

KIDZ DESIGN LAB: BUILDING DESIGN THINKING FOR THE FUTURE

Tale SKJØLSVIK¹ and Sverre STEENSEN²

¹OsloMet – Oslo Metropolitan University

²Unikia.com

ABSTRACT

The Kidz Design Lab (KDL) is a new and unique way of enabling customers to be participants in a design process. It is a lab, a methodology and a brand where kids develop products for kids. This paper presents the methodology of KDL, which represents an extreme exemplar case illustrating the inclusion of end users as designers. As the customers themselves develop the product, the methodology emphasises embedding the customer into the particular setting of the product rather than to empathise with them, as suggested by design thinking. The methodology of KDL extends the scope of the design process and incorporates the development of a business case, packaging design and marketing as well as negotiation with producers and distributors. In particular, the products are sold based on a presentation of the prototypes to distributors, rather than the final product. This enables KDL to severely reduce risk for the owner of the product as well as shorten the process from an initial idea until the product is in the store. Based on the documentation of the design process using a television crew, KDL enables storytelling and personification. The holistic thinking of KDL has important implications for practitioners in that it shows the benefit of integrating different stakeholders related to a product in the development process. It also illustrates the benefit of developing process facilitation skills for product developers in order to enable involvement of customers. As the product is sold before production, KDL allows for extensive risk reduction compared to many traditional product development processes.

Keywords: Design education, Creativity, Children design education, Innovation

1 INTRODUCTION

“We don’t grow into creativity, we grow out of it.”, Sir Ken Robinson

Innovation and new product development are at the heart of any organisation’s competitive advantage, as cost advantages are being eroded. In service industries, customers are often active co-creators, while for physical products they have mostly played a passive role as participants in focus groups. Customers have largely been central in defining needs and problems, which form a basis for new products and services, and in testing. This paper explores how customers can be co-creators in the entire development and launch process related to a physical product. In particular, Kidzdesignlab.com takes a fresh perspective on the involvement of kids in the development of real products. It is a lab, a methodology and a brand where kids develop products for kids. Thus, this paper presents the methodology and a case analysis of what happens when the end user becomes the designer. While the context involves kids, the methodology has far-reaching application potential beyond children learning processes.

The purpose of this paper is to present the lab and explore its design methodology. In particular, documentary material is analysed, the case described and the KDL methodology distilled. The paper presents an overview of the concept of the Kidzdesignlab.com, relates the concept to design thinking, and aims to show how the design methodology used in the lab adds to our current understanding and conceptualisation of design practice from a design thinking point of view.

2 THEORETICAL POSITIONING

Research about design thinking, practice and process can be traced to the late 1960 and early 1970s [1] [2] [3]. More recently, the application of design thinking to other domains has in particular been driven by the design company IDEO [1] [2]. Following increased popularity, design thinking has over

the last 10 years developed into a key perspective in innovation and management theory – and gained interest in education [6] [7]. Design thinking takes a human centred design ethos, which includes “a thorough understanding, through direct observation, of what people want and need in their lives and what they like or dislike about the way particular products are made, packaged, marketed, sold, and supported” [4: p. 87]. Design thinking assumes that design should be involved in the big picture of society, that the design process is a collaborative effort spread among diverse participating stakeholders, and that ideas need to be “prototyped,” and tried out early in the design process. Design thinking following the works of Tim Brown at IDEO [4] [5] typically involves three main stages: inspiration, where information is collected, ideation where ideas are developed and implementation where solutions are tested and evaluated.

Design thinking forms an important basis for the education at Stanford University [6], where they have developed the methodology into five steps to detail the process: Empathise, define, ideate, prototype and test. To empathise concerns doing interviews, shadowing and developing a non-judgemental understanding of the problem, product or service at hand. In working on the defining phase, personas – typical persons from the understanding of interviews and shadowing - are developed. Key issues that are treated are role objectives, decisions, challenges and pain points. As a last stage of ideation, priorities and selections are made. As the ideas have been prioritised, mock-ups and storyboards are developed. The point is to fail and iterate fast. Finally, testing is done to see what works and not, and adjust. These steps are not linear and might take an iterative form depending on the insights gained as one moves along the path of the design process.

