

Developments in Innovative Cost Reduction to Raise Profitability

An overview of how the various players in the food industry have responded to the recent financial pressures with new, more advanced cost reduction methods

The increasing financial pressures of recent years have forced European food manufacturers to keep prices as low as possible. Food manufacturers have looked for new ways to raise profitability. New schemes to reduce manufacturing costs have been started. Suppliers have responded innovatively, with new functional blends and packaging that replace expensive materials and bring additional benefits. The industrial services sector has also responded with new solutions. It has gone beyond operational cost reduction methodologies to offer services combining various technical innovation aspects. This article summarizes developments and describes the *Innovative Cost Reduction Audit*, a new cost reduction tool.

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In recent years the food industry has been hit by a series of financial problems: Fluctuations in the price of commodities, the financial crisis and the threat of recession. Food manufacturers have had to look for innovative solutions to meet these challenges effectively. New cost reduction methods have been developed by each of the players in the European food industry (manufacturing, material supplier and service industries).

Innovative Ideas-, food manufacturers have paid considerable attention to *operations analysis* for improved manufacturing efficiency and *waste prevention*. They have used a variety of specially developed operational analytical tools such as Six Sigma, Lean Manufacture and Cost-Benefit Analysis either internally or using the support of external specialists. In the best executed programmes these

With respect to maintaining product identity, cost reductions can be classified into 2 groups (Table 1). Strict cost reduction (type 1) focuses on cutting costs while keeping the product unchanged as perceived by the user. Cost saving of type 2 delivers in addition auxiliary benefits that are positively perceived by the user, e.g., environmental benefits linked to savings in packaging materials; health benefits arising during changes in the formulation of the product (reformulation). This article gives an overview of such developments in Europe.

Food manufacturers' cost saving

From the three cost reduction categories, - *Waste Prevention, Operations Analysis and*



Figure 1. Savings on formulation, process and package (“product savings”) are direct cost savings which directly translate into increased profitability.

approaches have delivered savings as high as 20% of manufacturing cost. *Waste prevention* is an ongoing focus to all companies. This activity is usually the responsibility of the plant or operations manager. If waste prevention is accompanied by valorisation of industrial side-streams, the R&D department also gets involved.

Conflicting demands on the R&D team frequently hinder the achievement of the full potential cost savings from the ‘Innovative Ideas’ cost reduction category.

to companies because they translate directly into increased product profitability. Such changes are risky, though, as they may result in product changes which are negatively perceived by the user. It is important to keep in mind that any changes in the product or package brought about by cost reduction should not reduce the brand equity or the product quality perception by

Innovative Ideas for cost reduction is a demanding task for the R&D department, and comes on top of the usual, hectic product, process and package development activities. Thus innovative cost reduction does not always receive the full attention it deserves, and seldom reaches the full potential savings. Thus in this category there is room to manoeuvre. To reach full savings potential, the R&D manager has to keep up to-date with developments in cost reducing solutions offered by the various suppliers in the marketplace; subject them to a systematic evaluation and selection procedure; and implement selected options to the complete product line. Further he should challenge the ‘status quo’ on specific issues to get ‘hidden’ cost saving leads. Thus to increase cost savings, companies often resort to using external specialists for specific parts of their cost saving project. The investment is rapidly recovered by the extra savings achieved.

the consumer. Specific know-how in product development and testing is thus essential. Experience with food multinationals proves that specially developed know-how eliminates such risks. However not all companies have the necessary knowledge and resources.

To maximize profitability, companies carry out dedicated cost reduction programmes for the existing product range at certain time intervals. Dedicated cost reduction tools in the *Innovative Ideas* category used in the past by manufacturers include *formulation value analysis* and *Big Scale Value Analysis (BSVA)*. Other examples of this type of cost reduction fall under the umbrella of other company programme such as *harmonisation* of raw materials or product *reformulation* for improved health, such as in the recent wave of fat-lowering product reformulation carried out by European companies to meet new EU obesity programme targets.

