Aalto University
Design Factory

CONTENTS

INTRODUCTION

Design + Sustainability 101:
The state of leveraging design
to create sustainable value & impact

Design represents a human-centered approach to change and development under conditions of complexity and uncertainty. Often, it comes as a welcome shift in organizations towards a more balanced approach, complementing business and technology-led approaches to innovation. In the past decade, design thinking and service design have expanded what is considered as the realm of design, and the Nordic countries have a long history of high-end design as well as of approaches such as participatory design.

However, while organizations and nations are increasingly turning towards design in search of new value, leveraging design is still in many ways in its infancy. This report takes stock of the practical ways in which design is being used in organizations, and provides a look into how design is being harnessed to tackle sustainability. Based on interviews with designers in 101 organizations, we've collected insights on the value that design brings to organizations, where organizations stand in terms of leveraging design, and how this translates into contributions towards environmental, economic and societal sustainability.

We believe design has much to offer in creating holistic solutions to the complex issues that organizations and society face, crafting a triple bottom line of value that works in both theory and practice. Our aim is to start a discussion on the next steps that organizations and designers themselves can take to shape a sustainable future. We welcome you to join the conversation!

Aalto Design Factory research team

This report and the research it builds on have been produced by the multidisciplinary research team of Aalto University Design Factory in Finland. The Design Factory is a global network of 34 experimentation platforms across the globe, advancing new co-creation and innovation practices in education, research and practice. Our team conducts and communicates timely research in design, R&D and organizational change. Our work has been published in leading international journals, and the Design Factory Global Network reaches thousands of learners worldwide. Aalto University itself is a top-ranking research university with a globally leading design school, bringing together technology, science, business, art and design to shape a sustainable future. The Design+Sustainability research project has been enabled by Aalto University and UPM.

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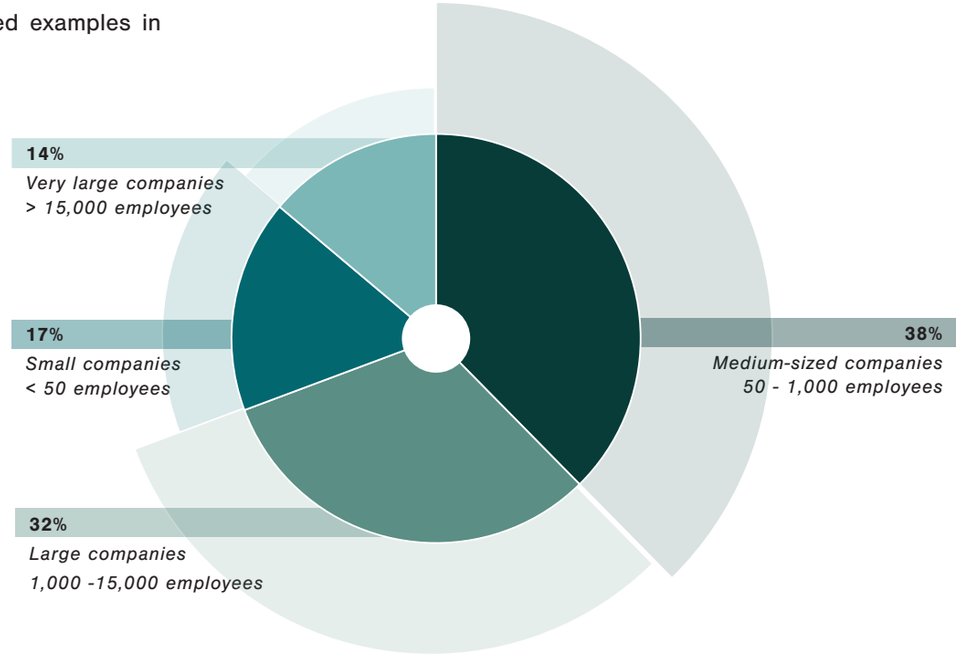
The data

The report is based on 103 interviews with 104 professionals and leaders in 101 organizations operating in Finland. The confidential interviews were conducted between April and June 2021 by the Aalto University Design Factory research team. The goal was to interview a comprehensive range of organizations, with the key criteria that all organizations had at least one in-house designer or a design professional. Where possible, we aimed to interview the highest-ranking designer in the organization to ensure a comprehensive view of design in their organization. The interviews were recorded and transcribed verbatim for analysis, and permission has been secured to share the names of selected examples in this report.

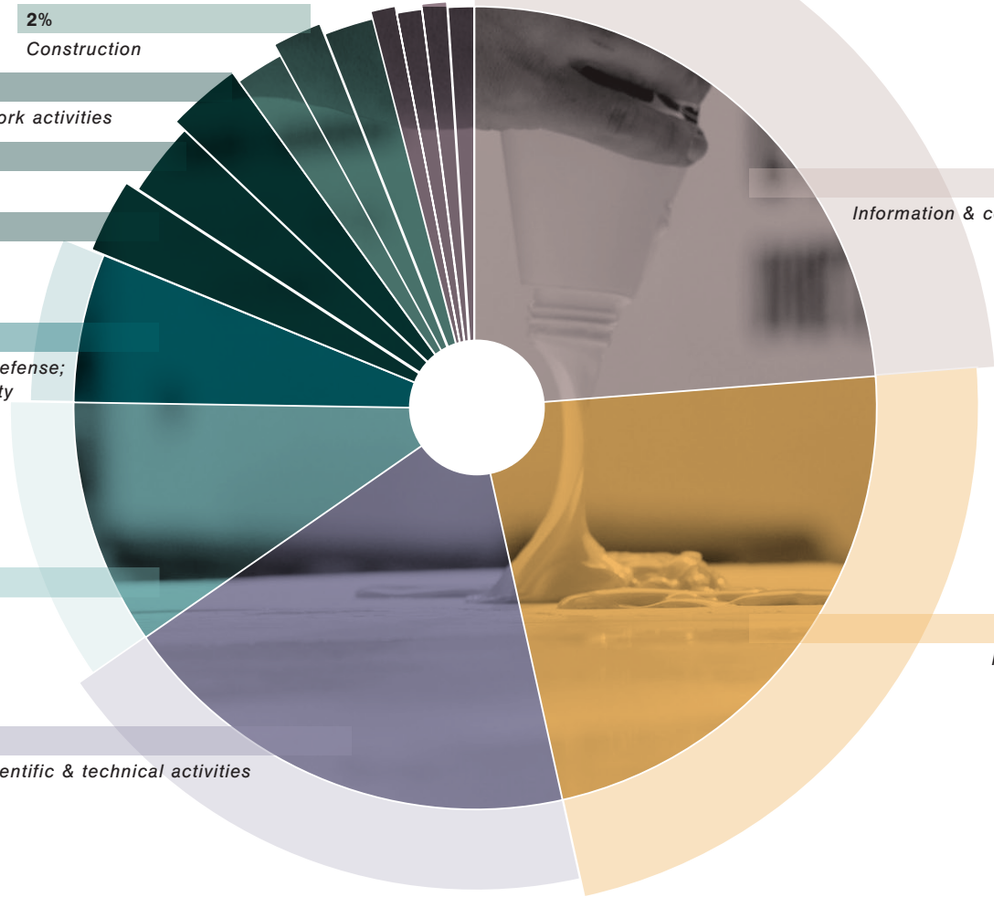
Company size

The size of the organization was determined based on the number of employees. Organizations included in the sample range from micro-sized companies with only a few employees to large multinationals with over 100,000 employees.

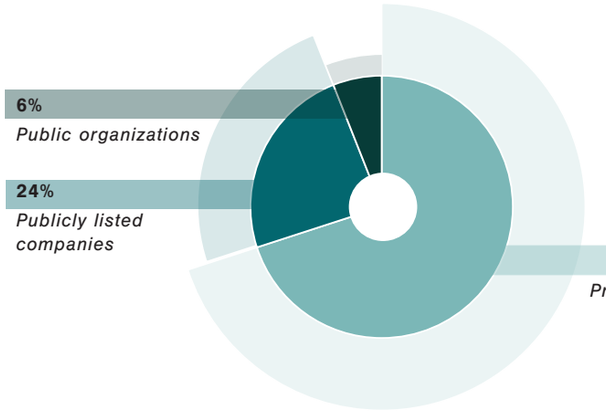


Industry sectors

The participating companies represent a diversity of industry sectors with Information and communication, Manufacturing, and Professional, scientific and technical activities sectors being the three primary sectors represented in the sample. The industry sector division is based on the Standard Industrial Classification TOL 2008 by the Statistics Finland.

