Design-driven venturing

Designing a new venturing architecture for Philips Domestic Appliances

Master thesis

Nijs Bouman

Strategic Product Design
Faculty of Industrial Design Engineering
Delft University of Technology

August 2022

PHILIPS
Domestic Appliances

Master Thesis

Design-driven venturing:
Designing a new venturing architecture for Philips Domestic Appliances

Graduation chair Lianne Simonse
Graduation mentor Euiyoung Kim
Graduation client Philips Domestic Appliances

Nijs Bouman
August 2022

Design-driven venturing:
Designing a new venturing architecture for Philips Domestic Appliances

Master thesis
Strategic Product Design (MSc)
Faculty of Industrial Design Engineering
Delft University of Technology

Graduation committee
Chair: Dr. ir. L. W. L. Simonse
Mentor: Dr. E. Y. Kim

Department of Design, Organisation & Strategy

Client
Philips Domestic Appliances
Strategy & New Business Development

Company mentors:
T. Deflandre, MBA
W. J. Shon, MBA

Author
N. L. J. Bouman
Student number: 4667883

TU Delft

Acknowledgments

This graduation project is supported by Philips Domestic Appliances and partially fulfills the requirements for the degree of Master of Science in Strategic Product Design at the Faculty of Industrial Design Engineering, Delft University of Technology. The supervisory team consists of Dr. ir. Lianne Simonse (chair) and Dr. Euiyoung Kim (mentor).

Philips Domestic Appliances is represented by Thomas Deflandre and Wei Jin Shon (company mentors). The graduation project was carried out within the Strategy and New Business Development team.

Disclosure statement
No potential conflict of interest was declared by the author.

Preface

This graduation thesis marks the end of my studies and the start of an exciting new chapter in my life, both professionally and personally. After five years of studying, first at Eindhoven University of Technology (BSc) and now at Delft University of Technology (MSc), I am proud to present my graduation thesis.

Before introducing my thesis contents, I would like to acknowledge the people who have contributed to my graduation journey, and express my gratitude for their motivational, inspirational, and intellectual contributions to my graduation.

I would like to start by thanking my graduation chair and mentor, Lianne and Euiyoung, who have expertly supported me. Thanks to you this journey has been an invaluable learning experience and I am pleased to have had you on board as my supervisors. Thank you for coaching me during my (internship) research projects and later for becoming part of my graduation team, not based on my proposal, but based on your trust in me.

Secondly, I would like to thank my company mentors, Thomas and Wei Jin, for your trust and support. Thanks to you I was able to develop myself, learn from our projects, and reflect upon my work. Next to that, being fully integrated in the team helped me to achieve a valuable and true work experience. Also, I would like to thank all other colleagues at Philips Domestic Appliances for making working with you a joy.

Thirdly, I would like to recognize the people who have supported my growth leading up to my graduation. This list of people includes Alessandro Iannelli (Royal Philips), Anna Zielińska-Frontczak (Boeing), and the communications team at Industrial Design Engineering (TU Delft).

Finally, I would like to thank everyone else who has supported me, including my family and friends, for their unconditional care and support.

I am pleased to present to you my graduation thesis.

All the best,

Nijs

Executive summary

This thesis investigates how strategic design contributes to the venturing architecture of New Business Development at Philips Domestic Appliances (DA). Based on eight in-depth interviews and a six-month embedding, a new co-designed venturing architecture is introduced (Figure 1). The proposed architecture guides innovation teams and executives at Philips DA to build the capabilities and processes for venturing into new territories of consumer value. Additionally, the new architecture reflects the newly established vision of the New Business Creation & Scaling (NBX) team and integrates a new 'value shaping' perspective, based on original research findings.

As Philips Domestic Appliances was disconnected from Royal Philips in 2021, the need for new 'ventures' emerged in order to remain a leading innovator in the domestic appliances industry. The key questions are what new business opportunities to pursue and how to increase success in bringing meaningful innovation, fostering a forward-looking culture, and facilitating the development of new skills & capabilities. Eight in-depth interviews shed light on the current new business development practice at Philips DA. Four baseline results that highlight areas for further analysis were identified: 'daring culture', 'consumer value', 'future visioning', and 'design strategy.'

Based on these baseline results, an inductive analysis yielded three themes: 'Using design to unlock new value spaces' (I), 'Insight-driven value shaping' (II), and 'Visions that embrace risk' (III). These themes orient venturing as a design-driven endeavor, in which consumer value is not only anticipated but actively shaped. Through co-design, the concept of insight-driven value shaping was developed into a new framework. The framework visualizes how the interface between an insight-driven perspective (e.g. trends, consumer needs), and a value shaping perspective (e.g. visions, value spaces) supports the client to identify new 'seed' opportunities.

This thesis adopts a design-driven venturing perspective and positions design-driven venturing as a subdomain of new business development. In discussing how NBX can pursue its vision of becoming an industry-leading venturing arm, the distinction between inbound change (how the environment changes Philips DA) and outbound change (how Philips

DA can change its environment) clarifies how change affects NBX. The new architecture allows NBX to continuously adapt its practice and realign capabilities and processes to cater to changing contexts of new business development, both inbound and outbound.

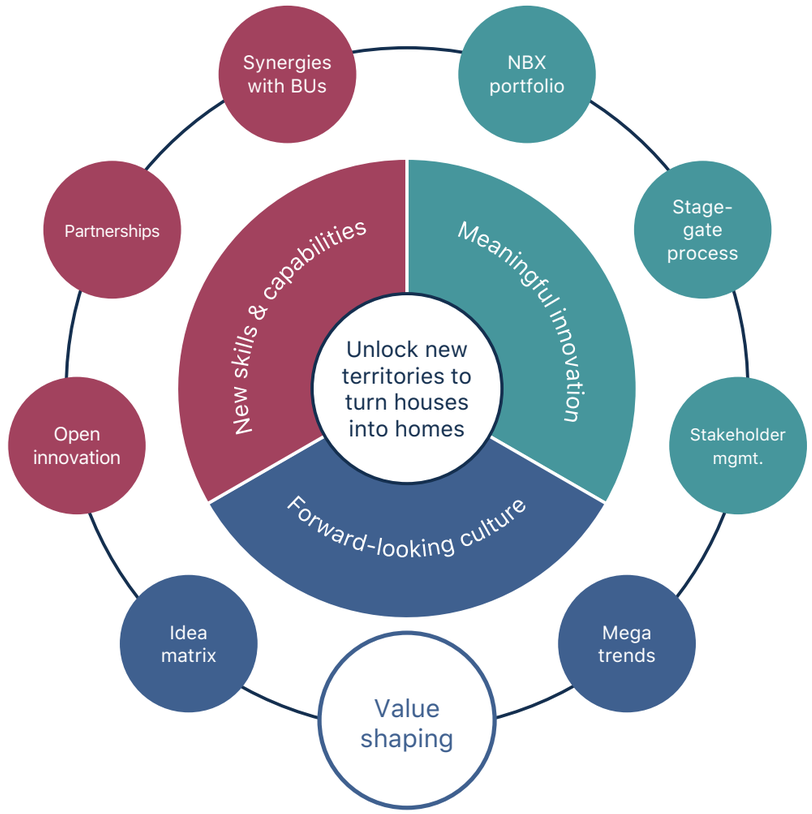


Figure 1. New venturing architecture of New Business Creation & Scaling at Philips Domestic Appliances.

Contents

List of figures

List of tables

List of abbreviations

B2C	Business-to-Consumer (direct interaction with consumers)
BU	Business Unit, e.g. Floor Care, Kitchen Appliances, etc.
BMC	Business-Market Combination
CAGR	Compound Annual Growth Rate, e.g. for market growth
DA	Domestic Appliances, i.e. household appliances
ELT	Executive Leadership Team of Philips Domestic Appliances
FFE	Fuzzy Front End, i.e. earliest phase in the innovation process
GTM	1) Go-to-Market, i.e. strategy to launch a product/service 2) Grounded Theory Method (qualitative research approach)
HREC	Human Research Ethics Committee (TU Delft)
IoT	Internet of Things
IP	Intellectual Property
M&A	Mergers & Acquisitions
MA&F	Market Analysis & Forecasting
MBA	Master of Business Administration (postgraduate degree)
MVP	Minimum Viable Product/Proposition
NBX	New Business Creation and Scaling
NPD	New Product Development
P&L	Profit & Loss (financial accounting)
PMF	Product-Market Fit
PoV	Proof of Value
ROI	Return on Investment (measure to evaluate investments)
SDG	Sustainable Development Goals (United Nations)
TAM	Total Addressable Market
VPC	Value Proposition Creation

Disambiguation

Royal Philips	Multinational Healthcare Technology Company, established in 1891.
Philips Domestic Appliances	Domestic Appliances (DA) business which has transferred to new ownership in September 2021. Philips DA is the graduation client.
Philips	Hereinafter the client is referred to as 'Philips', referring to both the brand and the corporate entity associated with Philips DA.
Append 'Royal'	Adding 'Royal' before Philips is used to distinguish Royal Philips from Philips DA.
Append 'DA'	Adding 'DA' after Philips is used to distinguish Philips DA from Royal Philips.

Visual reading guide

The following visual elements help to find information more easily.

Primary information

[e.g. statements, questions, insights]

Text-indents highlight personal remarks (1):

> Personal remark

Or indicate quotation (2):

> "This is a quote" – Name

The following hierarchy is used to indicate the structure of the thesis:

1.1 Section title — Primary

Paragraph heading — Secondary

Subparagraph heading — Tertiary

Motivation & personal ambition

Inspired by my previous master internship at Philips (fall 2021), I reached out to Philips Domestic Appliances when I noticed an opportunity related to 'strategy and innovations'. I have learned from my previous internship at Philips that I want to continue exploring career possibilities, since there are so many different career paths to choose. My bachelor internship at Boeing (fall 2019) taught me about front-end innovation processes. At Philips, I was involved in more 'midstream' activities related to marketing engagement. Now I want to close the loop by returning to front-end strategy and innovation, also because I now have a broader and deeper understanding of product development in general and the Philips ways of working in particular.

Building on my earlier master research project at Philips, which yielded new insights on how strategic design addresses unmet value, my interest has steadily grown towards innovation strategy and new product development. Therefore, I consider this graduation client and assignment the best way for me to put to test what I am able to accomplish professionally and academically in a new interesting and challenging context. To this end, I am going to commit to the following objectives.

Personal learning objectives:

1. Personal skills: convincing and inspiring colleagues by demonstrating the importance of design and implementing strategic design in the team process.
2. Building personal relationships with colleagues at different levels within the organization.
3. Project leadership: taking responsibility for a multi-stakeholder project and aligning different perspectives.
4. Learning how to apply data analytics in a new product development context by using different bottom-up analysis methods.

This graduation project involves analyzing (financial) business intelligence and market data, which is not directly linked to the field of Strategic Product Design. I think this is a good opportunity to develop myself in this area. Having followed courses in New Product Economics (9/10) and quantitative research (10/10), I am confident that I will be able to find my way in business intelligence as well.

General learning objectives:

1. Understanding how new business development takes place at Philips Domestic Appliances (the client).
2. Gaining insight into future career possibilities and professional preferences.

Figure 2 shows the focus of this thesis, which converges at the intersection of new business development (client's perspective), Strategic Design (Master's degree), and Value-centered Design (building on previous work). These lenses facilitate my personal learning ambitions.

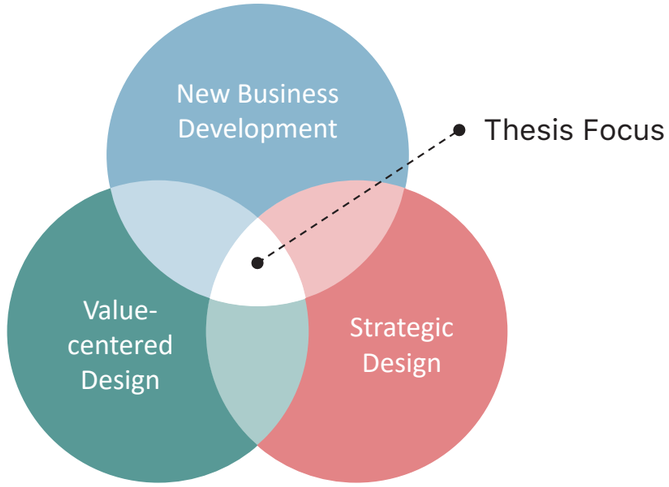


Figure 2. Disciplinary perspective on thesis focus.

01

Introduction

Chapter 1 – Introduction

1.1 Graduation project design

The graduation project consists of two design perspectives: a theoretical and an applied design perspective. In collaboration with an external client, both theoretical and applied design activities are carried out and reported in this thesis. Combining a theoretical and applied design perspective helps to design towards future-oriented, yet hands-on outcomes. An external client was chosen in order to apply the design outcomes of this thesis beyond the walls of the university, creating an additional layer of difficulty, but also an additional learning opportunity. The reason for choosing this particular client is three-fold: prior positive experience with its company culture, the international orientation of the company, and the availability of a graduation opportunity related to strategic thinking and product innovation.

A key design ability is perspective-taking. Figure 3 shows how this graduation project is structured in terms of theoretical design activities (green) and applied design activities (red).

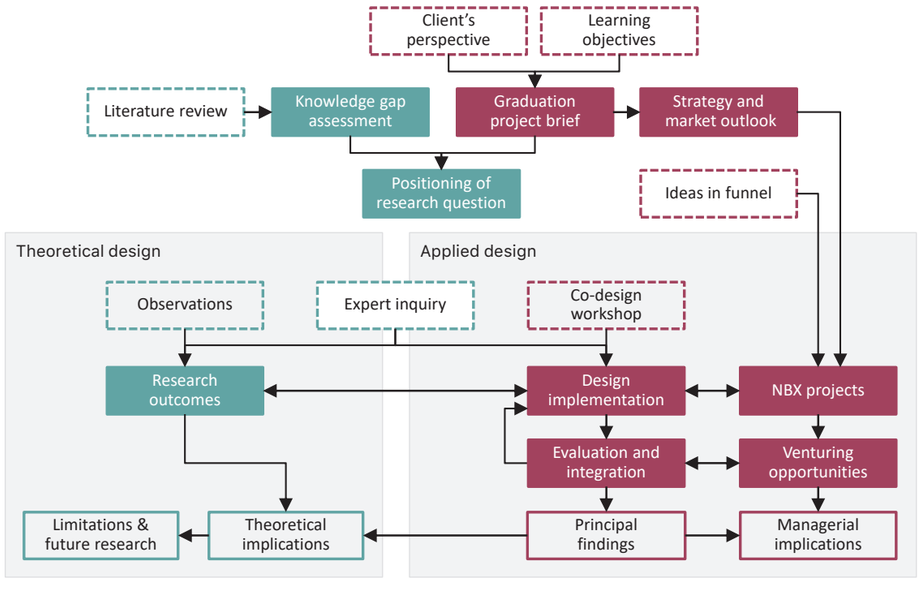


Figure 3. Schematic overview of the graduation project consisting of a theoretical and applied design perspective.

This thesis is structured in six chapters: Introduction, Theoretical foundation, Research method, Research outcomes, Design, and Discussion & Conclusion (including implications and recommendations). The appendices provide additional detailed information on the design process and outcomes, as well as administrative documentation (e.g. Appendix A1). Confidential appendices are only provided to the graduation team.

Chapters:

1. Introduction
2. Theoretical foundation
3. Research method
4. Research outcomes
5. Design
6. Discussion & Conclusion

Level of difficulty

The difficulty of this graduation project lies not only in the involvement of an external client, but also in the international and fast-paced environment of the client and the full-time company projects that run in parallel to the main graduation project for a period of six months.

During my first weeks, I noticed that the venturing process is still evolving a lot, which adds to the level of difficulty. By analyzing the current processes and co-creating a newly envisioned venturing architecture, the ways of working and design-driven capabilities can be improved.

Anticipated limitations

Transforming strategy and innovation processes company-wide can take years to accomplish and it is not realistic to expect that with my limited experience and time I will be able to establish and deploy an integrated new way of working. However, I think it is realistic and ambitious to aim for enhancements to the venturing architecture of new business development with an initial try-out by myself and direct colleagues, as well as a north star proposal as to where the team should head in terms of NBX capabilities and methodology from a strategic design perspective.

1.2 Introduction of client

Philips Domestic Appliances (Philips DA) helps people to turn their houses into homes, as described in its mission statement (Philips DA, 2022). By means of meaningful innovation, Philips Domestic Appliances aims to improve the lives of people, helping them to lead healthier and happier lives every day through sustainable solutions at home. Therefore, Philips DA contributes to the Sustainable Development Goals (SDGs) 11, 12, and 13: sustainable cities, responsible consumption & production, and climate action (United Nations, 2015).

> "At Philips Domestic Appliances, our purpose is simple yet powerful: helping people to turn their houses into homes."

Philips Domestic Appliances is headquartered in Amsterdam, and has presence in more than 130 countries. The company logo is shown in Figure 4. Philips DA employs over 7,500 people globally. The company is led by Henk de Jong (CEO) and the innovation activities are overseen by the Chief Business Strategy & Innovation Officer.

Business Units

Philips Domestic Appliances operates through five Business Units (BUs): Kitchen Appliances, Coffee, Air, Floor Care, and Garment Care, as well as market teams (e.g. North America, Asia-Pacific, China) and functional teams (e.g. HR, IT, Finance, Procurement, Legal, R&D, Design). Within each Business Unit, different business categories such as 'Portioned Coffee' or 'Food Preparation' are distinguished (Philips, 2021; Philips DA, 2022). Also referred to as a 'matrix organization', the Business Units, market teams, and functional teams work together to deliver on the brand promise: turning houses into homes.

PHILIPS

Domestic Appliances

Figure 4. Company logo of the client.

1.3 Client brief

This graduation project is part of a broader development to improve strategic thinking and new business venturing across Philips Domestic Appliances. The scope of this concerns topics covering new business development, (open) innovation, driving a funnel of innovative ideas, identifying trends, and unlocking new business territories. Part of this includes researching and profiling emerging innovations and value proposition opportunities in the domestic appliances' ecosystem, as well as creating business models for new value propositions and partnership initiatives. The NBX (New Business Creation and Scaling) team is responsible for this effort. In the first weeks we defined our team's mission:

NBX mission statement:

To venture beyond our existing businesses by bringing meaningful innovation, fostering a forward-looking culture and facilitating the development of new skills & capabilities.

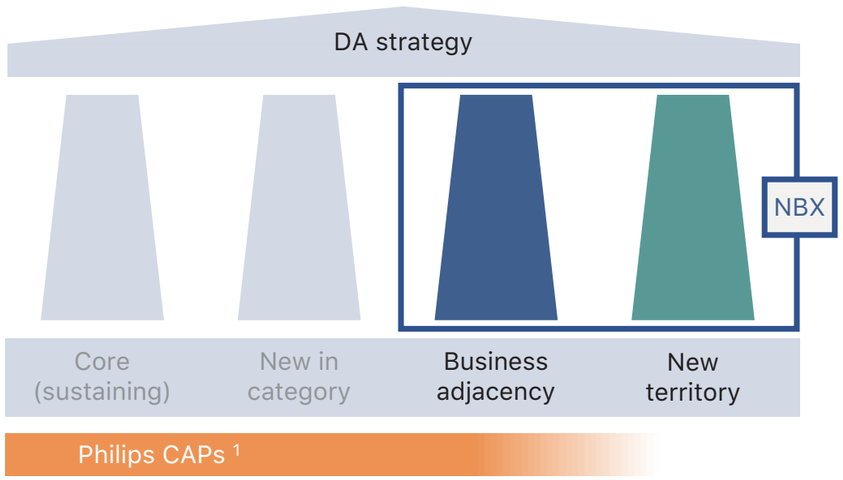


Figure 5. Strategic pillars defining the scope for NBX at Philips DA (based on Nagji & Tuff, 2012). Source: Author's own illustration (2022).

1. Capabilities, Assets and Positions

Meaningful innovation

Forward-looking culture

New skills & capabilities

New Business Creation and Scaling (NBX) focuses on growing new business opportunities across DA by unlocking **business adjacencies** and **new territories** which venture beyond existing businesses and deliver value to consumers (Figure 5).

This mission consists of different elements, with one common denominator: aiming for future growth. NBX wants to venture into new territories and bring novelty to the domestic appliances ecosystem. As a consequence, this is our vision (defined in the first weeks):

NBX vision statement:

To be an industry-leading venturing arm that unlocks new territories to help our consumers turn houses into homes.

Challenge

In relation to the client brief, the main challenge Philips Domestic Appliances faces, in particular the NBX team, concerns its ongoing effort to scout business opportunities and develop a sound infrastructure to act on new opportunities as scouted through various inquiries (e.g. business contests, open innovation, competitor sales channels, technology forecasts, social media data, user-generated data). As Philips Domestic Appliances has transferred to new ownership as of September 2021, making it an independent company with a strong growth ambition, the company seeks to expand its product portfolio and create an integrated ecosystem of value propositions. The Strategy and New Business Development team plays an instrumental role in this effort. Hillhouse Capital Group, the new owner of Philips DA, is a Chinese private equity firm, which was founded by Zhang Lei in 2005 (Philips DA, 2022). Hillhouse is in favor of expansion through new business development.

Therefore, the challenge of this graduation project is seeding new business opportunities, consolidating new idea prioritization and value proposition strategy, embedding the strategy into the NBX architecture, and visually communicating it, including strategic design methodology, which requires close cross-functional collaboration. The particular challenge lies in designing and communicating ways of working that

address the needs of all stakeholders within the organization, in order to advance a future-oriented NBX architecture. During this graduation project I study how design methods engage in developing an NBX architecture and relate this to previous work on strategic design abilities (Bouman and Simonse, forthcoming). The anticipated outcome is the design of a new strategic approach to NBX for Philips Domestic Appliances.

> During this graduation project I study how design methods engage in developing NBX architecture and relate this to previous work on strategic design abilities.

Opportunity space

The Philips Domestic Appliances organization has a strong growth ambition. How can it maintain its position and develop itself as a key player in the domestic appliances' ecosystem, as competition is fierce and existing product portfolios are in need of renewal?
Recent research (Bouman & Simonse, forthcoming) has demonstrated that strategic design abilities can engage in complex, multi-disciplinary contexts such as new business development through envisioning, modeling and engaging value (Figure 7 on page 32). Therefore, better understanding how strategic design abilities complement the current new business development practice is of interest to stakeholders within the company and potentially to the fields of study related to strategic design, venturing, and New Product Development (NPD).

Graduation stakeholders

Within Philips Domestic Appliances, the graduation project was conducted with the direct involvement of colleagues from the Strategy and New Business Development team at Philips DA. The graduation project is part of the master's program 'Strategic Product Design' at the Faculty of Industrial Design Engineering, Delft University of Technology. Other stakeholders include (end) users and their communities, as well as the markets they interact with. Customers may as well be the (end) users ('consumers'), but not necessarily. Furthermore, Philips DA has a responsibility to its (business) partners and its owner, Hillhouse Capital Group, which appoints the supervisory board. The university has interests in teaching, generating and sharing knowledge, and more re-

cently in facilitating the United Nation's Sustainable Development Goals (SDGs).

NBX Stakeholders

Various stakeholders from different departments within Philips Domestic Appliances engage in the development of new or adjacent business territory. Since Philips DA is a matrix organization, i.e. consisting of functions (e.g. R&D, design), Business Units (e.g. Kitchen Appliances, Garment Care), and markets (e.g. Asia-Pacific or 'APAC'), its structure is complex. It is part of this graduation assignment to align the perspectives of different stakeholders, in order to advance the NBX practice.
The closest stakeholders are our direct team colleagues (Strategy & New Business Development), as well as the NBX ambassadors, who represent the Business Units. The Executive Leadership Team (ELT) oversees the overall strategic direction of the company and is therefore also closely connected to our team.

The market teams directly engage with consumers across different geographical markets, while business functions play an important role in supporting and governing Business Units in terms of, e.g., experience design, R&D, sustainability, HR, finance, and supply chain. Additionally, through Business-Market Combinations (BMCs), such as 'Garment Care' in Latin America, BUs and markets collaborate.

Within our team, the Market Analysis and Forecasting team (MA&F) leads the data-based and data-enabled decision-making in support of (digital) strategy and market forecasting, which also facilitates the selection of markets and respective Go-To-Market (GTM) partners (e.g. retailers, agencies, warehouses). A special team within the organization is the 'exuviate' team, led by the head of digital transformation. As Philips DA builds its independent digital infrastructure, it 'exuviates' from the shared infrastructure with Royal Philips. Philips DA continuous to have connections with Royal Philips for its brand. The Brand Licensing Committee (BLC) collaborates with NBX to establish licensing agreements. The Executive Committee (ExCo) of Royal Philips (led by Roy Jakobs) consequently also has a stake in these agreements. An additional factor in these agreements is the new owner of Philips DA, Hillhouse Capital Group, who also sets out objectives for the company. Overall, NBX engages in a complex field of corporate actors, financial interests, and

organizational structures. However, Philips Domestic Appliances should remain focused on its responsibility towards its consumers, partners, communities and the environments in which it operates. The focus of this thesis is on bringing together these perspectives towards innovative future businesses with a strong connection to the brand purpose: improving the lives of people by helping them lead healthier and happier lives every day through sustainable solutions at home.

Figure 6 illustrates the main NBX stakeholder landscape, also providing a simplified view of the ongoing effort to exuviate from the shared infrastructure with Royal Philips. During an off-site stakeholder mapping session with the strategy and NBX team, earlier iterations of Figure 6 were created.

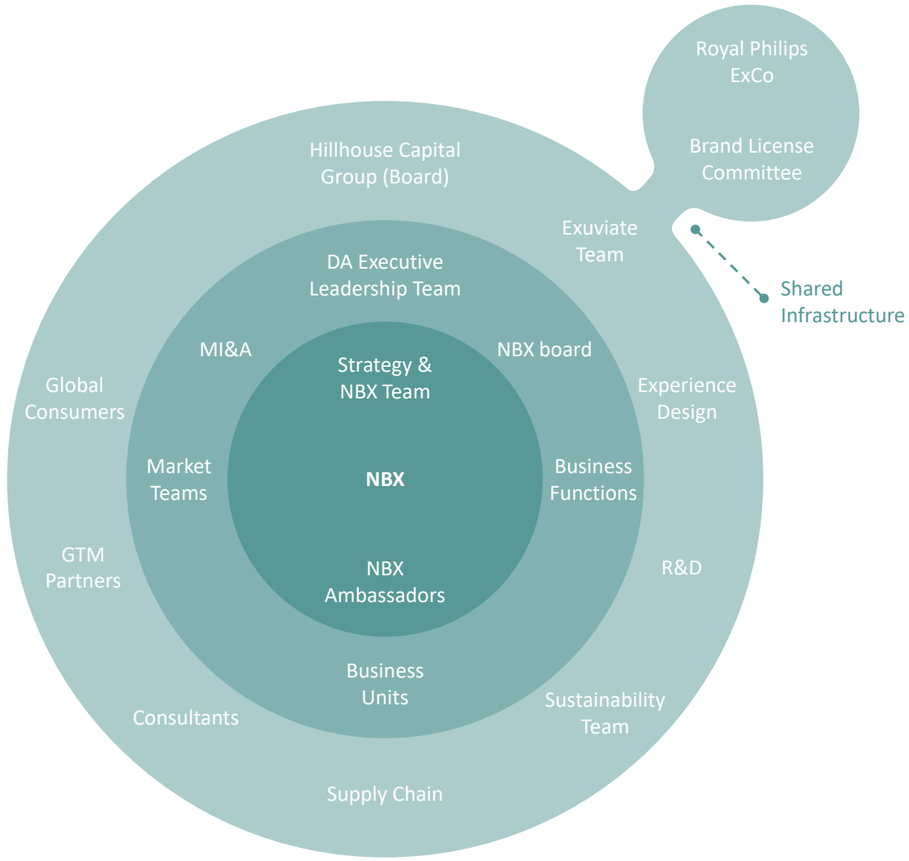


Figure 6. NBX stakeholders.

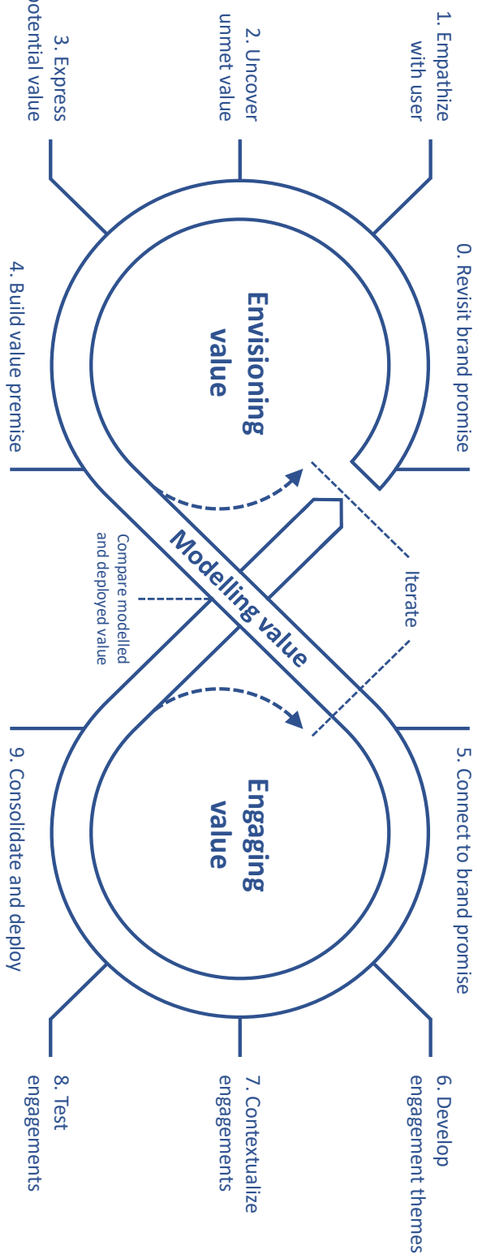


Figure 7. Theoretical framework that contextualizes strategic design abilities for the client's way of working (Bouman & Simonse, forthcoming).

Next to stakeholders, which can be actively managed and influenced, the market dynamics play an important external factor in how NBX ventures into new business territory. The next section provides a brief outlook on the global domestic appliances market.

1.4 Market outlook

The domestic (or household) appliances market is a fragmented market, characterized by a large number of competitors. Notable international competitors are Samsung, LG, Arçelik, Honeywell, Electrolux, Panasonic, Whirlpool, Bosch, General Electric, Siemens and Miele (general and kitchen), Dyson (cleaning and air), iRobot (cleaning), and Breville, Sage and De'Longhi (coffee). The global market is forecasted to grow more than 4% annually during the coming years (2022-2026), as a result of global economic growth and increased demand for innovative and energy-efficient technology in the domestic environment (Statista, 2021).

The overall market is segmented by two product categories: the large appliances segment (e.g. refrigerators, cookers, dishwashers) and the small appliances segment (e.g. coffee/tea makers, food processors, vacuum cleaners). See Figure 8. Philips DA is mostly active in the small appliances segment. This segment appertains larger sales volumes, but lower per unit prices (Statista, 2021). Consequently, this market segment is more volatile, with larger product throughput and shorter product lifespan (Khan et al., 2018; Shi et al., 2022).

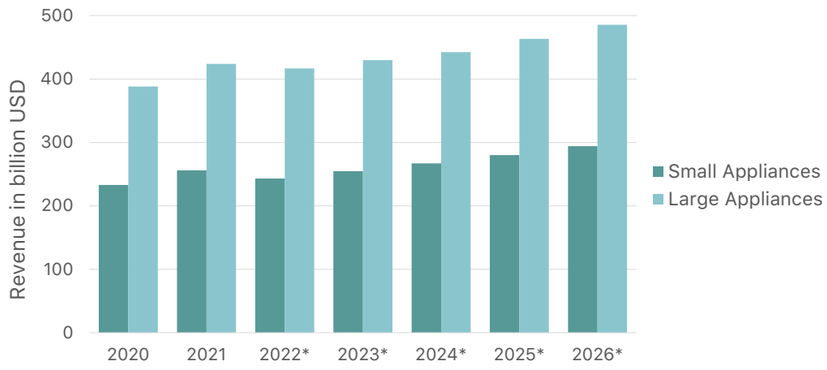


Figure 8. Domestic appliances global market size forecast. Adapted from "Consumer Markets: Household Appliances" by Statista, 2021.

	Top 5 markets in billion USD (2026)		Share global market
1	**China**	166.597	21.4%
2	**India**	86.888	11.1%
3	**United States**	61.264	7,9%
4	**Nigeria**	38.744	5.0%
5	**Brazil**	29.427	3.8%

Table 1. Market size projection for the five largest domestic appliances markets in 2026. Retrieved from Statista, 2021.

The Chinese market is one of the driving forces behind the domestic appliances market growth (Table 1). Furthermore, rising disposable income in emerging markets and increased living standards encourage consumers to upgrade their existing appliances or purchase new categories of appliances (Statista, 2021).

Moreover, the market beholds new trends in terms of well-being, health, sustainability, connectivity and aesthetically pleasing designs. In particular, technological advancements have led to the development of smart appliances with advanced features (e.g. internet of things capabilities, IoT) and more energy-efficient and sustainable solutions. IoT technology results in smart home appliances with higher customer satisfaction, energy efficiency and personalization (Aheleroff et al., 2020; Kobus et al., 2015). The rapid development of smart home and platform-based appliances is expected to further propel a sales increase in the overall market (Statista, 2021). Prominent examples of smart home platforms are Apple HomeKit, Google Home, and Amazon Alexa. While smart home appliances gain traction, steering consumer behavior towards more sustainable solutions remains difficult in this market (Wang et al., 2021).

Key insight

The domestic appliances market is projected to grow even further as rising incomes in emerging markets stimulate increased living standards at home.

References

- Aheleroff, S., Xu, X., Lu, Y., Aristizabal, M., Velásquez, J. P., Joa, B., & Valencia, Y. (2020). IoT-enabled smart appliances under industry 4.0: A case study. *Advanced engineering informatics, 43*, 101043.
- Bouman, N. L. J. (2021). Internship report. *Delft University of Technology*.
- Khan, M. A., Mittal, S., West, S., & Wuest, T. (2018). Review on upgradability–A product lifetime extension strategy in the context of product service systems. *Journal of Cleaner Production, 204*, 1154-1168.
- Kobus, C. B., Klaassen, E. A., Mugge, R., & Schoormans, J. P. (2015). A real-life assessment on the effect of smart appliances for shifting households' electricity demand. *Applied Energy, 147*, 335-343.
- Nagji, B., & Tuff, G. (2012). Managing your innovation portfolio. *Harvard Business Review, 90*(5), 66-74.
- Philips. (2021). *Annual Report 2020*. Retrieved April 10, 2022, from https://www.results.philips.com/
- Philips DA. (2022). Home. Retrieved April 10, 2022, from https://www.domesticappliances.philips.com/
- Shi, T., Huang, R., & Sarigöllü, E. (2022). Consumer product use behavior throughout the product lifespan: A literature review and research agenda. *Journal of environmental management, 302*, 114114.
- Statista. (2021). *Household Appliances - Worldwide*. Retrieved April 10, 2022, from https://www.statista.com/outlook/cmo/household-appliances/worldwide
- United Nations (2015). Sustainable Development Goals. Retrieved May 15, 2022, from https://sdgs.un.org/goals
- Wang, B., Deng, N., Liu, X., Sun, Q., & Wang, Z. (2021). Effect of energy efficiency labels on household appliance choice in China: Sustainable consumption or irrational intertemporal choice? *Resources, Conservation and Recycling, 169*, 105458.

