
Shrinkage: Introducing a Collaborative Approach to Reducing Stock Loss in the Supply Chain

Acknowledgements

The European shrinkage project was launched in September 1999 and since this time many retailers and manufacturers have contributed towards the development of this report. The time and work given freely by these companies has ensured that the findings are representative of the European Fast Moving Consumer Goods sector (FMCG) and thus they provide the reader with an insight to the problems of stock loss we face as an industry. More importantly though, the work of this group has generated a 'road map' for delivering a collaborative, systematic and systemic approach to finding new solutions to today's problems of stock loss. We would therefore like to thank the following organisations and people for their contribution.

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Introduction

The aim of the ECR Europe shrinkage project was to identify the scale and extent of stock loss in the FMCG sector, and develop a joint vision on how retailers, manufacturers and distributors could work together to reduce the problem of shrinkage.

In recognition of the complex nature of the stock loss problem, two academic organisations were selected to manage the research programme. The University of Leicester was chosen for their expertise in the area of security and retail crime while the Cranfield School of Management was chosen for their specialism in the field of supply chain management and logistics. Working together these two groups of experts have combined their knowledge to bring fresh thinking to the FMCG sector in an effort to achieve a coherent and comprehensive approach to tackling stock loss. This study breaks much new ground and can claim to be the first ever pan-European study of stock loss in the FMCG supply chain.

This report is intended to be a concise document, focused on convincing the industry of the need for a more collaborative, systematic and systemic approach to reducing stock loss. It makes use of two earlier reports; the first dealing with the size and nature of the stock loss problem within the FMCG sector, and based upon a pan-European survey of retailers and manufacturers. The second, a rigorous review of 12 complete supply chains (from point of manufacture through to point of sale) analysing process problems and failures that exacerbate stock loss. The full findings from these two studies, which have been summarised for this report, have been produced by the University of Leicester and the Cranfield School of Management, and are available for purchase (an order form can be found on page 47 of this report).

If collaborative efforts are increased, the industry could start to reduce its losses significantly

Looking forward there is good reason to believe that if collaborative efforts are increased and solutions found which contribute to total systems efficiency throughout the supply chain, then the industry could start to reduce its losses significantly.

While the evidence shows that there are opportunities for increased internal collaboration in all areas of the supply chain, it is the collaborative efforts between retailers, distributors and manufacturers, working at reducing losses within retail stores, where the most impact on the headline stock loss number can be made. Together they need to identify improvements in a wide range of areas including: product design, packaging, administration, logistics, stock control, replenishment planning, stock room management, store layout, shelf design and people management. Getting it right will require teamwork, a structured approach and hard data on the extent and nature of the stock loss throughout the entire supply chain: a paradigm shift away from where the industry is today. But if this is done, then it will benefit all parties, not least the shopper, who will see greater availability and choice on the shelf. This in turn will increase sales and profits for both the retailer and manufacturer.

Getting it right will require teamwork, a structured approach and hard data on the extent and nature of the stock loss throughout the entire supply chain

Shrinkage: Counting the Cost



Shrinkage: Counting the Cost

The Fast Moving Consumer Goods Sector (FMCG) in Europe is big business with a combined market value of over €820 billion. The groundbreaking research carried out on behalf of ECR Europe shows that shrinkage is a major threat to the efficiency and effectiveness of the sector. In 2000, retailers lost €13.4 billion due to shrinkage, equating to 1.75% turnover or €258 million a week. Manufacturers are not immune from this problem and lost €4.6 billion, accounting for 0.56% of turnover or €89 million a week. Taken together, the FMCG sector is haemorrhaging €18 billion a year due to stock loss. In addition, retailers alone are spending €2.14 billion trying to tackle this problem. The impact on profitability is dramatic and retail profits could be 29% higher if companies reduced losses due to shrinkage by 50%¹.

The FMCG sector is losing €50 million a day due to shrinkage

excess of 20,000 SKUs. Research shows that all points of the logistical chain are vulnerable to loss not just the retail store. In 2000, €6.1 billion of stock was lost even before it made it to stores.

Figure 1 The Shrinkage Iceberg: Known and Unknown Loss

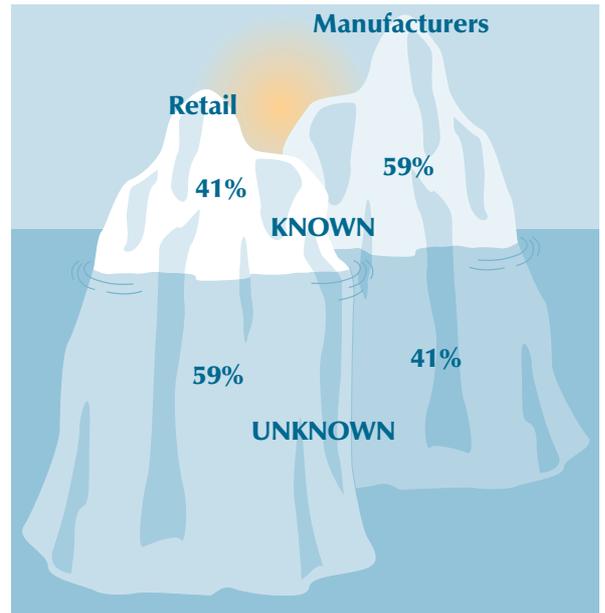


Table 1 Stock Loss in Europe

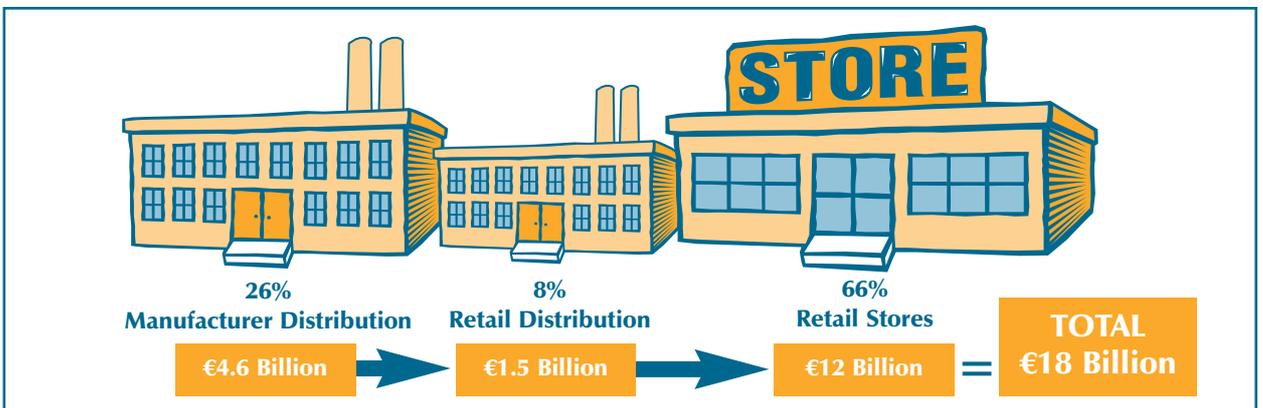
Sector	Loss as percentage of sales	Value (€ billions)
Retailers	1.75	13.4
Manufacturers	0.56	4.6
Total	2.31	18.0

The FMCG sector is highly complex with many manufacturers having logistical webs covering all of Europe, while some retailers have product ranges in

The Shrinkage Iceberg

Information on stock loss is shrouded in ignorance and hearsay. At best company information on this problem is partial and incomplete and at worst non-existent. Research carried out for ECR Europe found that most retail companies do not know where, how or when the majority of their losses occurred. Manufacturers can only boast a slightly better record although even they cannot account for over 40% of their losses. In 2000, retailers were unable to explain how €7.9 billion of stock was

Figure 2 Shrinkage in the European Fast Moving Consumer Goods Sector



1. Based upon data provided by ECR Europe on the average profit margin for retailers operating in the FMCG sector.

lost, while manufacturers were unable to pinpoint how €1.9 billion of their products ‘disappeared’. Taken together, the FMCG sector cannot account for nearly €10 billion of stock.

Gathering high quality data that is reliable, timely and complete needs to be a priority for any future stock loss reduction strategy. At the moment, while a number of companies regularly collect computerised information on process failures, very few keep track of all the shrinkage threats, in particular theft. If a problem is not recorded and analysed, it is highly unlikely that it will be understood or tackled effectively.

Retailers and manufacturers do not know where, how or when they lose €192 million a week

Causes of Shrinkage

Highlighting how stock is lost is a vital part of any effective stock loss reduction strategy – it can identify priorities and enable responses to be tailored to specific needs. The research showed

Figure 3 Causes of Stock Loss in the Retail Sector

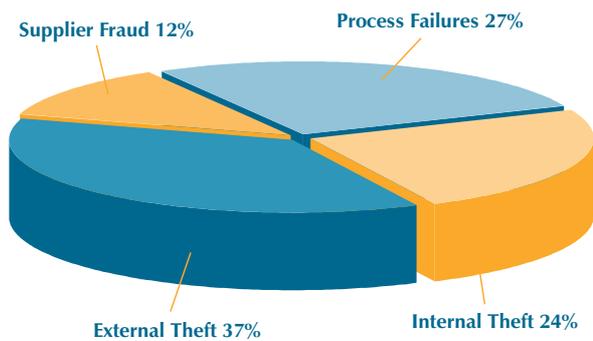
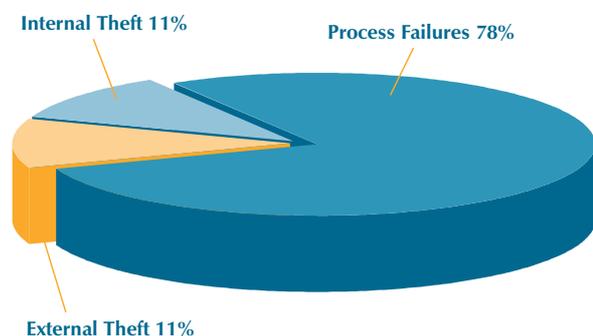


Figure 4 Causes of Stock Loss in the Manufacturing Sector



that for retailers, the biggest perceived threat came from theft – over €8 billion or over 60% of all stock loss was thought to be due to staff and ‘customers’ thieving from their organisations. Process failures were seen as the next major cause of shrinkage – €3.6 billion lost due to products being ‘misplaced’ in the supply chain, getting damaged or going out of date. For manufacturers, the biggest culprit was process failures with over three-quarters of all losses being seen as a consequence of this. For them theft was less of an issue although it still accounted for over €1 billion of loss in 2000.

Theft is thought to account for over €9 billion of loss in the FMCG sector

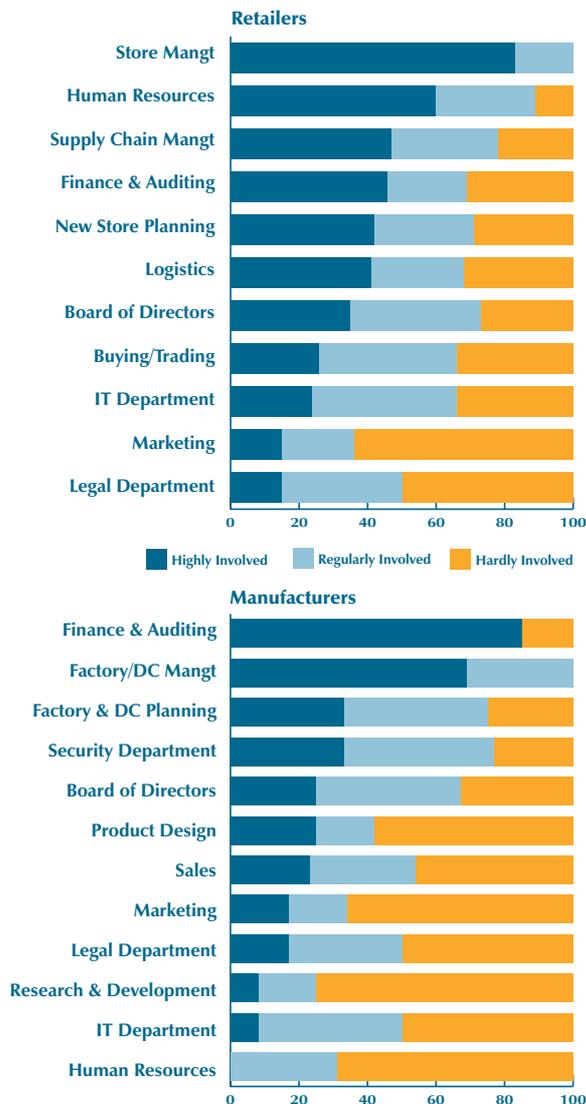
Lack of Co-operation

Shrinkage is a problem that transcends departmental and company boundaries – it is a common problem requiring shared solutions. The ECR Europe research showed a lack of co-operation not only within companies, but also between companies who are involved in the supply chain. For the most part retailers see stock loss as the exclusive responsibility of the security/loss prevention and audit departments, and store management, while manufacturers tend to put the onus upon the logistics team to deal with this problem. Few other departments are highly involved, with retailers rarely involving buyers, marketing, the IT department or indeed the Board of Directors. Similarly, manufacturers rarely make use of the research and development team, sales and marketing or human resources.

