VOLUME 02

CREATIVE MANAGEMENT THINKING

THE WORLD OF THE CUSTOMER AND THE FUTURE IN DESIGN THINKING: ASSESSMENT OF THE PRACTICE OF DESIGN THINKERS

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EXECUTIVE SUMMARY

WHILE DESIGN THINKING appears to have been widely adopted in practice, academia seems to be lagging behind. In this research we investigate two aspects of the practice of design thinkers:

— HOW DO DESIGN THINKERS ASSESS THE 'WORLD OF THE CUSTOMER'?

— HOW DO THEY DEAL WITH THE UNCERTAINTY ASSOCIATED WITH THE FUTURE?

Based on a survey of 302 design thinkers, our study reveals that design thinkers can be found in both small and large organizations. In our sample, 50% of design thinkers have more than five years of experience, and roughly one-third have a management background. Although ethnographic research can be time-consuming, this remains the preferred methodology to understand the world of the customer. Further, while a literature review provides little evidence of the usage of foresight tools in design thinking, it appears that design thinking projects do rely on tools from corporate foresight, such as scenario planning, to assess the future.

INTRO DUC TION

— DESIGN THINKING ENJOYS a constant increase in interest. Rasszouk and Shute (2012) attribute the increase in attention to the fact that the design of products and especially of services is a major source of a firm's competitive advantage (Martin, 2013).
Along with others (Welsh and Dehler, 2012), they argue that design thinking can affect education through to the use of creative problem-solving. Glen et al. (2014) claim that business schools must prepare their students better for a complex and turbulent business environment.

— THE GROWTH OF INTEREST in design thinking becomes clearer when it is seen as an application of human-centered "open" problem solving to "wicked" problems (Farrell and Hooker, 2013; Rittel and Webber, 1973). Martin (2013) has characterized wicked problems as complex, ambiguous and unique. Design thinking can be applied not only to develop or improve products and service, but also to fields such as management, organization or public health (Melles, Howard and Thompson-Whiteside, 2012; Liedtka, 2015), marketing management (Chen and Venkatesh, 2013), brand management (Beverland, Wilner and Micheli, 2015) and of course innovation (Wylant, 2008; Liedtka, 2011) or social innovation (Brown and Wyatt, 2010).
In the Harvard Business Review, Brown and Martin (2015: 58) wrote that design thinking has evolved from an application to physical objects into an approach that "can help strategic and systems innovators make the new worlds they've imagined come to pass." Lindberg et al. (2010) point out that while design thinking can be understood as a meta-disciplinary method for interdisciplinary creative work, it loosens its link to design as a profession. The general value of design thinking is seen in managers approaching management problems in the same way that designers approach design problems (Dunne and Martin, 2006). According to Dorst (2011), it can be interesting to study how designers work because designers traditionally had to solve complex problems. Liedtka and Mintzberg (2006: 18) conclude:

— "DESIGN IS NOT A METAPHOR for management, but, as Simon said, the very essence of it. ... Cities, buildings, products, services, systems, structures, and strategies all face the same need to combine expertise, insight, engagement, and adaptation, as well as to confront the tensions of designs, designing, and designers."

Design thinking can be understood as the application of design methods by multidisciplinary teams to innovation challenges. Design thinking is therefore helpful for business challenges which go beyond the traditional focus of industrial design (Seidel and Fixson, 2013). Liedtka (2015) describes design thinking, when viewed as a practice, as comprising an integrative framework bringing together creative and analytic modes of reasoning while being accompanied by a process and a set of tools and techniques.

— BROWN (2008: 88) FROM IDEO (a design consulting firm) sees design thinking as a process:
"The myth of creative genius is resilient: We believe that great ideas pop fully formed out of brilliant minds, in feats of imagination well beyond the abilities of mere mortals. ...; it was the result of hard work augmented by a creative human centered discovery process and followed by iterative cycles of prototyping, testing, and refinement. In light of this perspective we want to revisit design thinking from two angles."

In this research we want in general to better understand the practice of design thinking. We focus our research on two areas:

1 **How do design thinkers understand the world of the customer?**

2 **How do design thinkers deal with the future in their projects?**

To understand the practice of design thinkers, our questionnaire asked for details concerning the organization, industry, experience and background of the respondents.In the following the research items and the results of the study are described and discussed in detail.


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Chapter

02

—— LIEDTKA (2015: 3) ARGUES that based on the practice at firms such as IDEO or Continuum and on the way in which educators at the Stanford Design School, the Rotman School at the University of Toronto, and the Darden School at the University of Virginia use design thinking,
design thinking "specifies an initial exploratory phase focused on data gathering to identify user needs and define the problem, followed by a second stage of idea generation, followed by a final phase of prototyping and testing..." There are three elements of design thinking (Seidel and Fixson, 2013: 20):

1 Needfinding, encompassing the definition of a problem or opportunity through observation

2 Brainstorming, a formal framework for ideation

3 Prototyping, building models to facilitate the development and selection of concepts.

—— OF SPECIAL RELEVANCE FOR OUR DISCUSSIONS IS LIEDTKA'S (2015) SUMMARY OF DESIGN-THINKING TOOLS.

1. VISUALIZATION INVOLVES THE use of imagery, either visual or narrative. In addition to traditional charts and graphs, it can take the form of storytelling and the use of metaphor and analogies, or capturing individual ideas on post-it notes and whiteboards so they can be shared and developed jointly.

