



Developing design capabilities in a software SME

Graduation thesis - Sjoerd Bastiaansen

Appendices





Graduation Thesis
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CM PLATFORM 5

Bouw

2013

Productie

2014-2018

Afbouw

2019

Appendices

Appendix A: Scale levels in the Design Capacity Model

1. Awareness (Who are the design thinkers?)
 - 1.1. No one
 - 1.2. Design is seen as a possibility
 - 1.3. Top management (on the strategic agenda)
 - 1.4. Design is present in specific departments
 - 1.5. All employees see design as an important factor

2. Importance (Design is used in?)
 - 2.1. Not important
 - 2.2. Marketing
 - 2.3. Product and service development, including finish and styling
 - 2.4. Production processes
 - 2.5. Innovation projects
 - 2.6. Strategy and management

3. Users' involvement (How are users engaged?)
 - 3.1. No engagement
 - 3.2. User surveys and feedback
 - 3.3. User observations and focus groups
 - 3.4. Users are engaged in processes in the company
 - 3.5. User communities and lead users

4. Innovation drivers (What drives the innovation processes?)
 - 4.1. Technology driven innovation
 - 4.2. Supplier driven innovation
 - 4.3. Market (user/customer) driven innovation
 - 4.4. Design driven innovation (vision, market, and technology)

5. Design capabilities (Design capabilities originate from?)
 - 5.1. No designers employed
 - 5.2. External designers engaged
 - 5.3. Internal designers/design department
 - 5.4. Both internal and external designers

Appendix B: Survey outcomes, listed by scale

Awareness: Overall mean of awareness is 3.79 (N=77, SD=0.833), the highest-scoring department is support (M=4.13, SD=0.354), lowest-scoring department is Other (M=3.30, SD=0.923). A significant effect was found for awareness ($F(4,72)=2.942$, $p=0.026$), a post-hoc analysis reported a significant effect between Development (M=4.04, SD=0.838) and Other (M=3.30, SD=0.923), $p=0.22$.

Importance: Overall mean for importance is 3.58 (N=77, SD=1.250). The lowest-scoring department is marketing (M=2.64, SD=0.924), the highest scoring department is Support (M=4.13, SD=1.370). A significant effect was found ($F(4,72)=3.233$, $p=0.017$), but no pairwise effects.

Users' involvement: Overall mean for user's involvement is 2.30 (N=77, SD=1.014). The lowest-scoring departments are Marketing and Sales (M=2.00, SD=1.342 and M=2.00, SD=0.943), the highest-scoring department is Support (M=2.75, SD=0.886). No significant effects between departments were found.

Innovation drivers: Overall mean for innovation drivers is 2.53 (N=77, SD=1.119). The lowest-scoring department is marketing (M=1.55, SD=0.934), the highest-scoring department is Development (M=2.77, SD=1.070). An effect was found between departments ($F(4,70)=3.029$, $p=0.023$). A post-hoc analysis revealed effects to exist between Marketing (M=1.55, SD=0.934) and Development (M=2.77, SD=1.070), $p=0.20$, and between Marketing (M=1.55, SD=0.934) and Others (M=2.75, SD=0.967), $p=0.34$.

Design capabilities: Overall mean for design capabilities is 3.12 (SD=0.584). The lowest scoring department is Other (M=2.95, SD=0.759), the highest scoring department is Marketing (M=3.36, SD=0.505). No significant effects between departments were found.

