Impact and Measurement

Assessing the Value of Design Thinking to Organizations

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Intro

Research and practitioners alike describe multiple benefits of implementing Design Thinking into organizations. This chapter describes **the value that Design Thinking brings to organizations** and, based on our research, how practitioners go about measuring this value. We answer the following three guiding questions:

→ *What is the impact of Design Thinking on organizations?*

→ *Which type of organizations measure Design Thinking?*

→ *How do organizations measure Design Thinking?*

This chapter provides an overview of the impact of Design Thinking to organizations by exploring the areas where practitioners perceive a change through Design Thinking. Furthermore, we demonstrate how this change is currently assessed (or not) in organizations, understanding how measurement is used to support the implementation of Design Thinking by evaluating the added value Design Thinking brings to the organization.

Background

Since the first study in 2015, many more companies have implemented Design Thinking and the topic of Design Thinking has further become a topic of academic inquiry. Using the same questions as in 2015 allowed us to compare results over time. To complement the results from 2015, we asked additional questions about specific impact areas related to the Design Thinking mindset, such as openness to change or a culture that is more positive towards failure. Furthermore, we added questions to better understand why practitioners decided to measure (or not) Design Thinking.

What is the Impact of Design Thinking on Organizations?

An increasing number of organizations worldwide are applying Design Thinking, resulting in numerous Design Thinking initiatives and training (Carlgren et al., Rauth et al., 2014; Rauth, Carlgren and Elmquist, 2014; Liedtka et al., 2019; Micheli et al., 2019). Given the investments taken, many organizations seek to identify the impact of Design Thinking to evaluate the added value of these initiatives. Yet, studies investigating the impact of Design Thinking are scarce. This chapter, therefore, focuses on the impact of Design Thinking, offering insights from our study and ways of evaluating Design Thinking in your organization.

We asked our survey respondents about their **perception of the impact of Design Thinking in their organization.** In total, 235 respondents answered the question (see Figure 39). Multiple answers were allowed. There was little difference over time on overall perception of the impact of Design Thinking in organizations between the two studies (2015 and 2021). A positive change of the working culture is still seen as a major impact by 60 % of the respondents. However, we noticed a drop from 2015 to 2021 of 11 %. One reason could be that the expected or desired cultural transformation did not happen yet or as fast as expected. Another prominent impact mentioned in the studies was the integration of users and the efficiency of the innovation. In percentage terms, the highest changes occurred in relation to profit and costs: in 2021, 25 % of respondents (18 % in 2015) per-

ceived an impact of Design Thinking on their profitability and 30 % (18 % in 2015) stated that they 'have the impression' that Design Thinking helps them to save costs. Practitioners often struggle with the implementation of Design Thinking, as it is perceived as an additional task, especially in the beginning, taking up time and creating costs. These numbers suggest that applying Design Thinking can potentially help to increase profit and save costs. Previous research in large corporations, such as Siemens or IBM, has demonstrated such benefits (IBM, 2018; Appleyard, Enders and Velazquez, 2020). As Design Thinking not only brings new methods to organizations, but also changes the mindset of employees, the increase in the perception of the financial benefits between 2015 and 2021 could stem from the fact that Design Thinking needs time to be implemented before its effects on profit and cost savings actually occur. Another explanation could be that organizations now have better tools in place to assess the effects that Design Thinking has on financial performance.

While these numbers show that, even though there seems to be an increase in the perceived impact on profits and cost savings, between 2015 and 2021, **a much higher value seems to be attributed to soft outcomes,** such as working culture and the integration of customers into organizational processes, e.g., product development.

In 2021, the majority of respondents (in %) had the impression that Design Thinking creates impact through:

➔ *Making innovation processes more efficient (67 %).*

➔ *Improving working culture (60 %).*

➔ *Helping to integrate users more frequently (58 %).*

Given the strong increases seen between 2015 and 2021, regarding the impact of Design Thinking on cost savings and profitability, we were wondering what, in particular, has led to this increase, and whether the respondents' perception of positive impact could be backed up by hard data. If they reported measurements, how did the organizations go about measuring the impact of Design Thinking? We will address these questions in a subsequent section, but will first focus on the areas that were found to benefit the most from Design Thinking. In turn, we consider both process- and outcome-related factors, followed by internal factors, such as collaboration and engagement.

