

3 Method and Data

This chapter details the method and the data of the empirical study. The first section introduces the *research approach*. It argues for a qualitative case study design. The second section describes the steps of *data gathering* and details the applied techniques. Finally, section three lays out the process of *data analysis* according to the principles of grounded theory building.

3.1 Research approach

Customer co-design is a fairly new phenomenon in innovation research.¹³² As a consequence, the current understanding how digital media impact customers perceived value within the process of co-design is still very limited. Against this backdrop, the identification and description of current challenges in the proliferation of co-design services across digital media in-store as well as online requires an exploratory research approach for which qualitative research designs are seen as most appropriate.¹³³ In particular, qualitative research approaches allow new facets and nuances of under-researched phenomena to be uncovered. Furthermore, they enable the researcher to place equal emphasis on the context within which the phenomenon is embedded, which again increases the understanding of interdependencies, and causality in particular. Hence, qualitative research is suited for exploration, discovery, the deriving of theoretical differentiations and potential relationships in contexts where little is known about the underlying phenomena or mechanisms.¹³⁴

We followed the frequently applied case study method as characterized by Yin (2009) because it is capable of capturing unclear phenomena in a real-life context.¹³⁵ In particular in the form of an embedded case design it combines qualitative data from various and heterogeneous sources for in-case as well as cross-case analysis and provides flexibility, especially when data sources contain huge amounts of qualitative information, e.g. through semi-structured interviews or customer focus groups with open-ended questions.

¹³² Piller et al. (2005)

¹³³ Eisenhardt (1989)

¹³⁴ Yin (2009)

¹³⁵ Yin (2009)

This is a necessary pre-requisite for our study, as the process of customer co-design represents the interactive value creation between customer and the providing mass customizer. Thus, to explore the co-design process it needs to be approached from two perspectives: the customer's perspective and the provider's perspective. Consequently, data was collected from both knowledge domains (providers and customers) and through a particular combination of techniques, which will be detailed in the following section.¹³⁶

Second, cross-case comparison allows variables and dimensions to be derived, which are necessary to build theoretical explanations, differentiations and relationships for the phenomenon under study. The multiplicity of cases is considered to deliver more robust findings in comparison to a single case study. Hence, we analyzed multiple cases of co-design processes in depth.

The chosen research approach represents a *multiple embedded case study design* as it is defined by Yin (2009).¹³⁷ Each case is one independent mass customization business. The unit of analysis is the respective customer co-design process, which is embedded into the case. Thus each co-design process can be considered from both perspectives, i.e. customers and providers. In the following the process of data gathering will be detailed.

3.2 Data Gathering

The process of data gathering started with the selection of appropriate cases, i.e. mass customization companies. The selection process followed the strategy of *theoretical sampling* as it was initially proposed by Glaser and Strauss (1967).¹³⁸ This sampling strategy is supposed to best suit research contexts, in which the extent and characteristics of the unit of analysis are unknown.¹³⁹ Sampling is performed according to a priori developed or emerging selection criteria, which are supposed to yield new knowledge concerning the proposed research question. For the present study, cases have been selected based on (a) the complexity and approach of the co-design process and (b) the variety of service channels and the media employed to serve customers in designing their own individual products. The sampling process yielded six mass customization cases which deploy various channel strategies and

¹³⁶ Yin (2009)

¹³⁷ Yin (2009)

¹³⁸ Glaser and Strauss (1967)

¹³⁹ Lamnek (2008)

provide heterogeneous media to serve customers in conducting co-design processes of different levels of complexity (see table 2).