02

Theoretical foundation

Chapter 2 – Theoretical foundation

2.1 Positioning of research question

In recent years, design is increasingly positioned as a strategic capability (Gallego, Mejía, & Calderón, 2020; Micheli, Perks, & Beverland, 2018) and design-driven problem-solving in fields beyond the traditional remit of its practice is increasingly prevalent (Calabretta, Gemser, & Hekkert, 2014; Dorst, 2019). For instance, the field of 'strategic design' positions designers to innovate in areas that are closer to business development (Brown, 2019; Canales Durón, Simonse, & Kleinsmann, 2019). Moreover, both corporates and startups increasingly recognize the value of design in early stages of new business development (Kim et al., 2020; Muratovski, 2015) and consider design to be a strategic factor in business management, contributing to strategy development (Cooper, Junginger, & Lockwood, 2009; Micheli et al., 2018). Consequently, the realm of strategic design is expanding to fields such as marketing engagement strategy (Bouman & Simonse, forthcoming), sustainable business development (França et al., 2017; Geissdoerfer, Bocken, & Hultink, 2016), and new business venturing (Cosenz & Noto, 2018).

> Strategic design can be defined as "the practice of design that interacts with innovation processes and strategic decision-making, while taking an organizational viewpoint in enacting meaningful future value" (Bouman & Simonse, forthcoming).

In order to create meaningful value for future consumers, new and unrelated business innovations are sometimes beneficial, which require discontinuous growth initiatives, i.e. 'ventures.' Considering that (1) involving designers early in an innovation process helps to base propositions on consumer needs (Kim et al., 2020), (2) strategic design has growing connections with business development (Brown, 2019), and (3) 'envisioning value' is a key ability of strategic design (Canales Durón et al., 2019; Bouman & Simonse, forthcoming), strategic design could contribute to the early phases of New Business Creation and Scaling (NBX) at Philips Domestic Appliances. Additionally, the early phases of NBX

(the foresight, ideation and positioning phases) are characterized by high uncertainty, which is another aspect that fits well with the practice of strategic design (Lin et al., 2011).

However, it has not been studied yet how strategic design contributes to strategies such as new business development (or 'NBX' at Philips), and how it contributes to its foundational logic. To date, attempts to fill this knowledge void have yielded a theoretical understanding (Bijl-Brouwer & Dorst, 2017; Bouman & Simonse, forthcoming; Calabretta & Kleinsmann, 2017; Dorst, 2019; Wolff & Amaral, 2016) or an understanding of interdisciplinary integration of design (Björklund et al., 2020; Carlgren, Elmquist, & Rauth, 2016; Daalhuizen et al., 2019; Geissdoerfer et al., 2016; Gericke & Blessing, 2012; Micheli et al., 2018). Therefore, a better understanding of practical contributions of strategic design to NBX strategy would complement the body of knowledge related to the applicability of strategic design in fields beyond the traditional remit of its practice.

> The applicability of strategic design in fields beyond the traditional remit of its practice remains understudied.

In strategizing the direction of future venturing initiatives within NBX, projecting future consumer needs is instrumental, and therefore an integral part of the overall venturing strategy. Stanko and Bonner (2013) described projecting future consumer needs as "the ability of a product development organization to both understand as well as shape the future needs of customers" (p. 4). Engaging frequently with consumers has a positive effect on the development of this ability by embedding consumer needs early in the innovation process as well as co-creating future value (Bouman & Simonse, forthcoming; Gardien, Rincker, & Deckers, 2016; Kim et al., 2020; Stanko & Bonner, 2013). The process of engaging with consumers thus contributes to NBX through a reciprocal effect between consumer co-creation and projecting future needs. However, the multi-faceted characteristics of consumer needs and its continuous evolvement present an additional challenge, since capturing the expression of needs and delivering upon those needs is subject to an unavoidable time void. The uncertainties caused by this time void can be mitigated by increased sensitivity to trend-based shifts in needs. Taking a proactive stance in meeting future needs through 'visionary

leadership', in which consumer needs are actively shaped by leading consumers to new territories of unmet value (Chong & Chen, 2010; Tellis, 2006), also increases the ability to address future consumer value. Combining the perspectives of trend-based needs anticipation (inbound change) and actively co-creating future value (outbound change) could thus result in an increased ability of 'designing foresights' (Bühring & Liedtka, 2018; Bühring & Bishop, 2020; Daheim & Uerz, 2008).

This graduation project focuses on the foresight, ideation and positioning phases of NBX with an emphasis on future consumer needs projection and its interrelation with idea selection mechanisms, since these capabilities are the least defined at Philips Domestic Appliances. These capabilities could jointly contribute to 'design-driven venturing'. In contrast to traditional venturing, design-driven venturing could thus move beyond organizational responsiveness or 'ambidexterity' to explore and exploit future opportunity spaces, and actively steer in the direction of preferred consumer outcomes (Figure 9), based on the "positioning and enactment of meaningful future value" (Bouman & Simonse, forthcoming). This distinguishes design-driven venturing from the Lean Startup methodology (Ries, 2011), in which consumer needs are recognized or clarified, rather than actively shaped.

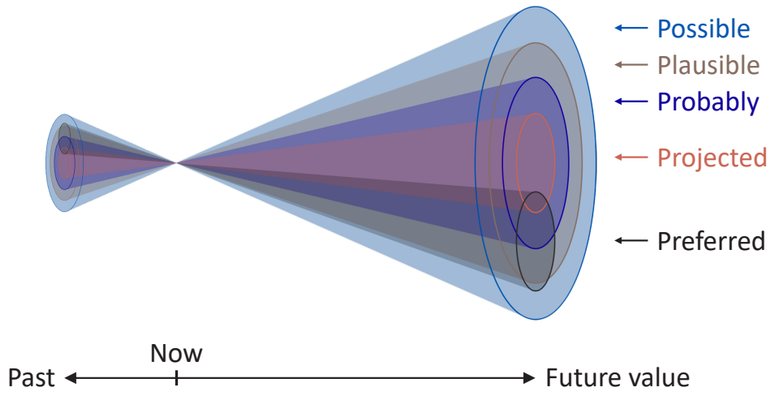


Figure 9. The 'Futures Cone' conceptualizes the ability to steer towards preferred consumer outcomes through 'designing foresight'. Extended from Hancock & Bezold (1994). Source: author's own illustration (2022).

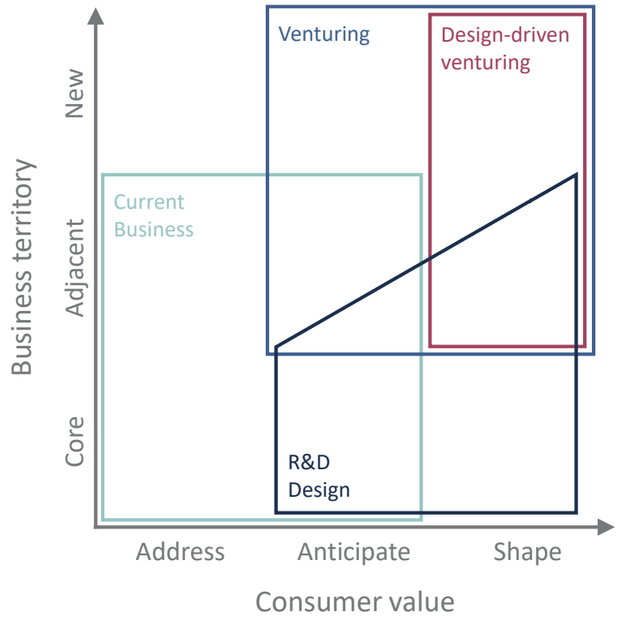


Figure 10. Positioning design-driven venturing in relation to venturing (general), R&D, design, and current business activity (building on Bühring & Liedtka, 2018; Petersen, 2015; Stanko & Bonner, 2013; Verganti, 2009). Author's own illustration (2022).

Future consumer value:

The consumer value that can be created through new business development, where consumer value is defined as "the difference between a consumer's perceived benefits and cost" related to a future product or service (building on Lai, 1995).

Resulting from the synthesis of design and innovation literature (Bühring & Liedtka, 2018; Petersen, 2015; Stanko & Bonner, 2013; Verganti, 2009), Figure 10 illustrates the domain of design-driven venturing in relation to other organizational activities. Whereas current business activities focus on addressing customer value today (Bühring & Liedtka, 2018), venturing, R&D, and design seek to explore and create value for future customers. In contrast to R&D and design activities, design-driven venturing activity seeks discontinuous business growth by venturing

into new territories of consumer value. Therefore, design-driven venturing is the subdomain of venturing in which future consumer value is not only anticipated, but actively shaped (Bühring & Bishop, 2020), e.g. through co-creation (Gardien et al., 2016; Stanko & Bonner, 2013).

R&D and design functions maintain a close connection with current business operations in order to leverage business capabilities and develop (adjacent) businesses. In contrast, design-driven venturing strategically looks beyond current business operations, seeking to create new territories of consumer value. Since R&D and design-driven venturing both increase the capability to address future customer needs, these activities converge as ventures become part of the core business portfolio.

A 'venturing architecture' is defined as the proposed venturing structure to build the capabilities and processes that constitute successful design-driven venturing, which includes consumer needs projection, idea prioritization mechanisms, and strategic design methodology. Holcomb et al. (2009) described a venturing architecture as an 'architecture of entrepreneurial learning', in which heuristics, knowledge and actions interact. More specifically, these venturing heuristics aim to reduce complexity to make judgments cognitively interoperable. Similar to designers, entrepreneurs rely on heuristics to cope with uncertainty and to navigate a landscape of changing conditions in pursuit of favorable outcomes (Gilbert-Saad, Siedlok, & McNaughton, 2018). Likewise, iteratively taking both reflective and future-oriented perspectives benefits the practice of design as well as business venturing (Romme & Reymen, 2018). Therefore, transferring strategic design to a venturing architecture could benefit new business development. However, how strategic design contributes to this architecture remains unknown (Abrell, Durstewitz, & Uebernickel, 2014; Holcomb et al., 2009; Romme & Reymen, 2018). Therefore, the following research question is formulated:

Research question:

How does strategic design contribute to the venturing architecture of new business development in order to create value for future consumers?

2.2 Foundational logic of NBX

In this paragraph, the first phases of NBX are discussed from a theoretical perspective in order to understand the baseline of the project in relation to venturing approaches. Alternative perspectives and emerging theory with respect to the current NBX approach are discussed for each (sub)phase. In chapter 3, the design methodology for the venturing architecture is presented.

New Business Creation & Scaling (NBX) represents one of the three main approaches for a cooperation to create value through entrepreneurial efforts. With Internal Corporate Venturing (ICV), established business activities are deliberately expanded through investments and/or new businesses are created within an existing organization (Burgelman, 1983). In contrast to ICV, External Corporate Venturing (ECV) involves the creation and growth of businesses outside the organizational domain. In the third approach – Joint Corporate Venturing – two or more (parent) companies engage in entrepreneurial activities outside the parent organizations. Since NBX operates as a venturing arm in an existing organizational domain, its practices and strategies are part of the stream of literature which studies internal corporate venturing (Covin & Miles, 2007). Within ICV, existing strategic or operational competencies can be leveraged to grow new business opportunities (Burgelman & Doz, 2001) or new competencies are built to venture into new "streams" of opportunities outside the traditional scope of operations (Kanter, 1989).

Additionally, studies indicate that corporate venturing is a 'C-level activity', suggesting that it cannot succeed without the support of senior leadership (Burgelman, 1983; Narayanan, Yang, & Zahra, 2009). Fortunately, this is recognized within Philips DA, as the NBX team directly reports to senior leadership, including regular alignment meetings with the Executive Leadership Team (ELT). However, a venturing unit should be granted sufficient autonomy in order to develop and grow, in which daily alignment with management is not necessarily beneficial. Yet, an internal venturing unit should seek connections with the rest of the company in order to evangelize and lead capability development, as well as leverage existing capabilities (Keil, 2004).

Stage-Gate Process (baseline)

Within the New Business Creation and Scaling (NBX) team, the Stage-Gate Process (Cooper, 1990) serves as the dominant logic (Barney & Hesterly, 2010) within the current venturing architecture, i.e. the structure to venture into new business territories and scale up emerging business opportunities. Originally, the Stage-Gate Process was heavily solution-oriented, but later interpretations of the process shifted towards business-oriented models, such as the Bell Mason Group (BMG) Venture Framework (Mason & Rohner, 2002).

Figure 11 shows the process as determined by the NBX team, influenced by both Cooper (1990) and Mason & Rohner (2002). The NBX process is divided into distinct phases, separated by pre-defined gates (i.e. decision moments). At each gate, continuation of a project is assessed and determined, based on the business potential, risks, necessary resources (e.g. monetary, time, expertise) and more. The further in the process, the more the addressable user needs and the value proposition take shape, but also the more resources are in use. Therefore, the gates ensure that the allocation of resources and project potential remain harmonized (Cooper, 1990).

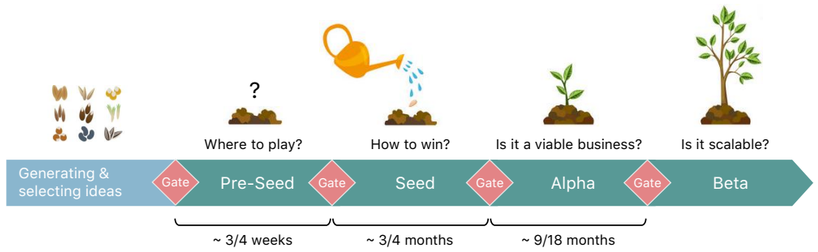


Figure 11. Stage-Gate Process at Philips Domestic Appliances (building on Cooper, 1990; Mason & Rohner, 2002; and Lafley & Martin, 2013).
Source: Author's own illustration (2022).

Co-evolution (emerging perspective)

A key contribution of design to New Product Development (NPD) is the notion of 'co-evolution': the evolution of a problem space in relation to the exploration of potential solutions in order to design towards a fit between problem and solution (problem-solution fit or 'value proposition'). This cross-fertilization of problem and solution has been recognized as

a fundamental design ability in the early stages of a design process (Dorst & Cross, 2001; Dorst, 2019; Smulders & Dorst, 2007). An apparent contradiction between the notion of co-evolution and the Stage-Gate Process can be observed when considering that the pre-defined gates may prevent a problem from developing as freely as suggested with co-evolution. However, combining the two perspectives is possible, since processes based on Stage-Gate (e.g. Kyffin & Gardien, 2009) and for instance the Double Diamond process (Banathy, 1996) are merely attempts to simplify or operationalize the design process (Dorst, 2019), not to adapt it, so Stage-Gate can therefore be used in conjunction with co-evolution.

Furthermore, the notion of co-evolution can be extended beyond NPD, by co-determining the planning and execution of venturing strategy in parallel in order to balance exploration and exploitation of entrepreneurial opportunity, i.e. to ensure entrepreneurial ambidexterity. Especially in fast-changing environments such as the domestic appliances industry, agility and trend anticipation are critical success factors. Therefore, merging the planning and execution phase of venturing strategy ensures 'real time foresight' that can increase an organization's ability to act on changing environments and adjust its strategy accordingly, as opposed to a more linear, stage-gated approach (Covin & Miles, 2007; Cunha, Clegg, & Kamoche, 2012).

Key insight

NBX at Philips Domestic Appliances is positioned as an internal corporate venturing process which is influenced by Cooper's Stage-Gated approach as well as BMG's venturing logic.

2.3 Early idea phase

Initial selection

Internal and external ideation contests and business challenges are commonly organized by companies such as Philips DA to discover new opportunity spaces and explore ideas for new value propositions (Kireyev, 2015). As a consequence, a large number of ideas enters the NBX 'funnel'. The selection and prioritization of incoming ideas is of high importance for organizations such as Philips DA, as it sets the stage for further exploration and lays the foundation for the development of future products. Furthermore, initial idea selection could be considered more pivotal than the (design) process that follows. This logic is commonly referred to as "doing the right things versus doing things right".

At the same time, the selection of good ideas is strongly context dependent and moderated by various factors such as the company's organizational, financial, and technological capabilities and its strategy. Therefore, a valuable idea for one company is not necessarily valuable for another company (Gabriel et al., 2016). Moreover, it can be argued that the logic of "doing the right things versus doing things right" is outdated, since the theory of co-evolution suggests that the 'what' and the 'how', are not necessarily consecutive (Dorst, 2019).

Additionally, when the quantity of submitted ideas increases too quickly, an information overload that companies can hardly manage could arise, both in terms of cognitive and financial resources (Wang et al., 2021).

Human bias

It has been identified that people show a tendency to select the same ideas as their peers when in public. This phenomenon can be interpreted as a consequence of the social proof theory: when people are unsure what to choose, they are affected by the choices of their peers (Fleury et al., 2020).

Previous studies have also demonstrated that perceived utility and novelty of an idea are negatively correlated (Buisonje et al., 2017; Diedrich et al., 2015), which makes it harder for people to select an idea that is both new and useful, although these qualities are not necessarily contradictory. Measuring idea selection performance also remains difficult

(Buisonje et al., 2017), since human bias plays a fundamental role in both idea selection and its reflective performance, regardless of the selection mechanism. A potential metric for idea selection performance could be the 'idea mortality', i.e. the percentage of ideas that do not succeed. However, this metric is also subject to inherent bias, as stricter initial idea selection results in a lower idea mortality, but not necessarily in a better overall funneling process (Binneman & Steyn, 2014).

In conclusion, although a surplus of ideas likely translates to the presence of one or more promising ideas, idea selection remains difficult. Context dependencies make it difficult to develop a generalized method, and selection biases as well as perceived contradiction between utility and novelty prevent companies from consistently selecting the most valuable ideas – efficiently. Identifying a subset of ideas which are the most promising could be the first step towards an overall idea prioritization mechanism. However, how strategic design contributes to the mechanisms of idea prioritization remains unclear. Therefore, the following sub question is formulated:

Sub question:

How does strategic design contribute to the mechanisms of idea prioritization?

2.4 Prioritization strategy

Prior to exploring how to best address consumer needs, ideas should be assessed and prioritized in order to optimize the use of resources available to the NBX team (Yoon et al., 2020), see 'Initial selection' (page 48). The primary objective of this first idea selection phase is to minimize the rejection of good ideas, while maximizing the rejection of bad ideas as soon as possible (Jugend & Da Silva, 2014). However, this objective is inherently contradictory, since more exploration reduces the likelihood of rejecting good ideas as a result of better-informed decision-making, but increases the resource investment per idea (Dewulf, 2013; Herstatt & Verworn, 2004). And of course, what is the definition of a 'good' idea?

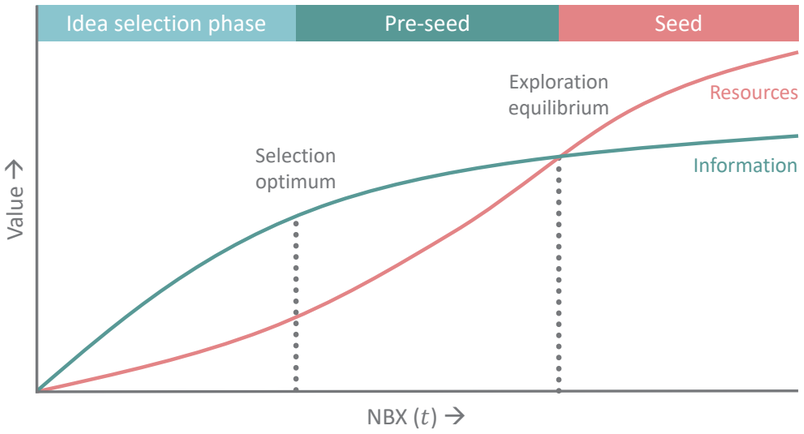


Figure 12. The relative 'value' of resources versus information in early NBX phases (conceptual model). Source: Author's own illustration (2022).

Therefore, during the idea prioritization phase it is crucial to balance receptiveness and sufficient investigation on the one hand, and a broader consideration of the relative potential of an idea in relation to competing ideas and the total quantity of available resources (e.g. monetary, time, expertise) on the other hand. When balancing these two opposing forces – i.e. searching for the right moment to either proceed (pass) or reject an idea – it can be helpful to consider whether further exploration improves the quality of the decision (continue/discontinue) and whether this justifies the team's focus (Sklavos & Souras, 2006). See Figure 12.

However, when to continue versus discontinue is difficult to predict accurately. Therefore, the timing of the first gate decision (before pre-seed) ultimately relies on the team's experience to balance exploration and resource allocation.

Multifactorial analysis (baseline)

Currently, Philips DA uses a multifactorial approach for assessing and prioritizing ideas. This approach is based on the 'GE multifactorial analysis', which was commissioned by General Electric and designed by McKinsey in the 1970s (Coyne, 2008). Figure 13 illustrates how ideas are prioritized based on three dimensions. Dimensions 1 and 2 are quantified using continuous metrics, mapped on the x- and y-axis. Examples of possible metrics of interest are market attractiveness, strategic fit and potential user value. However, these metrics cannot be directly measured or observed. Therefore, proxy metrics are used to operationalize the metrics of interest. For example, possible proxy metrics for market attractiveness are market size, market growth (CAGR), and/or the number of competitors, in order to indirectly measure market attractiveness. Statistical methods such as factor analysis and/or linear regression can be used to further refine the proxy metrics, thus creating a more accurate model. Using this approach, all ideas can be expressed in terms of x- and y-values, using a normalized scale. As shown in Figure 13, the upper right cell represents the 'sweet spot' of ideas that score high along both the first and second dimension.

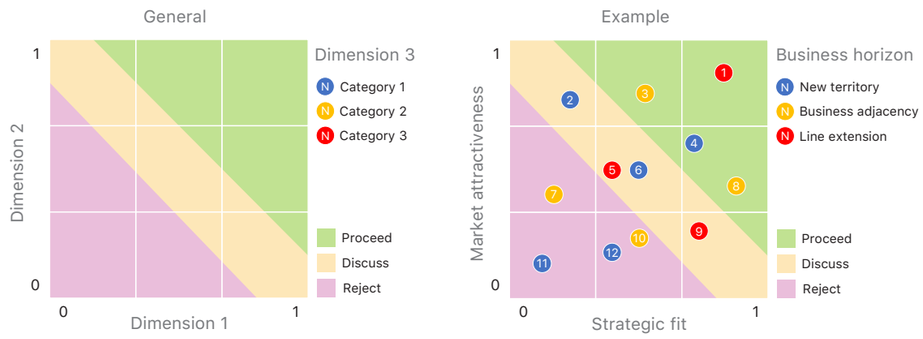


Figure 13. Multifactorial idea prioritization approach (Philips DA). Source: Author's own illustration (2022).

However, not all criteria are continuous. For example, Philips DA can only operate in certain product categories due to brand licensing or regulatory requirements and competitors could limit market entry by enforcing patents and/or other Intellectual Property (IP) rights. These criteria are called 'critical criteria'. Furthermore, some ideas are considered incremental (i.e. a line extension of an existing product) or adjacent to existing business units (i.e. a new product within an existing product category), while other ideas are new territory for Philips DA.

In order to balance short-term and long-term objectives (i.e. the 'business horizon'), the Executive Leadership Team (ELT) could decide to emphasize either incremental or adjacent business development (to meet short-term objectives) or new business territory development (to meet long-term objectives), which also results in a different risk profile. Using color coding, these additional criteria can be factored in and displayed in one visual, which makes comparing and prioritizing ideas more manageable. A fourth dimension can be added as well by altering the radius of the circles, for example based on the how much value an idea could bring to the end user.

Overall, the Philips DA method (Figure 13) has a sound logic, but it may not properly capture disruptive ideas, since this method builds on pre-defined 'static' criteria based on prior success. Furthermore, the effectiveness of deliberate prioritization criteria such as market attractiveness has been questioned (Cosenz & Noto, 2018; Zhu et al., 2017) since disruptive ideas may redefine existing markets as well. However, using the same criteria for all ideas also removes potential bias (Fleury et al., 2020) or the effect of someone's ability to effectively communicate an idea, which was also found to be influential (Beretta, 2019).

Alternative idea prioritization (emerging perspective)

Idea prioritization is part of a broader field of study referred to as 'Multi-Criteria Decision-Making' (MCDM). When considering alternative idea prioritization approaches, two categories can be distinguished: static and dynamic idea prioritization. Static idea prioritization is characterized by a pre-defined set of criteria, whereas dynamic idea prioritization depends on a significantly larger number of influencers, such as the social dynamics of a team, or someone's 'gut feeling', which is a subconscious judgment based on past experience. The current NBX idea prioritization approach (Figure 13) is primarily a static prioritization

approach, although it also builds on many assumptions. Another popular static prioritization approach is the RICE method, which uses a combination of objective and subjective metrics (McBride, 2018):

$$RICE\ score = \frac{\boldsymbol{R}each \times \boldsymbol{I}mpact \times \boldsymbol{C}onfidence}{\boldsymbol{E}ffort}$$

In this method, 'R' is defined as the total number of people that can be impacted with an idea, 'I' operationalizes the impact (High = 2, Medium = 1, Low = 0.5, Minimal = 0.25), 'C' is defined as the self-reported confidence of the impact (High = 100%, Medium = 80%, Low = 50%), and 'E' relates to labor (expressed in monthly FTE, e.g. a team of two full time employees for half a year corresponds to a value of 12). The strength of this approach is that it uses two direct metrics (Reach and Effort), but similar to the current NBX approach (Figure 13), assumptions and proxy metrics are necessary to complete the scoring, which is labor intensive, and the accuracy is questionable (Cosenz & Noto, 2018; Zhu et al., 2017).

Various (older) static methods have similar characteristics, such as the well-known Impact vs. Effort Matrix (Covey, 1989), Weighted Sum Method (WSM; Churchman et al., 1954), Pairwise Sorting method (Thurstone, 1927) and Choosing by Advantages (CBA) method (Suhr, 1999). CBA is emerging as the dominant MCDM method (Arroyo et al., 2018) and requires less calculations than WSM and RICE.

The fundamental rationale behind CBA is to compare advantages between attributes of ideas instead of using weighted criteria, which removes one step compared to the WSM. First, critical and non-critical advantages are separated (in which critical advantages are decisive), and subsequently the most important non-critical advantage is determined. All advantages (between combinations of attributes) are then related to this 'primary advantage' and summed up per idea, resulting in the idea with the largest total advantage compared to other ideas (Suhr, 1999). The downside of this approach is that it requires assumptions for each advantage.

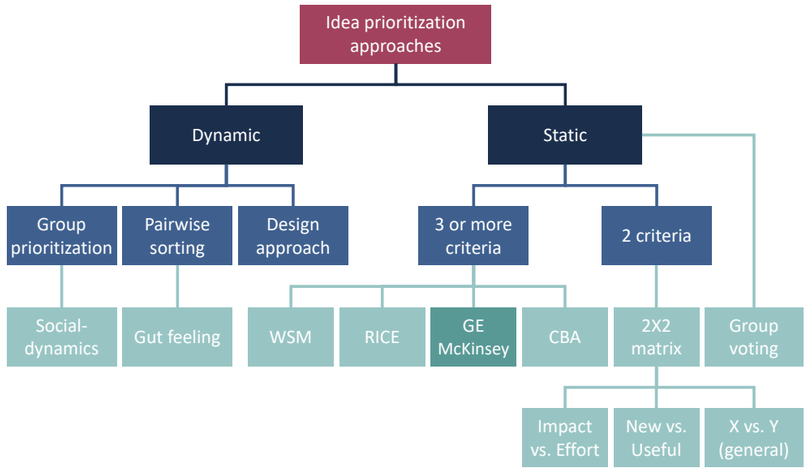


Figure 14. Different idea prioritization approaches. Source: Author's own illustration (2022).

Matrix prioritization is another approach. For example, the Impact vs. Effort matrix approach groups ideas in four quadrants ('cells'), with one quadrant showing the best ideas, similar to the GE multifactorial analysis (Figure 13 on page 51), which has nine cells. Another variant is the 'New vs. Useful' matrix.

Group voting is an alternative static idea prioritization approach in which a group of experts or users vote on ideas. Different approaches can be noted, such as simple (plurality) voting, multi-stage or run-off voting, ranked-choice voting, star (cumulative) voting, approval voting and many more (Pacuit, 2019). Building on group voting, discipline-based group voting involves voting by a group of people from different disciplines, thus capturing different perspectives and backgrounds at once.

Dynamic idea prioritization (emerging perspective)

Dynamic idea prioritization differs from static idea prioritization in the sense that is doesn't have a pre-defined set of criteria (Figure 14). With pairwise sorting for instance, ideas are compared in arbitrary pairs, in which the preferred idea is repetitively paired to a new idea. Good ideas thus rise to the top, until a better idea comes along and takes the lead. A few iterations of this approach yield an initial ranking of the ideas, based on 'gut feeling'. However, the order of pairing the ideas has an

unpredictable effect on the outcome (Ahmed et al., 2019). Similarly, group prioritization methods rely on the social dynamics of a group of people and can therefore result in significantly different outcomes when repeated with another group. A benefit of a group prioritization method is that it captures a lot of perspective at once and it also benefits from the dynamics of discussing arguments in a group (Hwang & Lin, 2012).

2.5 Mega trends

Strategic fit

Strategic fit concerns the extent to which the innovation strategy, desired risk profile, market landscape, organizational culture, and internal capabilities related to an opportunity (idea) are aligned (Chorn, 1991). To facilitate strategic fit across teams, the NBX team has identified four strategic areas: smart home, hybrid work, climate change, and wellness (Figure 15). These areas are based on trend research and aim to reinforce the brand purpose: turning houses into homes. Philips Domestic Appliances wants to drive category-shaping transformations in these four strategic areas, which also support the company's responsibility towards its consumers, partners, communities, and the environments in which it operates. Therefore, strategic fit with these areas is a crucial criterion for idea prioritization. The next section discusses an update of the mega trends.

Figure 15. NBX strategic areas.

New trends framework

In addition to discussing the internal NBX processes and practices, which focus on outbound change (how Philips DA can change its environment), inbound change (how the environment changes Philips DA) is also important when considering new business development. To this end, we have extended the trend research, and my contributions are reported in this thesis. The trend research focuses on strong signals in the market, building on the earlier identified strategic areas (Figure 15). Philips DA requested research on mega trends, hence this reporting.

Remaining competitive through innovation requires the ability to envision future scenarios based on emerging trends, innovate on the basis of early signals of trends and act on opportunities in a timely manner (Rohrbeck, 2014). Trend research enhances an organization's ability to look beyond the current socioeconomic landscape, and actively anticipate future consumer value. Trend research includes activities to identify change patterns and create a consolidated set of forecasts, which aim to drive the future innovation strategy (Rohrbeck, 2014). Therefore, the Strategy and NBX team can use trend research in its innovation strategy to create value for future consumers.

Figure 16. Method for identifying and structuring strong trends based on business intelligence. Source: Author's own illustration (2022).

Figure 16 shows the method that was used to identify the mega trends. A continuous search for trends in relevant professional literature, consisting of both internal (company) reports and external reports in the domestic appliance's domain, helps to establish a centralized overview of all the latest trends in the industry. A limitation of this approach is that it builds on secondary sources. Therefore, this type of trend research focuses on strong signals, as opposed to weak signals. Weak signals require increased sensitivity to not only the mainstream market, but also the periphery of the market, where niche value opportunities have the potential to grow into new value spaces (Ansoff, 1980; Simonse, 2018). Figure 17 shows the 'executive summary' of the findings.

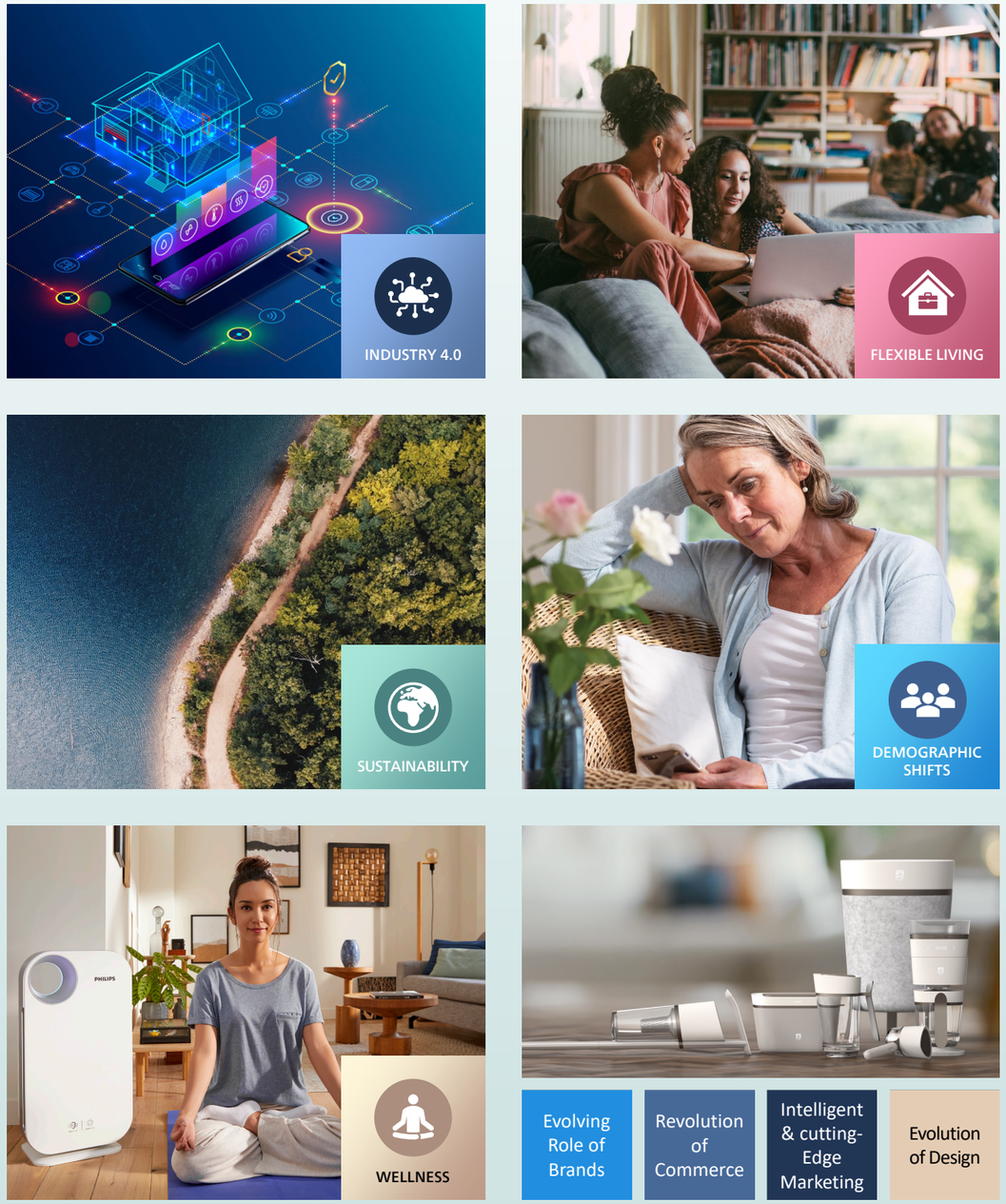


Figure 17. Mega trends in the domestic appliances industry.

Images: © Philips Domestic Appliances (except first image: © The Verdict network)

Through an iterative approach of collecting, identifying, and clustering (Figure 16), global 'mega trends' and respective sub trends were identified. These mega trends are the trends that shape all other trends, and can therefore be used to assess the relevance of other (sub)trends. Mega trends last for an extended period of time, approximately 10 to 15 years or longer (Slaughter, 1993; Saritas & Smith, 2011, p. 294).