2. ETHNOGRAPHY ENCOMPASSES A variety of qualitative research methods that focus on developing a deep understanding of users by observing and interacting with them in their native habitat. Techniques here would include participant observation, interviewing, journey mapping, and job-to-be-done analysis.

3. STRUCTURED COLLABORATIVE sense-making techniques like mind mapping facilitate team-based processes for drawing insights from ethnographic data and create a "common mind" across team members. Collaborative ideation, using brainstorming and concept development techniques, assists in generating hypotheses about
potential opportunities. These tools leverage difference by encouraging a set of behaviors around withholding judgment, avoiding debates, and paying particular attention to the tensions difference creates in the process of seeking higher-order thinking and creating more innovative solutions.

4. ASSUMPTION SURFACING focuses on identifying assumptions around value creation, execution, scalability, and defensibility that underlie the attractiveness of a new idea.

5. PROTOTYPING TECHNIQUES facilitate making abstract ideas tangible. These include approaches such as storyboarding, user scenarios, metaphor, experience journeys, and business concept illustrations. Prototypes aim to enhance the accuracy of feedback conversations by providing a mechanism to allow decision-makers to create more vivid manifestations of the future.

6. COCREATION INCORPORATES techniques that engage users in generating, developing, and testing new ideas.

7. FIELD EXPERIMENTS ARE designed to test the key underlying and value-generating assumptions of a hypothesis in the field. Conducting these experiments involves field testing the identified assumptions using prototypes with external stakeholders, with attention to disconfirming data.

Table 1: Common Design-Thinking Tools (Liedtka, 2015)

If the process of design thinking is considered in the questions, we refer to these three phases of design thinking: inspiration, ideation, and implementation.

– BROWN, 2008; LIEDTKA AND OGILVIE, 2011

—— TO RECRUIT PARTICIPANTS for our survey, we used the social media network LinkedIn.
Described as the world's largest professional online network (Baruffaldi, Di Maio and Landoni, 2017), LinkedIn has also been used for data collection (Baruffaldi, Di Maio and Landoni, 2017; Ecleo and Galido, 2017) and therefore seemed appropriate to recruit design thinkers for our empirical investigation.
However, its limitations are noted. Because people choose to be part of LinkedIn, this could introduce self-selection bias (Baruffaldi, Di Maio and Landoni, 2017). In addition, most of the information on LinkedIn is subjective and self-reported. These limitations (also found in other methods of data collection) need to be kept in mind when analyzing the results.
Besides better understanding the context and background of the surveyed design thinkers, we referred here to previous studies on the practice of design thinkers (Schmiedgen et al., 2015), two sets of questions were asked, one focusing on the world of the customer and the other focusing on the future. As shown in table 2, the same type of questions were asked.

'WORLD OF THE CUSTOMER'	FUTURE
—— APPROACHES: What approaches do you use to understand users' latent needs in design thinking projects?	—— APPROACHES: What approaches do you use to deal with the future in design thinking projects?
—— PHASE: Please state the phase of a design thinking project in which these approaches have been applied	—— PHASE: Please state the phase in which these approaches have been applied
—— TYPE OF PROJECT: Please state the type of project for which the approaches listed below were used	—— TYPE OF PROJECT: Please state for what type of project the approaches listed below were used
—— DEGREE/SUCCESS: To what degree have these tools contributed to the success of the project?	—— DEGREE/SUCCESS: To what degree have these tools contributed to the success of the project?

Table 2: Central questions in the questionnaire

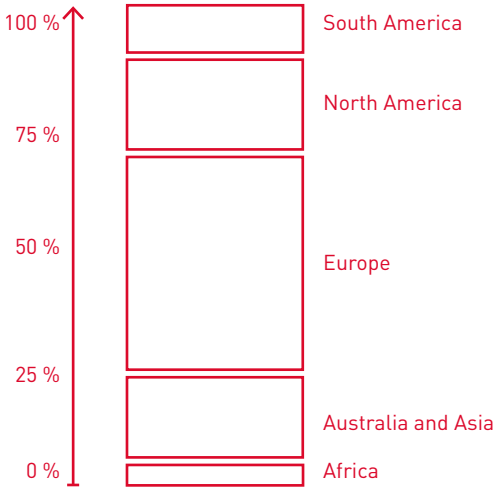
DESCRIPTION

of sample

Chapter
03

DESCRIPTION OF SAMPLE

Figure 1: Country of origin



— A TOTAL OF 302 DESIGN THINKERS FROM AROUND THE WORLD RESPONDED TO OUR QUESTIONNAIRE.

MORE THAN HALF (57%) of the respondents said they have five years of experience with design thinking projects, and 31% reported having at least 10 years. Three-quarters (75%) are employed by for-profit organizations. In terms of the size of organizations they represent, 25% of respondents came from very large (more than 9999 employees) organizations; 21% large (250 – 9999); 11% medium (50 – 249); 16% small (10 – 49); and 27% from micro (1 – 9) employee organizations. While the participants came from a variety of industries, roughly one-third reported having a management background.