Reduction in formulation and packaging costs, -two main aspects of the *Innovative Ideas* category- are very interesting

Table 1. Types of Cost Reduction in relation to Product Identity as perceived by the User

Type 1. UNPERCEIVED PRODUCT CHANGES (by user)

Aim: reduce manufacturing costs without introducing any product changes perceivable by the user.

Focus: strict cost-reduction.

Marketing: The cost-reduced product simply replaces the present product. No changes in market communication are needed.

Examples of cost reduction means: Ingredient analogues, product re-design, purchasing optimisation, process rationalisation, toll manufacturing, co-packing.

Type 2. POSITIVELY PERCEIVED PRODUCT CHANGES (by user)

Aim: Besides reducing manufacturing costs, the cost reduction should result in products with additional new benefits that require communication to the consumer e.g., health benefits (lower fat) or environmental benefits (less packaging).

Focus: cost reduction together with new product benefits

Marketing: New market communication is necessary; Cost-reduced product may open new distribution options.

Note: This type of cost reduction may also be part of the current development programme of the company. It is categorised as ‘incremental product development’.

Cost saving offer from Suppliers

The market pressure on manufacturers is also transferred to their suppliers. Thus suppliers keep looking for ways to come up with better and lower cost-in-use products to offer to their customers and to the marketplace. Some suppliers have even started dedicated business units focussed on cost reduction. **The food ingredients area** showcases new high-tech branded blends and ingredients with improved functionalities that address several aspects at a time. Examples are: 'flexible ingredients' that can be used in various product lines by the same manufacturer, thus reducing costs and inventory, as well as purchasing and warehousing complexity; fat replacing blends that also deliver improved storage stability of the end-product; volume and stability boosting blends for whipped products; new analogues to replace scarce or expensive ingredients, which also increase product stability; cost-reducing process accelerating ingredients; etc. Savings in product formulation reach 10-20% and more depending on the product.

Packaging materials suppliers also offer new options for cost reduction. For example: "lightweighting" by combining structural design and new, lighter materials delivers the same functionality and appearance while significantly

reducing material usage (typically 20% plastic reduction in soft-drink bottles). This generates savings in material and transport costs as well as in environmental taxes. Digital printing techniques have dramatically reduced set-up and printing costs. Sleeving, rather than printing or in-mould labelling allows a much greater range of pack appearances at a reduced cost. Linking pack development to process and equipment design offers opportunities for significant efficiency gains and savings. By paying careful attention to the combination of pack shape, size and palletisation, savings can also be generated in the logistic chain.

But the offer of material suppliers limits itself to recommendations involving their own portfolio; They do not provide an overview of the options in the marketplace and do not consider options from their competitors. They seldom get involved in optimisation of the manufacturing process, purchasing or waste minimization, and in other aspects of manufacturing. When they do it is to be able to apply their own materials. To consider all the various cost saving options at one time, food manufacturers have to engage specialised cost reduction consultants.

Innovative Cost Reduction Audit at a Glance

www.icr-audit.com

- Finds alternative options for high cost-in-use materials
- Identifies alternative material suppliers and their cost saving options
- Analyses unit operations to identify cost reduction opportunities
- Achieves cost savings that cannot be achieved by other cost saving methods
- Enables highly effective solutions by challenging the 'status quo'
- Benchmarks processes, formulations & materials
- Helps rationalise the number of suppliers and materials
- Focuses on maintaining product identity (type 1 cost saving; see table 1); Additional auxiliary benefits (type 2) are optional
- Reviews and improves the supply chain
- Reduces losses and waste not detected by other cost saving methods
- Applies the 80:20 principle for cost saving options
- Achieves cost reduction of 5-15% or more (in general)
- Results go beyond economic benefit and increased profitability to create higher manufacturing efficiency, better productivity, environmental and other benefits
- This tool provides company managers with new ways to increase savings and raise profitability