The picture is even gloomier when inter-company co-operation is considered. For retailers, the current climate is characterised by an emphasis on reactive collaboration with security providers and the police. Relatively few pointed to work with individual manufacturers or their representative organisations. Manufacturers were even more isolated with less than 1 in 3 working with individual retailers on issues of stock loss and most focusing their co-operative efforts on third party logistics service providers.

Few retailers and manufacturers are currently working together to deal with issues of shrinkage

Figure 5 Intra company co-operation for both retailers and manufacturers



manufacturers. It was also found that having the opportunity to report directly to the Board of Directors significantly improved the performance of these specialist teams.

Having specialist teams that report directly to the Board of Directors can significantly reduce losses from shrinkage

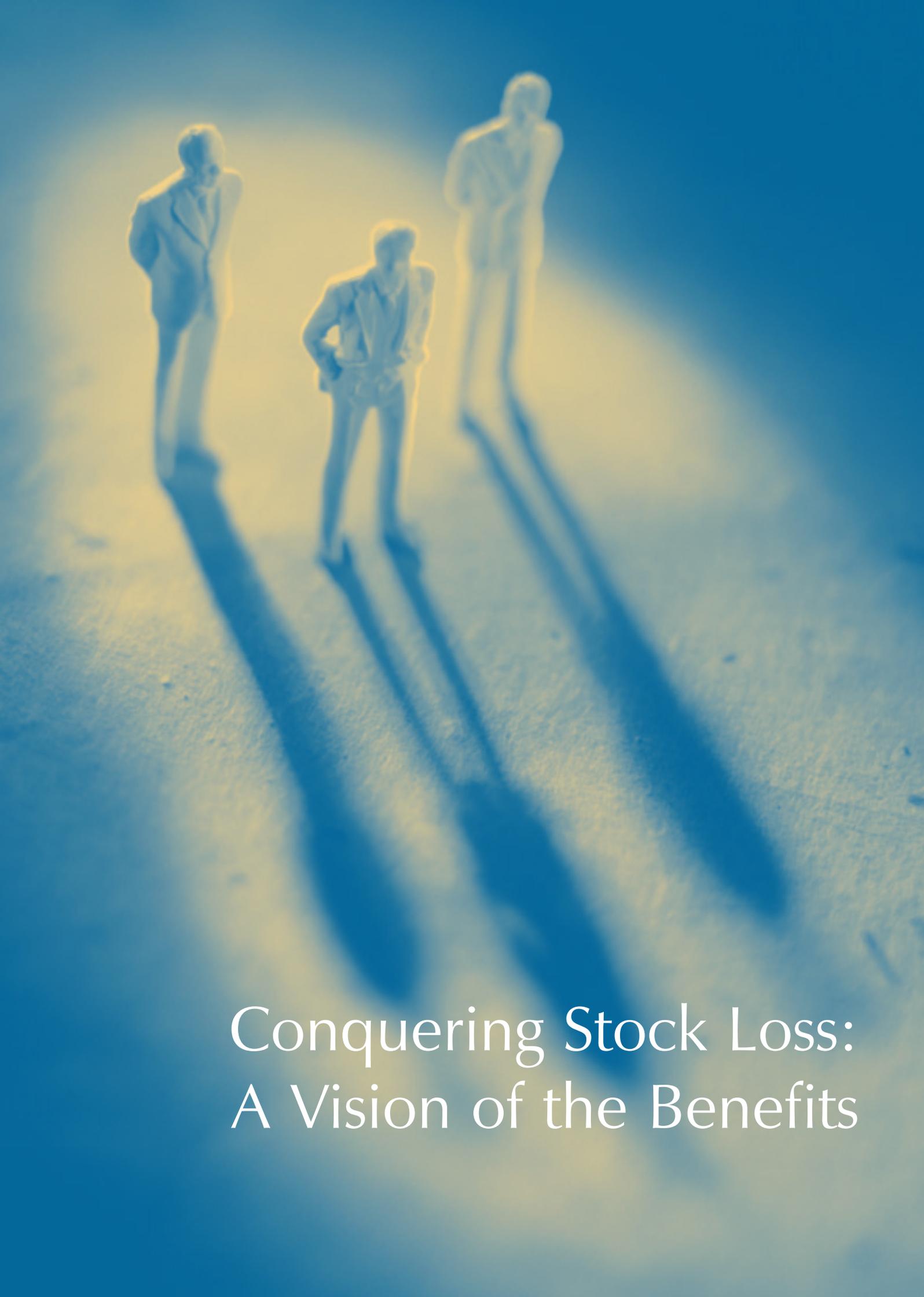
Time to Take Action

The research carried out for ECR Europe clearly shows that to date the FMCG sector has neglected the problem of shrinkage. It is a sector suffering enormous losses, lacking any detailed understanding of the extent and nature of the problem, with existing approaches tending to be ad hoc, piecemeal, partial and portrayed by poor levels of intra and inter company co-operation. It is time for the FMCG sector to take action to begin to tackle this problem through a systematic and co-ordinated approach. The consequence of not doing this is an ever-increasing bill for shrinkage, which currently stands at €18 billion per year.

Two additional reports are available giving more detailed findings from the research phase of this project. Please see Appendix 3 for further details and an order form.

Taking the Problem Seriously

More positively, the survey found that companies employing dedicated security/loss prevention departments and audit departments suffered much lower losses due to shrinkage. For those retailers with a security/loss prevention department, the level of stock loss was 27% lower. Similarly, manufacturers with such a specialist department also benefited from significantly lower levels of loss. The impact of dedicated audit departments was even more dramatic – retailers with such a function had losses 39% lower than those companies without such a department. Once again, this picture was mirrored in the data from



Conquering Stock Loss: A Vision of the Benefits

Conquering Stock Loss: A Vision of the Benefits

The future is bright for those companies able to solve their stock loss problem. By grasping the opportunity, they will develop considerable competitive advantage.

Europe’s €18 billion stock loss problem presents a substantial opportunity for performance improvement. Adopting available best practice has the potential to eliminate losses caused by both crime and poor process integrity. These improvements provide significant benefits for all the retail sector’s stakeholders including the consumer, retailers and manufacturers.

Companies will drive the delivery of these benefits on two fronts:

- Throughout their organisation
- Across the supply chain

Collaboration within a company provides the means to resolve problems beyond the scope of individual functions to solve. Likewise, collaboration between companies resolves communal problems beyond the scope of the separate companies to solve. The results of this work will be to:

- Design loss prevention solutions into the fabric of processes and facilities
- Ensure that these solutions effectively contribute to total supply chain efficiency, instead of solving a problem at one end of the chain only
- Implement simpler and cheaper controls to minimise loss

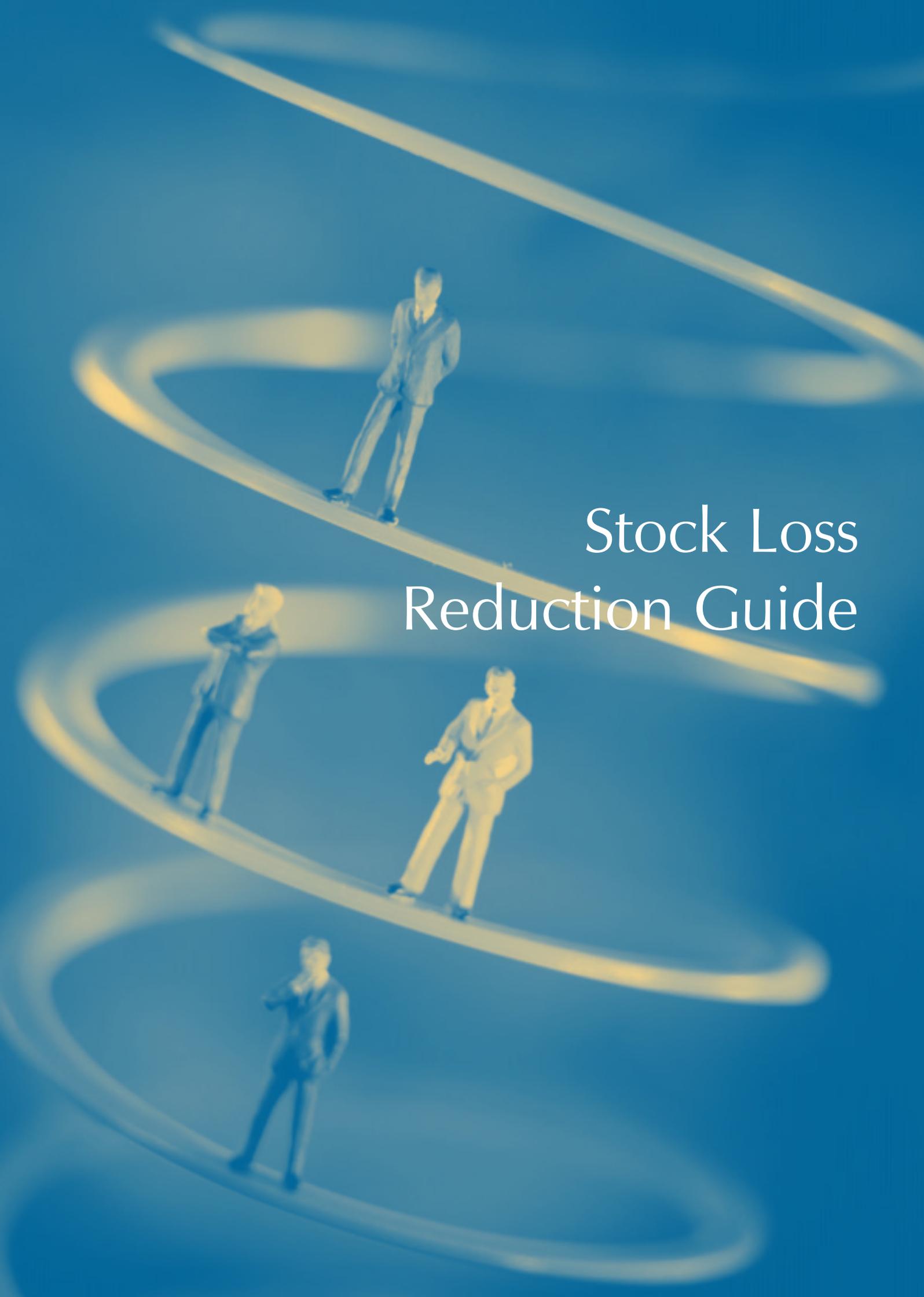
Using a structured approach to stock loss reduction will enable manufacturers, distributors and retailers to design efficient and effective replenishment processes. Central to this approach will be the analysis of losses based on facts and data on its extent and causes, instead of on uninformed perception. By focussing on understanding the root cause of the problem, cost effective choices will be made on the selection of appropriate solutions. The effectiveness of solutions will be analysed to ensure problems are resolved and to inform future efforts to further reduce loss. The choice of solutions will also be informed by a good appreciation of best practice adopted across Europe’s FMCG sector.

