Integrating environmental decision making into the product innovation process

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Abstract To deliver the Unilever target of doubling our sales whilst reducing our environmental impact, we must design products that have a lower impact across the full value chain: from raw material selection to how they are used by consumers. In order to achieve this target, it is essential to integrate environmental sustainability considerations into core business processes. For the innovation process, we created environmental assessment tools to systematically predict future product impacts and introduced these into the decision gate screening process. The tools were supported with guidance material and a tailored training programme. To ensure successful integration of this new approach, it has been important to appoint Sustainability Champions to embed these new approaches and targets for every key unit across Unilever.

1 Introduction

Since the Brundtland Commission developed the term sustainable development in 1987, society has become aware that is has to find solutions "that meet the needs of the present without jeopardising the needs of future generations" [1]. Companies are being increasingly challenged to contribute to sustainability by improving their environmental performance and to do this by reducing the amount of natural resources, energy consumption and emissions related to the manufacturing, use and disposal of their products and services.

One of the main approaches to achieve this reduction is through product design as it enables companies to meet market needs whilst also reducing the environmental impact of their product portfolio. It is therefore important that sustainability criteria can be understood and effectively applied by product developers to enable the rapid commercialisation of new product innovations. Life cycle thinking is

therefore critical in achieving sustainable development and as a source of inspiration for new product or system innovations.

In November 2010, Unilever launched the Unilever Sustainable Living Plan [2]. As part of this plan, there is a key target to halve the environmental footprint of our business (on a per consumer use basis). To achieve this target, it is important to build a sustainability culture and way of working that is embedded into the product innovation process to support business management systems. In addition to providing evidence of progress against the plan's targets, it is believed that sustainability thinking will support new product concepts that will better meet consumer needs, will drive market growth and will be better aligned with our customer requirements. In a global business with multiple innovations centres and a large number of innovation projects, a key challenge has been how to embed sustainability thinking into the innovation process and to transfer knowledge from sustainability experts based in a limited number of locations.

This paper will explain the approach taken to develop the environmental assessment tools, and implement these tools into Unilever's innovation process. In particular, this paper will discuss the challenges of building a sustainability culture within a large multinational company with a diverse portfolio of food, homecare and personal care products marketed in over 170 countries with varying consumer behaviours. Therefore the successful integration within Unilever required the utilisation of Sustainability Champions assigned to product categories, which are responsible for the correct application of simplified tools, supported by life cycle assessment (LCA) specialists who are able to complete bespoke environmental assessments for more radical innovations.

2 Methods and Approach

2.1 Scope of Unilever Metrics

Unilever's Sustainable Living Plan has three key product metrics namely water, waste and greenhouse gases (GHG). There is also a supply chain metric for sustainable sourcing, which covers additional environmental impact areas (e.g. biodiversity, water quality). These metrics were selected for the following reasons:

- Scientific relevance across our portfolio of products.
- Relevance to external stakeholder and their expectations of the key environmental issues of our company.

- Our ability to measure/quantify the metrics in a practical, resource efficient and repeatable way based on life cycle thinking.

The scope and definition of the 3 product metrics has been illustrated in Figure 1. In order to monitor the impact of future innovations, it was important to first measure the impact of Unilever's existing product portfolio. This was performed on 2008 sales by calculating these metrics for key product groups across 14 countries that account for approximately 70% of Unilever's total sales. This assessment was important to understand the environmental impact of Unilever's current portfolio, identify category contributions and to set a baseline against which we can monitor future improvements.

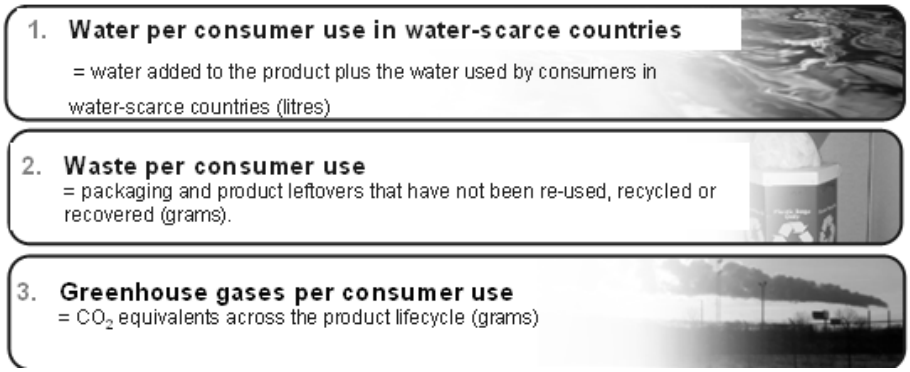

Fig.1: Environmental product metrics for water, waste, and greenhouse gases

2.2 Environmental assessment tools and integration into product innovation process

The next step on the journey was to integrate environmental measurement and decision making into the product innovation process. This was achieved by developing guidelines and tools to enable project teams to evaluate environmental impacts early in the innovation process and at every critical decision gate stage, as illustrated in Figure 2. The tools were tailored for the typical level of information known at each decision gate. An important aspect of this approach is that new innovations need to be compared to an existing Unilever product ('comparison product') that has already been assessed as part of Unilever's baseline assessment. The product had to represent an existing product with similar specifications and

