

The Small Design Changes that Make a Big Difference – a Case Study in Packaging Design from the Norwegian Company Jordan

Marianne Støren Berg, Ph.D.

KODE Design AS, Oslo, Norway

ABSTRACT

Companies may experience obstacles when implementing *Design for All* solutions. Conflicting requirements and anticipated cost consequences make decisions difficult in a design project. As the obstacles may be real or based on prejudice, there is a need for *Design for All* approaches that provide decision tools for balancing design priorities beyond the user dimension.

A pilot project within packaging that was carried out as part of the Norwegian Design Council's **Innovation for All** programme shows how small features in design can significantly improve the usability of the packaging when the *Design for All* approach accounts for all aspects of design.

This article reviews the process and results of a pilot project and discusses the following themes; 1) how disabled users were involved, 2) the application of a tool for securing *Design for All* priorities in design decisions, and 3) collaboration between *Design for All* experts and the rest of the project team.

KEYWORDS

Design for All; diversity; decision-making tool; industry implementation; user-centred innovation

INTRODUCTION AND BACKGROUND

Increasing emphasis has been put on investigating the implementation of Design for All (or inclusive design) in industry (Keates et al., 2000; Dong et al., 2002; Vanderheiden and Tobias, 2000). In this context, research has been conducted regarding the barriers of implementation (Dong, Keates, and Clarkson, 2003), the factors that foster adaptation, and the approaches that lead to successful implementation.

Initial research in the *Innovation for All* programme at the Norwegian Design Council, a programme to promote innovation through Design for All in Norwegian industry, included a brief review of the state-of-the-art Design for All methods and their application. The following characteristics were identified to be important for implementation of Design for All approaches in industry:

- promotion of Design for All as means for user-centred innovation
- customization of approach to industry, company, and project-specific aspects
- scaling the approach and user research according to company budgets and design task,
- collaboration with Design for All practitioners (designers with experience of diversity user research)
- handling both *reduction of barriers* with the *formulation of value propositions* in combination

An approach should also be accompanied with good examples; showcases of Design for All.

The Design for All approach that has been developed through the programme by KODE Design, has focused on the identified characteristics.

Successful implementation of Design for All in Norwegian industry is an objective of the *Innovation for All* programme at the Norwegian Design Council. Thus, best practice and its implementation are central in the programme. The pilot project reported in this paper explores the implementation of a

Design for All approach for the development of packaging. The project was carried out in collaboration with Jordan, a Norwegian company.

The *Innovation for All* programme administrated by the Norwegian Design Council is part of the Norwegian Government's Action Plan for increased accessibility for people with disabilities; the only part of the plan that is directed towards industry and the development of everyday products. Research conducted in the programme identified packaging as one area where all citizens experience barriers (KODE Design, 2005).

THE DESIGN FOR ALL APPROACH

In addition to improve the packaging regarding usability and user experience, the aim of the project was to explore the Design for All approach that is developed within the *Innovation for All* programme. The approach included three central elements; 1) involving users with disabilities as lead users, 2) providing a tool for design decisions accounting for all aspects of design, and 3) a workshop procedure to integrate the Design for All approach with the existing project process at the company. The process had the following steps as illustrated in Figure 1.

