

CSR case studies



3M

Development of a life cycle management approach to improve the environmental performance of 3M's products, manage potential risks and identify opportunities at all stages in the product's life.

● The company

3M is a global technology company. Its brand names such as Post-It™ and Scotchgard™ are familiar throughout the world selling in nearly 200 countries. 3M's structure of seven business companies (consumer and the office; display and graphics; electro and communications; health care; industrial; safety, security and protection services; and transportation) reflects its market presence. Through these businesses 3M has companies in more than 60 countries employing over 67,000 staff and generating worldwide sales of \$20 billion.

Within 3M there is substantial inter-company co-operation in research, manufacturing and marketing of products that is underpinned by four core values. These are to:

1. provide an attractive return for investors through sustained, quality growth;
2. satisfy customers with superior quality, value and service;
3. respect its social and physical environment;
4. be a company employees are proud to be part of.

3M's approach to corporate social responsibility and sustainable development (economic, social and environmental issues) is explicitly linked to its values and the company prides itself on employing the right people, '3Mers', who share the company's ethical standards and belief in openness, honesty and integrity. Within economic sustainability there

are business plans to achieve optimal efficiency in manufacturing and logistics – so saving costs. Environmental sustainability is included with 3M's strategies. There are business processes that monitor life cycle management of products and lead to identifying new products and market opportunities as well as ways to reduce impacts.

This case study focuses on the company's life cycle management approach to its products.

● The drivers

The importance of environmental sustainability to 3M is demonstrated by its successful 3P ('pollution prevention pays') programme that was established 30 years ago. The programme has been a driver within 3M for its life cycle management approach as it has demonstrated ways of savings costs through, for example, reducing raw material use. In the last three years, environmental sustainability has become increasingly important within 3M. This is because merely meeting compliance targets does not fulfil the values of the business. Furthermore, compliance alone is not enough to achieve the tough operational targets which it sets itself over five year periods (e.g. 2000 – 2005). These targets cover reductions in waste – including volatile organic waste, CO₂ emissions and energy use.

Another driver has been its customers who have told 3M's sales staff that environmentally

responsible products are important for their reputation. The combination of these three drivers together with the need to reduce risks within its product range to maintain and increase its market share led to 3M's life cycle management (LCM) approach.

● Taking action

The LCM is a tool to manage all potential risk associated with a product, whilst identifying opportunities at all stages of its life cycle from research and development, sourcing of materials, manufacturing, operations, customer use, to ultimate disposal. The four particular areas of risk that LCM deals with are the potential risk of certain materials in their products, the safety and environmental risks in manufacturing and sourcing the product, the risks to customers in using the product and the risks both current and future in terms of forthcoming legislation in disposal of the product.

Within 3M the corporate toxicology and regulatory unit and the corporate environment, health and safety unit take joint responsibility for LCM development, since combined they can best represent manufacturing and customer perspectives. LCM is based on existing literature, in-house experts and 3M's own experience of benchmarking other companies in this field. Guidelines and standards for the application of LCM were developed through consultation with all of its seven businesses.

Part of the LCM approach includes a matrix that is applied to products in development or existing products in review. The matrix provides a means of measuring the LCM by scoring performance in all parts of the product's lifecycle. It assesses the impacts of the product in the following categories: environment – air, water, solid waste; energy; resource use; health – chemical, physical, biological; safety – chemical, electrical and mechanical. If, on applying the matrix, the product has achieved a satisfactory score it can continue its development. If not, the risk areas are assessed and a decision is made as

to whether to proceed with its further development.

The matrix overcame the challenge for 3M of needing a practical way of assessing all products without each one undergoing a comprehensive life cycle assessment. The period for assessment varies with the complexity of the product and can take several months to complete. The matrix was ideal as it allowed a review to identify risks and environmental health and safety (EHS) performance in a relatively simple way. The end result is that the matrix identifies what needs to be done (such as further research) and can lead to innovations. An example of innovation was the development of the Super Sticky notes as a direct result of the application of LCM to Post It™ notes. The LCM revealed that Post It™ notes used a solvent base. For 3M it was important to reduce the use of solvent in the manufacturing process of new products for two reasons; first, it improves factory safety as it eliminates the risk of explosions and fires caused by solvents, and secondly, it overcomes the issue of recycling/disposing of the solvent afterwards. So 3M developed a water-based adhesive for the Super Sticky notes that had the same functionality and performance as the solvent based adhesive.

LCM reviews are prioritised based on perceived EHS risk – a risk register is kept for all the products and this is reviewed – and public opinion. The latter is assessed through scanning of media and relevant websites. For example, persistent chemicals (those which can accumulate within the environment and in humans) are a fast moving area of science with regular improvements to 3M's knowledge and understanding of them. Products containing these chemicals are reviewed first.

Another example of the LCM application has been with the development of 3M's Novec™, a hydrofluoroether based product used for fire fighting. This product has been developed so that it has zero ozone depletion and global warming potential and replaces

'perfluorocarbon' based products that had significant global warming potential.

The application of LCM has not been without challenges. It has required 3M staff to go through training in technical (EHS) and regulatory areas so that the approach can be consistently applied. However, that has led to development of new expertise amongst staff.

"Staff have welcomed the approach as they can see how it can help us in achieving our internal targets as well as demonstrating how we are being true to our values and acting responsibly" said Dietrich Sinnaeve, Environment, Health Safety and Regulatory Manager for 3M Europe, Middle East and Africa.

● **The business benefits**

The LCM approach has improved governance within the business as it leads to greater transparency through better communication with its customers, who tell 3M what product specifications they require. This in turn leads to new market opportunities and sustainable growth as the company makes products that the customer needs in a way that increases commercial longevity. This is because products that could be a long-term risk due to issues such as impending legislation are identified by LCM.

In general, LCM has provided benefits in enhanced reputation and strengthened brand names. It has helped to improve relationships with customers. Because risks have been significantly reduced, customers can rely on 3M's products without the threat of damage to their own reputations. It has led to reducing environmental risks, and promoted operational excellence by improving efficiency – a cost benefit to 3M. Lastly, it has been a source of innovation as the LCM reviews have led to new market opportunities for customers and 3M products. Ultimately LCM links to sustainable growth and the manufacturing of products that will stay for a long time within the market place. In this way it meets 3M's values and delivers innovation.

● **Why is it CSR?**

All 3M products are compliant to existing legislation. The LCM approach provides actions to improve the environmental impacts of the products either through manufacturing, use or disposal that is additional to meeting legal requirements.

● **What next?**

All new products undergo LCM and 3M has set the objective that by 2010 all 3M products will have had LCM reviews. Data collected from the review process should enable 3M to further revise its environmental targets and will be used to demonstrate to its customers how 3M is tackling issues of environmental responsibility. It is envisaged that LCM will help further optimize manufacturing operations.

Contact us

Any comments on this profile? Would you like your organisation to be profiled?

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