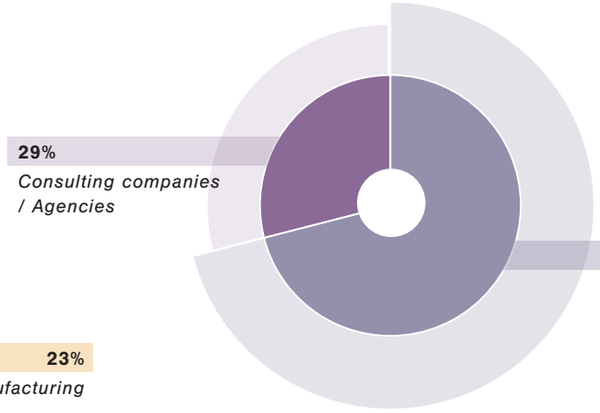


- 1% *Arts, entertainment and recreation*
- 1% *Administrative & support service activities*
- 1% *Real estate activities*
- 1% *Water supply; sewerage, waste management & remediation activities*
- 2% *Other service activities*
- 2% *Financial & insurance activities*
- 2% *Construction*
- 3% *Human health & social work activities*
- 3% *Transportation & storage*
- 3% *Electricity, gas, steam & air conditioning supply*
- 6% *Public administration & defense; compulsory social security*
- 10% *Wholesale & retail trade*
- 19% *Professional, scientific & technical activities*
- 23% *Manufacturing*
- 24% *Information & communication*



- 6% *Public organizations*
- 24% *Publicly listed companies*
- 70% *Private companies*

Type of organization

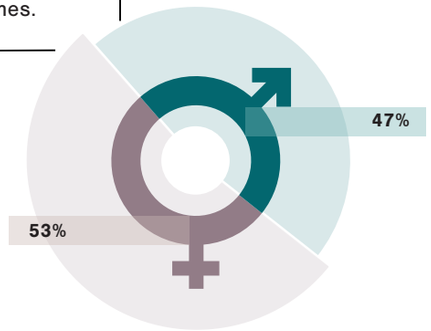


- 29% *Consulting companies / Agencies*
- 71% *Product/service companies*

Type of business

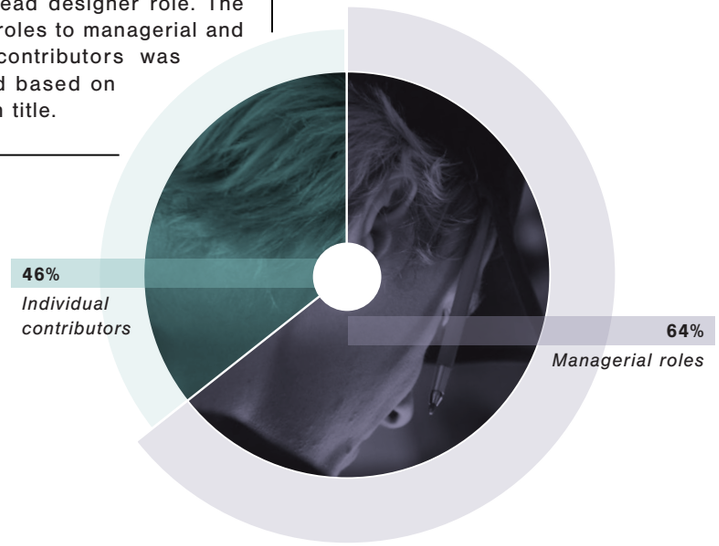
Gender division

The interviewees were selected based on their role at the chosen organizations. Gender was assumed based on interviewees' names.



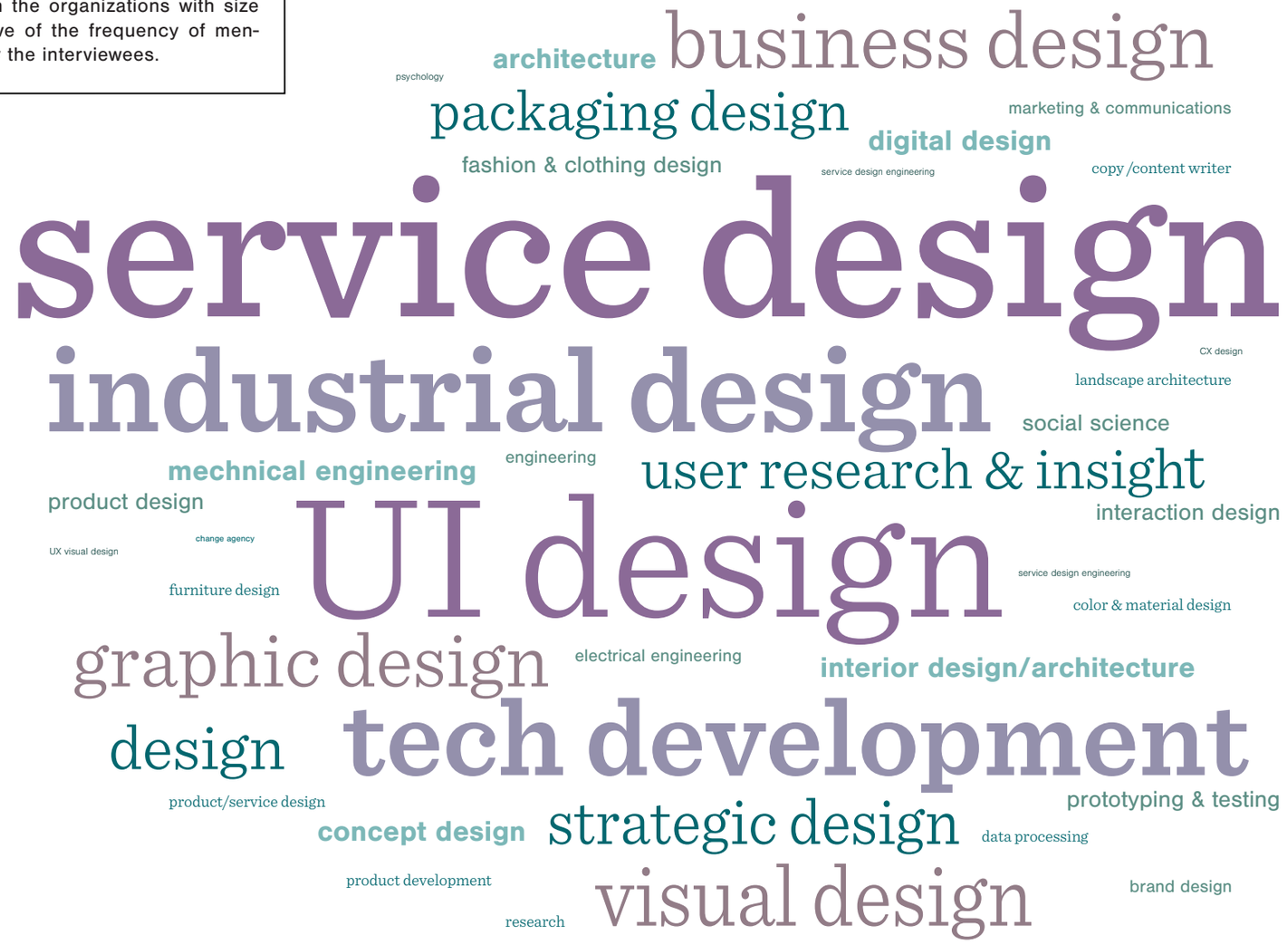
Interviewee role

As we targeted the highest-ranking designers in the organizations, most of interviewees had a managerial or lead designer role. The division of roles to managerial and individual contributors was established based on the position title.



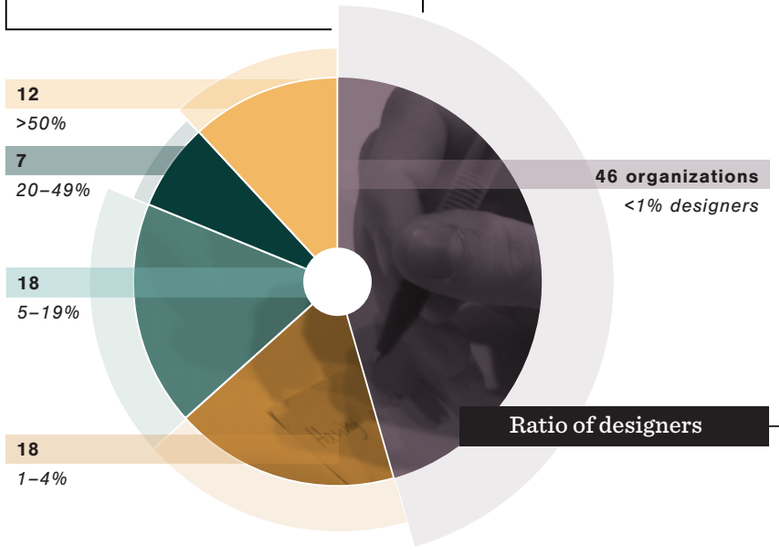
Design fields

The graph represents the design fields in the organizations with size indicative of the frequency of mentions by the interviewees.



Designer ratio in organizations

The ratio of designers relative to all employees in the organizations was estimated based on information from the interviewees regarding the size of the design teams. The definition of a designer was not specified to interviewees. Almost half of the organizations had a designer ratio below 1%, meaning that designers were a small minority in the organization.