Maintaining ongoing control over stock loss will be assured by linking the loss reduction strategy to the tactical business level through a performance measurement system. Key Performance Indicators (KPI) will be used to assess the effectiveness of preventative efforts.

Reducing stock loss presents a substantial opportunity for performance improvement throughout the supply chain

Figure 6 The Benefits of Reducing Stock Loss

Consumer Benefits	Retailer Benefits	Manufacturer Benefits
<ul style="list-style-type: none"> • Lower out of stocks • More open merchandising • Greater choice <p>Leading to:</p> <ul style="list-style-type: none"> - Higher consumer satisfaction - More convenience 	<ul style="list-style-type: none"> • Lower cost • Higher store loyalty • More efficient replenishment <p>Leading to:</p> <ul style="list-style-type: none"> - Increased sales - Increased profit 	<ul style="list-style-type: none"> • Lower cost • Higher brand loyalty • Better planning <p>Leading to:</p> <ul style="list-style-type: none"> - Increased sales - Increased profit

The image features a vibrant blue background with a prominent yellow spiral line that winds across the frame. Four stylized, semi-transparent figures of business professionals in suits are positioned at different points along the spiral, appearing to walk or stand on it. The figures are rendered in a light, ethereal style, blending with the background. The overall composition is clean and modern, with a strong sense of movement and direction.

Stock Loss Reduction Guide

Stock Loss Reduction Guide

The FMCG sector is a highly complex competitive business, with retailers often stocking in excess of 20,000 SKUs and manufacturers managing pan-European supply networks that handle multi-million numbers of cases of product each year. In addition, companies have a plethora of systems, procedures, policies and practices in place to move products from the point of manufacture to the point of sale. Throughout this process there is a multitude of opportunities for products to be either lost, broken, stolen, eaten, under priced or go out of date. The challenge is minimising these risks. In theory, the concept of stock loss reduction is simple. It can be described in terms of the three following steps:

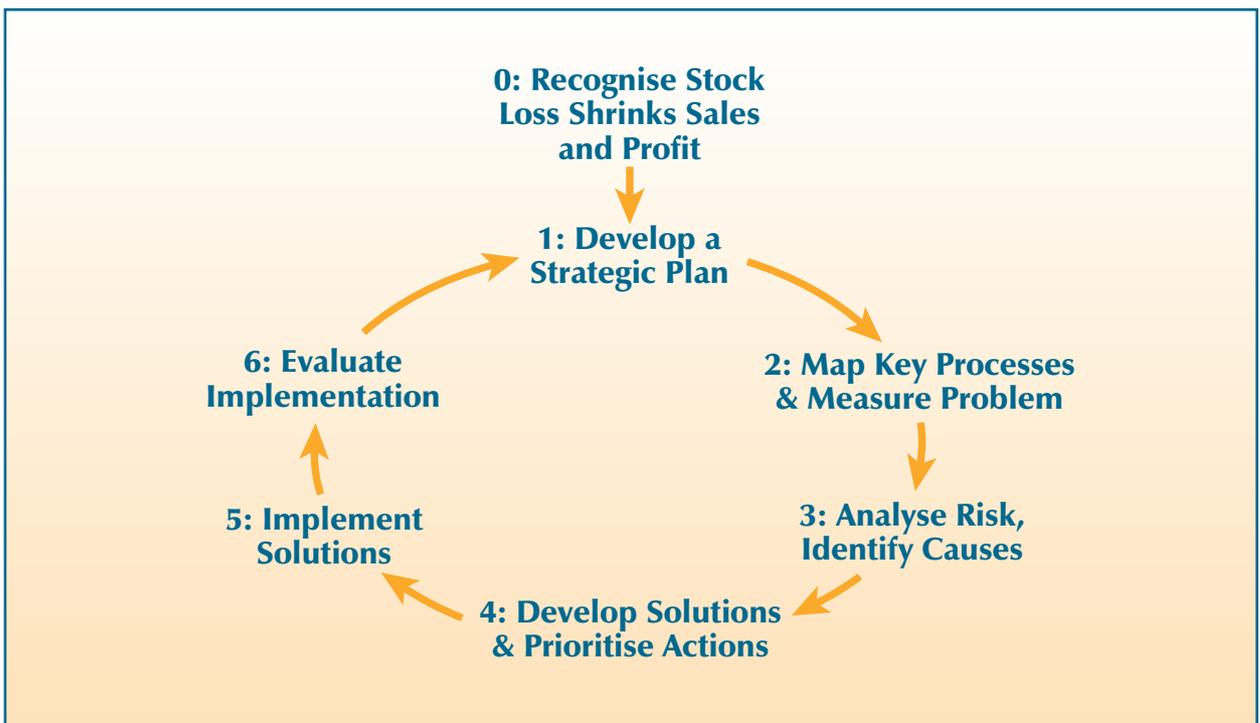
- Make stock highly visible so that loss is immediately noticed
- Quickly identify the cause of the loss
- Implement preventative solutions to resolve the cause of the loss and prevent reoccurrence

In practice, whilst this concept is simple to describe, its implementation is not. Difficulties in implementation arise for a wide number of reasons. Not least is the complexity of the sector, the absence of reliable data on the extent and nature of the problem, and a lack of co-operation both within companies and between companies in the supply chain to develop shared solutions. But the difficulties also stem from the lack of a 'road map' for undertaking stock loss reduction projects. For this reason, the key output from the ECR Europe Shrinkage project is the *Stock Loss Reduction Guide* presented here.

The guide acts like a manual, describing the overall activities that need to be undertaken in order to reduce stock loss. This guide consists of a general approach made up of the steps a company needs to follow, together with techniques and tools to help undertake each phase and to deal with problems that may be encountered. The general approach that forms the heart of the guide is shown in Figure 7.

This structure is systematic and provides the means for planning and undertaking stock loss reduction projects while guiding users towards continuous improvement through the cycle.

Figure 7 A Systematic Approach to Reducing Stock Loss



Stock loss reduction involves problem diagnosis and solution implementation. The essence of the guide is that through well-planned investigation, pressing needs are identified. These are followed by small-scale experiments that explore the stock loss problem, identify likely causes and develop appropriate solutions. Undertaking trials can then assess the effectiveness of solutions. Where a solution is found to be successful it can be implemented widely and practices standardised around it.

Given the uniqueness of each business environment where stock loss occurs, a single, 'right' strategy for reducing stock loss does not exist. Whilst this guide provides a basic structure for practitioners, the approach needs to be tailored to match prevailing circumstances in order for it to be effective. Knowing the scope for variation, what does and does not work and the reasons why, comes with learning through experience. It is therefore important to recognise that reducing stock loss is a long-term and on-going learning process. Therefore, success comes from using the systematic approach to building the capability to identify and understand the causes of shrinkage and reinforce practices that reduce loss.

The approach described in this guide provides a means for involving all company employees in stock loss reduction. Widespread involvement provides knowledge of current practices, such as stock control, and helps build commitment that allow changes to be implemented. This involvement stretches from the creation of radical visions for the supply process, analysis of the current process and its performance through to process redesign, implementation and review.

To help undertake the steps of the general approach, a number of techniques and tools are recommended. These have been chosen to aid communication and understanding. This list is not comprehensive and practitioners should introduce their own tools where they find them to be more useful.

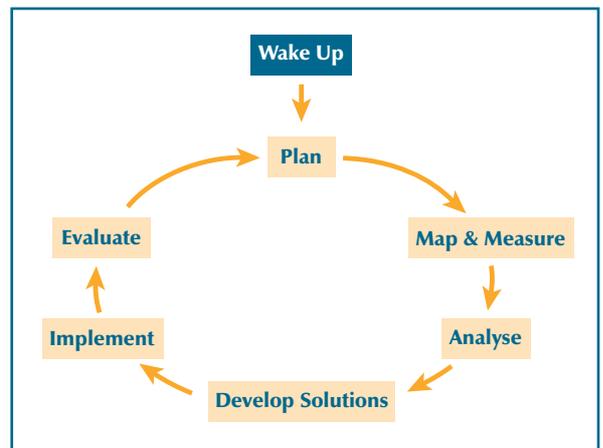
Step 0: Recognise that Stock Loss Shrinks Profit and Sales

- Objective:**
- Recognise need to change
 - Evaluate approach to tackling stock loss

Recognise the Need to Change

The FMCG sector suffers significant losses each year through shrinkage (€18 billion). These losses occur all along the supply chain: from point of manufacture, throughout the distribution process, to the point of sale. While €10 billion of this loss cannot be accounted for, the effects of shrinkage are clear: the shopper suffers through added cost and poorer service.

The outlook for retailers, manufacturers and consumers concerning shrinkage is bleak unless action is taken quickly. Against a background of significant losses today, future levels are likely to increase. Food retailers continue to expand the number of non-food items they carry, such as CDs,



clothes and electrical items, which are products perceived by them to be at greatest risk of theft.

Evaluate Approach to Tackling Stock Loss

In general, current attempts to address shrinkage are unfocused and unstructured. Despite its dramatic impact on the shopper, there is little collaboration either within companies or between companies to tackle the problem. Current practices

Table 2 Conceptual Approaches to Stock Loss Reduction

Rating Category	Ad hoc	First Steps	Systematic Practices	Strategic Policy Deployment
Philosophy	Shrinkage is not an identified issue.	Reactive firefighting with emphasis on detection.	Emphasis on detection and prevention.	Strategically led systemic approach.
Accountability	Nobody is accountable for shrinkage.	Accountability lies primarily with the store manager.	Specialist security/loss prevention and audit departments.	All departments have stock loss accountability and are measured against their targets as frequently as sales.
Responsibility	Shrinkage not seen as a priority therefore nobody takes responsibility for it.	Board sees stock loss as a 'cost of doing business'. Responsibility for stock loss is not taken centrally, but by local operatives.	Specialist security/loss prevention and audit departments but not responsible to the Board.	Board reviews stock loss quarterly. Head of stock loss reports to Board. All departments have responsibility for stock loss and producing quarterly reports on it.
Culture	Staff not used.	Some effort made to use staff through raising awareness and encouraging honesty.	Staff receive on-going training to tackle shrinkage. Methods adopted to screen new staff.	All staff carefully screened and then seen as the main defence against crime. Staff used as the main resource for better prevention.

are characterised by a heavy reliance upon reactive strategies that are only triggered when a particular problems become intolerable.

Such knee jerk and insular reactions not only fail to resolve the causes of loss, but they can also have a detrimental effect upon the profitability of a company. For instance, adopting ‘defensive merchandising’ can cause problems with replenishment and availability. **Hence, the need to wake up to a different approach.**

To help companies review their current stock loss reduction strategy, Tables 2 and 3 can be used as a benchmarking tool, both in terms of gauging the conceptual approach adopted and the practices presently employed. This ‘look in the mirror’ is an important step in recognising how a company compares against best practice, as well as identifying the gap between what is presently done and what needs to be achieved in the future.

Table 3 Company-wide Practices Employed to Control Stock Loss

Rating Category	Ad hoc	First Steps	Systematic Practices	Strategic Policy Deployment
Intra-organisation collaboration	None.	Some co-operation between security/loss prevention and audit departments, and store staff. Occasional pilot projects.	Security/loss prevention and audit departments liaise with other parts of organisation occasionally, but only on specific problems.	Regular cross-functional dialogue to design out stock loss throughout the supply chain.
Inter-organisation collaboration	None.	Pilot projects with isolated suppliers/customers based upon ad hoc arrangements.	Occasional projects to resolve specific problems with suppliers/customers and trade bodies.	Regular inter-organisational process evaluation and co-ordinated action on joint projects. External collaboration with other groups such as retailers, trade bodies, suppliers, police.
Data availability	Annual inventory counts undertaken, with stock loss data recorded at store/department level only and not available electronically.	Annual inventory counts undertaken and computerised centralised data available for some stock loss problems (process failures).	Annual inventory counts with supplementary checks on ‘at risk products’. Computerised records of most types of stock loss collated centrally.	Annual inventory counts topped up with more frequent counts for hot products, with all data recorded in electronic format. Reports on stock loss performance issued as frequently as sales reports.
Data analysis	No analysis performed on stock loss.	Emphasis on summarising inventory counts and process failure data.	Regular analysis of most types of stock loss including company-wide and store-specific profiles over time.	Regular data mining. Analysis tools used to identify patterns, adjustments data used to get to line level losses.
Evaluation of effectiveness of efforts	Not done – considered far too hard.	Occasional or one-off reviews.	Regular internal reviews.	On-going evaluation with all supply chain partners.

