

# ECR – OPTIMAL SHELF AVAILABILITY

INCREASING SHOPPER SATISFACTION AT THE MOMENT OF TRUTH



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**Roland Berger**  
Strategy Consultants

# ECR – OPTIMAL SHELF AVAILABILITY

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# 1 Acknowledgements

This report on optimal shelf availability presents the key results of the "Optimal Shelf Availability" project – a product of joint efforts of a large group of European manufacturers and retailers.

The participants committed their time, shared their expertise and data, and made various other contributions to a wide range of project issues. These contributions greatly enhanced the results of the project, and thus the benefits for the European retail and consumer goods industry.

The project was overseen throughout by Roland Berger Strategy Consultants, who provided the project methodology and authored this report.

ECR Europe would like to thank all those who have made this publication possible, and contributed to the understanding of the stockout problem and to the means of collaboratively reducing stockouts to a minimum.

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## 2 Executive summary

Consumer expenditure in a number of traditional FMCG industries is declining as the share of household budgets spent on food falls constantly. There are various reasons for this development. In many European markets real income is stagnating and a lot of consumers have begun to adopt a more price-conscious attitude. At the same time, a strong increase in expenditure on services such as health care, nursing, rents, public transport or telecommunication can be observed. Furthermore, the FMCG market is being challenged by the growing importance of private labels and the additional pressure that hard discounters put on the market.

In the meantime, consumers have become more demanding, better educated, and more sceptical in their shopping attitudes. Consumers are placing ever more emphasis on excitement in their shopping experience, and are looking to draw maximum benefit from consumption. Out-of-stock items mean dead time, money and energy, but more importantly, stockouts contribute to consumers switching to other brands or retail stores to fulfil their demands. Consumers facing out-of-stocks behave in a variety of ways – including switching the brand or changing the shopping location. About 37% of consumers will buy a different brand and 21% are likely to go to a different store. These figures are merely averages and may well be twice as high for certain categories. Another 9% of consumers facing an out-of-stock will decide not to buy anything at all.

The European Optimal Shelf Availability (OSA) survey shows that the retail and consumer goods industry is far from delivering near-perfect fulfilment. Average out-of-stock levels remain high, at 7.1% in average. However, there are some peaks which exceed 30%, costing the industry dearly.

The survey assessed a number of critical factors that hugely affect on-shelf availability. These factors – availability along the supply chain, category characteristics, promotions, store formats, day of the week, inventory levels and distribution method – provided critical insight that the industry should take into consideration, as consumers are not willing to accept current levels of out-of-stocks. The financial impact on manufacturers and retailers is considerable.

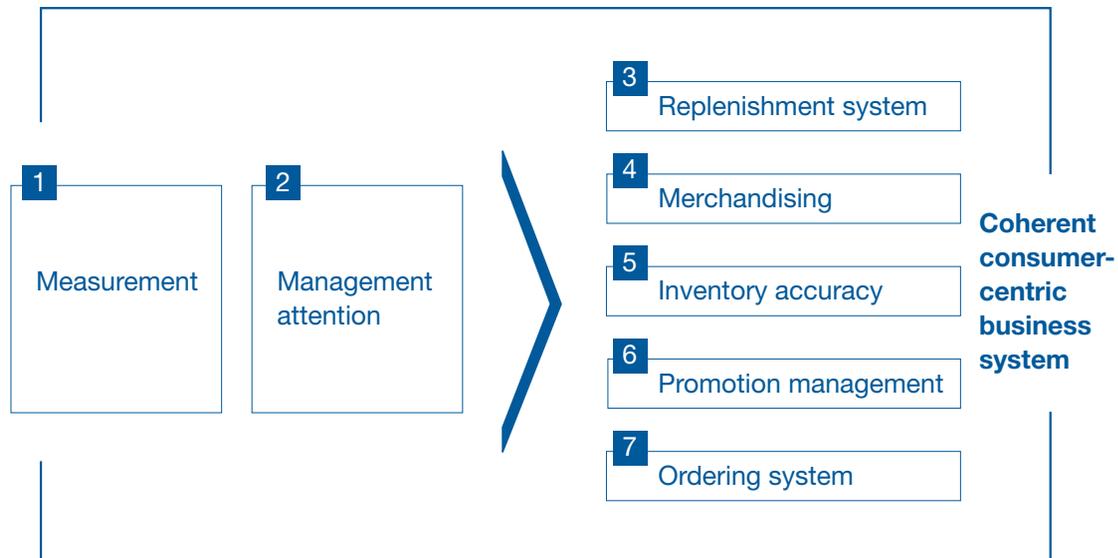
The only way companies can build superior brands and supply consumers in real time is by not letting the consumer down at the moment of truth in front of the shelves – they must reduce stockouts to a minimum.

According to a conservative estimate, the industry forfeits approximately EUR 4 billion in sales each year – and this is counting only the 9% of consumers who opt not to buy at all. This figure does not include the many other cases in which the intended consumer spending is lessened at the cost of retailers, manufacturers or both. For an industry suffering from low margins, this is unacceptable, particularly considering the profit potential that has been determined by past studies. By consistently increasing levels of on-shelf availability, retailers and manufacturers will gain not only sales and profits, but also competitive advantage.

In order to find the underlying reasons for out-of-stocks, a root cause analysis was performed using a predefined root cause catalogue. The analysis showed that availability deteriorates particularly at the end of the supply chain. Hence, the root cause analysis revealed that more than 85% of all out-of-stocks were within the domain of the store. The most prominent root causes were determined to be store ordering, shelf replenishment and inventory inaccuracy. Even though the causes for out-of-stocks were mainly within the domain of the retailer, the financial impact analysis revealed that manufacturers have to share the burden, making it therefore a cross-industry issue.

By specifically analysing the impact of the root causes the project participants were able to develop a coherent system of improvement levers which are critical components of a consumer-centric business.

### Coherent consumer-centric business system



Source: ECR Europe

This system, consisting of seven levers, will provide the expected performance improvement only if the levers are carefully co-ordinated. The levers were tested during store trials and produced quite exceptional results. Measures included providing management with a new performance measurement tool on their scorecard, reducing out-of-stock rates by as much as 50%, reducing the number of stock-keeping units by 30%, and reducing the number of stock keeping days. Overall, the system provides management with a performance assessment from a consumer perspective, allowing to focus on the most prominent problems and the processes underlying them.

The largest section of this report is dedicated to 9 concrete case studies from different European markets. These cases demonstrate how companies are tailoring their response to stockout problems according to their specific situation and resources. The cases highlight what levers are appropriate in a given context and where cooperation is crucial to not only deal with symptoms, but achieve sustainable and significant long-term successes across the whole value chain.

## 3 Optimal shelf availability – Why it is so important

### 3.1 Understanding the problem

The European grocery retail industry continues to suffer from low profit margins and strong competitive pressure, not only from within (e.g. hard discounters), but also from external entrants pushing into the market. These factors, in turn, have accelerated the consolidation process of both retailers and manufacturers in maturing and already saturated markets. This situation has led participants to display improvable supply chain behaviour.

Unlike in other industries, in which conflicts have been swept away by vertical integration, the scope for such developments is very limited in the retail and consumer goods industry. On their own, suppliers would not be able to produce a broad assortment, nor would retailers be able to fulfil consumers expectations by offering only their own brands. In the past, the parties have remained independent, pursuing seemingly incompatible goals with regard to issues like pricing, distribution and promotional activities. Each party seeks its own advantage instead of considering the most prominent and compatible goal together – shopper and consumer satisfaction.

Pursuing incompatible goals leads to an improvable supply chain and a malfunction at the moment of truth, which is reflected in average out-of-stock levels ranging from 7% to 10% in Europe. On-shelf availability levels may vary considerably depending on certain variables such as category, store format, promotion or day of the week, showing lows of 70% and highs of over 99%.

While the industry continues to suffer from an improvable supply chain, and consequently from out-of-stocks, it is being confronted with ever more demanding shoppers. Better educated, more critical consumers are spending less and less of their income on basic consumption items such as groceries and consumer goods.

**Definition of out-of-stocks:**  
A product not found in the desired form, flavour or size, not found in saleable condition, or not shelved in the expected location – from the perspective of the consumer.

Stockouts assume one of three forms:

- Classic out-of-stocks: Shelf-edge ticket but no product
- Dual placement out-of-stocks: Product on shelf/second placement site but not on the second placement site/shelf, respectively
- Delisting out-of-stocks: Product listed but taken from shelves by store staff

A larger share of disposable income is being channelled towards lifestyle products such as travel, cars and housing, as well as towards the increasing social security costs and pension plans of an ageing population.

Out-of-stocks represent dead time, money and energy for shoppers looking to draw maximum benefit from consumption. When faced with an out-of stock, shoppers will switch brands or stores, leave without purchasing anything, delay the purchase or buy a different style or size. This behaviour affects retailers and manufacturers alike.

### **3.2 ECR provides the tools needed to successfully manage the moment of truth**

In the past, ECR initiatives have focused on all elements, first improving the supply side (efficiency), then addressing more demand-side issues (effectiveness) to better meet shoppers' demands. Despite the efforts and successes of improvement measures taken in the past, out-of-stock levels remain unacceptably high in the retail and consumer goods industry.

The current project ties efficiency and effectiveness together and should therefore be considered in terms of the ECR global scorecard. By combining these two elements of ECR, the project helps adjusting supply chain processes to better meet demand without neglecting efficiency. To achieve this, using POS and inventory data, there are two major enablers of performance measurement.

Antony Burgmans, CEO of Unilever and former Co-Chairman of ECR Europe: "There is much to be done to improve efficiency throughout the supply chain, particularly, when it comes to out-of-stocks. It was always the dream of ECR Europe's founders that this problem would one day be nailed." (The Grocer 2001)

## 4 Out-of-stocks – Availability in Europe leaves much to be desired

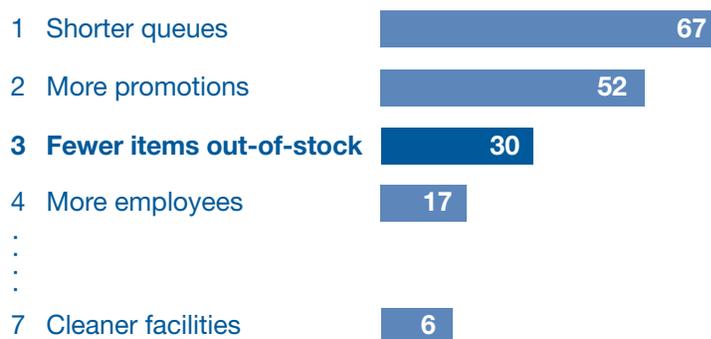
### 4.1 Out-of-stocks from a consumer perspective

To assess consumer needs 18 different studies were summarised, covering 11 countries, 115 categories and responses from more than 20,000 consumers, incorporating more than one million data points.

Out-of-stocks continue to be a central concern of shoppers.

Being confronted with an out-of-stock situation was identified as the third most important issue for shoppers, following the desire for shorter lines at the cash register and more promotions. An indicator of 30% stresses clearly that out-of-stocks are a central concern of consumers. These figures strongly support other studies showing that reducing out-of-stocks is even the second most important consumer need.

#### Consumer needs [%]

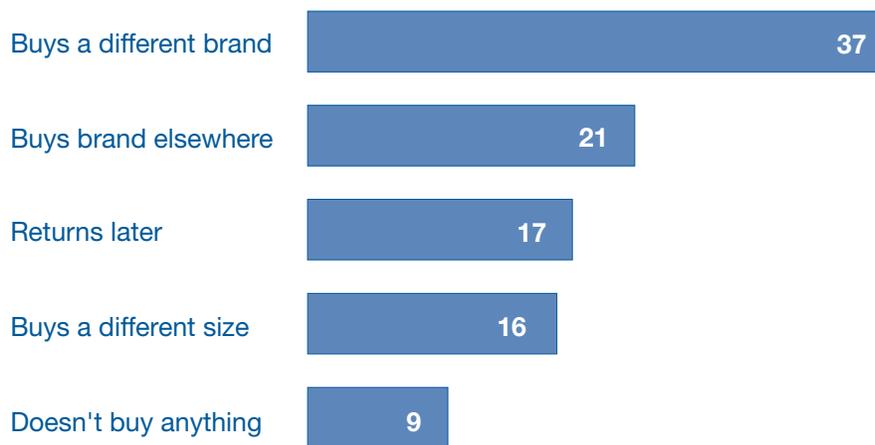


Source: ECR Europe

For the shopper, out-of-stocks imply dead time, money and energy, resulting in improvable benefit from consumption, which consumers are trying to maximise.

Being confronted with an out-of-stock situation possible behavioural alternatives are: Buying a different size or type, buying a different brand, not buying at all, buying the regular brand elsewhere or returning to the store later to make the purchase.

**Consumer responses [%]**



Source: ECR Europe

Facing an out-of-stock, European consumers are more likely to switch brands (37%) than retailers (21%), with the range of observed behaviours varying widely. Another 9% of consumers will decide not to purchase anything at all, which means that 9% of intended purchases are definitely lost due to out-of-stocks.