Based on this approach, five global mega trends and four commercial trends were found in relation to domestic appliances. Figure 17 illustrates the five mega trends, which can be used as a lens through which new business opportunities are assessed.

For each mega trend, a set of sub trends was identified (Table 2). The sub trends are based on industry reports from McKinsey, Boston Consulting Group and specialized consulting and market research firms, as well as NGOs such as the World Health Organization (United Nations). Similarly, the commercial (sub)trends (Table 3) are based on industry reports.

Industry 4.0	Flexible Living	Sustainability	Demographic shifts	Wellness
Sentient-based tech [1]	Hybrid work [1 2]	Growth of urban agriculture [1 2 3]	Global obesity epidemic [1]	Growing and massive wellness market [1]
Rise of commercial robots [1 2]	Flexible "smart" home design [3 4]	Tech-enabled waste-reduction [4 5]	Growing elderly population [2]	Wellness powered by tech [2]
Merging of digital & physical [1 3 4]	A movable home [5]	Smart cities designed for sustainability [6]	Urbanization [3]	Data-driven personalization [3]
1) Future Today Institute "Home of Things" 2022; 2) All Robots In "The Post-Pandemic Future of Companion Robot" 2022; 3) BCG "Executive Perspectives 2022 Future of Marketing and Sales" 2022; 4) MINTEL "2030 Global Consumer Trends" 2019	1) McKinsey "What executives are saying about the future of hybrid work" 2021; 2) GfK "Hybrid Future: How Tech & Durables brands can capitalize on the new work from home reality" 2021; 3) ScienceDirect "Flexible smart home design: Case study to design future smart home prototypes" 2021; 4) Future Today Institute "Home of Things" 2022; 5) MINTEL "2030 Global Consumer Trends" 2019	1) Futurism "Urban Farming Is the Future of Agriculture" 2018; 2) Inc. "Meet the Urban Farmers Shaping the Future of the $5 Trillion Agriculture Industry" 2021; 3) Visual Capitalist "Is Vertical Farming the Future?" 2022; 4) Trend Hunter "2022 Trend Report" 2022; 5) McKinsey "How AI can unlock a $127B opportunity by reducing food waste" 2019; 6) McKinsey "Smart cities: Digital solutions for a more livable future" 2018	1) WHO "Obesity and overweight" 2021; 2) WHO "Ageing and health" 2021; 3) UN Habitat "World Cities Report 2020, The Value of Sustainable Urbanization" 2020	1) McKinsey "Feeling good: The future of the $1.5 trillion wellness market" 2021; 2) The Zebra "Home wellness technology: The future of smart homes is health-focused" 2020; 3) McKinsey "The future of wellness: Connected and customized" 2021

Table 2. Five mega trends and sub trends shaping the domestic appliances industry. [1]

Evolving Role of Brands	Revolution of Commerce	Intelligent & Cutting-Edge Marketing	Evolution of Design
Brand Co-creation [1]	Hybridization of (sustainable) business models [1 2]	Primacy of data [1]	Social media-ready interiors [1]
Diversity Empowerment [2 3 4]	Instant and Social commerce [1 2]	Rise of new channels [2]	Roaring 20s are coming back [1]
Increasing Expectations [2 3 4]	'Prosumers' are on the rise [1 2]	Hyperpersonalization [1 2]	Rise of pet design [1]
1) Trend Hunter "2022 Trend Report" 2022; 2) MI&A "EU7 Consumer Trends (internal)" 2022; 3) MINTEL "2030 Global Consumer Trends" 2019; 4) MINTEL "2022 Ethics Check" 2021	1) MI&A "Future of Retail – EU7 (internal)" 2022; 2) Trend Hunter "2022 Trend Report" 2022	1) McKinsey "The big reset: Data-driven marketing in the next normal" 2021; 2) BCG "Executive Perspectives 2022 Future of Marketing and Sales" 2022	1) Trend Hunter "2022 Trend Report" 2022

Table 3. Four commercial trends and sub trends relevant for domestic appliances. [1]

> Based on strong signals retrieved from business intelligence reports, five mega trends were identified. These mega trends can be used as a lens through which new business opportunities are assessed.

1. Please note: this overview is the result of a joint effort by Wei Jin Shon (company mentor) and the author.

2.6 Designing strategic contexts

A potential 'designerly' way of prioritizing ideas is to reframe the way of prioritizing itself, by looking beyond the prioritization of ideas, and consider the prioritization of contexts in which emerging opportunities are embedded. Consequently, idea prioritization would pivot away from comparing attributes of ideas, towards comparing the (use) contexts in which to address future customer needs. Put differently, instead of relying on the next brilliant idea to come along, strategic innovation contexts can become a creative springboard that ignites different design innovation processes.

The mega trends (Figure 17) provide a high-level direction for future innovation, but fail to address concrete means to develop new value propositions. Recent research has identified that "iterative patterns of context navigation practices" contribute to large transformation such as the integration of new business territory in existing organizations. By aligning contexts, prioritizing contexts, and adding previously uninvolved, "new" contexts, NBX could leverage common goals, while fostering incongruencies between stakeholders, which allows for the exploration of new value propositions (Bos-de Vos et al., 2022, p. 299).

The strategic design abilities as presented in Figure 18 could facilitate this identification, prioritization, and alignment of strategic contexts, and further develop the venturing architecture of NBX. Through the strategic abilities of envisioning, modelling and engaging value, NBX could better address unmet value (Bouman & Simonse, forthcoming).

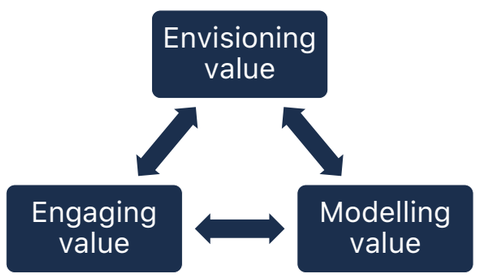


Figure 18. Strategic design abilities (Bouman & Simonse, forthcoming).

The mega trends as shown in Figure 17 on page 57 relate to the ability of envisioning value, by defining the "where to play" strategy (Lafley & Martin, 2013) and creating a cross-functional future vision. In addition, modelling value through the practice of design early in the development process helps to better balance feasibility, viability, and desirability (Kim et al., 2020) and acquire information that would otherwise remain latent (Cross, 2012; Efeoglu et al., 2013; Sanders & Stappers, 2012; Simonse, 2014; Wensveen, 2018). Therefore, the alignment of different innovation contexts could benefit from the ability of modelling value.

Furthermore, the third ability of 'engaging value' contributes to an 'engagement loop' practice in which customer needs, internal capabilities and emerging business opportunities interact and reinforce each other (Bouman & Simonse, forthcoming). See Figure 7 on page 32.

Key insight

The mega trends provide guidance for the "where to play" strategy in relation to turning houses into homes. Additionally, engaging consumers and other stakeholders can help align internal capabilities in order to address consumer value.

2.7 From pre-seed to successful scale-up

In this section, the NBX phases are briefly discussed. Figure 19 conceptualizes the different phases and milestones, which each bring higher investment costs, but also more confidence in commercializing the proposition. The red line illustrates the cumulative investment costs (not to scale). When a product successfully enters the beta stage, the first revenue starts coming in, which should turn the tide towards initial profits. Please note, the shape of the graph differs between different product categories, depending on for example the solution development costs and/or product launch costs.

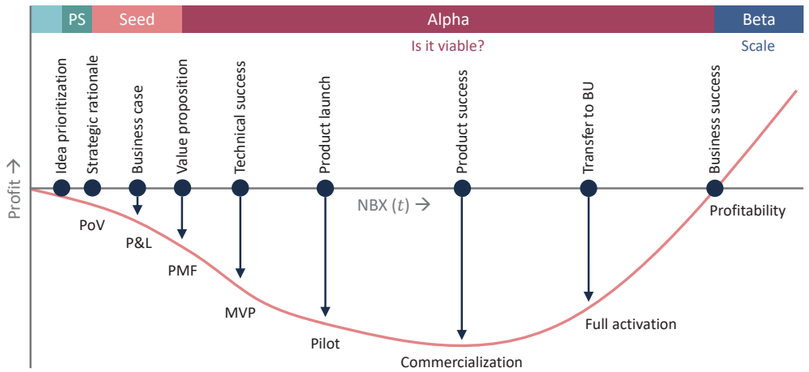


Figure 19. Valley of Death in Product Development (building on Markham et al., 2010). Source: Author's own illustration (2022).

When an idea enters the pre-seed phase (Figure 19: 'PS'), it is still a long way to potential profitability. Overcoming this time period can be a challenge for companies. The 'Valley of Death' is a metaphor to describe the difficulty of bridging the pre-seed stage on the left side and profitability on the right side (Markham et al., 2010).

The current NBX process is structured in a linear way: the conception or identification of a promising business opportunity ignites a process that builds on the same NBX logic, albeit with a thoughtful consideration of maturity, scope, costs and risks in each phase.

Pre-seed

In the pre-seed phase, all ideas that passed the idea selection phase are further explored. The primary objective of this phase is to find out whether an idea is worth 'seeding', i.e. if there is a Proof of Value (PoV). From a theoretical point of view, the right decision moment to advance an idea to the 'seed' phase occurs as soon as the main objective changes from exploring an idea to investing into an idea. In other words, the costs for further development surpass the information benefit, which basically means that the most fundamental questions have already been answered ('where to play?'), and that further pre-seed exploration would not yield significant new insights for decision-making (see Figure 12 on page 50).

By deciding upon (dis)continuation before committing to substantial investments, resource allocation remains balanced. Similar to the idea selection phase, the pre-seed phase involves a number of criteria to be further investigated. For instance, studying user needs through initial interviews, exploring potential business models, estimating investment requirements, market research, competitor analysis, M&A analysis and identifying unmet capabilities (in terms of expertise, people and technology) are all part of the pre-seed phase, which ultimately contributes to a (lack of) 'strategic rationale' to enter the next phase.

During this phase, it is important to balance the time spent on any opportunity in order to make a quality decision (not) to proceed to seed, while keeping the pre-seed phase as short as possible to allow many

opportunities to be considered every year. This ensures movement in the funnel, which is important for timely decision-making for all opportunities.

Seed

The seed phase is the last phase which is fully orchestrated by the NBX team. In this phase, the value proposition starts taking shape. Key activities include building a business case (with a Profit & Loss projection; P&L), defining the Go-To-Market (GTM) strategy, scouting suppliers, identifying possible internal business ownership (organizational setup), and demonstrating a Product-Market Fit (PMF). An internal investment pitch and a subsequent gate decision (pass/kill) concludes the NBX seeding process and is followed by the alpha and beta phases of new product development.

In the seed phase, a larger number of stakeholders is informed. In anticipation of a potential Go-to-Alpha decision, involving stakeholders helps to create visibility in the company, which helps to set the scene.

Alpha

In the alpha phase, the Minimum Viable Product (MVP) is created in order to demonstrate technical feasibility, and the product is launched to a few priority markets (pilot markets). The fundamental questions in this phase are whether the product is viable and whether it can be successfully commercialized. Moving forward, the business unit with the most adjacencies (i.e. fit in terms of capabilities or synergies) drives further development, or a new business unit is created if necessary. As the proposition evolves, it is important to remain focused on the underlying value for the (future) consumer.

Beta

If viability has successfully been demonstrated, the question remains whether the product is scalable to more markets and/or demographics. ‘Business Model Fit’ occurs when the value proposition is embedded in a profitable, sustainable and scalable business model. A full market activation should demonstrate whether this is the case. The business is officially considered a core business operation when it becomes part of the strategic planning and profit and loss (P&L) review.

As a fully activated scale-up, efficiencies and market expansion can further stimulate profitability. For this, budget for new staff positions could be allocated, constituting a new ‘vertical’ capability across functions such as supply chain, marketing, design, HR, finance, and legal, dedicated to the new business. Ultimately, this scale-up could become a substantial part of the company’s revenue, in addition to Kitchen Appliances, Floor Care, Air, Garment Care, and Coffee.

Key insight

Overcoming the “valley of death” is a key challenge in new business development. Having a strong focus on milestones such as the MVP can help obtain confidence and align stakeholders at each phase.

2.8 Review of venturing frameworks

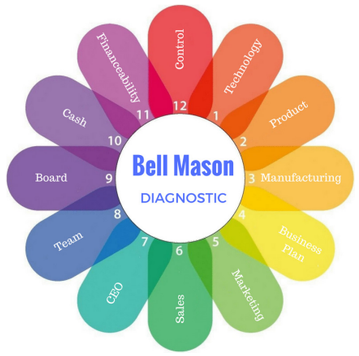
In addition to the NBX frameworks and processes discussed in the foregoing paragraphs, this paragraph reviews alternative venturing frameworks. This review lays the groundwork for positioning the enhanced architecture (chapter 6). In light of the NBX vision, "to be an industry-leading venturing arm that unlocks new territories to help our consumers turn houses into homes," this review aims to better understand other 'industry-leading' frameworks and clarify the purposes of these frameworks. Through a scouting exercise with the help of an experienced colleague, nine prominent frameworks were identified (Table 4).

Most venturing frameworks to date use a matrix visualization (last column of Table 4). McKinsey's 'Three Horizons' is unique in the sense that it uses curves. Furthermore, the identified frameworks serve varying purposes. Some frameworks are designed to manage project growth (Bell, 1991; VentureWell, 2021), or manage portfolio strategy (McKinsey's Three Horizons, 1999; Nagji & Tuff, 2012; Petersen, 2015, Vetter, 2019), while other frameworks describe practices and processes (Koen et al., 2001; Verganti, 2009; Gartner, 2016).

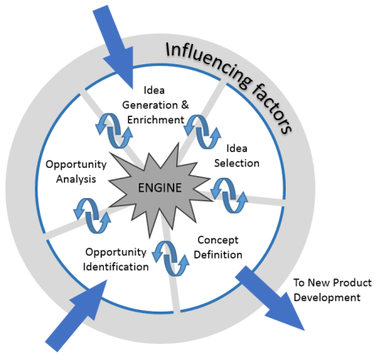
Although the concept 'design-driven' has been established by Verganti, the relation with future consumer value remains unclear. Furthermore, none of the frameworks are tailored for the needs of Philips DA.

Title of framework	Author(s)	Year	Purpose	Shape
Bell Mason Venture Diagnostic Framework	Gordon Bell	1991	"A rule-based tool designed to characterize the status of a high-information-technology start-up, at each stage of growth. The diagnostic is being used to aid the planning and diagnosis of start-up entrepreneurial and established company, intrapreneurial ventures."	Radial
McKinsey's Three Horizons of Growth	Mehrdad Baghai, Stephen Coley, & David White	1999	"To provide a structure for companies to assess potential opportunities for growth without neglecting performance in the present."	Curves
The New Concept Development (NCD) Model	Peter Koen et al.	2001	"To provide a common language and definition of the key components of the Front End of Innovation. The engine, which represents senior and executive-level management support, powers the five elements of the NCD model. The outer area denotes the influencing factors that affect the decisions of the two inner parts."	Circles
Design-Driven Innovation Framework	Roberto Verganti	2009	"To introduce a third stream of innovations that do not originate from the market, but create new markets by pushing new meanings instead of new technologies."	Matrix
Corporate Innovation Portfolio Management	Bansi Nagji & Geoff Tuff	2012	"To allocate finite resources into potentially infinite opportunity arenas and then into specific projects to capture a strategic objective."	Matrix
Market and Technology Risk Matrix	Søren Petersen	2015	"To assess a startup's design execution performance, in a selected market-technology position, [using] a multi-variable linear prediction model of the startup's design execution."	Matrix
Gartner's Digital Innovation Enterprise Architecture	Marcus Blosch, David Norton, Neil Osmond	2016	"To integrate the principles of leading innovation approaches in the innovation process and improve its effectiveness to support digital innovation efforts."	Circles
Corporate Innovation: A Framework for Defining Innovation Initiatives	Sebastian Vetter	2019	"To serve as a model to create value streams, support course corrections and acts as a north star when facilitating strategic shifts of focus for your organization."	Matrix
The Venture Development Framework	VentureWell (non-profit organization)	2021	"To describe the development of early-stage science- and technology-based ventures. This framework can inform the development, implementation, and evaluation of programs supporting entrepreneurs."	Radial

Table 4. Overview of venturing and/or innovation frameworks.

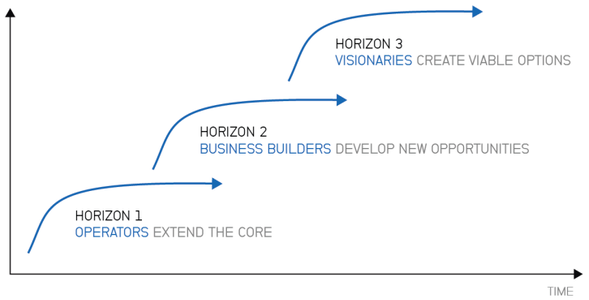


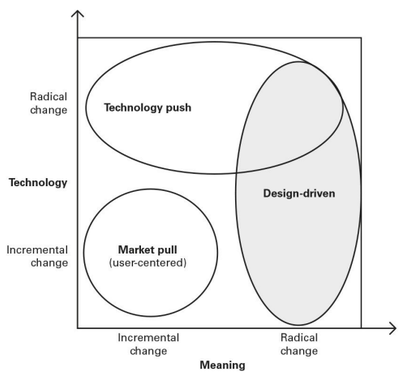
Bell Mason Diagnostic (1991)
Image: © Manish Sharma



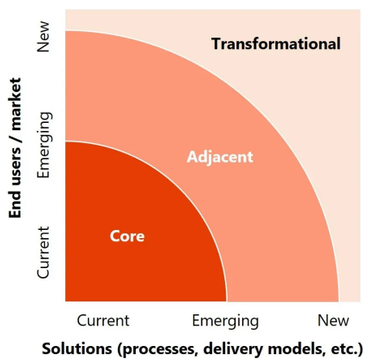
NCD-model (Koen et al., 2001)
Image: © Atte Martikainen

McKinsey's Three Horizons of Growth (1999)
Image: © thnk.org





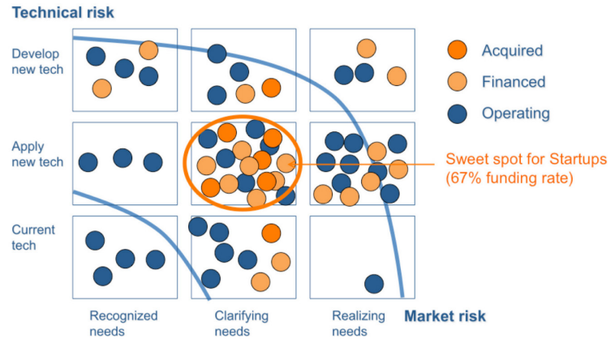
Design-Driven Innovation (2009)
Roberto Verganti

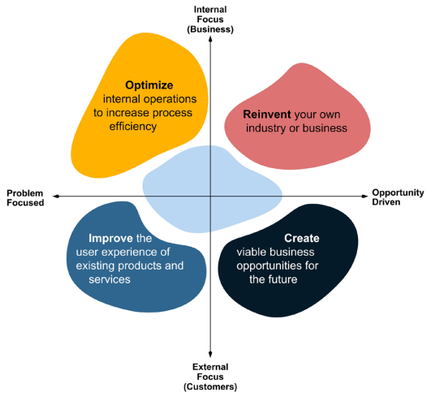


Ambition Matrix (Nagji & Tuff, 2012)
Image: © Nick Skillicorn

Figure 20. Exploratory canvas of venturing and/or innovation frameworks.

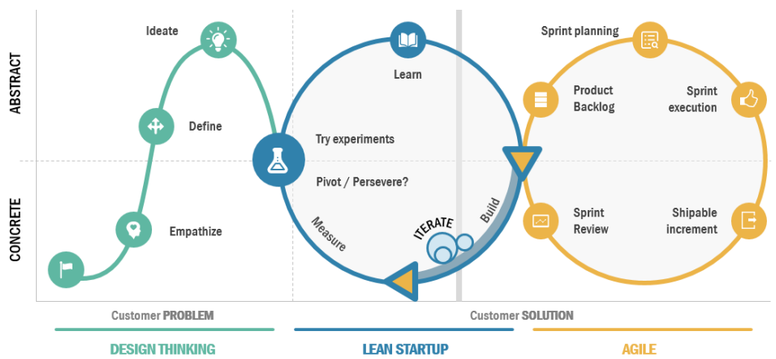
Market & Tech Risk Matrix (2015)
Søren Petersen





Defining Innovation Initiatives (2019)
Sebastian Vetter

Venture Development Framework (2021)
VentureWell



Digital Innovation Enterprise Architecture (2016)
Gartner (Blosch, Norton & Osmond)

References

- Abrell, T., Durstewitz, M., & Uebernickel, F. (2014). Design thinking and effectuation in internal corporate venturing: an exploratory study. *24th Annual RESER Conference 2014*. Helsinki, Finland.
- Ahmed, F., Ramachandran, S. K., Fuge, M., Hunter, S., & Miller, S. (2019). Interpreting Idea Maps: Pairwise comparisons reveal what makes ideas novel. *Journal of Mechanical Design, 141*(2), 021102.
- Ansoff, H. I. (1980). Strategic issue management. *Strategic management journal, 1*(2), 131-148.
- Arroyo, P., Mourgues, C., Flager, F., & Correa, M. G. (2018). A new method for applying choosing by advantages (CBA) multicriteria decision to a large number of design alternatives. *Energy and Buildings, 167*, 30-37.
- Baghai, M., Coley, S., & White, D. (1999). Three Horizons of Growth. *The Alchemy of Growth*, New York: Perseus Publishing.
- Banathy, B. H. (1996). *Designing Social Systems in a Changing World*. Springer US. p. XV, 372. ISBN 978-0-306-45251-2.
- Barney, J. B., & Hesterly, W. S. (2010). *Strategic management and competitive advantage: Concepts* (p. 408). Englewood Cliffs, NJ, USA: Prentice Hall.
- Bell, C. G., & Mason, H. B. (1991). A method to diagnose high tech ventures. In *Technology management: The new international language* (pp. 621-624). IEEE.
- Beretta, M. (2019). Idea selection in web-enabled ideation systems. *Journal of Product Innovation Management*, *36*(1), 5-23.
- Bijl-Brouwer, M., van der, & Dorst, K. (2017). Advancing the strategic impact of human-centred design. *Design Studies, 53*, 1-23.
- Binneman, B., & Steyn, H. (2014). Criteria for selection and gate reviews of technology innovation projects. *South African Journal of Industrial Engineering, 25*(1), 117-130.
- Björklund, T., Maula, H., Soule, S. A., & Maula, J. (2020). Integrating Design into Organizations: The Coevolution of Design Capabilities. *California Management Review, 62*(2), 100-124.
- Bos-de Vos, M., Deken, F., & Kleinsmann, M. (2022). Navigating multiple contexts to integrate system transformation programs. *International Journal of Project Management, 40*(3), 290-311.
- Brown, T. J. (2019). Strategic Design or Design Strategy? Effectively Positioning Designers as Strategists. *Design Management Review, 30*(1), 38-45.
- Bühring, J., & Bishop, P. C. (2020). Foresight and design: new support for strategic decision making. *She Ji: The Journal of Design, Economics, and Innovation*, *6*(3), 408-432.
- Bühring, J., & Liedtka, J. (2018). Embracing systematic futures thinking at the intersection of Strategic Planning, Foresight and Design. *Journal of Innovation Management*, *6*(3), 134-152.
- Buisonje, D. R., de, Ritter, S. M., de Bruin, S., ter Horst, J. M. L., & Meeldijk, A. (2017). Facilitating creative idea selection: The combined effects of self-affirmation, promotion focus and positive affect. *Creativity Research Journal*, *29*(2), 174-181.
- Burgelman, R. A. (1983). A process model of internal corporate venturing in the diversified major firm. *Administrative science quarterly*, 223-244.
- Burgelman, R. A., & Doz, Y. L. (2001). The power of strategic integration. *Sloan Management Review, 42*(3), 28-38.
- Calabretta, G., & Kleinsmann, M. (2017). Technology-driven evolution of design practices: envisioning the role of design in the digital era. *Journal of Marketing Management, 33(*3-4), 292-304.
- Calabretta, G., Gemser, G., & Hekkert, P. (2014). Extending design leadership to innovation strategy: Roles and tools. In Bohemia, E., Rieple, A., Liedtka, J., & Cooper, R. 19th DMI: *Academic Design Management Conference. Design Management in an Era of Disruption*, 2-4 September 2014, London, 1-21. Design Management Institute, Boston
- Canales Durón, R., Simonse, L. W. L., & Kleinsmann, M. (2019). Strategic Design Abilities for Integrated Care Innovation. In Pfannstiel, M. A., & Rasche, C. (Eds.), *Service Design and Service Thinking in Healthcare and Hospital Management: Theory, Concepts, Practice* (pp. 211-232). Springer.
- Carlgren, L., Elmquist, M., & Rauth, I. (2016). The challenges of using design thinking in industry–experiences from five large firms. *Creativity and Innovation Management, 25*(3), 344-362.
- Chong, Y. T., & Chen, C. H. (2010). Customer needs as moving targets of product development: a review. *The International Journal of Advanced Manufacturing Technology, 48*(1), 395-406.

- Chorn, N. H. (1991). The "alignment" theory: Creating strategic fit. *Management decision*.
- Churchman, C. W., Ackoff, R. L., & Smith, N. M. (1954). An approximate measure of value. *Journal of the Operations Research Society of America*. *2*(2), 172-187.
- Cooper, R. G. (1990). Stage-gate systems: a new tool for managing new products. *Business horizons*, *33*(3), 44-54.
- Cooper, R., Junginger, S., & Lockwood, T. (2009). Design thinking and design management: a research and practice perspective. *Design Management Review*, *20*(2), 46-55.
- Cosenz, F., & Noto, G. (2018). A dynamic business modelling approach to design and experiment new business venture strategies. *Long Range Planning*, *51*(1), 127-140.
- Covey, S. R. (1989). *The 7 Habits of Highly Effective People*. Free press.
- Covin, J. G., & Miles, M. P. (2007). Strategic use of corporate venturing. *Entrepreneurship theory and practice, 31*(2), 183-207.
- Coyne, K. (2008). Enduring Ideas: the GE-McKinsey nine-box matrix. *McKinsey Quarterly*. September issue.
- Cross, N. (2012). From a design science to a design discipline: Understanding designerly ways of knowing and thinking. In *Design research now* (pp. 41-54). Birkhäuser.
- Cunha, M. P., Clegg, S. R., & Kamoche, K. (2012). Improvisation as "real time foresight". *Futures, 44*(3), 265-272.
- Daalhuizen, J., Timmer, R, Welie, M., van der, & Gardien, P. (2019). An architecture of design doing: A framework for capturing the ever-evolving practice of design to drive organizational learning. *International Journal of Design, 13*(1), 37-52
- Daheim, C., & Uerz, G. (2008). Corporate foresight in Europe: from trend-based logics to open foresight. *Technology Analysis & Strategic Management, 20*(3), 321-336.
- Dewulf, K. (2013). Sustainable product innovation: the importance of the front-end stage in the innovation process. *Advances in industrial design engineering*, 139-166.
- Diedrich, J., Benedek, M., Jauk, E., & Neubauer, A. C. (2015). Are creative ideas novel and useful?. *Psychology of Aesthetics, Creativity, and the Arts*, *9*(1), 35-40.

- Dorst, K. (2019). Design beyond design. *She Ji: The Journal of Design, Economics, and Innovation*, *5*(2), 117-127.
- Dorst, K., & Cross, N. (2001). Creativity in the design process: co-evolution of problem–solution. *Design Studies*, *22*(5), 425-437.
- Efeoglu, A., Møller, C., Sérié, M., & Boer, H. (2013). Design thinking: characteristics and promises. In *Proceedings 14th International CINet Conference on Business Development and Co-creation* (pp. 241-256). Continuous Innovation Network.
- Fleury, S., Agnes, A., Cados, L., Denis-Lutard, Q., Duchêne, C., Rigaud, N., & Richir, S. (2020). Effects of social influence on idea selection in creativity workshops. *Thinking Skills and Creativity*, *37*, 100691.
- França, C. L., Broman, G., Robert, K. H., Basile, G., & Trygg, L. (2017). An approach to business model innovation and design for strategic sustainable development. *Journal of Cleaner Production*, *140*, 155-166.
- Gabriel, A., Camargo, M., Monticolo, D., Boly, V., & Bourgault, M. (2016). Improving the idea selection process in creative workshops through contextualisation. *Journal of cleaner production*, *135*, 1503-1513.
- Gallego, C., Mejía, G. M., & Calderón, G. (2020). Strategic design: origins and contributions to intellectual capital in organizations. *Journal of Intellectual Capital*, *21*(6), 873-891.
- Gardien, P., Rincker, M., & Deckers, E. (2016). Designing for the knowledge economy: accelerating breakthrough innovation through co-creation. *The Design Journal, 19*(2), 283-299.
- Geissdoerfer, M., Bocken, N. M., & Hultink, E. J. (2016). Design thinking to enhance the sustainable business modelling process–A workshop based on a value mapping process. *Journal of Cleaner Production, 135,* 1218-1232.
- Gericke, K., & Blessing, L. (2012). An analysis of design process models across disciplines. In *DS 70: Proceedings of DESIGN 2012, the 12th international design conference*, Dubrovnik, Croatia.
- Gilbert-Saad, A., Siedlok, F., & McNaughton, R. B. (2018). Decision and design heuristics in the context of entrepreneurial uncertainties. *Journal of Business Venturing Insights, 9*, 75-80.
- Hancock, T. & Bezold, C. (1994). Possible futures, preferable futures. *Healthcare Forum Journal, 37*(2), 23-29.
- Herstatt, C., & Verworn, B. (2004). The 'fuzzy front end' of innovation. In *Bringing technology and innovation into the boardroom* (pp. 347-372).

Palgrave Macmillan, London.

- Holcomb, T. R., Ireland, R. D., Holmes Jr, R. M., & Hitt, M. A. (2009). Architecture of entrepreneurial learning: Exploring the link among heuristics, knowledge, and action. *Entrepreneurship theory and practice, 33*(1), 167-192.
- Hwang, C. L., & Lin, M. J. (2012). Group decision making under multiple criteria: methods and applications (Vol. 281). *Springer Science & Business Media*.
- Jugend, D., & Da Silva, S. L. (2014). Product-portfolio management: A framework based on Methods, Organization, and Strategy. *Concurrent Engineering*, *22*(1), 17-28.
- Kanter, R. M. (1989). Swimming in newstreams: Mastering innovation dilemmas. *California Management Review, 31*(4), 45-69.
- Keil, T. (2004). Building external corporate venturing capability. *Journal of Management Studies 41*, 799-825.
- Kim, E., Simonse, L. W. L., Beckman, S. L., Appleyard, M. M., Velazquez, H., Madrigal, A. S., & Agogino, A. M. (2020). User-Centered Design Roadmapping: Anchoring Roadmapping in Customer Value Before Technology Selection. *IEEE Transactions on Engineering Management, 69*(1), 109-126.
- Kireyev, P. (2015). Prize Allocation and Entry in Ideation Contests. *Harvard Business School*.
- Koen, P., Ajamian, G., Burkart, R., Clamen, A., Davidson, J., D'Amore, R., & Wagner, K. (2001). Providing clarity and a common language to the "fuzzy front end". *Research-Technology Management, 44*(2), 46-55.
- Kyffin, S., & Gardien, P. (2009). Navigating the innovation matrix: An approach to design-led innovation. *International Journal of Design, 3*(1).
- Lafley, A. G., & Martin, R. L. (2013). *Playing to Win: How Strategy Really Works* (32305th ed.). Harvard Business Review Press.
- Lai, A. W. (1995). Consumer value, product benefits and customer value: a consumption behavior approach. *Advances in Consumer Research, 22*, 381-388.
- Lin, M., Hughes, B., Katica, M., Dining-Zuber, C., & Plsek, P. (2011). Service design and change of systems: Human-centered approaches to implementing and spreading service design. *International Journal of Design, 5*(2), 73-86.
- Markham, S. K., Ward, S. J., Aiman-Smith, L., & Kingon, A. I. (2010). The valley of death as context for role theory in product innovation. *Journal of Product Innovation Management, 27*(3), 402-417.
- Mason, H., & Rohner, T. (2002). The venture imperative. *Boston: Harvard Business School Press*.
- McBride, S. (2018). RICE: Simple prioritization for product managers. Inside Intercom. https://www.intercom.com/blog/rice-simple-prioritization-for-product-managers/
- Micheli, P., Perks, H., & Beverland, M. B. (2018). Elevating design in the organization. *Journal of Product Innovation Management, 35*(4), 629-651.
- Muratovski, G. (2015). Paradigm shift: Report on the new role of design in business and society. *She Ji: The Journal of Design, Economics, and Innovation*, *1*(2), 118-139.
- Nagji, B., & Tuff, G. (2012). Managing your innovation portfolio. *Harvard Business Review, 90*(5), 66-74.
- Narayanan, V. K., Yang, Y., & Zahra, S. A. (2009). Corporate venturing and value creation: A review and proposed framework. *Research policy, 38*(1), 58-76.
- Pacuit, E. (2019). Voting Methods. Zalta, E. N. (ed.) *The Stanford Encyclopedia of Philosophy*.
- Petersen, S. I. (2015). Design Driven Startups. In *DS 80-3 Proceedings of the 20th International Conference on Engineering Design (ICED 15) Vol 3: Organisation and Management*, Milan, Italy, 27-30.07. 15 (pp. 143-152).
- Philips DA. (2022). https://www.domesticappliances.philips.com/
- Philips. (2021). *Annual Report 2020*. https://www.results.philips.com/
- Blosch, M., Osmond, L., & Norton, D. (2016). *Enterprise Architects Combine Design Thinking, Lean Startup and Agile to Drive Digital Innovation*. Gartner. Retrieved July 30, 2022, from https://www.gartner.com/en/documents/3200917
- Ries, E. (2011). *The Lean Startup*. Portfolio Penguin.
- Rohrbeck, R. (2014). Trend scanning, scouting and foresight techniques. In *Management of the fuzzy front end of innovation* (pp. 59-73). Springer, Cham.
- Romme, A. G. L., & Reymen, I. M. (2018). Entrepreneurship at the interface of design and science: Toward an inclusive framework. *Journal of Business Venturing Insights, 10*, e00094.