Number of organizations

Organization sizes

Ratio of designers

<1%	1–4%	5–19%	20–49%	>50%
primarily large organizations with more than 1,000 employees	*primarily medium-sized organizations, with 50-1,000 employees, but also many large organizations present*	*primarily medium-sized organizations, with 50-1,000 employees, but also many small companies*	*primarily medium-sized organizations, with 50-1,000 employees, and some small companies*	*primarily small organizations with less than 50 employees*

The interviewed organizations

Aava
ABB Oy
Abloy
Accountor
Adventure Club
Agile Work
Aivan
Artek
Avidly
Cargotec
CGI
City of Helsinki
Deloitte
Demos Helsinki
Digitalist Group
DNA
Dusty
Finnish Digital Agency
Elisa
Exove Design
Fazer
Finnair
Finnish National Agency for Education
Finnish Tax Administration
Fira
Fiskars
Fjord – part of Accenture Interactive
Fortum
Fredman Group
Futurice
Genelec
GoFore
Gold&Green
Hakola Huonekalu Oy
Havu Cosmetics
Helen
Hellon
Holiday Club Resorts Oy
HSL
Huhtamaki
Huld
Idean – part of Capgemini invent
Industry62
Isku-yhtymät Oy
Kela
Kemppi Oy
Kesko
Kone Oyj
Kuja Studio
Kuudes
Lappset Group
Lassila & Tikanoja
Loihde Factor Oy
Lundia Oy
MaaS Global ltd
Mehiläinen
Metsä Board
Metso Outotec
Meyer Turku
Ministry of the Interior
Motley Agency
Nanso
NAPA
Nokia
Oivan
OP Financial Group
Oura
Pentagon Design
Planmeca
Polar
Ponsse
Posti
Rockseri Oy
Rovio
Sanoma Media Finland
Seos Design Oy
Siili Solutions
Sitowise
SOK
Solita
Stora Enso
Terveystalo
Tieto-Evry
Tikkurila
Vahanen-yhtiöt
Vaisala
Valmet
Valtori
Vincit
Virta
VR
VTT
Wärtsilä
Wolt
Wörks
Yeply
YIT
Yle

&

3 organizations
that preferred not to
be named in the report

THE VALUE OF DESIGN IN ORGANIZATIONS

What design brings to the table:
4 key roles of design in organizations

Design as a way to explore & experiment

Design as strategic positioning & direction

Design as the glue for collaboration
& basis of a shared understanding

Design as an advocate of customer-centricity

I've spent some time studying the roles of designers and how design has changed over the years from having these hero designers who made these good-looking products in a good way. We've changed from this to team working in design, requiring new capabilities. How do we tell better stories, how can we make better use of research information as part of design decision making? What have we learned to facilitate this co-development?

– Design manager in a large organization

Introduction:
The value of design in organizations

The value, role and impact of design represent three inherently interconnected areas. Whether examining sustainability, customer-centricity or adaptability, it's important to note that the shape and forms of design relative to these key issues depend on its organizational context. To understand design and sustainability, we need to first have a clear understanding of what design in general looks like.

Research has shown design can enhance innovation, efficiency and profitability[1], with estimates on return of investments typically found to range between 200 and 300%[2]. However, these rewards are disproportionately reaped by organizations using design comprehensively throughout their operations[3]. Furthermore, teasing out and measuring the impact of design specifically can be challenging[4]. Due to the holistic, cross-cutting nature of design, successfully integrating it into organizations requires investing in talent, organizational understanding and supporting structures simultaneously[5]. Having a clear understanding of the main value sought from design in your specific organization, and the extent and maturity of current design utilization provides a good starting point for identifying effective ways forward.

The designers in the 101 organizations we interviewed shared a myriad of roles and effects that design had in these organizations and their fields. In this section, we discuss the four major types of roles design was seen to play in organizations, as well as the designers' assessment of the extent of design utilization in their organization – including what was seen to enable or hinder design on these different levels. Taken together, a number of key parameters characterizing the design

We've learned that terminology is actually incredibly important in developing the design maturity of the organization. We've started talking about customer experience, customer value and customer-centricity. There's little talk about design, our semantics are now different even though we're talking about the same thing.

– Design manager in a large organization

contribution emerge: *execution and vision, external-facing and internal-facing* as well as *means and ends.* In many organizations, these were either/or parameters in practice, but in their most effective forms these are complementary arenas; design playing a role in the operational product or service level in what goals were pursued and how, and on a systemic, holistic level shaping and implementing company operations and strategy.

On the more operational level, design was often seen in the traditional form of design, focusing on a way to execute external-facing offerings. Here, design often worked in a specific business unit or team, had an impact on product or service outcomes and focused on more user-friendly and desirable solutions. Design was seen as an effective way to enhance exploration, experimentation and customer-centricity. On a more strategic level, design was typically positioned either as a visionary force guiding external-facing ends, or as an internal-facing means for executing strategy. Designers described shaping organisations' strategy and vision, cutting across business units and silos, identifying fruitful positions for the organization to move into and fostering a shared understanding. Often in these organizations, design was also used on an operational level, with design representing an established part of the organization or being embedded to an extent where it became difficult to differentiate design from organizational culture and other functions such as brand and marketing, as strategic topics are omnipresent and often cut across organisational silos.

Finally, it is noteworthy that the terminology through which design was talked about varied, and was sometimes seen as problematic. A plethora of terms could be seen as confusing to non-designers, and the scope of design was seen to continuously expand, leading to variance in definitions even amongst designers themselves. Sometimes, terms like service design or business design were used to cover all facets of design. In other cases, designers preferred not to talk about design specifically when discussing their work and the impact and value they create in order to avoid alienating and putting off non-designers. Typically, they resorted to customer or user experience and centricity instead, then baking design into the ways in which to pursue these organization-wide goals. Put simply: call it whatever you want, as long as it gets the job done in the organization.

References

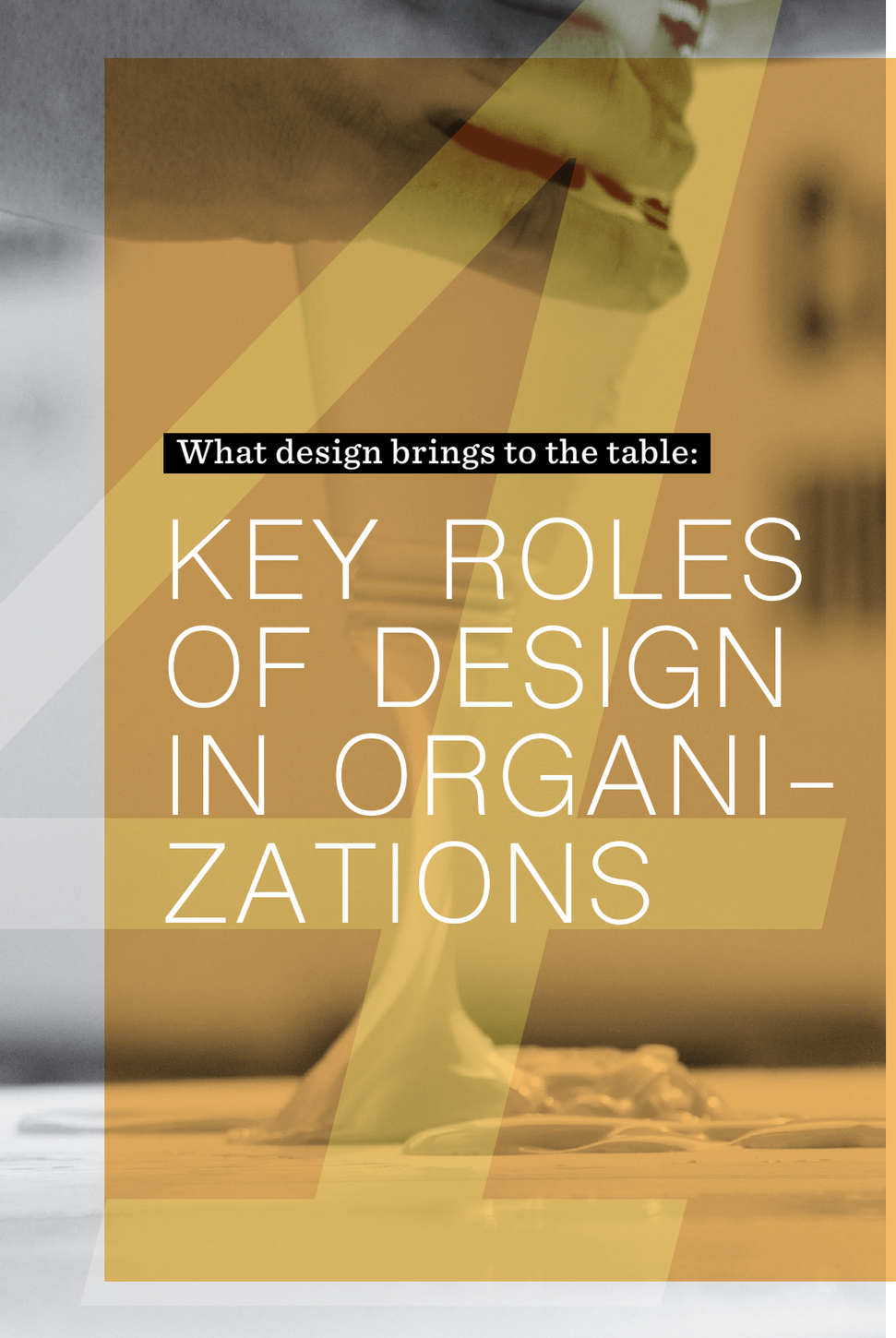
[1] BEDA (2017), BEDA Cluster: Measuring Design Value as a key factor of successful innovation. The Bureau of European Design Associations.; Björklund et al., (2020). Building design-driven organizations: The co-evolvement of deep and wide design capabilities. California Management Review, 62(2), 100-124, Candi, Gemser & an den Ende (2010), Design Effectiveness, Industry report; The Design Council (2008), The Value of Design, Factfinder report, British Design Council; Elsbach & Stigliani (2018), Design thinking and organizational culture: A review and framework for future research. Journal of Management 44(6), 2274– 2306.; Sheppard et al., (2018), The business value of design, McKinsey Quarterly.