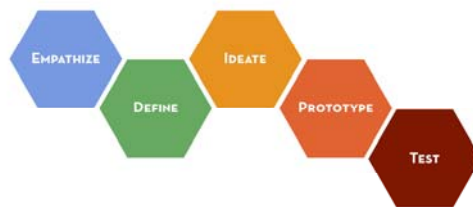


Figure 1. Overview of Design Thinking process, Stanford University Design School

The key assumption in design thinking is that the designer owns the process, collects the data and is in charge. Limited research has been done to integrate the customers further and let them be in charge of the process, with the support of the designers. This paper takes such a position and develops a complementary perspective on design thinking. In particular, the paper asks: What does the design process look like and what is the role of the customer under conditions of high customer involvement?

3 METHODOLOGY

To develop an understanding of a case of high customer involvement in a design process, an inductive, qualitative research approach was used [8] [9]. In particular, a single extreme exemplar case study was used [10] [11]. The research was done based on the case of the Kidz Design Lab (www.kidzdesignlab.com) in Norway. The Kidz Design Lab (KDL) is a concept where kids between the ages 8 till 13 years old develop products for kids, with the help of professional product designers (PPDs). The concept was developed in 2016 by a serial entrepreneur¹. The main idea of the KDL is to involve kids in the whole product design process – from a decision to target a product category - until the product is present in the shelves of a distributor. KDL has been completed for three different product segments during 2016 and 2017: kitchen, school and cleaning. In each of these segments, 6-7 product categories have been reinvented based on the perspective of the kids. For example, within the kitchen segment, the following products were targeted and reinvented: frying pan, casserole, mixing bowl, knives, stool and heat gloves². The process through which the products were made was filmed in full and an edited version is available online at <https://www.facebook.com/kidzdesignlab/>.

Each round of the KDL starts with the establishment of a co-operative partner for which products are to be developed, and the invitation of 50-60 kids to register for an audition. 6-7 kids are then selected to be part of the product development process. The remaining kids are included as test pilots that test

¹ The second author on this paper.

² Details on the products can be found here: <https://kidzdesignlab.com/collections/all>

prototypes and the final products. The kids selected for the lab find or are given a problem or product to work on. In turn - with extensive support from the PPDs that are part of the lab – the kids come up with ideas and prototypes. The prototypes are in turn developed into products that are sold to distributors, and launched to end customers within 40 weeks of the first audition. Kidzdesignlab.com is now in its third season and more than 15 products have been developed, of which 10+ products have been launched into the market.

All the work that has been done in KDL has been documented by Monster, a reputable and well known production and television company in Norway. For each of the three series, Monster had a total of approximately 100 hours of footage. This documentation has been edited and made into a series of short films (5-10 minutes) that has been used as data. This data has been used to map out the design process and the role of the kids in each stage of the process. Additionally, interviews have been done with 3 of the kids, the entrepreneur and the key product designer involved in the series. The interviews were transcribed in full.

The data was analyzed in three phases, following the process of Gioia et al (2013) [12]. In particular, in the first phase, all the films were seen through for familiarisation by the first author. Secondly, an informant-centric approach was taken to understand the process and the role of the kids across the different phases of the process based on the participants descriptions. The outcome of this work was the write-up of a process description. As a final phase, a research-centric approach was taken, where the process was compared to the process described in design thinking to look for similarities and differences. The initial analysis was done by the first author, and this process was in turn reviewed and validated by the second author, which has first-hand knowledge of the case.

4 FINDINGS

The design method of the KDL can be described in 9 main phases. Each of these phases are described below and summarised in Table 1. While not part of the design process as such, KDL is initiated based on an audition. During the audition, the kids test the products and try to understand what the limitations are for them as kids, when they are using products typically designed for adults. Thus, all the kids functioned as a focus group, and the insights from all the kids were leveraged to develop ideas for new products.