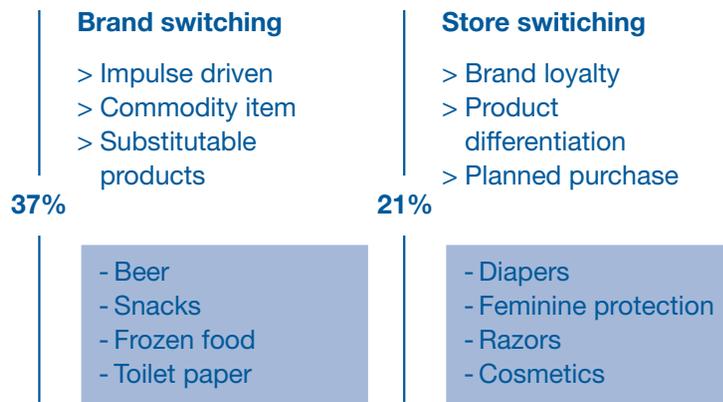
On an aggregate level, manufacturers seem to be slightly more affected by out-of-stocks than retailers, due to shoppers' greater loyalty towards stores. This trend is based on increased proliferation of retail brands, "commoditisation" of product brands, customers' desire for "one-stop shopping", time pressure and trust in the store of choice.

Facing an out-of-stock, European consumers are more likely to switch brands (37%) than retailers (21%), with the range of observed behaviours varying widely.

Other factors found to influence the degree of loyalty are an element of trust being associated with the product in question, the choice of products in a certain category being limited and the issue of whether product purchases are planned. Overall, behavioural differences are attributable to varying degrees of customer loyalty, and differ greatly between individual categories and between identical categories in different European markets.

For instance, if shoppers plan to drink a certain brand of beer while watching football in the evening, but their brand is sold out, they will simply buy an alternative choice. However, if they need diapers for their child they tend to rather leave the store than to buy another brand. This behaviour is mainly driven by high brand loyalty to products such as diapers and feminine protection products.

### Consumer loyalty



Source: ECR Europe

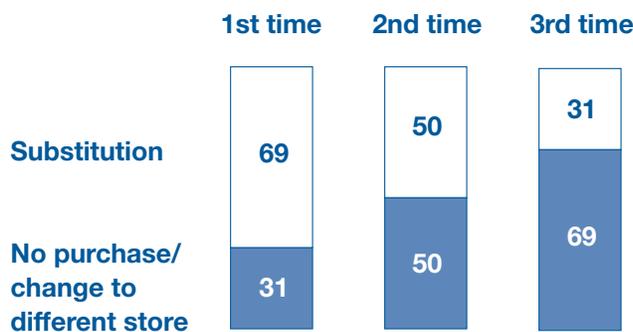
In the short run, manufacturers have a lot to lose, as shoppers may quickly substitute product lines instead of looking elsewhere for the desired product brand. This also harbours the danger of losing a loyal shopper when satisfaction with the alternatively purchased product is high. In the long run, however, retailers have just as much to lose, as shoppers rate

Retailers have as much to lose from stock-outs as manufacturers.

"good on-shelf availability" as important, and pure brand substitution decreases with every disappointing shopping trip consumers make.

Each time a shopper is disappointed, not getting the can of beer he is looking for, he will eventually stop substituting the product with another product. He even might not buy anything at all at the store, but will instead go to another store that will satisfy his needs. After the third disappointment, the probability of store switching increases to a staggering 70%. Shoppers blame retailers for the deficiency and increasingly switch stores to fulfil their needs. This behaviour has a particular negative impact on retailers, since not only a single purchase, but a full shopping basket might be lost, and potentially even the customer will be gone forever.

**Consumer reaction to stockouts [%]**



Source: ECR Europe

**4.2 Out-of-stocks from an industry perspective – Main problem areas**

With shoppers' preferences becoming increasingly recognised as a crucial success factor and a criterion for measuring goal attainment, an item is considered to be out-of-stock when it is not available from the point of view of the shopper.

The definition provided in the introductory chapter is a key concern for the overall success of the current and future projects, as only commonly accepted definitions can provide the required data comparability.

Shoppers usually encounter stockouts in several different forms. The first form is when the product cannot be found on the shelf, where a shelf-edge ticket is provided. The second form is when products are placed on both shelves and special displays, and the displays/shelves are found to be empty. A third form of out-of-stocks occurs when the shopper expects to find a product on the shelf, but the product has been delisted by store staff.

### Forms of stockouts

**1**

Classic out-of-stocks  
**Shelf-edge ticket but no product**

**2**

Dual placement out-of-stocks  
**Product on shelf but not on secondary site  
and vice versa**

**3**

Delisting out-of-stocks  
**Product listed but taken out by store staff**

*Source: ECR Europe*

The OSA project combined data from numerous studies conducted in the past, and added new data on the current out-of-stock situation in 7 countries in Europe. The project scope comprised 7 retailers with different store formats and several major FMCG categories. For two weeks multiple checks per day were carried out for 250 items per store.

Both, the existing data and the current survey show average out-of-stock rates in Europe between 7% and 10%, with lows of less than 1% and highs exceeding 30% for individual products, and an overall average of 7.1%. During the course of the project, a number of critical areas were tested to assess the extent to which these variables affect out-of-stock rates. The following seven conclusions on on-shelf availability can be summarised.

The out-of-stock problem in the European FMCG industry continues to be significant, with an overall average of 7.1%. However, highs well exceed 30%.

### 7 key conclusions on on-shelf availability

- 1 Availability deteriorates in the last meters
- 2 The out-of-stock level relates to the characteristics of a category
- 3 Not promoted items perform better than promoted items
- 4 Stores and store formats differ considerably
- 5 The peak shopping days are the most affected
- 6 High inventories can lead to poor availability
- 7 There is no significant difference between DC & DSD items

Source: ECR Europe

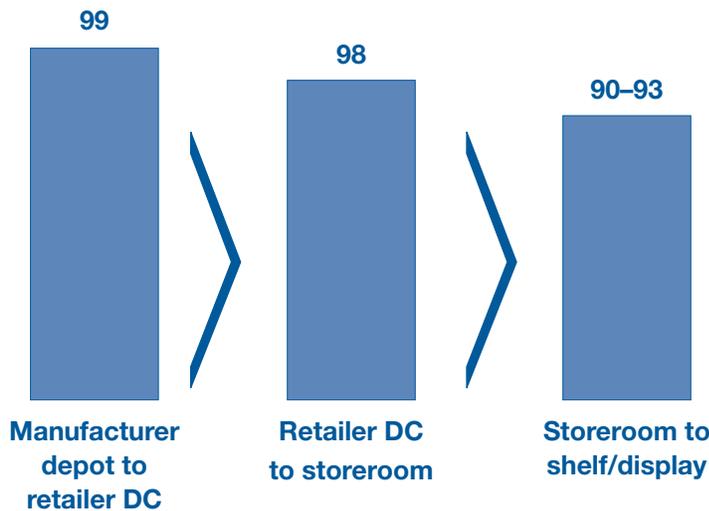
#### Availability deteriorates in the last meters

The availability deteriorates along the supply chain from the manufacturer to the retailer. While the survey shows high service levels from the manufacturer's warehouse to the retailer's warehouse, and similarly high service levels from there to the retailer's stockroom (98–99%), this performance drops sharply over the final metres from the stockroom to the shelf (90–93%).

The service level on the last metres deteriorates to only 90–93% letting hereby the consumer down at the moment of truth.

At the moment of truth – the moment of the intended purchase – the product is not available. Consequently, all the previous efforts made up to the stockroom will not pay off as expected. Failing at this point in the supply chain is detrimental to both retailers and manufacturers, as the product is not exposed to the shopper as intended by the parties involved.

**Service level along the supply chain [%]**



Source: ECR Europe

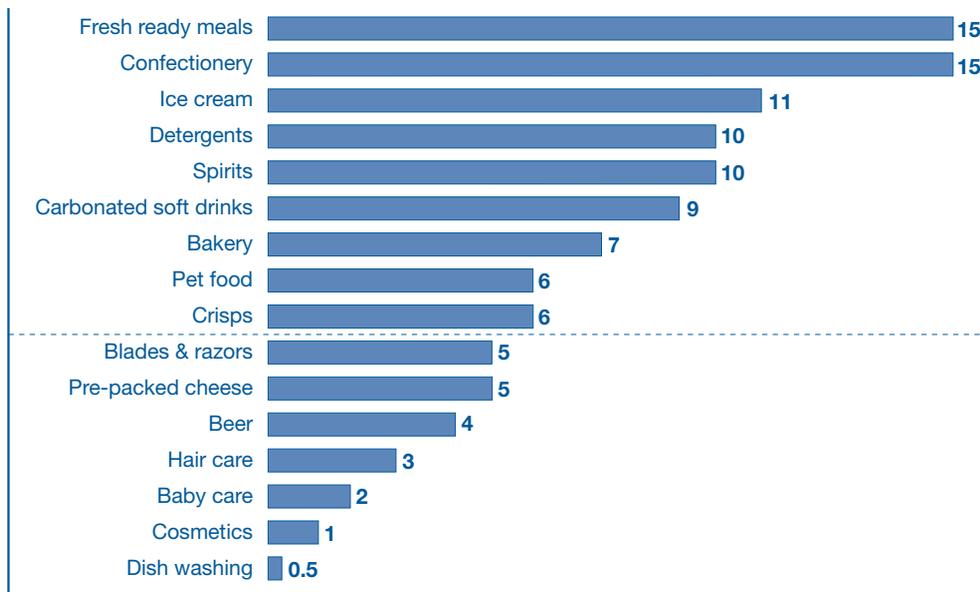
**The out-of-stock level relates to the characteristics of a category**

The current survey findings show that category characteristics themselves are one of the most important factors affecting on-shelf availability and out-of-stock rates, respectively.

Even though the average out-of-stock level is about 7%, a significant number of categories lie well above this rate, with between 9% and 15%. This group of problematic categories will require considerably more attention than others.

To make a distinction between demanding and less demanding categories, allows to focus efforts.

### Out-of-stock, per category [%]



N = 151.789

Source: ECR Europe

The following categorization of products that display certain characteristics allows efforts to be focused on the categories that are most affected. A distinction can be made between demanding categories and less demanding categories.

**Demanding categories** – The problematic categories exhibit out-of-stock rates above 9%, including categories such as detergents, spirits, carbonated soft drinks, ice cream, confectionery and fresh ready meals.

A common characteristic among all of these categories is the high level of demand they place on the supply chain. This may be in form of a wider assortment, increased product proliferation, seasonality, fashion cycles, promotions (short-term increase in demand), impulse-driven purchasing behaviour, temperature needs (frozen and chilled products), a lack of stockroom facilities, or a trade-off between on-shelf availability and wastage.

Decision makers face a trade-off between wastage and availability. So far, the tendency has been to accept an out-of-stock situation rather than throw the product away. This problem is magnified by the fact that shoppers demand 24/7 service and expect to come into the store at 10 p.m. and find fresh salads, bread, and pasta. Impulse-driven products like confectionery are another prime candidate for out-of-stocks. Even the notion of 'impulse' implies something that is difficult to plan and control. Frequently promoted items with short-term increases in demand also exhibit higher out-of-stock rates. Laundry detergents are a good example of this: Shoppers happily buy into the promotion, with the result that the product runs out of stock much earlier than expected.

**Less demanding categories** – Categories that exhibit considerably fewer problems in terms of on-shelf availability show out-of-stock rates of below 5%. These include such categories as dish washing detergent, cosmetics, baby care, hair care and some ambient food products. In general, they tend to be far less demanding on the supply chain and have relatively stable demand patterns, less product/assortment proliferation and no freshness trade-off. Some of these categories deliver near-perfect fulfilment. This raises the question of whether the increased revenue from perfect product availability would justify the costs of supply chain optimisation.

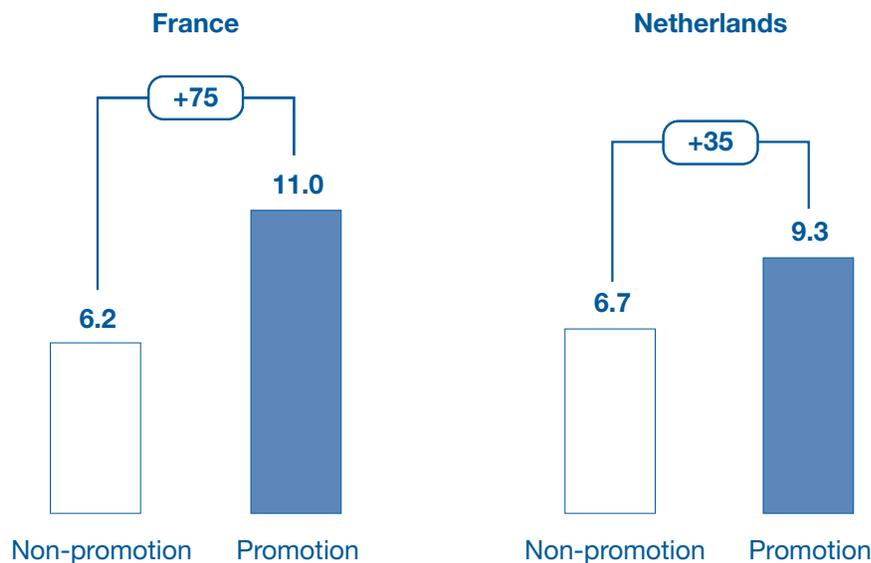
**Not promoted items perform better than promoted items**

Out-of-stock levels for promoted items average between 9% and 11%. This figure is significantly higher than for not promoted items (in some cases as much as 75%). The poor performance destroys the benefits the promotion is expected to bring, as the industry is not capable of matching supply with increased demand. Great effort is expended to draw shoppers into the store with the help of promotions, e.g. advertising, features, events etc., but in many cases, the promise made to shoppers cannot be fulfilled.