consumer use characteristics, which would be used as a benchmark. The comparison product selected should remain constant throughout the gates, so that project teams and gatekeepers would have a directional view of how the new innovation would compare to the existing portfolio. In the absence of a comparative product, the average value for the category should be used as a benchmark. Also separate systems were put in place to calculate the impacts of radical innovations that were beyond the scope of the environmental assessment tools.

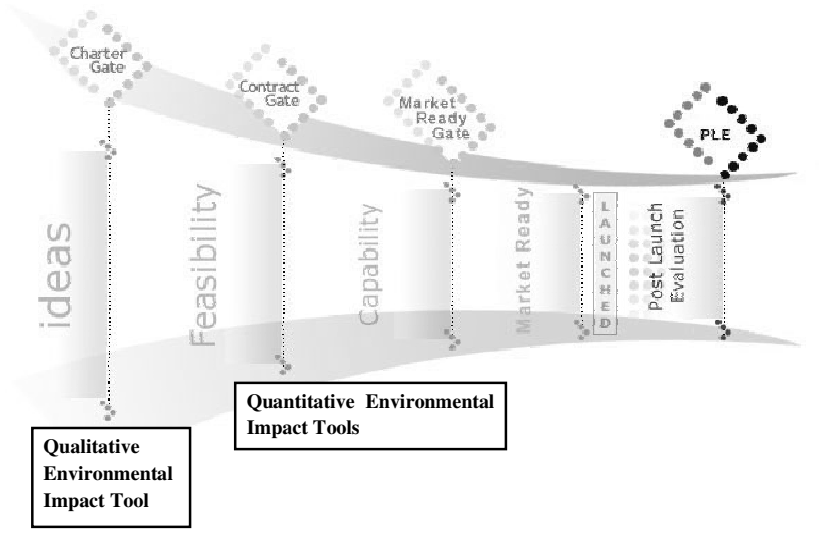

Fig.2: Unilever's Innovation process, with environmental impact tools tailored for different gate decision points and level of information available.

2.2.1 Qualitative tool for charter gate

At the first gate (Charter gate), a simple qualitative screening question set was designed, to give an understanding of whether the environmental impacts for water, waste and GHG would be better, worse or the same in relation to the comparison product selected. The results were colour coded for clear communication to stakeholders (green, orange, red). This section should be completed by Project Leaders and example questions for each metric area are as follows:

- Will your innovation change the amount of water used by the consumer versus the comparison product?
- Determine whether the packaging waste to landfill will increase, decrease or remain the same versus the comparison product.
- Will the innovation result in a change in the consumer energy use versus the comparison product?

2.2.2 Quantitative tools for contract and market ready gate

At the second gate (Contract gate), more information is known about the innovation project, in relation to packaging, formulation, manufacturing, key countries for launch and predicted sales etc. Therefore a more detailed quantitative assessment can be completed, to measure the change in predicted GHG emissions, water use and waste production compared to the existing product benchmark and overall category targets. The tools can be used again at the final gate (Market Ready gate), if there have been any significant changes between gates that will impact on the metrics. The tools that were developed for these gates are as follows:

- a) **Quantitative Environmental Impact Tool.** A quantitative assessment tool for waste and water.
- b) **GHG Measurement Tool.** A quantitative assessment tool for GHG. This tool was developed with LCA models prepared by experts and can be accessed by users through the Gabi i-reports interface, using software from PE international.

Each of these tools are used by Sustainability Champions based in the R&D technical functions in all global regions, who support the Project Leader in the completion of the documentation required for each gate. There is also a free-text area in the innovation documents to highlight any other environmental impacts or issues that are relevant to their project (e.g. ozone depletion, eutrophication). The Sustainability Champions have an overall view of the category portfolio to ensure that category targets can be achieved.

2.3 Implementation and Training

2.3.1 Pilot project development

In preparation for the roll-out of this new process, interviews were conducted with senior leaders within Unilever to understand the needs, benefits and challenges of implementing this new approach. Based on this feedback, a proposed format for environmental impact assessment was drafted, and piloted with 5 project teams, at different stages of their innovation cycle (early and late). The practical experience and feedback from these pilots was crucial to optimise the proposal, and ensure that it would work in practice.