Figure 2: Type of organization

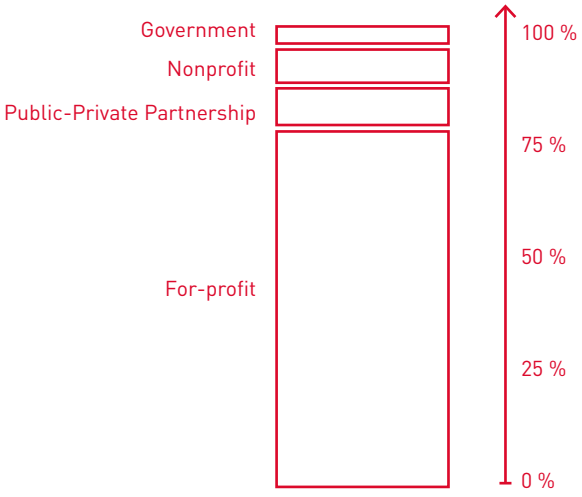


Figure 3: Size of organization

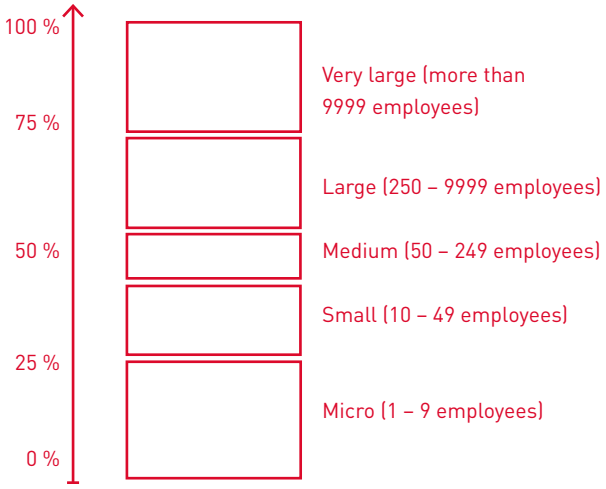


Figure 4: Industry sectors

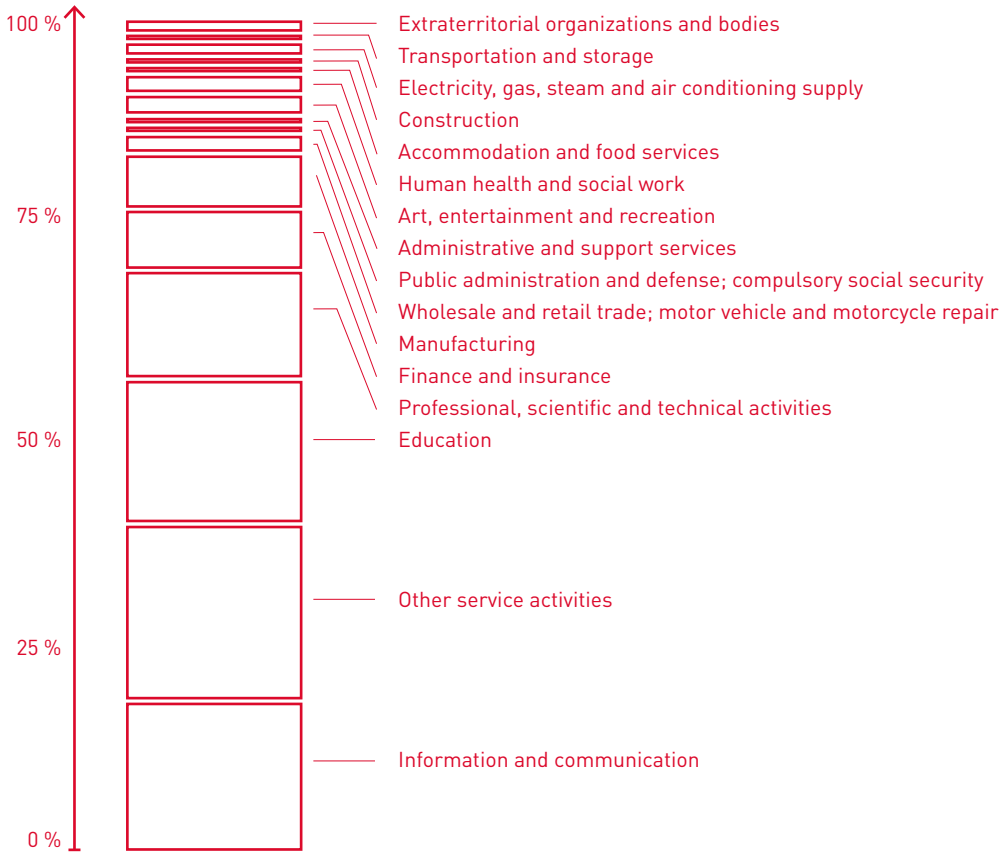


Figure 5: Experience using and applying design thinking

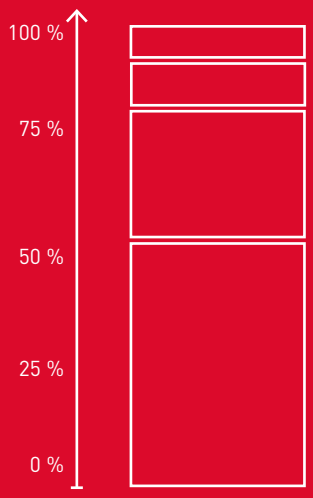
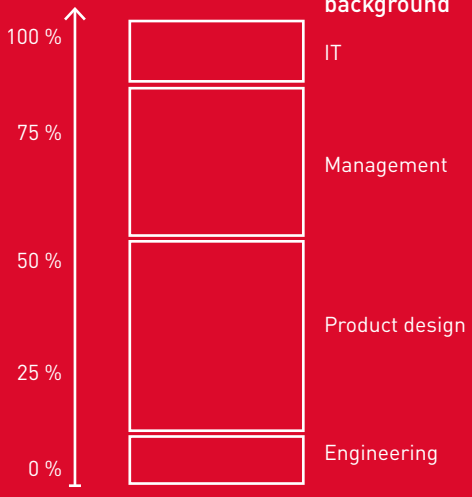


Figure 6: Professional background



The world of the

CUSTOMER

in design thinking

Chapter
04

THE WORLD OF THE CUSTOMER IN DESIGN THINKING

— TO UNDERSTAND AND ASSESS the world of the customer, ethnographic research can be a central element in design thinking, especially in the observation phase (Beckman and Barry, 2007).