High out-of-stock levels for promoted items destroy the benefits a promotion is expected to bring.

The illustration below shows the difference between not promoted and promoted items in France and the Netherlands.

### Out-of-stock rates for not promoted vs. promoted items [%]



Source: ECR Europe

By increasing demand, promotional activities magnify and intensify the effects of supply chain inefficiencies previously detected for regular, not promoted items. Not only the usual product groups with higher demands on the supply chain and insufficient stockroom facilities are affected, but also slow-moving product categories with less frequent deliveries and longer lead times show higher stockout rates when promoted. Likewise, out-of-stock levels for new products that lack a well-established distribution channel are twice as high as for older products that do not suffer from such shortcomings.

What makes things very complicated is the fact that the most problematic days are the first days of the promotion. Hence, phasing products into the system still remains a major challenge.

**Stores and store formats differ considerably**

Store formats, too, show considerable differences with regard to out-of-stock levels, with on-shelf availability varying by about 3% between supermarkets and hypermarkets.

As previous studies confirm, supermarkets generally perform better than hypermarkets. This is directly related to factors such as less complex assortments in supermarkets, more employees per stock keeping unit, better space management and more fast moving items.

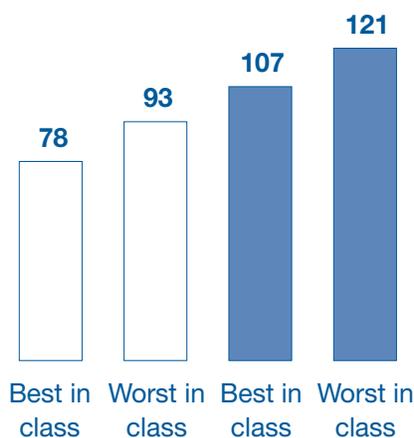
Even so there is a difference in the performance of individual stores of the same format, super-markets generally have a higher on-shelf availability than hypermarkets.

However, store format alone does not explain enough to justify different out-of-stock levels among the same type of store format. These levels can vary vastly, with some stores performing 6 to almost 7 times better than others in this respect. Thus, there must be additional factors playing key roles.

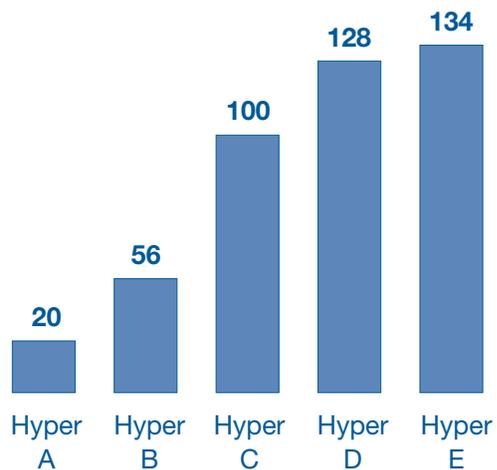
Management attention towards ensuring that the proper in-store processes are in place is a critical element in the quest to reduce stockouts, and offers ample opportunities for managers to make in-store improvements. It appears that some managers have already cracked the code to good availability.

**Performance by store format [Index]**

**Stockouts by store format**



**Stockouts hypermarkets**



□ Supermarkets    ■ Hypermarkets

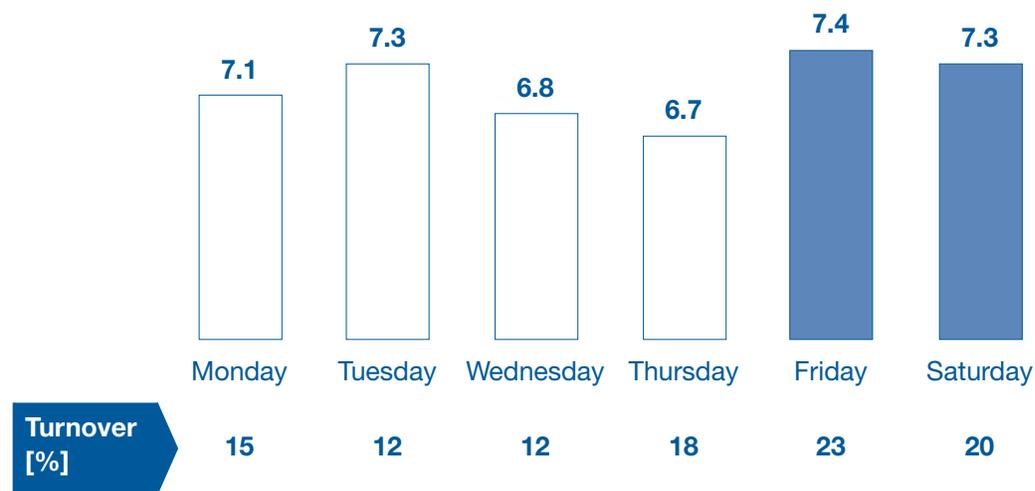
Source: ECR Europe

**The peak shopping days are the most affected**

On-shelf availability fluctuates over the week, with the most affected days being at the end of the week and the beginning. The differences during the week are not decisive, with a performance discrepancy of 0.7%. What makes the end of the week so crucial is the share of weekly turnover. On average, Friday and Saturday account for 43% of sales, but may well reach the 50% level in some stores.

The share of weekly turnover makes it crucial to focus on the end of week.

**Out of stock rate per day of the week [%]**



Source: ECR Europe

Past experience and the current survey show that availability is strongly influenced by store traffic, delivery schedule and the shelving process. Heavy traffic on Fridays and Saturdays without the required store deliveries make these days particularly problematic; the start of the week is also critical, when deliveries have taken place, but products have not yet been shelved.

That the delivery schedule is an important factor would seem to be self-explanatory. Nevertheless, it provides valid insights when carefully looked at in the context of the root cause

analysis that shows store ordering and replenishment to be the two key problems affecting on-shelf availability. As the delivery schedule is not randomly set, but directly linked to the store ordering process, it is not delivery per se, but an insufficient store ordering process that strongly influences on-shelf availability on certain days of the week. The impact of the shelf replenishment process has to be accounted for, too, as the efficiency of this process greatly affects on-shelf availability.

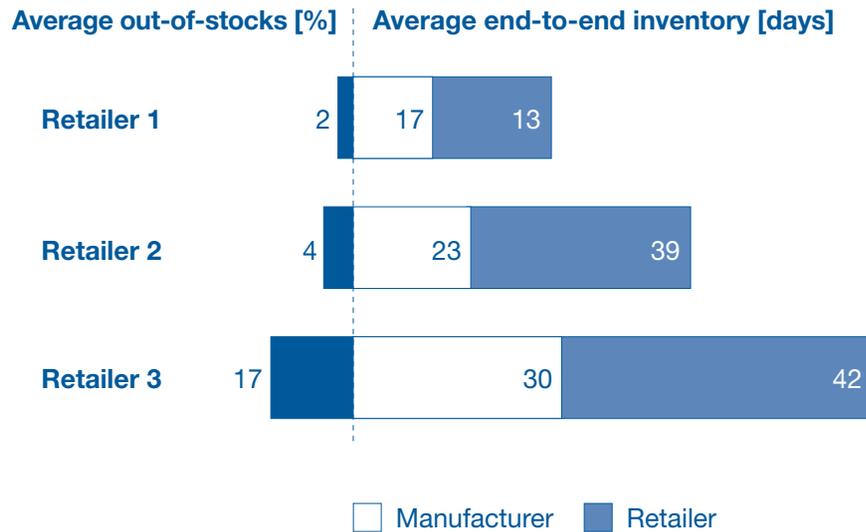
**High inventories can lead to poor availability**

Another interesting finding of the project is that high inventories do not necessarily equate with good on-shelf availability. On the contrary, high inventories tend to create a series of problems, such as clogging the stockroom and slowing in-store operations.

High inventories do not necessarily stand for good on-shelf availability.

In fact, in the current project, retailers and manufacturers who managed their supply chain most efficiently demonstrated low out-of-stock rates with low inventories. Again, co-operation seems to be the key to benefiting from reducing both out-of-stock rates and inventories.

**Relation between inventories and on-shelf availability**



Source: ECR Europe

### **There is no significant difference between DC & DSD items**

Contrary to previous belief, the current survey shows that the respective distribution methods (central warehouse delivery vs. direct store delivery) play a subordinate role with regard to the out-of-stock rate of certain product categories. Similar products sourced via alternative channels exhibit performance differences of less than 0.3%, which clearly indicates their potential to perform equally. In one case from the current survey, the performance gap was almost 5%. This difference could be attributed directly to the channel through which the product categories were sourced. Fresh, chilled and frozen products were sourced via direct store delivery and less demanding products like ambient food products and fast moving non-food categories through central warehouse delivery. The result shows the importance of the product category itself relative to the distribution method.

The distribution method plays a subordinate role with regard to the out-of-stock rate.

Taking the root cause analysis into consideration, which shows that more than 85% of the root causes lie in the domain of the retail outlet, the subordinate role the distribution method plays in on-shelf product availability becomes even more apparent.

### **4.3 Top root causes – Underlying reasons for the out-of-stock problem**

The on-shelf availability analysis shows merely that there is a problem in general and that some factors, such as promotions or specific categories, may accentuate the out-of-stock problem. However, only a root cause analysis can identify the underlying reasons for a product not being available. To tackle the problem of low availability it is therefore essential to identify:

- The stages in the supply chain responsible for out-of-stocks
- Bottlenecks and problems at a micro level
- Perceived and real problem areas for out-of-stocks

Retailer in-store operations cause over 85% of all out-of-stocks. Store ordering, shelf replenishment and inventory inaccuracy are the key issues for industry participants.

There is a multitude of reasons why a particular product may be out-of-stock at any given step of the supply chain. However, the lowest levels of availability appear at the downstream end of the supply chain (the moment of truth).

A standardised root cause catalogue was defined for the project to identify specific root causes, using a common approach in all seven markets in widely differing retail environments. The catalogue comprises 13 major root causes that help identify the deficiencies, and 49 sub-root causes are available to identify in greater detail the reasons for products not being on-shelf.

**Root cause catalogue**

1	Delisting by store staff	8	Store ordering
2	Inventory inaccuracy	9	DC ordering
3	Damages & shrinkage	10	Incorrect master data
4	Shelf replenishment	11	Forecasting inaccuracy
5	Delivery schedule	12	DC/supplier related (other)
6	Operations at DC	13	Supplier related (other)
7	Supplier reliability		

Source: ECR Europe

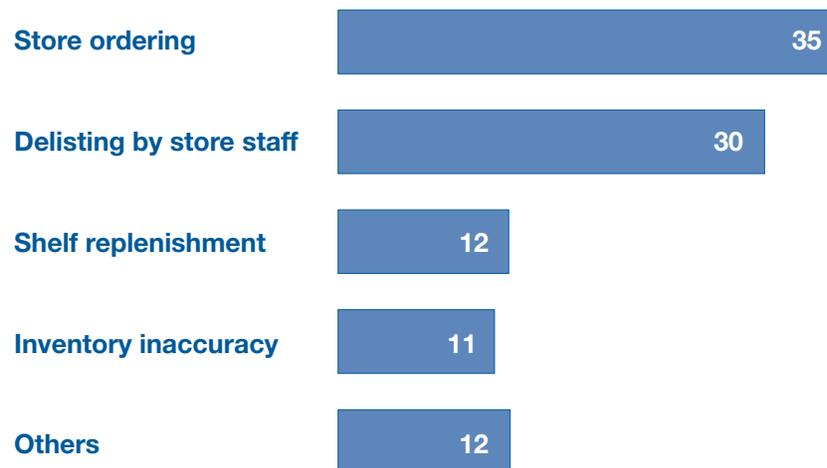
The root cause analysis reveals a clear division of root cause responsibilities, showing the issue to be largely a "retailer problem". Despite this fact, the analysis of financial implications shows that manufacturers also bear a huge burden, making the problem a cross-industry issue and again showing that co-operation is vital.

The analysis of the financial implications clearly indicates that the out-of-stock problem is a cross-industry issue.

In contrast to past surveys, the major root causes are not only identified, but are specifically quantified with respect to their impact on the out-of-stock problem. Quantifying the root causes helps to focus improvement strategies on the most important levers.