[2] Rae (2016), Design value index exemplars outperform the S&P 500 index (again) and a new crop of design leaders emerge, Design Management Review, 27(4), 4-11; Forrester (2018), The total economic impact of IBM's design thinking practice.

[3] Buley et al. (2019), The new design frontier, Invision.; Sheppard et al. (2018), The business value of design, McKinsey Quarterly; BEDA (2017), BEDA Cluster: Measuring Design Value as a key factor of successful innovation. The Bureau of European Design Associations.

[4] Björklund et al. (2019). Tracking the impact of design. In Björklund & Keipi (eds.) (2019). Design+ Organizational renewal and innovation through design. Aalto University, Helsinki. ISBN 978-952-60-3782-0. pp. 74-91; Schmiedgen et al., (2016). Measuring the impact of design thinking, in Plattner, C. Meinel & Leifer (eds.): Design Thinking Research: Making Design Thinking Foundational (pp. 157-170), Switzerland: Springer International Publishing. ; Sheppard, et al., (2018), The business value of design, McKinsey Quar.

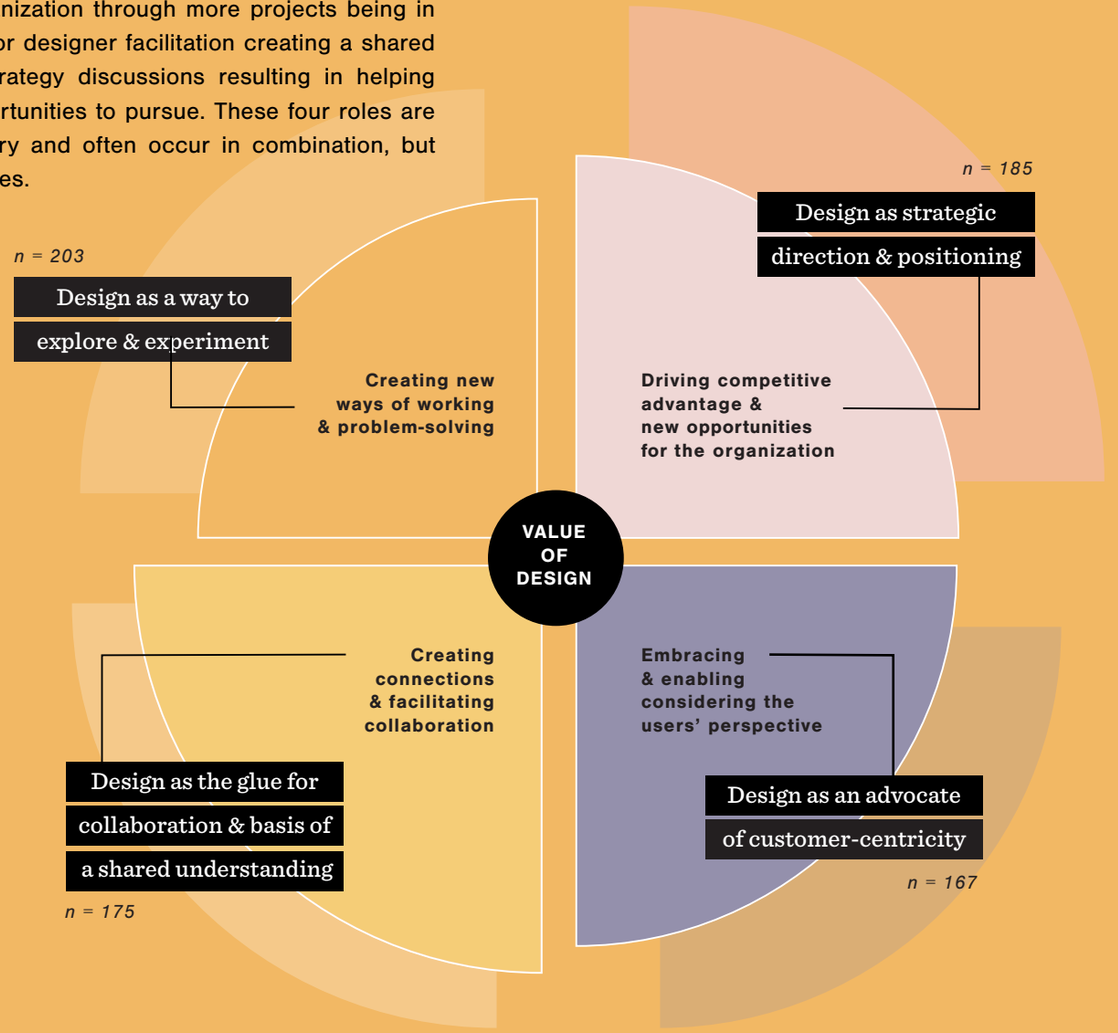
[5] Björklund et al. (2020). Building design-driven organizations: The co-evolvement of deep and wide design capabilities. California Management Review, 62(2), 100-124.

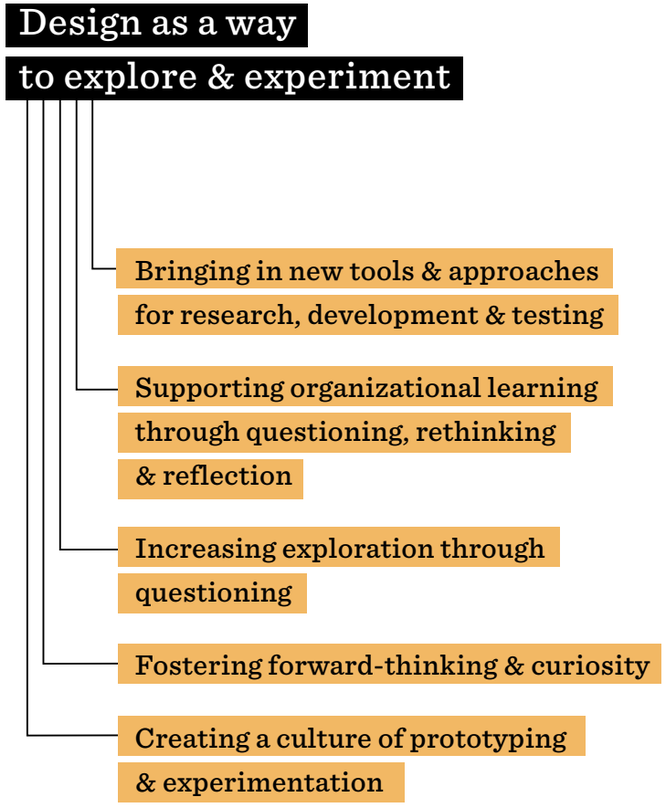


What design brings to the table:

KEY ROLES OF DESIGN IN ORGANI-ZATIONS

Although design was seen to have countless positive effects and roles in the organizations, most of these could be grouped into four major types of contributions in the organizations. Typically, these roles worked in tandem, such as design methods for exploration increasing customer understanding in the organization through more projects being in contact with users, or designer facilitation creating a shared understanding in strategy discussions resulting in helping to identify new opportunities to pursue. These four roles are highly complementary and often occur in combination, but with varying emphases.





The most common type of value the interviewees saw design as bringing into their organizations was its provision of an effective path to explore and experiment with novel and agile ways of developing their offerings and operations. Design enabled faster iteration and learning cycles as well as rapid experimentation. This provided clarity, insights, and potential directions in situations of uncertainty.

The observations and evidence-based iterative approach embodied by design encourages the process of validating assumptions and ideas, along with continuous data gathering. As such, it offered direct benefits in terms of improved offerings, but also a basis for organizational learning. Designers often used new-to-organization tools in their development projects, broadening the toolbox being used in the organization. Such methods could include, for example, challenging what the client asks for and validating needs before creating solutions in the case of Oivan, visualizing and prototyping the future service package of Terveystalo, and empathizing with the broad range of ICT end-users ranging from office workers to surveyors working outdoors through use case scenarios at Valtori. Designers at the Finnish Digital Agency, in turn, facilitated workshops to create a new platform, offering a human-centered mindset and methods for public servants to work in development. Design was often an important approach to innovation overall in the organization, complementing and broadening engineering, business, and developer approaches.

> *Design is also process-wise an important part of our innovation capability, playing a role in sort of mixing up and disrupting normal processes.*
> **– Jukka Kortesoja, Head of design, Accountor**

Design was seen to carry a license to challenge the status quo and ask tough questions, prompting more and new directions of exploration in the organizations. In practice, this could result in flexibility toward enabling pivots in ongoing development projects as well as reflecting on organizational practice more deeply, which in turn opened doors for organizational learning. For example, designers at Exove Design carrying out a gas station payment process study found a multitude of contextual factors that influence how people pay, providing new ways to think about payment processes. For one, machine contractors had to fuel not only their transportation truck but also the machines it carried, often including different types of fuels and resulting in multiple separate payment transactions. These types of insights helped frame the issue as something dealing with both physical and digital aspects of gas station payments, eventually resulting in digital solutions resolving many of the challenges in the physical side as well. In a similar vein, designers at Solita challenged basic assumptions linked to significant issues and new potential directions by prompting discussions on what truly sustainable business is, while designers at Finnair took steps highly relevant for the reasons behind a great deal of sustainable design work by assessing whether user research efforts had focused on relevant issues. Together, these examples help to illustrate the significance of questioning how issues and practices are fundamentally framed in the effort toward improved sustainability foundations.