The aim of ethnographic research here is to understand the context in which customers live. This context, according to Beckman and Barry (2007: 31), "operates at different levels: immediate physical and situational surroundings, language, character, culture, and history all provide a basis for the meaning and significance attached to roles and behavior."
Ethnographic research arrives at insights that, for instance, focus groups, interviews, and other such methods cannot. Ethnographic research can take the forms of participant observation, non-participant observations, formal ethnographic interviews, intercepts, informant diaries and virtual ethnography (Beckman and Barry, 2007).

— SEIDEL AND FIXSON (2013: 21) cite Brown (2009) who "...presented the case of a designer who, in order to develop a deep understanding of the experience of a patient needing treatment, checked himself into a hospital and went through the emergency room experience from admission to examination.
The designer captured his experience with a video camera tucked underneath his hospital gown so he could later share his insights with his team."

Ethnographic researchers face several obstacles. How does the presence of an observer change the setting he or she is trying to observe? Can deep insights from the consumer actually be derived from observations?
Most critical is the time which needs to be invested in ethnographic research.

The next section explains how design thinkers assess the world of the consumer.

4.1

Chapter

APPROACHES

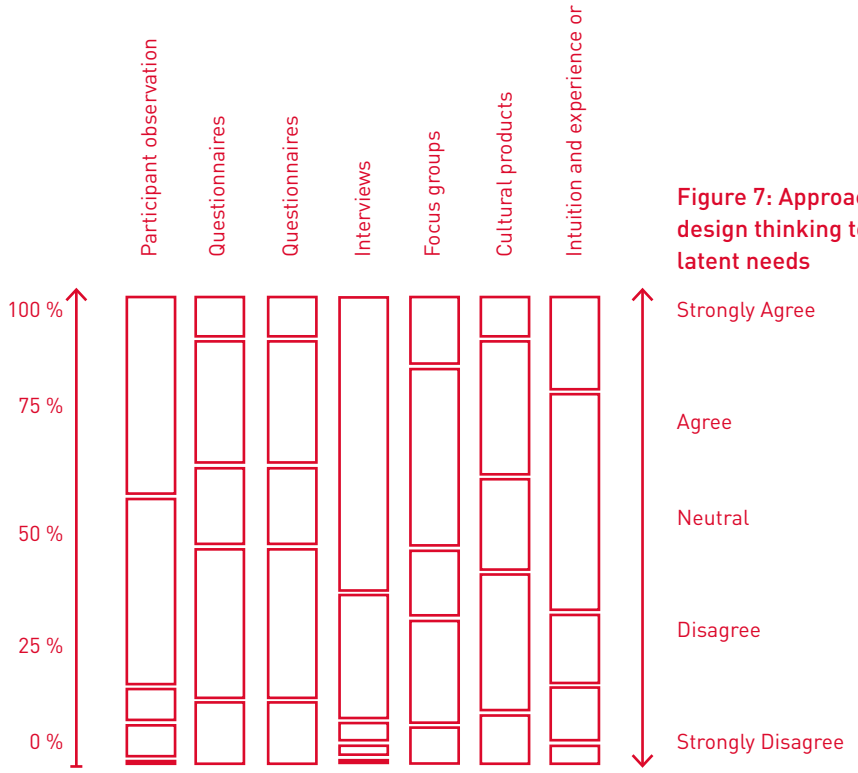


Figure 7: Approaches applied in design thinking to understand users' latent needs

—— PARTICIPANT OBSERVATION or ethnographic research appears to be design thinkers' preference when it comes to understanding the world of the customer.

Interviews are used the most and questionnaires or cultural products are less applied. If we follow the idea that cultural products, such as movies or novels, can be considered as one of the basis of the social construction in society (Schwarz and Liebl, 2013; Schwarz, Kroehl and von der Gracht, 2014; Schwarz, 2015), cultural products could be an interesting source to assess the world of the customer.

4.2

Chapter

PHASE

— NOT SURPRISINGLY, participant observation is used primarily in the inspiration phase, with questionnaires and interviews. Further research would be needed to better understand approaches used in the implementation phase.