The survey specifically identifies four major root causes of stockouts. These root causes relate to in-store retailer operations and can be subdivided into two main groups, one relating to better planning and communication (delisting by store staff) and the other to supply chain inefficiencies (store ordering, shelf replenishment and inventory inaccuracy).

#### Top root causes [%]



Source: ECR Europe

It might happen that store management does not adhere to headquarters merchandising policy or to planograms. Even if products are part of the fixed assortment they might not be available in-store. The same holds true if products are not shelved as stated in planograms. This unintentionally inflates the out-of-stock measured. Not only does this pose an obstacle to better planning, it also exemplifies the lack of communication across divisions and functions within an organisation. Along the supply chain the following inefficiencies need to be closely looked at.

### Supply chain inefficiencies

Store ordering	Shelf replenishment	Inventory inaccuracy
> Last order generated too late	> No time for staff to refill shelves	> Inaccurate book stock
> Incorrect order planned	> Poor back store operations	> Damages
> Inaccurate forecast	> Lack of shelf-edge label	> Stolen goods
> Inadequate order generation process	> No out-of-stock checks	

Source: ECR Europe

#### 4.4 What is at stake? Financial implications of stockouts

Current data on consumer behaviour and out-of-stock levels indicate that manufacturers and retailers forfeit approximately EUR 4 billion in sales each year. This very conservative estimate takes into account only those shoppers who choose to "not buy at all" (9%). The estimate could be much higher, as retailers also lose sales when shoppers buy the product elsewhere, postpone the purchase, take their entire shopping basket elsewhere, make no purchase or buy a smaller size. Manufacturers lose sales when shoppers postpone the purchase, make no purchase, buy a smaller size or buy a different brand.

The dilemma for industry participants is that the root causes may not lie within their domain, and that they may not be able to influence performance at all levels of the supply chain. Nevertheless, out-of-stocks seem to be equally detrimental to manufacturers and retailers in financial terms. No matter how well individual actors perform in their domain, they will eventually have to share a considerable burden, once again emphasising the importance of true supply chain co-operation. There is a lot of potential for improvement in each category and in each market. Taking the example of detergents: customers

According to a conservative estimate, EUR 4 billion in sales are lost every year merely by shoppers "not buying at all" (9%) when they encounter stockouts. The real financial losses may well exceed this figure.

require this product on a regular basis. If they run out of washing powder, they will not leave the store without it, exhibiting store loyalty rather than brand loyalty. Hence, customers will not switch over to another store to get it, but will substitute it with another brand or, alternatively, trade down or up. Taking a different example, diapers are characterised by high product loyalty. Having the preferred brands constantly in stock can be a true competitive advantage for retailers, because consumers are more likely to switch stores than brands. The sales growth benefit is in this case in favor of the retailer. The respective store will become the parents' retailer of choice. Furthermore, these parents will spread the word about the store's superior performance. The retailer thus not only satisfies current shoppers, but also attracts new ones.

Consequently, if retailers and manufacturers co-operate on the out-of-stock issue, retailers benefit from reducing out-of-stocks for key brands, and manufacturers gain from losing fewer sales and picking up extra sales from shoppers who switch from a different brand that has sold out. Both benefit from increased shopper satisfaction and loyalty.

Increased on-shelf availability may not only boost sales and profitability but also enhance shoppers satisfaction and loyalty.

As the examples from previous studies verify, lost sales have an even greater impact on profitability. When sales are lost due to negligence in the last metres of the supply chain, most of the costs of supplying the product have already been incurred. The product has been purchased, shipped from the manufacturer to the warehouse and from the warehouse to the store – without, however, reaping the benefits of the moment of truth, as the customer is prevented from making the intended purchase. Persistently high out-of-stock levels will even increase cost due to the additional activities required to solve the problem, such as disposing of wastage, returning promotional stock to suppliers and investing additional resources on managing the supply chain.

The scenario becomes even more dramatic when the long-term behaviour of shoppers who constantly face out-of-stocks is considered. Shoppers will potentially be lost altogether. A family typically spends around EUR 150 a week on groceries. In the long term, this works out to EUR 150,000 over a period of 20 years.

Retailers and manufacturers who consistently offer higher on-shelf availability than their competitors will gain additional sales and benefit from improved profits. In addition, delivering continuously higher on-shelf availability is a true competitive advantage that will attract additional shoppers who value this service level.

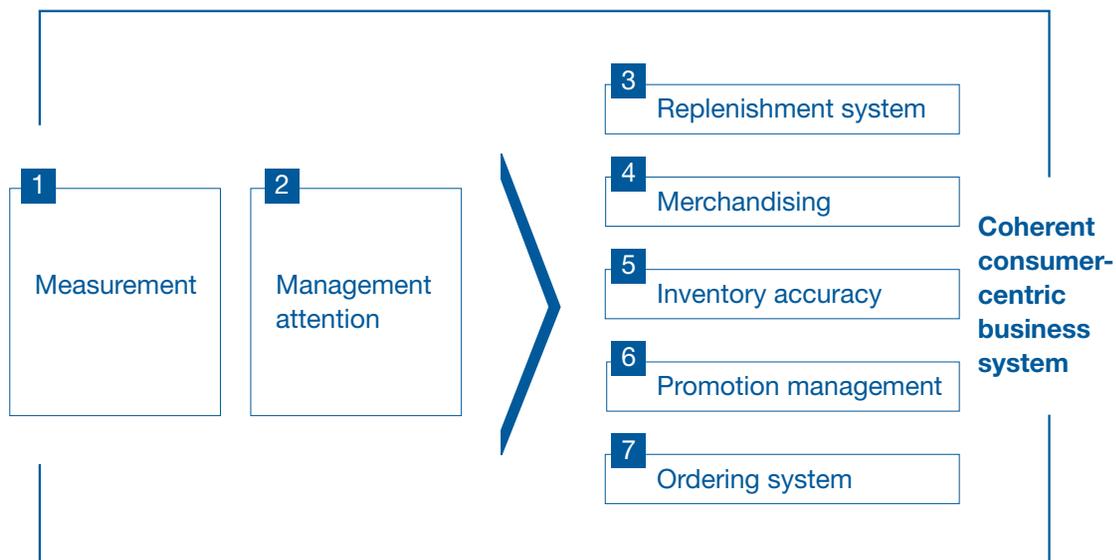
## 5 Improvement levers – Mastering out-of-stocks with a coherent consumer-centric business system

### 5.1 A coherent consumer-centric business system

The project identified seven critical levers. These levers are directly related to the identified root causes and highlight the importance of more co-operation within the retail industry supply chain, reducing out-of-stocks by as much as 50% during initial store trials. One lever by itself will not lead to the desired improvement – only the careful orchestration and integration of all seven into one coherent consumer-centric system will secure the expected on-shelf availability improvements.

The participating companies identified seven levers which have to be applied in a holistic manner.

#### Coherent consumer-centric business system



Source: ECR Europe

Manufacturers aiming to build brands and retailers striving to excel in real-time retailing have to meet consumer expectations at one essential point in time. It is the moment of truth for all participants: manufacturers, retailers and shoppers.

Having performed all the hard work necessary to get products from the plant to the store and to get customers into the store, failing to take this last hurdle prevents the customer from making the intended purchase, and manufacturers and retailers from benefiting from their efforts. Therefore, to successfully master the out-of-stock problem in future, retailers and manufacturers need a system that integrates these levers.

Measurement and management attention are the two prerequisites for the following levers: Replenishment system, merchandising, inventory accuracy, promotion management and ordering system.

### **Measurement**

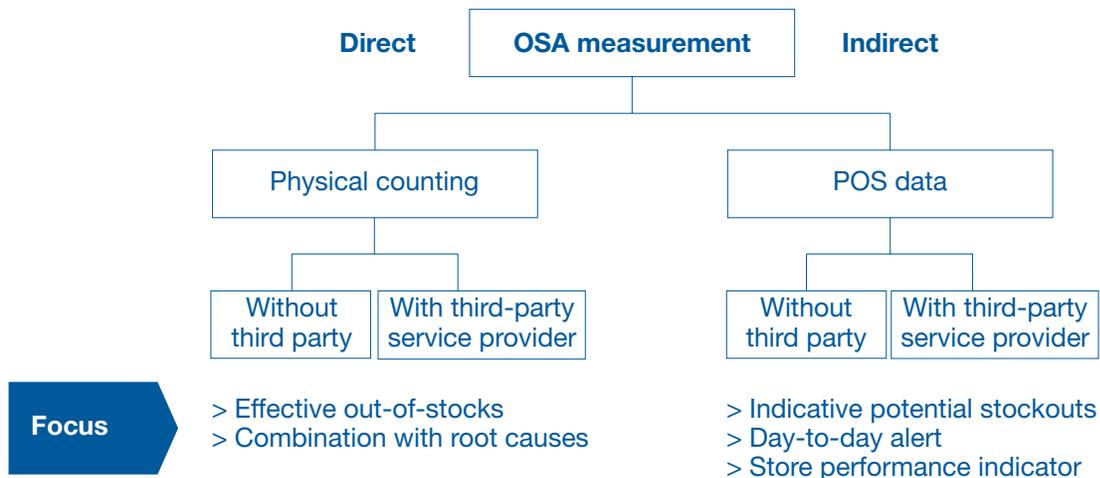
Measurement is one of two prerequisites for tackling the out-of-stock problem. Without measurement, there can be no awareness of the existing problem, its financial impact or the negative impact on shoppers' perception. There are two ways to generate measurement tools: physical counting or the use of POS data.

Measurements is one out of two prerequisites for tackling the out-of-stock problem.

Physical counting, the direct approach, means having store personnel or third parties go into the stores and physically count the effective stockouts by looking for shelf gaps. This method was used by most participants during the trials. Apart from showing gaps on the shelf, this method allows participants to find out in real-time why a particular product is out-of-stock. Looking for the root causes can therefore go hand in hand with physical counting. Only intermittent results are generated by this direct approach.

Alternatively, some participants used an indirect approach, using POS data to identify atypically low sales or no sales, which equate to partial or total stockouts. Also here a third party or service provider specialised in information provision can be involved. This indirect approach gives management a tool for measuring performance on a daily basis.

**OSA measurement**



Source: ECR Europe

**Management attention**

The second prerequisite for approaching the out-of-stock problem is management attention. Stockouts require attention at all levels of the organisation, from the boardroom to the shop floor. Increasing management attention will push the issue up on the agenda at all levels of the organisation. Simply comparing the average figures from the survey of weeks one and two shows how effective this lever is: the results during the second week of stockouts counting, were consistently about 1% lower than those of the first week. Hence, this lever had a huge impact on performance without changing systems or people.

Management attention is the second out of two prerequisites for tackling the out-of-stock problem.

In order to bring the issue of optimal availability to the forefront of employees' attention, management may offer their employees incentives, or integrate the issue into their scorecard measurements. Making availability a key factor in the evaluation can improve staff performance on this issue.

The following improvement levers, described below, clearly build on the two prerequisite levers mentioned above.

### **Replenishment system**

Shelf replenishment has been identified as one of the key issues to improving on-shelf availability. Inadequate shelf replenishment may have a number of causes, such as insufficient time for store staff to refill shelves, poor stockroom operations, missing shelf-edge labelling or the lack of availability checks. Hence, the key performance drivers identified for improving the lever replenishment are delivery frequency, stockroom organisation and the shelf replenishment process itself. The techniques for overcoming these shortcomings are not new to the industry, but they must be applied rigorously, for example through CMI, VMI and CRP. Therefore solutions should be generated collaboratively and all appropriate technical means available should be used.

### **Merchandising**

Although merchandising was not at the forefront of participants' interest at first, the trials showed that it plays a key role in future performance improvement. Considering that thousands of grocery articles are introduced into the market every year, it becomes evident how important it is to have a clear merchandising policy. This means adhering to planograms with a specified range of complexity and number of facings, without foregoing the opportunity to add new listings. Therefore it is particularly important to use collaborative category management, taking industry partners on board, to develop the best possible product mix in all categories.

### **Inventory accuracy**

Many industry participants believe that, with the advent of IT and the Internet, data accuracy should no longer be an issue. However, the trials showed that more than 10% of all stockouts are due to inventory inaccuracy. This may be caused by a number of factors, such as inaccurate book stocks, damages or stolen goods. This in turn leads to poor order quality, which will eventually result in stockouts. To overcome this problem, system and data quality must be improved, as the performance of the whole system is based on this. However, the key problem is not the system, but the human factor. Store staff will require training and motivation to improve data quality in the short term and increase shopper satisfaction in the long term.

**Promotion management**

Promotion management is a key lever not only because out-of-stock levels are up to 75% higher for promotional items than for non-promotional items, but also because shoppers are disappointed when drawn into the stores with great effort, only to be let down on the moment of truth. Early in the promotion cycle, in particular, out-of-stock levels are above 15%. Efficient promotion management requires greater forecasting accuracy and should not be based solely on past data and experience. A very important factor here is a collaborative planning process for the retail and consumer goods industry. This process has long been incorporated in existing CPFR initiatives, which is the right direction to take on an issue that exhibits excessive supply chain inefficiencies paired with high shopper dissatisfaction.