Step 1: Develop a Strategic Plan

Objective: • Set goals

Current efforts to contain stock loss are at best piece-meal, with few companies even operating an organisation-wide approach to resolving the problem. Companies need to recognise that traditional approaches, that is only tasking security, audit or health and safety departments with the challenge, are not effectual in tackling stock loss. Instead, companies need to change their approach to resolving stock loss and make use of a wider range of people. In changing their approach, companies need to choose one that is both systematic and systemic. A systemic approach requires information from stakeholders across a company and throughout the supply chain. Collaboration is therefore necessary not only between company functions, such as buying, logistics, marketing and IT, security and audit departments, but also between companies: manufacturers, distributors and retailers. Only through such a degree of collaboration can an effective strategy be developed for tackling shrinkage.

The Systematic Approach

In general, stock loss is not currently approached in a systematic manner. Most companies do not plan and they do not know if they are making the slightest difference in reducing loss. Few of the organisations studied during this research have even the simplest structure to guide their approach to reducing stock loss, nor were they able to determine the effectiveness of any of the solutions they currently use to reduce it. Instead, most companies rely on a mixture of security folklore – security guards are a good thing – and a fixation with the ‘latest’ technological solutions. Whilst technological advancements may lead to new solutions that make inherent sense, the problems they solve are rarely quantified so the effectiveness of new equipment is often only justified anecdotally and over short periods of time.

In order to break away from the culture of half-truths and anecdotes, a systematic approach provides the way for a company to quantify and prioritise its problems, to analyse the causes of these problems and to direct its available resources



to the most cost effective solutions. Finally, the true effectiveness of these solutions needs to be determined after their implementation and this information then used to guide future investment.

The first step in the systematic approach to stock loss reduction is planning. Planning is based upon clear, realistic, attainable objectives with criteria for knowing when these objectives are met. This requires the project team responsible for delivering reductions to have answers to the following questions:

- What is the supply chain process to be improved?
- When does the supply process to be improved start and finish?
- What are the goals of the stock loss reduction activity?
- When is the date by which some benefits must be felt?
- What are the attributes of the ideal supply process?
- What are the constraints to improvement?
- What are the stock loss threats faced by the company?

The answers to these questions guide the project team's activities towards achieving their goals. Starting the project in this way is especially important in cross-functional projects where the effectiveness and efficiency with which project resources are used dramatically improves with up-front investment in planning.

An organisation undertaking a stock loss reduction project will benefit from knowing how its approach

to shrinkage stands in comparison to best practice. This can be determined by making an assessment against the conceptual approach that a company applies to its stock loss efforts and the practices used to control loss (see Tables 2 and 3 in the previous step).

The Systemic Approach

Effective stock loss reduction requires companies to be systemic by identifying, for the supply chain as a whole, where problems occur and can best be resolved. Such work requires collaboration along supply chains between suppliers, distributors and retailers as well as across the FMCG sector as a whole. Only when internal and external problems are considered together can comprehensive analysis be undertaken to deliver early, tangible results. Research demonstrates that efforts to reduce stock loss today are not systemic. Companies are simply not taking advantage of the opportunities to share expertise with either their competitors or suppliers, or indeed internally. The first phase of this ECR Europe shrinkage project found that whilst 70% of retailers are working individually with other retailers, only one-half of them are working in representative groups of retailers to ensure that sector-wide solutions are investigated and shared. The picture is different in the manufacturing sector, where only 15% of companies are working with other manufacturers to reduce stock loss and less than two-fifths of companies are working in joint groups looking at issues of shrinkage. Whilst this paints a picture of low cross-sector collaboration, co-operation between retailers and manufacturers is even more concerning. Only one-half of all retailers and manufacturers are working together to tackle stock loss. This graphically demonstrates that problems affecting the whole of the supply chain are not being addressed in a systemic manner.

Step 2: Map Key Processes & Measure Problem

- Objectives:**
- **Process Map**
 - **Performance Measure**

Reducing stock loss begins with a rigorous diagnosis of the problem. This diagnosis starts by understanding the nature of the losses and then identifying their causes. Understanding the current operational system and processes is also the first step in gaining widespread recognition of the problem and establishing the need to change within an organisation. The act of creating a business process model that identifies the source of stock loss can develop the critical momentum required to change existing behaviour.

Security-led approaches to reduce stock loss tend to be based upon better detection of theft. A process-led approach applies process analysis to the stock loss problem and emphasises prevention. Traditional security strategies can therefore be supplemented by better understanding of the replenishment supply process. Process mapping and measurement provide the mechanisms to do this. Preventing system and procedural losses also reduces loss from theft by removing the opportunity to abuse deficient systems.

Process Mapping

Documenting an existing process helps individuals view their work from a process perspective. Often, existing ways of working have never been described or even viewed as processes. Without the ability to communicate the need for improvement from this perspective, those who do not view their current activities in process terms are not likely to readily adopt revolutionary solutions.

Process mapping is a technique used to detail business processes that focuses on the important elements that influence behaviour, allowing the business to be viewed at a glance. Mapping and measuring a process establishes the performance base line that enables the effectiveness of solutions to be measured. An example of a top-level supply chain is depicted in Figure 8. This diagram shows two supply chains from Gillette in the UK to two of their customers, ICA in Sweden and Tesco in Hungary.

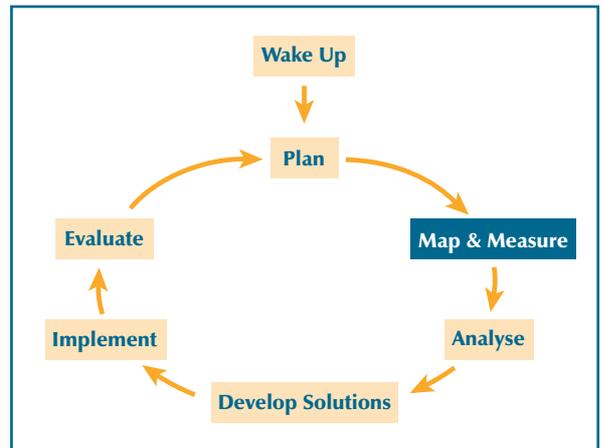


Figure 8 Gillette Supply Chains to ICA, Sweden and Tesco, Hungary



Whilst Figure 8 gives an understanding of the total supply chain, it provides few details. In order to show more in depth information, a more rigorous process map is required.

Simple flow charting techniques are often the most appropriate technique to use when process mapping for the first time. Process maps are developed by physically following products as they pass along the supply chain. This involves visiting each site that the products pass through and documenting the steps involved in receiving, storing and dispatching them.

Figure 9 is an example of a process map showing the flow of products through a distribution centre. This gives an overview of the steps involved in receiving, storing and dispatching goods; therefore it provides a higher level of detail.

Even when the flow chart does not provide a complete or totally accurate model of a process it is still able to promote a process-orientated approach to improvements and to communicate understanding.

Figure 9 Distribution Centre Product Flow Chart



Hot Products²

Processes and systems usually contain a wide range of product items. Rather than map all the various routes taken by all the different items it is appropriate in the initial cycle of analysis to focus on ‘hot products’. Following the path of these products through the supply chain illustrates general features of the process and exposes major problems inherent within it.

‘Hot products’ is a concept that many retailers and manufacturers are familiar with, and generally refers to those products most attractive to thieves. If retailers and manufacturers were to gain a better idea of what makes a product ‘hot’, then this could, by reducing the levels of the theft element within stock loss, help dramatically reduce levels of shrinkage within the whole supply chain. Crime prevention specialists are beginning to acknowledge that preventative methods must not be spread too thinly and should be directed towards areas that will produce the greatest benefit. In the FMCG sector, this means concentrating activities on the products that are most at risk of theft. The hot products concept offers a framework of factors that affect the likelihood of a product being taken by shop thieves or members of staff.

Hot products are those that are ‘CRAVED’ by thieves, and possess the following characteristics:

- Concealable
- Valuable
- Removable
- Enjoyable
- Available
- Disposable

At the moment, the list of hot products a retailer may stock or a manufacturer produces are usually based upon perceptions of the security department, as methods are not always in place to analyse the true nature of stock loss. As shown earlier, retailers can only identify 41% of their losses and manufacturers are aware of 59% of the losses they suffer. However, evidence from the ECR Europe survey finds that non-food products are perceived to be most at risk of theft, particularly; tobacco goods, videos, CDs, DVDs, beers, wines and spirits, health and beauty products and electrical goods. These items increasingly feature within FMCG stores, so the need to control their loss may be the trigger for retailers and their suppliers to work collaboratively to deal with this problem. While the concept of hot products refers mainly to items that are stolen, lessons learnt from closely monitoring their progress throughout the entire supply chain may have more generalised benefits for improving the processes used to move these, and all other products.

Measuring the Problem

It was found that currently within the FMCG sector, most retailers keep records of supplier fraud and process failures, but few kept computerised records of internal and external theft, either at a company or store level. Manufacturers were found to keep computerised records of process failures, but few recorded any form of theft on a computerised system. The majority kept either no record whatsoever or only paper files. It is only through the use of computerised databases that trends can be identified and a more information-led strategic approach can be adopted to deal with all the elements that account for shrinkage.

There are a number of fundamental measures of stock loss that are required in order to determine the What? How? and When? for each stock loss

² Clarke, R.V. (1999), *Hot products: understanding, anticipating and reducing demand for stolen goods*, Home Office Police Research Series paper 112, HMSO, London.

incident. From a supply chain perspective, the following basic measures need to be collected:

- The level of loss in deliveries to a site
- The level of loss from a site
- The level of stock loss in deliveries from a site

These measures allow a ‘top-level’ assessment of the extent and location of stock loss across a supply chain. In addition, it is necessary to collect data on the following factors:

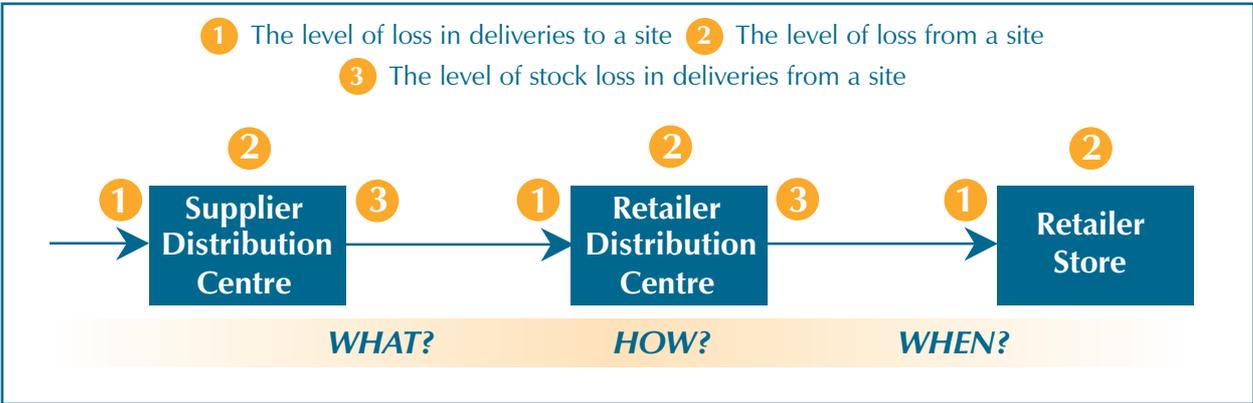
- The type of incident
- How the incident occurred
- When it happened

This allows the nature of the type of stock losses suffered to be better understood.