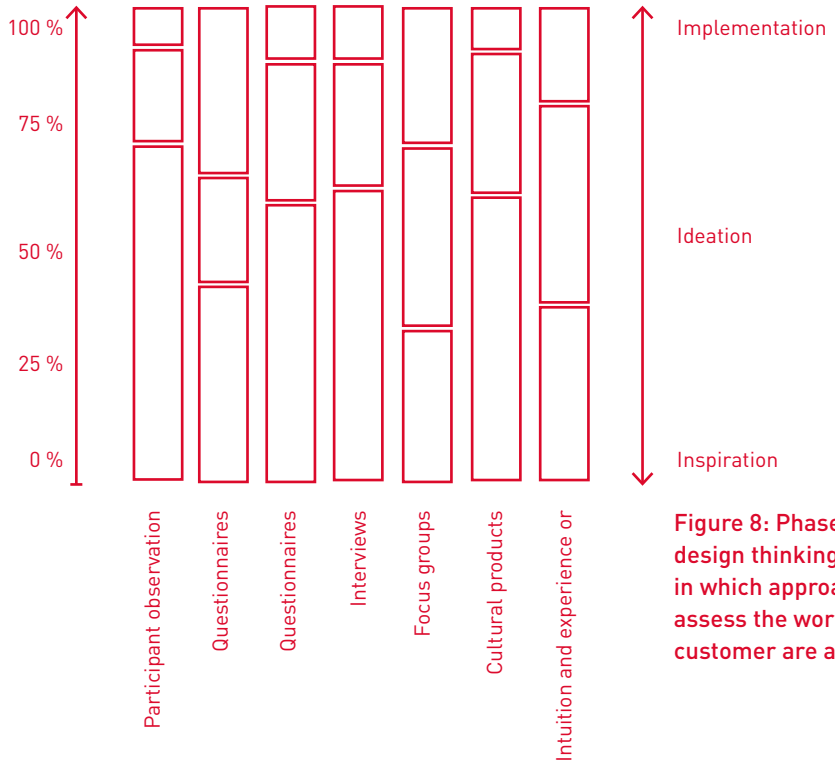


Figure 8: Phase of a design thinking project in which approaches to assess the world of the customer are applied

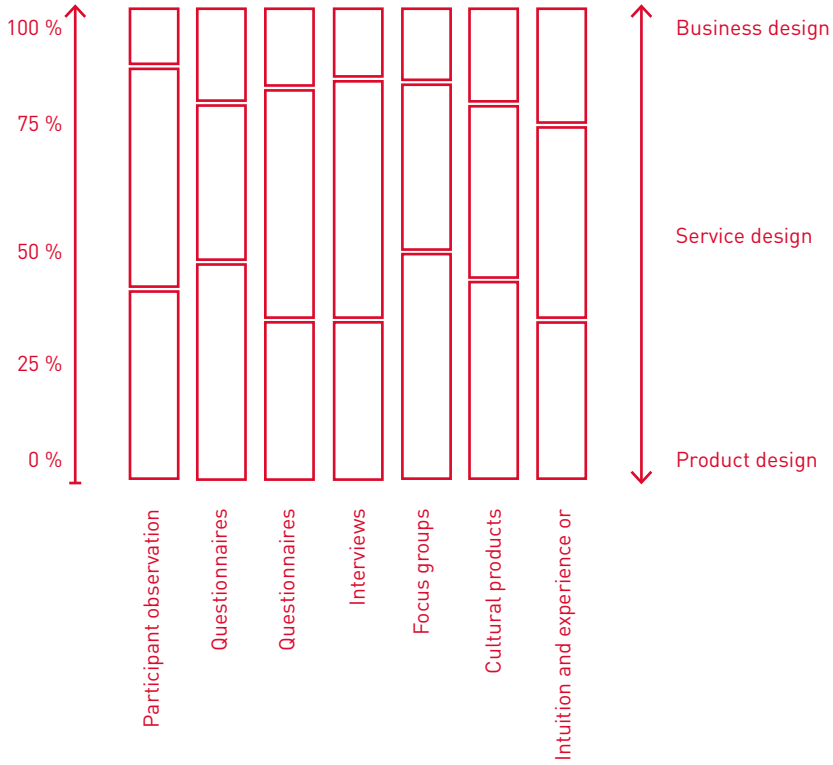
4.3

Chapter

TYPE OF PROJECT

— ARE DIFFERENT APPROACHES used for different kind of projects? Our survey reveals that open-ended questionnaires or interviews are preferred for in-service design projects but closed-ended questionnaires are preferred for product design projects.

Figure 9: Type of project for which the approaches were used



4.4

Chapter

CONTRIBUTION TO THE SUCCESS OF A PROJECT

— WHAT APPROACHES contribute to the success of a project? The design thinkers who completed our survey state that participant observations and interviews contribute most to the success of a project. Conversely, closed questionnaires or cultural products are seen as less relevant.