- Sanders, E. B. N., & Stappers, P. J. (2012). *Convivial toolbox: Generative research for the front end of design*. BIS Publishers, Amsterdam.
- Saritas O., & Smith J. (2011). The Big Picture – trends, drivers, wild cards, discontinuities and weak signals. *Futures, 43*(3), 292-312.
- Simonse, L. W. L. (2014). Modeling business models. *Design Issues, 30*(4), 67-82.
- Simonse, L. W. L. (2018). *Design Roadmapping: Guidebook for Future Foresight Techniques*. BIS Publishers, Amsterdam.
- Sklavos, N., & Souras, P. (2006). Economic Models & Approaches in Information Security for Computer Networks. *Int. J. Netw. Secur.*, *2*(1), 14-20.
- Slaughter, R. A. (1993). Looking for the real 'megatrends'. *Futures, 25*(8), 827-849.
- Smulders, F., & Dorst, K. (2007). Towards a Co-Evolution of the Npd-Manufacturing Interface. In *DS 42: Proceedings of ICED 2007, the 16th International Conference on Engineering Design, Paris, France, 28.-31.07. 2007* (pp. 719-720).
- Stanko, M. A., & Bonner, J. M. (2013). Projective customer competence: Projecting future customer needs that drive innovation performance. *Industrial marketing management, 42*(8), 1255-1265.
- Suhr, J. (1999). *The choosing by advantages decision-making system*. Greenwood Publishing Group.
- Tellis, G. J. (2006). Disruptive technology or visionary leadership?. *Journal of Product Innovation Management, 23*(1), 34-38.
- Thurstone, L. L. (1927). A law of comparative judgement. *Psychological Review, 34*, 278-286.
- VentureWell. (2021). *Venture development framework*. Venturewell.org. Retrieved July 15, 2022, from https://venturewell.org/venture-development-framework/
- Verganti, R. (2009). *Design-Driven Innovation: Changing the Rules of Competition by Radically Innovating What Things Mean*. Boston: Harvard Business School Press.
- Vetter, S. (2019). *Corporate Innovation: A Framework for Defining Innovation Initiatives*. *Innovate Strategy*. Retrieved July 15, 2022, from https://www.innovate-strategy.com/blogposts/corporate-innovation-a-framework-for-defining-innovation-initiatives

- Wang, N., Tiberius, V., Chen, X., Brem, A., & Yu, F. (2021). Idea selection and adoption by users–a process model in an online innovation community. *Technology Analysis & Strategic Management*, *33*(9), 1036-1051.
- Wensveen, S. A. G. (2018). *Constructive design research*. Eindhoven University of Technology.
- Wolff, F., & Amaral, F. (2016). Design Management competencies, process and strategy: a multidimensional approach to a Conceptual Model – ProQuest. *Strategic Design Research Journal, 9*(3), p. 145.
- Yoon, B., Jeong, Y., Lee, K., & Lee, S. (2020). A systematic approach to prioritizing R&D projects based on customer-perceived value using opinion mining. *Technovation*, *98*, 102164.
- Zhu, Y., Ritter, S. M., Müller, B. C., & Dijksterhuis, A. (2017). Creativity: Intuitive processing outperforms deliberative processing in creative idea selection. *Journal of experimental social psychology*, *73*, 180-188.

03

Research method

Chapter 3 – Research method

3.1 Research design

In order to better understand how strategic design contributes to the venturing architecture of NBX, a qualitative research design was chosen (Creswell & Poth, 2016). Through a qualitative approach, attention was drawn to capturing new insights in order to induct a thematic understanding of the contribution of strategic design to the venturing architecture of NBX. The context was defined as 'creating value for future consumers of Philips Domestic Appliances'. The Grounded Theory Method (GTM) provided rigor to this approach (Glaser & Strauss, 2017).

Since an understanding of New Business Creation and Scaling (NBX) is instrumental in answering the research question, expert inquiry was chosen to shed light on domain-specific knowledge that may contribute to identifying opportunities and envisioning a future venturing architecture for NBX within the organizational context.

> Being fully integrated in the NBX team on a full-time basis for a period of six months helped to better understand the organizational context (Glaser, 1978).

First-hand observations of ongoing projects also helped to articulate and frame the design challenges associated with the venturing activities of the company and its efforts to create value for future consumers through new business development.

Within the field of strategic design research, different approaches and methods can be used to generate insights (Sanders & Stappers, 2008). Since this research was designed to yield future-oriented insights, expert inquiry was combined with generative research methods in the form of co-design (Sanders & Stappers, 2012) to evaluate the present, and construct future value (Wensveen, 2018). Generative research methods effectively position design as a research vehicle – as opposed to positioning it as a subject or outcome – which is a powerful strategy to enrich data collection.

In conclusion, three qualitative modes of inquiry can be noted: expert inquiry (interviews), observations (six-month embedding) and generative research (co-design). The combination of these methods aimed to embed the generative research outcomes into its context, which contributed to the applicability of the research outcomes, as well as method and data source triangulation (Leech & Onwuegbuzie, 2007). Furthermore, as expert inquiry relied on experiences from the past and observations are based on the present, inductive and generative research extended this line of inquiry towards the future.

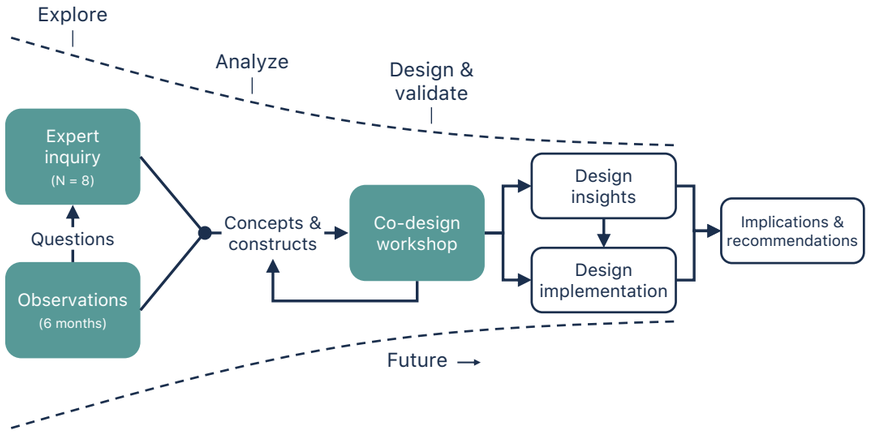


Figure 21. Three modes of inquiry: observations and expert inquiry (wide), followed by a co-design (focused) to generate future-oriented design insights.

Figure 21 shows the three modes of inquiry, which aimed to first explore the organizational context and opportunity space through observations and expert inquiry, and extend the derived concepts and constructs to the future through co-design. Co-design also contributed to increased embeddedness in the company's context and validation. The concepts and constructs co-evolved as the co-design practice highlighted further focus for the subsequent design iterations.

3.2 Expert inquiry

Expert inquiry was conducted by means of in-depth interviews with relevant stakeholders of the NBX process, based on an interview protocol (Appendix A2). The individual interviews focused on experience with identifying and scaling new business opportunities, organizational challenges associated with successful venturing, and design methods related to the foregoing. Trends, organizational incentives, and industry characteristics were also touched upon. A semi-structured interview is both flexible enough to capture unforeseen perspectives, but also structured enough to highlight ideas and thoughts on central themes across interviews (Fontana & Frey, 2000). The questions followed a chronological path of inquiry, starting with experiences, followed by a view on the current situation and an outlook on future practices (Sanders & Stappers, 2012). Following this path of inquiry ensured cohesion between interviews, as well as overall focus on the research question, by building towards future-oriented insights in a logical flow.

Interview participants

The participants were selected through purposive sampling at Philips (Taherdoost, 2016). See Figure 22. A wide range of participants were recruited: from design, marketing, strategy, innovation, and across BUs within the company, with varying levels of experience and seniority (Table 5). This ensured that a wide range of perspectives was captured. The sampling strategy aimed at a balanced distribution between participants with a design background (4 participants) and without a design background (4 participants). A total of 8 experts were interviewed (5 male and 3 female). All participants had a university degree. Two participants also had a professional degree (MBA).

Participants were approached by email or in person with the help of contacts within the company. No attempt to recruit a specific expert was rejected. Participants were recruited until thematic saturation occurred. Individual participants were selected with advice from direct colleagues, and based on the participant's experience related to new business development, design and/or innovation.

ID	Gender	Business title	Business function	Seniority [1]	Years of experience	Highest education	Design background	Interview duration	Number of codes
1	F	Vice President	Air	Leadership	16	Master	No	32:14	52
2	M	Sustainability Leader	Sustainability	Leadership	20	Master	Yes	33:37	52
3	F	Business Category Leader	Garment Care	Management	14	Master	No	33:31	68
4	M	Design Business Lead	Design	Management	10	Bachelor	Yes	40:26	88
5	M	Product Marketing Director	Floor Care	Management	18	MBA	No	37:09	79
6	M	Marketing Director	Floor Care	(Senior) professional	16	Master	No	35:30	55
7	F	Senior Marketing Innovation Manager	Garment Care	(Senior) professional	16	MBA	Yes	35:18	53
8	M	Product Manager	Coffee	(Senior) professional	3	Master	Yes	55:08	81

Table 5. Interview participants.

1. Management reports to leadership and leadership reports to the ELT.

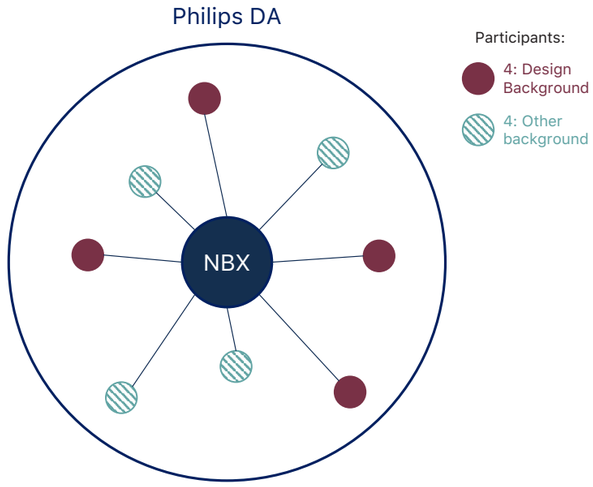


Figure 22. Sampling strategy for interviews.

Interview procedure

Prior to each interview, participants were briefed individually on the scope, objective, and duration of the interview and participants were asked to provide written consent for audio-recording the interview and using the insights for research (Appendix A3). The research information was also introduced verbally, stressing the voluntary nature of the interview.

The in-depth interviews were conducted in English (professional proficiency). The interviews were organized both in the office (Amsterdam) and through online video calls (Microsoft Teams). Design probes (visuals of design methods) were used during the interview (Appendix A2). The interviews were conducted in May and June of 2022 and lasted between 32 and 55 minutes (excluding informal introduction chat). No repeat interviews were conducted. All interviews were fully transcribed (Microsoft Transcribe and manual transcription) and anonymized. Transcripts are available upon request. The overall interview procedure is similar to the procedure as used in the paper of Bouman and Simonse (forthcoming).

3.3 Generative research

Untangling future practices of new business venturing in order to create value for future consumers requires rich data beyond the status quo. A co-design workshop featured a generative design exercise using sticky notes mapping. Figure 33 on page 130 shows the workshop's setting. The briefing presentation at the beginning of the workshop is included in Appendix A7.

Workshop participants

The participants were selected through purposive sampling (Taherdoost, 2016). Participants were approached by email with the help of contacts within the company. No attempt to recruit a specific expert was rejected. Individual participants were selected based on the participant's experience related to new business development, design and/or innovation. One expert participated in both an interview and the workshop (Business Category Leader). The workshop was conducted with a group of five stakeholders (Table 6). None of the participants had a design background. All participants had experience with innovation practices. Participants with (global) decision-making authority were present.

ID	Gender	Business title	Business function	Years of experience	Highest education
1	M	NBX & Venture Leader	NBX	13	MBA
2	M	New Business Development Director	NBX	17	MBA
3	F	Business Category Leader	Garment Care	14	Master
4	M	Innovation Consultant	External	12	Master
5	F	Sr. Innovation Lead	NBX	30	Master

Table 6. Participants of the co-design workshop.

Workshop procedure

Prior to the workshop, participants were briefed on the scope, objective, and duration of the workshop (Appendix A7) and participants were asked whether taking pictures during the workshop and using the in-

sights for thesis research were permitted. The workshop was held in English. The workshop took place in July 2022. A spacious and well-lit meeting room in the office with a whiteboard was used for the workshop (Figure 33). The workshop lasted for 60 minutes. All participants were de-identified.

3.4 Observations

During my embedding at Philips Domestic Appliances from March to September 2022, a better understanding of the company context was established (Glaser, 1978). Daily activities included preparing meetings, attending meetings, presenting findings to colleagues and management, and identifying, exploring, analyzing and scaling emerging business opportunities by liaising with stakeholders. Field notes related to strategic design, venturing strategy and/or future consumer value were taken. Individual teams and team members at Philips Domestic Appliances constituted the unit of observation, while the unit of analysis was positioned at the company-level, i.e. how the company creates future consumer value through design-driven venturing (Babbie, 2020).

Furthermore, the observations in the first two months helped to articulate the most relevant questions for understanding the company's challenges and opportunities with regard to meeting the needs of future consumers. The observations were converted into a process map, as communication through non-verbal methods is one of the qualities of strategic design (Canales Durón, Simonse, & Kleinsmann, 2019; Cross, 2011, 2012). Process maps based on first-hand observations resulted in additional tangibility, thus contributing to answering the research question. A 'swim lane' diagram was used as a tool for process mapping (Damelio, 2011), originally coined by Rummler and Brache (1995). The process map is for internal use only.

3.5 Data analysis

For the inductive analysis of the research data, a thematic approach was used to identify patterns within the data obtained through interviews and observations (Thomas, 2003). The data were grouped under codes, categories and themes, with a strong focus on the research

question. Through an iterative process of computer-assisted qualitative data analysis (ATLAS.ti, v3.19.1), the data were coded line by line (open). Next, the coded data that shared characteristics were grouped into categories through axial coding. Categories with limited support from the data (containing quotes from less than 3 participants) were left out. In the final stage of coding, the categories were clustered into themes – building towards theoretical constructs and/or concepts. A coding tree (Figure 26 on page 102) illustrates this process, which resulted in a thematic understanding of the contribution of strategic design to new business development.

Validity

Combining three modes of inquiry (interviews, co-design, and observations) increased the research validity as a result of method triangulation (Leech & Onwuegbuzie, 2007). The baseline results were discussed with the company mentors and Head of Strategy in order to ensure that the starting points for further analysis were accurate and complete. Furthermore, the explanation of the current NBX process (see page 62) was evaluated by the Head of NBX, who characterized it as "very good and complete". During the thematic analysis, feedback from the company mentors and supervisory team added breadth to the analysis (Patton, 1999). An additional design evaluation session was carried out with one team member (Patton, 2014). To maintain methodical validity, implications and limitations of the inductive analysis are reviewed in the discussion (Cohen, Manion and Morrison, 2017).

3.6 Ethical considerations

The research part of the graduation project was approved by the Human Research Ethics Committee of Delft University of Technology (Appendix A3) and the graduation committee (supervisory team and company mentors). Potential participants were able to reject the invitation to participate without facing any consequences. Prior to the interviews, all participants agreed to participate by providing informed consent (Appendix A3). The discussed topics were not sensitive and did not impact employee evaluation. During data analysis, no personal information was used. Participants were not asked about private information or experiences. The presented quotes in this thesis are sufficiently general to avoid re-identification of participants.

References

- Babbie, E. R. (2020). *The practice of social research*. Cengage learning.
- Canales Durón, R., Simonse, L.W.L., & Kleinsmann, M. (2019). Strategic Design Abilities for Integrated Care Innovation. In Pfannstiel, M.A., & Rasche, C. (Eds), *Service Design and Service Thinking in Healthcare and Hospital Management: Theory, Concepts, Practice* (pp.211-232). Springer.
- Cohen, L., Manion, L., & Morrison, K. (2017). Action research. In *Research methods in education* (pp. 440-456). Routledge.
- Creswell, J. W., & Poth, C. N. (2016). *Qualitative inquiry and research design: Choosing among five approaches*. Sage Publications.
- Cross, N. (2011). *Design thinking: Understanding how designers think and work*. Bloomsbury Academic.
- Cross, N. (2012). From a design science to a design discipline: Understanding designerly ways of knowing and thinking. In *Design research now* (pp.41-54). Birkhäuser.
- Damelio, R. (2011). *The basics of process mapping*. CRC press.
- Fontana, A., & Frey, J. H. (2000). The interview: From structured questions to negotiated text. *Handbook of qualitative research, 2*(6), 645-672.
- Glaser, B. G. (1978). *Theoretical sensitivity: Advances in methodology of grounded theory*. Sociological Press, Mill Valley, CA.
- Glaser, B. G., & Strauss, A. L. (2017). *The discovery of grounded theory: Strategies for qualitative research*. Routledge.
- Leech, N. L., & Onwuegbuzie, A. J. (2007). An array of qualitative data analysis tools: a call for data analysis triangulation. *School Psychology Quarterly, 22*(4), 557-584.
- Patton, M. Q. (1999). Enhancing the quality and credibility of qualitative analysis. *Health Sciences Research, 34*, 1189-1208.
- Patton, M. Q. (2014). *Qualitative research & evaluation methods: Integrating theory and practice*. Sage publications.
- Rummler, G. A., & Brache, A. P. (1995). *Improving Performance: How to Manage the White Space on the Organization Chart. The Jossey-Bass Management Series*. Jossey-Bass, Inc., 350 Sansome Street, San Francisco, CA 94104.
- Sanders, E. B. N., & Stappers, P. J. (2008). Co-creation and the new landscapes of design. *Co-design, 4*(1), 5-18.
- Sanders, E. B. N., & Stappers, P. J. (2012). *Convivial toolbox: Generative research for the front end of design*. BIS Publishers, Amsterdam.
- Taherdoost, H. (2016). Sampling methods in research methodology; how to choose a sampling technique for research. *International Journal of Academic Research in Management, 5*(2), 18-27.
- Thomas, D. R. (2003). A general inductive approach for qualitative data analysis. *American Journal of Evaluation, 27*(2), 237-246.

04

Research outcomes

Chapter 4 – Research outcomes

4.1 Results overview

This chapter presents the original research results. The results focus on outbound change (how Philips DA can change its environment) and lay the foundation for the design in chapter 5. Challenges associated with new business development in a commercial environment are discussed in chapter 5.

Frame of analysis

An important distinction between the interview baseline results and the inductive analysis is the frame of analysis. Whereas the baseline results reflect the dominant thinking today, the inductive analysis builds towards future-oriented insights for the venturing framework.

> An inductive analysis is a systematic procedure for analyzing qualitative data guided by grounded theory and original research objectives (Thomas, 2003).

4.2 Interview baseline results

Current situation

Based on field notes (observations) of the current situation and the resulting interview protocol, eight experts were asked to reflect on their experience with previous NBX projects and then describe the current state (Figure 23). A preliminary analysis of the expert interviews uncovered four clusters of baseline results (current situation), which consist of prevailing viewpoints among participants grounded in their experience. Resulting from a high-level clustering of all interview insights, the following present-day clusters were identified: ‘daring culture’, ‘future visioning’, ‘consumer value’ and ‘design strategy’. Figure 24 on page 96 shows each cluster and the viewpoints that constitute these clusters. The clusters highlight the status quo within the company based on the most prominent viewpoints.

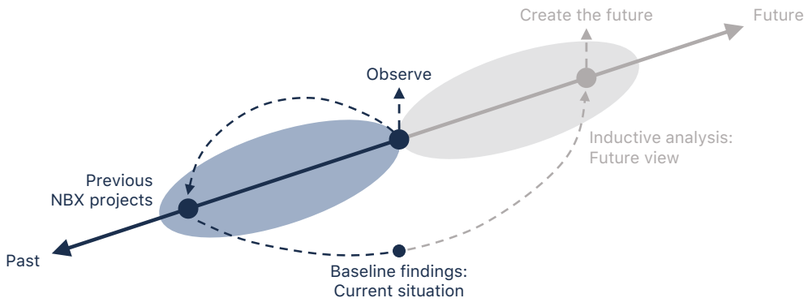


Figure 23. Expression-relation of interview results: baseline results precede the inductive analysis (Sanders & Stappers, 2012). Source: Author’s own illustration (2022).

Daring culture

+ People recognize the importance of NBX
± Tendency to be rational and process-driven
– Uncomfortable with embracing uncertainty
– ‘First time right’ mindset

Consumer value

+ Our strength is excellent consumer value
+ Consumer insights are used to influence decisions
– Value proposition creation can limit innovativeness
– Value proposition creation is often (too) market-driven

Future visioning

+ Harmonized Home gives visionary direction
± Visions are often based on market insights
– Long-term plans are mostly financial
– Future visioning is not yet a core capability

Design strategy

+ Design is well established in the company
+ Design covers all consumer touch points
+ Co-creation increases the likelihood of success
– Design as a strategy is not always recognized

Strength (+)
Challenge (–)

Figure 24. Interview baseline results in four clusters.

Daring culture

‘Daring with purpose’ is promoted as desirable behavior throughout the organization. Especially considering the focus of the interviews on new business development, ‘daring’ was frequently mentioned. ‘Daring’ also means trying new things, and for Philips DA this suggests looking beyond the existing businesses (Kitchen Appliances, Coffee, Air, Floor Care, and Garment Care). Consequently, participants recognize the importance of NBX. At the same time, the tendency to be rational and process-driven was frequently brought up to be part of the Philips culture, which may impose a barrier, since existing processes are not designed for non-standard work. As an organization that excels in execution, processes are designed to reduce uncertainty and optimize return.

> “In the past, Domestic Appliances was a cash cow within Phillips and now we are on our own so we cannot only be a cash cow.”
> – Sustainability Leader

However, processes remain focused on efficiency and increasing return:

> “Both the markets and the businesses are set up to do things the way we do them today and we have invested billions into doing it very efficiently.” – Sustainability Leader

In the last decade, Royal Philips shifted its strategic priority to health technology. Health technology is an industry which is heavily regulated and focused on minimizing risk at every stage of the development process. Therefore, Philips Domestic Appliances, which used to be part of Royal Philips, inherited this ‘first time right’ mindset. A ‘first time right’ mindset can limit the company to be more daring:

> “We need to be more daring to activate and to try a proposition which doesn’t have that solid background.” – Product Marketing Director

> “It took a long time to enter the market because they [Royal Philips] wanted to do everything the first time right and design every single detail in the best way.” – Design Lead

> “We are looking at new business very financially – it needs to succeed from the get-go.” – Business Category Leader

Another participant indicated that the company remains to have difficulty with entering new opportunity spaces and embracing the associated uncertainty:

> “They keep on investing in the things that they see from the past, the things that work: ironing, beauty, vacuum cleaners…”
> – Senior Marketing Manager

However, new business development requires embracing uncertainty:

> "NBX is by definition a lot more uncertain. Uncertainty is very against especially Phillips DA – we're very process-driven, we're about precision." – Business Category Leader

Consumer value

The strong end-to-end marketing capabilities and rigorous user testing practices at Philips DA ensure excellent value for consumers. As a European brand, these are the factors that allow Philips Domestic Appliances to compete with Asian competitors who can offer lower price points. It is no surprise that consumer insights are a fundamental part of the company's way of working and its Value Proposition Creation (VPC) methodology is elaborate and thorough. On the other side of the coin, the VPC method is considered to be a bulky and business-driven approach, leaving little room for daring initiatives. This view is reflected by participants, who indicate that VPC is business-driven, i.e. focused on responding to market needs.

> "VPC [Value Proposition Creation] is really business-driven as it's about recognizing an insight or a market pressure." – Design Lead

One product manager indicated that although VPC is important, it can form a barrier to innovation:

> "The VPC process based on existing user insights kind of limits the value proposition to be more innovative." – Product Manager

In the end, the BUs have the final say in determining the value proposition towards the consumer. Their key concern is increasing sales:

> "Value propositions to a large extent are still dictated by the business, because they need to in the end have products that they think they can sell." – Sustainability Leader

Future visioning

Roadmapping is common practice in the organization, with every BU having their own roadmap (internal conversations) and the company

is investing in R&D to make new products come to live and connect new technology with consumer needs. The 'Harmonized Home' framework gives visionary direction from a design point of view and the brand promise – turning houses into homes – ensures a joint effort in creating future value. The 'harmonized home' framework is bringing design into the visionary realm:

> "The design strategy, called the Harmonized Home, is a kind of high-level visionary concept." – Design Lead

However, some concepts within the BUs remain close to current business activities and don't look far into the future:

> "The concepts are sometimes very much just focusing on how we could reflect on market pressure today." – Design Lead

Market insights are used to anticipate shifts in consumer behavior and the company acts accordingly. For instance, traditional ironing in developed markets is in decline (internal conversation). As a result, the company is investing the majority of its resources in steam generators and other emerging garment care solutions. However, BUs are still very focused on optimizing P&L (Profit and Loss), which suggests a short to medium-term mindset that favors profits today over taking risks to grow in the future. Furthermore, 'future visioning' as a core capability is not always recognized. Long-term plans tend to be financial:

> "We're very focused on where we spend our resources, so that's why you see that these long-term future views are not always there."
> – Marketing Director

Design strategy

The design department is well-established within the company. Design is seen as more than an afterthought, and design actively influences decision-making. Furthermore, a wide range of design practices were observed. The department's name, 'Experience Design', already indicates that it extends its scope beyond traditional product design. The team includes CMF designers (Color, Materials, Finish), UX/UI design-

ers, communication designers, brand designers, graphic designers and more, but design is not (yet) elevated to a 'strategic design' level. For instance, no designer is part of the Executive Leadership Team (reporting to the CEO).

> "At this moment I feel that design is following the business requirements, but I think that design is to drive the business into a future-oriented direction." – Product Manager

> "Typically, we don't make it strategic as such or have design to be involved in the strategy." – Vice President

And the full scope and capability of design is not always recognized:

> "They look at color trends." – Marketing Director

However, design strategies are recognized and deployed. For example, connectivity and IoT applications are not only positioned to improve the user experience, but also exerted for sustainability practices (product lifecycle management) and to increase consumer engagement and retention (customer relationship management). Furthermore, co-creation practices which originated from Royal Philips (see also Gardien et al., 2016) continue to facilitate shared innovation initiatives. However, not all concepts are pursued, and many concepts are not further developed. Initial indications have been found that the gap between current operations and futuristic ideas can form a barrier:

> "Sometimes the co-create ideas just end up in the drawer because maybe they are too futuristic." – Design Lead

Furthermore, co-creation is considered to be a more creative and future-oriented approach than VPC:

> "[Compared to VPC], co-creation is focusing more on outside-the-box thinking to be able to identify new concepts." – Design Lead

4.3 Inductive analysis

In this section, the results of the inductive analysis are presented. In contrast to the baseline analysis, inductive logic is applied to extend the research outcomes towards the future (Figure 25).

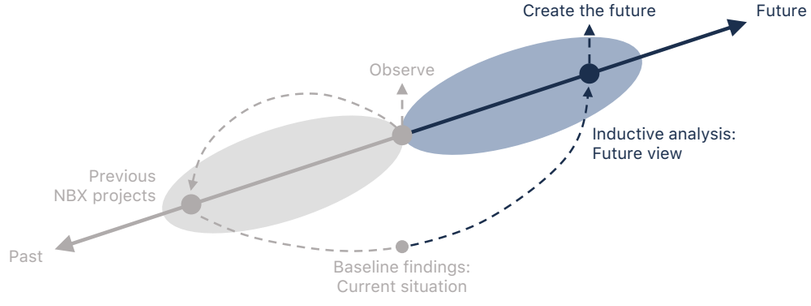


Figure 25. Expression-relation of interview results: extending the line of inquiry through inductive analysis (Sanders & Stappers, 2012). Source: Author's own illustration (2022).

Future view

In order to extend the line of inquiry towards the future, an inductive analysis is carried out based on an iterative process of coding and clustering quotes. Appendix A6 includes initial clustering of quotes and related codes. Further in-depth analysis based on the research question resulted in a thematic understanding of 'design-driven venturing', which is illustrated by means of a coding tree (Figure 26). The tree presents the data induction of 14 codes (containing 449 quotes) into five categories, which are summarized by three themes. These categories are 'Design as a vehicle to explore' (A), 'Aligning market forces and consumer value' (B), 'Capturing value through innovation' (C), 'Interplay between user research and future visioning' (D), and 'Venturing mindset' (E). Further induction of these five categories, while maintaining focus on interview-based evidence, resulted in three themes that introduce the emerging notion of 'design-driven venturing'. These themes are 'Using design to unlock new value spaces' (I), 'Insight-driven value shaping' (II), and 'Visions that embrace risk' (III). In the next section, evidence quotes for each category are presented, followed by the inductive logic that resulted in the three themes. These themes are used as building blocks in chapter 5.

Key insight

Eight interview transcripts with a combined 40,000+ words were coded line by line (containing 449 quotes). The resulting codes were clustered into five categories. Based on these categories, three themes were identified.

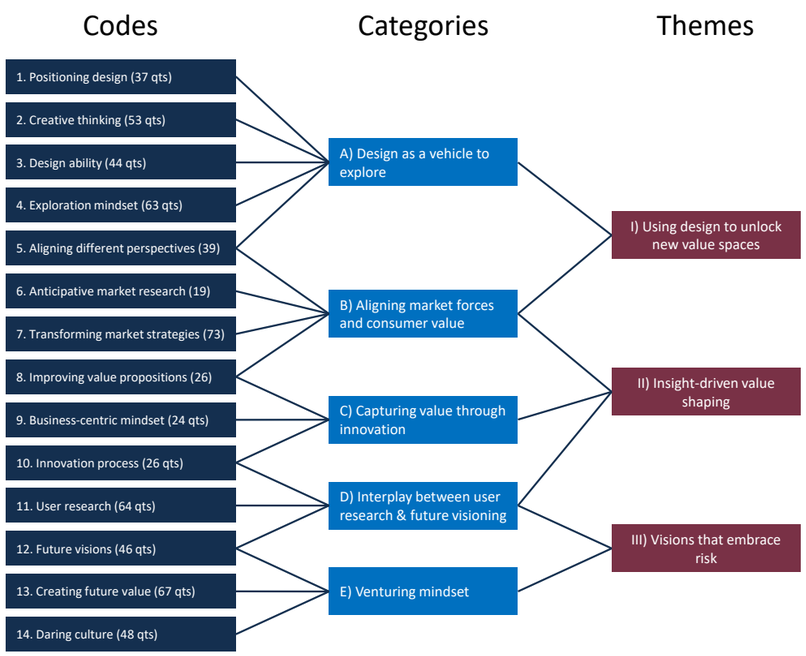


Figure 26. Coding tree illustrating how strategic design contributes to new business development in order to create value for future consumers. Source: Author's own illustration (2022).

A) Design as a vehicle to explore

Both participants with and without a design background believe that design plays a role in exploring new business opportunities. It forms a bridge between different disciplines and makes exploration tangible (39 quotes).

> "Design can help the company to look towards the future from different aspects." – Design Lead

Representing code 5

> "Design has different tools to help people to think." – Product Manager

Representing code 2

This evidence quote illustrates that the design team could help Philips DA to be a futurist:

> "This is a role of the design team and the futurist that Philips needs to be." – Marketing Director

Representing code 1

B) Aligning market forces and consumer value

'Insight-driven ideation' helps to examine the market forces (in the form of trends) and expose the tensions that are present (19 quotes):

> "Insight-driven ideation helps to understand future trends, related insights and then translate that to tension plots." – Design Lead

Representing code 6

From a marketing perspective, determining your own vision and not blindly following the market could help to enter new value spaces (26 quotes):

> "The market is moving to X but we believe that consumers want Y so we can jump into this gap and offer what consumers are looking for." – Product Marketing Director

Representing code 7 (1)

> "If you're a market leader, you can dictate the market." – Vice President

Representing code 7 (2)

Co-creation is suggested to be a helpful approach to resolve tensions and create value propositions (26 quotes):

> "That's where co-creation comes in and brings together the different functions and work together as a team to determine value propositions." – Design Lead

Representing code 8

C) Capturing value through innovation

As a for-profit company owned by a Private Equity Firm, the Return on Investment (ROI) for any new business opportunity is a crucial consideration. Having a vision is one part of the story, but capturing the value accordingly is just as important (24 quotes):

> "If you develop those visions, then the question is can you capture the value?" – Marketing Director

Representing code 9 (1)

A business-centric mindset (24 quotes) could limit the ability to capture value through innovation if the focus remains on short term sales:

> "If you have a crazy idea, most probably the management team is going to say, "how much can we sell?" – Senior Marketing Manager

Representing code 9 (2)

Another participant indicated a potential solution to potential push back from management:

> "The challenge is to let them believe that your idea will be successful, that it will make profits in the business case. We need to really be tough and be confident to push a vision in order to have a new product introduction or new product innovation." – Product Manager

Representing code 9 (3)

Participants point out that future visions remain just a vision if the right resources and/or capabilities are not available (26 quotes):

> "Innovation deprioritizes certain ideas because we simply don't have the capabilities yet." – Design Lead

Representing code 10 (1)

It is suggested that leadership and the board should stimulate innovation:

> "In order to do even more groundbreaking innovation, I think it's about leadership and board decision, that's what we need to do."
> – Vice President

Representing code 10 (2)

D) Interplay between user research & future visioning

Different attitudes towards the role of user research in (new) business development can be observed among participants. All participants consider user research to be an essential element of (new) business development (64 quotes), but they have varying viewpoints on how these insights play into the new business development process and future visioning. Participants indicate that user research alone is not sufficient in order to make a new business opportunity successful:

> "It's impossible to test a new business model in user research, I've not seen it to work." – Sustainability Leader

Representing code 11

> "One is the consumers, one is the business and one the technology, and to work all together, you must take the different stakeholders into consideration." – Product Manager

Representing code 10 (1)

Moreover, user research could actually limit innovation (10 quotes):

> "There's definitely a tension between what consumer insights tell us and how we can actually innovate." – Product Marketing Director

Representing code 10 (2)

Leveraging user research for incremental development clearly adds value, whereas the role of user research in discontinuous business development is more nuanced and may be subject to careful positioning and interpretation. It is suggested that design could help with projecting a future vision based on an understanding of the consumer. In particular, design can use creativity to bridge missing user insights and help project the vision:

> "We have the creativity to look towards the future and project a vision based on the learnings that we have, but also to use creativity to fill up some gaps which cannot be scientifically observed today."
> – Design Lead

Representing code 12

E) Venturing mindset

In addition to the foregoing viewpoints, the right mindset could also be crucial in design-driven venturing. One participant (representing 11 quotes) suggests that the way success is defined and measured today is not suitable for new ventures:

> "We are trying to think of success or failure based on the metrics for existing businesses. This will not help us enter new categories."
> – Business Category Leader

Representing code 13

Building on this statement, a need to be bolder is mentioned in order to venture into new business territory (48 quotes):

> "We need to be bold otherwise we keep on doing the same and the same." – Senior Marketing Manager

Representing code 14 (1)

This is also recognized by other participants, although phrased differently:

> "We need cowboys who are comfortable with not following all the rules of the standard business." – Sustainability Leader

Representing code 14 (2)

> "We need to be more daring to activate and to try a proposition which doesn't have that solid background." – Product Marketing Director

Representing code 14 (3)

In order to make ventures a success, visionary direction from the highest management level is required (12 quotes):

> "Entering new territories becomes more an ELT kind of decision, so I think the ELT with Hillhouse have to decide whether to fund a new business." – Sustainability Leader

Representing code 12

4.4 Thematic rationale

I) Using design to unlock new value spaces

As identified in the theoretical foundation (chapter 2, see page 60), the practice of design has the ability to uncover insights that would otherwise remain latent. Building on this concept and the exploration mindset as identified in code 4 (63 quotes) as well as the necessity of creative thinking as identified in code 2 (53 quotes), the category 'Design as a vehicle to explore' (A) was identified.

The underlying rationale is that positioning design as an exploratory research vehicle – as opposed to positioning it as a subject or outcome – is a key element of successful design foresight practices that allow venture teams to look beyond the obvious consumer insights and actively explore latent needs that have not yet been identified. For example, co-design practices could empower consumers to express themselves in ways that were not possible before.

As a result, NBX could detach itself from the present by not only chasing market forces and strong signals, but also expand its outlook through design as a vehicle to explore new insights that transcend the market and consumer insights today. Today's insights are most likely already known by competitors in the first place. Furthermore, prior research has indicated that empathizing with the user through design contributes to envisioning (consumer) value (Bouman & Simonse, forthcoming), in addition to the constructive qualities of design in research (Wensveen, 2018).