**Ordering system**

Finally, store ordering accounts for approximately 35% of all stockouts and is thus an important issue for the industry. Again, as an improvement lever, it comes in at the very end of the supply chain, but it affects all participants equally. Improving this process requires better data quality and increased staff training and motivation. Technical solutions to this problem consist in automatic store ordering systems or sales-based ordering. Simply looking at the store ordering process is not sufficient to improve availability by 50%. By assessing this lever in greater detail, it becomes evident that it is not a stand-alone concept, but is based on many of the aspects discussed above. This highlights again the importance of seeing the levers not as individual catalysts, but as a complete system.

**5.2 Store trial results**

The participating companies have piloted most of these improvement levers with some quite impressive results. The findings from the trials provide the industry with much needed insights into how to consistently improve the out-of-stock situation. Technologies such as automatic store ordering are becoming more and more common making poor in-store processes obvious. The human factor is shown to play a decisive role in sustainably improving on-shelf availability.

Co-operation remains also a key issue, despite the fact that the last metres are in the domain of the retailer. As it is the manufacturer's brand in the retailer's store, both must feel responsible for ensuring complete shopper satisfaction at the pivotal moment of purchase. These improvement processes are not a one-time change process, but require ongoing efforts.

In the following sections, the results of the store trials are presented in greater detail.

**Store trials**

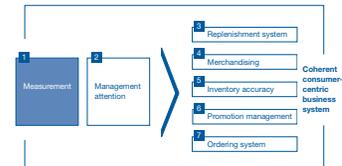
<b>Measurement</b>	Innovative approaches to measuring stockouts Auchan – Nestlé
<b>Management attention</b>	Increasing management attention through collaboration Tradeka – Saarioinen – Valio Putting availability at the centre of attention to reduce stockout rates Spar Austria
<b>Inventory accuracy</b>	A key requirement for the high-tech supply chain Safeway – Manor Bakeries
<b>Merchandising</b>	Getting the basics right to jump start the availability program Pingo Doce – Firma – Unicer
<b>Ordering system</b>	How packaging and merchandising help improving availability dm – L'Oréal An alert system as basis for a new ordering system Delhaize Using a collaborative platform to improve on-shelf availability Veropoulos – Elgeka

Source: ECR Europe

**5.2.1 Auchan – Nestlé  
Measurement – Innovative approaches to  
measuring stockouts**

**Participating companies**

- *Manufacturer: Nestlé*
- *Retailer: Auchan*
- *Third party: IRI Secodip*



**5.2.1.1 Setting**

So far there is no common measurement system for continuously and consistently providing figures to which industry participants can react. The shopper who faces an out-of-stock situation reacts, but he does not automatically initiate an alert. Currently, alerts may come from retailers (e.g. employees, internal stock management systems), manufacturers (e.g. during sales force visits), specific industry studies or joint initiatives. The measures devised for reacting to alerts are based on the perspective of the respective partner and are usually conducted only at long intervals. Therefore in most cases only figures are provided, but no action is taken.

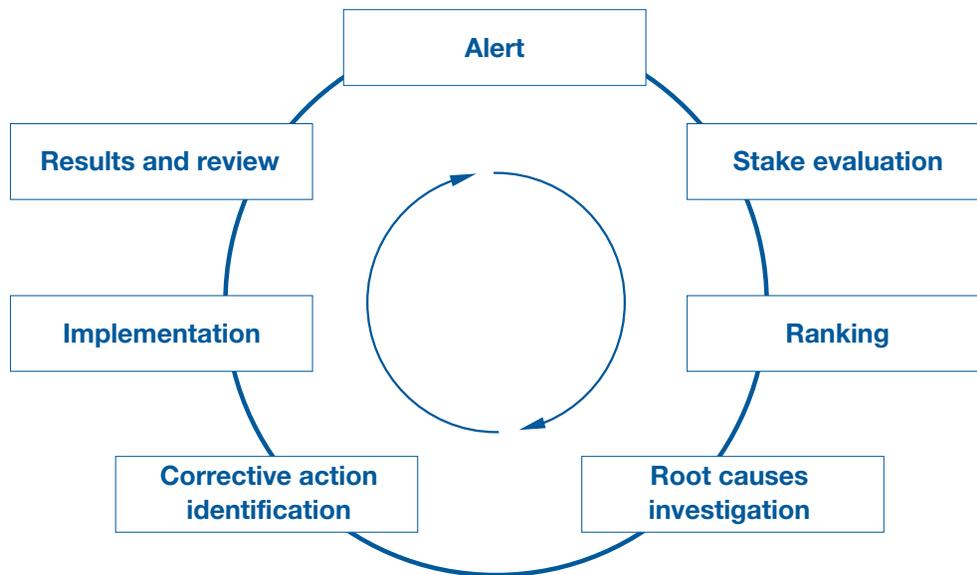
In November 1999, seven distributors and 32 manufacturers joined the ECR France working group "Consumer Service Level" and developed a collaborative approach to reducing out-of-stocks. The group defined stockouts from the point of view of the shopper wishing to purchase a product. A collaborative approach – comprising a seven-step continuous improvement process as well as a measurement tool – was developed to overcome the limitations of previous measurement systems.

"A product is considered to be out of stock when shoppers cannot buy the specific product because it is not available, although the product is usually available on the store shelves."

**The developed 7 step improvement process**

The improvement process consists of the following steps: Alert, stake evaluation, ranking, root cause investigation, corrective action identification, implementation and results and review.

### The 7 step improvement process



Source: ECR France

In order to achieve the goal of reducing out-of-stocks, the participants had to overcome the fact that there was no common measurement system available to continuously and consistently provide figures to which industry participants could react. Therefore a new consumer-oriented measurement system had to be developed that provides information on a particular product at a specific point of sale on a given day in a continuous and consistent way. The following paragraph gives insight into the new measurement tool which represents a basic module for the seven step improvement process.

#### The new measurement tool

Based on lessons learned, the following specifications were defined for the new measurement tool:

- It must be shared. This is essential for a joint effort between manufacturers and retailers.
- The measurements must be objective (based on POS data, no human intervention).
- The tool must allow potential to be quantified to facilitate implementation of the prioritised actions.

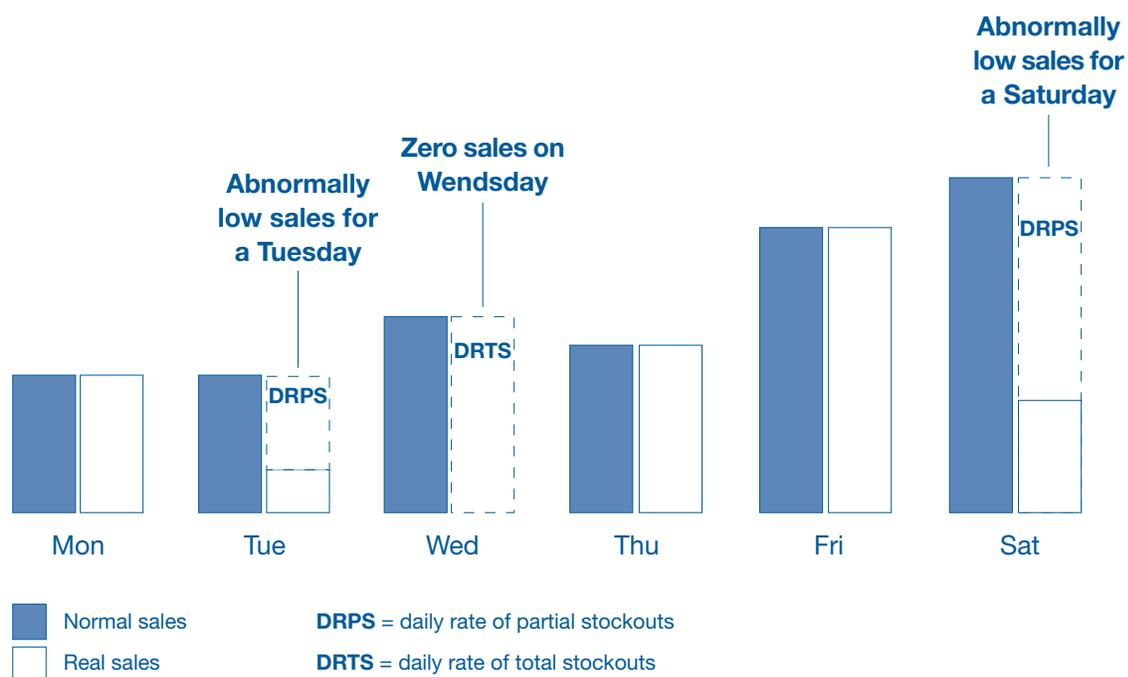
- The information must be available for each point of sale named (the pilot studies showed that the action plans must be established at the point-of-sale level, making this level of detail essential).
- The measurements must be made at least daily or on an ongoing basis (the pilot studies showed that malfunctions can happen at any time during the week or day).
- It must be possible to repeat the measurements or perform them regularly.

All participants involved in this trial were asked to develop a tool with the qualitative aspects as defined above. For this purpose, daily sales data was aggregated and assessed on a per item/day/store basis.

The participants developed a methodology based on a simple principle for measuring partial and total stockouts by looking at "normal" and "real" sales of a reference product:

- A product with normal sales displays perfect availability
- A product with abnormally low sales is partially out-of-stock
- A product with zero sales is totally out-of-stock

**Comparison of normal and real sales of a reference product in a given store [per day]**



These figures were used to establish the two main measurements: Daily rate of total stockouts (DRTS) and daily rate of partial stockouts (DRPS) according to the share of observations of zero sales or abnormally low sales.

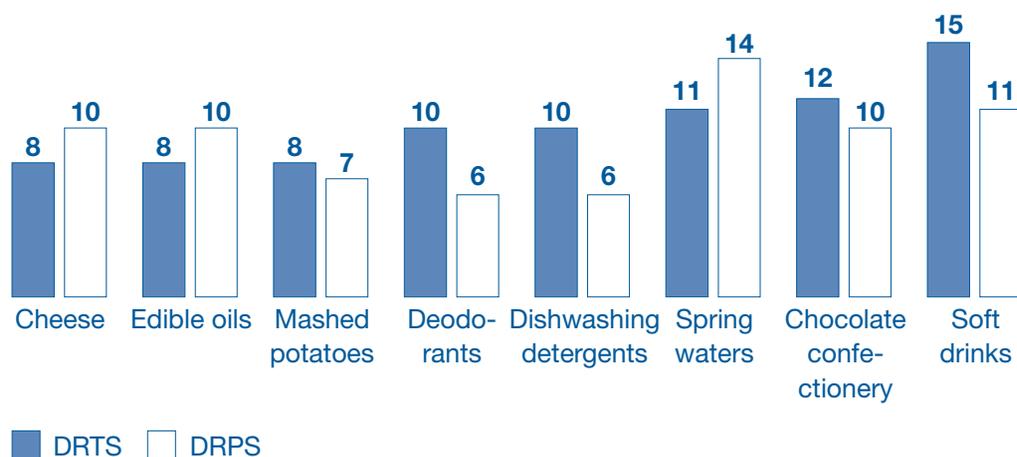
### 5.2.1.2 Findings

In the first wave, 8 categories were tested using the new measurement tool. The first wave involved 6 retailers including 4 in their entirety (all of their stores, i.e. over 1,000 stores) and 8 categories from October 8 to December 15, 2001 (i.e. 10 weeks, based on 59 days of information). The cross-sectional study presents the methodology and the types of measure the tool allows. The tool is best used jointly, within the framework of a collaborative approach. Eight pilots were run during the first wave and others were launched in May 2002 (with 2,500 POS and 12 categories), including Auchan, Carrefour, Casino, Cora, Système U, Bel, Coca-Cola, Evian, Ferrero, Henkel, L'Oréal, Nestlé, Unilever Bestfoods and Vania.

#### Experiences with the applied measurement tool

The new tool enables measurements of total (DRTS) and partial stockouts (DRPS) for different categories.

#### Daily rate of total and partial out-of-stocks [%]



Source: ECR France

Moreover the not realised turnover can be calculated. Not realised turnover due to total and partial stockouts amounted to 14% of total turnover in the 8 categories for the 6 retailers; 7.5% was due to partial out-of-stocks and 6.5% to complete out-of-stocks. For all the categories, the impact of partial out-of-stocks is rather significant, despite slight differences between markets.

### **Experiences with the applied 7 step improvement process**

Auchan and Nestlé, co-chairs of the ECR France working group, were the first to use the new collaborative tool. The ECR France out-of-stock improvement process and the new measurement tool were used to address the "dehydrated mashed potatoes" category in the French Auchan hypermarkets.

Following the alert, the first step was to identify the most important stakes. IRI Secodip supplied the participants with 3 indicators based on daily point of sale data: Partial stockouts (%), total stockouts (%) and stakes (EUR).