Figure 39: **What is your perception of the impact of Design Thinking in your organization?**
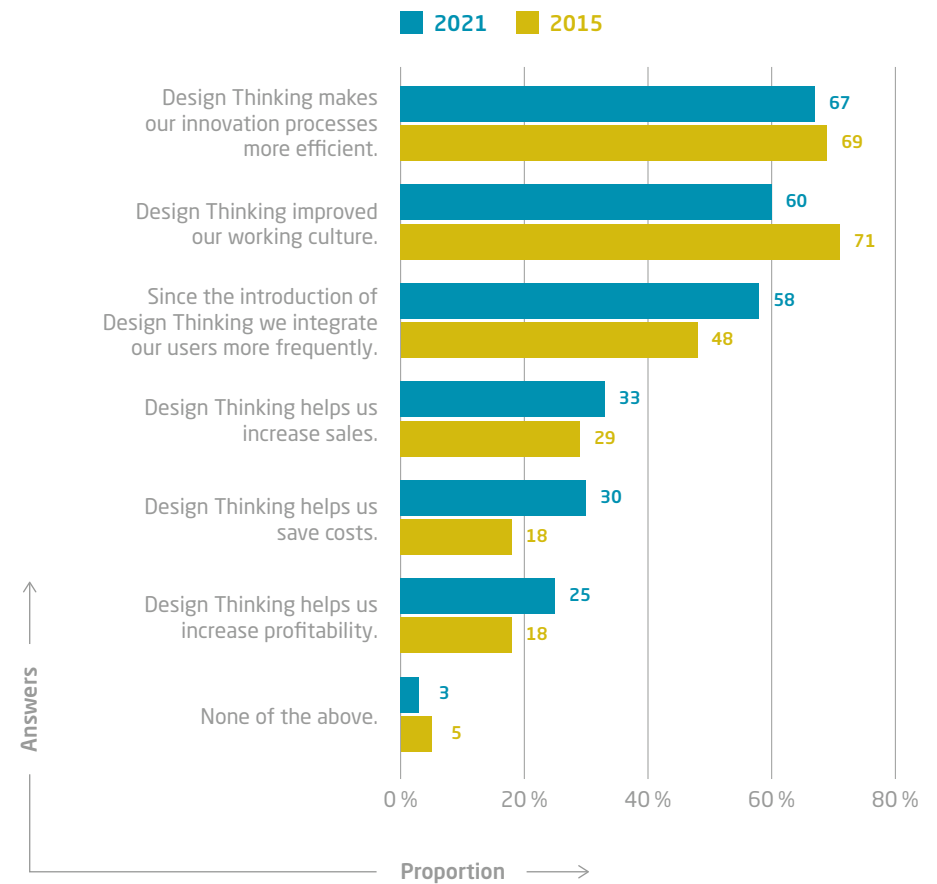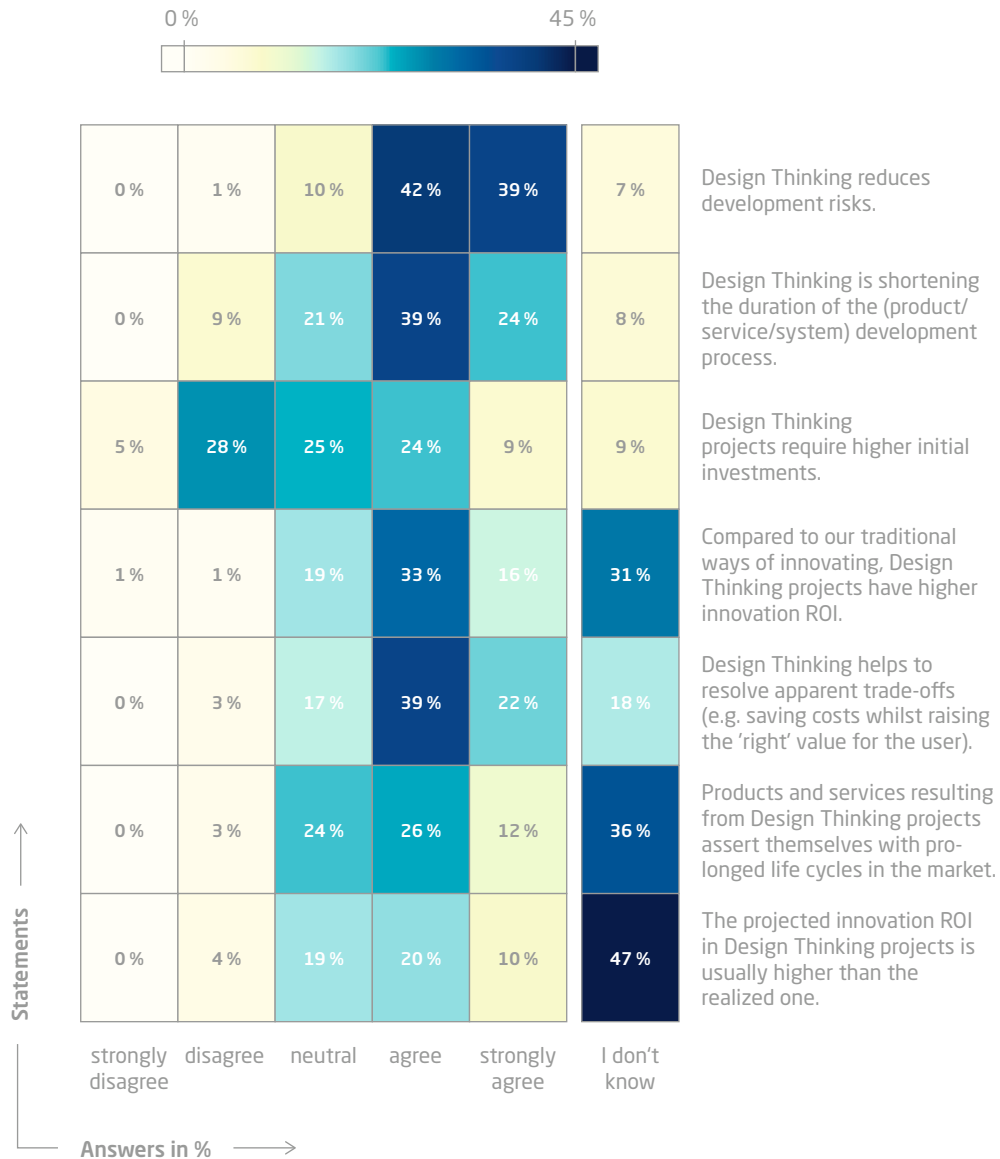Multiple answers. n = 235