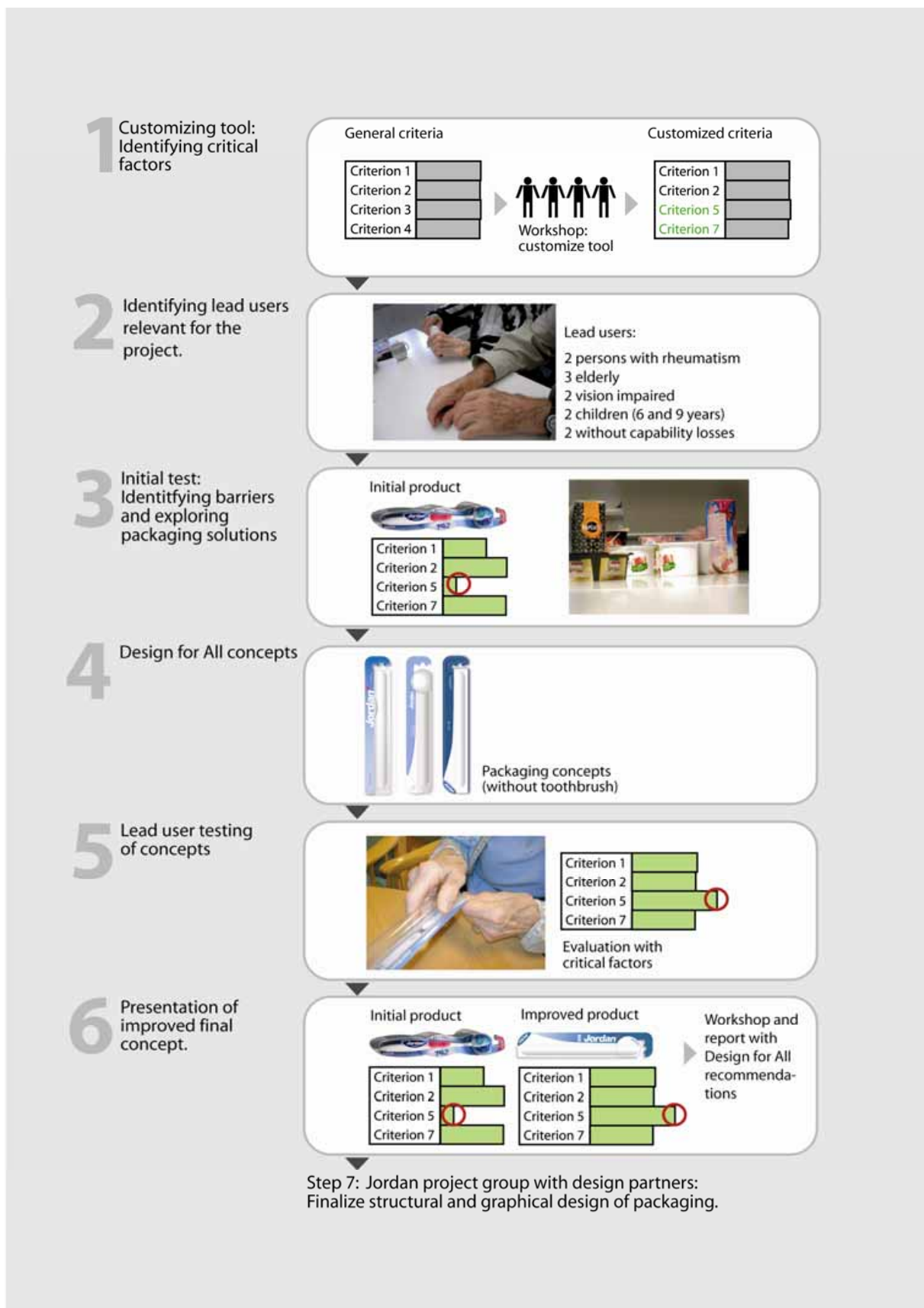


Figure 1. The steps in the Design for All approach applied to the pilot project at Jordan.

LEAD USER INVOLVEMENT

For the approach chosen in this project, user involvement is not merely about reducing barriers for the actual user group represented in the user research, they are involved as *lead users*. The concept of lead users, which originated in Eric von Hippel's work (von Hippel, 1986), is extreme users with critical needs that benefit significantly from solutions that meet these needs. They challenge the functional capacity of the product: the packaging in this case.

The user research was planned so that the different users were involved to extend the obvious barriers experienced in the packaging. The users with vision impairment, for example evaluated brand visibility on the shelf in addition to more inevitable matters concerning barriers such as the readability of information and graphics.

Selecting the profile of the lead users was central in the research design. The obvious lead users regarding openability and handling of the packaging are people with capability losses in the hand function as such rheumatism. The main reasons for the lead user profiles are listed below:

- **Users with rheumatism;** openability and handling.
- **Vision impaired users;** readability of product, packaging, information and graphics
- **The elderly;** since many elderly have general reduction of many capabilities they can challenge all features of the product
- **Children;** have not fully developed in motor skills and thus can inform about the design of openability and handling. They are also good judges of how intuitive solutions are because they lack experience with packaging solutions.
- **Users without capability losses;** they are not involved as lead users, but are to compare the findings from the lead users against the user experiences of the large user group without disabilities. They can indicate how important the barriers and solutions are for users with less critical needs. Do the various features of the packing create or strengthen a sales argument, do they improve the overall product experience, or do they represent a barrier for all or a source of irritation?