Combining this perspective with 'Aligning market forces and consumer value' (B) provides further direction for a potential theme for design-driven venturing. 'Design as a vehicle to explore' (A) could help align market forces and consumer value through abilities which are specific to the practice of design (code 3, 44 quotes), such as the ability to use design artefacts to resolve tensions (Cross, 2011). Consequently, positioning design (code 1, 37 quotes) as an exploratory vehicle could unlock new value spaces. Based on these research outcomes, the theme 'Using design to unlock new value spaces' (I) was inducted. The premise is that a design-driven approach is required to effectuate a radical change in meaning as suggested by Verganti (2009). In addition to a

'technology-push' approach, a design-driven venturing approach could thus contribute to discontinuous business growth by unlocking new and previously unknown value spaces.

II) Insight-driven value shaping

Similarly, 'Aligning market forces and consumer value' (B) provides direction for the second theme. A business-centric mindset (code 9, 24 quotes) that is (to some extent) required in new business development, as well as the need to improve value propositions (code 8, 26 quotes) and the importance of the innovation process (code 10, 26 quotes) contributes to an understanding of 'Capturing value through innovation' (C) as a prerequisite for successful new business development in the domestic appliances industry.

Additionally, the 'Interplay between user research and future visioning' (D) was identified as an important driver for future visions in NBX ventures (code 12, 46 quotes). 'Aligning market forces and consumer value' (B), 'Capturing value through innovation' (C) and how user research affects future visions can be characterized by the question "how to use insights to shape value in NBX?", resulting in the theme 'Insight-driven value shaping' (II).

Insight-driven value shaping involves using insights to not only address or anticipate consumer value, but active shape it (Figure 10). This is a cornerstone of the emerging concept of 'design-driven venturing', which contributes to positioning NBX as an industry-leading venturing arm that 'shapes' the future of the domestic appliances industry. Fundamentally, the attitude towards insights pivots from *enhancing* functionality towards "externalizing a layer of meaning in which unmet value is grounded". This 'layer of meaning' refers to the high-order needs and wishes of the consumer, such as 'self-esteem' and 'a sense of connection'. Grounding future consumer value in a layer of meaning is likely the key to developing a successful and future-oriented venturing strategy (building on the playbook "Inspiring engagement strategies" as part of my internship at Royal Philips; shared internally in November 2021).

III) Visions that embrace risk

A ‘daring culture’ (code 14, 48 quotes) was frequently mentioned in relation to NBX. In combination with the ambition of NBX to ‘create future value’ (code 13, 67 quotes) by venturing into new business territory, the category ‘Venturing mindset’ (E) was formed. Merging the perspectives of the ‘Interplay between user research and future visioning’ (D) and how visions in NBX require a venturing mindset to embrace (short-term) risk, resulted in the thematic finding of ‘Visions that embrace risk’ (III).

A venture, by definition “a new activity that involves risk or uncertainty” (Cambridge Dictionary), seeks discontinuous business growth. Design-driven venturing could even be a further amplification of uncertainty, since not only the envisioned value space, but also the insights that contributed to this vision, lie ahead in the future (i.e. ‘designing foresights’).

Additionally, design-driven venturing aims to unlock new business territory that is not only new to the company, but also new to the industry in general. This creates an additional element of uncertainty. Therefore, ‘visions that embrace risk’ is a necessary component of design-driven venturing. Fortunately, strategic design has demonstrated to embrace uncertainty through a human-centered yet systemic approach (Andreassen et al., 2016).

By ‘embracing’ risk rather than mitigating risk, it can be turned into something favorable. This is especially true for design-driven venturing, where part of the (competitive) advantage lies in being the first to venture into a new value space by actively shaping it.

> In conclusion, the thematic analysis has yielded three distinct themes that orient venturing as a design-driven endeavor, and characterize design-driven venturing as a subdomain of corporate venturing that incorporates strategic design in order to venture towards future consumer value.

The three themes provide a foundational understanding of the contribution of strategic design to the venturing practice of NBX. In the next chapter, the design is presented.

References

- Andreassen, T. W., Kristensson, P., Lervik-Olsen, L., Parasuraman, A., McColl-Kennedy, J. R., Edvardsson, B., & Colurcio, M. (2016). Linking service design to value creation and service research. *Journal of Service Management, 27*(1), 21-29.
- Cambridge Dictionary (n.d.). Venture (English). *Cambridge Dictionary*. Retrieved July 15, 2022, from: https://dictionary.cambridge.org/dictionary/english/venture
- Cross, N. (2011). *Design thinking: Understanding how designers think and work*. Bloomsbury Academic.
- Gardien, P., Rincker, M., & Deckers, E. (2016). Designing for the knowledge economy: accelerating breakthrough innovation through co-creation. *The Design Journal, 19*(2), 283-299.
- Sanders, E. B. N., & Stappers, P. J. (2012). *Convivial toolbox: Generative research for the front end of design*. BIS Publishers, Amsterdam.
- Thomas, D. R. (2003). A general inductive approach for qualitative data analysis. *American Journal of Evaluation, 27*(2), 237-246.
- Verganti, R. (2009). *Design-Driven Innovation: Changing the Rules of Competition by Radically Innovating What Things Mean*. Boston: Harvard Business School Press.
- Wensveen, S. A. G. (2018). *Constructive design research*. Eindhoven University of Technology.

05

Design

Chapter 5 – Design

5.1 The venturing architecture of NBX

Based on the findings and considerations of the previous chapters, this chapter presents the design of the venturing architecture. In this paragraph, the final design is presented. Afterwards, the design process and various iterations that contributed to the final design of the venturing architecture are discussed.

In order to relate the NBX vision to the existing NBX frameworks and methods, inspiration was drawn from the golden circle approach (Sinek, 2009). This approach starts with 'why' (the vision) in the center, encircled by 'how' (the mission), and 'what' (frameworks and methods). In the architecture, the center circle contains the vision of NBX, the ring around the vision illustrates the mission, and the outer ring shows the main frameworks and methods used by NBX (the 'cornerstones'). A total of nine cornerstones give structure to the architecture (Figure 27).

Originality

In relation to the other NBX frameworks (e.g. Figure 5, Figure 11, and Figure 13) as well as other frameworks in the industry (page 68), the architecture represents an overarching framework that integrates the NBX vision and clarifies the relation between various venturing frameworks. The exploration of existing frameworks as illustrated in Figure 20 on page 70 ensured that the architecture reflects an original contribution. Furthermore, by integrating the NBX vision the architecture is tailored for Philips DA.

In addition to clarifying and visualizing the 'cornerstones' of NBX, the architecture also introduces a new construct: 'value shaping' (see Figure 27). This addition is based on the original research findings as presented in chapter 4 as well as the co-design workshop follow-ups (design sprints). Details of this new 'value shaping' construct are presented on page 109 (chapter 4).

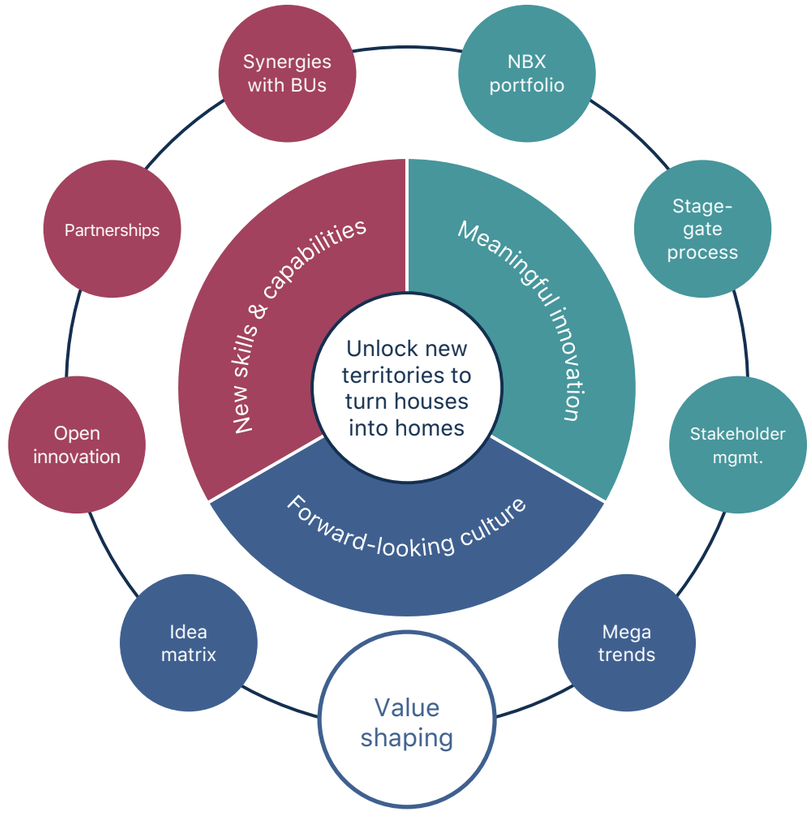


Figure 27. Venturing architecture of NBX: positioning 'value shaping' as one of the cornerstones of the new architecture. Source: Author's own illustration (2022).

Purpose

The architecture shows the proposed venturing structure for building the capabilities and processes to venture into new territories of consumer value. It helps NBX to obtain a holistic overview of its practice in relation to its vision. The new architecture allows NBX professionals (designers, engineers, analysts, marketers, strategists, consultants, researchers, etc.) to design, review, and discuss venturing capabilities and processes and assess their relevance for achieving the mission.

The framework can thus be used as a cross-functional artefact that brings together all essential capabilities and processes. It supports teams and executives to better articulate the NBX capabilities and take

leadership of each of the important cornerstones. Therefore, the architecture helps decide what new skills and capabilities to further develop, who takes ownership, and which people to hire.

Designing the venturing architecture: a thematic view

The three themes that emerged from the inductive analysis (page 102), 'Using design to unlock new value spaces' (I), 'Insight-driven value shaping' (II), and 'Visions that embrace risk' (III), orient venturing as a design-driven endeavor, in which consumer value is not only anticipated, but actively shaped (theme II). Consequently, the architecture includes a 'value shaping' cornerstone.

In relation to the theme 'visions that embrace risk' (III), the NBX vision embraces risk by seeking to unlock new territories to help consumers turn houses into homes. In order to signify the importance of this theme, the vision is positioned in the middle.

As an incubator, NBX fosters a forward-looking culture, and it can leverage design to accelerate new business development in order to unlock new value spaces (theme I). This insight is based on the premise that positioning design as an exploratory research vehicle – as opposed to positioning it as a subject or outcome – complements successful design foresight practices in order to actively explore latent consumer needs. More details are provided on page 108.

5.2 Practical application of the NBX architecture

The final design of the architecture is the result of not only the research findings and three design sprints (three time-constrained design phases of two weeks), but also my practical experience during the graduation project internship. In order to illustrate how the projects at Philips DA contributed to the new architecture, I highlight each circle of the outer ring based on projects I have worked on: two seed projects, the idea matrix, the portfolio dashboard, the mega trends research (page 56), and the SharePoint website (Appendix A4). The last two projects are public information, whereas the first four projects are still in development and are therefore kept confidential.

NBX portfolio

For bringing meaningful innovation, a portfolio that is aligned with the vision is crucial. Therefore, the NBX portfolio is a cornerstone of the venturing architecture. A good NBX portfolio balances adjacencies, which are closer to the existing portfolio, as well as 'moonshot' ventures, which seek to unlock new territories for Philips DA (as stated in the vision, page 28). For example, two NBX projects called 'Project Paw' and 'Project Cocoon' aim to venture into new business territory, whereas for instance developing a new refrigerator or oven (currently not offered) would have a stronger connection with the existing portfolio, contributing to a balanced NBX portfolio (details are provided to the graduation team in the form of a dashboard).

Stage-Gate Process

Although the Stage-Gate Process has its limitations as discussed on page 46, it is a well-established innovation process with clear deliverables and success criteria. The Stage-Gate Process used at Philips is optimized to guide new ventures and it is based on years of refinement. The Stage-Gate Process therefore is a key component of the NBX architecture. In the final design of a new website for NBX (Appendix A4), I use the analogy of a seed that slowly grows into a tree to explain the Stage-Gate Process. At each stage, different ingredients contribute to the growth of the tree. By nurturing the tree to grow bigger, someday we might harvest its fruits. However, not every seed has the potential

to grow into a fruitful tree. The Stage-Gate Process can help determine whether a seed has the potential to grow or not.

Stakeholder management

As mentioned in the introduction (page 31), NBX should support the company's responsibility towards its consumers, partners, communities and the environments in which it operates. Therefore, stakeholder management in a broader sense is what eventually constitutes 'meaningful' innovation. For Project Paw (one of the ventures) I interviewed 18 consumers: four in the Dutch market, six in the Chinese market, four in the German market, and four in the American market (USA). Based on these interviews, the team and I were able to better understand the needs and wishes of one of our most important groups of stakeholders: our consumers.

Mega trends

As the Head of Strategy and NBX explained during one of our meetings, the mega trends form a lens through which new business opportunities are assessed. As such, they guide what value spaces we want to pursue as a company, also considering the purpose to "turn houses into homes" (page 24). For example, air conditioning would be an interesting business opportunity (Statista, 2021), but it does not reflect our perspective on the sustainability trend (Philips DA, 2022). This illustrates that the mega trends contribute to the execution of the NBX vision.

Idea matrix

The multifactorial analysis, i.e. 'idea matrix' as discussed on page 51, is a helpful tool for comparing different future venture directions. During the internship, I have regularly updated the matrix to reflect the latest ideas for future ventures. The idea matrix brings a continuous stream of opportunities, thus contributing to a forward-looking culture. Since the team uses this matrix as a tool to initiate new ventures, it is a cornerstone of NBX.

Value shaping

A new contribution to the architecture is the 'value shaping' cornerstone. It is positioned between the idea matrix and mega trends, signifying the importance to not only respond to trends, but actively shape ideas

based on inbound change (change in terms of consumer needs, market dynamics and/or technology). For responding to inbound change, shaping activities such as ideation or early prototyping contribute to future consumers value by taking an outbound perspective (how Philips DA can change its environment). This value shaping is discussed in more detail on page 109 (chapter 4).

Open innovation

I have designed a process to engage with external stakeholders such as suppliers & partners, students & professionals, and users & consumers (the process map is provided to the graduation team). As the domestic appliances industry moves towards IoT (Internet of Things) and platform-based solutions (page 35), the importance of open innovation becomes even more important, since companies increasingly rely on shared innovation to deliver consumer value (e.g. Apple HomeKit, Google Home, Amazon Alexa; see page 35).

Partnerships

NBX has worked closely with an innovation studio called *Aimforthemoon*. This studio helped NBX with Project Paw, and I worked with *Aimforthemoon* on a daily basis over the course of July and August 2022. This studio also introduced new skills and capabilities to NBX, such as keyword analysis (Google Trends) and advertisement experiments. Keyword analysis involves the comparison of different keywords in order to identify early signals in the market, and advertisement experiments were used to measure engagement with different potential propositions by buying test advertisements online (to measure engagement).

Synergies with BUs

As an internal corporate venturing arm, NBX has a potential advantage over new entrants (startups) since it can leverage some of Philips DA's existing capabilities (see page 45). Therefore, synergies with BUs constitutes a key component of the architecture. In order to leverage potential synergies, I helped the NBX team organize monthly 'NBX ambassador' meetings to review ongoing new business development projects, both within the BUs as well as within NBX. The stakeholder map as presented in Figure 6 on page 31 clarifies the relation with the BUs.

In the next section, earlier iterations of the architecture are presented, which show a design journey with many turns and pivots. Eventually, these iterations resulted in a small but important contribution to the final architecture in the form of the 'value shaping' cornerstone. The following three design sprints preceded the final venturing architecture:

- First sprint: the outline
- Second sprint: co-design
- Third sprint: integration

Figure 28 illustrates the design approach, based on a visualization as proposed by Kemmis & McTaggart in 1988 (as cited in Kemmis, McTaggart, & Nixon, 2014). The two circles represent the pivots between the design sprints.

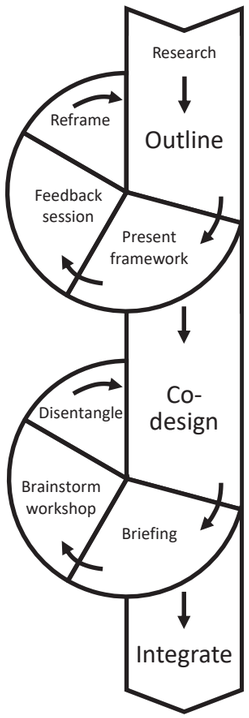


Figure 28. The design approach with three sprints and two pivots (based on Kemmis & McTaggart, 1988). Source: Author's own illustration (2022).

5.3 First sprint: the outline

Design rationale

The distinction between 'business adjacency' and 'new territory' is helpful in linking an opportunity to potential synergies with existing business operations, but it does not describe the potential future value for consumers. It merely describes the novelty for Philips DA itself (Figure 29). For example, Project Cocoon (confidential) will likely create a new territory of value for Philips DA and its consumers, but the concept has already been established in the market. Therefore, Project Cocoon is an interesting business opportunity that could bring meaningful and improved value to new groups of consumers, but the consumer value it brings is not new (a description of the current state of the project is provided to the graduation team). In order to distinguish novelty for the company versus novelty for the consumer, a new framework for NBX could be introduced, building on the notion of 'design-driven venturing' (Figure 26). This envisioned framework complements the current process framework (Figure 11) and encourages early venture streams to look beyond market opportunities by integrating a 'value shaping' practice, as emerged from the thematic analysis (theme II).

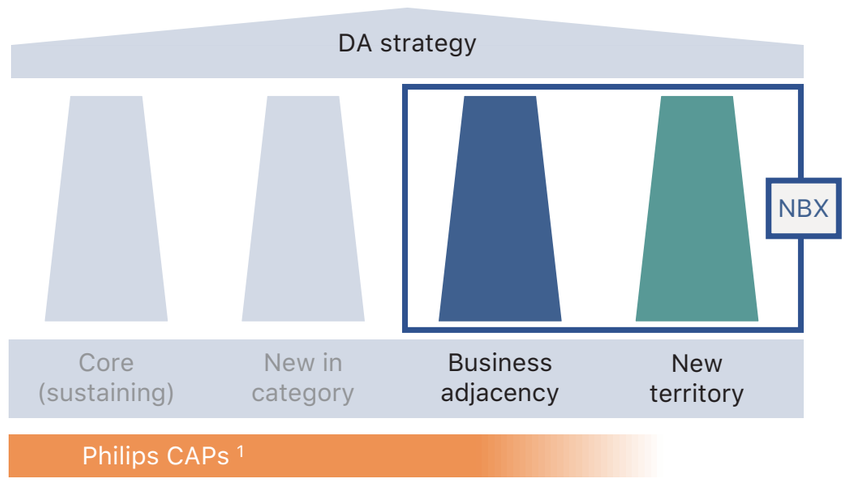


Figure 29. NBX strategic pillars (scope). Source: Author's own illustration (2022).

1. Capabilities, Assets and Positions

The proposed new framework is based on design implications which were inferred from the NBX vision statement, thematic analysis and literature findings (see Table 7). These implications are also used as design parameters to design, review, iterate, and validate the proposed framework accordingly.

	Grounding			Design implication
Vision	To be an industry-leading venturing arm that unlocks new territories to help our consumers turn houses into homes.	Chapter 1	Page 28	To emphasize the ambition to unlock new business territories by venturing beyond the near future.
Themes	Inductive analysis (chapter 4)			In order of numbering
	I. Using design to unlock new value spaces. To unlock value spaces that are not only new to Philips DA, but also new to the industry (i.e. “to be an industry-leading venturing arm”).	8 codes	354 quotes	To position design as a vehicle to explore value spaces and shape visions that transcend the current market landscape and bring future consumer value.
	II. Insight-driven value shaping. Insights play a fundamental role in new business development. Central to all insights is the potential value for the consumer.	8 codes	317 quotes	To include an insight-driven perspective to respond to signals in the market, and a value-shaping perspective to actively shape future consumer value.
	III. Visions that embrace risk. Visions ranging from ‘moonshot’ ventures to ‘low-hanging fruit’ opportunities contribute to a balanced risk profile.	5 codes	251 quotes	To allow for visions that embrace risk by including different streams of new business development in the form of ventures with varying levels of certainty and impact.
Literature findings	Premises			In order of appearance
	NBX can actively venture towards preferred consumer outcomes by navigating both inbound change (e.g. market foresights, mega trends) and outbound change (shaping value).	Chapter 2	Page 42	To position ‘value shaping’ as one of the key streams of new business development in addition to insight-driven venturing.
	The NBX venturing arm should be granted sufficient autonomy while seeking synergies with existing capabilities.	Chapter 2	Page 45	To consider a wide spectrum of opportunities, while existing BUs remain an important orientation point.

Table 7. Findings and considerations from which design implications for the framework were inferred.

Contextualization for NBX: design of the framework

Based on the use of language that emerged from the expert inquiry (Figure 26), the following activity terminology is proposed to contextualize the framework for NBX: envision, shape, and unlock (themes).

In relation to ‘visions that embrace risk’ as emerged from the expert inquiry (theme III), the framework aims to pave the way for ‘3rd horizon’ ventures (i.e. long-term ventures) and therefore embraces the uncertainty associated with these types of ventures. Additionally, by making the role of design in long-term ventures more explicit, the framework aims to broaden long-term plans to not only include market objectives, but also reflect future consumer value more explicitly. Through the interplay of market-driven and design-driven venturing streams, the framework seeks to enhance the NBX practice and introduce a new model that more closely reflects the daring culture as strategized.

The proposed framework argues strongly in favor of implementing more design-driven ventures, and argues that these types of ventures could result in the biggest impact for consumers by unlocking new value spaces. Therefore, the ‘design-driven’ approach is a given such a prominent place in the first iteration, which could contribute to increased recognition of design as a strategy (one of the interview baseline results).

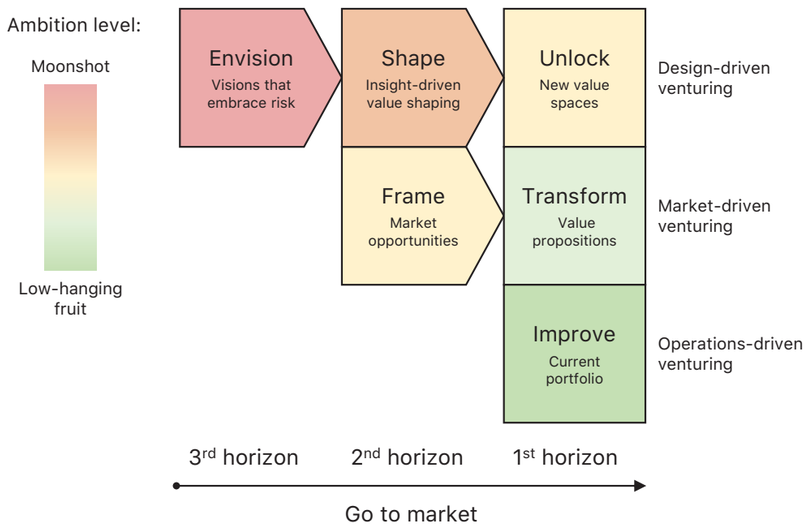


Figure 30. First iteration of the venturing framework with three parallel and cross-fertilizing venturing streams. A balanced venturing portfolio includes ventures with different horizons and levels of ambition. Source: Author's own illustration (2022).

Figure 30 presents the first iteration of the proposed venturing framework, which suggests three parallel and cross-fertilizing streams of new business development. The design-driven venturing stream is suggested to have the highest potential to unlock new value spaces. The supporting logic is that responding to market forces (market-driven venturing) will likely result in a transformation of known consumer needs. In order to unlock new territories of consumer value ('future consumer value'), design activities are suggested to drive the 'envisioning' and 'shaping' of new values spaces, hence 'design-driven venturing' as a dedicated venturing stream.

Reframing the shape

Figure 31 (A) displays the various shapes that were explored during the first sprint of designing the venturing framework. All these shapes have some sort of 'grid' structure with orthogonal baselines. In order better connect with the strategized 'wide spectrum of opportunities' (Table 7), this visual pattern was reframed to a radial design. Figure 31 (B) shows the reframing of the base shape.

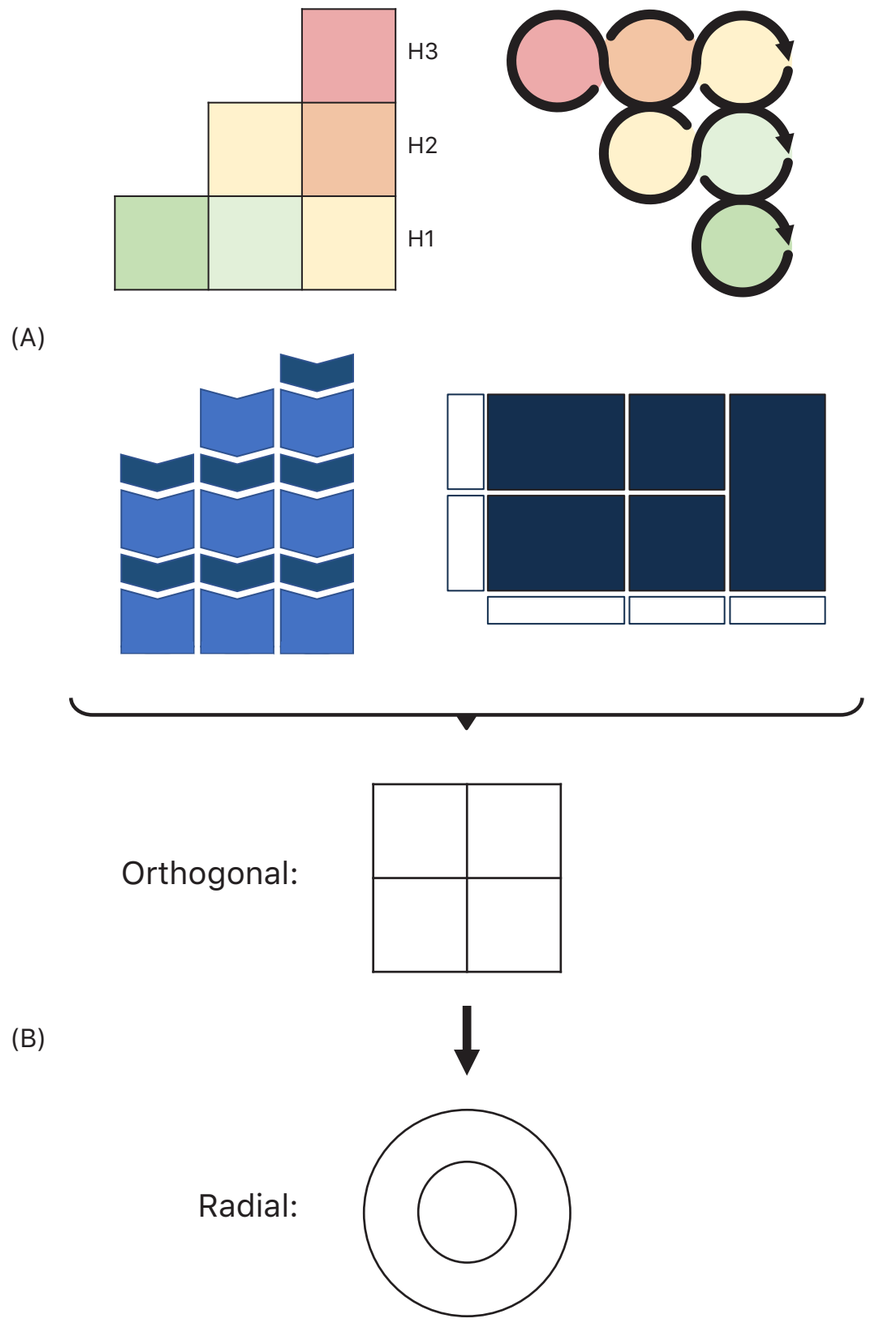


Figure 31. Reframing the base shape from orthogonal to radial.

Points of improvement

Points of improvement were identified during the first round of collecting feedback. For example, the operations-driven stream is not strongly connected to NBX, and the use of 'horizons' could be confused with roadmapping practices. Furthermore, 'go to market' suggests a market-driven approach, while this is not necessarily the case. In the next design sprint, different colors and more fluid shapes are explored to better connect with the strategized design implications (Table 7).

Key insight

During the first design sprint, design implications were identified. Based on this, the first version of the framework is designed and introduced. Finally, the base shape is reframed to a radial design.

5.4 Second sprint: co-design

Figure 32 shows the result of the reframing. In order to better reflect the strategized 'daring culture,' a radial and open shape is used, compared to the boxy shapes of the first iteration (Figure 30). Furthermore, the red and dark orange colors were replaced, since these colors are associated with risk (Heller, 1948), which is not in line with the strategized daring culture. A design-driven and market-driven side remain present, while using the terminology 'dare, focus, and create' in an attempt to simplify the framework. 'Dare' and 'focus' are derived from the interviews, while 'create' relates to New Business Creation and Scaling (NBX), the name of the team.

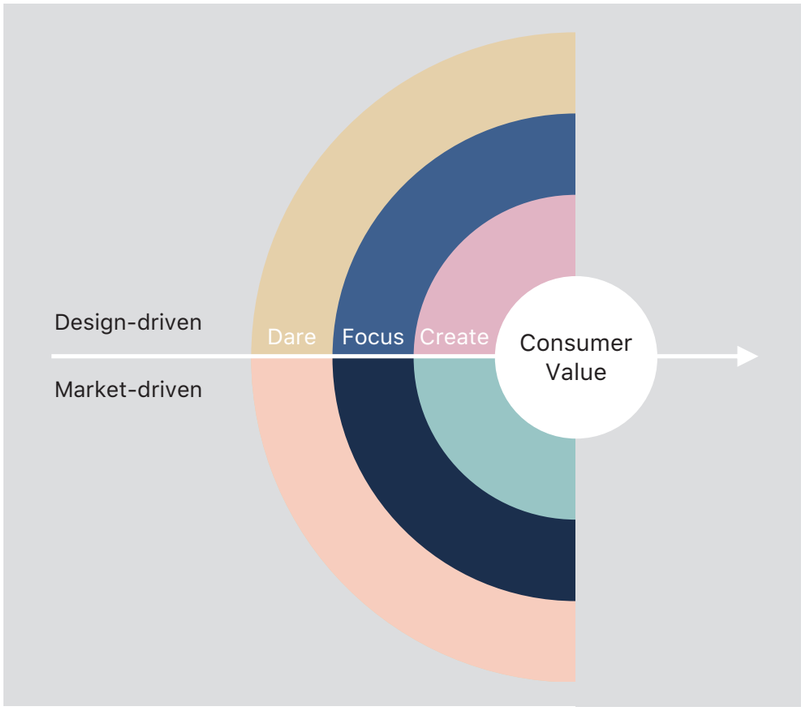


Figure 32. Second iteration of the venturing framework. Source: Author's own illustration (2022).

The second iteration of the framework, including the newly strategized radial shape, was used in the co-design workshop. In this iteration, the 'objects' of the framework are different seed opportunities, illustrating the maturity of different opportunities. For example, Project Paw is currently in the focus stage. We are narrowing down which value space we want to focus on. Project Cocoon on the other hand is one step further in the process since we have narrowed down our focus and are now building a Minimum Viable Proposition (details are provided to the graduation team).

Workshop outcomes

The objective of the co-design workshop was to further develop the outline of the framework and identify points of improvement. During the co-design workshop, which lasted for one hour, the outline of the framework as shown in Figure 32 was further developed. The co-design workshop also provided valuable insights into the participant's attitude towards the existing NBX strategic pillars (Figure 29).

Want went well:

- Through an icebreaker and introduction presentation the audience was able to relax and feel comfortable giving feedback.
- Face-to-face interaction stimulated a rich discussion.
- The audience was very engaged and provided feedback throughout the workshop.
- The number of participants (5) was suitable: everyone was able to speak and listen.

A detailed description of the background and roles of the workshop participants as well as the workshop procedure is provided on page 87 (Research method).

After a short briefing presentation (Appendix A7), the workshop started with identifying what the participants think of the NBX strategic pillars (Figure 29). Based on brainstorming and clustering of different venturing approaches and methods using sticky notes (see Figure 33), we established that the current pillars clearly show the connection to the

BUs, that they are understandable, and that Hillhouse (the owner of the company) recognizes the framework, because of its use of the words 'adjacency' and 'new territory', which are common in the venturing industry.

In addition, we collectively concluded that there is a need to either renew or build upon the current framework(s) in order to better reflect future consumer value in relation to the newly defined NBX vision. Based on the question "what do you think of the current NBX architecture?", we identified four areas of improvement by clustering all the sticky notes with similar insights (Figure 33 and Figure 34).

The following conclusions were drawn:

- The current strategic pillars are generic, and a new framework should therefore be tailored for Philips Domestic Appliances.
- The pillars do not reflect the 'daring culture' as emerged from the interviews.
- The pillars have an 'inside-out' perspective, i.e. it prioritizes novelty for the company over novelty for the consumer.
- It does not inspire us to turn houses into homes (the company's purpose).

During the co-design workshop it also became apparent that we first needed to better understand the relation between existing NBX frameworks, e.g. the strategic pillars (Figure 29), the idea selection matrix (Figure 13) and process framework (Figure 11), before designing the next iteration. In retrospect, this is one of the key learnings for me that emerged from the workshop. As a result, the workshop provided particularly useful feedback, but we were not able to converge the findings yet, also considering the limited time available (one hour).

In order to position more clearly the envisioned 'venturing architecture' in relation to other venturing frameworks, a venturing architecture is defined as "the proposed venturing structure for building the capabilities and processes to venture into new territories of consumer value."

Figure 33. Workshop setup with posters, a whiteboard, sticky notes and digital slides.

Figure 34. Brainstorming, chatting, and giving feedback during the workshop.

Disentanglement of frameworks

Based on the co-design workshop outcomes, I decided to disentangle the envisioned pre-seed framework from the overall venturing architecture.

The following courses of design action were identified:

1. Organize a follow-up meeting to review other frameworks in the industry and identify gaps (e.g. frameworks by McKinsey, Bell Mason Group, Koen et al., and Verganti). The results of this additional theory-based review meeting can be found in Figure 20 (Theoretical foundation).
2. Initiate a third design sprint of the framework, based on the identified gaps and design parameters (Table 7).
3. Disentangle various frameworks: (1) strategy and portfolio, (2) practice and process, and (3) governance and capabilities frameworks (this categorization is the result of suggestions from workshop participants).
4. Zoom in on the pre-seed stage since the project brief emphasizes “the scouting of business opportunities” (page 28) as a key objective of this thesis. Therefore, this stage deserves a dedicated framework.
5. Answer the research question by focusing on the foresight, ideation and positioning phases (i.e. pre-seed), since these are characterized by high uncertainty, which fits well with the practice of strategic design (Lin et al., 2011).

Based on discussions within the team, I realized that the venturing architecture is not one framework (as imagined at the start of the thesis), but rather an integrated set of frameworks that helps NBX to accomplish its vision. In light of this, the value shaping framework should be integrated in the overall venturing architecture.

A potential future workshop could be improved by:

- Breaking up the step from the present to the new framework into smaller steps. For example, by spreading out the workshop over several meetings.
- Articulating a central question of co-design instead of two separate problems (the positioning and the visualization problem).
- More clearly distinguishing ‘architecture’ from ‘portfolio’ or ‘process’.
- Scheduling for 2 hours (or longer) instead of 1 hour.

Conclusion

The proposed ‘value shaping’ framework zooms in on the pre-seed stage, while the venturing architecture integrates this new framework with the other NBX frameworks.