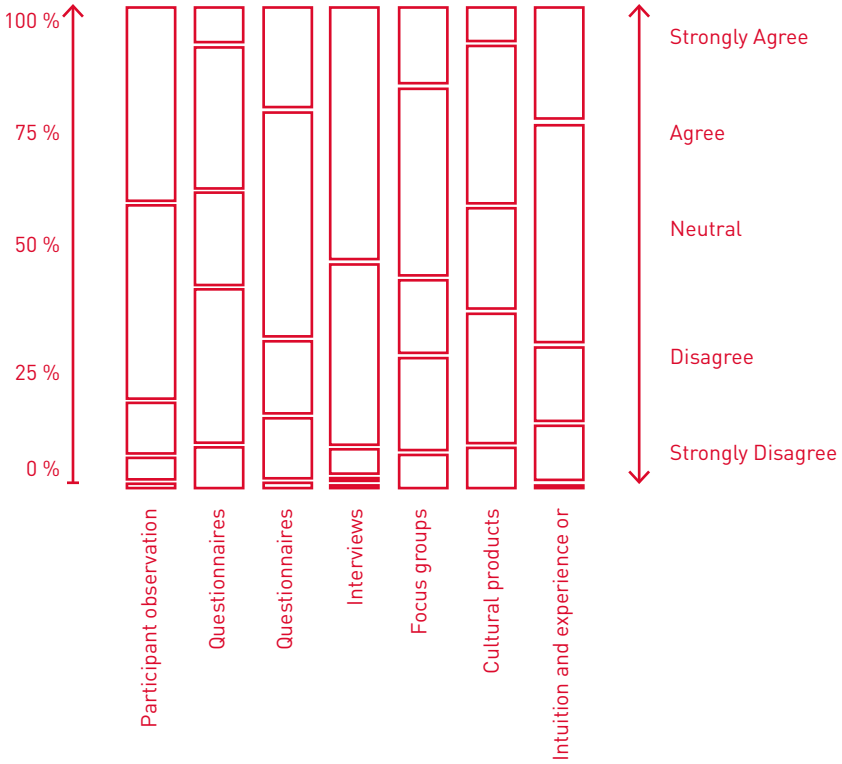


Figure 10: Degree to which these tools have contributed to the success of a design thinking project

THE FUTURE

in design thinking

Chapter

05

— SINCE THE LATE 1980S, the term "foresight" has been used to describe activities that inform decision-makers by improving the inputs about the long-term future of an organization. Rohrbeck et al. (2015: 2) define corporate foresight as follows:

"Corporate Foresight permits an organization to lay the foundation of future competitive advantage. Corporate Foresight is identifying, observing and interpreting factors that induce change, determining possible organizations-specific implications, and triggering appropriate organizational responses.
Corporate foresight involves multiple stakeholders and creates value through providing access to critical resources ahead of competition, preparing the organization for change, and permitting the organization to steer proactively towards a desired future."

— THE TERMS "STRATEGIC," "organizational" or "corporate foresight" -- used synonymously (Liebl and Schwarz, 2010) -- have been used to describe future research activities in corporations or in organizations. These activities can include setting up
processes to support organizations in detecting trends (Liebl and Schwarz, 2010) and making sense of them (Schwarz, 2005), or using strategies such as the Delphi technique (Schwarz, 2008) to collect expert judgment on the future, conducting strategic simulations, also known as business wargames (Oriesek and Schwarz, 2008; Schwarz, 2009, 2011), to anticipate the future actions and reaction of competitors or to apply the established scenario planning approach (Schoemaker, 1995) to develop alternative pictures of the future.

— SELIN ET AL. (2015: 8) PLACE DESIGNERS AND SCENARISTS IN THE SAME SITUATION:

A designer designs things for present as well as future situations, and if paying attention to the context of the design, would consider scenarios as a plausible set of contextual conditions of these situations. As in practice these future situations unfold, scenarios step in to help explore how they may depart from how any design team imagined things would play out.

— VON STECKELBERG (2015) states that scenario and design work are similar in the way they support learning and creativity in a team, since both aim at the creation of something new. Moreover, both activities, especially in design thinking, can be considered as a type of team-coaching that emphasizes facilitation. However, von Steckelberg (2015: 18-19) offers a clearer idea of how the two can be combined and how they can benefit from each other:

— DESIGN, ON THE one hand, can be
described as a way of the accompanying use of future scenarios for generating prototypes, with the goal of creating new forms and engendering possible disruptions of the past. On the other hand, scenario planning can be understood as a process of the supporting use of design techniques for manufacturing possible future scenarios as feasible ways of developing the past.
In the application of design thinking at Hewlett-Packard, we find evidence of a structured approach to include the future. Here the Theory U (Scharmer, 2009) can be perceived as similar to design thinking but with a stronger emphasis on the future (Sato et al., 2010). Yoo and Kim (2015: 76) report on the application of design thinking at Samsung and describe the role of visualizing the organization's future:

Designers, by contrast are trained to break from the past. But if they want to persuade decision makers to take a chance on their radical visions of the future, they need to adopt a managerial mindset.
Visualization is a powerful tool for bridging the two ways of thinking and getting skeptics to support new ideas.

In the following we examine the ways in which design thinkers assess the future.

5.1

Chapter

APPROACHES

— WHILE WE FIND only little evidence in the literature on the usage of foresight tools in design thinking, it is surprising to discover that among the surveyed design thinkers, over 50% report using scenarios in their projects. Even more of them use trends or expert interviews. Again, we see less use of cultural products (science-fiction novels and movies).