In addition to creating value through bringing in understanding of new ways of working and offering ways in which exploration and experimentation could be done in the organizations, design was also seen to increase the willingness to engage in these issues in the first place. Design promoted forward-thinking and curiosity, with a license to explore

something unknown and look ahead in terms of trends, future visioning, and foresight. For example, at Kela, designers have been championing foresight work, taking a valuable big picture overview and identifying hidden needs to explore, instead of focusing only on the short-term view and the immediate operational challenges.

> *Design brings the ability to wonder, which means empathizing with things, organizations and people, wondering what could be the thing that we really are solving. In addition, design gives this sort of freedom to not care about organizational boundaries or such, rather you're interested about everything related to the problem to be solved.*
>
> **– Juha Jauhiainen, Design director, Exove Design**

Indeed, the interviewed designers were often actively working towards introducing, creating, and fostering a culture of exploring early on throughout their organization. For example, at Elisa there has been an active effort in recent years to transform their organizational culture.

> *In the past few years, we've directed a lot of effort to adopting this kind of explorative approach in the organization. Instead of an old-fashioned hero designer approach, where in the old days a designer was the one who knew the answers and envisioned the future, nowadays the designer is more of a facilitator who helps an organization understand what it wants to achieve, and then in quick, light and agile ways also to understand what would be the right direction for achieving that goal. So, experimentation in its diversity; a culture of experimentation has been the thing we have been bringing in.*
>
> **– Jouni Linkola, Design Director (PO Head of Design), Elisa**

IN PRACTICE:

Effective conceptualization at NAPA

When the new lead service designer, Marjo Mansén, started in her position at NAPA, she was faced with reserved enthusiasm from some of her new colleagues. Bringing in customer understanding as well as process knowledge of implementing strategy using design methodology, she became familiar with the company's updated strategy from a couple of years before. Mansén approached the issue in an explorative way by zooming into what the strategy could mean for a product in NAPA's portfolio with tremendous potential but with little vision for the future at the time. With the goal of introducing agile and explorative conceptualization, a concept project was created involving multiple key stakeholders internally across sales, business development, product development and engineering. Pursuing the project in this collaborative manner enabled the designer to not only highlight the value of vision work, but also to share some best practices for effective teamwork, service design, and experimentation. The concept project was carried out in six weeks, which was perceived as an exceptionally short time compared to previous projects. As a result, the project was a success and everyone involved was positively surprised by the outcomes and the experimental way of working. Design proved itself as a fast, systematic way to explore opportunities toward integrating customer understanding to the company in a collaborative and goal-oriented way.

Building a culture of prototyping at Gold&Green

At Gold&Green, the Chief Innovation Officer, designer Maija Itkonen, takes pride in the prototyping-centered development culture that has been built into the organization. For example, they facilitate a community of developers in the company and bring them together to a forum – internally called an incubator – every week. There, the community of product developers, researchers and other experts come together in a relaxed setting, stepping outside of their specific roles to collaboratively analyze and evaluate new prototypes. An emphasis on an agile and positive prototyping culture is at the core of Gold&Green's activities – prototypes are developed, iterated and evaluated on a daily basis. A large physical piloting and experimenting space, Design Lab, enables low threshold prototyping on site and the staff is accustomed to presenting and reviewing different levels of prototypes rather than waiting to have finalized and polished results to share. In addition to the internal prototyping activities, the company regularly extends experimentation to consumers as well. For example, Gold&Green has established a group of co-developers with 100 participants consisting of a wide range of volunteering consumers from different backgrounds. This community is used as an active tool for demand-driven feedback and co-development, where the company gets immediate feedback, ideas and user experiences from a broad range of users. Indeed, experimental prototyping has remained tight in the product development culture of the organization throughout its growth and incorporation into the Paulig family. To the employees of Gold&Green, prototyping has become a natural way of developing and sharing their work.

Integrating exploration to operations at Avidly

Prototypes can also work as a tool for finding the right ways of operating and balancing differences in the ways of working in a widely spread organization. At Avidly, business is being actively prototyped in order to learn what kind of solutions could work and what does not, for example setting a goal three months out and then adapting based on learnings from the experiment. Agile organizational development is valued and measured too, and is being incorporated into the OKRs (objectives and key results) of staff in many cases. CEO Jesse Maula also highlights the importance of design methods and rituals to support the type of feedback culture and discussions that are needed for such explorative and adaptive work. In addition to in-house designers, all employees are expected to be able to empathize with and do qualitative research on a small scale in their daily work.

As a part of the organizational transformation at the company, Avidly also worked to clarify what experimentation and creative problem solving mean for them. Working in five countries, language can be interpreted in very different ways across the company without conscious effort. Avidly engaged in several rounds of storytelling, using design approaches to clarify shared purpose and identity, and arriving at a shared vocabulary. Maula sees this as an important enabler for agile yet cohesive operations in the organization

Design as strategic direction & positioning

- Identifying the right problems to focus on & solve
- Forming an overall systems understanding that enables effective prioritization
- Creating a basis or enabler for the business model of the company
- Opening up new business opportunities
- Increasing recognition through differentiation, consistency, & brand development
- Creating &supporting strategy by visioning the future in compelling ways

> *Business-wise, the benefit of design is in doing the right things and also doing those right things in the right way. We've been able to show that when design is used on a large scale, our development processes are more efficient and effective, which also creates cost and business benefits.*
>
> **– Tuomas Manninen, Head of Design, OP Financial Group**

Design was seen as a key approach to identifying strategic opportunities and issues to tackle, helping to position the entire company. This was often tied to designers' ability to unearth meaningful problems and ensure that organizational offerings create real value. Design could provide a much-needed step backwards to gain perspective and to direct limited resources where they matter most.

> *Too often I've seen projects that come from the ivory tower downwards, just informing you that now you need to think about and solve this. And at that point, you then find out that it actually never had any customer value, and is, at its worst, just the equivalent of force-feeding solutions. The greatest value of design is in catching onto what does and does not need to be solved early on. So that the limited development dimes found in Finnish companies end up being invested in the right things.*
>
> **– Ulla Jones, Head of Design, CGI**

> *Design's biggest value is on the strategic side, where we first dive into finding problems worth solving and then tease them apart in practice.*
>
> **– Maria Uhari-Pakkalin, Director and Head of Design, SOK**

Uncovering such key issues often relied on customer insights and data, along with the empathetic, human-centric approach of designers to understand the people connected to the issue (tied in part to building more customer centric organizations, as discussed in Design as an advocate of customer-centricity). However, design methods and ethos also helped to form a holistic understanding that made identifying opportunities and discussing priorities possible. For example, value stream mapping has played an important role in understanding connections and opportunities at Metso Outotec, while visually mapping value streams and stakeholders in the ecosystem has supported strategy work at Aava and motivation based customer segmentation has helped to prioritize product portfolio development at OP Financial Group. These processes rarely happened in isolation, as they involved strongly leveraging collaboration as discussed in Design as the glue for collaboration and basis for shared understanding.

> *Design brings in a helicopter view, perceiving things holistically. On one side, this means understanding the customer journey, seeing it from their perspective. On the other end, designers bring in technical know-how, working from customer and business understanding, all the way down to the technical implementation.*
>
> **– Tingting Lin, Team lead of digital experience at Ponsse**

However, it is important to note that design was also thought to be a long-term investment, as building a holistic enough understanding and making strategic changes based on it incurs short-term costs with little certainty of a pay-off. Accordingly, Kimmo Holm, a service designer at Siili Solutions, notes that to access its full potential, design needs to be bought at the highest levels of organizations, as otherwise any initia-

tives risk becoming a project-level "theater" of being holistic, while the real impact and learning remain small.

On the part of design agencies such as Fjord, Hellon, Idean and Pentagon Design, design was the basis of their entire business model and represented their way of creating value for their clients. However, design played a significant role in the business models of other types of organizations as well. For example, many designers reported the use of design to identify new business opportunities.

> *For us design is a driver of growth, or, in practice, a way to answer to the needs of our customers' changing world. So, we find new areas of business with it.*
>
> **– Elina Halinen, Design and Development Director, (Digital solutions) Fredman Group**

One prominent way in which design identifies new business opportunities is by enabling superior customer experiences. For example, for Oura, good design has been a central tenet for the company, as the value of health-tracking measurements relies on having a smart ring that people want to wear 24/7. Similarly, the business model of Kuja Studio relies on made-to-measure furniture, where design has shaped both the value proposition to customers as well as the efficiency of the production process needed for a viable business.

Outside of identifying and pursuing new business opportunities, design was also seen as a differentiating factor for organizations, making their offering recognizable and building a valuable brand. For many product companies, such as Genelec, Artek, and Lundia, high-end design was a key identity. Design also helped to create a recognizable, systematic brand in the market through consistent offerings. For example, Fazer has consolidated a shared design DNA for the nearly 60 brands they have, and Dusty uses design to create a distinct look for their men's clothing lines that can be recognized as uniquely theirs. Shared design principles were also used to harmonize offerings and operations beyond their look and feel, with for example Posti designers following a collection of prioritized design pillars in all design efforts, such as reducing mental and material waste.