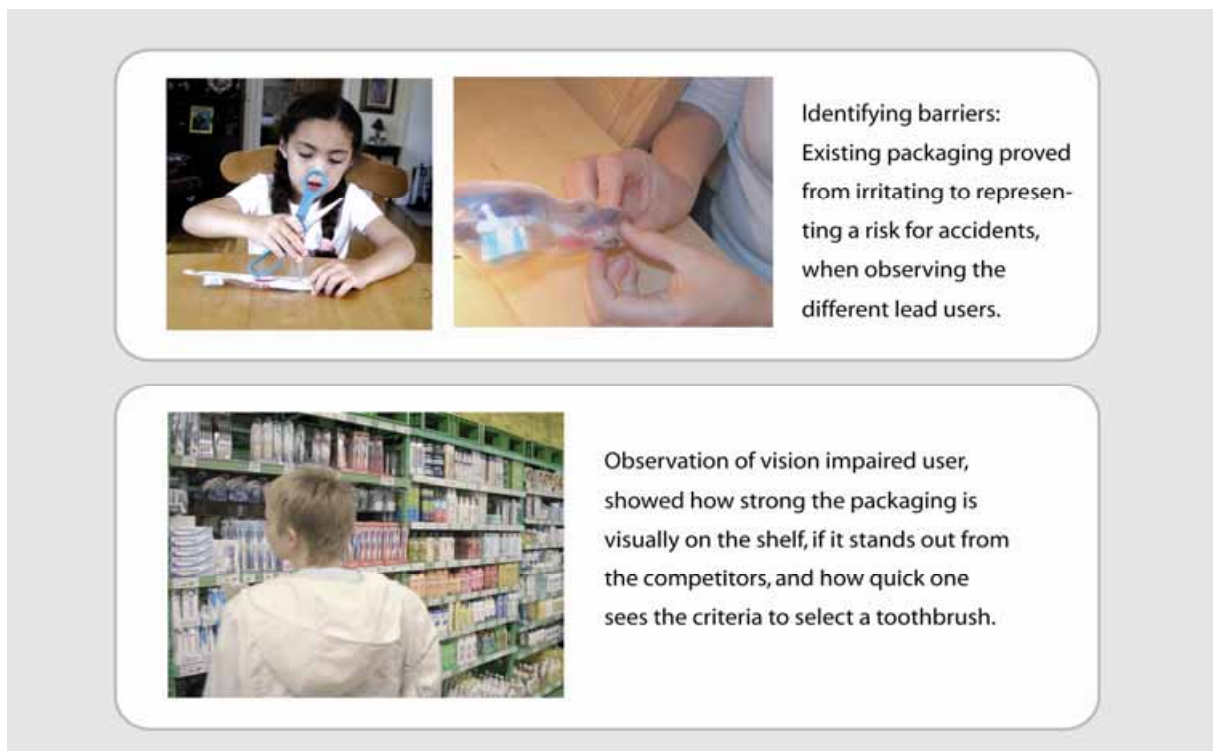


Figure 2. Examples of how lead users informed the design process in the design of packaging.

The profile of the users, regarding the type and degree of capability impairment, was specified based on the users' ability to carry out everyday tasks and not diagnostic measures. They were recruited through their interest organizations, based on a discussion with a contact person in the organization. We specified users that are on the border of managing everyday tasks independently; People who find it challenging but not impossible to handle packaging.

The users that were recruited were to some degree a result of who were available at the time. No formal recruitment procedure was followed. There was some difficulty recruiting the elderly. The senior organization did not have systems to contact their members. For this project they were recruited through a senior centre. Formal procedures for user recruitment are called for in later projects. Finding the user is time consuming and may be a major barrier against user involvement in design projects.

When working with users with a great variation of capabilities, the research set up had to be customized to each user; and it was necessary to be conscious about arranging the research so that it was barrier-free. For example, the elderly found it troublesome to travel to a laboratory for focus group discussions. Observation and oral communication are better suited for most users than filling in questionnaires or technology-based research methods. The research arrangement was designed for each user group, emphasizing different aspects of the packaging and customizing interview guides and observation schemes.

In qualitative studies such as the user research of this project, the personality of the user is also of relevance. For some of the aspects in the research, users who are motivated and conscious of the way they interact with the packaging are of greater value than users that are unengaged. This is of less relevance for aspects where observation techniques are used.