The points in the supply chain where these measures should be taken are shown in Figure 10.

In addition to where the loss has taken place, companies need to develop systems that track how and when particular incidents occur, and they need to do this for all types of stock loss. Companies need to develop an approach that is systematic and part of an on-going process for collecting and collating timely and useful information that describes patterns, trends and information on stock loss throughout the supply chain – from first delivery to final check out.

Figure 10 Points of Measurement across the FMCG Supply Chain



Step 3: Analyse Risk, Identify Causes and Prioritise Actions

- Objectives:**
- Understand process structure and flow
 - Identify most significant causes of loss

Having mapped and measured the current operation, this data should be analysed to understand and describe exactly what is wrong. Having understood this, the causes of problems can be identified.

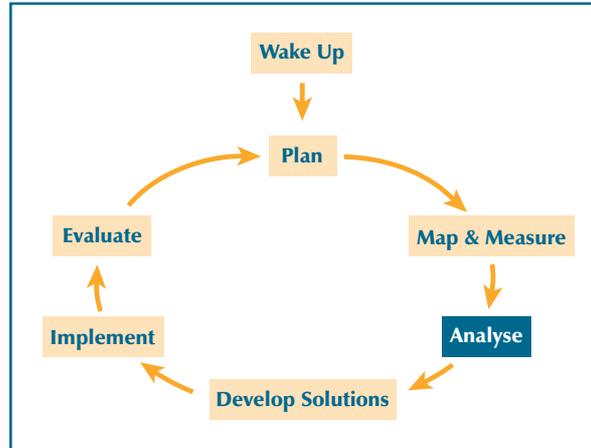
Cause and Effect Analysis

Cause and effect analysis can be applied to identify the causes of stock loss. This technique benefits from a long and successful history of application in the investigation of quality problems and is fairly simple to understand and use.

Having identified specific symptoms of poor performance the cause and effect diagram, shown below, is an effective way of capturing possible contributing causes to it. This diagram is most useful in brainstorming sessions where the project team can contribute their findings, experience and understanding. Brainstorming is an effective way of bringing out contributions.

The main spines of the diagram are given broad headings around which causes to the symptom of a problem are grouped. The choice of these headings is fairly arbitrary.

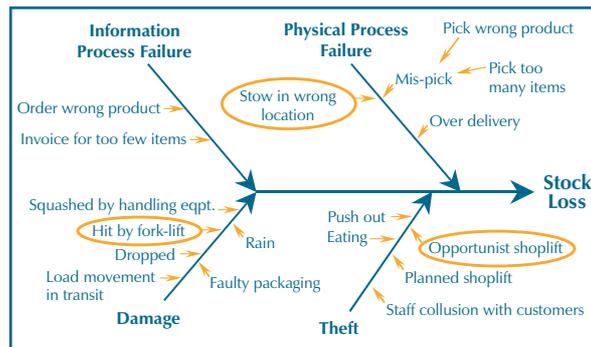
To focus effort, the major causes of problems need to be identified from amongst the trivial many. This could be achieved statistically through the collection of data from the process using check



sheets to determine the number of incidents associated with each of the causes that have been suggested. However, it is possible to get the project group members to identify many of the most significant problems from their experience.

In Figure 12, three causes of stock loss have been highlighted as being the most significant ones for this particular site. These are the causes that will be investigated further. This approach follows the Pareto Principle that the ‘vital few’ causes are responsible for the bulk of problems.

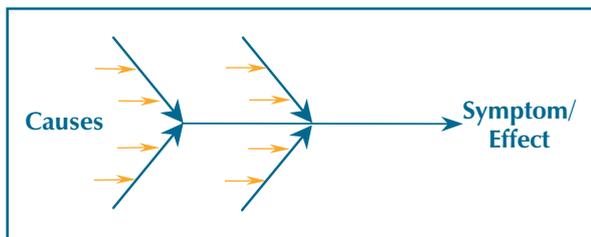
Figure 12 Stock Loss Cause and Effect Diagram with Three Significant Causes Highlighted



Five Whys

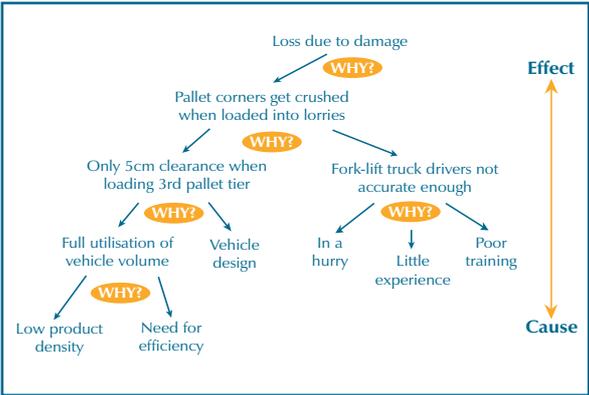
Initial ideas about the causes of problems are unlikely to identify underlying root causes. Having tidied the initial ideas and focused upon the significant ones, deeper cause and effect structures need to be identified. A technique to explore causes beyond those first perceived is the ‘5 whys’ technique. This involves understanding the cause and effect relationship as fully as possible by repeating the question, ‘why does that cause stock loss?’ This technique is illustrated in Figure 13.

Figure 11 A Cause and Effect Diagram



Identification and understanding of root causes concludes the diagnosis of the causes of stock loss and starts the 'remedial journey', where solutions to these problems are sought. It is important to stress however, that the problem of stock loss is dynamic, particularly when considering the threat from internal and external thieves. Companies need to continually analyse the threat in order to react promptly to new approaches adopted by offenders.

Figure 13 A 'Five Whys' Diagram used to Investigate the Root Causes of Effects



Step 4: Develop Solutions and Prioritise Actions

- Objectives:**
- Design technical solutions
 - Define skills/staffing needs
 - Specify organisational structure

Organisations traditionally start their stock loss reduction efforts at this, the solution stage. It is not uncommon to find a great solution and then search for a problem to apply it to. The problem with this approach to resolving stock loss is that it is very tempting given the large number of seductive solutions currently available. However, this is totally at odds to the systematic approach advocated here.

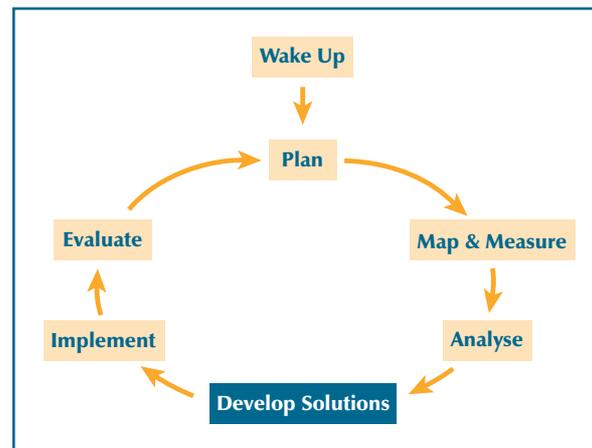
Having been through the systematic process of investigation described in Steps 0 – 3 of this guide, where a stock loss problem has been investigated and its causes identified, the development of solutions that resolve this cause and reduce loss is usually extremely context-specific. However, it is possible to associate particular solutions with particular problems. A series of options are presented in Appendix 2: *Stock Loss Reduction Solutions*, which provide guidance in this matter, and a summary is presented in Table 4, offering a ‘quick-check’ guide.

Designing particular solutions into the practices and procedures of an organisation can be undertaken through one of two general approaches:

- Clean sheet
- Renovate existing operations

The clean sheet approach sets existing systems to one side and starts afresh. This recognises that current practices are beyond salvage and have no further use. Renovating existing processes builds upon the capabilities that have underpinned the historical success of the organisation. This requires those capabilities to have retained some value, which may not be the case.

New processes and systems should be accompanied by newly designed performance measurement systems. In the same way that processes are redesigned to deliver their objectives, so the performance measurement systems also need to be redesigned to monitor and control the



new processes. Such a system requires a suite of measures. These reflect the range of factors important to the organisation that the improvement project needs to enhance. Considering them in harmony, for instance by using a ‘Balanced Scorecard’³, promotes improvements across a broad front or at least ensures performance is maintained for the basket of measures whilst driving progress in a key one. Using a balanced scorecard can show people how their efforts affect strategically important measures.

Where performance levels essential to future success have been identified, but the process design that delivers them is not understood, benchmarking⁴ can be a useful technique to help overcome this. A benchmarking exercise helps identify the processes used in other organisations that enable them to achieve superior performance, for example by benchmarking against other hot products or items from other categories.

³ Kaplan, R. S. (1996) *The Balanced Scorecard: Translating Strategy into Action*, Harvard Business School Press, Boston, Mass: USA.

⁴ Camp, R. C. (1989) *Benchmarking: the search for industry best practices that lead to superior performance*, Quality Press: New York, USA.

Table 4 Solutions to Reducing Stock Loss**PROCEDURES AND ROUTINES**

Annual Stock Loss Awareness Campaign
 Company-Wide Stock Loss Refresher Training
 Customer Returns & Refund Controls (Operator & Customer Database)
 Damaged Goods Resale Controls
 Employees Exit Searches
 Hot Product Identification
 Hot Product Management
 Hot Products Routine Counting
 Security Newsletter
 Internal Key Control
 Patrol Routes for Employees (Red Routes)
 Point of Sale Information or Data Checks
 Random Till Cash Checks
 Rigorous Delivery Checking Procedures
 Shelf Replenishment Techniques
 Induction Training for New Employees
 Unique Till Operator PIN Numbers
 'Watertight' Product Monitoring Procedures

PEOPLE AND PROCESSES

Anonymous Phone Line
 Civil Recovery
 Covert Surveillance of Customers or Employees
 Employee Awareness and Training
 Employee Stock Loss Training and Education
 Employee Incentives – Discount Purchase Schemes
 Employee Incentives – Stock Loss Bonus Schemes
 Employee Integrity Checks
 External Compliance Monitoring
 External Security/Loss Prevention Function
 External Stock Audit Function
 Internal Compliance Monitoring
 Internal Security/Loss Prevention Function
 Internal Stock Audit Function
 Random Checks On Distribution Centre Picking Accuracy
 Store Detectives
 Test Purchasing (mystery shopper)
 Uniformed Security Guards

EQUIPMENT AND TECHNOLOGY

Active CCTV
 Automated Ordering Processes
 Cash Protection Tactics and Equipment (both cash offices and tills)
 Company-Wide Stock Loss Awareness Posters
 Dummy Display Cards in Place of High-Risk Products
 E.A.S. Hard Tagging (recycled)
 E.A.S. Soft Tagging (disposable)
 E.A.S. Source Tagging (either disposable or recycled)
 Employee Purchasing Arrangements
 Employee Panic Alarms
 Employee Uniforms without Pockets
 Intruder Alarm Systems
 Non-Active CCTV
 Point-of-Sale Camera Monitoring
 Protector Display Cases Applied By Retail Outlets
 R.F.I.D. Intelligent Tags on Pallets, Cases or Items (Radio Frequency)
 Replenishment Equipment to Support Techniques
 Secure Lockers for Employees
 Security-Sealed Containers/Shippers
 Shoplifting and Theft Policy Posters for Customers and Staff
 Specialist Anti-Theft Display Equipment

DESIGN AND LAYOUT

Appropriate Product Location Strategies
 Designing-Out Blind Spots
 Designing-Out Crime Programme
 Distribution Centre Secure Storage
 Employees Entry/Exit Access Control
 External Security – Fences, Anti-Ram Raid, Roll Shutters
 Risk-Based Design and Layouts
 Robust Anti-Theft Packaging
 Single Direction Product Flow
 Supply Chain and Logistics Network Design

The 67 solutions listed above have been grouped into four different types: procedures and routines; design and layout; equipment and technology; and people and processes. It is in no way an exhaustive list of possible stock loss reduction options, but merely examples of the different approaches currently available. They are listed in alphabetical order and no attempt has been made to 'rate' their effectiveness. A more detailed description of these solutions can be found in Appendix 2.