Another way that design was seen to offer differentiation in the market was through bringing an extra edge in highly competitive technical markets and basic services. For example, in the telecommunications industry in Finland, where the quality and offerings across fundamental service providers are fairly similar, design has helped to create a distinct and actionable brand. For Wolt, design focuses on creating a "magical and fun" product feel to stand out in international comparison. Similarly, for Kemppi Oy, the usability and user experience of their welding machines makes them stand out from the competition. Visa Rauta from KONE echoed a similar sentiment:

> *As in many other fields, our industry is heavily competitive and the technical differences between companies are often small and the offerings quite similar. That's why design and value-added services are definitely good ways to differentiate. In our experience a little thing, say a turnstile or a device you've seen in the lobby of a building, can have a significant impact on the customer's decision-making process: a client ends up choosing KONE as supplier because we had something exceptional to offer.*
>
> **– Visa Rauta, Design Director, KONE**

Notably, such differentiation and brand image issues applied to public as well as private organizations, with for example the City of Helsinki seeing design as a key brand factor.

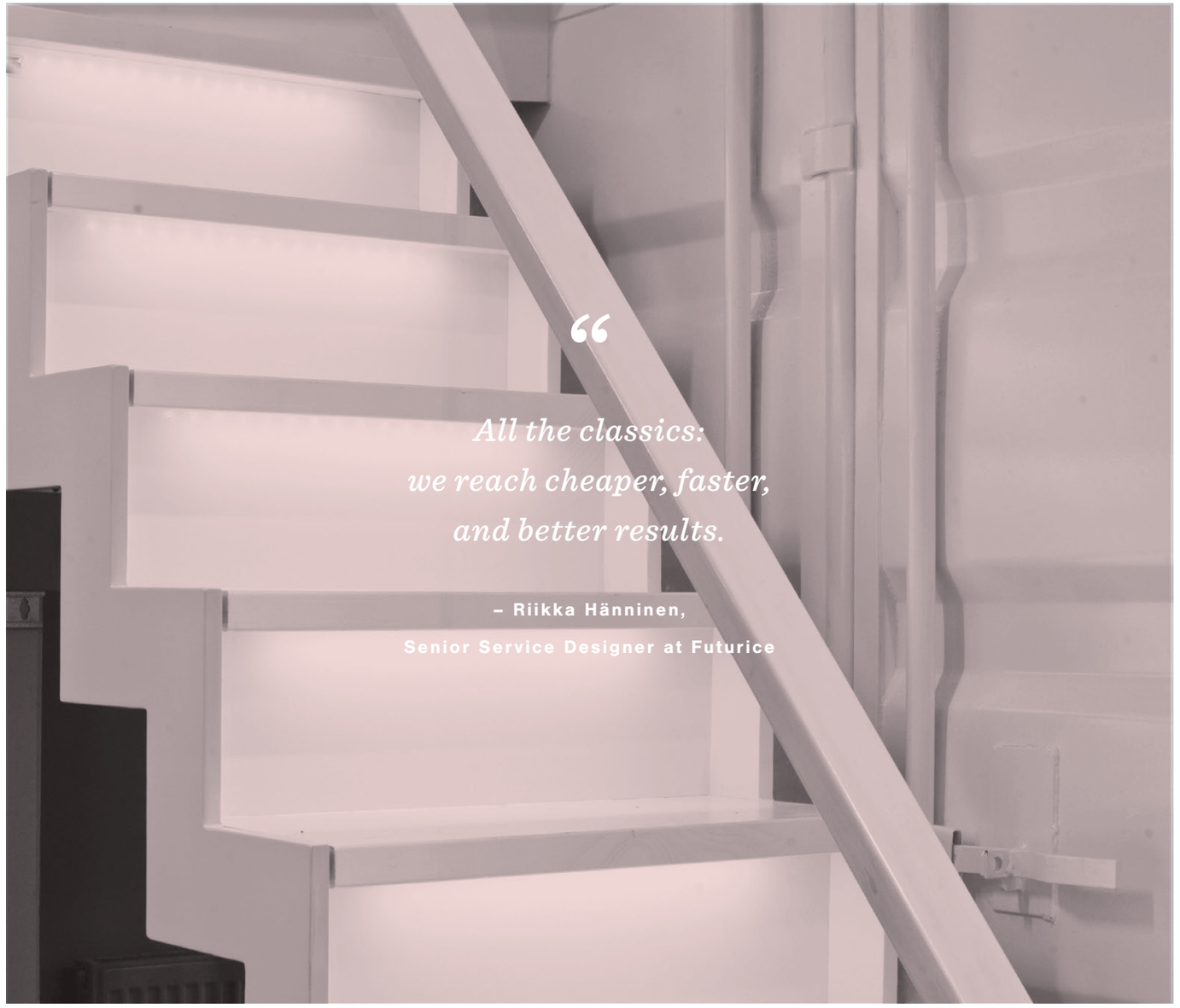
> *For us, design is clearly a brand element that profiles us internationally. So, we think that design is clearly a rising topic that interests and resonates out there in our ecosystem, where we strongly collaborate with various cities and their networks. And overall, user-centered thinking in the city context is on the rise, and we really are a clear forerunner there. We want to stay in that role in the international competition between cities. So, customer experience, employee experience, and the city brand, those are the three clear values.*
>
> **– Päivi Hietanen, City Design Manager, City of Helsinki**

Finally, design was seen to play a key role in the strategy processes of some organizations. In addition to extending the scope of participation and supporting a shared understanding (as discussed in Design as the glue for collaboration and basis of a shared understanding), design brought value in the vision work of organizations. For example, in Fredman Group, design approaches have helped to evaluate and estimate how professional kitchens will develop and change over time, and at Kela design helps to anticipate what kind of attitudes and expectations citizens will have in ten years. Consultancies and agencies also leveraged design tools in both their client work and internal development, with for example Industry62 using design thinking tools and methods for envisioning the future to support strategic decision making.

In addition to clarifying and probing different alternative futures with such efforts, design played a key role in getting

internal and external stakeholders excited about future plans. For example, in launching the new KONE DX Class elevators in 2019, KONE shifted from a technical and product focus to value based, customer-facing communications highlighting the needs of end users that the new offering targeted. Design enables the creation of a compelling narrative that helps to implement chosen strategies.

> *Design brings a vision into a company's strategy, and it's really important for future prospects. It's kind of like storytelling that can inspire different sides.*
>
> **– Jussi Hiltunen, Senior User Experience Designer, MaaS Global**



IN PRACTICE:

Mapping value & prototyping strategic opportunities at Aava

When Chief Strategy Officer Katarina Segerståhl started at Aava a few years ago, she faced the task of clarifying the business portfolio and strategy as well as discovering new directions. The company had ambitious growth goals that clearly required seizing new opportunities beyond an incremental development of current operations. As the first in-house designer in the company, Segerståhl set out to create multiple models and visualizations of the markets and ecosystems at play to form a basis for strategic decisions. These included, for example, mapping the actors and stakeholders in the market, how information moves between different parties and how they interact, as well as capturing the systems dynamics of where value is created, multiplied and diluted. As an added challenge to mapping and management alike, the value chains and ecosystems are not static. Complex relationships and dynamics need to be well understood to capture new value. Segerståhl reflects on the role of models in strategic decision making:

> *When it comes to the strategy of the corporation, my role has been to use design to visualize, model and refine different options and views under discussion, and in that way support also the dialog in the executive team. That we've had concrete models, artefacts, prototypes or scenarios we've been able to discuss, rather than relying only on opinions held in mind or lines of Excel.*

These mappings have resulted in new insights, and the role of design has not stopped at their identification. Rather, prototyping new business has also become a key part of Segerståhl's job, doing quick experiments and scaling up to minimum viable products. Such prototyping has played a key role in distilling desired strategies into actionable business opportunities. As one example of capturing new value in practice, Aava just launched a new business line for proactive health, Aisti Health.

Paving the way for a new direction through focal products with Pentagon Design for Orthex

Pentagon Design and Orthex have had a long-standing working relationship for the past two decades. Pentagon Design owner and Design Director Sauli Suomela notes that the shared history has helped to push boundaries in opening up new competitive advantages with design. As a company manufacturing plastic household products, Suomela sees the SmartStore Collect recycling system they designed for Orthex as an important focal point in developing and communicating the identity of the company. While the idea immediately seemed interesting, it took time for Orthex to see a market being established for the recycling system. After other successful collaborations, the idea was greenlighted and SmartStore Collect opened a new product line. Made from 100% recycled materials and produced in Finland and Sweden, the design investment has paid off with strong sales.

The new product has played a part in changing conversations around the company, for example winning the Red Dot Design Award in 2020. Suomela notes the importance of new products and concrete examples also for strategic shifts in their client companies:

> *Design is a way to start building and concretizing those strategies, start making them visible so that it's easy to communicate in-house that this is what we are, this is what we want to be – we're not that yet, but this is the goal.*

Indeed, the SmartStore Collect system has helped to shift discussions internally at Orthex, sparking investments in developing new materials and increasing the usage of recycled materials throughout product lines. The share of design-led novelty products has tripled in turnover since 2010 at Orthex, and there is a systematic focus on designing the road map, design language and product portfolio of the company.