Figure 40: **Areas impacted upon by Design Thinking.**
Do you agree with the following statements?
n = 226

0 %	1 %	10 %	42 %	39 %	7 %

Design Thinking reduces development risks.

0 %	9 %	21 %	39 %	24 %	8 %

Design Thinking is shortening the duration of the (product/service/system) development process.

5 %	28 %	25 %	24 %	9 %	9 %

Design Thinking projects require higher initial investments.

1 %	1 %	19 %	33 %	16 %	31 %

Compared to our traditional ways of innovating, Design Thinking projects have higher innovation ROI.

0 %	3 %	17 %	39 %	22 %	18 %

Design Thinking helps to resolve apparent trade-offs (e.g. saving costs whilst raising the 'right' value for the user).

0 %	3 %	24 %	26 %	12 %	36 %

Products and services resulting from Design Thinking projects assert themselves with prolonged life cycles in the market.

0 %	4 %	19 %	20 %	10 %	47 %

The projected innovation ROI in Design Thinking projects is usually higher than the realized one.

strongly disagree · disagree · neutral · agree · strongly agree · I don't know

Statements

Answers in %

Specific Areas of Impact: Process and Outcome-related Factors

We asked our survey participants about specific areas impacted by Design Thinking. In total, 226 respondents answered these questions (see Figure 40), indicating on a scale from 1 (strongly disagree) to 5 (strongly agree) whether and to what extent they had seen any impact in relation to seven respective suggested impacts:

The three most commonly mentioned outcomes of Design Thinking relate to risk management, speeding up the development process, and positive trade-offs:

→ *81 % of all participants agreed or strongly agreed that Design Thinking reduces development risks.*

→ *63 % of all participants agreed or strongly agreed that Design Thinking shortens the duration of the development process.*

→ *62 % of all participants agree or strongly agree that Design Thinking results in trade-offs, such as those between effecting cost savings and generating value for the customer.*

Whilst there was clear agreement about the areas with the highest impact, a very high proportion of participants were rather uncertain about how Design Thinking impacted on other areas, as demonstrated by the high number of proportion of 'don't know' answers. These areas of **uncertainty about the impact** were:

→ *The projection of the ROI of Design Thinking for innovation projects is higher than the realized ROI (47 % stated "I don't know").*

→ *Products and processes developed with Design Thinking have longer life-cycles (36 % stated "I don't know").*

→ *Design Thinking projects have a higher innovation ROI than traditional projects (31 % stated "I don't know").*

The survey also revealed **an ambiguous picture** with regard to participants' assessment of whether Design Thinking projects require a higher initial investment. While 33 % of participants disagreed or strongly disagreed, the same proportion (32 %) agreed or strongly agreed, while another 25 % were neutral.

It is hardly surprising that these results present an ambiguous picture of the impact, given the measurable assessment of Design Thinking (e.g., costs, return); however **roughly 80 % of our participants reported that their organization does not at all measure the impact of Design Thinking** (further details will be provided in the next section). Comparing the participants whose organizations measure Design Thinking separately with those you do not, we get a clearer picture: Organizations measuring Design Thinking show higher rates of agreement and strong agreement over all seven areas, compared to those lacking any such measurement. Hence, and as can be expected, measuring Design Thinking impact provides the foundation for assessing its overall impact, especially in terms of hard outcomes. More details on who measures and what are provided in the next section.