DESIGN FOR ALL CRITERIA TOOL

Design always involves contradictory needs and is thus a creative pursuit for generating solutions to overcome the contradictions or balance them well. The same applies for Design for All solutions. Solutions that fail to meet requirements or do not display added value and commercial potential in relation to cost are not likely to be implemented in the design. A criteria tool provided a framework for systematic decision-making process and to formulate value propositions based on Design for All priorities.

A general tool for packaging was designed based on earlier pilot projects within Design for All at the Norwegian Design Council (KODE Design, 2003 and KODE Design, 2004) and a similar approach applied on packaging (Gough, 2004). There were two sets of criteria: criteria concerning the user experience, and other critical factors, such as investment level, unit cost, and logistical requirements. This tool comprised the starting point for the project, and was customized to the company and the particular project.

The main objective of the tool is to create a common understanding and common language for the user experience aspects of the packaging. Based on the criteria tool, a systematic discussion was done throughout the design process, to secure Design for All priorities in design decisions. It clearly visualized where barriers can be removed, where there was potential for improvement, or which aspects have the potential to develop added value. Each criterion is evaluated on a scale from impossible with urgent need for improvement to very good user experience and little potential for innovation. Difference between user groups are also displayed and indicate what commercial potential exists if the aspects are improved.

The tool was used to evaluate existing packaging solutions, to form a foundation for the project and define the focus of the subsequent process. The most critical barrier was linked to the handling of the packaging. Both understanding of how to open and actually open the pack proved challenging. Poor openability was already identified by the company based on customer complaints. The new finding at

this stage was the problems that users had in understanding how the packaging was supposed to be opened. The users applied many different strategies to open the pack. Investigation of 70 different packaging solutions showed how openability improved when the user understands how to open it. If the opening mechanism is intuitive, many manage to open the packaging. Of course this does not apply to all if the opening mechanism requires strength and high motor capability. It also showed that the outer shape of the packaging is a very strong communicator, in fact stronger than graphic communication. The most effective design solution for an intuitive opening mechanism was a combination of outer shape and a strong graphical contrast element. The graphical element does not have to be illustrative or the differentiation does need to be very “loud” to make the opening intuitive.