Appendix C: Visual representations of interdepartmental scorings

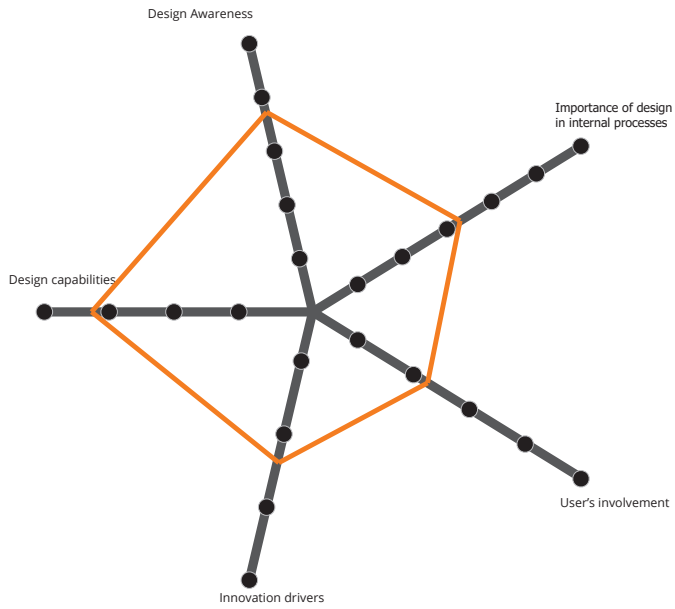


Figure C1: Total

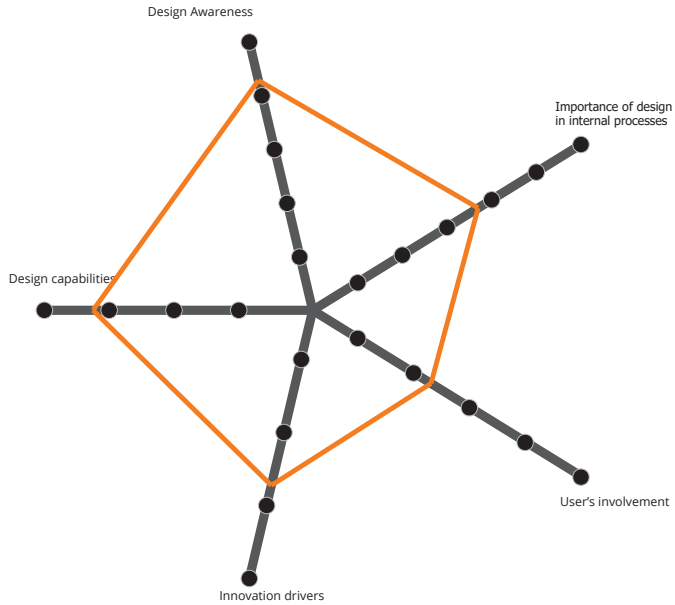


Figure C2: Development

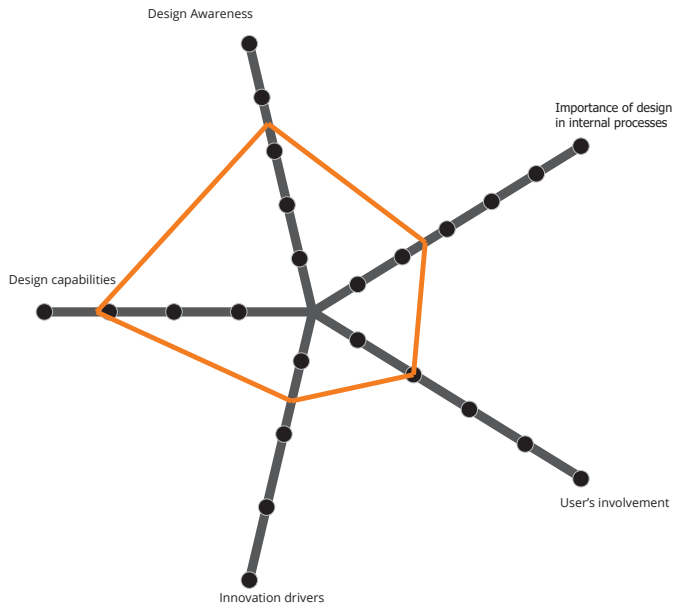


Figure C3: Marketing

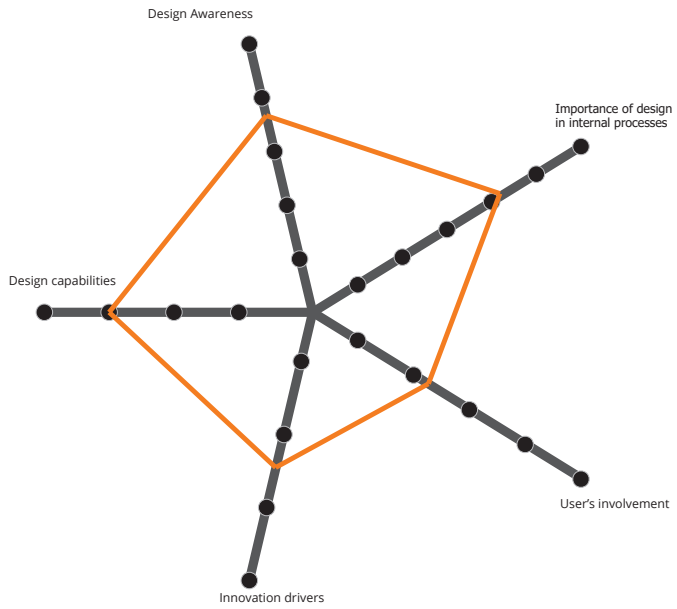


Figure C4: Sales

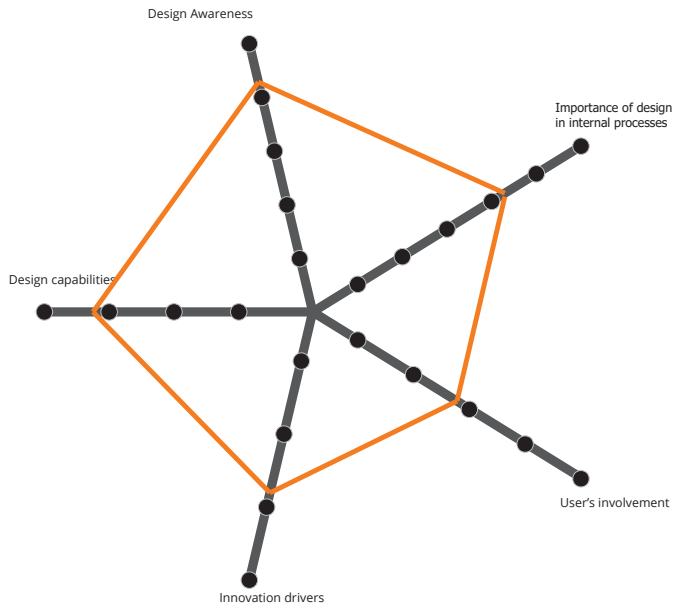


Figure C5: Support

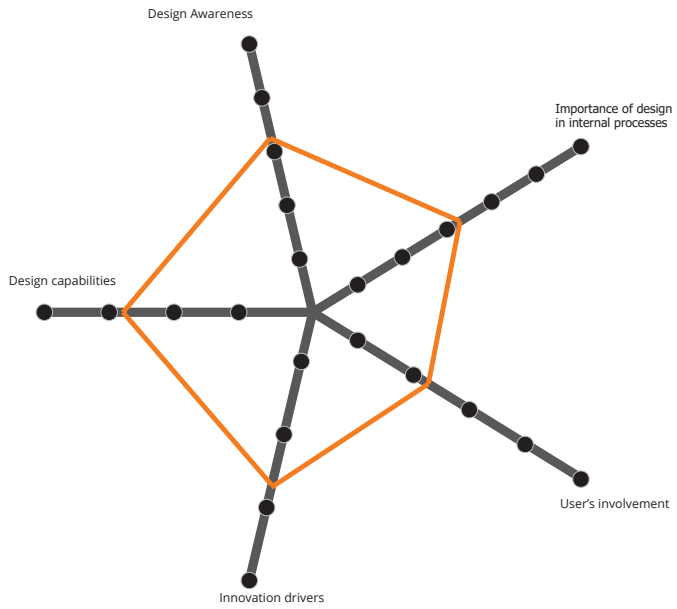


Figure C6: Other departments

Appendix D: List of positions held by the participants in the first round of interviews