## Specific Areas of Impact: Internal Factors

In addition to process- and outcome-related factors, we also asked about the **impact of Design Thinking on internal aspects,** such as practices of working together or changes of mindsets. Figure 41 shows an overview of all the internal impacts as perceived by respondents. For these nine questions, respondents could answer from 1 (no impact at all) to 5 (very high impact), and the additional option of indicating lack of knowledge: 6 (don't know). The strongest impact of Design Thinking referred to a mindset shift, more specifically, the highest impact of Design Thinking was perceived to have changed:

→ *How they approach problems (78 % mentioned a high to very high impact).*

→ *How open practitioners are to changing their perspective (73 % see a high to very high impact).*

These results are in line with the ongoing discussion about similarities and differences of Design Thinking compared to other agile methods. While there are many overlaps between them, the exploratory and human-centered nature of Design Thinking is often highlighted as its distinctive feature (Rhinow, 2018).

Figure 41: Internal attitudes and practices impacted upon by Design Thinking. How strongly did Design Thinking impact on...
n = 236
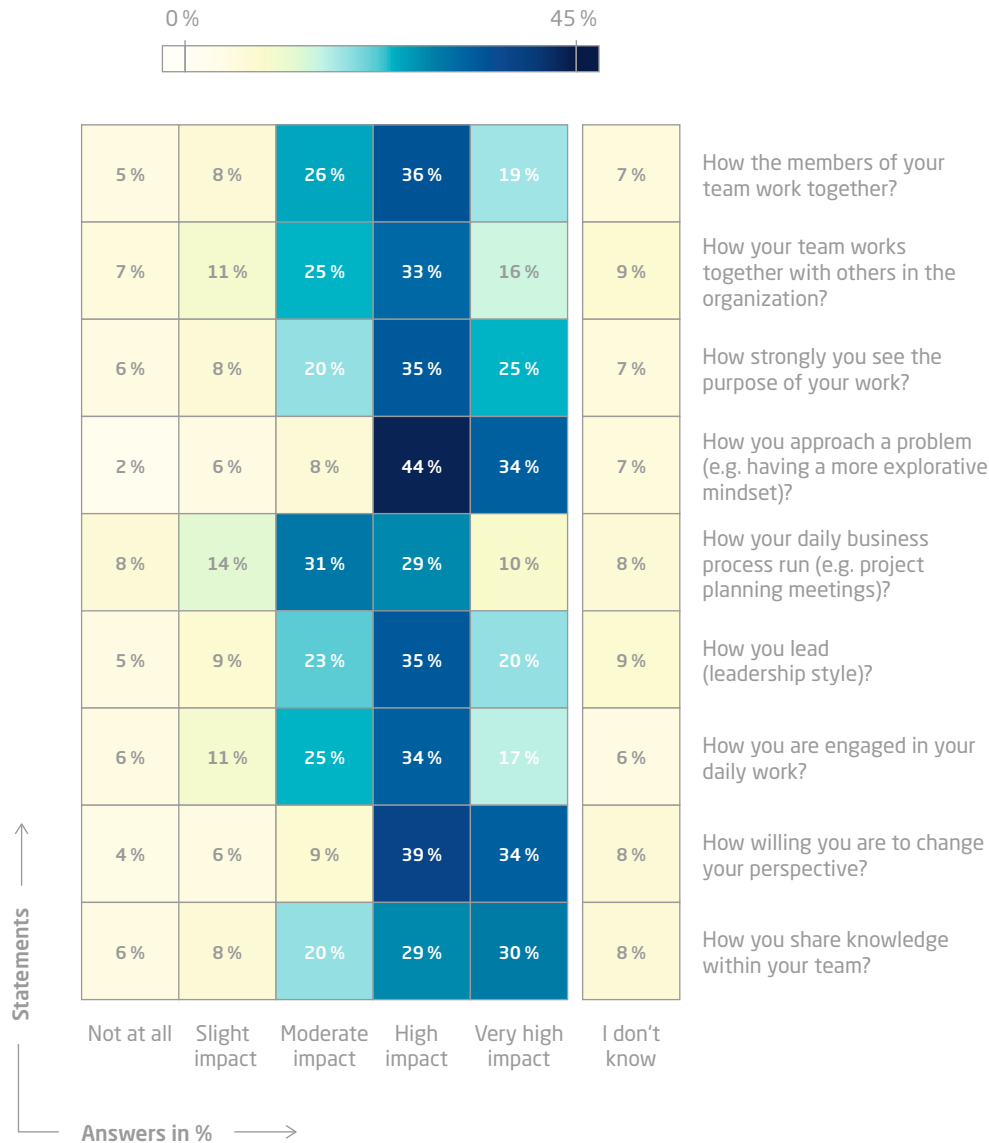
In a similar vein, more than half of all respondents rated the impact of dt as high or very high on:

➜ *Seeing a clear purpose in your work (60 %).*

➜ *Knowledge sharing (59 %).*

➜ *Leadership style (55 %).*

➜ *Working together (54 %).*

➜ *Being engaged at work (52 %).*

These results reflect **the effects of Design Thinking to foster 'real' collaboration** instead of just cooperation, a leadership style embracing coaching, and a strong orientation towards understanding people's needs. These effects reach beyond one's team, since 49 % reported experiencing a high or very high impact on working together with others in the organization (49 %). However, since respondents were aware of the aim of this study, results might include a slight overestimation due to social desirability. Nevertheless, we believe these results also reflect the strategic goals of implementing Design Thinking, as it is seldom implemented to reduce cost, but rather to change the way of working within organizations.

A considerable number of respondents perceived either no or little impact of Design Thinking on, for instance:

➔ *Daily business processes (22 % reported no or only a negligible impact).*

➔ *Working together with others in the organization (18 %).*

➔ *Sense of higher engagement at work (17 %).*

This might stem from the fact that for most respondents, Design Thinking is not applied throughout the entire organization, but only in certain departments or projects.

Statement: *We can conclude that Design Thinking practitioners report the impact of Design Thinking in the areas of the development process ('hard outcomes') and a mindset shift caused by Design Thinking ('soft outcomes').*

HYPOTHESIS

The role of Design Thinking in transforming organizational culture and fostering a mindset that is open to change might be as important as supporting innovations as such.

Which Type of Organizations Measure Design Thinking?

In this study, 43 out of a total of 231 respondents (19 %) confirmed that their organization monitors and evaluates the success of Design Thinking activities, in contrast with 81 % that do not. To better understand these numbers, we delved deeper into finding out who is (and isn't) involved in evaluation, and whether the perception of people who have specific measures in place differs from those who do not:

➔ *Overall, 19 % of all practitioners monitor their Design Thinking endeavors, whereas 81 % have no monitoring or evaluation in place.*

➔ *The **industries with the highest proportion** of Design Thinking monitoring in our study were:*
- Information and communication sector (41 %).
- Professional, scientific and technical activities (19 %).
- Financial and insurance activities (16 %).

➔ *More practitioners **from smaller companies (38 %) implement some form of measurement** than those from larger companies (17 %).*

However, there seemed to be little, if any, difference between different types of organization. Whether the respondents worked for a *profit oriented*, a *non-profit*, a *governmental* or any *other type of organization*, the pattern matched the overall numbers of roughly one fourth of respondents who had measurements in place.

Within organizations, we looked at differences according to the departments in which Design Thinking was applied. It is important to recall that multiple answers were possible, since Design Thinking can be applied in multiple departments in the same organization. According to our survey, *Finance & Accounting* is the most represented department that monitors Design Thinking activities, with 33 % of respondents reporting it for those departments. This may well be due to the nature and practices of monitoring and evaluating expenditures and revenues that is the purpose of these departments. Interestingly, one might expect to see similar trends in IT departments, as they tend to work with data. Yet we did find that only 15 % of IT departments have adopted Design Thinking monitoring, which is actually slightly below the average of all departments.

Looking at the size of organizations, we expected to find that the proportion of organizations monitoring and evaluating Design Thinking might be smaller for small compared to large organizations. However, we did not find this in the data. While 38 % of practitioners in small organizations (10–49 employees) reported to use measures for Design Thinking, this was only the case for 17 % of practitioners in large organizations (≥ 250 employees). The difference in organizations' size could be related to the fact that smaller companies implement Design Thinking more centrally, while larger organizations tend to have more distributed initiatives. Therefore, smaller organization might find it easier to set up monitoring systems.

We also looked at organizational age, i.e., whether respondents from younger or incumbent organizations might have a higher fraction of measuring Design Thinking than older organizations, but could not identify any such pattern. Comparing the youngest third of organizations in the data (20 years and younger; 32 % of respondents) with the oldest third (older than 100 years; 31 % of respondents) reveals that, on average, 18 % of young organizations and 15 % of old organizations are monitoring Design Thinking.

Differences in the Assessment of the Impact and Success of Design Thinking

In addition to discovering patterns in the characteristics of survey respondents in organizations, we also looked into whether the difference between monitoring and non-monitoring organizations is reflected in people's perception of the success of Design Thinking in their organization. The differences are shown in Figure 42.