Table 2: Sample of cases with various customer co-design processes

Case Name & #	Web Presence	Custom Product Category	Characteristics of Customer Co-Design Process
1	selve www.selve.de	luxury foot-wear for men and women; bags	Co-design in-store and online offered: in-store with sales personnel, online via a toolkit based on solution and need information
2	ErtlRenz www.ertlrenz.de	sports shoes, mainly ski boots, and shoes for golf, running, hiking	Co-design purely in-store (retailers) with the help of professional sales personnel; based on need information
3	Spreadshirt www.spreadshirt.de	apparel, mainly t-shirts, bags, pullovers, accessories	Co-design strongly focused on online via a toolkit; sporadic in-store workshops are held; based on solution information
4	DeinDesgin www.designskins.com	skins for electronic devices	Co-design purely online via a toolkit; customers may choose between pre-configured or self-designed covers; based on solution information
5	3Guerteltiere www.dreiguerteltiere.de	multi-color belts made of fabric or leather	Co-design purely online via a simple toolkit; pre-designed belts also sold via in-store retailers; based on solution information
6	MyParfuem www.myparfuem.de	Fragrances and flacons for women and men	Co-design purely online via a simple toolkit or a set of guiding questions; based on solution and need information

For each of the cases, data from multiple sources were collected. Data collection started with a detailed description of the MC offer based on publicly available documents and participant observations of the provided co-design processes. In addition, we conducted expert interviews with representatives of each company in order to capture the provider perspective as well as two focus groups with customers of selve AG to collect data on the customer perspective. The data collection from experts and customers is reported in more detail in the following subsections.

3.2.1 Expert Interviews

To capture the provider's perspective, semi-structured interviews with managers and management advisors of the founders were performed. A priori an interview guideline was developed in close partnership with two senior researchers in the

domain of mass customization.¹⁴⁰ This careful preparation ensured relevancy of questions and allowed a comparable set of answers to be initiated, as all managers received the same set of open-ended questions.¹⁴¹ It followed the systematic structure of explanative questions for clarification, open ended questions for narration, inquiring questions for deeper understanding, and summarizing for self-reflection as proposed by Lamnek (2005).¹⁴²

All interviewed experts were highly interested in the topic under study and showed a strong motivation to take part in this study. According to them, the topic itself was highly interesting, as it reflected their daily struggles to increasing customer value. As a consequence, all of them contributed valuable insights not only into their processes of customer co-design, but also concerning the context of their offers, such as their strategic and operational orientation. Every interview was conducted with two researchers. Interviews typically lasted for one hour and were (with the exception of one) conducted in the offices of the company. One interview took place via phone as no personal meeting could be arranged in time. All 12 expert interviews (see table 3) were audio taped and subsequently transcribed verbatim.¹⁴³

Table 3: List of expert interviews

#	Case Name	Number of Interviews	Respondent's Role in the Mass Customization Business
1	selve	3	Founder & CEO; Marketing Manager; Sales Representative;
2	ErtlRenz	3	Technology Manager; Marketing Manager; Management Advisor
3	Spreadshirt	3	Community Manager; Toolkit Developer; Management Advisor
4	MyParfuem	1	Founder & CEO
5	3Gürteltiere	1	Founder & CEO
6	DeinDesign	1	Founder & CEO

3.2.2 Customer Focus Groups

In order to cover the customer perspective on the digital media impact on processes of co-design, two focus groups were conducted, with six selected customers each.

¹⁴⁰ Senior researchers from HHL Leipzig Graduate School of Management and the RWTH Aachen

¹⁴¹ Atteslander and Cromm (2008)

¹⁴² Lamnek (2008, pp. 358–359)

¹⁴³ See Annex A for the German guideline applied in the expert interviews.

Moderated focus groups are frequently applied as independent instruments for data gathering in combination with surveys, observations or expert interviews.¹⁴⁴ We used focus group as a method, because

“it is particularly useful when researchers seek to discover participants’ meanings and ways of understanding.”¹⁴⁵

Focus groups profit from the fact that participants inspire each other through mutual feedback. Focus groups also help to elicit counter arguments as well as alternative supporting arguments for relevant issues. Second, and in contrast to managers of the selected service providers, customers are not constantly involved in co-design processes. Hence, the possibility to reflect upon their individual experiences helped to stimulate more valuable feedback compared to individual customer interviews. However, focus groups increase the complexity of the data gathering process to a large extent. Hence, a thoughtful preparation has been performed to minimize the negative effects of group discussions, such as opinion leadership and a lack of focus on the intended topic of co-design.