1. Event coordinator
2. Junior marketer
3. Marketing coordinator
4. Senior digital marketer
5. Developer
6. Chief Technology Officer
7. Lead developer
8. Sales manager
9. Sales manager
10. Head of software development
11. Junior developer
12. Sr. developer
13. Developer
14. Sr. developer
15. Sr. front-end developer
16. Chief Marketing Officer
17. Product Manager

Appendix E: Three defined levels of codes in the thematic analysis

<i>Level</i>	<i>Notes</i>	<i>Code</i>
1	92	Attitudes to user testing
1.1	7	Developers about who should be used for testing
1.1.1	3	1 developer proposes to do the testing with students
1.1.2	2	a front-end and back-end developer argue it is best tested with actual users
1.1.3	2	two developers argue in favor of asking people that aren't related to CM in any way
1.2	14	
1.2.1	4	Developers (4) say a lot of testing is done by just clicking through things
1.2.2	4	Developers and a marketer talk about piloting
1.2.3	4	Two developers discuss what a demo session entails
1.2.4	2	A developer and a marketer argue a lot can be gained from better UX testing
1.3	8	Contact with customers isn't ideal
1.3.1	3	Developers (3) argue that they think talking to users isn't really their thing
1.3.2	1	A developer says he doesn't have contact with users
1.3.3	2	2 marketers that think it's a task that can be automated
1.3.4	2	A developer sees that despite best efforts, things go wrong.
1.4	11	Technical people on feedback
1.4.1	2	A sales manager and a developer think that a pilot is a nice moment to get feedback
1.4.2	4	The CTO and a developer think that getting feedback is nice, because it helps you forward
1.4.3	3	Two developers say they want feedback as early as possible
1.4.4	2	A sales manager and a developer say they don't get feedback at the moment.
1.5	11	Developers see a lot of potential trouble
1.5.1	3	Two developers think that beta testing is sometimes technically impossible
1.5.2	4	Developers (3) en marketer (1) think it's difficult to involve actual users
1.5.3	4	Technical people see that surveys may not be the right solution.
1.6	12	People think that it can be very valuable to talk TO customers
1.6.1	5	Een sr. front-end developer vind dat het heel nuttig kan zijn om goed naar de buitenwereld te communiceren waar je mee bezig bent

1.6.2	6	Technical people see that it's important that when you ask people for their opinion, you have to keep them involved
1.6.3	1	The CTO says that being honest in your communication works to make a good relation
1.7	9	
1.7.1	4	Developers think there needs to be someone to filter feedback; ideally the product manager
1.7.2	4	Developers (3) say their product manager is already quite good at doing the contact with customers
1.7.3	1	A developer tells that there will be a new system to help PCPs to get focussed feedback.
1.8	18	
1.8.1	6	Developers (3) want a tool that people can use to give feedback in the platform or to propose new things
1.8.2	3	Developers state that their product might be interesting to do user testing with
1.8.3	3	Developers (3) say that they think doing demos with clients is interesting
1.8.4	2	Developer (1) say that he thinks surveys are interesting, but does see some potential problems.
1.8.5	2	Developers (2) say they think it may be interesting to observe users.
1.8.6	2	A marketeer says that she'd love to get in touch with users personally to ask them about their experiences.
2	69	Self-referentiality
2.1	6	
2.1.1	3	A marketeer, a developer and the CTO propose ways to manage internal ideas.
2.1.2	3	Two marketeers discuss that people in CM should feel more confident in sharing their ideas.
2.2	7	
2.2.1	3	A marketeer and sales manager say that developers get a lot of room to develop their own ideas
2.2.2	2	Developers (2) discuss that they get room to develop their own ideas.
2.2.3	2	A senior developer says that they have room to decide for themselves what to work on (within the reasonable of course)
2.3	18	
2.3.1	7	Developers, a sales manager and a marketeer discuss the way ideas are shared (very informally)
2.3.2	7	Marketeers (3), a sales manager and developers (2) state that product development is very strongly driven from self-referential

2.3.3	3	A marketeer says that CM gives a lot of room to employees to develop good ideas
2.3.4	1	A developer says that CM develops products based on what's "logical"
2.4	8	
2.4.1	3	A developer talks about the way development is managed
2.4.2	2	two senior developers discuss the way prioritization is managed.
2.4.3	3	The head of software development and a marketeer give examples of what has been developed based on internal ideas
2.5	8	
2.5.1	3	Sales mgr, developer and marketeer say that product development has a technical orientation
2.5.2	2	A sales manager states why products work "easy"
2.5.3	3	Marketeers (2) discuss where ideas come from
2.6	9	
2.6.1	3	A developer and marketeer say that CM talks a lot from a "we know what you want"-position
2.6.2	4	A marketeer and sales manager say that there is a lot of innovation coming from technical possibilities
2.6.3	2	A developer and marketeer say the changes they make can't be too big.
2.7	8	
2.7.1	3	Cto and head of software development say they think contact with customers leads to tailormaking
2.7.2	4	A developer and a marketeer say they can think what's best for the customer themselves
2.7.3	1	A junior developer thinks that spending too much time on usability isn't ideal
2.8	5	
2.8.1	5	Developers discuss that testing is something that is done internally as well.
3	42	Attitudes to design
3.1	7	Design is looked upon as something that makes images
3.1.1	4	Developers say "designers make images"
3.1.2	3	A developer and marketeer say they ask designers to think about the way things should look
3.2	4	A junior developer sees some added value
3.2.1	3	A junior developer sees that working closely with designers can help them save time
3.2.2	1	The same junior developer says that you need to see if the time spent by a designer doesn't outweigh the time fixing things