IN PRACTICE:

Promoting coherence through company-wide design principles at Planmeca

Planmeca has company-wide design principles that both guide the direction of their work and describe the important values in their development. Originally explicated for industrial design, Senior Industrial Designer Timo Silvonen reflects that these came to resonate throughout the company. The list included four key principles right from the start:

- **Efficient workflow for professionals, ranging from solutions supporting timely treatment of patients at the dentist to after-sales ensuring equipment value is put to use**
- **Patient and staff safety, including issues such as ergonomics for physically intensive working and hygiene**
- **Patient comfortability, tackling the fact that most people are at least somewhat nervous walking into the dentist, with materials and equipment designed to put the patient at ease**
- **Long-lasting aesthetics, ensuring that durable equipment will still look current decades later and that it fits the needs of the 120 countries where the products are used in**

Designers and upper management soon realized the drafted principles could act as a North Star not only in the case of industrial design, but for all design company-wide. Now the four principles act as signposts for all development efforts at Planmeca in all business areas and are included in company presentations. Articulating the design principles has helped to create a vocabulary for discussing and evaluating development decisions relative to the desired direction and positioning of the company, helping to create more coherent offerings and operations.

Design as the glue for collaboration & basis of a shared understanding

- Bringing people together across organizational silos
- Synthesizing diverse perspectives
- Facilitating collaboration & discussion in a participatory manner
- Creating well-packaged information to impact decision-making to support forming a shared understanding
- Demonstrating & concretizing abstract ideas to discussable representations

> *Design is located in a cross-section of functions, summing up and bringing together a wide variety of things. Design can be the joining element.*
>
> **– Anna-Marja Suvilaakso, Senior Industrial Designer, Polar**

Designers often highlighted improving knowledge transfer and enabling other experts to better share information in their organizations. Working in a participatory manner builds up collaboration, and design approaches help to make complicated concepts understandable for diverse stakeholders.

Designers created bridges between products, services, people and information, often operating across organizational boundaries. As such, they created platforms for discussions, extending the scope of voices heard in development. For example, Posti designers have involved drivers and sorting personnel to service and customer experience development efforts, bringing in more diverse perspectives, but also improving employee experiences at the organization. Similarly, designers in companies like Vaisala and Polar engage with marketing, sales, and production professionals in product development projects. Coming into contact with diverse groups of stakeholders, designers are also often in a position to synthesize a holistic understanding and voice issues falling in-between silos. For example, designers at Sanoma Media Finland "travel through organizational walls," raising potential issues based on what they see different units and functions doing.

Fostering collaboration also required practical facilitation skills beyond calling people from distant functions together. Forming a clear agenda and making sure everyone is familiar with any tools used for the meeting (such as virtual whiteboards) were seen as important for facilitating interaction between diverse functions and stakeholders. This, according to Briana Romero, a service designer at Stora Enso, ensures that all relevant parties are given a chance to influence decisions: "You have to give people a chance to have a voice in these sessions, and to be able to extract the information in a way that everyone can see it and check it later on."

In addition to building collaborative efforts, designers often helped in making sense of the different perspectives brought to the table. This included categorizing, visualizing and organizing perspectives and input, ultimately increasing everyone's understanding of the topics at hand and helping move conversations forward. The following quotes from Sanoma Media Finland and Huld show how designers simplify discussion topics to ensure shared understanding.

> *It's amazing when you're in a workshop with clients and draw some shoddy, hazy sketch, like 'this is kind of what people said', and then even that visualization brings something new to the table, which helps us move forward and discuss.*
>
> **– Hannu Havusto, Design Manager, Huld**

> *We're given business goals that are numeric, without a lot of background information. To be able to get on the same page about these things, we typically have to change them into something other than words or numbers before we get to reasonable discussions. Design methods help to achieve the state of shared understanding where, when someone says that 'this is a ball', everyone understands what the ball looks like, how big it is, and what it is used for.*
>
> **– Ville Sielunahjo, Design Lead, Sanoma Media Finland**

A core outcome of shared understanding was that it helped people perceive their contribution to the organization more clearly and ultimately carry out their work better, resulting in improved work excitement and satisfaction. Katja Soini, Design Director at Vahanen-yhtiöt, explained the value of having visualized real-time customer data enabling everyone to see shared clients and projects in the same way. Here, design enabled the simplification of multidimensional data, including customer experience, project status client lists and economic outcomes and outlooks in an understandable and relevant format. A designed layout and functionality build holistic understanding, providing a shared language and platform on which diverse units can interact concretely toward more sustainable business practices. A holistic view “speaks to various stakeholders,” such as project managers when they notice the movements of different parts in projects, and upper management when they perceive the organization and its wider ecosystem more concretely. This shared understanding and interactive capability are the prerequisites for a shared direction in terms of the sustainable development efforts of a multidisciplinary organization.

IN PRACTICE:

Listening & visualizing to create shared understanding at Fira

Jenni Mattila, currently Lead Designer at Fira, had little knowledge about the construction industry when she joined the company, and initially set off to learn about the field. Here, she used common design tools, personas and visualizations, to map and represent the main stakeholder groups Fira was dealing with. The motivation for this work came in part from her feelings of unclarity in project kick-off meetings and conceptualization sessions: “It felt tough when around 10 people each explained their own views on a topic, with one explaining this, another that, and a third one yet again something different. So, I tried to visualize and scratch together a coherent whole to share.” Her efforts in listening to people’s points and summarizing them visually helped, according to her, “speak about the same things, and move forward with a shared vision.” As such, this shows how a designer, motivated to learn about a new field and equipped with a visual way of working, can support the creation of shared understanding among subject-matter experts. For Mattila, these initial successes in meetings have encouraged her toward more proactive “shoving” of personas and visualizations in other projects, further pushing toward shared visions amongst new groups of people.

Journey mapping to crystallize individual contributions at Ponsse

Designers need to connect distinct worlds to achieve meaningful collaboration between different functions. While designers tend to passionately push change in ways of working, it is more important to truly engage with multiple stakeholders and make change a collaborative effort together. This is something that Ponsse’s Team Lead Tingting Lin has sought to promote. Hence, in building collaboration, she has actively sought feedback on new ways of working, emphasizing a desire to implement processes that are truly helpful, instead of enforcing additional documentation duties or meetings around lofty and unrealistic topics. In practice, this has meant using collaboration tools familiar to a designer, but also adopting a human-centered view to the process – in this case, an employee-centered view. One of the tools that has been adopted to support a shared understanding in placing user journey maps at the focus of development projects. These are used to position and involve everyone’s contributions into a larger framework, engaging expertise from business, technology, and design, with planning efforts beginning to focus on journeys instead of separate features.

> *“We as designers and business analysts need to understand the rest of the organization, like how people are working and what their pain points and goals are. So, the worst thing we can do is follow our own process in isolation, come up with a concept, and throw it to the implementation people, like ‘deal with it.’ Instead, we should take the responsibility to engage with people and facilitate an end-to-end process from design to implementation.*
>
> **– Tingting Lin, Team Lead in Digital Experience, Ponsse**

Organizational structures to support shared understanding at OP Financial Group

OP recently realized that while their teams were doing stellar work in their own fields, at times this came at the cost of the bigger picture for customers. Head of Design Tuomas Manninen compared this to teams being pieces of a puzzle, where the individual pieces were polished and shiny, but from the perspective of the customer, the pieces might not even belong to the same puzzle. As an example, in wealth management, teams were working on individual solutions or even features in isolation from one another, which led to competing and overlapping solutions for customers, such as them being offered similar investment funds through multiple communication channels. Responding to this issue, a concept designer together with upper management decided to restructure the teams around customer motivations, instead of OP’s products and services or socioeconomic segments for customers, such as millennials or urban professionals. Hence, in the example of wealth management, rather than focusing on managing one investment fund, teams focus on how to more holistically serve different types of customers, such as those wanting support for their decision making or those who tend to do their own calculations and research. Now, this experience has spurred more interest in the organization as a whole to center units and teams around customer motivations. As opposed to the cases of Fira and Ponsse, OP’s case shows that designers can facilitate collaboration and shared understanding even in a top-down manner, as long as changes help the right people talk to each other.

> *Being an industry benchmark can't be done without a superior user experience. And, service design is the way to reach it.*
>
> **– Marjo Kurri, Manager, Service Design & Customer Experience, Virta**

Almost all of the interviewed designers emphasized adopting a human and a customer-centric perspective to problem solving, which was seen as the vehicle to create superior customer experiences and to improve accessibility and usability.

Designers used customer-centricity as the starting point for problem solving. Here, designers worked to see the product or service from the users' point of view, as opposed to the organization's point of view. This is exemplified below by Stephanie Del Rey, Fjord's Design Director and Matias Halmeenmäki, Sitowise's Design Manager & Service Designer:

> *Our job is to say 'Wait a minute, we need to think about why we are doing this, what the purpose is, what needs we need to fulfil, what the question we need to answer is.' So really understanding the needs and the context of the end-user, customer or people in general. Our way of doing things is never technology first. It's human first.*
>
> **– Stephanie Del Rey, Design Director, Fjord**

> *The experience of public areas is strongly influenced by some fairly straight-forward design choices, such as lighting. Still, the design of places like public transport stations isn't just about having minimum-infrastructure benches, trash bins, a paid toilet, and some timetable screen. Rather, you should think about what would be nice if you were a passenger. Or, if you were a woman in the middle of the night alone at the station, what would you feel like. It's about designing empathically.*
>
> **– Matias Halmeenmäki, Design Manager & Service Designer, Sitowise**

Designers also created tools and approaches to help shift organization and technology perspectives to the customers' point-of-views across the organization. For example, designers at TietoEVRY created templates for pitch decks that guide presenting projects through focusing on customer value and the story first, framing technology as means to create the value rather than an end on itself.