To identify the stores with the most important stakes, the focus was placed on the total potential by store. By sharing information between Auchan and Nestlé ("one-to-one agreement"), participants identified the 29 points of sale that accounted for almost 50% of the improvement potential.

The next step in the out-of-stock improvement process was to identify the root causes. To this end, IRI Secodip supplied two other indicators: Total stockouts by store and partial stockouts by store. These indicators were the basis, but more information was needed to identify the root causes. Auchan and Nestlé thus qualified every point of sale with shared information such as the number of reference products per shelf metre and total store space. Correlations with other factors were also examined such as store efficiency, store organisation and logistics.

The findings can be summarised as follow:

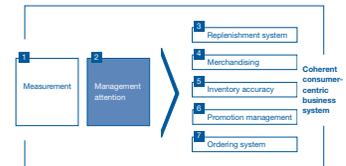
- Partial out-of-stock rates are just as high as total out-of-stock rates: Before this study, it was not possible to distinguish between partial and total stockouts. Partial stockouts and total stockouts do not have the same root causes, and measuring them allows retailers to better identify the causes of the stockouts.

- Not all stores are affected: in addressing the out-of-stock issue, the key is to identify the most important stakes which therefore should be done at the very beginning of the improvement process. This step is crucial for concentrating efforts on the most important potential turnover. Working with all stores at the same time would be inefficient and expensive.
- Establishing a collaboration is efficient for two reasons:
  - A one-to-one agreement (information sharing between retailers and manufacturers) gives both parties more detailed information (e.g. information by named store for the manufacturer)
  - Having all the required information makes it easier to identify the root causes
- The availability of an adapted measurement tool is very important: it provides us with uniform information at the store level on a daily basis and makes it possible to verify whether corrective actions have the expected results.
- There is still room for improvement concerning tool reactivity and tool usage in the context of joint best practice analyses in order to further boost the level of consumer service.

### 5.2.2 Tradeka – Saarioinen – Valio Management attention – Increasing management attention through collaboration

#### Participating Companies

- *Manufacturers: Saarioinen, Valio*
- *Retailer: Tradeka*



#### 5.2.2.1 Setting

Tradeka used a combination of measures to drive down stockouts. While focusing on management attention also collaborative availability management and sales based ordering were addressed. The results of the OSA survey showed that these companies faced three major problems:

- Hypermarkets performed considerably better than mini markets in terms of out-of-stocks, with average out-of-stock rates of 2.4% and 5.2%, respectively
- For both formats, the most problematic category was fresh ready meals, with 7% and 13% out-of-stocks; this means that other perishable categories may also exhibit similarly high out-of-stock rates
- For both formats, the major root causes were store ordering and item not being listed, although store ordering tends to affect hypermarkets more, while item not listed is more pronounced in mini markets

#### Out-of-stock rates – most affected categories [%]



Source: ECR Europe

### 5.2.2.2 Findings

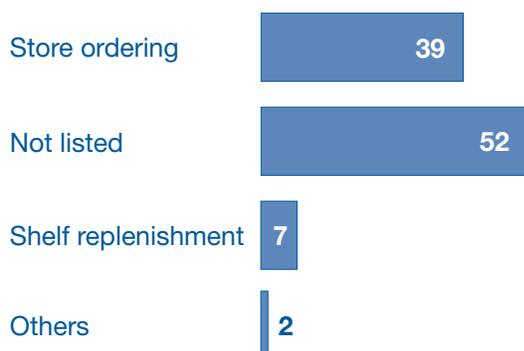
The most prominent root causes, store ordering and item not listed, accounted for more than 80% of stockouts. Consequently, the team decided to focus on ordering and assortment execution. As the survey results already highlighted, the out-of-stock rate dropped simply by providing a measurement system as part of the management information system.

In the past, out-of-stocks were neither measured systematically nor collaboratively, and problems were solved within organisational boundaries without ever formulating a common approach to address the issue.

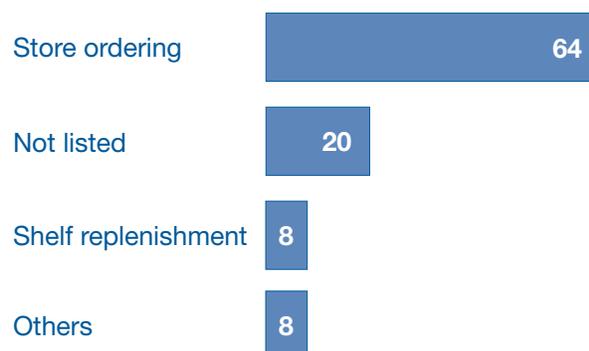
Today, the participants understand the out-of-stock problem better. This allows them to focus on specific problematic stores and products and take corrective action. Improvements have been achieved by combining store and product knowledge. The participants believe that more improvement potential can be tapped in this area merely by increasing retailers' awareness of this problem.

#### Root causes for different store formats [%]

##### Mini market



##### Hypermarket



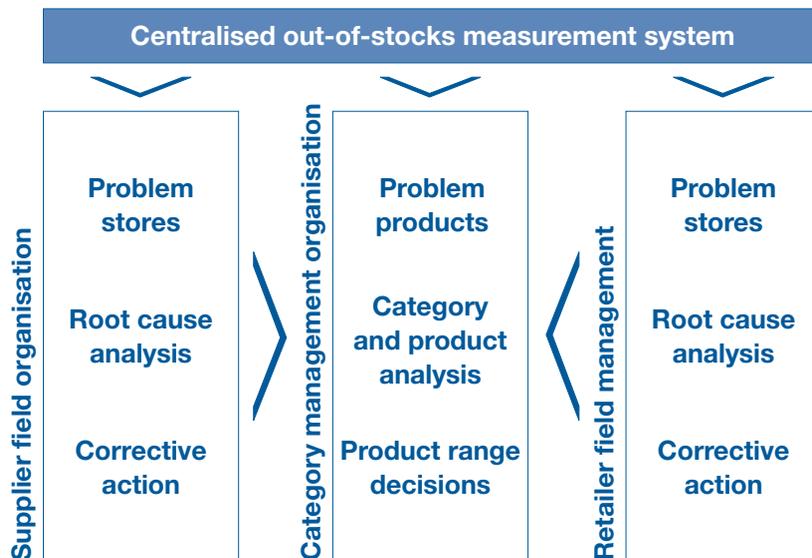
Source: ECR Europe

During the trial the Shelf Availability Management (SAM) model was developed. The participants also addressed the store ordering system.

**The Shelf Availability Management model**

The trials have provided very encouraging results that support the participants' efforts to develop a centralised measurement system known as the Shelf Availability Management model. This model makes it possible to focus efforts on the most problematic stores and products, bringing suppliers and retailers together in a category management organisation to reduce high out-of-stock rates.

**Shelf Availability Management (SAM) model**



Source: ECR Europe

**The store ordering system**

Furthermore the participants addressed the store ordering system and policies. Until recently, a manual store ordering system with handheld devices was used. Orders were based on sales orders and individual experienced related estimates, which led to considerable differences between stores.

The manual process was time consuming, and even though stores received 4-6 deliveries each week, many products were only ordered every two weeks, thus increasing the chance of items going out-of-stock. A sales-based ordering system was introduced on the basis of allocated space, minimum fill rate, POS data and event forecasts. This means that products may be ordered daily to ensure optimal availability, and store staff has more time to perform other tasks such as checking availability, replenishing shelves and focusing on shoppers.

The improved ordering system has increased on-shelf availability significantly. In fact, during the trials, out-of-stocks were reduced by as much as 50%, while inventory levels remained stable. Introducing the automatic store ordering process has also brought other advantages, such as better space management and assortment.

### Automatic store ordering

- > Better planning and execution of assortments and space allocation
  - > More accurate orders
  - > Focus on availability management and customer quality in stores
- 
- 50% reduction of stockouts**

*Source: ECR Europe*

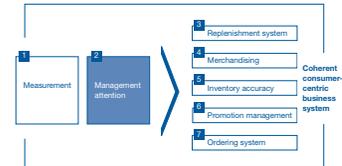
Another trial group finding was that, with a sales-based ordering system (SBO), the major root causes for out-of-stocks were no longer retailer related; instead, 66% of all out-of-stocks were related to supplier and warehouse problems. The promising results achieved during the trials led to fast implementation and rollout in all 590 Tradeka stores, and more categories will be included over time.

### 5.2.3 Spar Austria

#### Management attention – Putting availability at the centre of attention to reduce stockout rates

#### *Participating company*

- *Retailer: Spar Austria*



#### 5.2.3.1 Setting

The stockout problem had been at the forefront of Spar's interests for quite some time. It joined the OSA project to generate quicker results and to benefit from their colleagues' insights.

#### 5.2.3.2 Findings

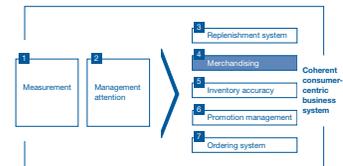
During the trial phase, Spar tested 150 items in 11 stores on 11 consecutive days, adding up to approximately 18,000 item checks in total. The overall stockout rate was 2%, while demanding categories such as fresh ready meals had a rate of 6.5%. During the first trial week, results were consistently about 1% higher than the results of the second week. Looking at their root causes, Spar found 45.7% of all out-of-stocks to be due to incorrect inventory data and hence wrong order quantities. The second most prominent root cause was found to be orders being placed too late (35.1%), while shelf replenishment accounted for about 17% of stockouts.

Spar has taken several steps to address the problems and to continuously improve existing processes and systems. These include greater involvement of the central office in trying to detect differences between physical counts and POS inventory data, as well as expanding its automatic ordering system. As most measures are still under development, it is not possible to provide further details on progress at Spar. It is interesting to note, however, that the aim is to reduce out-of-stocks by 50% by the end of next year, and that out-of-stocks will be a core measurement on its scorecard.

## 5.2.4 Pingo Doce – Fima – Unicer Merchandising – Getting the basics right to jump start the availability program

### Participating companies

- *Manufacturers: Fima, Unicer*
- *Retailer: Pingo Doce*



### 5.2.4.1 Setting

The OSA survey showed that the out-of-stock problem in the portuguese market was considerable high, with an average of 17.3%, ranging from 33% for detergents to 4.6% for beers. The main root causes were store ordering (49.3%) and items not being listed in-store (16.7%). Combining these figures with consumer behaviour data made it possible to quantify lost profits for the retailer, which totalled EUR 4.3 m per year.

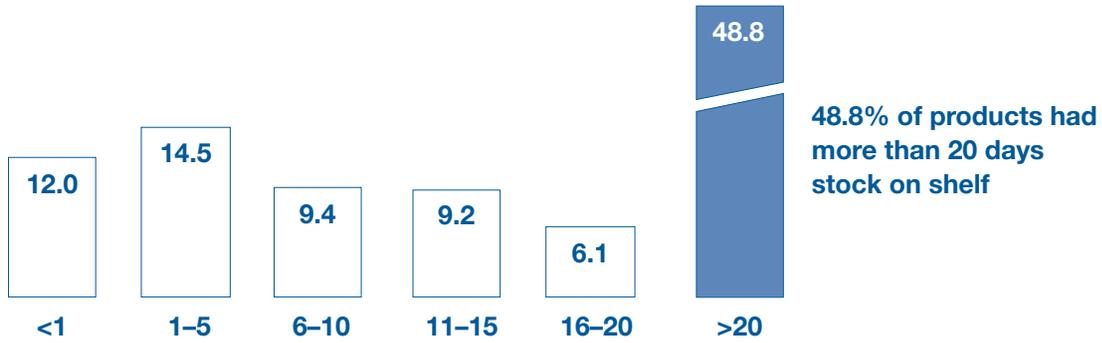
### 5.2.4.2 Findings

To improve the situation, the three participating companies focused on merchandising, but they also looked at the levers measurement and ordering system. The initial approach addressed all three levers simultaneously, which proved to be the wrong tactic. Following this experience, the companies decided to solve the merchandising issue before addressing a measurement and alert system as well as an automated store ordering process. In order to minimise the out-of-stock rate the following areas were adressed: Assortment cleanup, store clustering and planograms, measurement and warning system, automatic store ordering.

### Merchandising

The participants were facing a situation where stores had more than 15,000 products, orders were based on store staff experience and planograms outdated. The first step was to streamline the assortment according to days stock on shelf per category, as almost 50% of the items had more than 20 days stock on shelf.

**Product on shelf [days]**



Source: ECR Europe

Assortment cleanup led to an immediate improvement in the reliability and efficiency of store orders, as the assortment was reduced to 5,100 products, i.e. to one third of its previous complexity.