3.3	9	There are some people that see chances for more styling
3.3.1	3	A marketer and head of SW development say there is a mismatch in styling between website and styling
3.3.2	4	two developers and a marketer see that the styling between products is inconsistent.
3.3.3	2	A developer and sales manager say design isn't usually a first priority
3.4	5	Marketeers see the chances for CX in the company
3.4.1	3	two marketeers see future potential for UX/CX in CM
3.4.2	2	A marketer has good positive experiences with customer experience
3.5	10	People see that there isn't enough design capacity in CM
3.5.1	4	A front-end developer says there aren't enough front-end developers to work effectively on interfaces
3.5.2	4	Marketeer, developer and sales manager see that the current design department is insufficient
3.5.3	2	A junior developer sees that there isn't enough to work from, like a styling library.
3.6	7	Developers get a lot of room, also in terms of designing.
3.6.1	2	Developers (2) say that they do a lot of designing during the development themselves
3.6.2	2	A marketer and a developer "know" how to improve the usability.
3.6.3	3	Developers say they do a lot of small UX designing themselves.
4	42	Customers
4.1	8	People in CM see potential
4.1.1	3	A marketer and CTO see that working together with customers does have benefits
4.1.2	4	two marketeers and a developers see value in informal events with customers
4.1.3	1	A developer sees the value, but it shouldn't interfere with normal work
4.2	3	The CTO values feedback
4.2.1	2	the CTO knows where feedback comes from
4.2.2	1	The CTO knows that feedback is a base for good decisions
4.3	10	Clients give ideas for new products
4.3.1	3	Two marketeers think that talking to clients help getting ideas
4.3.2	3	The CTO and a marketer say that a lot of ideas can come from sales managers
4.3.3	2	A marketer and developer say where ideas come from
4.3.4	2	the CTO and a developer say that sales can get a lot of ideas from going to the customer

4.4	7	People perceive CM as market pull
4.4.1	4	A marketer, a developer and the CTO say they are "market pull"
4.4.2	3	People see that getting customers to talk is a valuable addition
4.5	14	
4.5.1	4	The CTO describes that CM has a broad range of clients
4.5.2	5	The clients in the platform need less sales (sales manager)
4.5.3	2	A sales manager and a developer say charities are amongst the clients
4.5.4	3	A sales manager talks about the technical customers
5	41	Company culture and processes
5.1	6	The way CM does testing
5.1.1	3	Developers say they have a lot of room to put things live themselves
5.1.2	3	A marketer and two developers about the "testing" process
5.2	12	CM discusses their "core values"
5.2.1	4	A marketer discusses what CM means to the outside world
5.2.2	2	the head of software development says that CM hires people to diversify the business, not to add to one thing
5.2.3	3	A marketer and developer say processes in CM need to be flexible to be accepted
5.2.4	3	A marketer says that in CM all employees are valued equally.
5.3	2	
5.3.1	2	There are some misunderstandings between people in CM
5.4	7	
5.4.1	4	The CTO discusses the reasons why CM does innovations
5.4.2	3	A developer, a marketer and CTO argue a structure for collecting and sharing ideas
5.5	14	
5.5.1	5	A marketer and a developer discuss the product development method
5.5.2	6	Developers discuss the way tasks are divided in product development
5.5.3	3	Developers discuss what tools they use for development
6	19	Attitudes to quantitative data
6.1	9	People argue information should be quantitative data
6.1.1	3	marketeers argue that performance measures should be quantitative.
6.1.2	4	a marketer and head of sw-development argue in favor of quantitative feedback
6.1.3	2	A marketer and the head of sw-development argue qualitative feedback is not useful
6.2	4	

6.2.1	3	A marketeer and the CTO say improvements are decided based on gut feeling
6.2.2	1	A marketeer says that CM doesn't have time to get ideas from the market.
6.3	6	
6.3.1	2	Marketeers show the tools used to collect quantitative data
6.3.2	2	A marketeer discuss that data isn't readily used
6.3.3	2	A developer and a marketeer see problems using data
7	13	Internal means for sharing information
7.1	5	Discussing the forum
7.1.1	3	A developer and sales manager say the forum doesn't work that well
7.1.2	2	Two developers say the forum works quite well
7.2	4	Information isn't used very well.
7.2.1	3	A developer discusses that information isn't organized that well
7.2.2	1	A marketeer says that the information that exists, isn't used
7.3	4	
7.3.1	3	developers and a marketeer say that information sharing internally is not always working that well
7.3.2	1	A developer says that he is working to help mitigate that.
8	11	Role of support in the organization
8.1	4	
8.1.1	2	A sales manager and a developer on where ideas come from
8.1.2	2	A marketeer and a developer saying that everybody has too much on his hands often
8.2	7	
8.2.1	2	A sales manager on how he solves client's problems
8.2.2	3	A developer and a sales manager on how problems come into the organization
8.2.3	2	A developer on where they get their feedback from
9	4	Miscellaneous
9.1	3	
9.1.1	3	Problems with the working of the platform
9.2	1	
9.2.1	1	A quote by Ruud Lubbers

Appendix F: Articles shared to increase awareness of design's added value to employees

Innovatie begint bij het ontwerp

Het Financieele Dagblad (12 November 2016)

Julius Caesar en Augustus konden niet zonder 'design thinking'

Het Financieele Dagblad (29 April 2017)

The evolution of the design-inspired enterprise

Gabriella Lojacono & Gianfranco Zaccai
MIT Sloan management review (Spring 2004)

Finding the right job for your product

Clayton Christensen, Scott Anthony, Gerald Berstell, Denise Nitterhouse
MIT Sloan management review (Spring 2007)

Walking the Walk: putting design at the heart of business

Paul Gardien, Freddy Gilsing
Design Management Review (Summer 2013)

What is Service Design? A tale of two coffee shops

Fjord
Vimeo (12 april, 2017)

How Samsung became a design powerhouse

Youngjin Yoo, Kyungmook Kim
Harvard Business Review (September 2015)

Chapter 2: Do A Usability Test Now!

Elizabeth Goodman, Mike Kuniavsky, Andrea Moed
Observing the user experience (2012)

Design for action

Tim Brown, Roger Martin
Harvard Business Review (September 2015)

What is the real value of design?

