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USE OF THE LIFE CYCLE APPROACH ON COMPANY, CATEGORY AND PRODUCT LEVEL TO SUPPORT THE GREENHOUSE GAS STRATEGY IN A MULTINATIONAL COMPANY

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ABSTRACT

Unilever routinely uses life cycle assessment to understand the environmental impacts of its products and to support decision making.

Five years ago Unilever started an initiative to assess its global environmental footprint including GHG emissions as well as water use, consumer waste and sustainable sourcing. The results of this global footprinting exercise helped inform the Unilever Sustainable Living Plan launched in 2010. Focussing on GHG, this paper describes how the information has been used internally and externally at various levels of aggregation.

INTRODUCTION

Product life cycle assessments (detailed and streamlined) have been performed in Unilever for over 20 year. Such assessments were generally performed on a case by case basis and often on a specific product in a market. As such these studies provided an incomplete picture of the global business and were of limited value in understanding strategic decision-making at the various organisational levels (e.g. company or category).

In 2008 Unilever started an ambitious initiative to assess its global footprint including GHG (greenhouse gas) emissions, water use, consumer waste and sustainable sourcing. The results of these global footprints were communicated at the launch of the Unilever Sustainable Living Plan in 2010. This was the first time, the full life cycle GHG impact of the company's portfolio was assessed consistently across all product categories and it formed the basis for Unilever's ambitious target to double the size of the business by 2020 whilst reducing its environmental footprint and increasing its positive social impact. The GHG footprint approach has been described previously (Unger et al., 2011) and this paper focuses on:

- How the footprint information can be aggregated and expressed at different levels to inform decision making across the company
- Improvements in the footprint approach and on-going challenges

METHOD

The footprinting methodology was designed specifically for the external reporting of Unilever's footprint and for internal management needs. It was not designed for the

measurement and external communication of product level data to current reporting standards/requirements but it does not preclude such use of the data with the appropriate caveats.

The Unilever footprint is measured at an individual representative product or stock keeping unit (sku) level across the life cycle and it is aggregated at a sku, product cluster (e.g. format, pack size and type), category, country and company level. It is expressed in two formats namely: per consumer use and as absolute totals.

The Unilever footprinting methodology comprises three main phases namely:

- a business data extraction phase covering sales, product specifications and consumer habits information,
- a footprint measurement phase that combines the business data with environmental information and
- an interpretation/reporting phase.

There are on-going to systematise and improve the quality and efficiency of the annual measurement. Delivering the corporate footprint does not only provide the footprint data for reporting but crucially also supports innovation tools, provides guidance for the innovation process and allows to systematically predict future product impacts (Franceschini et al., 2011).

RESULTS

The Unilever Footprint has now been performed three times and it is planned to repeat it annually. This has only been made possible by significant improvement in the footprinting processes and the development of bespoke data validation and reporting tools that hold and manage data from the different business IT systems. The first footprint took approximately 18 months to complete and this has now been reduced to 8 months (see Table 1). In addition there have been significant improvements in data quality, increased granularity and number of representative skus enabling greater specificity and brand level assessments and reporting. Moreover, the footprinting activity initiated a number of research projects to address science gaps, such as approaches to filling data gaps (Roches et al. 2010), degradation of chemicals in the environment (Muñoz, Rigarlsford, Milà i Canals & King, 2013) and land use change (Flynn et al. 2012).

Table 1. Progress in footprinting efficiencies

The footprint in numbers	2008	2010	2011/12
% clustered sales in 14 countries	84 %	93 %	96 %
Number of clustered SKUs	20,300	25,600	41,800
Number of representative SKUs per cluster	1,638	1,860	2,507
Duration (months)	18	12	8

Internal uses of the information:
Product, category and company footprint details provide valuable insights. For example each category can be analysed in detail to understand how much each product format contributes to

the category footprint, understand the countries with the most consumer uses and the drivers for the impact. In addition, looking across the results of all categories and contributing life cycle aspects helps identifying the key contributors. The top ten contributors (Table 2) cover about 80 % of the total footprint with the 'Skin cleansing and care' category use phase being by far the highest contributor of just under 50 %. The second highest contributor is about 8 %, the lowest of the top ten contributors is about 2 %.

Table 2. Top ten contributors to Unilever's GHG footprint

Unilever Footprint contributors	Ingredients	Primary packaging	Sec & tertiary packaging	Inbound transport	Manufacture	Warehouse & distribution	Retail	Consumer use	Disposal
Ice cream							■		
Beverage								■	
Spreads	■								
Dressings									
Savoury	■								
Laundry	■							■	
Household care								■	
Skin cleansing and care	■							■	
Oral care									
Deo									
Hair								■	

External uses of the information

The footprint is essential part Unilever's external target of halving the average per consumer use impact. Between 2010 and 2013 the GHG footprint per consumer use could be reduced by about 6 %, however hot waste use associated with soap, shower gels and shampoos remains a key challenge. In addition the behaviour of individual consumers need to be changed. Unilever published the behaviour change model 'Five levers for change' (Unilever website) which comprises a set of key principles, which, if applied consistently to behaviour change interventions, increases the likelihood of having an effective and lasting impact.

A summary of the applicability of Unilever footprint method and data for various levels of public disclosure is shown in Table 3.

Table 3. Assessment of public disclosure of data versus Unilever methodology and data

Level of data aggregation	Comments	Suitability of Unilever methodology and data for disclosure
Unilever	• Basis of USLP target • Highest level of aggregation • Minimises inaccurancies related to measurement assumptions and approaches • Required to support company reporting and commentary	Yes
Category	• Highlights potential differences between formats • Supporting strategies	Yes
Product	• Low data specificity (e.g. not supplier, geography specific) • Not suitable for on-pack labelling	No

DISCUSSION AND CONCLUSION

The contribution analysis (Table 2) highlights that it is not (only) the inherent design of the product, e.g. a soap that drives the impact but also the number of sold consumer uses, local infrastructure (e.g. grid electricity) and the typical consumer behaviour. Therefore, mitigation measures cannot be limited to innovation alone but also needs to include communication, behaviour change and advocacy. It also aides thinking about new business models and enables ways of delivering a service which might be outside the current business practice. Data and the underpinning life cycle models enable future scenarios to be conducted on aspects that can be influenced/driven by the company. Based in the footprinting data it is possible to estimate how a new product launch or change to an existing product might affect the footprint.

Conducting such footprints also brings challenges, in particular improving data quality and representativeness as well as incorporating new methodological developments in a efficient manner. Although resource intensive, a company footprint as subsequently updates to the footprint are an essential tool in corporate GHG management. It is going beyond the traditional life cycle approach in the sense that it includes sales information. However, such a company footprints does not address all questions and detailed life cycle assessments are still essential for further developing the LCA capability and answering specific questions.

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