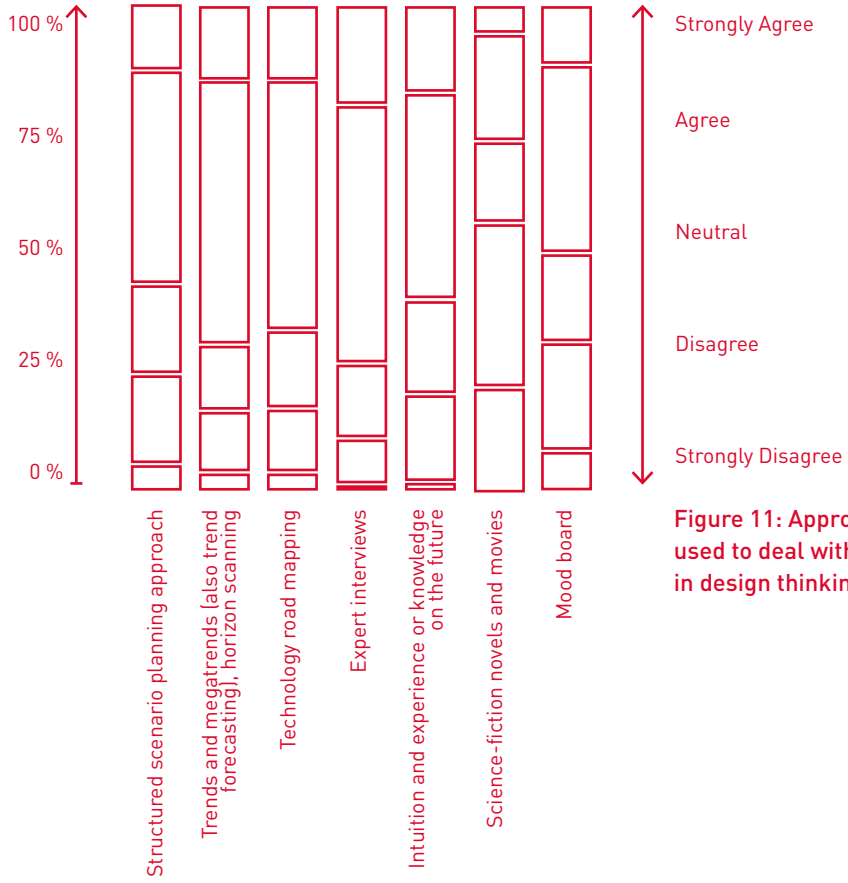
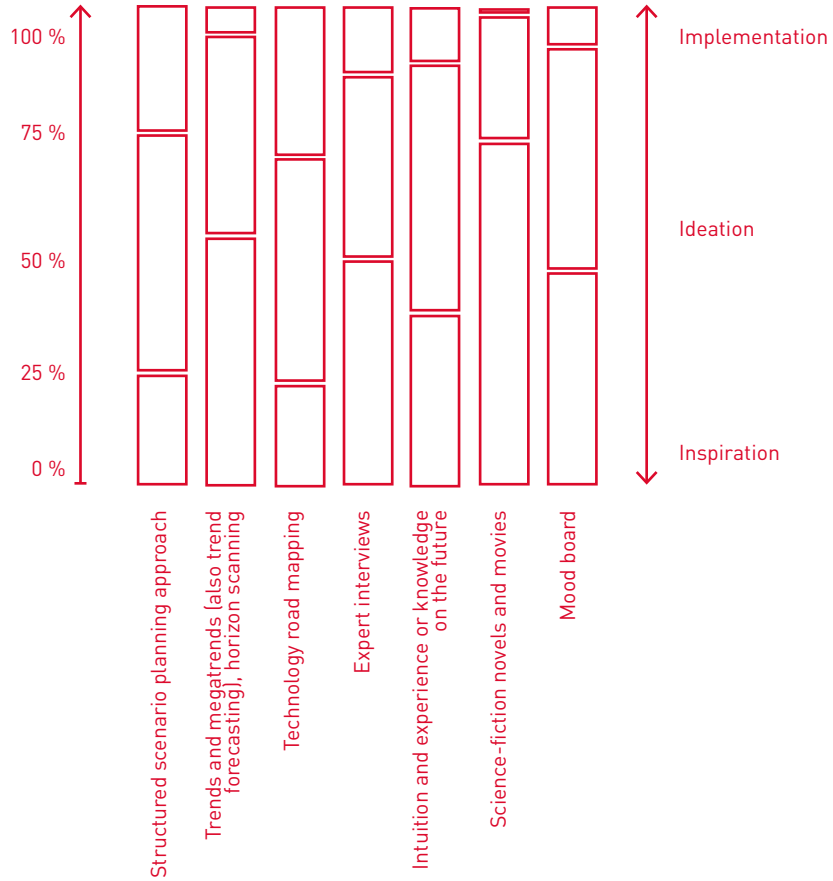


Figure 11: Approaches used to deal with the future in design thinking projects

— CONSIDERING THE PHASES of a design thinking project, surveyed design thinkers reveal that science-fiction novels and movies are used in the inspiration phase. Scenario planning is applied in the ideation phase, as is technology road mapping. However, the application of scenario planning in the implementation phase raises questions that merit further investigation.

Figure 12: Phase in which approaches to assess the future have been applied in a design thinking project



5.3

Chapter

TYPE OF PROJECT

— NO CLEAR TREND can be derived from the assessment of which approaches are used for what type of product. However, scenario planning is arguably more important in service design while sciencefiction novels and movies are more relevant for product design.