Step 5: Implement Solutions

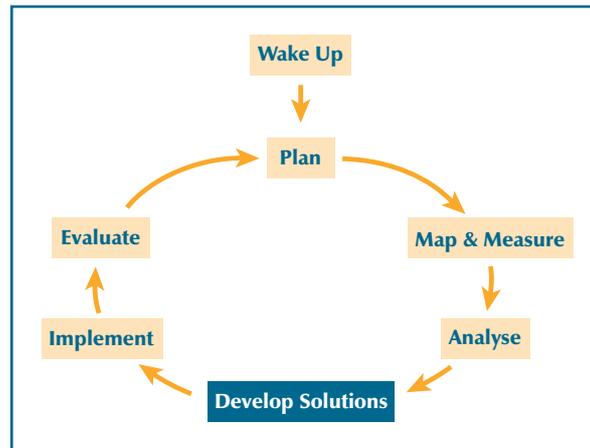
- Objectives:**
- **Develop implementation plans**
 - **Pilot implementation**
 - **Monitor progress and refine full rollout**

In a similar manner to the approach used to plan the project investigation, the implementation of the solution that will reduce stock loss requires project planning. Successful projects require a sponsor to be responsible for delivering the benefits of the project. To achieve success the sponsor, usually a senior manager, needs to ensure that the project team constructs a clear and robust business case. This business case defines what is to be delivered, the benefits this will bring and the resources required.

A project plan is used to map the best use of resources to achieve the desired objectives within time and cost limitations. Here the tools of project management will prove useful. These can be applied on both small and large-scale projects. Where a project team undertakes planned change for the first time, the plan should consider not just the task but also the learning necessary to deliver it.

At a top level, a project plan is constructed by following a sequence of steps. The following provides an overview of such a process:

- Identify the overview tasks needed to complete the project
- Show the interrelationships between tasks and the sequence in which they can be undertaken on a network diagram
- Estimate the types and amount of effort needed to complete these tasks
- Calculate the resource profile over time to complete the project
- Identify potential risks to successful project delivery
- Mitigate risks or plan contingency
- Iterate the plan to match it against resource availability
- Secure resource
- Put in place procedures for evaluation



Evaluating the effectiveness of the stock loss reduction effort provides information that guides the direction of the next cycle of reduction. Stock loss reduction needs to be ongoing to ensure loss reduction efforts are compatible with developments across the supply chain and to counter the resourcefulness of criminals.

Step 6: Evaluate Implementation

- Objectives:**
- **Determine solution effectiveness**
 - **Identify further steps to reduce stock loss**

The stock loss reduction project ends with an effective solution in place. However, this is not the end of stock loss reduction as a whole. From the organisation's perspective, evaluation of one project is important in order to:

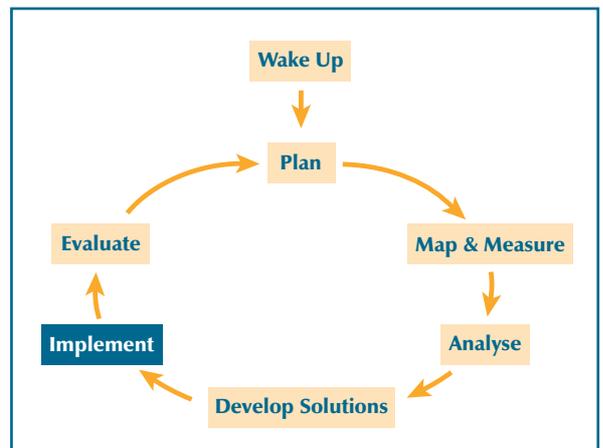
- Determine the success of the solution
- Guide future projects

The review is therefore the last step of one project and the first step of the next. The ability to sustain significant improvements in stock loss over long periods of time rests on the capability to learn from experience and to ensure that companies access the wide range of developing tools at their disposal.

A review of the implementation must be objective. All too often reviews are undertaken with the aim of justifying the work that has been done and fail to provide an honest appraisal of what solution worked and why. Therefore, the evaluation should be rigorous, robust and led by somebody who can provide an objective review, independent of equipment providers and those who may have commissioned the project in the first instance. They need a clear mandate to assess the performance of the implemented solution and compare this against the level of performance originally planned.

This assessment should consider how the implementation of solutions was justified, for example by the use of a cost/benefit analysis. In this example, the actual cost of the solutions and their implementation should be determined. These figures should then be contrasted in the following ways:

- Actual cost against planned cost
- Actual benefit against planned benefit
- Actual cost/benefit against planned cost/benefit
- Performance over time



This information provides the feedback that allows the stock loss reduction team to objectively consider the effectiveness of the:

- Approach the project team took to reducing stock loss
- Specific solutions they implemented

The aim of this feedback is to identify whether any further action is required before the current project can be signed off, and to gain a better appreciation of successful approaches and solutions that might be applied during future projects. It should be noted, however, that the evaluation process may need to be ongoing – the performance of an initiative can change as its 'environment' alters. For instance criminals may gradually find ways of defeating the newly adopted approach or changes in product range or levels of staffing might reduce its effectiveness. Therefore, periodic reviews of newly adopted measures may need to be carried out in order to gauge their effectiveness over time and to evaluate whether any corrective measures need to be taken.

Conclusions



Conclusions

The purpose of this project was to better understand the extent, nature and control of shrinkage within the entire European FMCG sector. Having analysed both the survey of the FMCG sector and 12 complete supply chains, it has been possible to provide conclusions concerning the following issues:

- Recognising the need to change
- Improved stock loss reduction practices
- Techniques and tools to reduce stock loss
- The need to take immediate action

Recognising the Need to Change

The cost of shrinkage is enormous, with an annual price tag of €18 billion, excluding expenditure on trying to respond to the problem, which would add a further €2.14 billion to the bill⁵. Taken together, this is equivalent to €50 million a day and accounts for 2.31% of market turnover. Measuring the cost of shrinkage was an important part of the project. Having established this figure, it should be used to focus attention on a topic that has, for the most part, been largely ignored.

Shrinkage needs to be addressed at all points of the supply chain and not simply in the retail store

Significant losses occur at each point in the supply chain process, although the retail stores are seen to be the place where nearly two-thirds of all shrinkage takes place. In many respects this is not surprising – it is the point at which ‘customers’ enter the stock loss equation; mainly to browse and buy, but sometimes also to steal, eat and damage stock. It is also the point at which perishable goods usually meet their ‘sell by dates’; at best triggering price reductions, and at worse causing stock to be destroyed. But other stages in the ‘chain’ are responsible for significant losses as well and critically affect the efficiency and effectiveness of the sector. The data presented in this report graphically depict the importance of seeing shrinkage as something that needs to be addressed at all points of the supply chain and not simply as a retail store problem.

Deciding how stock is lost is a perennial question for those trying to manage and monitor shrinkage – is it the staff, the customers, the suppliers or simply a consequence of company processes? Because most retailers do not know where and how two-thirds of their stock loss occurs (manufacturers are only marginally better), answering this question accurately is always going to be difficult if not impossible. Certainly theft is bound to be more of a problem for retailers than manufacturers due to the nature of their business, but there is a danger that too much emphasis is placed on a single explanatory factor when all companies are vulnerable to a range of stock loss problems.

Improved Stock Loss Reduction Practices

Having established the scale of the problem and the nature of current stock loss techniques, it is possible to identify three major areas where companies can improve their behaviour. These are:

- Collaboration
- Information management
- The use of security and audit personnel

Collaboration

Shrinkage is a problem that transcends departmental and company boundaries – it is something that requires genuine partnership and co-operation if it is to be managed efficiently and effectively. For many retailers stock loss is the exclusive responsibility of the security/loss prevention and audit department and for manufacturers, very often the logistics team. However, virtually all parts of an organisation can play a role in reducing stock loss; from the buyers, IT department, the distribution management team, right through to the legal department and buildings planners. Indeed, the role of departments like security should be as much about co-ordinating inter-departmental efforts to reduce shrinkage as it is about installing CCTV and employing security guards. In addition, co-operation between companies operating within the supply chain is equally important. Without cross-company collaboration, any shrinkage solutions will be partial, piecemeal and problematic, and will not contribute to overall supply chain efficiency.

All parts of an organisation can play a role in reducing stock loss

⁵ This excludes the cost of shrinkage control for manufacturers, as it was not possible to calculate this figure.

Information Management

Most retailers cannot tell where or how most of this loss takes place; only 41% is known. Manufacturers claim to be slightly more knowledgeable, but even they can account for only 59% of their loss. Much of the shrinkage iceberg is submerged beneath the choppy waters of accountability.

Without good quality data that is up-to-date and timely, loss prevention strategies will always be based upon the shifting sands of hearsay, guess work and perception. The surveys found that reporting procedures varied considerably not only between manufacturers and retailers but also between the different types of stock loss. A significant proportion of respondents identified process failures as an area that was reasonably well recorded, but internal and external theft were not seen as a priority for computerised database systems, with most either not recording incidents at all or simply keeping a paper record. This was particularly the case for manufacturers. This raises two points. First, 'data reinforcement' can take place whereby only those problems that are recorded are seen as a problem and hence little effort is then made to record other data. In effect a problem becomes self-selecting and self-prioritising and a perpetual loop of justification is produced. Secondly, paper-based systems offer little more than an auditable record of events and are bereft of virtually any analytical capabilities. It is only through the use of computerised databases that trends can be identified and a more information-led strategic approach can be adopted to deal with all the elements that account for shrinkage.

The Use of Security and Audit Personnel

Significant data was found on the potential impact security and audit departments can have on tackling shrinkage problems. In both the retail and manufacturer surveys, companies with such specialist teams had significantly lower levels of stock loss. For retailers this amounted to a difference of 26% for those with a security department and 39% lower for those with an audit department. In addition, having access to the higher levels of decision-making also improved the performance of these teams, with those able to report directly to the Board of Directors having more of an impact on stock loss.

Techniques and Tools to Reduce Stock Loss

The investigations undertaken throughout FMCG supply chains identified that a major impediment to the good intentions of companies was the lack of a 'road map', both to guide their stock loss reduction efforts and to offer the techniques and tools needed to solve problems. In response to this need, the comprehensive guide to stock loss reduction presented earlier in this report has been constructed. This guide is systematic, well structured and systemic, emphasising the need for a collaborative approach to be taken. The techniques and tools associated with this have been chosen because of their simplicity and effectiveness. It is therefore possible to use this guide to deliver targeted and effective solutions to resolve major stock loss problems over a relatively short timescale.

The Need to Take Immediate Action

To date very little has been done to try and co-ordinate the different aspects of the entire supply chain process that requires manufacturers and retailers to work together to seek common solutions to shared problems. Some work is underway and organisations such as ECR are trying to positively encourage co-operation that will benefit those taking part and ultimately, the consumer. This report has shown that much more could be done both by retailers and manufacturers to collaborate on problems of shrinkage. There is plenty of evidence that points to a significant amount of commonality in problems suffered, particularly with respect to process failures. It is difficult to see the disadvantages of improving the scale and extent of links between those who produce and those who sell. But it is plain to see the possible impact of self-interest and a lack of sector-wide co-operation – a bill for stock loss of €18 billion a year.

Much more can be done both by retailers and manufacturers to collaborate on tackling the problems of shrinkage

Glossary of Terms



Glossary of Terms

Balanced Scorecard: A technique for structuring performance measurement that considers the perspectives of shareholders, customers, internal processes and the creation of future value.

Business Process: A sequence of interlinked steps that provide the mechanism for delivering value to customers. A business process can transfer both physical products and information. It may extend beyond a single business and include activities in other companies, across the supply chain.