The data shows a clear difference:

➔ *All respondents who considered Design Thinking to be implemented (very) unsuccessfully do not have any monitoring in place.*

➔ *On the other hand, **people who did monitor Design Thinking were more likely to view the Design Thinking implementation as successful** (i.e., 40 % who did compared to 10 % who did not).*

Since these numbers are only descriptive, we cannot say if high-er (perceived) implementation success is linked to monitoring or whether the existence of systems in place (and the top-management pressure associated with it) leads to a higher (perceived) success of Design Thinking implementation. Nevertheless, this pattern would support either of these two causalities.
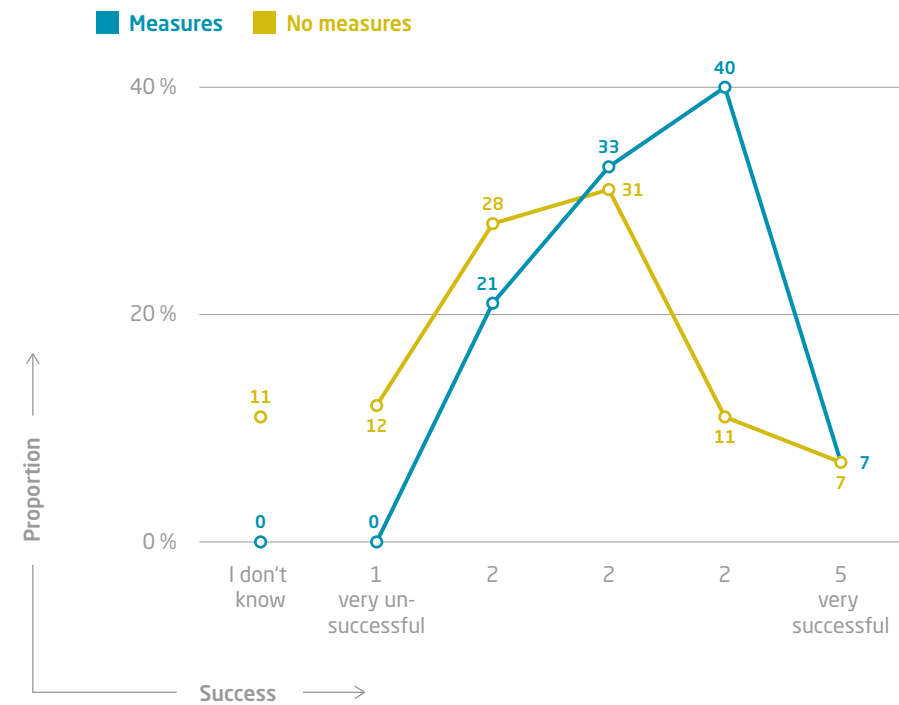
Statement: We can conclude that the monitoring of
Design Thinking is not yet widely practiced.

HYPOTHESIS

Monitoring Design Thinking positively affects how the
success of its implementation is perceived.

Figure 42: **Differences in the assessment of Design Thinking success and Impact**

n = 231

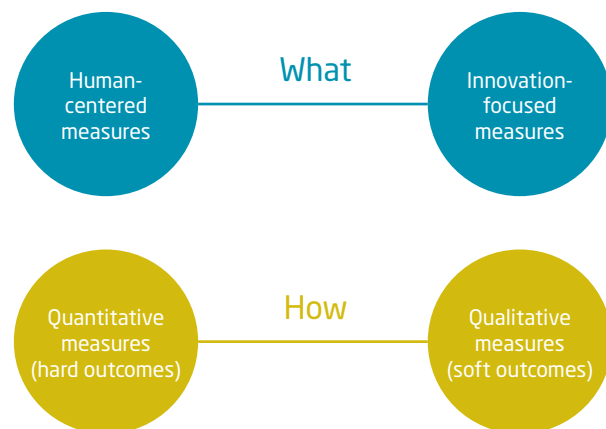# How do Organizations Measure Design Thinking?

We asked respondents to describe what exactly they measure, when and how. An overview of the findings can be seen in Figure 43. Within the group of study participants who monitor the impact of Design Thinking, we found *two major types of measures:*

➔ *Human-centered measures*
➔ *Innovation-focused measures*

We also found a difference in *how* they were measured, in terms of:

➔ *Hard outcomes*
➔ *Soft outcomes*

Figure 43: **Measurement dimensions**

What do Organizations Measure?

In alignment with the nature of Design Thinking, the first and largest type of measurements mentioned are *human-centered measures.* With this cluster, we refer to aspects such as customer satisfaction, feedback from clients, number of interactions with clients, quality of insights from customers, customer loyalty, net-promoter score[1], but also to measures with a focus on outcomes for 'internal' staff, such as staff retention and employee engagement. On the other hand, we found a second group of *measures related to innovation outcomes,* including the assessment of the innovativeness of ideas, number of ideas, innovation rate, sales of innovated products, and innovation speed (time to market).