2.3.2 Training and embedding the new process

Appropriate training was provided for Unilever employees based on their roles and responsibilities in the innovation process. For example Project Leaders, who complete the Charter gate assessment, were given web-based training on Unilever's approach, measurement and targets for environmental impact and then specific training on using the Charter gate qualitative assessment tool. Sustainability Champions were then given additional training on how to use the quantitative waste, water and GHG tools, as well as guidelines on the application and limitations of the assessment tools. One important limitation was that the environmental assessment tools had been created for internal guidance and tracking against aggregated targets. Therefore the innovation teams needed to be aware that this information could not be used for external claims, as additional more detailed studies would be required. Overall over 800 Project Leaders and 65 Sustainability Champions were trained globally. This entire process was supported by a central team of experts, across marketing, supply chain, R&D and LCA.

3 Results

The environmental assessment approach was implemented in March 2010. Since the launch, hundreds of individual projects have completed the qualitative assessment at Charter gate and the quantitative assessment at Contract or Market Ready gate

The initial results of the implementation show clearly that one of the main factors for success has been the degree to which the senior leaders in each category have

embraced environmental impact assessment and driven action. In categories where project teams are routinely challenged on their environmental impact by their leaders, and have even failed decision gate meetings in this area, teams have quickly learnt to ensure that they enter these meetings with their environmental actions and targets clearly identified.

However the fact that many project teams still leave it relatively late to complete the environmental impact section with their Sustainability Champions suggests that this message, and the resulting culture change required within the business, will still take time to become fully embedded. As project teams are exposed to environmental impact assessment for the second or third time we would expect to see an improvement in this area.

Equally the knowledge base built-up within the Sustainability Champion community has been vital in ensuring that they have the capability to not only help innovation teams to assess their environmental impacts successfully, but also develop a clear action plan for impact reduction. Whilst all Sustainability Champions have had generic training on environmental impact assessment and the tools, categories where Sustainability Champions have been able to complement it with category specific training have succeeded in building strong user communities. This is often because an in-depth knowledge of the category portfolio and its key environmental impact drivers, and the ability to effectively share experiences within the category, builds competence and confidence.

4 Discussion and Conclusion

The inclusion of environmental impact assessment has raised the profile of the role of innovation in meeting Unilever's environmental targets. The systematic inclusion of environmental impact considerations at every decision gate in the innovation process sends a strong message to project teams that Unilever does not have specific "green" projects or a "green" innovation funnel, but that every project team has a responsibility to meet its environmental targets. The process has also raised awareness in project teams of the potential environmental impacts of new innovations and encouraged a life-cycle thinking approach.

For the first time, Unilever is able to comprehensively assess the environmental impact of innovations across the value chain and has now made this information available for all functions. This is important, as results have shown that the sourcing of raw materials and the use of our products by the consumer at home has a far larger footprint that Unilever's manufacturing processes. Consequently the plan is designed to reduce environmental impacts across the lifecycle of our

products. This lifecycle approach is both ambitious and, we believe, unique amongst global fast-moving consumer goods (FMCG) companies [2].
The process of integrating the environmental decision making into the product innovation process has been a challenging endeavour and resulted in a number of important learning points that have been summarised below:

- All innovation teams need to take responsibility for their impacts. Therefore it is important that the process for assessing the environmental impact of product innovation should be mandatory for all projects, rather than a side activity or through a separate "green funnel".
- New approaches and tools need to be based on scientific assessments and validated data, capturing the extensive knowledge from internal systems and experts. This information should then be easy to access through a simple user-interface, with integrated guidance and help text.
- Pilot the approach first to get feedback and engagement from key stakeholders and to address any barriers for implementation
- It is vital to support the new process with appropriate training and guidance material and provide opportunities for question and answers.
- In order to embed the process within such a large, diverse fast moving consumer goods company operating at a global scale, it is important to have Sustainability Champions to get local engagement, provide tailored support for their category and to monitor progress against targets.
- The most successful categories for integrating this new approach, have worked with expert teams to create tailored guidance for their product portfolio and to develop understanding of the granularity of the tools for guiding decision making.
- It is also important to state the scope and limitation of the tools for guiding decision making and also whether or not the information can be used externally (e.g. for claims).
- It is also essential that these new initiatives are driven by strong leadership, not just from the Unilever board, but at a category leadership level to drive changes in culture to ensure that environmental considerations are driven up the priority list for decision making.

In relation to next steps, it is important to get feedback from different stakeholders and business users to understand what is working well and what could be improved in the future. It is also important to monitor and measure the integration of this new approach and track the successful launch of product innovations which have taken significant steps to reduce their environmental impacts. In particular, to

gather financial data for projects which have achieved strong environmental improvements versus a comparison product. This includes data on ROI (return of investment), increased sales and market share. This will help to create successful business cases, to further advertise the value in financial terms of addressing the environmental impacts of new product innovations. An additional challenge for the future will be to create a wider toolbox to support product innovations especially at the earlier idea stages of innovation, when greater, more disruptive changes are possible

5 References

[1] World Commission on Environment and Development, *Our Common Future*, Oxford University Press, 1987

[2] <http://www.sustainable-living.unilever.com> (Accessed 08.04.2011)