Source: ECR Europe

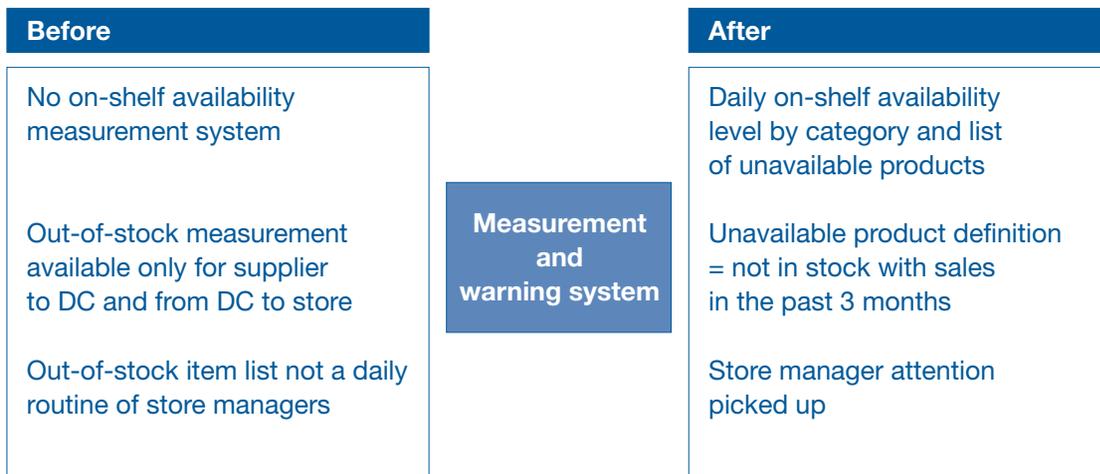
The new planograms provided much better guidance for store orders, saved time, and clustered stores according to category footage.



Source: ECR Europe

### Measurement and warning system

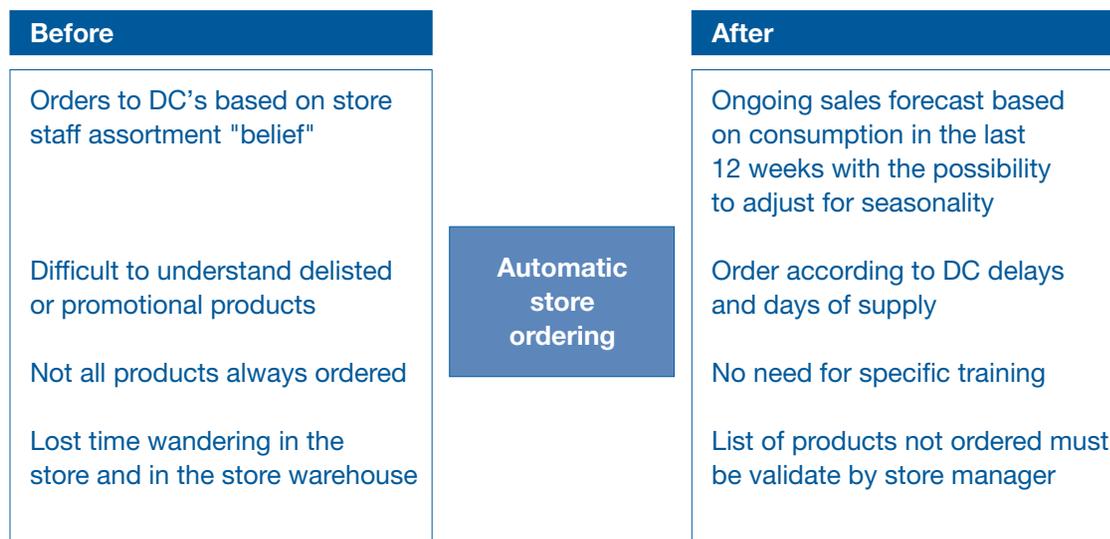
Only after tackling the merchandising issue, the members were able to address the measurement system. To do this, out-of-stock was defined very simply as "not in stock but with sales in the last three months", which not only provided management with out-of-stock figures, but simultaneously increased managements' awareness of this issue.



Source: ECR Europe

**Store ordering system**

Furthermore, an automated store ordering system was used, based on sales figures from the last 12 weeks, while leaving enough individual freedom to integrate new product lines.



Source: ECR Europe

The store trials have been very encouraging, with a reduction of out-of-stock of more than 50%. Aside from the encouraging results in financial terms, store management and staff have more time to place a greater focus on the customers.

### 5.2.5 Safeway – Manor Bakeries Inventory accuracy – A key requirement for the high-tech supply chain

#### Participating companies

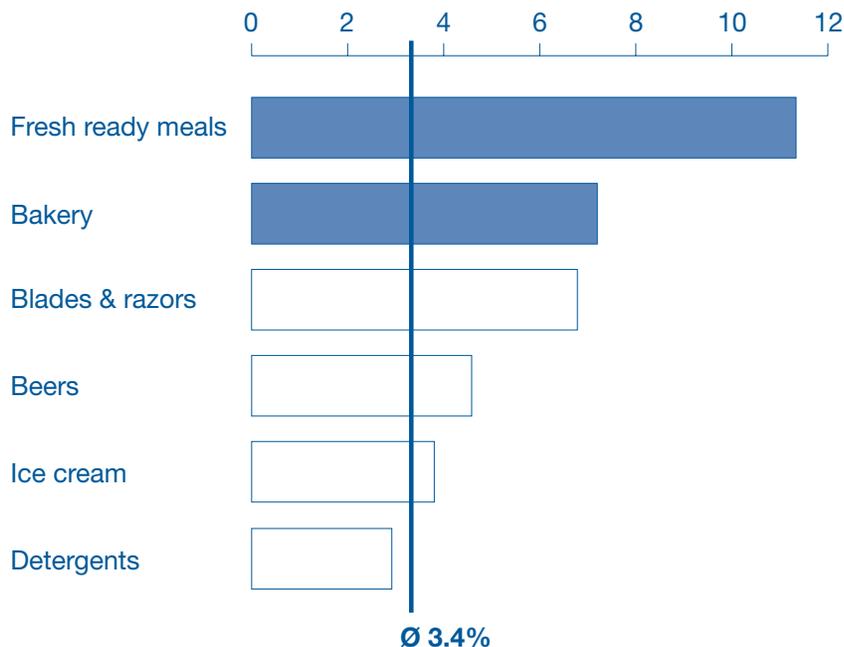
- *Manufacturer: Manor Bakeries*
- *Retailer: Safeway*



#### 5.2.5.1 Setting

With around 500 stores and 21 DC's Safeway operates a technically advanced supply chain, driven by a sales based ordering system. The survey data showed that there is relatively little room for improvement in the market compared to the other trial markets. Safeway had an average out-of-stock rate of 3.4%. Therefore there was relatively little room for improvement. However, the opportunity arose when the out-of-stock rate of the fresh ready meals category was determined to be twice as high as the average, and sometimes even higher.

#### Out-of-stocks by category [%]



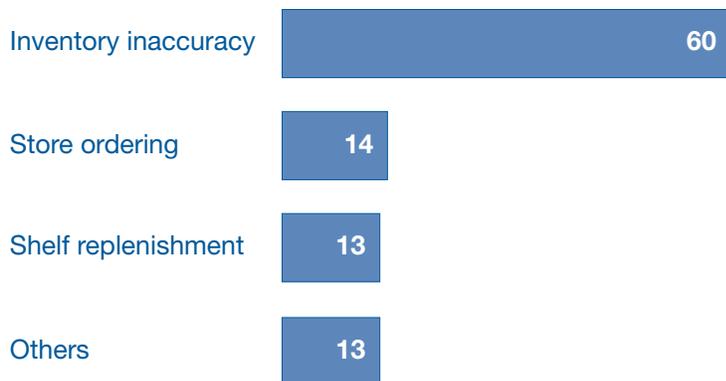
Source: ECR Europe

Safeway had invested a great deal into the development of its supply chain and – whilst benchmarking market-leading levels of availability – felt that there was still a level of competitive advantage achievable from further improvements.

### 5.2.5.2 Findings

The major root cause was inventory inaccuracy accounting for 60% of stockouts, inaccuracy in the store ordering system and missed shelf replenishment accounted for 14% and 13% respectively. Therefore inventory inaccuracy had top priority for the participants.

#### Top root causes [%]



Source: ECR Europe

To improve accuracy both human as well as system induced errors needed to be tackled. Five levers were applied to address the out-of-stock problem: store re-education, collaborative management, electronic picking, shelf edge computing and RFID's.

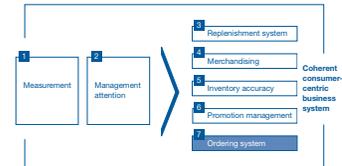
The store re-education programme re-wrote and re-issued the manuals relating to the management of the store replenishment processes. Under collaborative management close work with two key suppliers led to the identification of opportunities that existed for suppliers to get involved in improving availability in the last meters. Additionally an electronic pickering process was implemented within the warehouse. RFID's have demonstrated that a product can successfully be tracked from production to shelf edge using the technology; this data can be used collaboratively via the internet to reduce stockouts. However, the cost of this technology remains still a major barrier to implementation. Shelf edge computing has been easily the biggest success story as it allows the store management better visibility and diagnostics while at the same time simplifying the stockouts correction. The introduction of shelf edge computing during the trial period has reduced stockouts by 39%.

## 5.2.6 Delhaize

### Ordering system – An alert system as basis for a new ordering system

#### *Participating company*

- *Retailer: Delhaize*



#### 5.2.6.1 Setting

Results of the trial run covering 12 stores and 200 items across different departments and categories were as follows:

- The unadjusted out-of-stock rate was 12.4% – the categories confectionery and fresh ready meals were clearly above 20%
- The adjusted out-of-stock rate dropped to 2.8% if the root causes "not listed" and "discontinued line" were omitted
- Out-of-stocks of unlisted items were caused by store management's decision not to follow the central listing decisions
- There was little variation in the out-of-stock rate across the week

#### 5.2.6.2 Findings

Based on these results, the participants decided to look at various levers such as merchandising, inventory management, shelf replenishment systems and store ordering. However, most important was the development of an out-of-stock alert system.

#### **The out-of-stock alert system**

In the first step, participants focused on an out-of-stock alert system. This alert system consists of a listing of all items sold, generated at least 10 times a day, excluding sales from 5 p.m. to 8 p.m. It is available in the store at the opening of the next business day and indicates for each product:

- Item number
- Item description
- Average turnover for the last two weeks
- Average sales volume for this item
- Number of sales for the current day
- Number of times the article was out-of-stock during the last two weeks
- Time of last sale of the day

In the initial phase, five pilot stores were selected to run this trial. The role of the shelf manager was to check all listed items on the respective shelves. Thereafter, the project was launched in all 120 stores. However, the listing was not used in all stores and departments at all times due to a lack of reliability. Nevertheless, when the listing was checked on a daily basis, the stores were able to cut the number of listed items by 50%.

The new alert system was tested during the second trial phase. The system is based on POS data retrieved centrally every hour from all the stores for all items for the last 30 days. For this purpose, sales are compared at a specific hour each Monday with average sales of the last 4 weeks, to take the weighting of the day and the hour into account. Since the information is received every hour, it can be communicated hourly to the store and thus provides an almost real-time alert.

The basic rule is to calculate the "no sales" probability for each item for each weekday and hour based on average sales and standard deviation. (Example: If "no sales" and probability of "no sales" is near "0", an alert is triggered.) The objective of the new alert system is to benchmark the results of different stores (by item), to track a selected list of items (high value, store switchers etc.), and review shelf spacing, if necessary.

The accuracy of the new alert system has increased, but cannot be fully assessed due to its short history. Another limiting factor is the huge amount of data collected in 120 stores x 20,000 products x 12 hours x 28 days.

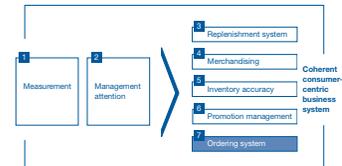
#### **Linkage of the out-of-stocks alert system to store inventory**

In the next phase of this trial, the new system will be linked to store inventory and will track all goods received and all goods sold (scanning data) in order to compare theoretical and physical inventory. The out-of-stock alert system will compare the statistical results of the Phase 2 trial with the theoretical inventory. If Phase 2 and Phase 3 conclude that an item is out-of-stock, the system can trigger an alert. The accuracy of the out-of-stock detection should then be very high. Consequently, the use of such alert systems will lead to a new sales-based ordering system, basing reorders on store inventory data.

## 5.2.7 dm – L'Oréal Ordering system – How packaging and merchandising help improving availability

### Participating companies

- *Manufacturer: L'Oréal*
- *Retailer: dm*



### 5.2.7.1 Setting

During the OSA survey, the average out-of-stock rate at dm drugstores turned out to be far below average, at just 1.2%. The same rate applied to the tested cosmetics category. Trials run by the two participating companies focused on determining the profit impact of stockouts in this category. The main root cause of over 50% of out-of-stock items was store ordering, followed by shelf replenishment (24% of stockouts). Therefore the focus was put clearly on store ordering and shelf replenishment.