[1] *net-promoter score (= the ratio of promoters to detractors) is a performance indicator suggested by Reichheld, 2003*

"I could not think of a KPI with which we could now really measure it. One of the things is also that the maturity level of our organization is not high enough to be measured. However, there are a few things which you could measure, overall employee satisfaction. Do people feel empowered? Do people feel that individually and as a team they are able to contribute in a significant way to the business results?"
_ Interviewee I20

"We've got a couple of KPIs but not one on raising people's awareness of Design Thinking. We are focused on refinancing ourselves, so we got our internal staff cost and with every project we need to work against those costs, so to speak. This is our major KPI. Then of course we've got our KPIs, especially the feedback we get, on the projects we are running. After every project('s completion), and in between, we are asking how people are satisfied with our work, with communication, results, and so on, so we can bring that on board. For me a very important KPI is the diversity of the team, so who has joined the team recently, and what is the spread of staff in terms of diversity of backgrounds."
_Interviewee I4

How do Organizations Measure Design Thinking?

Concerning the 'how' of measurement, respondents describe the use of **hard and soft outcomes.** For the soft outcomes, many respondents mentioned a need for more qualitative measures, but were rather unspecific about what exactly they meant. In Table 20 we give examples of soft and hard outcomes that were measured.

These findings are in line with current research, showing that measurements found in Design Thinking projects can be categorized mainly as customer-oriented or financial metrics (Mayer, 2021). Furthermore, current research indicates that practitioners face multiple challenges when measuring Design Thinking, such as, for example, how to demonstrate the value of soft outcomes, where hard metrics are unsuitable (Mayer, Haskamp and De Paula, 2021).

Table 20 Examples of soft and hard outcomes

Hard outcomes measured	Soft outcomes measured
net-promoter score	evaluations from feedback sessions in workshops
ROI (Return of Investment)	customer feedback
number of sales	estimation of project success
development cycle time	
number of successful projects	qualitative assessment in retrospective meetings
number of workshops conducted	
number of ideas generated	

"We established a stream with which we measure strategically, the net promoter score and operationally the customer experience on every interaction with an important product. With that you can do almost everything. Once you see the strategic direction of a product and that is not how it should be you can start responding to it. We compare strategic solid designs with what happens in reality and then put new measures up all the time. You also need an internal measurement so that you can measure it before something comes on the market. On a strategic level, we apply the customer-centricity score as internal measure which was the same level as the net-promoter-score. On the culture level, more operationally, we measured how people feel with the per-

spective of using all the skills and underlying principles that Design Thinking offers. We have a software, which we call Pulse KPI, which is fun to use and it doesn't take more than seven minutes. Teams can say how they are and whether they can do a great job with the agile Design Thinking principles. We put agile together with design, and this is very good because it's transparent to everybody. That's the first measurement ever that is transparently sharing such data. Now you can see which teams are happy in what way, and you can see the qualitative feedback of whether they're happy to do a great job. That of course, puts a soft pressure on the team leads because if you are several times in the lower range, something is probably not working."
_Interviewee I23

Measurement in the Future

Measurement is a topic of interest to Design Thinking practitioners and might become even more so. While only 19 % of the 2021 study respondents reported that their organization does measure the success of Design Thinking, 50 % expected Design Thinking to be measured by the year 2023. In an open question format, we asked the other half (that did not expect Design Thinking to get measured) about the reasons. We found **differences in the levels of awareness and intentionality,** as displayed in Table 21. Roughly, respondents can be categorized into three types, depending on their attitudes towards measurement:

➔ *Unaware – blind spot*
➔ *Aware – but unclear on how to measure*
➔ *Aware – but do not want to measure*

Table 21 **Reasoning for not measuring**

Unaware - Blind Spot	Aware - but unclear on how	Aware - do not want to measure
Never Considered Measurement	Measurement perceived as difficult	Design Thinking is everywhere and therefore not measured separately (success of organization like profit is success of Design Thinking)
Too early in implementation process to measure	No resources allocated	
	Not clear how to single out Design Thinking as a working mode when other approaches are in place as well	Measuring Design Thinking is contradicting the holistic and open nature of Design Thinking
		People believe in Design Thinking and do not need 'proof'

First, we discovered that some people had not even considered the possibility of measuring Design Thinking, either because they had 'never thought about it' and are unaware of this option. A larger portion of survey participants was partly aware, but found that, since they were still very early into their projects or the overall Design Thinking implementation, they did not consider measurement as applicable right now and might consider it later. While this argument seems logical at first glance, it is also problematic. In order to understand impact at a later point in time, measures need to reflect the organization's goal. Not knowing what to measure in the beginning might indicate that it is also unclear what the desired achievement should look like, which might impede any later impact assessment.

