Memoranduum by Boots Plc to the Lords Science & Technology Committee Sub-Committee 1 Waste Reduction.

1. Introduction – The Product Journey

1.1 Understanding the role of products in the context of sustainability requires a holistic appraisal of the interplay between the various societal and environmental impacts a product may have throughout its lifecycle from “cradle to grave”. This can be termed the Product Journey.

1.2 This holistic approach, mirroring the working of natural ecosystems, is rapidly evolving. The way society has addressed environmental, social and ethical issues has changed considerably over the last twenty years. From an early focus on the mitigation of “end of pipe” impacts, thinking has now moved on to a more holistic and sustainable approach closely linked to the concept of social responsibility. Understanding the complex systems that determine our effect on the social and natural environment is now seen as critical in meeting the challenges facing society.

1.3 For product developers, manufacturers and retailers this evolution has been mirrored by a move from the management of single issues such as the environmental impact of packaging waste or product safety into the arena of whole product impact and sustainable product development. Entire product lifespans can now considered using cradle-to-cradle thinking.

1.4 This is recognised in the UK Government Sustainable Development Strategy:

We need a major shift to deliver new products and services with lower environmental impacts across their life cycle, while at the same time boosting competitiveness. And we need to build on people’s growing awareness of social and environmental concerns, and the importance of their roles as citizens and consumers.

Securing the Future, UK Government Sustainable Development Strategy 2005

1.5 However the interplay between the various factors influencing sustainable development is complex and potential solutions are only beginning to be understood. Policy and regulation needs to reflect the need for a holistic approach to keep place with this thinking.

2. How a holistic approach can achieve sustainable products and reduce waste.

Using the questions posed buy the Committee the following examples demonstrate how taking a holistic “Product Journey” approach can help achieve reductions in waste.

2.1 What role can better design and materials play in minimising waste?

2.1.1 Better design is key to minimising impacts throughout the products’ lifecycle. Approximately 80% of the products impact is decided at the design stage. Designers and specifiers need be aware of the product’s journey from cradle to grave and build this into design strategies. Examples of good design practice include:

- The correct selection of materials to reduce end of life impacts.
- Design for disassembly including minimising the number of materials used to aid recovery.
- Ensuring that the consumer can easily pass on waste materials to the appropriate recovery route.
- Designing for consumer needs.

2.1.2 Progress in this area has been limited by a lack of awareness by designers of end of life processes and waste management infrastructure. Inclusion of these aspects in design education and subsequent inclusion in clients’ design briefs should help to address this. Links should also be built between product designers, the supply side of the product development process and the waste management industry.

2.2 Factors influencing the use of materials

2.2.1 Three main factors influence material choice:

- Cost
- Technical requirements
- Availability

2.2.2 Availability is becoming of increasing importance. For example the uptake of post consumer recycled polymers in packaging is being hampered by a lack of available reprocessing facilities which clean and process the material into a form that can be used in new high value applications.

2.2.3 There is a need to create simple metrics to measure the “sustainability footprint” of materials to enable this to become a factor in material selection.

2.3 Can Better Design Offset the Increase in Consumption?

2.3.1 Better design has a significant role to play in reducing waste and unnecessary consumption. This can be achieved by factors such as:

- Increased durability.
- Increased repairability or facilities to upgrade products.
- Correct portioning to meet consumer needs and demographics.
- Including design features to reduce waste product.
- Design for local sourcing / production
- Consideration of providing “services” instead of “products”

2.3.2 It is important to consider all activities associated with the product at the design stage. For example packaging has a significant role to play in product design. Considering packaging as part of the overall product can open up significant opportunities. In the case of liquid products such as those in the personal care sector matching the product viscosity to the packaging dispensing system can significantly reduce the amount of unusable product that the consumer is unable to access from the container. In addition packaging design can be used to ensure the consumer uses the correct amount of product to perform its function. Additionally consideration of sales and transit packaging should be integrated together in order to ensure optimisation. Often these elements are considered in isolation giving the potential for unnecessary waste.

2.3.3 Designers hold the key to creating novel partnerships between unrelated parts of the supply chain. Examples include replacing a product with a service (eg; car manufacturers providing “mobility” rather than selling cars) or the introduction of consumer refillable products. This provides the opportunity for significant innovation and creation of new markets.

3 Major Barriers to be overcome.

3.1 If a holistic approach to sustainable product design is to be achieved a number of major barriers need to be overcome:

3.1.1 Product Designers need awareness of the complete product supply chain including end of life. Design education should have a focus on this aspect. Product specifiers should ensure their design briefs include waste reduction requirements.

3.1.2 More understanding of the challenges faced by the waste management sector is required by the product supply sector (and vice versa). Co-operative working is required by the whole supply chain to address waste issues.

3.1.3. Regulations and government policy need to be more holistic in nature. There are many examples of regulations that focus on one aspect of the supply chain. For example the Packaging Waste regulations aim to reduce

packaging by weight. They take no account of recycled material content, product wastage or the impact of different material types.

3.1.4. There is a lack of a national integrated waste management infrastructure. The majority of product suppliers and retailers are national (or international) in scope. Waste management infrastructure is very localised based on individual Local Authorities. This leads to certain materials being collected in one area but not in a neighbouring authority. This structure prevents national brands and retailers from providing consistent advice to consumers and prevents co-ordinated product design and material selection choices being made.

3.1.5 There is a lack of planning for new materials entering the market. For example there has recently been significant growth in the use of compostable and bio-based materials. However facilities for dealing with these materials and labelling for consumer information are lagging well behind.

3.1.6 Planning and investment for waste management facilities typically follows a 10-20 year cycle whereas new product development follows 2 – 3 year cycles. Therefore waste management planning is continually falling behind product development.

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