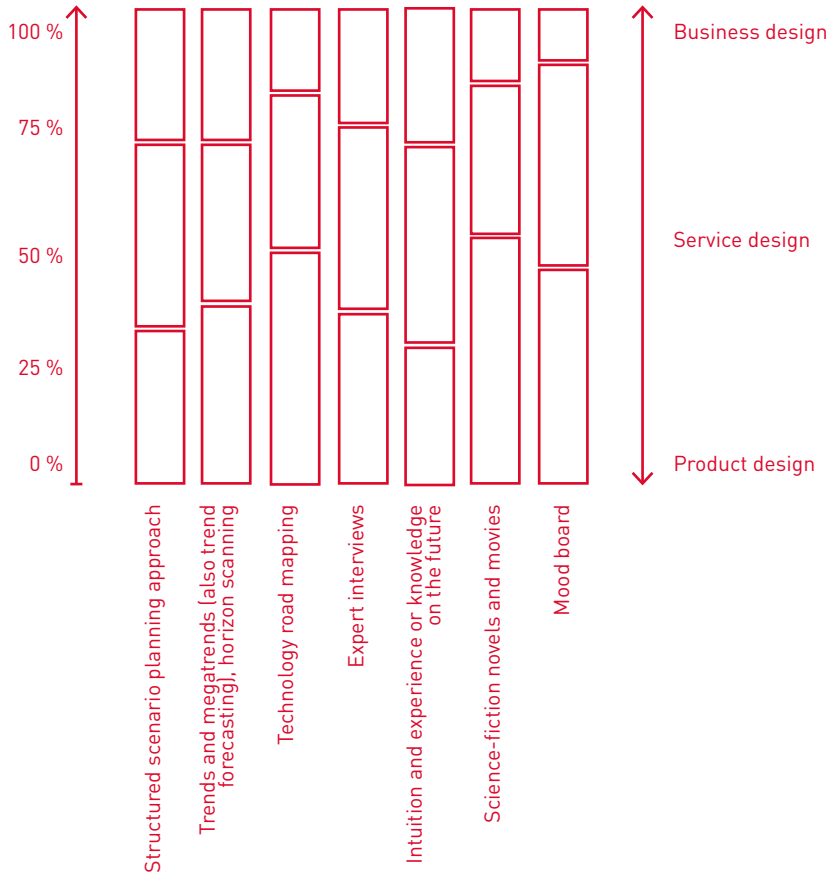


Figure 13: Type of project approaches were used

5.4

Chapter

CONTRIBUTION TO THE SUCCESS OF A PROJECT

— WE OBSERVE HIGH success rates for most of the approaches surveyed, less for science-fiction novels and movies or mood boards. The lower relevance of science-fiction novels and movies can be explained by the argument that this should be strictly a complementary approach.

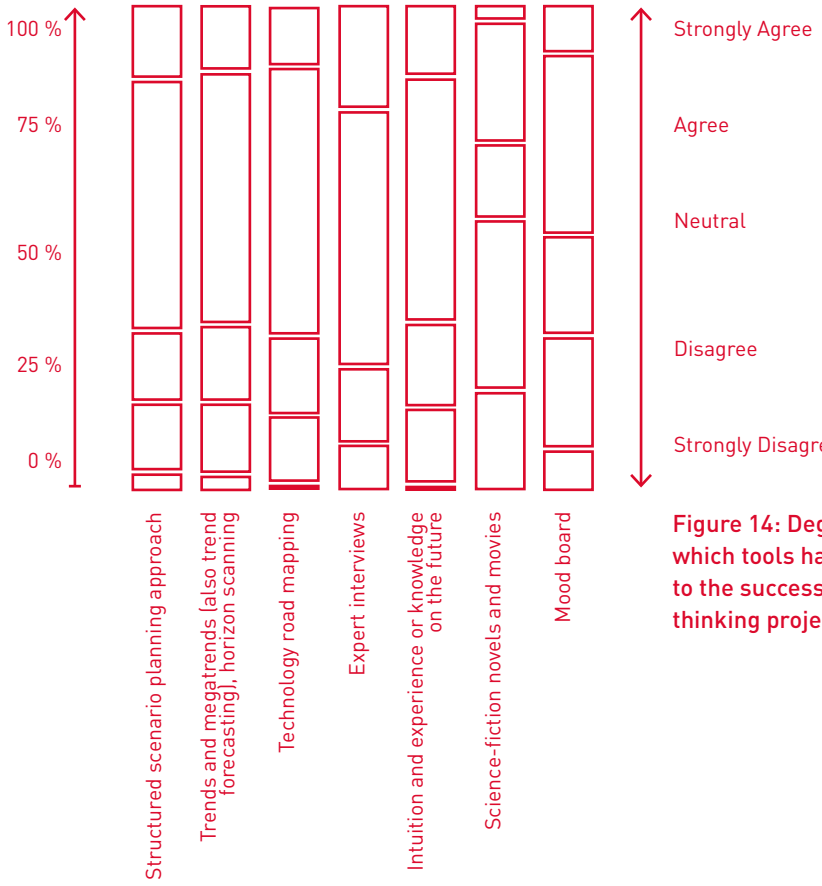


Figure 14: Degree to which tools have contributed to the success of a design thinking project

DISCUSSION

and conclusion

CHAPTER SIX

DISCUSSION AND CONCLUSION

— THIS RESEARCH HAS SHED LIGHT ON THE PRACTICE OF DESIGN THINKING, ESPECIALLY ON THE WAYS IN WHICH DESIGN THINKERS ASSESS THE WORLD OF THE CUSTOMER AND DEAL WITH THE FUTURE.

WE FIND THAT ethnographic research or participant observation still plays a vital role in understanding the latent needs of consumers. While not reflected in the literature, we find that foresight tools, such as scenario planning, are used in design thinking projects to deal with the future. This might also imply that the rapid adoption of design thinking in practice is outpacing academic research when it comes to understanding current practice of design thinking.

The background information collected on the 302 design thinkers we surveyed revealed not only that they are employed in large corporations but also that roughly 50% of those surveyed have more than five years of experience in applying design thinking. This speaks to the diffusion of design thinking practice. In addition, approximately 30% of those design thinkers have a management background. This is evidence of the popularity of design thinking as a vital management tool.

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