The largest group of respondents was aware of the potential of measurement, had the intention to leverage it, but were unclear on how measurements could be applied to Design Thinking. There was a general sense of difficulty, but also some more specific reasons, such as lack of time or budget allocation for measurement activities. In addition, one key challenge for measuring Design Thinking seemed to be the question of how to single out the Design Thinking approach when it is tightly connected to other approaches, such as SCRUM or Lean Startup, but also if it was implemented as mindset and not easily distinguishable from the overall corporate culture.

As 50 % of respondents expected to find measurement to be in place by 2023, there were still 50 % who didn't anticipate any such measurement in the foreseeable future. A small number in this group might be covered by the unawares described above, while the majority seemed **to be aware of the possibility of measurement,** but did not intend to do so. Here we see practitioners with a high maturity of Design Thinking in their organizations seeing Design Thinking as 'pervasive' and being present everywhere and at the core of the organization, therefore being unable and unwilling to separate the impact of Design Thinking from the overall performance of the organization. Others did strongly believe in its impact, because they did "feel a positive impact" and saw no need to back this up with measurements. And lastly, some were opposed to measurements as they see them as contradicting the open and holistic nature of Design Thinking.

"It (measurement) is an interesting factor. We have been testing that unsuccessfully over the last couple of years. We haven't found a golden middle, where you say, hey, where can we grab and put a number on mindset and capability changes? It's an ongoing topic where we're behind and have been looking into, to say, okay, what actually makes the difference? What would that be, what are the crucial relevant numbers?" _ Interviewee I2

Statement: *Overall, Design Thinking measurement is a controversial topic. Right now, less than 20 % of respondents measured their Design Thinking activities. While 50 % of all respondents planned to measure Design Thinking in the future, that still left over 50 % not planning to do so, indicating that many do not see the application of measurements as applicable or desirable to Design Thinking.*

Success Factors and Challenges

> **HYPOTHESIS**
>
> The availability of more suitable measurement systems is likely to increase the willingness of practitioners to measure Design Thinking.

Overall, we identified eight success factors and challenges when it comes to the impact and measurement of Design Thinking. These factors are based on the reporting of practitioners in this study as well as matching insights from recent literature. An overview of these factors and the respective literature is presented in the following tables. They do correspond with findings from previous research, such as for example the success factors identified by Wolf (2019).

Table 22 Success factors for impact and measurement

Success Factors	Description	Further reading
Reconsidering success	*In particular in times of transformation, a mindset shift or change in how people collaborate and communicate might be equally as important as creating innovative products for the market.*	Mayer, S., Schwemmle, M., Nicolai, C., & Weinberg, U. (2021) Haskamp, T., Mayer, S., Lorson, A., & Uebernickel, F. (2021)
Accepting that Design Thinking can be measured and showing willingness to do so	*Some respondents described a strong aversion to measurement, referring mainly to classical, often financial KPIs. Seeing measurements as a valuable tool might be a first step to finding a fitting approach to prove the value of Design Thinking.*	Haskamp, T., Lorson, A., de Paula, D., & Uebernickel, F. (2021) Haskamp, T. (2021)
Taking a broad measurement approach, reflecting hard and soft outcomes, as well as human-centered and innovation-focused.	*Using existing measurement systems mainly based on hard measures creates a misfit especially with the exploratory nature of Design Thinking. Including soft factors as well as other management control systems might be more appropriate.*	Mayer, S., Haskamp, T., & De Paula, D. (2021)
Connecting measures with the reason behind implementation (strategic fit)	*Understanding the impact of Design Thinking means connecting the initial goal with later outcomes. Therefore, it is crucial to consider measurements as early as possible, in the initial implementation stages.*	Marx, C., Haskamp, T., de Paula, D., & Uebernickel F. (2021)

Table 23 Challenges for impact and measurement

Challenges	Description	Further reading
Overseeing major effects of Design Thinking impact	*Focusing on established KPIs that are easy to measure might lead to overlooking the added value that Design Thinking is bringing, for example to the transformation of organizations.*	Mayer , S., Schwemmle, M., Nicolai, C., & Weinberg, U. (2021)
Investments in Design Thinking are hard to justify based on soft and fuzzy outcomes alone	*Currently, most incumbent organizations rely on financial justifications for implementing new initiatives, such as Design Thinking. Exploratory endeavors with open outcomes are hard to 'sell' in a classical business mindset.*	Mayer, S. (2021)
Long term effects need time to become visible	*Starting with Design Thinking as an early exploration tool leads to long periods of time until potential positive effects become visible when looking at financial factors such as product sales.*	Mayer, S., Haskamp, T., & De Paula, D. (2021)
Non-availability of suitable measures and management systems	*The perception of the unavailability of suitable measurement options impedes the search and development of finding fitting approaches.*	Mayer, S., Haskamp, T., & De Paula, D. (2021)