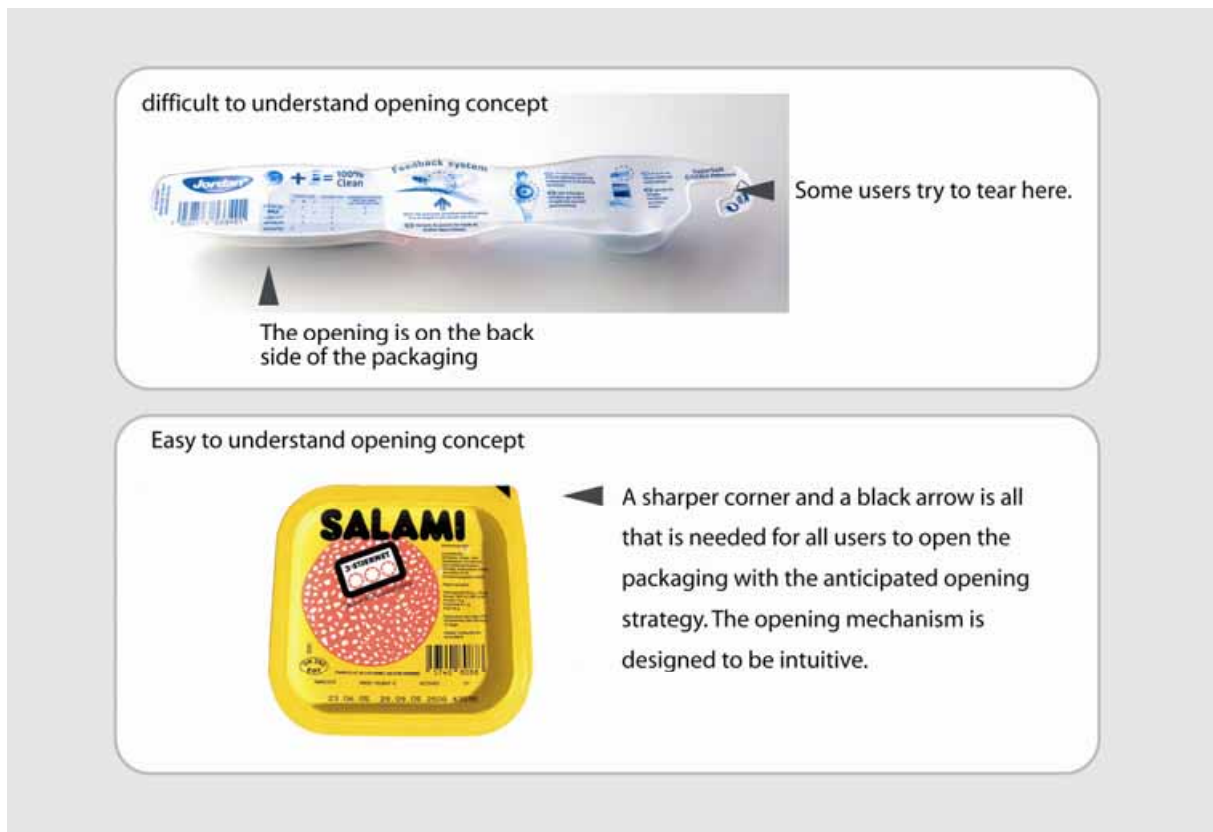


Figure 3 Examples of packaging solutions that score differently regarding *intuitive opening*.

Figure 4 illustrates how two of the criteria were applied in the pilot project. After customizing the tool, it was used to evaluate packaging solutions throughout the process. First, it evaluated existing packaging. In the process the Design for All design team applied it to evaluate ideas. And second, the proposed concept was tested and evaluated. Comparing the criteria indicates the improvement of the new solutions, and shows if the new solution meets the features where existing packaging already performs well.