Jeneanne Rae
Design Management Review (Winter 2013)

Kees Dorst: How design can improve public spaces

Design Indaba
Youtube (18 June 2012)

Design value: A framework for measurement

Thomas Lockwood
Design management review (Fall 2007)

The seven tenets of human-centred design

David Townson
UK Design Council (13 June 2017)

A totally new travel experience

Philips Design
90 years of Philips Design (2015)

The customer experience: a road-map for improvement

Robert Johnston, Xiangyu Kong
Managing service quality (Volume 21 2011)

Stay crazy: How do we design human in our digital world

Hector Pottie
Medium (18 May 2017)

User-centered innovation is not sustainable

Roberto Verganti
Harvard Business Review (19 March 2010)

Case study: When you have to choose between core and new customers

Marco Bertini, Nader Tavassoli
Harvard Business Review (26 June 2017)

Jinek (Episode)

Sicco Santema
KRO-NCRV (6 July 2017)

People-centric thinking

Philips Design
90 years of Philips Design (2015)

The 7 Deadly Sins of User Research

David Travis
Medium (11 February 2016)

A Crash Course in UX Design Research

Matt Lavoie
Medium (22 June 2015)

Benefits of Co-design in service design projects

Marc Steen, Menno Manschot, Nicole de Koning
International Journal of Design (Volume 5 2011)

Design thinking comes of age

Jon Kolko
Harvard Business Review (September 2015)

Chapter 1: Introduction

Elizabeth Goodman, Mike Kuniavsky, Andrea Moed
Observing the user experience (2012)

Everyone is a designer. Get over it.

Daniel Burka
Medium (11 April 2017)

Our top picks from New Designers

Sarah Weir
UK Design Council (12 July 2017)

Why a toaster is a design triumph

Ian Bogost
The Atlantic (20 July 2017)

585: Nike's co-founder on Innovation, Culture, and Succession

HBR Ideacast
Soundcloud (13 July 2017)

Health Care Providers Can Use Design Thinking to Improve Patient Experiences

Sharon Kim, Christopher Myers, Lisa Allen
Harvard Business Review (31 August 2017)

Appendix G: Interview guide for the reflective interviews

Research topic:

The adoption of design capabilities in a software SME.

Main research question:

How do employees think about design after a 5 month contact with a design catalyst?

Checklist for start

Is it quiet

Is the recording apparatus on?

Is there something to drink?

Is my notepad present?

Introductory script (optional)

During this conversation, I will ask you some questions, to get to know more about the way the company thinks about design.

It is important to note that I am looking for your opinion on things and that you cannot give any wrong answers. And although our conversation is recorded, I will take out any names to anonymize the findings.

Subtopic 1:

Attitude to user engagement in the NPD process (User engagement)

Opening question:

Could you tell me more about the way you see the role of users in product development?

Follow-ups/probes:

- Why do you think so?
- What do you think users can add to the product development process?
- How do you think CM can expand on this?
- Do you see any potential problems as a result of user involvement? What problems do you see?

Subtopic 2:

Knowledge of design in the organization (Awareness)

Opening question:

Could you tell me what design means to you?

Follow-ups/probes:

- Can you give me an example of what you think is good design?
- Why do you think so?
- What do you think makes a bad design? Why do you think so?

Subtopic 3:

Application of design in the organization? (Importance)

Opening question:

For what do you think should designers be responsible in the organization?

Follow-ups/probes:

- How would you argue does the organization meet that?
- How would you argue can design benefit the organization?
- Do you think the organization can benefit more? How would you think that can be achieved?

Checklist for closure

- Does the interviewee have any last questions or remarks?
- Did I ask everything I wanted to have answered?
- Did I turn off the recording equipment?

List of generic probes (optional)

- Oh?
- Could you elaborate on that please?
- Do you think that others in the organization disagree with you in this regard?

Appendix H: List of positions held by the participants in the second round of interviews

1. Chief Marketing Officer
2. Senior front-end developer
3. Financial analyst
4. Product manager
5. Product marketer
6. Product manager
7. Junior developer
8. Product manager
9. Chief Technology Officer
10. Event coordinator
11. Head of Software Development

Appendix I: Themes and sub-themes discovered in the second round of interviews

<i>Number</i>	<i>Topic</i>	<i>Tickets</i>
Code group	Organizational opportunicles	
Tickets	28	
1.1	Challenges for organizational culture	7
1.2	Challenges in facing outward for feedback	7
1.3	Challenges in processes	4
1.4	Challenges with regard to design	7
1.5	Others	3
Code group	Responsibilities for design professionals	
Tickets	39	
2.1	Styling/Visual appearence	10
2.2	Market/customer research	7
2.3	Usability	10
2.4	Development process	3
2.5	Data interpretation	2
2.6	Collaborating	3
2.7	Other	4
Code group	On user research	
Tickets	53	
3.1	Perceived risks	8
3.2	Digital means	9
3.3	Person-to-person means	7
3.4	Research subjects	2
3.5	Process	9
3.6	Responsible people	6
3.7	Goals of research	10
3.8	Other	2
Code group	Visible change in the organization	
Tickets	34	
4.1	Realization of value UX designers	5
4.2	Value of external information	12
4.3	Hiring policy	5
4.4	Managerial attitudes	6