In the ideation phase, the kids primarily developed prototypes as a way to capture their thoughts. A traditional ideation phase did not seem suitable for the kids. Rather, going straight to the physical material and building prototypes seemed much more effective. Thus, the kids were testing and ideating at the same time. The prototypes were developed by the kids with the support from the professional product developers (PPDs).

After the prototypes were developed, the kids that came for the audition and wanted to be brought in as test pilots, offering their reactions and advice related to the products. In this stage, the kids took centre stage and revised the products based on the comments that they got. In turn, the PPDs developed final prototypes in co-operation with potential factories. The kids were not involved in this more technical process.

Following this technical process, the business developers related to the KDL developed a business case for each of the products, in some cases in discussion with the kids. In turn, the kids had to present their product and key numbers related to the business case to the board. The board then decided if the product would be accepted. All products were accepted, and this was more of a learning experience for the kids, than a real decision gate. Still, the kids did not know this, were nervous and prepared hard for the presentation.

After getting their products accepted by the board, the kids had to negotiate and discuss each product with the selected factory. This was also for the major part a learning experience and facilitated by the business developer at Kidz Design Lab.

Table 1. Overview of design process of Kidz Design Lab

Quote	Phase name	Description	Role of kids	Phase in design thinking	Added insight
<i>“My arm was hurting – I think I can make something better that will make it easier for kids to do it.”</i>	1) Testing of existing products	Understanding strengths and weaknesses	Primary actor	(Empathise)	Actual kids as personas. No shadowing needed. To embed more important

Selma, 9 years old					then to empathise.
<i>"If you see that Plasticine – It is to make the edges smoother and to make it easier to get into the frying pan."</i> Emma, 10 years old	2) Proto- typing	Developing ideas; Prototyping and doing 3D design	Primary actor; 3D modelling done by professionals	Ideation, Proto- typing and testing	The kids easily developed crude prototypes. That was their way of ideating.
<i>"You need some rubber on the handle of the knife so it does not fall down."</i> Camilla, Test-pilot, 9 years old.	3) Testing	Testing of prototypes by a panel of kids	Primary actors	Testing	The kids on the test panel had massive amounts of insights that enabled further development of the products.
<i>"Now, we will work with the producers and develop the product somewhat more so it can be presented to the board."</i> Tom, Designer	4) Final prototyping	Final prototypes and 3D models developed by professional product designer (PPD).	Kids help summarise results from testing.	Proto- typing	There is no need to involve the customers in the technicalities of the product.
<i>"The board has decided to invest in this product – we believe in you and the product".</i> Sverre, Chairman of the Board, Kidz Design Lab	5) Business case	Business case for the product developed by professional business developer (PBD)	Kids present the product to a board	Implemen- tation	The kids as enthusiastic promoters of the products.
<i>"We think the price for the products is a little high. How can we reduce that?"</i> June, 11 years old.	6) Negotiation	Negotiation with factories	Telephone call to factories; facilitated by PBD		Kids as protector of ethics in factories. Strong negotiators.
<i>"...here there is a hole for the egg-cracker so it does not hurt the packaging."</i> Hellek, 13 years old.	7) Packaging design	Developing a great packaging design.	Participation in workshop. Co-creation with a PPD	Ideation	Packaging expert as facilitator. Packaging as separate design process.
<i>"If we are to take in your product something else that we have in our store needs to be taken out."</i> Representative, distributor.	8) Marketing	Developing PR/marketing strategy/sell product to distributors	Kids presented to distributors; facilitated by PBD	Implemen- tation	The kids as primary persons representing the products.
<i>"The answer to what we [Norway] are to live off after the oil is just what you have been part of right now."</i> Thorbjørn Røe Isaksen, Norwegian Minister of Knowledge at Launch.	9) Launch and post introduction initiatives	Formal launch of the product; Visit shops that sell the products/ communicate with end users	Primary actor; Facilitated by all stakeholders of the Kids Design Lab		Kids as owners of ideas and products.