- **A holistic R&D approach to cost savings in product, process and packaging, - which considers: design, optimisation, rationalisation, efficiency, harmonisation, flexibility and quality improvements*.**
- **Covers: formulation; product; process; package; waste, rejects, returns; purchasing & sourcing; contract manufacturing & co-packing.**
- **Highly efficient service: 2 day audit at company location by external senior auditors; low client involvement.**
- **Carried out by international specialists whose experience was gained while working for food multinationals.**

* e.g., product quality defects, such as off-taste, oxidation, colour stability; storage stability & shelf-life extension; manufacturing variability.

Cost Reduction Consultancy Services

Consultancy services on *operations analysis* are well-known to the European food industry. In particular *Six Sigma* and *Lean* have given rise to specialised consultancies which flexibly assist companies with advising, training and implementation.

Consultancy services on cost reduction based on *Innovative Ideas* provide an overview of the cost saving alternatives offered by material suppliers and at the same time look at other manufacturing aspects. Consultants offering a *holistic* approach to *Innovative Ideas* cost saving are scarce, in spite of the good savings potential. This is due to various reasons: the care and experience necessary to carry out cost reduction in such risky areas such as product formulation and packaging (danger of users perceiving changes as negative); insufficient knowledge to cover the various sectors of the food industry; lack of a practical and efficient methodologies applicable across industries; and the necessary secrecy and confidentiality obligatory in the development area.

A significant development in this area is a service called the *Innovative Cost Reduction Audit* (ICR-Audit). This is a diagnostic tool, designed to assist the company manager who is under pressure to deliver top results in a short time by providing him with new recommendations, leads and ideas for technical cost reduction and increased profitability. The ICR-Audit is a holistic tool that carries out an expert value analysis on the various R&D-related aspects of a product line, such as: product formulation; process optimisation; packaging; waste, reject and return reduction; purchasing & sourcing optimisation; outsourcing, contract manufacturing and co-packing.



Figure 2. The Innovative Cost Reduction Audit allows company managers to reach cost savings not achieved by other cost reduction methods.

The ICR-Audit was developed by two former senior R&D managers from food multinationals -Danone, Unilever, Sara Lee- and is based on years of international experience in the innovative aspects of cost reduction and product development for many food sectors. It achieves cost savings not achieved by other cost saving methods. As a tool carried out by external R&D specialists under the highest standards of confidentiality, the ICR-Audit challenges the 'status quo' for new cost saving leads, takes care to maintain product quality and brand equity, and complements other cost reduction schemes used in the food industry such as those focussing on marketing & promotion; safety; operations and other aspects. For more information contact Dr. Cecilia Kuhn (c.kuhn@icr-audit.com) or Dr. Russell Ward (r.ward@icr-audit.com)

About the Auditors

Dr. Cecilia Kühn (c.kuhn@icr-audit.com) has more than 25 years of international innovation experience in the food industry, and has worked in Europe, the Americas and Japan. Besides her work on product, process and package development, Dr. Kühn is an international specialist in Valorisation and Waste Management in the food industry. She has worked on valorisation projects in USA, Netherlands and Central America (in a United Nations project). She has been co-responsible for the innovative cost reduction of a 'Big Scale Value Analysis' programme at an Unilever manufacturing hub in Germany (for 6 European countries).

Dr. Russell Ward (r.ward@icr-audit.com) has more than 20 years experience developing innovative products for world-class food/beverage and household products companies throughout Europe and in China. Dr. Ward specialises in providing the technical solutions necessary to develop high quality/low cost products. Amongst his successes are the development of low cost probiotic dairy products for Danone in Russia and Eastern Europe, cost optimisation of beverages, yogurts and desserts, and for Reckitt Benckiser and Unilever development of detergent formulations adapted to the needs of consumers in China, Brazil, Indonesia and Eastern European markets.