 10,612	-€ 10,824	-€ 52,040
Return on Investment						57%
Net Savings Before Tax	€ 87,500	€ 90,713	€ 94,040	€ 97,488	€ 101,059	
Present Value Before Tax	€ 78,138	€ 72,298	€ 66,957	€ 62,002	€ 57,301	
Net Present Value Before Tax						€ 36,695
Discounted Payback Period Before Tax						4 Years 4 months
Internal Rate of Return						17%

# Electronic Article Surveillance

- ▶ CCTV
- ▶ The tag-and-alarm systems
- ▶ Data Mining

# Direct and Indirect Measurement of Interventions

Measurement		Intervention		
		CCTV	EAS	Data Mining
Direct	Security	✓	✓	✓
Indirect	Safety	✓		
	Compliance	✓		✓

**Source: ECR Europe**

# Self-scan checkouts

## *Evolution of Self Service:*

- ▶ Service has evolved in to self service:
  - Service counters have evolved into check-outs
  - Check-outs have become self check-out

# DECISION TO OFFEND

Expected  
Punishment

Risk of  
Detection

Ease of  
Offending

Perceived  
Reward

Frustration  
Factor

Creating a Zone of Control

Surveillance

Design

**People:**  
Supervisors; Guards

**Technologies:**  
CCTV; Tills

Channelling; Visibility  
Podium Placement;  
Exit Control

Proximity

**Distractions and Firefighting**  
Number of: Alarms; Alerts; Checkouts;  
Customers; Errors

Vigilance

Deviancy  
Identification

Training

Reluctant/Justified' Offender

# Impact of self-scanning checkouts

- ▶ Self checkout reduces required total surface check out area
- ▶ Self checkout increase total investment check out area
- ▶ Self-scan possibly reduces labor cost in check out area
- ▶ Self-scan possibly increases shrinkage
- ▶ Self-scan reduces total cash in store operation
- ▶ Increased turnover through self-scan not quantifiable

# *Conclusions*

- ▶ Surveillance can be achieved through technologies – CCTV, till-based alerts and prompts and public view monitors.
- ▶ The impact of self-scan checkouts on the use of security devices.
- ▶ Customer's choice between traditional check out and self scan.