Cause and Effect Analysis: A tool used to help identify causes of a particular stock loss problem.

Distribution Centres, DC: Supply centres that are used and/or managed (but not necessarily owned) by manufacturers and constitute an integral part of their distribution network.

ECR Europe: An organisation representing both retailers and manufacturers that aims to encourage companies to work together to integrate their operations and eliminate barriers that reduce their efficiency and effectiveness, and impact on their ability to satisfy consumers. Details of how to join ECR Europe can be found in the acknowledgements at the front of this report.

Europe: The term 'Europe' used in the report refers to the area covered by ECR Europe activities and includes Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Irish Republic, Italy, Luxembourg, Norway, Poland, Portugal, Slovakia, Spain, Sweden, Switzerland, The Netherlands and UK.

External Theft: The unauthorised taking of goods or cash from a store at any time of the day or night by customers or other non-company employees. This includes incidents of shoplifting, fraudulent return of goods, till snatches and burglary (breaking and entering a store whilst it is closed).

Five 'Whys' Analysis: A tool used to identify the root causes of particular stock loss problems.

Flow Chart: A tool used to represent the activities involved in a process. The simplest form of flow chart uses a notation of boxes to represent activities and arrows to represent relationships between activities.

FMCG: The Fast Moving Consumer Goods Sector. Retailers and their suppliers who provide a range of goods sold primarily through supermarkets, hypermarkets and smaller retail stores. The core of their business is providing 'essentials' such as various fresh and processed foodstuffs, but they also stock a wide selection of other goods as well including health and beauty products, tobacco, alcohol, clothing, some electrical items, baby products and more general household items. Some retailers may stock more than 20,000 different product lines.

Hot Products: Particular items or types of product that have been identified by retailers to be especially at risk from theft. Such products are easily concealed and often have special procedures and security policies associated with them to provide additional protection and reduce losses.

Internal Theft: The unauthorised taking of goods or cash from a store at any time of the day or night by staff employed by the company (including contract staff, for instance third party security staff or maintenance workers). This includes staff theft, collusion between customers and staff, employees eating stock, till shortages and the deliberate manipulation of prices.

Known Stock Loss: A calculable total where there is some form of record of the loss, for instance, paper or computerised records of incidents such as theft or the disposal of goods that are out of date.

Percentage of Stock Loss: Total value of stock loss at retail value (including taxes) as a percentage of total sales. For manufacturers, this excluded losses incurred as part of the manufacturing process.

Process Failures: Losses due to operating procedures within the organisation including products which have become out of date, or have been reduced in price; incorrect pricing; product identification errors; incorrect stock counting; products which have been damaged; scanning errors; and errors in deliveries to the stores (e.g. short deliveries due to errors in picking and dispatch from distribution centres).

Process Mapping: A technique used to describe business processes. This is usually visualised through the use of flow charts. See also **Business Process** and **Flow Chart**.

Retail Distribution Centres, RDC: Supply centres which are used and or managed (but not necessarily owned) by retailers and constitute an integral part of their logistical network.

Shrinkage: Losses due to a combination of supplier fraud, process failures, internal theft and external theft. See also **Percentage of Stock Loss**.

Stock Keeping Units, SKUs: Industry-wide term used to describe individual product lines.

Stock Loss: see **Shrinkage**.

Supplier Fraud: Losses due to suppliers or their agents deliberately delivering less goods than what you are eventually charged for by them. This includes vendor and contractor fraud but does not include discrepancies in the goods supplied from company DCs.

Supply Chain: A network of connected and interdependent organisations mutually and co-operatively working together to control, manage and improve the flow of materials and information from suppliers to end users.⁶

Systematic: A methodical, deliberate approach that proceeds according to the system.

Systemic: An approach that considers the whole body.

Unknown Stock Loss: A calculable total but where there is no record of how, where or when the losses occurred within an organisation.

⁶ Aitken, J. (1998) *Supply Chain Integration within the Context of a Supplier Association*, Cranfield University, Ph.D. Thesis.

Appendices



Appendices

Appendix 1: Research Methodology

Over the last decade a number of writers and organisations have studied stock loss in retail settings. These studies, which have mainly been carried out in the US and Europe, have focussed on trying to measure the extent and nature of shrinkage, together with identifying the methods used to try and prevent loss. They might be regarded as an inventory of prevention techniques that are in place, with few studies seeking to challenge recording methods or question the role of security and audit departments within organisations. The work commissioned by the ECR Europe Shrinkage team differs from these approaches in a number of important ways, because the survey:

- Investigates the problem of shrinkage solely within the FMCG sector
- Is pan-European
- Examines the nature and extent of stock loss from the point of manufacture right through to the point of sale
- Is an independent piece of research, which has not been sponsored by a loss prevention consultancy firm or a security hardware company

This study is the first of its kind to try and gather detailed information on the extent of shrinkage across Europe and the approaches adopted by retailers and their suppliers to deal with the problem, and both phases offer unique pieces of research. Phase I concentrated on the scale and extent of the problem by conducting a detailed survey of retailers and manufacturers. Phase II used a qualitative case-study approach, reviewing the movement of goods through the entire supply chain process (delivery of finished goods to point of sale).

Phase I Quantifying Stock Loss in Europe's FMCG Sector

The first phase of the project measured the scale and nature of the stock loss problem within Europe and investigated the phenomenon within retailers and manufacturers. The project made use of two

questionnaires: one for retailers and one for FMCG manufacturers. The questionnaires asked for information on 5 areas:

- Company information
- Extent, nature and impact of stock loss within the company
- Methods for recording stock loss
- Company responses to stock loss
- Nature of collaborative efforts to tackle stock loss

The retailer questionnaires were sent to almost 200 companies in 20 European countries. The sample was selected based upon targeting companies that had the largest share of the market within their own country, with the aim being to maximise the representation of the entire market within the survey. On average, for those countries selected to be included in the analysis the market share of the respondents equates to 30%, with some as high as 97% coverage. In total, the study received 38 responses from retailers, with a total turnover of €121.9 billion or 14.78% of the total European market share. The rate of response varied considerably between countries and by the end of the data collection phase the research team had sufficient information to enable meaningful analysis to take place on companies from 15 different countries.

The sample of manufacturers was based on companies that have a 'pan-European' presence and provide a wide range of products to retailers. This included alcoholic beverages, cleaning products, cosmetics, cooked foods, toys, and electrical goods. In total, 29 companies were sent a copy of the questionnaire. Responses were received from 14 companies, a response rate of 48%, who had a combined turnover of €61.7 billion.

Few companies, either retailer or manufacturer, were able to provide data for every question in the surveys and some of the questions asked respondents to comment on known and unknown loss. This clearly relied upon them using their knowledge and experience to estimate what the requested breakdown might be. However, despite the complexity of the project and the difficulty of collecting data on the sensitive and often hidden topic of shrinkage, sufficient data was collected to allow the first robust assessment of the problem of stock loss in a European setting and provided a sound basis upon which the second phase could be built.

Phase II Understanding the Causes of Stock Loss

The work undertaken in Phase II sought to identify and analyse stock loss problems throughout FMCG supply chains. Supply chains consist of a large number of diverse activities, each concerned with different aspects of the handling of products and exchange of information. These various activities combine to form processes. The processes that exist within and between organisations provide a means to analyse firms and their supply chains. Because processes consist of diverse, interlinked tasks, analysing them can open up the 'black box' of the supply chain: taking a process perspective of the investigation of both individual activities and whole organisations allows both the trees and the forest to be analysed. It also ensures the realities of work practices are considered in parallel with the supply chain's overall function.

The second phase of the project was based on the exploration of 12 complete supply chains. The analysis of these supply chains required the investigation of 17 companies, including manufacturers, distributors and retailers, on 41 sites in 10 countries. Undertaking the analysis of these supply chains required a systematic approach. Following the flow of products through FMCG supply chains in a structured manner provided both a systematic and systemic approach. Being systematic, this research was methodically arranged and undertaken according to plan. The systemic nature of this work referred to the focus on whole processes and the integration of research undertaken at the individual sites along the supply chains.

Each site visit, whether at a manufacturing company, distributor or a retailer, consisted of at least two structured interviews; one with members of the senior management team and one with the managers responsible for security, logistics and stock loss. These interviews sought to collate the following information and data:

- Stock loss statistics
- Company methods to identify stock loss
- Extent of staff and external theft
- Company methods to reduce stock loss

- Justification for the methods of reducing stock loss
- Impact of loss prevention methods on sales

Goods were physically followed through sites in order to document the supply chain process, and to identify the practices and procedures used to facilitate this process and to control losses. The investigation made use of Failure Modes and Effect Analysis (FMEA) to examine the various ways that a process may fail and to determine the effect of the different failure modes. Through focussing attention upon stock loss, and by using the FMEA technique, it was possible to understand the:

- Ways in which a process can fail and allow stock to be lost
- Severity of the loss should a failure happen
- Likelihood of a failure occurring
- Ability to detect that a failure has occurred

The data collated from the process analysis and interviews allowed a composite model of the supply chains to be constructed. This provided the basis from which the performance of the supply chains was analysed and the conclusions drawn.

Appendix 2: Stock Loss Reduction Solutions

Detailed below are 67 solutions grouped into four different types: procedures and routines; design and layout; equipment and technology; and people and processes. It is in no way an exhaustive list of possible stock loss reduction options, but merely some examples of the different approaches currently available. They are listed in alphabetical order and no attempt has been made to 'rate' their effectiveness.

Procedures and Routines

Annual Stock Loss Awareness Campaign: Create themes, activities and performance measures to engage every part of the organisation. This could include awareness of current performance, risks and prevention procedures. Often supported by departmental action teams to gain feedback.

Company-Wide Stock Loss Refresher Training: Scheduled training that covers every employee within a reasonable time frame. It uses the most relevant materials based upon recent stock loss performance, responsibilities, industry 'best practices' and specialist loss prevention techniques.

Customer Returns & Refund Controls (Operator & Customer Database): Sets maximum values for refunds without supervision, develops over-rider facilities procedures, management 'halos' to ensure that high value, hot product or high abuse items are tracked e.g. clothes, videos, CDs etc.

Damaged Goods Resale Controls: Procedures that make it less attractive for employees to deliberately damage 'premium goods' to enable them to be bought later at a reduced price or get it free of charge.

Employees Exit Searches: Using a precise record of shift patterns allowing management or security teams to carry out employees searches either by a random, arbitrary or targeted schedule.

Hot Product Identification: Hot products vary by outlet, location, time of year and demographics. Once identified, various approaches can be considered to reduce their loss e.g. delivery checking, shelf replenishment techniques, use of special storage, display location and equipment and regular counting routines.

Hot Product Management: A unique set of procedures and guidelines, which aim to control the risks associated with these groups of products. Because varying degrees of risk occur throughout the replenishment cycle, checkpoints should be invoked at all key stages of the supply chain process.

Hot Products Routine Counting: Used to identify levels of loss, timing of loss and if possible whether the loss occurred on the sales floors, in the storeroom or in transit. Frequency of count should be weekly minimum and hourly maximum. Counting may deter theft as the products receive more regular attention and therefore thieves will be prone to more surveillance.

Induction Training for New Employees: Use the captive and influential opportunity during induction to enlighten new employees to issues of stock loss prevention, including areas and products at risk, common theft techniques and the organisation's policy on prosecutions. Should also be supported by brochures, videos and aide memoirs.

Internal Key Control: Logging systems to determine whom, when and why particular areas such as 'hot product' secure lock ups are opened and secured after each activity.

Patrol Routes for Employees (Red Routes): Standard or set routes through storage and sales floors areas that all employees are required to use. Enables vulnerable stock areas to be more carefully monitored.

Point of Sale Information or Data Checks: Point of sale audits against targeted personnel based upon suspicion, anecdote or concerns about an individual's honesty. Could also cover internal and or external collusion.

Random Till Cash Checks: Random, arbitrary or targeted cash checks to detect mid-shift or end of shift under-ringing and cash abuse/theft.