Having done the presentation to the factories, the process was taken back to an ideation stage to work on the packaging of the product. This was done through a workshop facilitated by PPDs. The kids developed their own packaging solution in practice with the support of the professional. In turn, the packaging was prototyped and tested by the professional.

Before putting the product into production, the kids had to sell the products to the distributors, which was important to enable distribution and for marketing. The business developer had arranged the meetings, but the kids themselves were presenting each of their products for the distributor to evaluate. Again, this was done more as a learning experience, but the meeting was realistic, and the kids worked hard to get their product into the assortment of the distributor.

The final part of the process was the launch of the product into the market, which included a launch party as well as a presentation of the products to end users in store of the distributors selling the products. In this phase, the kids were shown as the designers of the product.

5 DISCUSSION

The Kidz Design Lab (KDL) offers a new perspective on design, which is more comprehensive compared to existing conceptualisations following a design thinking perspective on design theory.

Figure 2 gives an overview of the identified process. Building on this process, The KDL offers 5 key additions and insights compared to existing design thinking:

- (1) The scope of the process is broader than what is assumed in existing design thinking;
- (2) The involvement of the customer is more extensive than proposed by existing processes;
- (3) A separate ideation phase is offered for packaging;
- (4) Products are sold before they are produced; and
- (5) The documentation and communication of the process represents a key part of the marketing – which is also part of the process.

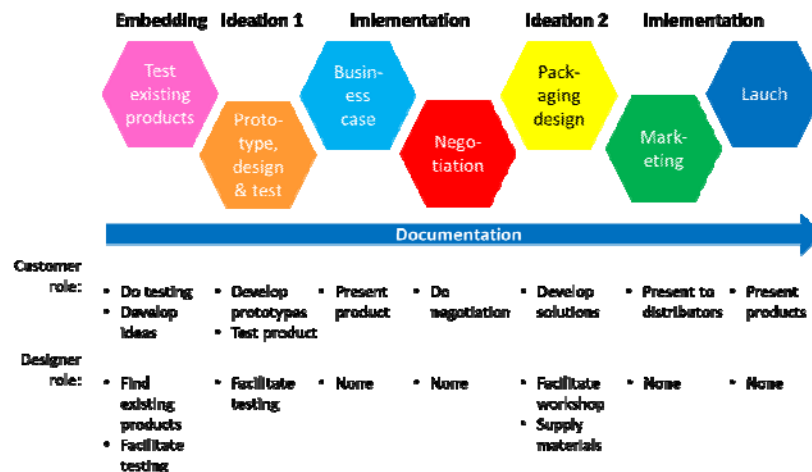


Figure 2. Kids Design Lab Process Overview

Design thinking based on Stanford University Design Thinking process has a relatively narrow focus, emphasising the development of a product or service [4], and puts much less emphasis on related initiatives that needs to be put in place to enable a product to be used and valued by customers. KDL offers a broader perspective – including a number of activities that integrates the customer perspective more in depth. An overview of the additional process steps are shown in Figure 3 on the next page as adjacent bubbles beyond the traditional process of design thinking. The KDL methodology involves potential customers into the whole design process. While design thinking emphasises developing empathy for the user to understand their problems [4], the KDL moves the customer to the centre of the product development process. As shown in figure 2 the customer in fact does more of the job related to the product compared to the designers. The relevance, importance and functionality of packaging is recognised in the methodology and given special attention after a prototype of the product has been developed. In particular, the process reverts to the ideation phase for packaging after prototyping.

An interesting insight from the process is that the products are sold before they are actually produced. While this has been done in the past for example in the toy industry, it is not the mainstream way to approach the market. In KDL, products are sold based on a presentation of prototypes. This enables KDL to reduce product risk and access financing of product development and production. Additionally, it enables a shorter time span from product development until the product is in the store. Finally, KDL enables the development of the story related to every developer. Through documenting the process through film, the story becomes a key feature of the product. Thus, it enables storytelling and personification, which forms the foundation for the marketing of the product.