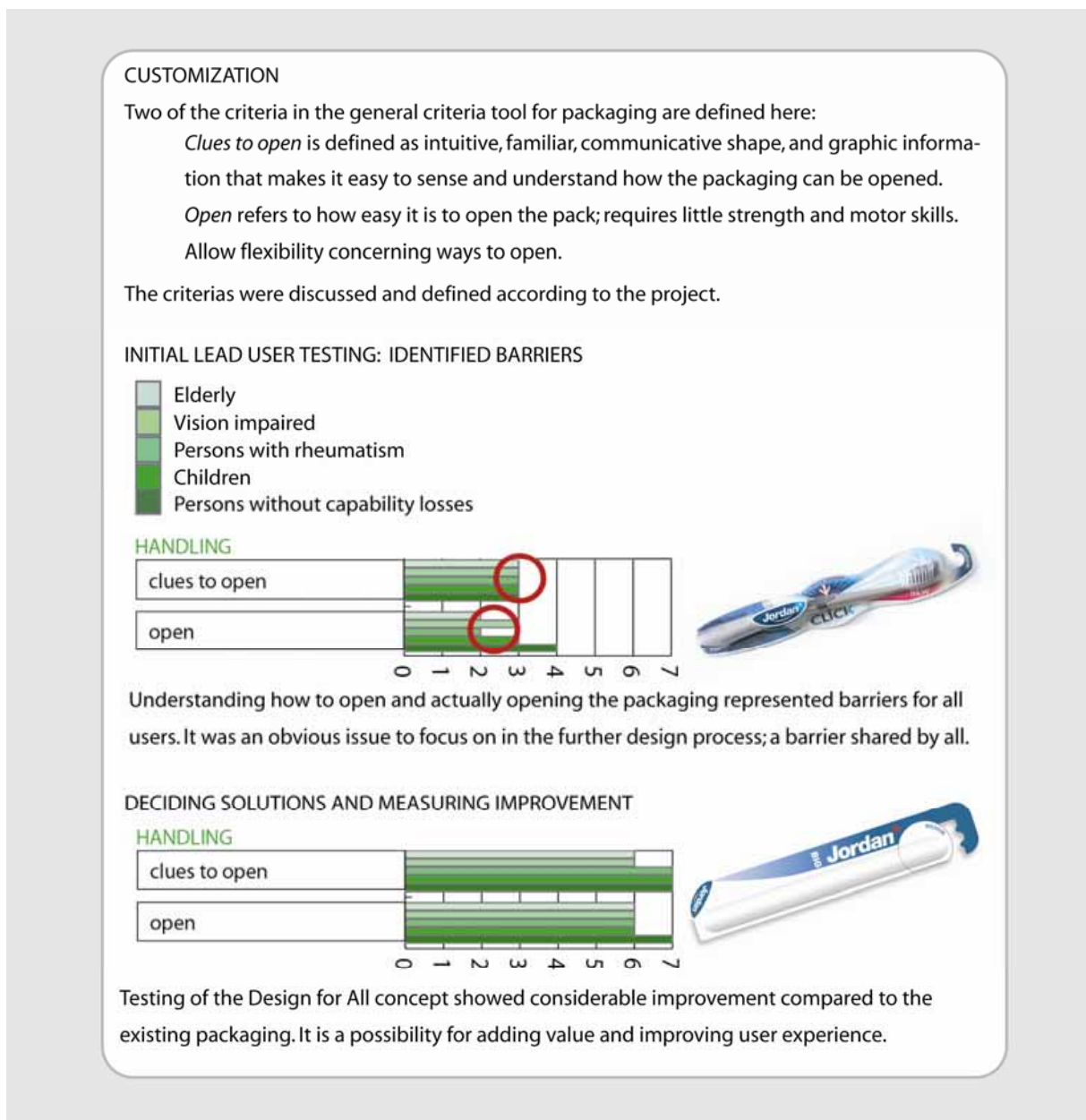


Figure 4. Examples of the use of the criteria tool in the project; 1) customizing and specifying critical factors for the packaging, 2) evaluating existing solutions, and 3) evaluating concepts.

The criteria tool also held criteria extending usability aspects, for example graphical design and branding aspects. Changing the opening mechanism and how the opening is communicated also had to account for the graphical design concept and strengthen the design goals for the concept. When generating new solutions to improve the packaging, systematic consideration of different packaging features was carried out. Finding solutions was a balancing act, where user involvement was essential to find the line between inclusive and exclusive solutions (Figure 5).



Figur 5. There is a fine line between intuitive solutions and solutions where you have to search for the opening.

COLLABORATION IN THE PROJECT

Integration is a success criterion for product development. In this context, this means integration of the various aspects of product development through collaboration between participants that are involved in decision making. The pilot project included two collaborative workshops with the Design for All team and the rest of the project team.

The objective of the first workshop was to customize and establish the criteria tool. The discussions and formulation of customized criteria for the project also defined the design brief and thoroughly informed the Design for All team of the agendas for the project. The second workshop aimed to report the Design for All outcomes and collaborate to implement these in the packaging design. It proved to be impractical for other external design partners to participate in the workshops.

The outcomes of the project were Design for All concepts with recommendations for the further development of the packaging. The recommendations concerned all features of the packaging concerning the user experience. In the further development many of the recommendations were implemented in the design of the packaging. Some were adjusted resulting in less improvement and some were left out. The pilot project generated some questions: Were the workshops important for the solutions that were implemented in the design? And would even more have been implemented if all the design partners had worked closer together? One pilot project does not provide the answer and a

question for further research is how collaboration effects the implementation of Design for All solutions.

The company reported that the most important reasons for including a Design for All approach in the development of packaging were:

- Flexibility and customization of the running project
- Explicit priorities through the criteria tool
- Scaling the research activities (The company is less willing to invest in packaging compared to the product. The pilot project was at an appropriate level.)
- As a method for innovation, the Design for All approach suits their design philosophy.

CONCLUSION

In this project, Design for All was not on the agenda initially in the project, but was introduced in the process after the product was developed and a rough design concept for the packaging existed. Like many design projects in packaging, the technology was set initially which restricted solutions to meet constraints tied to this technology. This project proved that it was possible to improve the packaging in the most critical areas, even with the tight constraints of technology, logistics, unit cost, and contradictory design requirements.

The design of products and packaging involves many compromises, and with a Design for All approach there is no difference. There are few cases where one is free to create the perfect packaging for everyone. Thus Design for All is about balancing, compromising, and bridging conflicting requirements. It is about finding the small changes that make a difference for many people, and it is about creative ways of combining barrier reduction with added value in the packaging by simple means. The removal of barriers is accompanied by a value proposition.

Exploration of the Design for All approach applied in this pilot project, indicates that the combination of a criteria tool for managing different packaging features and lead user involvement are a strong combination that yields solutions that will be implemented in the design and improves the packaging regarding usability. How the collaboration effect functions in the implementation of Design for All solutions is something that is recommended for further research.

The Design for All approach described and discussed in this paper will be revised based on the findings from the pilot project. The main findings were:

- Need for improved procedures for user recruitment
- Avoid barriers in user research; customize research set up to users
- Call for further investigation of collaboration in Design for All projects

Future work will include a second pilot project before the approach is applied in up to six other projects as part of the *Innovation for All* programme.

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