Rigorous Delivery Checking Procedures: Clear and detailed procedures covering all types of delivery checks for internal and external suppliers of stock. This should include detailed levels of claims for shortages, timescales and validation processes for claims. This can include special procedure for high-risk products.

Security Newsletter: Regular communication alerting employees at all levels about loss prevention techniques and up-to-date information on fraud and theft trends and cash and stock controls. Depending on sensitivities and civil rights, examples of external and or internal theft and vigilance awards for employees can be highlighted.

Shelf Replenishment Techniques: A range of techniques to reduce the risk of internal or external theft by regulating the flow of goods on to the shelves. Examples include a maximum of one day's sales on shelf, loose stock secured between replenishment cycles, stock secured between cycles and replenishment cycles increased for high-risk lines.

Unique Till Operator PIN Numbers: A unique electronic operator number that enables transaction monitoring and an audit trail at operator level to be determined. It can also enable other electronic tracking devices such as CCTV to be used to investigate individual operators.

'Watertight' Product Monitoring Procedures: Used to identify skilled theft of high-risk products. CCTV cameras monitor the shelf stock of high-risk products. The quantity of shelf stock is checked twice a day, morning and afternoon, by a hand count. The number of items taken from the shelf is compared against EPOS data. If a loss is found to have occurred then the CCTV tape is reviewed to identify likely culprits. Files are kept on these people and evidence collected over time on their behaviour patterns until enough is known to act to stop them.

Design and Layout

Appropriate Product Location Strategies: This approach locates high-risk products in an area of high visibility and control during storage and the sales area.

Designing-Out Blind Spots: This involves improving the physical layout of a facility, for example through better lighting, improving the positioning of CCTV cameras and giving better line of sight visibility to members of staff from their work location.

Designing-Out Crime Programme: Using up-to-date techniques to ensure that thieves cannot loiter undetected, cannot steal large quantities of high-risk products easily, and cannot conceal themselves internally or externally in any part of the building.

A range of equipment e.g. one-way entrance/exit gates, low-level fixtures, CCTV, anti-theft display equipment and robust packaging should support this approach.

Distribution Centre Secure Storage: These solutions consist of isolated distribution centres or sections within a distribution centre designed to handle high risk product groups with uniquely rigorous receiving, picking, access control and despatch processes.

Employee Entry/Exit Access Control: A unique entrance and exit facility for employees to ensure that arrivals and departures can always be monitored. This area will include a place where either management or security employees can perform searches discreetly.

External Security – Fences, Anti-Ram Raid, Roll Shutters: A range of defensive approaches designed to ensure that exterior and out of business hours breaches are made more difficult and do not go undetected.

Risk-Based Design and Layouts: In place of a 'one size fits all' approach to store design, this approach considers risk profiling or modelling of each unit based upon their specific levels of risk of stock loss. This method makes use of records of internal and external theft, insurance risk (industry data), historical stock loss performance, local demographic data, rates of staff turnover, trading hours and cash losses to develop an accurate 'picture' of the risks associated with a particular site.

Robust Anti-Theft Packaging: The use by manufacturers of extra strong and robust packaging. Includes design concepts such as 'too large to fit in the average pocket' packaging.

Single Direction Product Flow: A one-way process that does not have any ability to reverse the movement of stock for any reason. Quantities are designed to always fit into the despatch, delivery and replenishment requirement of a recipient, without fail.

Supply Chain and Logistics Network Design: Consideration of a range of specific secure delivery methods that could include, cross docking, unique hot product delivery processes, third party consolidation and delivery service for hot products, central distribution high risk product routine check points throughout the network and unit item picking in a controlled environment.

Equipment and Technology

Active CCTV: Either black and white or preferably colour systems that operate during working or trading hours and record incidents throughout the key areas of the building.

Automated Ordering Processes: Computer based ordering processes usually either sale based or sales trend based. May include manual intervention capability to adjust final order quantities.

Cash Protection Tactics and Equipment: (both cash offices and tills): A wide range of equipment and approaches are available including cash drawer covers to prevent till snatches, cumbersome metal till cash pick up units, maximum values between till pick ups, heavily supervised/guarded pick ups and timed 'dead locks' on safes.

Company-Wide Stock Loss Awareness Posters: Use the most appropriate and relevant themes. Position in key employees areas, changing rooms, main corridors/stairways, employee restaurants, department notice boards, to capture the attention of full-time and part-time employees. It is important to be creative and rotate themes in order to stimulate interest and sustain attention.

Dummy Display Cards in Place of High-Risk Products: Professional replicas of product with signage explaining clearly to customers how and where this product can be obtained and paid for.

E.A.S. Hard Tagging (recycled): Radio Frequency, Acosta Magnetic or Electro Magnetic tags placed on high-risk products by employees to raise alarm if products are removed and not purchased. Usually disarmed or identified at point of sale and used extensively on clothing.

E.A.S. Soft Tagging (disposable): Radio Frequency, Acosta Magnetic or Electro Magnetic tags placed on high-risk products by employees to raise alarm if products are removed and not purchased. Usually disarmed or identified at point of sale. Can sometimes cause problems with systems in other locations if 'deactivated' products are taken there.

E.A.S. Source Tagging (either disposable or recycled): Radio Frequency, Acosta Magnetic or Electro Magnetic tags placed on high-risk products by manufacturers, to raise alarm if products are removed and not purchased. Usually disarmed or identified at point of sale.

Employee Purchasing Arrangements: Facilities that make monitoring of staff purchases and benefits easier to track. It often requires heavy investment to create an exclusive or unique facility for staff.

Employee Panic Alarms: Alarm buttons strategically placed and often connected to the local police station to reduce the risk of personal injury, armed robbery as well as the theft of cash and goods.

Employee Uniforms without Pockets: Reduces the opportunity for staff to conceal either cash or stock while at work.

Intruder Alarm Systems: Make use of passive beams, infrared or wire-based anti-breach burglary alarms. Can be used to control stock security either during operating hours or secure buildings when closed to the public.

Non-Active CCTV: Dummy cameras that look as if they are real but have no facilities for enabling monitoring or recording of incidents.

Point-of-Sale Camera Monitoring: Cameras targeted on till operators and used in conjunction with a computerised till monitoring system that tracks 'unusual' incidents such as till drawer open for more than an acceptable amount of time, consistently low transaction values etc.

Protector Display Cases Applied by Retail Outlets: Robust product containers that are applied in the retail outlet to protect products such as CDs, music tapes and videos. Usually removed at the point of sale with special equipment.

R.F.I.D. Intelligent Tags on Pallets, Cases or Items (Radio Frequency): Tags that can track the correct stock despatch to the right outlet. Usually focussed on high-risk product groups but could extend to all products over time.

Replenishment Equipment to Support Techniques: Specialist equipment for high-risk products, which allows secure storage for loose hot products before, during and between replenishment cycles and operator shifts.

Secure Lockers for Employees: An employee facility to ensure that personal possessions or money are not accessible during business hours for employees; always maintaining a management prerogative to search if suspicion exists.

Security-Sealed Containers/Shippers: Specially designed secure containers for hot products moving from supplier to distribution centres, and between distribution centres to outlets. These range from hot sealed opaque bags to lockable/sealed boxes or containers.

Shoplifting and Theft Policy Posters for Customers and Staff: Signs distributed around any stock areas, both for employees and customers, clearly stating the policy to arrest, prosecute or detain anyone suspected or caught in possession of unpaid goods.

Specialist Anti-Theft Display Equipment: Restrictors on the level of fill and/or restrictors to reduce removal of more than a single product per customer. Also includes lockable display units, dummy display units and customer service dispensing only systems.

People and Processes

Anonymous Phone Line: Constantly manned or answer phone-based hot line, which enables employees to report any known internal theft or incidents of collusion that they are aware of, but would prefer not to be identified for fear of reprisals. This could also extend to external events that are known about and reported by customers in high-risk locations.

Civil Recovery: A process that takes theft-related offences beyond standard police prosecution and utilises civil law to recover the costs of stolen property from the offender (both customers and employees).

Covert Surveillance of Customers or Employees: Use of CCTV or trained personal to observe suspected employees without them knowing it is taking place.

Employee Awareness and Training: A wide-ranging programme, which can help to change organisational culture if sponsored by senior management. Makes use of internal and external specialists to enlighten, facilitate and help create a change within the organisation. It is important to identify the intended outcomes and to measure them accordingly.

Employee Incentives – Discount Purchase Schemes: These are schemes which incentivise employees to buy products from the company at discounted prices, and act as an alternative to stealing product during working hours. Some schemes are only valid after a certain minimum number of months of employment.

Employee Incentives – Stock Loss Bonus Schemes: A range of schemes to incentivise employees to improve stock loss performance. Industry examples range from percentage of annual savings shared with employees to developing and rewarding key performance indicators such as degree of compliance with procedures, cost controls and sales performance.

Employee Integrity Checks: Pre-employment screening to ensure that no relevant previous criminal record exists.

Employee Stock Loss Training and Education: Continuous structured programmes facilitated by a range of internal and external specialists, which may include, security, loss prevention, stock management, customer service, manufacturers, police and consultants.

External Compliance Monitoring: External staff contracted to measure key process adherence to existing stock loss prevention procedures. They can also provide industry standards, best practice and up to date thinking on new procedures.

External Security/Loss Prevention Function: External staff contracted to measure security procedure adherence on cash, stock, alarms, key holder controls, and perform risk assessments. They can also provide industry standards, best practice and up to date thinking on security issues.

External Stock Audit Function: External staff contracted to count stock on a regular basis either through entire inventories across all processes or alternatively more focussed counting on high-risk products in high-risk outlets. Used to produce performance results in a consistent format enabling comparisons over time to be made.

Internal Compliance Monitoring: Staff employed to measure key process adherence to existing stock loss prevention procedures. Unless they are specialists it is unlikely that they can provide or compare results with industry standards. Their performance can be enhanced if they are able to report directly to senior management.

Internal Security/Loss Prevention Function: Staff employed to measure security procedure adherence on cash, stock, alarms, key holder controls, asset risk assessment. Unless they are specialists, it is unlikely that they can provide industry standards. Research shows that such a function has a greater impact if it reports directly to senior management.

Internal Stock Audit Function: Staff used to count stock on a regular basis either through entire inventories across all processes or alternatively more focussed counting on high-risk products in high-risk outlets. Used to produce performance results in a consistent format enabling comparisons over time to be made.

Random Checks on Distribution Centre Picking Accuracy: Internal or external agencies who carry out load checks prior to despatch to identify picking errors. Usually focussed on high risk product groups.

Store Detectives: Plain clothed security operatives employed to detect or deter would-be shop thieves.

Test Purchasing 'Mystery Shopper': Customer decoys who take a normal or targeted shopping load through suspected or regular employee to check accuracy of transaction, cash handling and observational skills of checkout operators.

Uniformed Security Guards: Either contracted from a specialist company or trained as a member of the organisation. Used as a visible deterrent to would-be offenders and often positioned near 'at risk' products. Also employed to reassure staff who may feel vulnerable to crime, especially violent crime.

Appendix 3

ORDER FORM FOR RELATED SHRINKAGE REPORTS

FAX

To: Adrian Beck, Scarman Centre,
University of Leicester

Date: _____

From: _____

Please send me the following reports:

State number required

Shrinkage in Europe:
A Survey of Stock Loss in the Fast
Moving Consumer Goods Sector

Shrinkage in Europe:
Understanding
the Causes

*Each report costs €182 including
postage and packing*



Your Contact Details: *(Please write clearly in black ink and using capital letters)*

Name: _____

Position: _____

Company Name: _____

Address (where report[s] should be sent):

Country: _____

Postcode: _____

Telephone: _____

Fax: _____

Email: _____

Please invoice me for the sum of _____ Euros

Where appropriate, please
state your order number: _____

To send your order either fax this form back to: +44 [0]116 252 5934

Or post to:

Adrian Beck, Scarman Centre, University of Leicester,
154 Upper New Walk, Leicester LE1 7QA, UK