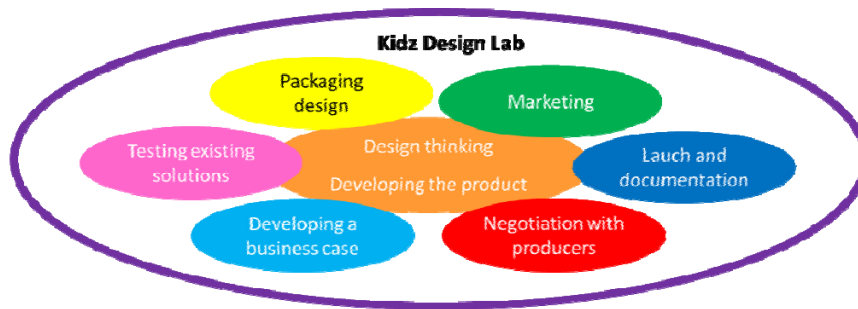


Figure 3. The scope of Kidz Design Lab

KDL represents a specific design methodology, which has been applied in the context of kids. Still, the method has the potential to have far-reaching applications beyond this context. The methodology points to the involvement of potential users and customers as designers as a way to develop, market and sell products. Such customer involvement could be just as appropriate in the case of for example students, elderly or middle-aged office workers. To further test the generalisability of the methodology, future research and practice should aim to test it across contexts.

6 CONCLUSION

The KDL methodology represents a new perspective on user oriented product development. A key characteristic of the process concerns the cross-disciplinary approach, the extended scope, the premature product sales and the integration of the design and marketing in the documentation and use of social media.

The holistic thinking of KDL has important implications for practitioners in that it shows the benefit of integrating different initiatives and stakeholders related to any product initiative. It also illustrates the potential for product developers to develop their process facilitation skills in order to enable true involvement of customers. Based on the sales of the product before production, the methodology offers potential for extensive risk reduction and cost cutting. Further, KDL offers interesting opportunities in developing education within product design, innovation and entrepreneurship.

REFERENCES

- [1] Cross, N. (2011). *Design thinking: Understanding how designers think and work*, 2011, (Berg, Oxford)
- [2] Lawson, B. (2006). *How designers think: the design process demystified*. Routledge.
- [3] Simon, H.A., *The Sciences of the Artificial*, 1969, (M.I.T. Press, Cambridge, Mass.)
- [4] Brown, T., *Design Thinking*. *Harvard Business Review*, 2008, 86(6), 84–92.
- [5] Brown, T., *Change by design: How design thinking creates new alternatives for business and society*, 2009 (HarperCollins Business, New York)
- [6] Johansson - Sköldbberg, U., J. Woodilla, and M. Çetinkaya, *Design thinking: past, present and possible futures*. *Creativity and innovation management*, 2013, 22(2), 121-145.
- [7] Benson, J. and S. Dresdow, *Design thinking: A fresh approach for transformative assessment practice*. *Journal of Management Education*, 2014, 38(3), 436-461.
- [8] Glaser, B.G. and A.L. Strauss, *The discovery of grounded theory: Strategies for qualitative research*. 1967 (Aldine, Chicago)
- [9] Langley, A., *Strategies for theorizing from process data*. *Academy of Management review*, 1999, 24(4), 691-710.
- [10] Eisenhardt, K. and M. Graebner, *Theory building from cases: Opportunities and challenges*. *Academy of Management Journal*, 2007, 50(1), 25-32.
- [11] Yin, R.K., *Case study research and applications: Design and methods*. 2017, (Sage publications, New York)
- [12] Gioia, D.A., K.G. Corley, and A.L. Hamilton, *Seeking qualitative rigor in inductive research notes on the gioia methodology*. *Organizational Research Methods*, 2013, 16(1), 15-31.