4.5	Long-term aspirations	3
4.6	Other	3

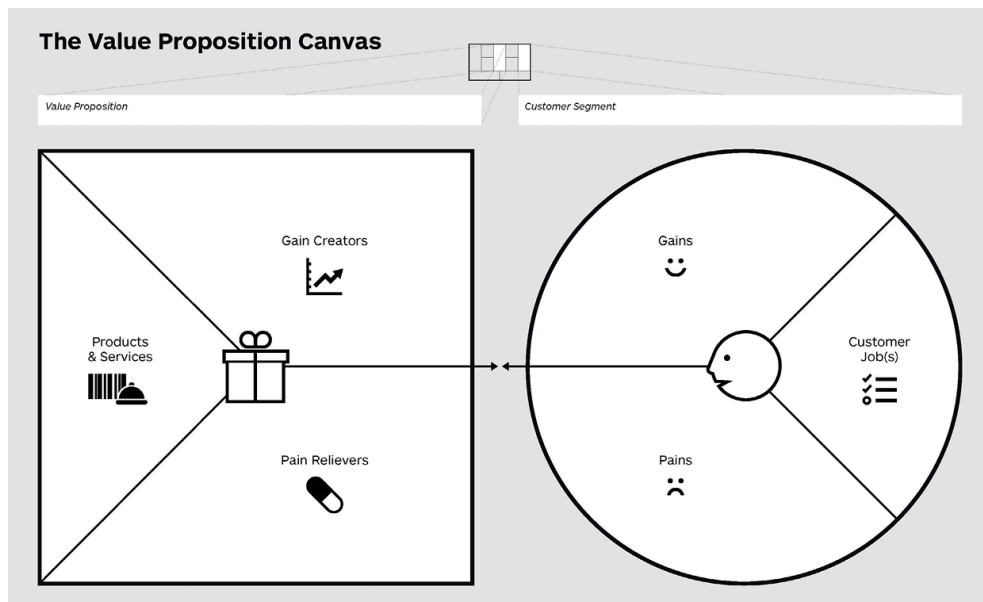
Number	Topic	Tickets
Code group	Definition of design	
Tickets	42	
5.1	Design & Experience	5
5.2	Aesthetics	10
5.3	Usability	10
5.4	Process	11
Code group	Acknowledgement of low user-centredness	
Tickets	20	
6.1	Technical orientation	2
6.2	Product performance	4
6.3	Self-referentiality	4
6.4	User involvement	9
6.5	Other	1
Code group	Example of self referentiality	
Tickets	18	
7.1	Negative attitude	4
7.2	Self-acknowledgement	2
7.3	Examples	8
7.4	Other	4
Code group	Preference for quantitative measures	
Tickets	13	
8.1	Using parameters	10
8.2	Quantative data as a supplement	3
Code group	Positive attitudes from workshops	
Tickets	9	
9.1	Enthousiasm for new workshops	4
9.2	Learnings	3
9.3	Follow up actions	2
Code group	On design capacity	
Tickets	8	

10.1	Acknowledgement that it is low	4
10.2	Resulting difficulties	4

Number	Topic	Tickets
Code group	Organizational attitudes	
Tickets	15	
11.1	About product development	6
11.2	General	5
11.3	About design	4

Code group	Added benefit of external evaluation	
Tickets	22	
12.1	Examples of benefits	4
12.2	Examples of application	2
12.3	Positive attitudes	7
12.4	Proposed process	6
12.5	Proposed benefits	3

Appendix J: Large versions of workshop booklets



DIY toolkit Value Proposition Canvas

What your product does is only part of the reason your product is successful. Key to helping your product become successful is understanding how your product helps your customers and improving from there.

To help you create this understanding, Alexander Osterwald developed the value proposition canvas. A tool that helps you define your target audience, and define how your product creates value to them.

The model, displayed in the image above, is an expansion to Osterwalder & Pigneur's Business model canvas, and focusses only on the Value Proposition and the Customer Segment. By helping you define these two more in depth, you can find ways in which you can improve 'fit' between what your customers want, and what your product offers.

You can fill out this canvas on your own, but it works great if you work together with some people so you can discuss your ideas about the customers. You may even do an ideation session afterwards. So let's get started.

Preparation

Before you get started, there are only a few things you need to do. First is reading through this document to understand the plan, and print out physical copies of the canvas, which can be downloaded at strategyzer.com under the canvas section. Book a room and reserve 2 hours in your team's agenda and you're good to go.

Understanding the canvas

On the left side of your canvas you find the 'value proposition', that helps you describe your product. On the right side you find the 'customer segment' that helps you describe your target customer. The easiest way in building up the canvas is by first doing the customer segment part of your canvas. This also follows the structure described by Simon Sinek

working through the Why, How, and What of your value proposition.

The customer segment circle is responsible for the 'why' of your value proposition and it is made up out of 3 parts; customer jobs, pains, and gains.

Customer jobs

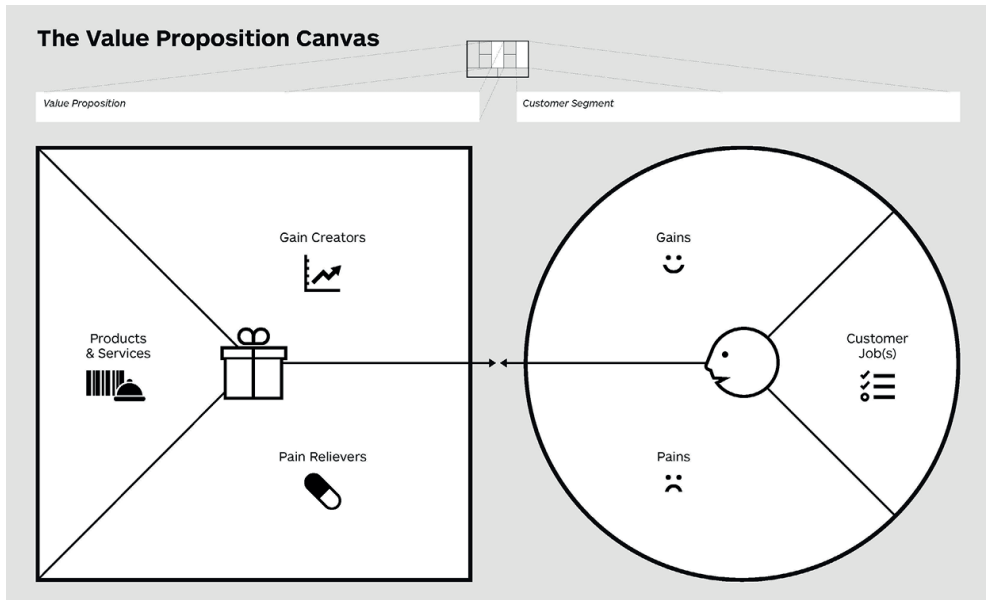
The customer jobs describe what your customer wants to do in the most basic way possible. In a fictional case of an app for a taxi company, this might be 'call a taxi' and 'pay for a taxi'. Write down all things you argue your customer wants to do, you can always scrap some in a discussion.