5.5 Third sprint: integration

The final iteration of the renamed framework (now called ‘value shaping’ framework) visualizes the use of insight-driven value shaping (Figure 35) within the overall venturing architecture (Figure 27). The middle line of the value shaping framework signifies the interface between the insight-driven and value shaping perspective of a design-driven venturing strategy. Each arc is divided into an insight-driven and value shaping segment, illustrating the core components of the pre-seed stage. While the lower segments highlight the insight-driven perspective, the upper segments highlight the value shaping perspective (see Figure 35).

Objective of the value shaping framework

The framework allows NBX professionals (designers, engineers, analysts, marketers, strategists, consultants, researchers, etc.) to review, discuss, iterate and assess a pre-seed venture. The framework can be used as a discussion tool by bringing together all essential results and support teams and executives to steer the project, compare it to other pre-seed ventures, and make a go/no-go decision accordingly.

Building on the thematic analysis and co-evolution (Dorst & Cross, 2001), the interplay between an ‘insight-driven’ and ‘value shaping’ perspective (theme II) is one of the driving aspects of the pre-seed stage. For example, purely trend-based new business development will not result in achieving the vision “to be an industry leading venturing arm” (page 28), since merely responding to trends (in particular ‘strong’ trends) does not involve the ‘shaping’ of opportunities that is required to venture towards truly new value for consumers. Therefore, the proposed pre-seed framework extends the current NBX rationale to include a dedicated ‘daring visions’ shaping space, encouraging visions to embrace risk as resulted from the thematic analysis (theme III). A detailed explanation of the new value shaping framework as well as evidence quotes are provided in Appendix A8.

Value shaping framework

Fostering a forward-looking culture

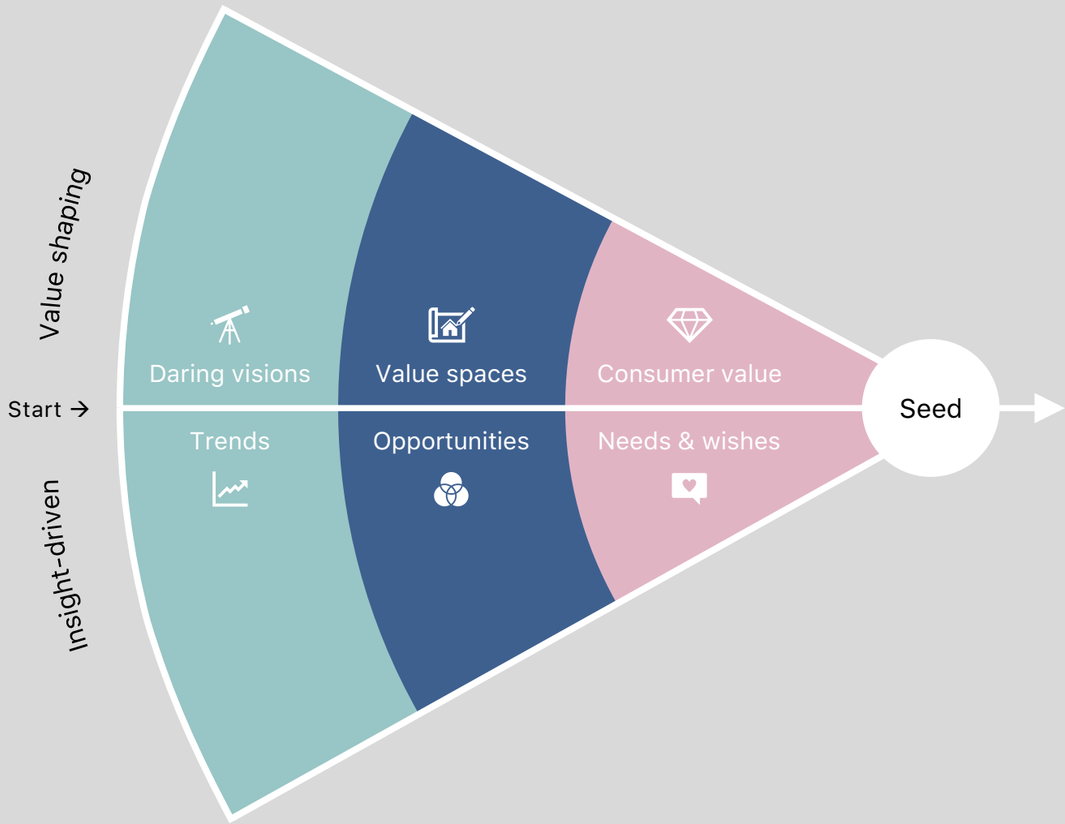


Figure 35. Value shaping framework: exploring and venturing towards future consumer value in pre-seed. Source: Author’s own illustration (2022).

Visualization rationale

The book *Design Roadmapping* provides guidelines for visualization (Nas in Simonse, 2018, p. 220). Although targeted at roadmap visualization, it can be argued that many guidelines also apply to other strategic visualizations, especially considering that new business development often feeds into roadmaps: "what type of benefits, support and roadmap would we need to have in place to make the vision happen."
– Business Category Leader.

The following visualization guidelines were implemented:

Visualization guideline	Implementation
"Use graphic elements and colors in consistent ways."	Colors were harmonized for each arc, and now have a more neutral tone compared to the first iteration.
"Incorporate icons to increase communicability."	Icons were added for each segment to improve clarity.
"Include a positive emotional tone to make your target audience feel interested, happy and upbeat."	Words such as "risk," "constraint," or "threat" were avoided, also in line with the proposed 'daring culture.' Instead, the subtitle "fostering a forward-looking culture" is added, in relation to the mission statement.

Table 8. Implementation of visualization guidelines (Nas in Simonse, 2018, p. 220).

As illustrated in Figure 35, the final value shaping framework includes icons, consistent colors, and a clear start (Table 8). The visualization is also in accordance with the Philips DA corporate brand identity guidelines (internal).

5.6 Using the value shaping framework

The pre-seed stage is a fuzzy process. There is no right or wrong approach or predetermined path, based on my own experience.

Three best practices for populating the framework can be noted:

- Involve all team members in populating the framework in order to capture a wide range of perspectives and knowledge.
- Regularly review the framework, identify gaps, and adjust next steps accordingly.
- Compare and discuss each input in order to arrive at a shared decision.

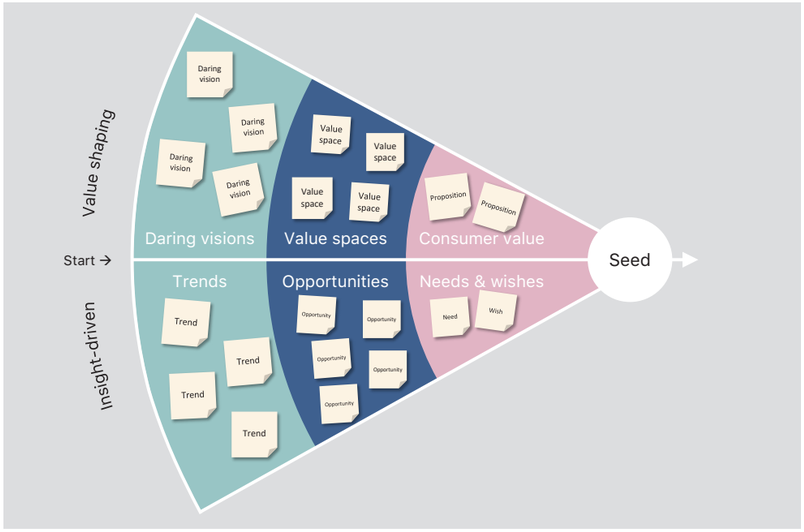


Figure 36. How to use the value shaping framework (subject to future research).

Overview

The new value shaping framework contributes to the overall venturing architecture by clarifying the thematic finding of 'insight-driven value shaping.' Especially the value shaping aspect in design-driven venturing was identified as a key contribution of strategic design and its practice is relatively new to the NBX team. 'Value shaping' is therefore added as a cornerstone of the venturing architecture.

References

- Dorst, K., & Cross, N. (2001). Creativity in the design process: co-evolution of problem–solution. *Design Studies*, *22*(5), 425-437.
- Heller, E. (1948). *Psychologie de la couleur: effets et symboliques*. Paris: Pyramid.
- Kemmis, S., McTaggart, R., & Nixon, R. (2014). *The action research planner: Doing critical participatory action research*. Springer Singapore.
- Koen, P., Ajamian, G., Burkart, R., Clamen, A., Davidson, J., D'Amore, R., & Wagner, K. (2001). Providing clarity and a common language to the "fuzzy front end". *Research-Technology Management, 44*(2), 46-55.
- Lin, M., Hughes, B., Katica, M., Dining-Zuber, C., & Plsek, P. (2011). Service design and change of systems: Human-centered approaches to implementing and spreading service design. *International Journal of Design, 5*(2), 73-86.
- Philips DA. (2022). Purpose. Retrieved July 15, 2022, from https://www.domesticappliances.philips.com/
- Simonse, L. W. L. (2018). *Design Roadmapping: Guidebook for Future Foresight Techniques*. BIS Publishers, Amsterdam.
- Sinek, S. (2009). *Start with why: How great leaders inspire everyone to take action*. Penguin.
- Statista. (2021). *Household Appliances - Worldwide*. Retrieved April 10, 2022, from https://www.statista.com/outlook/cmo/household-appliances/worldwide

06

Discussion & Conclusion

Chapter 6 – Discussion & Conclusion

6.1 Principal findings

The principal findings of this thesis are the emerging notion of 'design-driven venturing', a thematic understanding of this new domain, and its implications for NBX at Philips Domestic Appliances. The design of the new 'value shaping' framework and its integration with the overall venturing architecture implement the theoretical findings in practice.

Research question:

How does strategic design contribute to the venturing architecture of new business development in order to create value for future consumers?

Answer to research question

Strategic design contributes to the venturing architecture of new business development by introducing a 'value shaping' practice and by integrating a 'daring' vision into the architecture, as emerged from the thematic analysis. In particular, the translation of visions and trends into various emerging business opportunities by using an insight-driven and value shaping approach as critical lenses is a key contribution of strategic design to the venturing practice of new business development.

Furthermore, this thesis adopts a design-driven venturing perspective which is relatively new to Philips DA. Design drives a strategic venturing stream towards future consumer value, in which consumer value is not only anticipated, but actively shaped (building on Bühring & Bishop, 2020). Parallels can be drawn with the work of Stanko and Bonner (2013, p. 4), in which projecting future consumer needs is described as "the ability of a product development organization to both understand as well as shape the future needs of customers." Arguably, the findings of this thesis correspond to a similar understanding of strategic design in relation to future consumer value, and provide an enhanced understanding of new business development.

Additionally, this thesis complements this understanding by introducing a practical framework that uses 'insight-driven value shaping' for new business development (Figure 35 on page 135), grounded in a thematic understanding of the contributions of strategic design to new business development (Figure 26 on page 102).

Revisiting the concept of a 'venturing architecture,' defined as "the proposed venturing structure for building the capabilities and processes to venture into new territories of consumer value" (page 129), and considering the outcomes of the co-design workshop (page 128), it became clear that a venturing architecture is not one framework (as imagined at the start of the thesis), but rather an integrated set of frameworks that helps NBX accomplish its vision. Therefore, the positioning of the new value shaping framework (Figure 35) among other frameworks (e.g. Figure 5, Figure 11 and Figure 13) in relation to the vision in essence constitutes the venturing architecture. Figure 37 illustrates the positioning of the new value shaping framework and illustrates the venturing architecture of NBX.

Sub question:

How does strategic design contribute to the mechanisms of idea prioritization?

Answer to sub question

Strategic design contributes to the mechanisms of idea prioritization by reframing the prioritization itself. By looking beyond the prioritization of ideas, and pivoting towards the prioritization of contexts in which ideas are embedded, design can be positioned as a vehicle to explore new value spaces and ignite the creation of future consumer value (see "Design as a vehicle to explore" on page 102).

The value shaping framework (Figure 35) extends idea prioritization to include the interrelation with opportunities, as well higher-level trend research and vision shaping. This new context-prioritization 'mechanism' that positions 'envisioning' as a fundamental strategic design contribution is in accordance with the co-evolving engagement strategy frame-

work as proposed in earlier research (Bouman & Simonse, forthcoming). Additionally, strategic design contributes to the mechanisms of idea prioritization by integrating a “forward-looking culture” into a visual framework that allows the client to better manage the exploration of venture opportunities (so-called ‘pre-seed’ stage, see page 64), ranging from ‘low-hanging fruit’ ventures to ‘moonshot’ ventures with varying levels of ambition. By taking both insight-driven and value shaping perspectives, strategizing which value spaces to venture into becomes both a factual and creative decision. The new value shaping framework (Figure 35 on page 135) provides the key components to navigate this complex environment of idea prioritization.

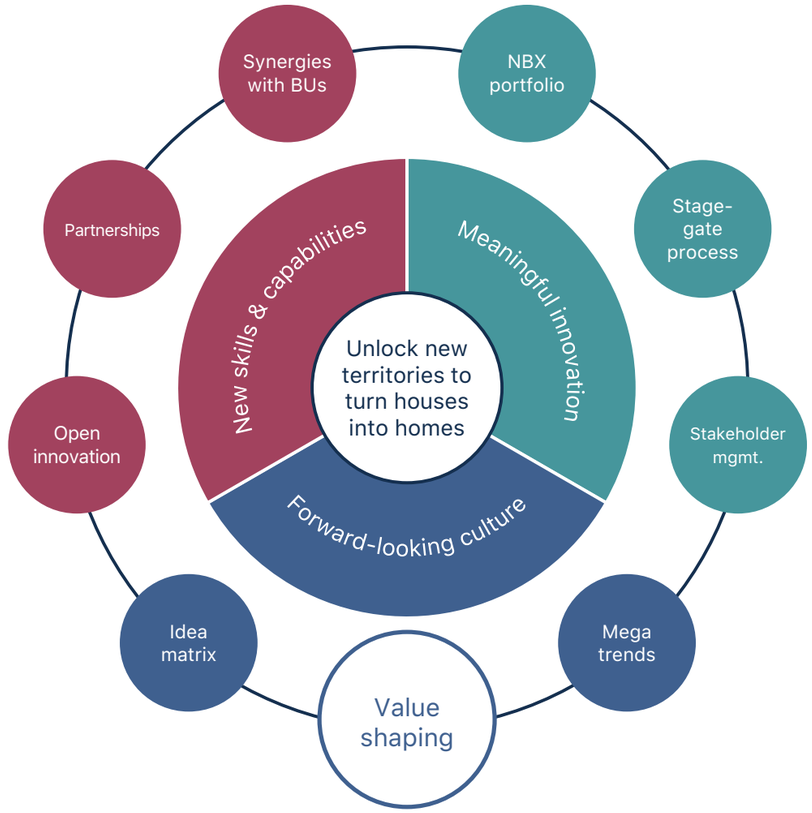


Figure 37. New venturing architecture of NBX at Philips Domestic Appliances. Source: Author’s own illustration (2022).

6.2 Positioning of the NBX frameworks

The venturing architecture (Figure 37) adopts a radial design as strategized in chapter 5 (Figure 31 on page 125), similar to the 'Bell Mason Venture Diagnostic Framework' (1991) and the 'VentureWell Development Framework' (2021). However, the latter frameworks manage individual project growth or progress. Therefore, the purposes of these frameworks differ. Regarding the term 'architecture', Gartner refers to its framework as a 'Digital Innovation Enterprise *Architecture*' (2016), although this architecture focuses on the new business development *process*. In contrast, the architecture as shown in Figure 37 is positioned at a higher level. For better understanding the hierarchy of frameworks, it is helpful to consider APQC's Process Classification Framework (PCF), introduced in 1992 (Figure 38) and adopted by Philips.

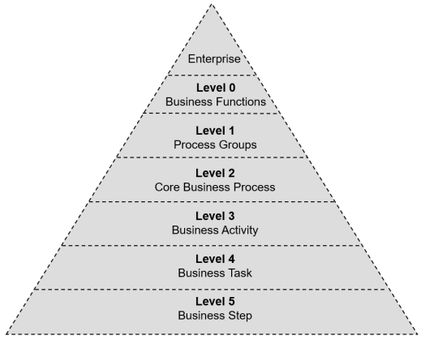


Figure 38. APQC's Process Classification Framework (1992).

The proposed venturing architecture (Figure 37) is positioned at the business functions level (0), orchestrating capabilities and processes such as the current Stage-Gate Process. The architecture is positioned one level below the enterprise strategy, which covers the entire company. The classifications of Figure 38 further imply that the components of the mission statement, i.e. (1) bringing meaningful innovation, (2) fostering a forward-looking culture, and (3) facilitating the development of new skills & capabilities, correspond to process groups (level 1), and that the outer ring of the architecture corresponds to core business processes (level 2). Table 9 summarizes the identified frameworks and their positioning in the venturing architecture.

	Title of framework	Author(s), year	Positioning in venturing architecture	Business level [1]	Page
New NBX frameworks	Venturing architecture of NBX	Introduced in this thesis	=	0-1	145
	Value shaping framework	Introduced in this thesis	Forward-looking culture	2	135
	Mega trends	Introduced in this thesis	Forward-looking culture	2	57
	Open innovation (NBX process view)	Introduced in this thesis (confidential)	New skills & capabilities	2	n/a
Emerging [2]	Digital Innovation Enterprise Architecture	Blosch, Norton & Osmond (2016)	Meaningful innovation	2	70
	Defining Innovation Initiatives	Vetter (2019)	Meaningful innovation	2	70
Existing NBX frameworks	Idea matrix (GE multifactorial)	McKinsey (1971); Coyne (2008)	Forward-looking culture	2	51
	NBX portfolio (funnel dashboard)	Dashboard, no author (confidential)	Meaningful innovation	2	n/a
	Stage-Gate Process	Cooper; Mason & Rohner (1990/2002)	Meaningful innovation	2	46
	Stakeholder management	Map created in this thesis	Meaningful innovation	2	31
	Synergies with BUs (business adjacency)	Nagji & Tuff (2012)	New skills & capabilities	2	26

Table 9. Overview of venturing frameworks and their interrelations.

1. Referring to the APQC's Process Classification Framework (Figure 38)
2. Prominent emerging frameworks from the literature review (Figure 20)

Corporate governance

As shown in Table 9, the venturing architecture of NBX (first row) integrates all frameworks into a consolidated view, connected to the NBX vision through its mission. In addition to the title, author(s) and publication year, Table 9 also positions each framework in relation to the mission of NBX (third column). The fourth column describes the hierarchy of the frameworks. The venturing architecture is positioned as the 'parent' framework (level 0), relating to the entire business function (i.e. NBX), while the three components of the mission (middle circle in Figure 37) constitute process groups (level 1). Therefore, the venturing architecture connects the level 0 and 1 business levels (Figure 38). The frameworks that help achieve the mission correspond to the core business processes (level 2), such as the Stage-Gate Process.

New NBX frameworks

In order to strengthen the venturing architecture, two new frameworks are introduced: the value shaping framework (Figure 35) and the mega trends (Figure 17). Both frameworks contribute to "fostering a forward looking culture" (mission), which relates to "the scouting of business opportunities" as stated in the original design brief (page 26). Additionally, a process map for open innovation was designed (internal use).

Emerging frameworks

NBX has to continuously evolve in order to keep up with the ever-changing landscape of new business development. To this end, frameworks should constantly be renewed and/or replaced. Two prominent emerging frameworks were identified that could potentially replace existing NBX frameworks. The first is the 'Defining Innovation Initiatives' framework by Sebastian Vetter (Figure 20 on page 70), published in 2019. Compared to the existing strategic pillars of NBX (Figure 5 on page 26), it more clearly articulates the difference between novelty for the company (internal focus) versus novelty for the consumer (external focus), which was one of the outcomes of the co-design workshop.

Secondly, the process as proposed by Gartner (Blosch, Norton & Osmond) in 2016 adopts a more iterative approach compared to the current Stage-Gate approach. This approach more closely resembles the 'double diamond' approach (Banathy, 1996), which is familiar to many designers. This process as proposed by Gartner could therefore elevate design to a more strategic level (Micheli, Perks, & Beverland, 2018).

6.3 Implications and recommendations

Emerging area of design-driven venturing

This thesis introduces a subdomain of new business development that could become a new area of design research, building on the concept of 'design-driven innovation' as coined by Verganti (2009). This new area studies the role of design in venturing into new territories of meaningful consumer value. The recently founded *Journal of Business Venturing Design*, which studies "entrepreneurship as a form of design" (Berglund, 2021, p. 1), published its first issue in 2021. This indicates growing scientific interest in and relevance of design-driven venturing as a potential avenue of research.

As venturing by definition involves a risky and uncertain undertaking (Cambridge Dictionary), converging venturing and design practices could contribute to discontinuous business development in order to unlock new spaces of consumer value. Based on the thematic understanding of design-driven venturing (Figure 26 on page 102), the following definition is proposed.

Design-driven venturing (definition):

Design-driven venturing is the subdomain of new business development that seeks discontinuous business growth by positioning design as a vehicle to shape new value spaces and venture towards future consumer value. [1]

1. "Consumer value" is used in a B2C context and "customer value" in other contexts.

Inbound and outbound change

In order to be an industry-leading venturing arm, NBX has to continuously respond to change and evolve accordingly. The distinction between inbound change (how the environment changes Philips DA) and outbound change (how Philips DA can change its environment) clarifies how change affects NBX. Theoretical research and trend findings that focus on inbound change (chapter 2) and original research findings that focus on outbound change (chapter 4) are therefore the foundation of the proposed NBX architecture, value shaping framework and implications related to design-driven venturing.

Inbound change (chapter 2):

- Theoretical research
- Trend research

Outbound change (chapter 4):

- Interview baseline results: current situation
- Inductive analysis: future view

Figure 39 schematizes the distinction between inbound and outbound change and illustrates the positioning of the value shaping framework. The value shaping framework seeks to narrow the identified “gap” and connect the inbound and outbound perspectives.

In relation to the theme ‘insight-driven value shaping’ (II), iteratively taking an inbound and outbound perspective was identified as useful in design-driven venturing. ‘Insight-driven value shaping’ therefore paves the way for unlocking new value spaces for NBX (theme I). In combination with ‘visions that embrace risk’ (theme III), the emerging notion of design-driven venturing takes further shape.

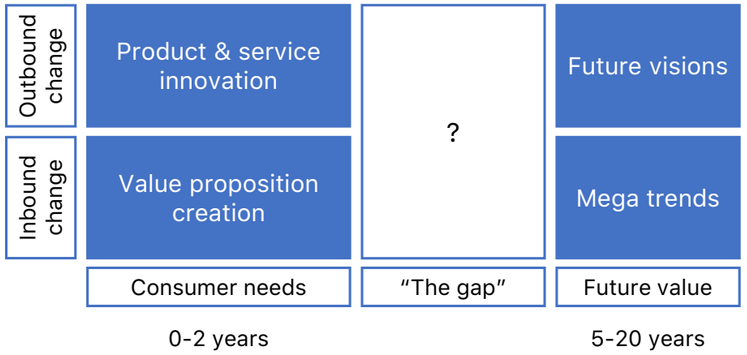


Figure 39. Inbound and outbound change affecting the NBX practice at Philips DA. Source: Author’s own illustration (2022).

Whereas product and service innovation based on future visions have an inherent outbound perspective (how the company creates future consumer value), responding to mega trends and consumer needs, including resulting value proposition creation (VPC), takes an inherent inbound perspective. This thesis suggests that both perspectives are valuable, and that the interplay between the two perspectives is a driver for successful venturing. However, as evidenced through expert inquiry (see the baseline results related to “Design strategy” on page 99), the gap between the long-term (5-20 years) and short-term (0-2) presents a challenge. The value shaping framework aims to help teams address this challenge.

In correspondence with Bühring & Liedtka (2018, p. 136), Figure 39 builds on the framework of ‘systematic futures thinking’ and contextualizes it for the NBX practice. The emphasis is placed on how new business development engages with inbound and outbound change, and how futures thinking informs decision-making for NBX. Combining an inbound and outbound perspective thus helps achieve deeper insight and strategic alignment in order to venture towards future consumer value.

Key insight

Iteratively taking an inbound and outbound perspective plays an important role in design-driven venturing. In the next section, theoretical implications are discussed.

Theoretical implications

Design perspective on entrepreneurship

Dimov (2021) described the design perspective on entrepreneurship as the "interface between the inner system of the entrepreneur and the outer system of the environment" (p. 2), building on Berglund et al. (2020). Furthermore, Dimov argues that the "theory of change" is a cornerstone of entrepreneurship to be studied as a design practice (p. 8). Considering the identified inbound and outbound change as critical lenses for design-driven venturing, this thesis affirms this positioning and supports the forward-looking stance of design within entrepreneurship (Dimov, 2016; 2021).

'Insight opportunity' versus 'value opportunity'

In correspondence with the work by Dimov (2021, p. 2) that draws a distinction between opportunity as "the content of entrepreneurial intention" and opportunity as "external conditions for entrepreneurial success," this thesis confirms the need to distinguish two types of 'opportunity' and proposes the 'insight opportunity' and 'value opportunity'. Whereas the insight opportunity describes change (e.g. change in market dynamics, consumer needs, technology), the value opportunity describes the potential for a company to respond to the insight opportunity and shape future consumer value. Consequently, not all insight opportunities will lead to new business ventures, as it is the interplay between the insight-driven and the value shaping that constitutes a value opportunity. In relation to the value shaping framework (Figure 35), this distinction helps to relate the insight-driven perspective and the value shaping perspective in order to build towards a potential value opportunity, i.e. an opportunity worth 'seeding'.

Co-evolution

Similar to the notion of co-evolution, visions and trends as well as value spaces and opportunities cross-fertilize through insight-driven value shaping. This cross-fertilization has been identified as a fundamental design ability in the early stages of the design process (Dorst & Cross, 2001). This thesis suggests to extend co-evolution to the field of venturing, since the interplay between the insight-driven and value shaping perspective has been identified as a critical capability of design-driven venturing in order to steer towards truly new value for future consumers.

Fuzzy front end

In relation to the 'Fuzzy Front End' (FFE) stage, originally coined by Smith & Reinertsen (1991), the value shaping framework addresses all key components of this stage (Koen et al., 2001). Considering that co-evolution has been linked to the fuzzy front end (Sanders, 2005; Smulders et al., 2007), the value shaping framework provides guidance to the fuzzy front end in a venturing context.

Furthermore, while Koen et al. (2001) suggest idea genesis and opportunity identification as primary means of input, the framework extends this by including trends and daring visions. As a result, the value shaping framework integrates a 'design foresight' perspective into the venturing practice (Bühring, & Bishop, 2020).

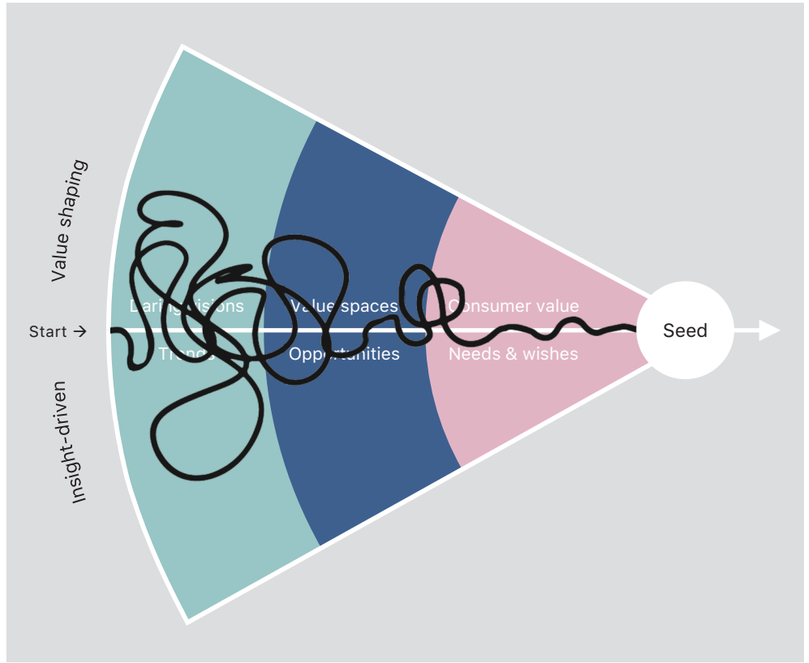


Figure 40. Pre-seed venturing can be a fuzzy process (building on Smith & Reinertsen, 1991). Source: Author's own illustration (2022).

Managerial implications for NBX at Philips DA

Not all new ventures have to become so-called "moonshot" ventures with high ambition, based on daring visions or (mega) trends. Some ventures can also respond to market pressure today. Such "low-hanging fruit" ventures address unmet needs using a quicker 'go-to-market' approach. The combination of "low-hanging fruit" ventures and "moonshot" ventures helps to achieve a balanced risk profile.

The existing idea matrix (Figure 13 on page 51) can be a side stream in the value shaping framework for a quicker 'go-to-market', based on ideas that emerge from the current market landscape. Similarly, market analysis (MA&F) could highlight opportunities in the market, such as fast-growing product categories. The addition of these additional streams of input thus contributes to a balanced risk profile. Further implications for NBX can be found in Appendix A9 and Appendix A10.

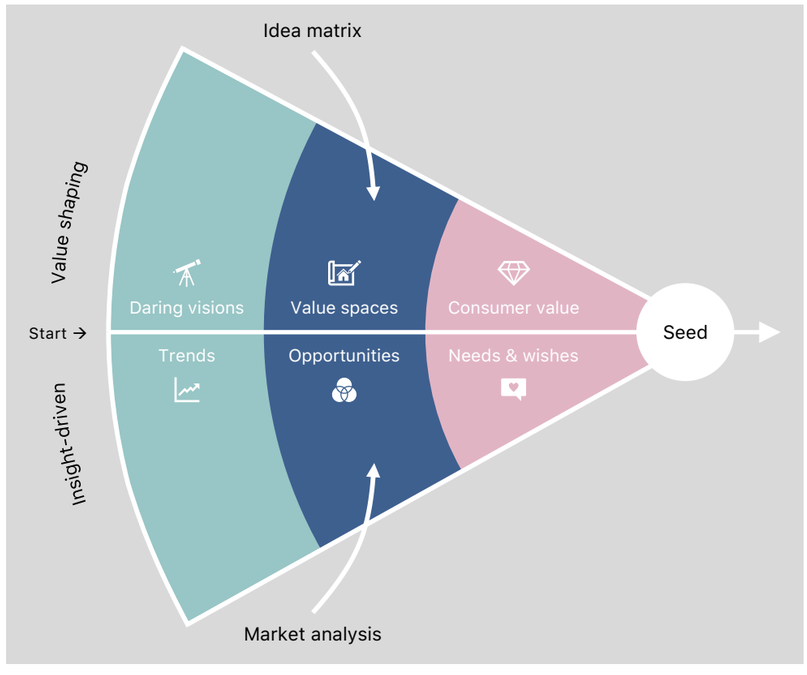


Figure 41. The idea matrix and market analysis are additional streams of input in the value shaping framework, contributing to ventures with varying levels of ambition and risk. Source: Author's own illustration (2022).

Recommendations for NBX

In order to strengthen both insight-driven and value shaping venturing perspectives (Figure 41), acquiring additional expertise to enhance the value shaping practice could be beneficial for the NBX team. Currently, the NBX team has strong insight-driven capabilities, also due to its adjacency to the Market Analysis & Forecasting (MA&F) team and the comprehensive available expertise in business administration. Additional emphasis on 'value shaping', for example by implementing (more) design sprints, could enhance the venturing practice at NBX.

Practically, trainings could address the use of (digital) prototyping, to not only validate, but also explore new business opportunities. This would contribute to additional tangibility of the proposed 'value shaping' practice. Furthermore, talent could be attracted that brings additional 'value shaping' expertise, by hiring people with a design, entrepreneurship, engineering, marketing, and/or creative background.

NBX at Philips Domestic Appliances is in many ways already very successful, considering the recently launched alpha venture (Project Cocoon, confidential) and other promising ventures in the pipeline. As for any venturing team, new business development requires continuous adaptation of ways of working in order to be an industry-leading venturing arm. NBX does this well, and the new venturing architecture could further increase the success of NBX.

Final remark

Although the proposed venturing architecture (Figure 37), value shaping framework (Figure 41), and resulting managerial implications address the situation at Philips Domestic Appliances, I expect that similar implications also apply for venturing practices at other companies or industries (to be validated). The next paragraph discusses limitations of this thesis as well as directions for future research.

6.4 Limitations & future research

The presented concept of ‘design-driven venturing’ represents an emerging perspective on new business development. This thesis therefore provides an initial understanding of what could become a new area of research within strategic design and/or innovation literature. However, the relation with other streams of literature, such as Lean Startup, Innovation Strategy, and Design Roadmapping, requires further investigation. Design-driven venturing as a venturing rationale should not be considered in isolation, but also compared to other emerging theory within corporate venturing.

The limitations of this thesis are associated with the qualitative and inductive research design. Therefore, the findings should be considered in the context of this exploratory method. For further development of the concept of design-driven venturing, a larger sample size is required to quantify the effects of strategic design on venturing in order to create value for future consumers. A larger sample could include ventures across different companies or industries, as well as a larger number of ventures to be studied in general. Additional case studies are necessary to confidently generalize findings across industries and create a consolidated framework for design-driven venturing. Furthermore, although the need for design-driven venturing has been identified at Philips Domestic Appliances, the need for other companies or industries is subject to additional research.

With regard to the research question, aiming for future consumer value has been incorporated in the expert inquiry as well as the co-design workshop. The distinction between novelty for the company versus novelty for the consumer (see page 121) clarifies the implications of future consumer value for new business development. However, these findings are based on an indirect involvement of consumers, since consumers were not included in the research design. Nonetheless, consumers have been interviewed extensively for one of the ventures (Project Paw), but these findings are subject to confidentiality. Therefore, future research could consider ways to directly integrate the perspectives of consumers (end users) as a means to study co-design practices for ventures and its implications for design-driven venturing.

The Volatile, Uncertain, Complex, and Ambiguous (VUCA) environment of NBX created an interesting but also challenging context for writing a thesis. Future research should consider a more detached perspective with respect to the research subject (unit of observation). Although the internship projects and thesis research provided interesting cross-fertilization, this combination also made it difficult to remain fully unbiased (i.e. being involved daily can cause blind spots).

The client company had provided the brief for this thesis before the start. This brief was created with the specific needs of NBX in mind. Since the graduation brief focused on the venturing architecture of new business development in order to create value for future consumers, other aspects of successful venturing in relation to design could also be explored in future research, such as the various design tools and artefacts that are not discussed in this thesis. For example, ‘jobs to be done,’ personas, prototyping and more. Furthermore, the NBX vision, “to be an industry-leading venturing arm that unlocks new territories to help our consumers turn houses into homes”, introduced both necessary direction as well as limitations for this thesis. The vision was defined together with the company mentors at the start of the graduation project.

Considering that most ventures are multi-year endeavors, a longitudinal study could provide additional insights into the (lack of) benefits of design-driven venturing in the long term. Additionally, the feasibility of a new approach as well as readiness to adopt a new approach within a large organization remains partially unknown. Change management is most likely required to implement a new way of working. Further testing of the architecture could contribute to its validity in practice. For example, applying the architecture in other organizational contexts could shed light on cross-organizational validity and clarity.

In conclusions, the following future research directions can be noted:

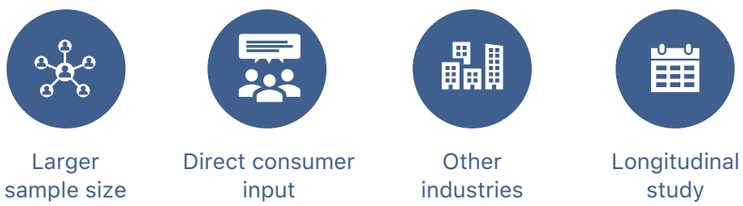


Figure 42. Future research directions.

