

Exploratory research on the development of recyclable e-commerce suitable packaging

This thesis aims to explore the possibilities for e-commerce suitable and recyclable FMCG packaging and determine how e-commerce suitable recyclable packaging can be designed, done through answering the main research question: *How can e-commerce personal care FMCG packaging be designed in such a way that it is more recyclable?*

During the process, the double-diamond method, figure 1, has been used to structure the process. It structures the thesis in two diamonds, each consisting of a diverging and a converging phase.

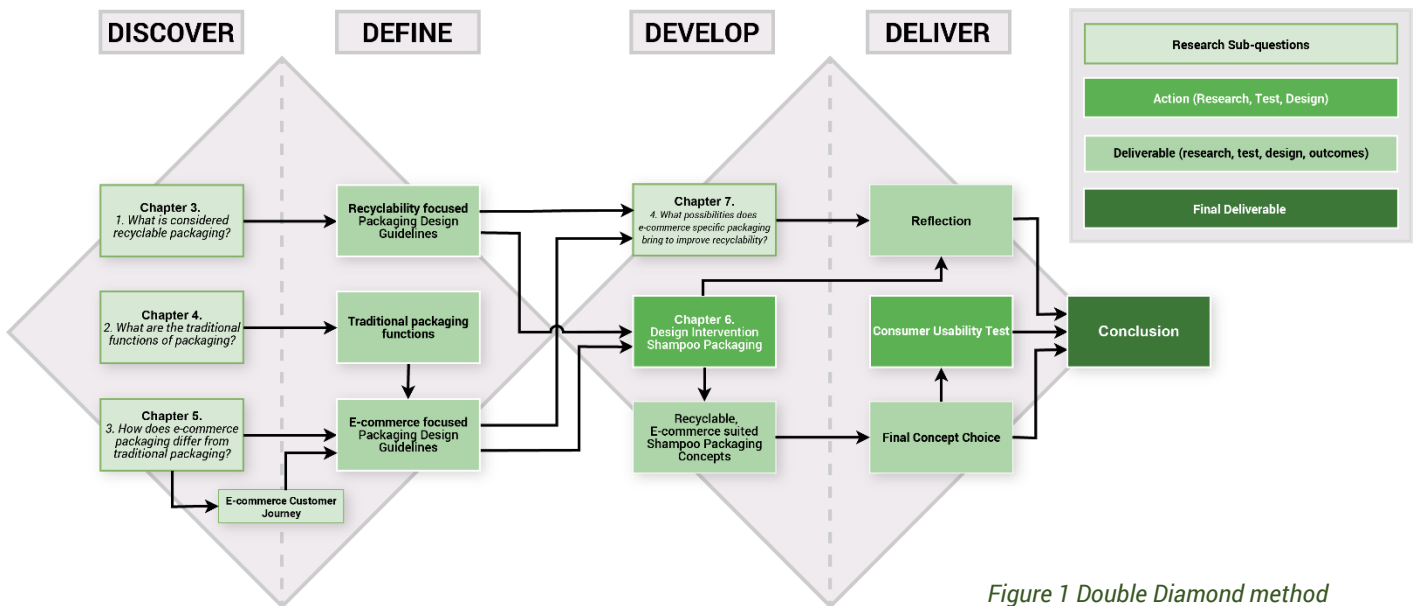


Figure 1 Double Diamond method

Discover

The first diamond consisted of three separate literature reviews have been conducted on respectively, the recycling process, the traditional functions of packaging, and the e-commerce environment, including the retail chain and the consumer behaviour. The result of these literature reviews has been converged to create guidelines which would help the development of e-commerce suitable and recyclable FMCG packaging.

Define

The recycling guidelines described in clear statements and are based directly on the capabilities of the recycling process. The precise structure of the recycling guidelines enhanced the implementation of these guidelines during the creation of the shampoo concepts.

The lifecycle of primary packaging in e-commerce can be three to four times as long as the traditional retail lifecycle. Next to that, the use and support of tertiary packaging are not possible for the majority of the lifecycle. Therefore, e-commerce specific packaging should be designed to withstand the extra forces, vibrations, shocks, and pressures that the e-commerce retail chain brings.

Since the e-commerce environment provides alternative options to the consumer to guide their decision, the appearance of packaging in e-commerce is less critical for the purchasing decision of the consumer. Undamaged delivery of packaging is vital for the entire purchasing process since this is the first time the consumer gets into contact with the packaging.

Furthermore, the e-commerce guidelines are described in terms of functions which were challenging to implement these in the creation of the shampoo concepts directly. Primarily, since the guidelines were all based on general literature and, therefore, not explicitly applicable to shampoo packaging.

Develop

In the second diamond, the applicability of these guidelines is examined through the creation of new shampoo packaging concepts in a design intervention. Shampoo is chosen as a representative product for the personal care FMCG. Based on a product/packaging analysis, the shampoo packaging of Nivea Men Deep shampoo, see figure 2, is selected as the main subject of the design intervention.

Finally, four concepts have been created, see figure 3, of which a final concept is chosen, since it is both recyclable and suited for the e-commerce environment. This final concept, see figure 4, has been tested in a usability test with real consumers. This test is set up together with Josée Habermann, a bachelor student from International Business Administration at the University of Twente. The usability test shows that consumers are willing to buy sustainable products, although they often have troubles finding them.



Figure 2 Nivea Men Deep shampoo



Figure 3 The four designed concept directions

Deliver

Through the development of the concepts, the answer to the main research question is found. When creating e-commerce specific recyclable packaging, it is essential to design packaging according to the recycling guidelines. Next, the entire retail chain has to be investigated per product individually; this can help to determine the improvement areas of the current packaging. The exact customer journey of the target group has to be investigated by interviews or observation to determine the importance of the appearance and unboxing experience of packaging. On top of that, the communication functions of the e-commerce web-shop should be used to communicate the (recycling) changes made on the packaging to the consumer to avoid confusion and possibly stimulate the sustainable purchasing behaviour.



Figure 4 The final concept