Both focus groups consisted of customers from one mass customization company, i.e. selve. Selve is the only company in the sample which provides two fully independent media support methods for the same co-design task. Selve allows customers to carry out all steps of the co-design process online and in-store. Hence, customers were able to report on their perceptions of both fundamental settings. Invited participants received a 50% reduction on their next purchase as an incentive to take part in the group discussion. Both focus groups were jointly moderated by a team of two researchers in order to ensure a high quality of moderation. The rules of moderation have been adapted according to the suggestions by Flick (2007).¹⁴⁶ Guiding questions and time management have been developed in advance with the help of two senior researchers in the domain of innovation management.¹⁴⁷

3.3 Data Analysis

In total, the semi-structured interviews and the customer focus groups resulted in 248 pages of transcribed text. The data were analyzed using professional

¹⁴⁴ Flick (2007)

¹⁴⁵ Lunt and Livingstone (1996)

¹⁴⁶ Flick (2007, p. 259)

¹⁴⁷ See Annex B for the German guideline applied in both customer focus groups.

QDA-software.¹⁴⁸ Data analysis followed the standards for qualitative research as reported by Eisenhardt (1989) as well as by Miles and Huberman (2009).¹⁴⁹ It followed the iterative step-by-step approach of constant comparison as suggested by Glaser and Strauss (1967).¹⁵⁰ This process of analysis exhibits four steps as depicted in Figure 9. Relevant quotes were systematically identified and used as anchors to derive and develop appropriate codes - a single word or a short phrase that captured the essence of the related quote. Codes were subsequently grouped according to the similarity of meaning. During this stage, the researchers constantly compared quotes, codes and code groups in order to achieve a transparent final arrangement. In the third step, groups of codes were analyzed, compared and arranged to form categories and to verify/reject relationships among them. The final groups of codes were analyzed in order to identify higher order categories which best reflected the initiating research question. To reduce bias of subjective analysis, two researchers performed each step of analysis independently, applying the same software tool and the same technique of analysis. Subsequent to each step, an investigator triangulation process as suggested by Yin (2009) was performed.¹⁵¹

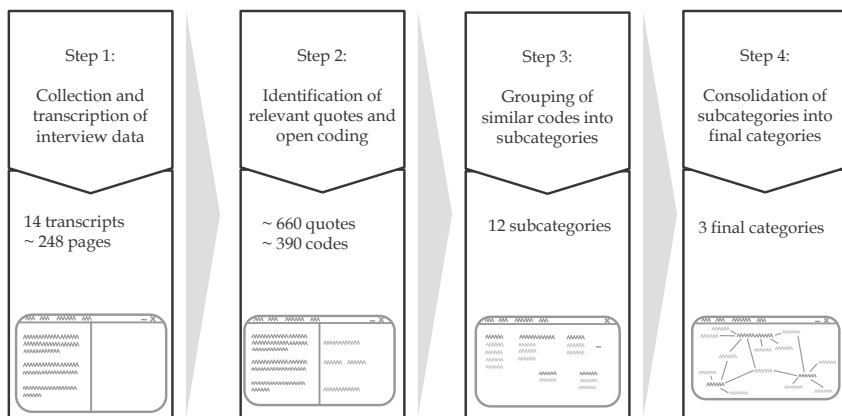


Figure 9: Steps of qualitative data analysis in part III¹⁵²

¹⁴⁸ Qualitative data analysis (QDA) was performed with software provided by ATLAS.ti Scientific Software Development GmbH (2012).

¹⁴⁹ Eisenhardt (1989); Miles and Huberman (2009)

¹⁵⁰ Glaser and Strauss (1967)

¹⁵¹ Yin (2009)

¹⁵² Own illustration