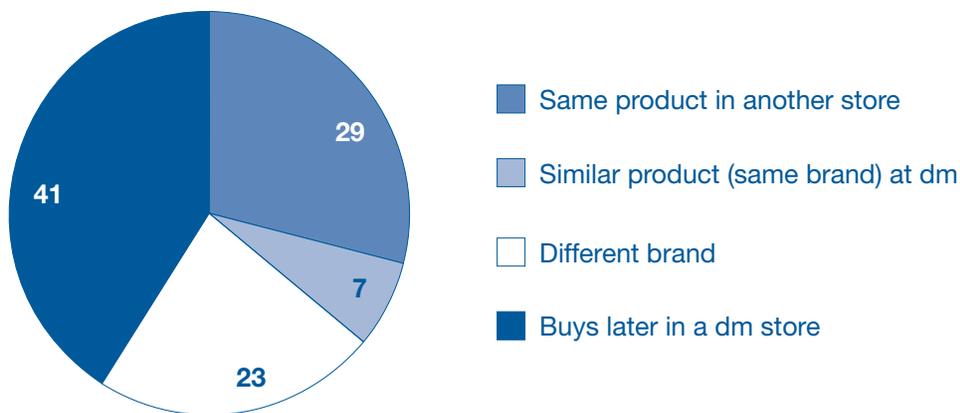
### 5.2.7.2 Findings

The category under review is critical to both companies for several reasons:

- It is a core competence of both retailer and manufacturer
- dm generates more than 50% of its revenues with beauty products and 11% with cosmetics
- 75% of all cosmetics purchases are planned
- The category is highly complex – seasonality, fashion and innovation are key factors
- Many of these products are high-price items
- The logistics approach is complex, allowing for individual orders and direct store delivery

Previous consumer behaviour studies clearly showed that the retailer and the manufacturer share the losses equally, the retailer losing 29% and the manufacturer 23% of consumers who planned to buy a specific product. When facing an out-of-stock item, consumers generally opted to shop at a different store or buy a different brand. These potential losses/gains emphasise once again the need to adopt a collaborative approach.

### Switching behaviour [%]



Source: Internal L'Oréal Study

The store ordering process and shelf replenishment process were closer looked at. The findings are summarised in the following paragraphs.

#### **The store ordering process**

The cosmetics category posed some special difficulties that needed to be addressed. The store-ordering problem was considerable due to the continuous use of manual ordering processes and the minimum order value for direct store delivery.

The initial focus of the trials was to improve traditional ordering processes, which were characterised by manual store ordering, variable ordering rhythms and a lack of forecasts. To approach this problem, the participants tested a computer-based sales forecast system. They expect to see first results by the end of 2003. All these issues were addressed during the trial while simultaneously increasing management awareness of the importance of the category cosmetics.

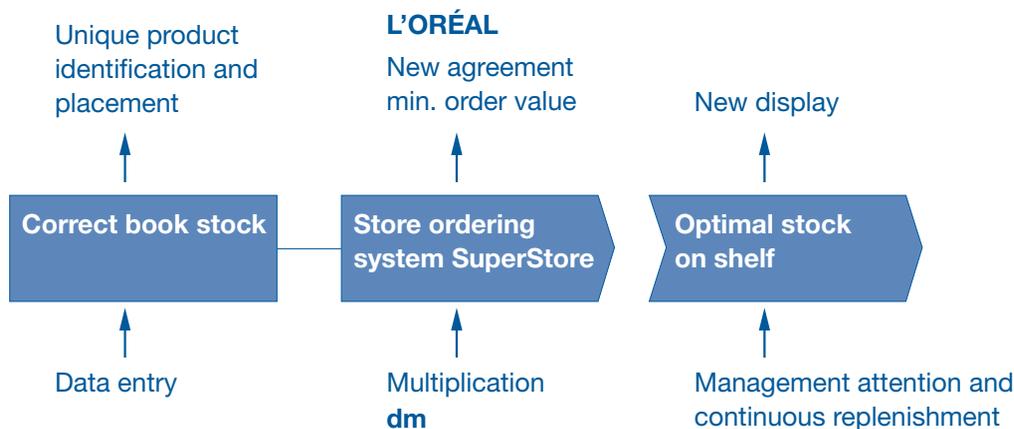
#### **The shelf replenishment process**

The shelf replenishment process was time consuming for store staff due to the similarity of the products (eyeliner and lipliner), and occasionally due to the lack of labelling in the two product groups.

Therefore, the shelf replenishment process needed to be revised. It was suffering from poor shelf labelling, the similarity of products and colours, a lack of space for replenishment and the problem of identifying re-launched articles. This aspect was successfully dealt with by designing a new display layout addressing all of the above-mentioned shortcomings, thus providing new display and product labelling and enough space for the product replenishment process.

Despite the fact that the vast majority of the root causes was within the retailer domain, only a collaborative approach was able to solve the problem.

### Collaborative approach from L'ORÉAL and dm



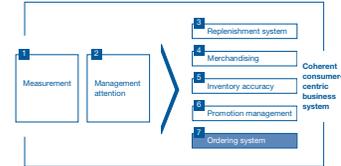
Source: ECR Europe

For the future, the participants are looking forward to using an RFID-based system to identify stockouts, and to more sensitivity for this issue from all supply chain participants.

### 5.2.8 Veropoulos – Elgeka Ordering system – Using a collaborative platform to improve on-shelf availability

#### Participating companies

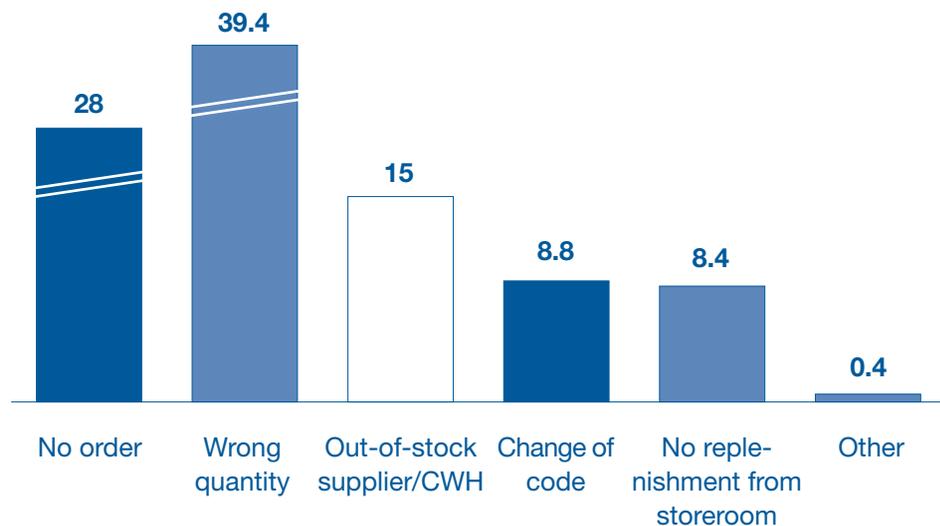
- *Manufacturer: Elgeka*
- *Retailer: Veropoulos*
- *Third party: ONIA-NET*



#### 5.2.8.1 Setting

The participants all had the same goal: overcoming the out-of-stock situation they faced and remedying the root causes. In the initial situation the out-of-stock rate was 8.2% for 120 selected products in 15 different categories, including fast and slow moving items. The detected shortcomings related to both direct store delivery (problems connected with the manufacturers sales force making orders) and replenishment via the retailer's central warehouse. Similar to the other trials, the participants experienced out-of-stocks due to two main reasons: incorrect order quantity (39.4%) and no order at all (28%). Together, these two factors accounted for approximately 70% of all stockouts.

#### Reasons for stockouts [%]



Source: ECR Europe

### 5.2.8.2 Findings

In order to overcome this situation, the participants decided to improve information sharing and collaboration between retailers and suppliers following the Process of Collaborative Store Ordering (PCSO™) using the ONIA-NET collaboration platform.

#### **The Process of Collaborative Store Ordering (PCSO™)**

Under PCSO™, trading partners share information (sales data, store assortments, in-store stock levels, promotional activities, out-of-stock alerts etc.) and collaborate on a daily basis to support the store replenishment process.

This model uses the Internet to bring together suppliers' expert opinions with the knowledge of store managers. The ultimate objective is to eliminate out-of-stocks, while maintaining optimum levels of stock throughout the supply chain.

#### **The ONIA-NET collaboration platform**

The enabler of this process is the ONIA-NET collaboration platform, supporting the daily online exchange of all critical information, sales forecasting and order generation, online collaboration between the trading partners, and finally, order exchange and status tracking. Users connect to this collaborative platform through a secure Internet connection using a simple web browser interface.

Using this new system, the participants made great progress in alleviating the above problems. In particular, comparisons between pilot stores and control stores showed the advantages of the new system. The second most prominent root cause (no order) was also reduced by more than two thirds. Overall, the level of stockouts was reduced by as much as 67%, while the out-of-stock situation attributed to the two main reasons, incorrect quantity and no order, was reduced by more than a factor of four. Another advantage of the new system was that store inventory was reduced by as much as 8.7%. Following the great success in the trial stores, the participants agreed to a rollout across all Veropoulos stores. In time, the process will also include more indirect and direct suppliers.

These results clearly indicate that PCSO™ has an important and sustained impact on shelf availability, leading to increased sales and lower costs for both retailers and suppliers, by reducing out-of-stocks and optimising inventory levels.

Apart from these tangible improvements, other, less measurable improvements were also detected:

- Inventory levels better aligned with consumer demand
- Immediate information on the performance of new products and promotions
- Fewer manual, time-consuming ordering processes (users during and after the pilot report great improvements in this area)
- Fewer costly errors (returns and re-orders) through improved accuracy
- Up-to-date supplier catalogue information, especially for new, promotional and withdrawn codes
- Performance measures (store and category statistics) based on recent and actual POS information
- Improved collaborative relationships with suppliers
- Improved communication and monitoring of stores/suppliers/warehouse

Following Veropoulos' successful rollout of this process, Elgeka is now rolling out the process, as well. Other major Greek retailers are considering the application of PCSO™ to support both internal replenishment between stores and the central warehouse, and collaboration with suppliers.

## 6 Recommendation and outlook

This report is an important milestone for the optimal shelf availability working group of ECR Europe. Over the past year, the project has provided great insight and helped to understand the critical levers for improving on-shelf availability to more accurately meet consumer demands. The developed business system, consisting of seven levers, will provide the expected performance improvement only if the levers are carefully coordinated. The levers were tested during store trials and produced quite exceptional results. Specific actions included providing management with a new performance measurement tool on their scorecard, reducing out-of-stock rates by as much as 50%, reducing the number of products by 30%, and reducing the number of stock keeping days. Overall, the system provides management with a performance assessment from a consumer perspective, allowing it to focus on the most prominent problems and the processes underlying them.

The experiences made, clearly underline that the following three maxims should be kept in mind when considering to improve on-shelf availability.

### Sustainability – Magnitude – Change

#### Sustainability

The trick is to maintain the performance: Self-enforcement is key

#### Magnitude

The task is huge: The whole company needs to be involved

#### Change

It is the advent of the loyalty driven supply chain



Source: ECR Europe

**Sustainability** – The store trials exposed the potential for improving on-shelf availability, but systems and processes have to be adapted over time. The technologies used for automatic store ordering and shelf-edge computing are easily adaptable and are becoming commonplace across the industry; however, it is the human factor, the training and retraining that remains key to long-term success. After all, the high-tech supply chain is only as good as the people who make it work.

**Magnitude** – The size and scope of the topic faced by the industry is huge. It has taken the OSA team almost a year to arrive at this stage, but the payoff will be worthwhile. In order to pursue a project of this magnitude, alignment and support is required at all levels of the company, from the shelf to the boardroom.

**Change** – The industry needs to recognise and accept the fact that consumers are no longer willing to accept current out-of-stock levels. In the very near future, the arrival of the loyalty driven supply chain will require participants to re-think the supply chain organisation.

In order to benefit from continued success, the importance of a coherent consumer-centric business system must be re-emphasised. The only way to build a superior brand image and supply consumers in real time is to not confront consumers with out-of-stocks at the moment of truth in front of the shelves. The human factor plays a key role in achieving this; this factor, however, is not perfectly controllable. Therefore, it becomes even more important to provide effective tools and an environment, in which they can perform at the peak of their abilities.

The following three key messages will help to initiate the process of improving availability and managing the moment of truth.

**Measure and understand**

The first and foremost consideration has to be an understanding of consumer behaviour. Measurement is crucial in order to understand what is happening at the moment of truth and how well a product/company is performing. Finally, co-operation between all supply chain partners is a key issue and common goals are decisive in order to achieve an improvement in on-shelf availability.

**Manage change and redesign**

Within the change process, it is important to focus on the most critical areas first, rather than trying to solve everything at once. Involvement of store management and staff is crucial, as these parties are closest to the customer. As this is a long-term process, a start should be made rather today than tomorrow, as short-term improvements will motivate all parties involved to continue the change process.

**Multiply and roll-out**

After first short-term successes the whole company needs to be involved. In the long run, only sustainable improvements and consistent application of improvement levers will deliver the results the industry urgently needs to become more profitable and sustain customer satisfaction.

Achieved results, presented in this report, are the first steps on the long road to success. Manufacturers and retailers have to collaborate even more closely in order to further increase consumer satisfaction and thus sales. Focusing on one common goal will ensure higher on-shelf availability at the moment of truth.