Gains

The customer gains are what the customer finds important about these types of products, in case of the taxi application, it can be something like 'easy to use' or 'easy payments'. Again, write down all of these things, you can scrap stuff later.

We'll continue on the other side!

Figure J1: Booklet for value proposition canvas workshop (front)



Pains

Here you write down what makes the user unhappy. In the case of the taxi service app, this might be 'long waiting times', or 'unprofessional drivers'.

Gain creators

Now we're coming to the section where you describe how you create value to your customer. In the gain creators you describe how your product creates the gains for the customer. In our fictional case of the taxi app, this might be 'multiple payment methods' or 'GPS locating', so people don't need to fill out their location.

Pain relievers

The pains you defined earlier need to be addressed as well, write down here what it is your product does to take away these pains. The taxi app may use a rating system for drivers to inform people of driver quality.

Products and services

Here you can write what it is that creates the value, this may be a number of things. In the taxi app case, the app but it may be supported by a customer service hotline.

Workshop

In the workshop you'll start by having a short, creative game to help everybody out of their creative inhibition, try for example a round of picti-nary, or a game of hints.

After the game, the workshop leader will briefly introduce the canvas, just to get everybody on the same page, after which every individual will get 20 minutes to fill out a canvas for him/herself. To help people, the workshop leader may browse the internet to find examples of filled-out canvasses to help everybody understand what each topic could contain.

After the 20 minutes everybody will get a few minutes, 5-10 to walk the other participants through his canvas. Then, the team proceeds to fill out a canvas together, by combining and discussing the canvasses filled out by individuals. And that's it. You've successfully created an understanding of your customers and how you create value for them.

Optional: Brainstorm

In case you want to make your product more succesful, you can do a brainstorm or generative meeting

based on the canvas. A few days after filling out the canvas, get the team back together and discuss what else your product can do to create gains or relieve pains. This would typically take 102 hours at least. If you want to make prototypes to test, it can take anywhere from a half to an entire day.

Workshop timetable

Length: 1,5 - 2 hours
Participants: 2-5 people
Tools: Canvasses, pens, creative game, examples of canvasses, this guide.

- 0:00 - 0:20**
Warm up game
- 0:20 - 0:30**
Introduction of the canvas, explain how it works.
- 0:30 - 0:50**
Individuals fill out a canvas
- 0:50 - 1:20**
Short presentation of canvasses
- 1:20 - End**
Discussing and developing a final canvas.

Figure J2: Booklet for value proposition canvas workshop (back)



DIY toolkit Doing a usability evaluation

Whilst making your product, you have surely developed an idea of how people should be using it. But do they actually use it like this?

This booklet helps you to set up a usability evaluation, that can be done in just a few steps. The usability evaluation can be carried out using a small research booklet, displayed in the image above. This short guide will help you use it through preparation, individual activity and a workshop to share findings.

The booklet

The booklet consists of three parts, the cover page, which is used for preparation, the inside, used for describing observations, and the backside, used in reflection. Detailed images are shown on the other side of this folder.

The coverpage

On the cover you can find four boxes; Product, Goal, Tasks, and User. In the product you describe what product will be evaluated. In the goal you describe what you want to find out through your research.

Then, you describe what tasks you want the participant in the research to carry out. For example, for PowerPoint, this may be 'open a blank document' and 'choose a design'.

Take three tasks at maximum to keep the evaluation short. In the bottom box, you write down some basic characteristics of the participant in your evaluation. This can help to place the results in context.

The inside

The inside has 4 big boxes, of which three are labeled 'Notes task #'. You use these boxes during the evaluations, in which you write down everything you see the participant do that catches your interest. You might for example see someone click an unclickable button.

In the fourth box 'Other notes' you can write down anything that caught your interest, but did not specifically relate to a single task.

The backside

On the back of the booklet, you can reflect on the usability evaluation. You get two boxes to write down your most important finding and other findings. You find the third box to use to write down some initial ideas you might have on how to improve your product, based on what you saw.

Doing a study

Doing a usability study can be conducted by doing the observations yourself, or have them conducted through an external platform (TryMyUI has been used by Tjeerd in the past). In both cases, the procedure to follow is fairly similar. You have one half-hour meeting to prepare the study, have the study conducted and do the observations and then get back together to discuss what you've found.

Part 1: Preparation

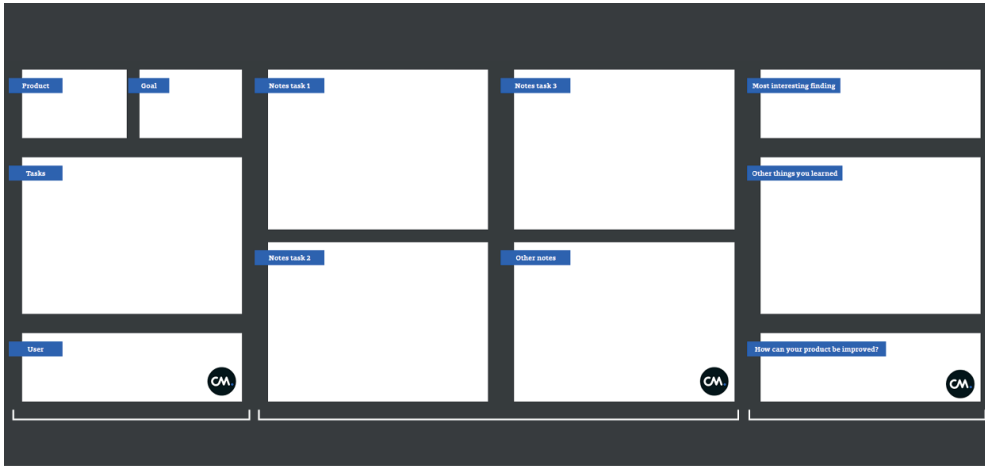
Get a team of people involved together in a room to discuss what product you're evaluating and what you want to find out in the study. Together define the tasks the participants will have to do in the evaluation.