6.5 Conclusion

This thesis contributed to the venturing architecture of New Business Development at Philips Domestic Appliances by adopting a design-driven venturing perspective based on three new themes: *using design to unlock new value spaces*, *insight-driven value shaping*, and *visions that embrace risk*. By means of grounded theory, an extensive literature review provided rigor to these research findings, which originated from eight expert interviews. Further evaluation of the themes revealed new design implications for new business development.

Based on a six-month embedding, eight in-depth interviews, and three design sprints, a new co-designed 'value shaping' framework is introduced and integrated in a newly designed venturing architecture. The value shaping framework addresses the client's brief and leverages the original research outcomes. The proposed framework facilitates a design-driven and forward-looking approach in the earliest stages of new business development (i.e. 'pre-seed'). The data suggest that strategic design contributes to new business development throughout the practice of venturing into new territories of consumer value, since visions, value spaces and consumer value co-evolve with trends, opportunities, and needs & wishes.

In order to reflect the newly established vision of the New Business Creation & Scaling (NBX) team and integrate the value shaping framework, a new venturing architecture is introduced, connecting the vision to the NBX practice. This architecture allows NBX to continuously adapt its practice and re-align capabilities and processes to cater to the changing context of new business development, both inbound and outbound. In discussing the interrelation between the NBX frameworks, it became clear that positioning the venturing architecture as an integrated set of frameworks helps NBX accomplish its vision.

The emerging notion of design-driven venturing represents an initial attempt to understand the role of strategic design in venturing towards future consumer value and I look forward to further research on the topic.

6.6 Personal reflection

For reflecting on my learnings I first zoom in on the graduation project and then gradually zoom out to five years of studying. At the start of this graduation project, I identified four personal learning objectives.

1. Personal skills: convincing and inspiring colleagues by demonstrating the importance of design and implementing strategic design in the team process.

Regarding the first objective, I think I have managed to demonstrate the importance of design in NBX and of using design as a strategy. My research findings, which suggest elevating design to a strategic level, were received with interest by the NBX stakeholders as well as within the strategy team. The proposed NBX architecture clearly implements strategic design into NBX (see Figure 37). My work could have been more inspiring by further integrating examples based on currently running NBX projects. I will keep practicing using storytelling to make insights resonate better with all kinds of stakeholders, not only designers (Appendix A4 shows examples). The design recommendations in Figure 50 on page 202 offer suggestions for embedding strategic design into NBX based on the baseline results (Figure 24 on page 96).

2. Building personal relationships with colleagues at different levels within the organization.

The second objective was aimed at improving my interpersonal skills and I think I have made the most progress here. Engaging with a wide range of stakeholders, ranging from the Executive Leadership Team to foreign suppliers, helped me build relationships with colleagues. For example, I have presented our findings on multiple occasions to the Chief Business Strategy & Innovation Officer, and I also regularly reached out to other teams independently to ask for input. This required a bit of practice in order to find a balance between explaining why I needed someone's support and being clear in setting expectations.

Figure 43: The Rock interior © Tetris

Next to formal interactions with colleagues, I was involved in a lot of informal activities, such as drinks, dinners, sailing the Amsterdam canals, and more fun activities with fellow interns and colleagues. These activities have made the internship experience not only more fun, but also helped with getting to know people in a more casual way, which helped with reaching out to colleagues for work-related topics as well.

3. Project leadership: taking responsibility for a multi-stakeholder project and aligning different perspectives.

I have learned that project leadership is not only about getting the right results with the help of all stakeholders, but also about obtaining their trust in my ability to make the project a success. This ties in with the second objective. Social confidence results in professional confidence as well. In this regard, I can still improve my presentation skills. How I present to others is sometimes a bit plain, going straight to the findings or critical topics. However, sometimes it is necessary to first set the scene and make sure that the audience is engaged and ready to accept the actions that you propose. To this end, it helps to zoom out and provide transparency about the (NBX) process and how decisions are made. The mission and vision statements (page 26 and page 28) as well as the dashboard (confidential) helped with getting stakeholders in agreement.

Having people move towards a shared vision takes a lot of practice. One practical method I have learned is to keep communicating the goals of NBX to stakeholders and be enthusiastic about our work. This way, people are more open to work collaboratively.

During the graduation internship, I have led the conversation in a large number of meetings, first with some help from my mentors, and later also without their help or without them being present at all. I think this demonstrates that they were comfortable with letting me handle topics independently. Also, I was more confident making decisions autonomously and explaining the decisions afterwards. This not only accelerated some activities, but also created a sense of professionalism to drive decisions while liaising with stakeholders. Figure 6 on page 31

illustrates different stakeholders of the NBX team. In order to further improve managing stakeholders, I could practice steering large meetings and proposing the best courses of action for future NBX projects (high-level decision-making). This requires a solid acumen of the overall NBX landscape. More exposure to different NBX projects would help with developing this ability.

In conclusion, proactive stakeholder management is crucial for the responsibilities related to new business development since one has to continuously align all stakeholders and keep renewing the ‘mandate’ to venture into new business territory. I have taken noticeable steps forward and I will continue improving my stakeholder management skills.

4. Learning how to apply data analytics in a new product development context by using different bottom-up analysis methods.

The last objective was set in order to develop skills that are relatively new to me, such as data analytics in a new product development context. For this I carried out a market sizing project through a bottom-up approach (from the consumer to the overall market) and a top-down approach (from the overall market to the consumer). This has helped the team with building a business case for Project Paw, by better understanding the market size (confidential). Furthermore, rigorous ‘data scraping’ to retrieve sales data from Amazon.com helped with better understanding the competitive landscape (confidential) and primary competing offerings. This method has taught me the power as well as the limitations of a quantitative approach in new business development and how to best apply market sizing and data scraping.

From a practical point of view, I have learned new Excel skills while carrying out the data analytics. However, the most challenging part was to make sense of the data and translate the insights into actions. For example, based on the data scraping, we were able to narrow down our scope for Project Paw, and triangulate some of our qualitative consumer insights. Next to my own contribution to finding quantitative insights for Project Paw, we also worked with an agency to gather quantitative insights, for which I had learned how to write a brief (confidential).

General learning objectives

With respect to the general learning objectives, I have made the following progress:

1. Understanding how new business development takes place at Philips Domestic Appliances.

A process view was designed that illustrates an initial analysis of the current NBX way of working and how different stakeholders interact (confidential). Additionally, one of the assignments during the graduation internship was to design and launch a website to share how NBX works. This site aims to establish 'thought leadership' on new business development and become the starting point for future collaborations. Understanding a topic can be difficult, but explaining it is even more difficult. Designing the NBX website ensured that I had a good command of the NBX way of working and our strategic objectives.

Furthermore, working full-time on NBX projects also complemented my practical understanding of NBX as well as Philips Domestic Appliances in general. However, every new business development project is by definition different, and I think you should not necessarily relate what you know from prior projects to new projects, since it can limit creativity. Therefore, I think that experience helps with mastering the process of new business development, but experience does not necessarily contribute to 'outside the box' thinking and envisioning new value spaces.

2. Gaining insight into future career possibilities and professional preferences.

This graduation internship, as well as my internships at Boeing (fall 2019) and Royal Philips (fall 2021), have brought me work experience that is beyond helpful in choosing the right career path. I think that my decision to start my career in innovation and/or new business development has been reinforced. For me, the dynamic environment of new business development is enjoyable to work in, because it offers the opportunity to lead projects and show initiative, perhaps more than what

would normally be possible in execution-driven projects. Furthermore, the NBX opportunities foster creative thinking, business-logic and calculated risk-taking, which are elements that I enjoy and I could see myself grow in as well. As a design student who has always been interested in entrepreneurship and business development, Internal Corporate Venturing (ICV) could thus be the right fit for me.

Additionally, I think that more practice with processing new information quickly and conveying my thoughts more effectively will contribute to my career. I see that some colleagues are quite successful at this, and this helps them tremendously in their work. The ability to distill critical information and use (business) logic to decide and communicate the right courses of action is at the heart of succeeding in fast-paced environments such as new business development. I believe that this is something that you can only learn on the job.

How this graduation became a success

For a period of half a year, I have been very fortunate to experience not one but two interwoven learning journeys: a graduation project and an internship, which I was able to merge into one graduation internship. For me this was a unique opportunity to combine theoretical and practical skills and manage a complex multi-stakeholder project. The journey started at Royal Philips, where I conducted a case study and reported my findings in an academic paper thanks to the support of my coach who later became my graduation chair. Based on this research, my interests gradually moved towards innovation strategy and new product development.

One day after applying for an internship that offered exactly this (Strategy & Innovations), one of my later company mentors reached out to me for scheduling an interview. After two successful interview rounds, it was a match! The only concern was the workload. Would it be possible to combine a full time internship with a full time graduation project? Thanks to the diplomatic skills of my chair we were able to write a compelling proposal. But the hiring manager was not convinced yet that I would be able to combine the workloads (and perhaps rightfully so). After two alignment calls we decided to go for it. It was the beginning of a very enjoyable, valuable, but also very intense period. Working 60+ hours a week in order to combine all responsibilities became the norm.

The match with the rest of the strategy team was really good. I was able to gain trust and confidence from the rest of the team and I enjoyed working together with all colleagues. A few of the highlights were the presentations we gave to the Executive Leadership Team, as well as all the social events (bouldering, lunches and dinners, off-site, and more). Next to that, my company mentors showed interest in my personal growth and gave advice on career choices.

Another important highlight is the vibrant intern community I was part of. We organized a lot of fun activities such as boat trips (2x), drinks, diners, and some parties. Overall, I think this was not only a lot of fun, but also helped to build a network of people that I can trust and reach out to for advice and potential career opportunities.

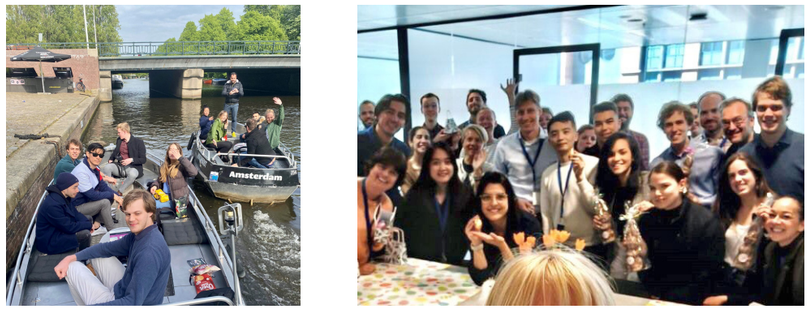


Figure 44. Impression of the after work activities with colleagues and interns.

Five years of studying: a retrospective

Zooming out on my study period which started in September 2017, I realized that I have changed significantly. As a student at Eindhoven University of Technology I learned the basics of Product Design, Interaction Design, Business Design, and many more areas of design. My bachelor thesis was titled “Designing Phased Transitioning of Control in Highly Automated Vehicles” and introduced me to the field of Human-Machine Interaction. This was a logical continuation of my UX-focused internship at Boeing (in Frankfurt am Main). Furthermore, I tutored in the course ‘Data Analytics for Engineers’ which helped me improve my coding and statistics knowledge. In the meantime, I also launched and failed with three businesses, which has taught me a lot, but mostly that I have to take more time to become really good at and specialized in one specific skill and turn that into a successful business.

After deliberately switching to Delft University of Technology for the Master ‘Strategic Product Design’, I quickly joined the communications team of the faculty to earn some money. Only afterwards I realized that it was also a valuable 1.5-year work experience that helped me not only improve my technical skills (building websites, graphic design, communication design), but also my communication skills. In the meantime, I also worked as a student coach for Erasmus University, where I coached students in the course ‘Management of Technology’.

Soon after I joined Royal Philips as an intern in the Marketing Transformation department (Group Marketing & E-Commerce). This experience has taught me more about how companies work and the dynamics of a more senior team (compared to Boeing). During this internship, I interviewed many colleagues about marketing engagement and strategic design within Royal Philips. These insights have resulted in a paper with the help of my internship mentor from the TU Delft (see Appendix A5 for the abstract). The process of finalizing and submitting the paper has provided an interesting and insightful glance into the academic world. In March 2022, I joined Philips Domestic Appliances as a graduation intern (start with the first chapter of this thesis to read more about that).

Looking back at these five years, I don’t feel that I have made any ‘big’ mistakes or regret anything in particular. Overall, I could have been less stressed and more confident in my ability to learn and grow. This would

have helped me to enjoy my learning experience more. Passion is the strongest driver for me to grow and make an impact, so I should always remain focused on where my passion lies, as it is constantly evolving. With these words I would like to conclude this reflection and the thesis in general. A big thank you to everyone who has contributed to my growth!

Special thanks

In alphabetic order

Carolijn
Floris
Ilya
My chair and mentor
The interns
The interviewees
The strategy team
The workshop participants
Thomas
Wei Jin

> I am happy and grateful for this graduation opportunity and all the support I have received from the team, all while exploring the field I am most interested in. Working with such a talented and fun team has brought me an amazing experience.

Family & Friends

Thank you Caroline, Jan Jaap, Maartje, Robert, Jim, and others for your support.

PHILIPS

Domestic Appliances

References

- APQC. (1992). *Process Frameworks*. Retrieved July 30, 2022, from https://www.apqc.org/process-frameworks
- Banathy, B. H. (1996). *Designing Social Systems in a Changing World*. Springer US. p. XV, 372. ISBN 978-0-306-45251-2.
- Bell, C. G., & Mason, H. B. (1991). A method to diagnose high tech ventures. In *Technology management: The new international language* (pp. 621-624). IEEE.
- Berglund, H., Bousfiha, M., & Mansoori, Y. (2020). Opportunities as artifacts and entrepreneurship as design. *Academy of Management Review, 45*(4), 825-846.
- Berglund, H. (2021). Entrepreneurship as Design and Design Science. *Journal of Business Venturing Design, 1*(1-2), 100012.
- Blosch, M., Osmond, L., & Norton, D. (2016). *Enterprise Architects Combine Design Thinking, Lean Startup and Agile to Drive Digital Innovation*. Gartner. Retrieved July 30, 2022, from https://www.gartner.com/en/documents/3200917
- Bühring, J., & Bishop, P. C. (2020). Foresight and design: new support for strategic decision making. *She Ji: The Journal of Design, Economics, and Innovation*, *6*(3), 408-432.
- Bühring, J., & Liedtka, J. (2018). Embracing systematic futures thinking at the intersection of Strategic Planning, Foresight and Design. *Journal of Innovation Management*, *6*(3), 134-152.
- Cambridge Dictionary (n.d.). Venture (English). *Cambridge Dictionary*. Retrieved July 15, 2022, from: https://dictionary.cambridge.org/dictionary/english/venture
- Cooper, R. G. (1990). Stage-gate systems: a new tool for managing new products. *Business horizons*, *33*(3), 44-54.
- Coyne, K. (2008). Enduring Ideas: the GE-McKinsey nine-box matrix. *McKinsey Quarterly*. September issue.
- Dimov, D. (2016). Toward a design science of entrepreneurship. In *Models of start-up thinking and action: Theoretical, empirical and pedagogical approaches* (Vol. 18, pp. 1-31). Emerald Group Publishing Limited.
- Dimov, D. (2021). From "Opportunity" to Opportunity: The design space for

entrepreneurial action. *Journal of Business Venturing Design, 1*(1-2), 1-10.

- Dorst, K., & Cross, N. (2001). Creativity in the design process: co-evolution of problem–solution. *Design Studies*, *22*(5), 425-437.
- Koen, P., Ajamian, G., Burkart, R., Clamen, A., Davidson, J., D'Amore, R., & Wagner, K. (2001). Providing clarity and a common language to the "fuzzy front end". *Research-Technology Management, 44*(2), 46-55.
- Mason, H., & Rohner, T. (2002). The venture imperative. *Boston: Harvard Business School Press*.
- Micheli, P., Perks, H., & Beverland, M. B. (2018). Elevating design in the organization. *Journal of Product Innovation Management, 35*(4), 629-651.
- Nagji, B., & Tuff, G. (2012). Managing your innovation portfolio. *Harvard Business Review, 90*(5), 66-74.
- Sanders, E. B. N. (2005). Information, inspiration and co-creation. In *Proceedings of the 6th International Conference of the European Academy of Design*. Bremen: University of the Arts.
- Smith, P. G., & Reinertsen, D. G. (1991). Developing Products in Half the Time. *Van Nostrad Reinhold, New York*, 3-6.
- Smulders, F. E., van den Broek, E. L., & van der Voort, M. C. (2007). A socio-interactive framework for the fuzzy front end. In *Proceedings of the 14th International Product Development Management Conference*, *Porto-Portugal, June* (pp. 10-12).
- Stanko, M. A., & Bonner, J. M. (2013). Projective customer competence: Projecting future customer needs that drive innovation performance. *Industrial marketing management, 42*(8), 1255-1265.
- VentureWell. (2021). *Venture development framework*. Venturewell.org. Retrieved July 15, 2022, from https://venturewell.org/venture-development-framework/
- Verganti, R. (2009). *Design-Driven Innovation: Changing the Rules of Competition by Radically Innovating What Things Mean*. Boston: Harvard Business School Press.
- Vetter, S. (2019). *Corporate Innovation: A Framework for Defining Innovation Initiatives*. *Innovate Strategy*. Retrieved July 15, 2022, from https://www.innovate-strategy.com/blogposts/corporate-innovation-a-framework-for-defining-innovation-initiatives

A

Appendices

A1 – Project brief and midterm evaluation

Personal Project Brief - IDE Master Graduation

TU Delft

Design-driven venturing: how strategic design contributes to venturing — project title

Please state the title of your graduation project (above) and the start date and end date (below). Keep the title compact and simple. Do not use abbreviations. The remainder of this document allows you to define and clarify your graduation project.

start date 22 - 03 - 2022 — 31 - 08 - 2022 end date

INTRODUCTION **
Please describe, the context of your project, and address the main stakeholders (interests) within this context in a concise yet complete manner. Who are involved, what do they value and how do they currently operate within the given context? What are the main opportunities and limitations you are currently aware of (cultural- and social norms, resources (time, money,...), technology, ...).

Context:
As described in the mission statement, Philips Domestic Appliances aims to help people turn their houses into homes. By means of meaningful innovation, Philips Domestic Appliances improves the lives of people, helping them to lead healthier and happier lives every day, through sustainable solutions (SDG 11, 12, 13). This graduation project is part of a broader initiative to develop strategic thinking across Philips Domestic Appliances. The scope of this initiative concerns topics covering new business development and venture opportunities. Part of this is researching and profiling emerging innovations and value proposition opportunities in the domestic appliance ecosystem as well as creating business models for new product development and partnership initiatives.

Main stakeholders:
Various stakeholders from different departments within Philips Domestic Appliances (e.g., R&D, Marketing, Strategy & New Business Development, Supply Chain, Businesses) engage in the creation of new product or business initiatives. It is part of this graduation assignment to align the perspectives of different stakeholders, in order to advance the value proposition creation process. Additionally, Philips Domestic Appliances has a responsibility towards its customers, consumers, partners, communities and the environments in which it operates.

Main opportunities:
The newly established Philips Domestic Appliances has a strong growth ambition. How can it maintain its position and develop itself as a crucial player in the domestic appliances ecosystem, as competition is fierce and existing product portfolios are in need of renewal?

My recent research (forthcoming) has demonstrated that strategic design abilities can engage in complex, multi-disciplinary contexts such as new product development through envisioning, modeling and engaging value (figure 1 and figure 2). Therefore, better understanding how strategic design abilities complement the current value proposition creation process is of interest to stakeholders within the company and potentially to the fields of study concerning strategic design and new product development.

space available for images / figures on next page

Personal Project Brief - IDE Master Graduation

TU Delft

introduction (continued): space for images

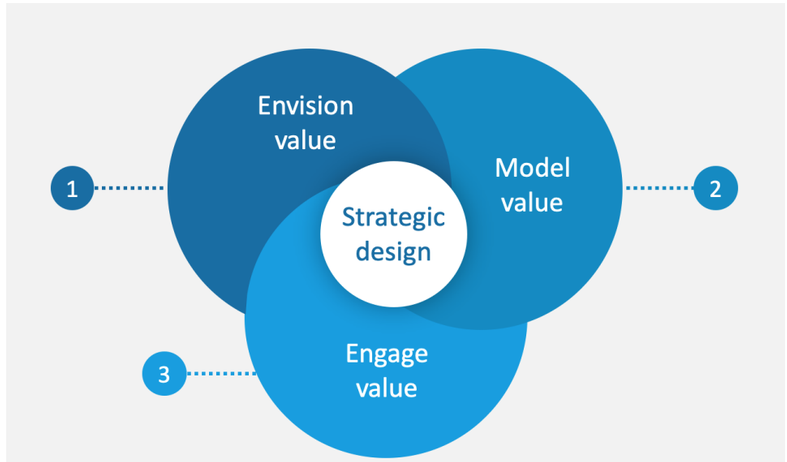


image / figure 1: Theoretical framework that contextualizes strategic design abilities

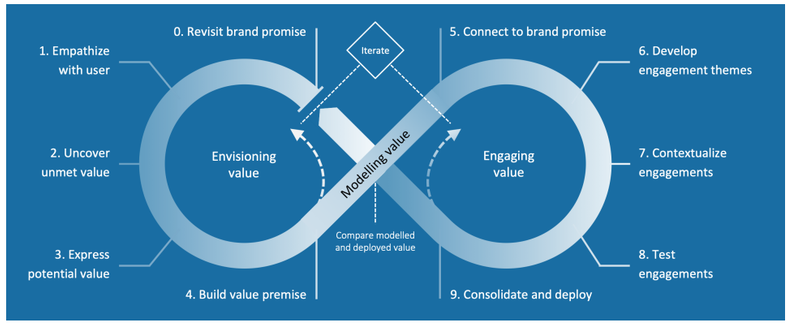


image / figure 2: Theoretical framework of the engagement strategy process loop

TU Delft

Personal Project Brief - IDE Master Graduation

PROBLEM DEFINITION **

Limit and define the scope and solution space of your project to one that is manageable within one Master Graduation Project of 30 EC (= 20 full time weeks or 100 working days) and clearly indicate what issue(s) should be addressed in this project.

Main challenge
In relation to my graduation project, the main challenge Philips Domestic Appliances, in particular the Strategy and New Business Development department faces, concerns its ongoing effort to scout potential value propositions and develop a sound infrastructure to act on new opportunities as scouted through various data inquiries (e.g., open innovation, competitor sales channels, technology forecasts, social media data, user-generated data). As Philips Domestic Appliances has transferred to new ownership as of September '21, making it an independent company with a strong growth ambition, the company seeks to expand its product portfolio in order to create an integrated ecosystem of value propositions. The Strategy and New Business Development department plays an instrumental role in this effort.

Therefore, the challenge for this graduation project is scouting new value proposition opportunities, consolidating new scouting and value proposition strategy, and visually communicating it through a web page, including strategic design methodology, which requires a close collaboration with colleagues. The particular challenge lies in designing and communicating tools that address the needs of all stakeholders within the organization, in order to advance a future-oriented value proposition architecture.

Research question: How does strategic design contribute to creating venturing architecture in order to meet the needs of future customers?

Sub question: How does strategic design contribute to the mechanics of idea selection?

(Architecture: The blueprint / fundamental structure of a system)

ASSIGNMENT **

State in 2 or 3 sentences what you are going to research, design, create and / or generate, that will solve (part of) the issue(s) pointed out in "problem definition". Then illustrate this assignment by indicating what kind of solution you expect and / or aim to deliver, for instance: a product, a product-service combination, a strategy illustrated through product or product-service combination ideas, ... In case of a Specialisation and/or Annotation, make sure the assignment reflects this/these.

During this graduation project I am going to study how design methods engage in selecting ideas and developing value propositions, and design one value proposition in order to bring an idea to the 'seed' stage of new business development.

Supporting challenge
A backlog of ideas is currently stored in Excel. This is not an optimal way of working with the backlog. My aim is to find a better alternative for this, by mapping the needs of the team, comparing alternatives, and ultimately initiating the use of a better tool.

Limitations
Transforming strategy and innovation processes company-wide can take years and it is not realistic that with my limited experience and time I will be able to establish and deploy an integrated new way of working. However, I think it is feasibly to aim for enhancements to the value proposition creation process with an initial try-out by myself and direct colleagues, as well as a north star proposal as to where the team should head in terms of the value proposition creation process from a strategic design perspective.

Initials & Name _____ Student number _____

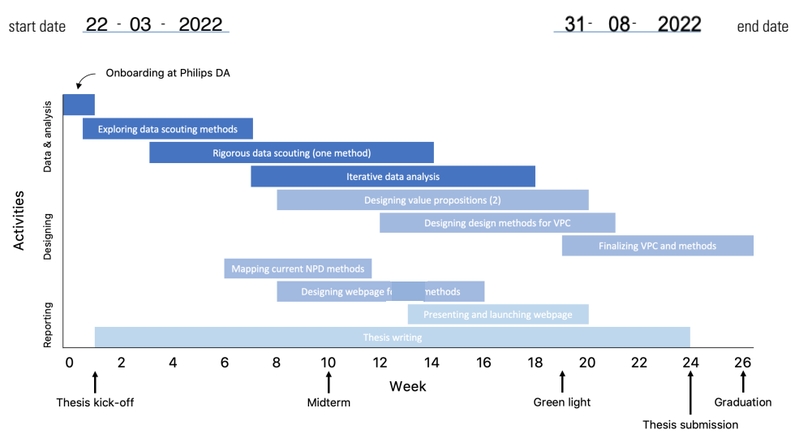
Title of Project _____

TU Delft

Personal Project Brief - IDE Master Graduation

PLANNING AND APPROACH **

Include a Gantt Chart (replace the example below - more examples can be found in Manual 2) that shows the different phases of your project, deliverables you have in mind, meetings, and how you plan to spend your time. Please note that all activities should fit within the given net time of 30 EC = 20 full time weeks or 100 working days, and your planning should include a kick-off meeting, mid-term meeting, green light meeting and graduation ceremony. Illustrate your Gantt Chart by, for instance, explaining your approach, and please indicate periods of part-time activities and/or periods of not spending time on your graduation project, if any, for instance because of holidays or parallel activities.



Key deliverables:

Data analysis – week 18
Webpage – week 20
VPC and methods – week 21
Thesis – week 24

Meetings:

Kick-off – week 1
Midterm – week 10
Green light – week 19
Presentation – week 26

Weekly office days

2-3 days (week 1-26)

Main deliverable: thesis
- New NBX architecture (strategic design perspective)
- Strategy (mission + vision)
- The mechanics for selecting ideas
- Moving one idea from the backlog to 'pre-seed' and to 'seed' (if the idea has potential)

Included in seed stage:
- Visualizations of value propositions (as a means of prototyping)
- Fit with ecosystem (strategic fit)
- Positioning in future customer journey:
  - Key touch points (visualized)
  - Needs or pain point (and how to address them)
- Business case (a Lean Start-up perspective):
  - Market size
  - Revenue model

Initials & Name _____ Student number _____

Title of Project _____

TU Delft

Personal Project Brief - IDE Master Graduation

MOTIVATION AND PERSONAL AMBITIONS
Explain why you set up this project, what competences you want to prove and learn. For example: acquired competences from your MSc programme, the elective semester, extra-curricular activities (etc.) and point out the competences you have yet developed. Optionally, describe which personal learning ambitions you explicitly want to address in this project, on top of the learning objectives of the Graduation Project, such as: in depth knowledge a on specific subject, broadening your competences or experimenting with a specific tool and/or methodology, ... Stick to no more than five ambitions.

Inspired by my previous internship at Philips, I reached out to Philips Domestic Appliances when I noticed an opportunity related to 'strategy and innovations'. I have learned from my previous internship at Philips that I want to continue exploring career possibilities, because there are so many different career paths to take. My first internship at Boeing taught me about front-end innovation processes. At Philips, I was involved in more 'midstream' activities related to marketing engagement. Now I want to close the loop by returning to front-end strategy and innovation, also because I now have a broader and deeper understanding of product development in general and the Philips ways of working in particular. Building on my research project at Philips, which yielded new insights on how strategic design addresses unmet value, my interest has steadily grown towards innovation strategy and new product development. Therefore, I consider this graduation client and assignment the best way for me to put to test what I am able to accomplish professionally and academically in another interesting context. To this end, I am going to commit to the following objectives.

Personal learning objectives:
- Convincing and inspiring colleagues by demonstrating the importance of strategic design and implementing strategic design in the team process.
- Project leadership: taking responsibility for a multi-stakeholder project and aligning different perspectives.
- Building personal relationships with colleagues at different levels within the organization.

General learning objectives:
- See how new business development takes place at Philips Domestic Appliances.
- Gain insight into future career possibilities and personal preferences.

This graduation project involves analyzing (financial) business intelligence data, which is not directly linked to the field of Strategic Product Design. I think this is a good opportunity to develop myself in this area. Having followed courses in New Product Economics (9/10) and quantitative research (10/10) I am confident that will be able to find my way in business intelligence as well.

FINAL COMMENTS
In case your project brief needs final comments, please add any information you think is relevant.

Initials & Name _____ Student number _____

Title of Project _____

Midterm evaluation form

May 23rd, 2022

The Midterm Evaluation Form

Name student	Nijs Bouman
Student number	4667883
Name chair	Dr. ir. Lianne Simonse
Name mentor	Dr. Euiyoung Kim

Interim/In-between results

Short description of realised interim results:
- Chapter 1: Introduction (mostly complete)
- Chapter 2: Theoretical foundation (mostly complete)
- Chapter 3: Method (mostly complete)
  - HREC approval obtained
  - Interview questions (complete)
  - Interview probes (complete)
- Data collection (started)
  - First interviews in week of May 23rd
- Completed company projects:
  - Trends update 2026 strategy refresh
  - NBX workshop with ambassadors (1)
  - NBX update 2026 strategy refresh
  - NBX dashboard design / NPS strategy team
  - Pre-seed of Pet tech (first green light)
  - Swimlane view of process (to be continued with Ilya)
  - Missions and vision project
  - Update of idea backlog (3 updates)
  - Cocoon (to be continued in Alpha stage)
  - SharePoint website about to be launched
  - First explainer video is almost finished

Reaction on description interim results:
<to be filled in by supervisory team>

Well written interim report, looking forward to the results of your interviews and the design of the NBX architecture!
- *You listed a lot of company projects here – make sure you integrate some of this completed work into your report too.*

Reflection[1]
<take the course's learning objectives as starting point when reflecting on the topics below [2]>

Reflection on quality	In the chapters 'introduction' and 'theoretical foundation,' I think I have sufficiently discussed relevant background information in order to move to the data collection stage. By implementing the received feedback, I think the quality of the first chapters will be good. Question: what could be improved in chapter 1 or 2 to step up in quality (i.e., which part would benefit most from improvement or additions)? Chapter 3 'method' required a bit more guidance from supervisors, but I think I managed to prepare well for the upcoming data collection stage.	The quality of work done by now is above satisfactory. Sufficient level of related works in academia and practice has been achieved. You are well prepared for the interviews. *Consider to describe some your project work as part of the NBX architecture analysis @ the company. – f.i. by describing your observations and reflecting on your 'embedded' experiences in an additional analysis chapter/paragraph.*
Reflection on planning	So far, I think that adherence to my planning has been satisfactory, although I believe that I need to adjust time management for 'company-focussed' projects versus thesis (these overlap to some extent). Currently, 70% of time is spent on company-focussed projects. This needs to decrease to <60% and I will bring this up in the next meeting with my company mentors. A potential risk is that the interviews will take longer than expected. Therefore, I plan to finish	*<to be filled in by supervisory team>* Good that you were able to adjust time between the thesis project and practical work for the company in consultation with your company mentors—glad that you can have 1 full day (Friday) off for writing the thesis for instance. *From the about 10 company tasks make a*

[1] A short indication of your thoughts and considerations with regard to the graduation project up till now.
[2] Learning objectives are to be found in the Course Manual, and in the IDE Study guide.

May 23rd, 2022

May 23rd, 2022

	interviews before July 10th, which gives 2.5 months for analysis, design workshops and discussion/conclusion.	*choice to focus on 1-2 max 3. that exemplify the NBX and the new NBX architecture you will design in the next stage.*
Reflection on personal ambitions (if formulated in project brief)	In terms of project leadership (goal 2), I think I have made progress. I am running most projects independently, while keeping in touch with stakeholders. Compared to my previous internship, I take a more central role in the team. One example of this is that I was given the opportunity to present part of a presentation on behalf of our team in a leadership meeting in which the CEO was also present. With regard to 'building personal relationships with colleagues' (goal 3), I think being in the office 3+ days a week really helps. We have regular drinks after work which also helps to build relationships. I could improve by looking beyond direct colleagues and other interns and try to connect with other teams as well.	*<to be filled in by supervisory team>* Well done in presenting your work to CEO! Sounds like you have been embedded in the organization quite well. Collecting the data from the company and getting to know the professionals each other are great (and unique) opportunity for you to learn the real-world case. *Well done indeed!*
Reflection on supervision and/or project context	Company projects are going as expected. However, the workload is high. I should consider discussing this with my company mentors. Working in evenings and weekends occurs more often than not, both on company projects as well as the thesis. As I start collecting more data, I probably need more support from my graduation supervisors compared to the initial phase (introduction/theoretical foundation). I will reach out more frequently.	*<to be filled in by supervisory team>* Feel free to reach out to us as you need. As mentioned earlier, it is important to save a certain amount of time dedicated to the thesis writing, otherwise, you may be easily overwhelmed by all things to follow on your plate. *Good that you had it at the top of the agenda of your mid-term meeting.* *As agreed for the next stage of designing you will focus on the Pet tech project. I was happy to hear that both of your company managers will fully support you in a high achievement result of your graduation project. Well-communicated!* *Now the challenge will be to keep on monitoring your work load and communicate the load boundaries of the time you can spend and when exceeded the need to prioritize your graduation tasks!*
Decision supervisory team concerning progress graduation project at this moment		
X Continue	☐ Adjust	☐ Discontinue
Substantiate the decision: *<to be filled in by supervisory team>* *Continue as proposed!*		
Adjustment of Project Brief: new arrangements		

Proposal new arrangements based on this midterm evaluation:
 	
Although the direction of the thesis has evolved to some extent, I think that this doesn't result in a significant shift from the project brief.
 	
However, from the reflection I see three action points (to be discussed):
• Block more time for thesis work as data collection requires more time.
• Plan 5 more interviews still this month.
• Start identifying the best option for presenting and reporting the (design) results considering confidentiality.
  ○ Current plan is to write as normal and include only direct references to sensitive information in the appendix.
  ○ In case the confidential results represent a fundamental part of the results, the potential need for an embargo should be discussed.	

Final arrangements		

<describe here the agreed on new arrangements, to be filled in during/after meeting> *Continue as agreed upon.*
Signatures (name, date and signature of student, chair, and mentor)
 **Name student: Nijs Bouman** **Date: June 11th, 2022**
 **Name chair: Lianne Simonse** **Date: June 10th, 2022**
 **Name mentor: Euiyoung Kim** **Date: June 3rd, 2022**

A2 – Interview protocol

Semi-structured | Duration: 30-45 minutes

The purpose of this interview is to explore how strategic design contributes to the venturing architecture of NBX in order to create value for future consumer. The interview will last approximately 30-45 minutes. You are not obliged to answer any of the questions during this interview, and you may decide to leave at any point. This interview is audio-recorded and will be anonymized.

The structure (3 parts):

I. Your experience related to (1) new business development, (2) design, (3) venturing and/or (4) innovation methods and practices
II. A view on the current New Business Creation & Scaling (NBX) process and venturing architecture at Philips DA
III. A future perspective: the role of strategic design in NBX and in creating future consumer value

Part I: PAST

1. How many years of experience do you have in your current field?

2. Could you give a brief overview of your work and your expertise related to [1-4: mention topic most related to participant's background]?

3. Could you talk about your experience with strategic design at Philips DA (if any)?

Part II: PRESENT

To better understand complex environments such as NBX, frameworks are used to communicate and facilitate a shared understanding of a process.

4. Could you describe the main framework you use for [1-4: mention topic most related to participant's background]? (Team level)

Examples: Double Diamond, Stage Gate Model, IDEO approach, Lean

Startup, BMG Venture Framework, Sprint Model (Scrum)

5. Are there any frameworks that I have missed and that could be useful for NBX (and why)?

An important part of strategic design is future visioning, which involves identifying trends, including designers early in the process, prototyping, and defining new value propositions.

6. How would you describe DA's current design or innovation capability to envision future consumer value?

Part III: FUTURE

[Shows cards, see page 184]

7. How would you rank these design techniques in usefulness for NBX (and why)?

8. What is your view on venturing in relation to these design techniques?

9. Are there other techniques that could be useful for NBX (and why)?

10. Could you describe how you would improve the current NBX process, by giving an example?

11. What role should strategic design have in the NBX process?

12. What capabilities would help NBX to better meet the needs of future consumer?

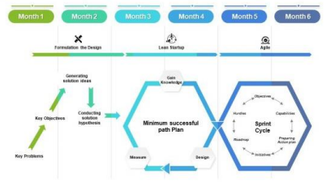
This is the end of the interview, but before we wrap it up, are there any remarks you would like to share?

END

Thank you!

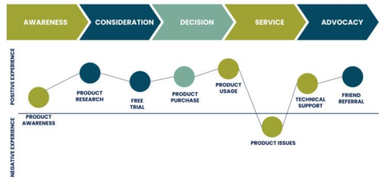
Do you perhaps know other people with whom I could talk as well?

Interview design probes



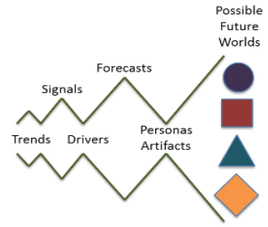
Design roadmapping

Vision concept

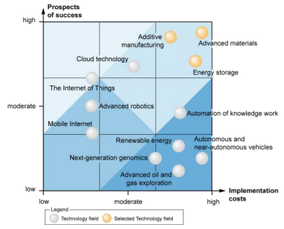


Future journey mapping

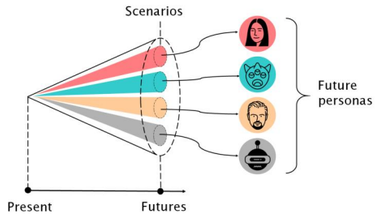
Trend foresight



Future thinking



White spot analysis



Future persona

User scenario

A vision concept visually illustrates aspirations for the future – a 'north star' for an organization. It conveys an idealistic and positive perspective on the future. CGI can add realism to the visualization.

Vision concept

A design roadmap strategically visualizes and maps out the customer value, technology, and business approach over time. Design roadmaps are driven by innovations from the perspective of future customers, instead of relying solely on technology projections.

Design roadmapping

Trend foresight helps to map trends and emerging technologies from a specific point of view. A visualization allows for filtering, linking, and comparison of opportunity spaces from different angles and in relation to different time horizons.

Trend foresight

A future journey map is a visual representation of how customers will engage with an organization in the future. It helps to determine how to alter the customer journey to accommodate new services or experiences and understand what factors affect future value for customers.

Future journey mapping

White spots analyses helps to identify the customer or revenue potential that a company is not yet exploiting, i.e., the unmet customer value. White spots are gaps that a business can fill to scale its revenue through new propositions.

White spot analysis

Futures thinking reveals what could happen as a result of decisions, actions and issues occurring in the present. It includes future scenarios that are likely to happen in order to make the best choices for all stakeholders, and steer towards a 'preferred future.'

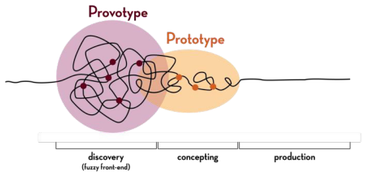
Future thinking

User scenarios are stories which designers create to show how users might act to achieve a goal. Scenarios help to understand users' motivations, needs, barriers and more in the context of how they would use a design, and to help ideate, iterate and usability-test optimal solutions.

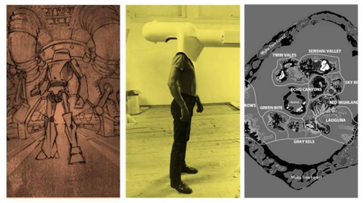
User scenario

Future personas are fictional individuals living in future scenarios. With their cognition and behavior, they embody the scenarios. They are the living essence of the futures and help to empathize with future users.

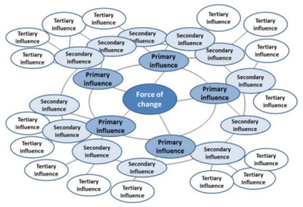
Future persona



Provotypes



Science fiction prototype



Futures wheel

A science fiction prototype is a short story, movie, or comic based on a scientifically grounded present technology that explores the potential future development of that technology and its implications for society.

Science fiction prototype

A provotype is a provocative prototype. It is introduced in the early exploratory phases of the design development process to cause a reaction – to provoke and engage people to imagine possible futures.

Provotype

The futures wheel is a method to structurally visualize direct and indirect future consequences of a particular change, action or development.

Futures wheel

A3 – Human research approval

Informed consent form

Informed consent

Research information
You are invited to participate in a graduation project titled *Design-driven venturing: How a design-driven venturing strategy creates value for future customers.* This project is conducted by student Nijs Bouman from Delft University of Technology under supervision of Dr. Lianne Simonse and Dr. Euiyoung Kim, as part of the MSc programme in Strategic Product Design.

The purpose of this project is to study how strategic design contributes to venturing architecture in order to meet the needs of future customers in the Domestic Appliances industry. Your participation will take approximately 30-45 minutes to complete.

Audio recordings will be used for transcription, analysis, and publication of anonymised quotes in a thesis and related educational and/or research outputs. Your participation involves discussing how to identify and scale new business opportunities, organizational challenges associated with successful venturing, and design methods related to the foregoing.

As with any (online) data collection and processing, the risk of a breach exists. Therefore, your answers in this research will be de-identifying and stored in a secure environment with restricted access.

Your participation in this research is entirely voluntary and **you can withdraw at any time**. You are free to omit any questions.

Student researcher:
Nijs Bouman (n.l.j.bouman@student.tudelft.nl)

Supervision:
Dr. Euiyoung Kim (E.Y.Kim@tudelft.nl)
Dr. Lianne Simonse (L.W.L.Simonse@tudelft.nl)

PLEASE TICK THE APPROPRIATE BOXES	Yes	No
A: GENERAL AGREEMENT – RESEARCH GOALS, PARTICPANT TASKS AND VOLUNTARY PARTICIPATION		
1. I have read and understood the research information. I have been able to ask questions about the research and my questions have been answered to my satisfaction.	☐	☐
2. I consent voluntarily to be a participant in this study and understand that I can refuse to answer questions and I can withdraw from the study at any time, without having to give a reason.	☐	☐
3. I understand that taking part in the study involves: • Recording audio • Transcribing audio as text • Using anonymised quotes in (published) research outputs • Storing audio files digitally	☐	☐
B: POTENTIAL RISKS OF PARTICIPATING (INCLUDING DATA PROTECTION)		

PLEASE TICK THE APPROPRIATE BOXES	Yes	No
4. I understand that taking part in the study also involves collecting specific personally identifiable information (full name) and associated personally identifiable research data (audio recording and transcript) with the potential risk of my identity being revealed.	☐	☐
5. I understand that the following steps will be taken to minimise the threat of a data breach, and protect my identity in the event of such a breach: • Anonymization of data • Secure data storage with limited access (researcher and supervisors only)	☐	☐
6. I understand that the (identifiable) personal data in the form of an audio recording will be destroyed within 6 months.	☐	☐
C: RESEARCH PUBLICATION, DISSEMINATION AND APPLICATION		
7. I understand that after the research the de-identified information I provide could be used in a published thesis, research publication or other educational and/or research outputs.	☐	☐
8. I agree that my responses, views, or other input can be quoted anonymously in research outputs.	☐	☐
D: (LONGTERM) DATA STORAGE, ACCESS, AND REUSE		
9. I give permission for the de-identified transcripts to be archived in the repository of Delft University of Technology so it can be used for future research and learning.	☐	☐
10. I understand that access to this repository is public.	☐	☐

Signature

_____ _____ _____
Name of participant Signature Date

Contact details for further information: Nijs Bouman (n.l.j.bouman@student.tudelft.nl)

HREC approval letter

Date 17-May-2022
Contact person Dr. Cath Cotton, Policy Advisor Academic Integrity
E-mail c.m.cotton@tudelft.nl

TU Delft Delft University of Technology

Human Research Ethics Committee
TU Delft
(http://hrec.tudelft.nl/)

Visiting address
Jaffalaan 5 (building 31)
2628 BX Delft

Postal address
P.O. Box 5015 2600 GA Delft
The Netherlands

Ethics Approval Application: Design-driven venturing: How a design-driven venturing strategy creates value for future customers
Applicant: Bouman, Nijs

Dear Nijs Bouman,

It is a pleasure to inform you that your application mentioned above has been approved.

Please note that this approval is subject to your ensuring that the following conditions are fulfilled: 1) Please use separate Informed Consent forms/participation sheets for the interviews and the workshops. 2) Please ensure that participation doesn't influence employee assessment.

Good luck with your research!

Sincerely,

Dr. Ir. U. Pesch
Chair HREC
Faculty of Technology, Policy and Management

A4 – Stakeholder communication

NBX website design

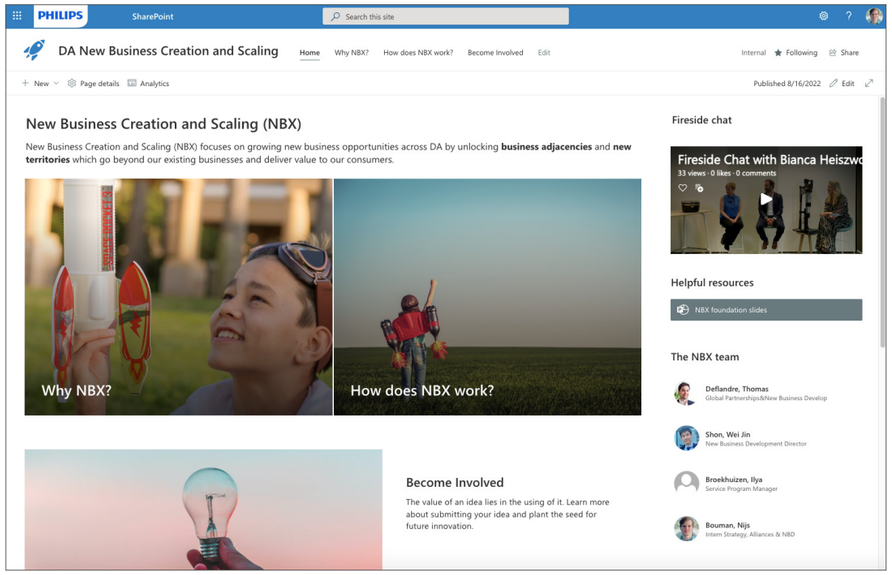


Figure 45. Homepage of the NBX website.

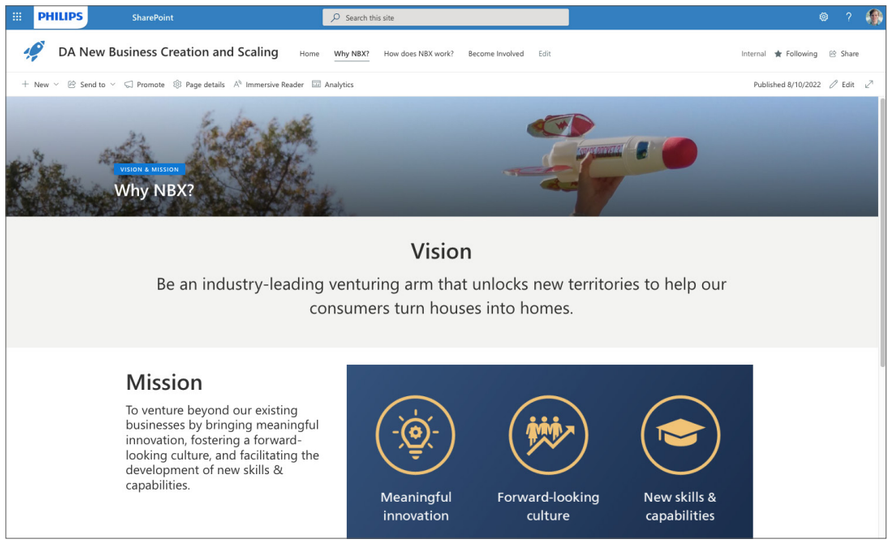


Figure 46. 'Why' page of the NBX website.

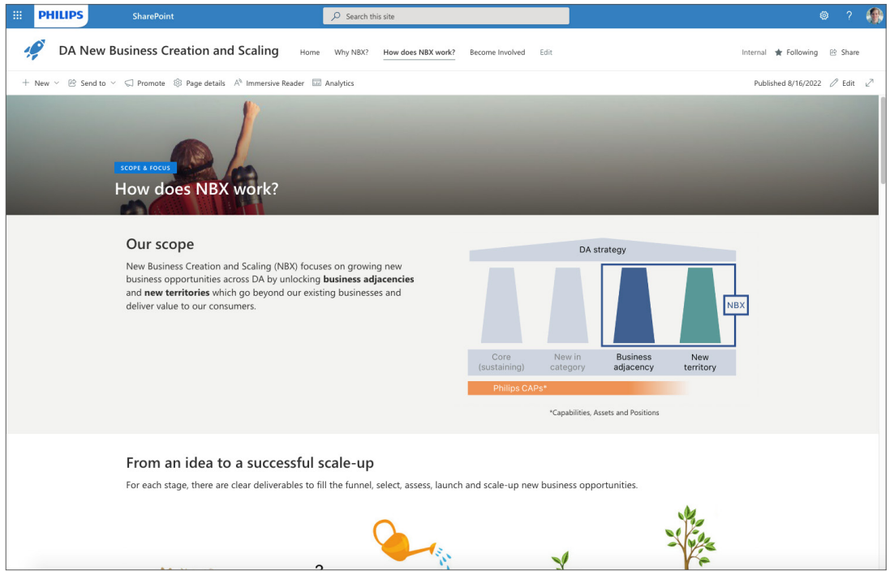


Figure 47. ‘How’ page of the NBX website.

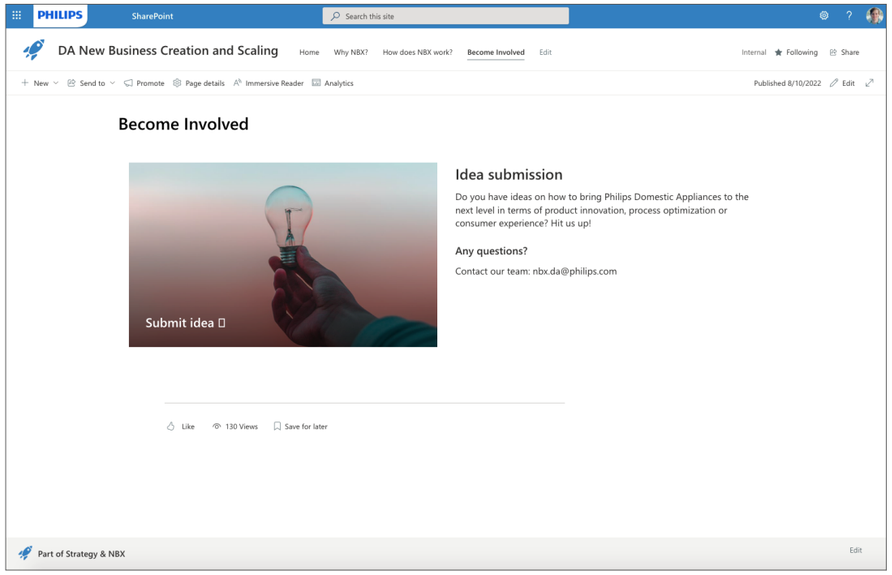


Figure 48. ‘Become involved’ page of the NBX website.

Video script

Mission

New Business Creation and Scaling – or NBX for short – ventures beyond existing businesses by bringing meaningful innovation, fostering a forward-looking culture, and facilitating the development of new skills & capabilities.

Beyond existing businesses

NBX is there to be an industry-leading venturing arm that unlocks new territories to help our consumers turn houses into homes.
As we venture beyond existing businesses, we need to build new capabilities to identify, select, explore, and grow new business opportunities.

Meaningful innovation

Through a staged-gated approach, NBX identifies and prioritizes meaning innovation and the operational capabilities required to develop & grow new businesses. To this end, we define strategic rationale, build business cases, and design minimal viable proposition to ensure speedy time-to-market and initial learnings. To find out more, please consult our other videos.

To accommodate all these processes, we go through five stages – each with a different focus, starting with the ideation stage. Let’s zoom in.

We collect ideas across markets, businesses, and functions, and actively collaborate with business partners and universities to encourage open innovation.

From here, we consolidate and prioritize the most promising ideas, by reviewing the ideas through four lenses: does it fit with DA’s strategic direction, market attract, ability to win and brand? [Venn diagram]

The top ideas go into the pre-seed stage. In this stage, we seek a deep understanding of the core needs of future consumers, and we look at market opportunities. In 3 to 4 weeks’ time, we decide whether the opportunity proceeds to the next stage, or we move on and investigate other opportunities. Both outcomes are equally valuable in helping us pursue the right opportunities, effectively and efficiently.

In the seed stage, our goal is to build the MVP – or minimal viable proposition – and test our proposition with an initial set of consumers. We also define our go-to-market strategy and build the business case to pitch to our investor committee.

If we decide to further invest, the proposition enters the alpha stage, in which we activate the solution development process, build partnerships, and investigate M&A opportunities. Soon after, we launch the product or service to pilot markets and seek confidence in our ability to scale to more markets.

In case we achieve good results in pilot markets, we enter the beta stage for full market activation, in which we scale the venture to a strong standalone business, which will drive future growth and create new ways for our consumers to turn houses into homes.

A5 – Abstract of paper

How strategic design abilities address unmet value in service engagement strategies

Purpose – Engaging with customers and addressing unmet value have become increasingly challenging within multi-stakeholder environments of service innovation. Therefore, this paper addresses this challenge by studying how strategic design abilities address unmet value in service engagement strategies.

Design/methodology/approach – We conducted a qualitative inductive study at a multinational corporation and interviewed marketing and design professionals on their innovation practices of service engagement strategies.

Findings – From the inductive analysis we identified three strategic design abilities which effectively contribute to addressing unmet value throughout the co-evolving process of service engagement strategies: envisioning value, modelling value, and engaging value.

Research limitations/implications – Based on this we propose the emerging framework of the "co-evolving loop of service engagement strategies". The limitation of this emerging theory is a lack of broad generalizability with mutual exclusivity or collective exhaustiveness.

Practical implications – The service engagement loop framework can be of great value to service innovation processes, for which an integrated, cross-functional approach is often missing.

Social implications – Our findings further suggest that next to a methodological skill set, strategic design abilities consist of a nurtured mindset.

Originality/value – This paper introduces strategic design abilities in order to address unmet value and proposes a novel co-evolving loop framework of service engagement strategies.

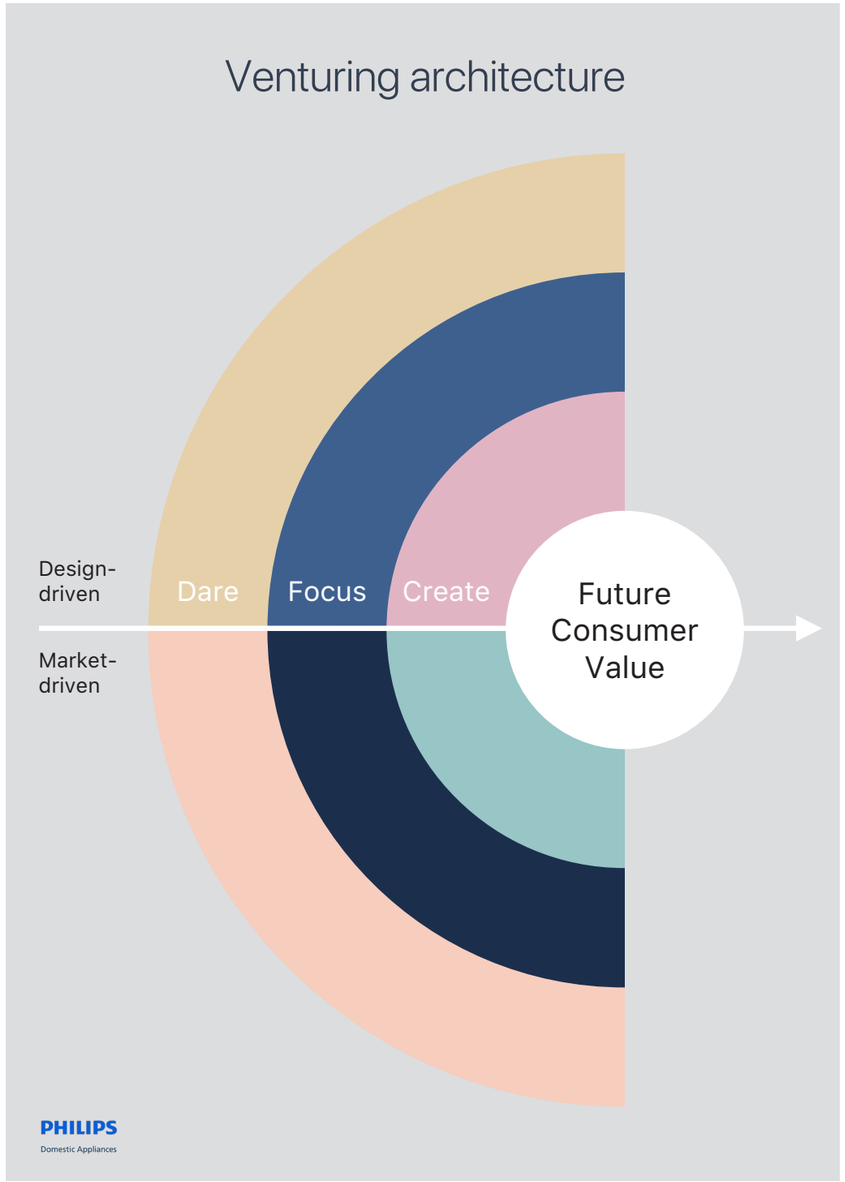
Keywords: Service Innovation, Strategic Design, Engagement Strategies, Unmet Value, Co-evolution, Customer engagement, Conceptual Framework, Qualitative Inductive Research

Article type: Research Paper

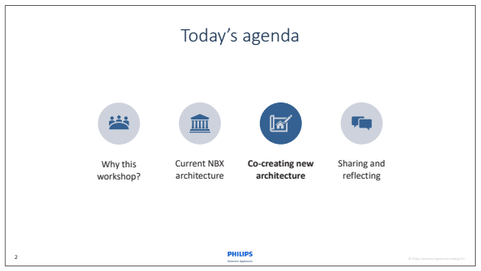
A6 – Preliminary interview clustering

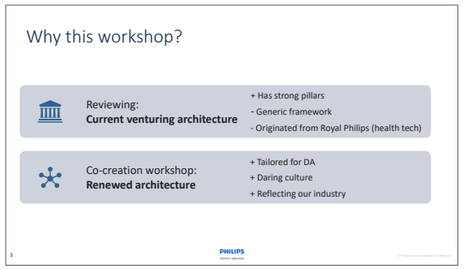
A7 – Workshop materials

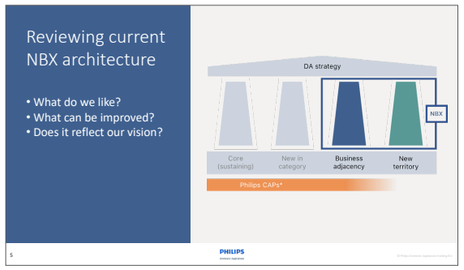
Workshop poster of venturing architecture (v1)

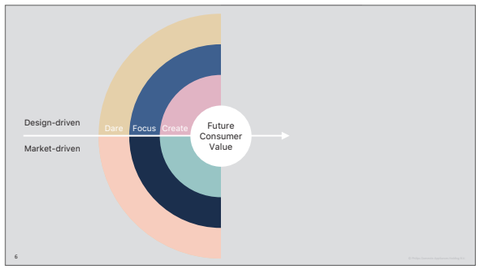


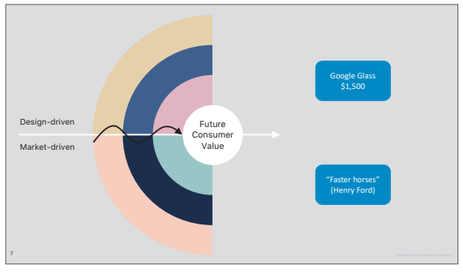
Briefing presentation of the co-design workshop

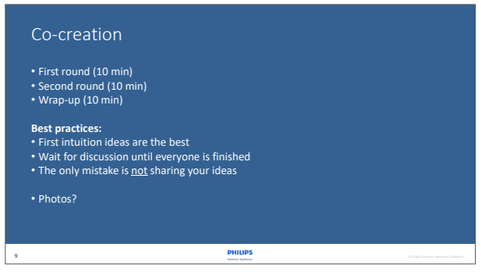












A8 – Value shaping framework: evidence quotes

For each arc, the insight-driven and value shaping perspective is labeled (Figure 49). This terminology is derived from the interviews in order to leverage existing vocabulary. Figure 49 shows the various design choices and related features of the framework, tabulated with corresponding evidence quotes (Table 10).

	Feature	Evidence quote
1	Emphasize value shaping as a driver	"I think that design is to drive the business into a future-oriented direction." – Product Manager
2	Start with visions and trends	"They keep on investing in the things that they see from the past." – Senior Marketing Manager
3	Interplay between insights & value shaping	"There's definitely a tension between what consumer insights tell us and how we can innovate." – Product Marketing Director "A lot of times the intersection points between VPC and co-create were missing." – Design Lead
4	Daring visions to embrace risk	"We need to be bold otherwise we keep on doing the same." – Senior Marketing Manager
5	Base value on visions	"Concepts are sometimes just focusing on market pressure today." – Design Lead
6	Align visions and trends	"It can only work if it's reflecting something which is a real insight or a real macro trend." – Design Lead
7	Align value spaces and opportunities	"One is the consumers, one is the business and one the technology, and to work all together, you must take the different stakeholders into consideration." – Product Manager
8	Base on needs & wishes	"VPC [Value Proposition Creation] is really business-driven as it's about recognizing an insight or a market pressure." – Design Lead

Table 10. Design features and corresponding evidence quotes.

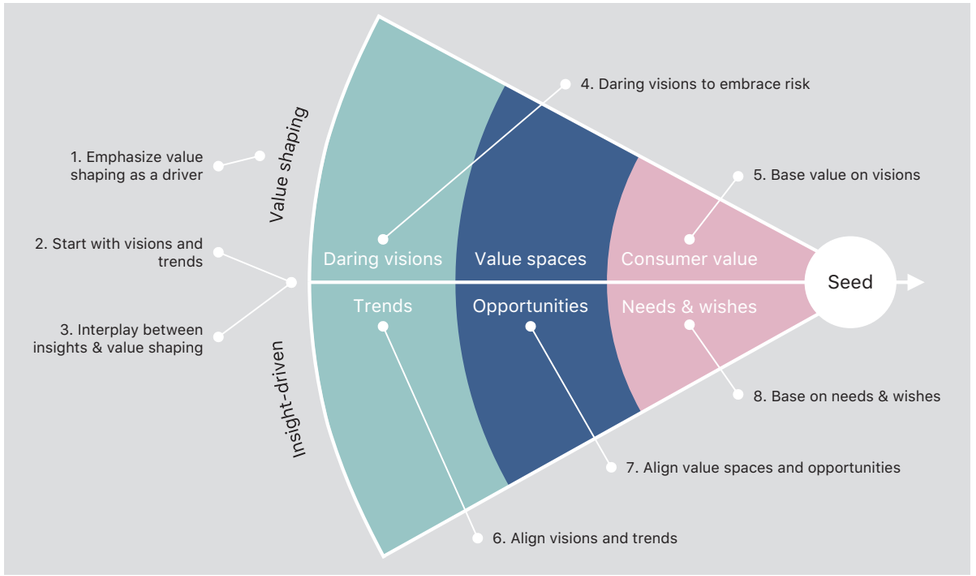


Figure 49. Design choices and related features of the framework. Source: Author's own illustration (2022).

A9 – Additional managerial implications

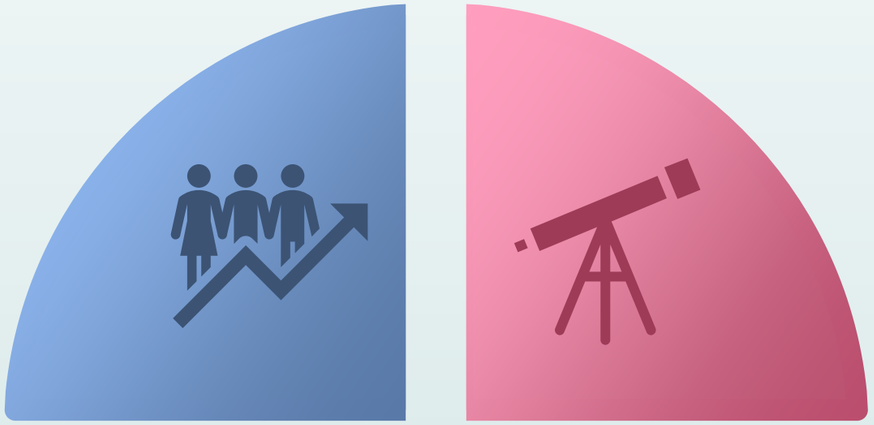
Research findings are highlighted in **bold**

Daring culture

Daring to venture into new spaces will unlock a first-mover advantage. To this end, **visions** should **embrace risk** (III) short-term to ultimately create long-term consumer value.

Consumer value

In order to move beyond market-driven venturing, **insight-driven value shaping** (II) instead of value prop. creation enables NBX to define rather than anticipate consumer value.



Future visioning

Design as a vehicle to explore (a) will accelerate knowledge generation and shape future visions based on value spaces. ‘Quick & dirty’ prototyping and involving users early are instrumental.

Design strategy

The practice of designing can uncover consumer insights that are difficult to capture. Therefore, we can **use design to unlock new value spaces** (I) by empowering consumers to articulate value.

Figure 50. Courses of action for NBX in four clusters based on baseline results.

A10 – Fostering a forward-looking culture

With respect to the mission of "fostering a forward-looking culture," any change to a culture is challenging to implement. Figure 51 provides an argumentative ladder that uncovers the root cause(s) of the current state of the company culture. Since it is out of the scope of this thesis to discuss the entirety of company culture, the cultural implications that focus on NBX are laid out. The analysis uses the well-known 'five whys' method to determine underlying causes. Based on this, a reframing is proposed. Consequently, through 'five hows' different courses of actions are identified.

As a starting point, the provocative statement "DA is not yet pursuing 'new to the world' ventures" is used. Although the ambition to create 'new to the world' products and services is there, it has not yet been materialized into a 'forward-looking culture'.

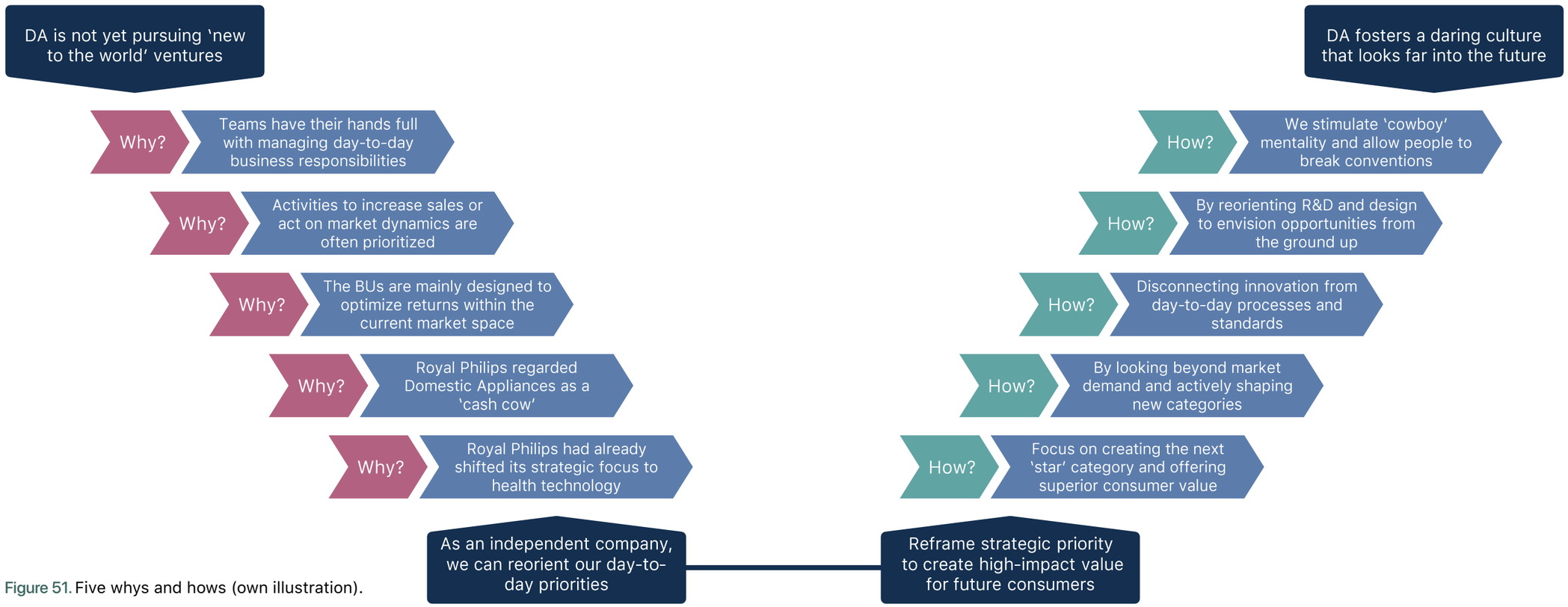


Figure 51. Five whys and hows (own illustration).

The original parent company of the domestic appliances business was identified as (one of) the root cause(s) of the current state of the forward-looking culture. As Royal Philips had already shifted its focus to health technology, the domestic appliances business was more or less a neglected child. Philips DA can reframe its strategic priority and aim for the creation of high-impact future consumer value. Using a 'five hows' approach, different courses of action were identified.

Notably, innovation activities should seek a higher degree of disconnection from the day-to-day operations, and R&D and design should be repositioned to focus on supporting NBX. Lastly, the company (i.e. ELT) should stimulate 'cowboy' behavior and allow teams to bend the rules when necessary. This will foster a daring culture in which people don't follow the standards, but invent their own (when appropriate).


TU Delft


PHILIPS
Domestic Appliances