If everybody has to do an evaluation, define who should be the ideal participant. Everybody should find someone from his personal network to participate, this can be a partner, friend, or parent, as long as she isn't involved in the development of your product.

Then, pick a date on which you will get back together to discuss your findings in a one-hour meeting.

We'll continue on the other side!

Figure J3: Booklet for usability evaluation workshop (front)



Part 1,5: Getting people to be observed

In case you're doing an observation yourself, get in touch with someone from your network and schedule a meeting with them where you can have that person conduct the tasks you described. Such a meeting can even be held in your local starbucks.

In case you've decided to have the evaluation sourced externally, the team's leader (probably the product manager) will visit the website and buy 3-5 of these tests, and describe what tasks the participants will have to do. The movies he gets in return, he will send to his team for them to watch and make observations, you can make a choice if you have one movie per team member, or have everybody watch all movies.

Part 2: Observing

Whilst doing the observations, ask the participant to think and do out loud, this way, you don't have to guess what he's doing, or what he thinks. This helps your observations. During the observation, take notes in the research booklet. After you've finished the observation, take some time for yourself in which you reflect on what you have seen and learned, and fill out the back of the booklet.

Part 3: Reflecting on your findings

In a one-hour meeting, all members of the team get together in a room and discuss what they found interesting in their observations. Start by appointing a team leader, who will lead the workshop. Then, all team members get a few minutes to present their findings and observations. Someone, not necessarily the team leader will write each comment down on a sticky note.

When all have presented their findings, the team takes 10 minutes to categorize the sticky notes into groups. Take 10 minutes to briefly discuss each category. The workshop leader writes a brief description of the category.

Then, everybody is given 3 stickers which he/she can use to 'vote' for an insight they consider important to fix for the product. Two stickers are used for insights that can be fixed more easily, so-called quick wins.

The other sticker, is of a different colour and used to vote for ideas that are more difficult to realize, but may be bigger improvements for the products.

After the voting is done, the workshop leader will place all sticky notes that received votes together, which the team discusses in order to translate these from only sticky

notes with stickers into an actionable list of things to improve.

The outcome of the workshop should be a nice overview of things to improve in the coming time, as well as some future directions.

You can repeat this every few months, or after you have made a big or radical improvement to your product.

A last advice; the externally sourced test works well because it requires less effort from the team, but sitting next to someone and seeing them work with your product can be more valuable.

Workshop timetable

Length: 1 hour
Participants: 2-5 people
Tools: Sticky notes, reflection booklets, dot-stickers, pens/markers, blank writing papers.

- 0:00 - 0:20**
Presenting findings
- 0:20 - 0:30**
Categorizing findings
- 0:30 - 0:40**
Discussing categories
- 0:40 - 0:45**
Voting
- 0:45 - end**
Grouping of votes, making a list of actionable product improvements.

Figure J4: Booklet for usability evaluation workshop (back)

Appendix K: Description of the stepping stones between the third and fourth level of the Danish Design Ladder

Section 4.5 describes three stepping stones between the second and third level of the Danish Design Ladder. These stepping stones were introduced by Doherty et al. (2014). The model proposed did not only identify stepping stones between the second and the third level in the Danish Design Ladder, but also identified two stepping stones between the third and fourth level.

These stepping stones were initially of less relevance to CM because CM was making a transition between the second and third tier. However, as the evaluation in section 7.2 describes, some employees that were involved with the catalyst's work had reached the third level of the Danish Design Ladder, and were progressing towards the fourth tier. This section elaborates on the steps for them to take between the third and fourth tier.

Two stepping stones were defined between the third and fourth tier; design as relationships and design as management.

- **Design as relations:** At this stepping stone, there is an acknowledgement that design does not only create (intangible) value for stakeholders. Rather, design also allows to create meaningful relationships with stakeholders in the value chain. This enables companies to create value for all of the stakeholder in the value chain, by integrating every player's capability and needs.
- **Design as management:** At this stage, the company is very well aware of the impact design has on the company's product development processes. The company's management applies this knowledge and methods to the way the business is run.

Image K1 on the next page provides a visual representation of these stepping stones.

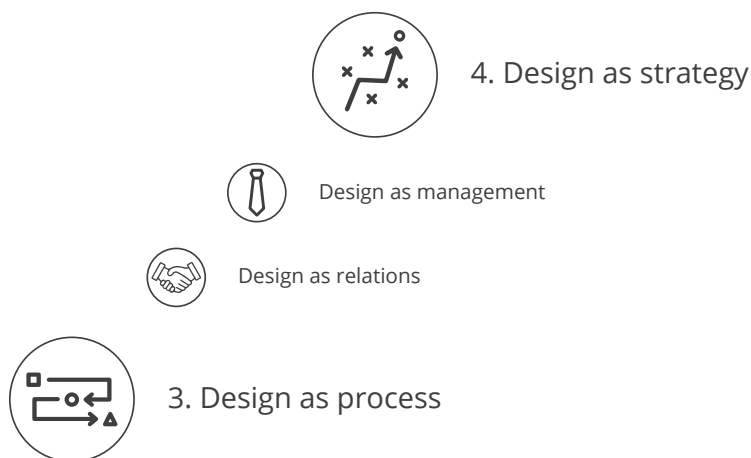


Figure K1: Stepping stones between the third and fourth level in the Danish Design Ladder, adapted from Doherty et al. (2014)

Abstract

The study investigated a small- to medium-sized enterprise (SME) that had expressed the interest to explore the potential benefits of developing design capabilities. Previously, CM had conducted a company-wide branding exercise and saw an opportunity to explore this further. During a 6-month period, the researcher was embedded at CM as a design innovation catalyst to understand what first steps the company could take and to help the firm take these steps. Through design workshops and knowledge sharing, the catalyst managed to improve the understanding of design and have employees that were more actively involved in the catalyst's work change their behaviours.