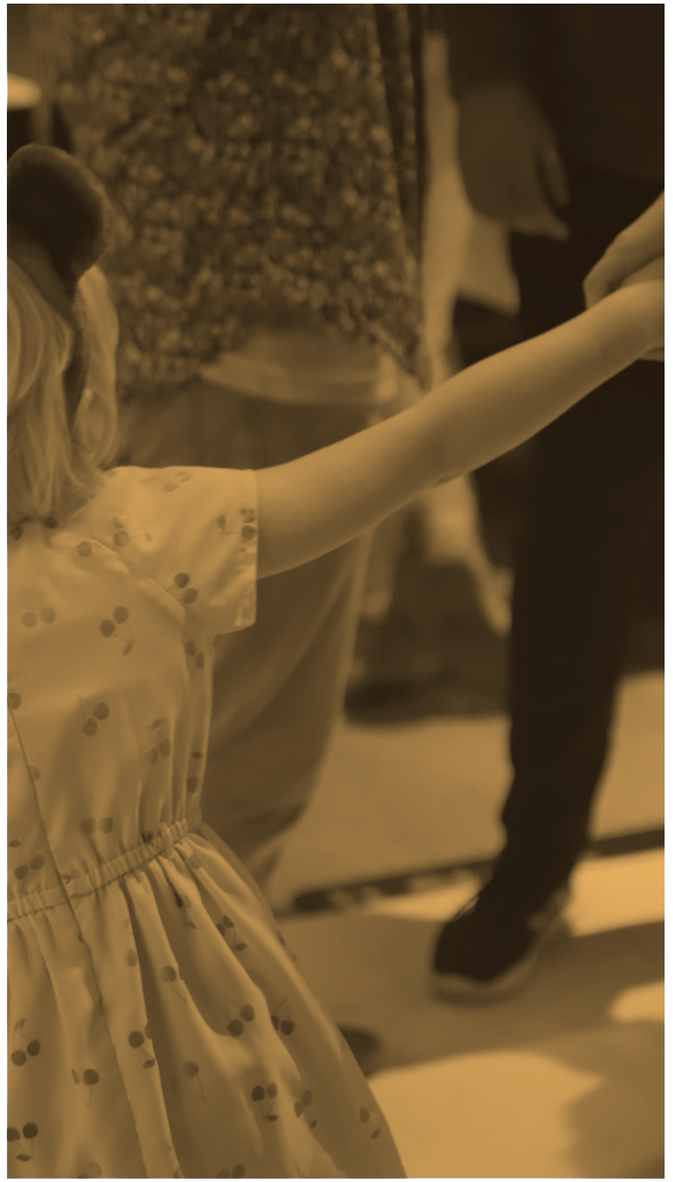
Advocating for customer-centricity also required connecting different parts of the organization to each other. For example, a handful of public organizations discussed their efforts in streamlining user touch points across different bureaus, when traditionally each bureau had worked in isolation. Essentially, to achieve desirability, usability, ease of use, and appeal from the user point of view, designers needed to work across silos in their organizations, thus ending up as advocates of this customer-centered orientation. This attitude was also highlighted by private companies, such as Nokia:

> *One of design's values lies in bringing this customer and user perspective into all decision making, specifically with regards to product development. Being the path between users, clients, and product development. Sales and marketing are the path from inside to out, and design is the path from the outside in, bringing insight into what should be done and how.*
>
> **– Olli Mannerkoski, Product Design, Nokia**

Convincing organizations to adopt a customer and user-centered point of view required designers to work proactively, understand the status quo, and to be quick in showcasing the benefits of the new approach. First, as an example of proactivity, a design director (PO Head of Design) at Elisa had encouraged designers to form teams with non-designers instead of working on their own, which had helped de-silo design and "hack" the organization from within. Next, understanding the status quo helps designers propose meaningful changes in an understandable way. For example, designers at ABB Motion surveyed employees and found that discussions about customers tended to stay on the level of "this ship," instead of considering groups of people, such as captains, maintenance, and purchasing. Knowing this enabled the designers to systematically bring up the disparate needs of separate individuals, starting to bring depth to how users were discussed internally. Lastly, to quickly showcase benefits, several designers reported using experiments and tests (which is also one of design's key values, see Design as a way to experiment and explore). In the case of Elisa, this meant, for example, field testing the kind of value promises and arguments around sustainability that matter for end customers and fit for the teleoperator.

In organizations where user-centricity had been more comprehensively embraced, designers had developed formalized processes for involving users in development activities, by simplifying the logistics of user testing as well as educating employees on user-centered research techniques. For example, to simplify testing logistics, Kemppi Oy employs in-house welders to test prototypes. As an example of educating others in user-centricity, the designers in HSL together with Hellon have trained roughly 20 employees in the basics of design and meet with them monthly to exchange project updates and reflect upon work. According to a HSL customer experience specialist, these people now partially "work as ambassadors of design and customer-centricity."

Of course, designers' advocacy work is strongly supported by their core expertise, namely the practical techniques used to understand customer views and needs. These techniques include interviews, observation, surveys, experiments, tests, and collaborative workshops conducted by the professional designers themselves. For example, Wärtsilä interacts with and interviews customers to identify value propositions in their rapid innovation projects, the design team at the Finnish National Agency for Education visits schools and municipalities to understand what questions and needs teachers have, and the Havu Cosmetics team visits stores selling their products to interview customers and to see how their products look on shelves with other products. When it comes to collaborative sessions, Fortum had conducted customer journey mapping workshops with internal software developers, architects and business representatives, crossing many internal functions, whereas Finnair had organized workshops with customers to imagine a new lounge experience, focusing on external input more than the internal side.



IN PRACTICE:

Designer-led transformation toward employee-centricity at Kela

A pair of designers was hired into Kela in 2018 with an unusual premise: they were to carry out a five-month participatory strategy development project. Here, the two designers were given blessings from upper management but also free range in how to do the work. In the end, the two designers carried out workshops in Kela offices all around Finland, showing interest in local ways of working. Insights about everyday life of Kela employees, along with critique on previous strategies, were systematically analyzed for key themes, and fed back to upper management in strategy development sessions. The designers also assured two-way transparency, by communicating their work toward not only management but also employees through, for example, internal blogs. In the end, this participatory process garnered trust from employees, who enjoyed being genuinely heard, and resulted in a strategy that people actively utilize and talk about in their work. The success of the strategy development project also built trust into the human-centered approach of design in Kela, and opened doors for further employee-centered design to support upper management, including projects related to strategic forecasting and AI ethics.

Advocating for user-centricity through grassroot activity at the Finnish Ministry of the Interior

The Ministry of the Interior exemplifies a very different approach to promoting design in an organization than the case of Kela: at the Ministry, designers rarely own projects but instead support others' work, and advocate design in a highly bottom-up manner. Mariana Salgado, a service designer at the Ministry, explains how even the most mundane support work is an important form of advocacy: "Sometimes I go into a really interesting project, and they ask me if I could make a flyer. And I can do a flyer to start, so that they understand that visualization is one of my tools. But, when you make that flyer, you can ask about the important things. What's the goal of this workshop? Why are you doing it like that? What's the big picture?" This highlights the bottom-up approach, where designers aim to showcase the usefulness of considering customers' perspectives to individuals instead of conducting their own projects with a higher mandate. As another means of grassroot advocacy, Salgado invites designers from other organizations to talk about how they go about user-centricity, as well as hires students to do thesis work in the organization. Both of these methods are essentially low-cost ways to show the benefits of a user-centered approach to others. Grassroot advocacy builds interpersonal trust, which Salgado says arises from successful collaboration experiences and resulting in people knowing to grab you by the hand and seek your help. She summarizes the importance of trust as follows: "It's not enough that others understand that your way of doing things is useful, but they must also trust you as a person."

Designing for the user instead of for differentiation at Kemppi Oy

Kemppi has adopted a user-centered approach in product development. While an organization-centered perspective may focus on technical differentiation from competitors, designers at Kemppi have focused on making users' lives easier. In one example, the design focus was on users needing to access difficult positions while still using multiple welding settings. For example, welding the flue gas scrubbers of ships requires climbing through a small hole into a huge cylinder and using ladders to move around inside the block. Here, different types of welds are needed, each requiring different settings in the welding device. To change settings, the user had to climb back to the machine on the ground floor. Acknowledging these customer needs, Kemppi designers created Control Pad, the world's first wireless handheld user interface to control all welding settings. Eliminating the user's need to return to the machine when changing settings, the users' work is easier and the productivity increases.

In another project, designers approached welding parameter setting from a user-centered point of view. Traditionally, welders adjust parameters that refer to invisible physics: electric current, voltage, wire feed speed, pulse frequencies etc. Finding the best settings for each welding task proceeds through trial and error. Starting from the users' mental models, Kemppi designers created an alternative input method. With Weld Assist, the user selects the material of the metal plates, their thickness, joint type and welding position. Whereas users traditionally start by making guesses, now the user interaction starts from what the users know. The Weld Assist feature has become a key sales argument for new users.

A user experience manager from Kemppi summarizes the value of this user-centricity: "It is important to look at design from the perspective of how we can make the user's everyday life easier: simplify the work and make it more enjoyable. Since these devices are business-to-business products, a key goal is that working with our devices is also more productive." This has resulted in a clear differentiation from other products on the market, but the route to the goal was found through adopting users' and customers' perspectives as the primary driver.

Commentary:

TAKING STEPS FOR DESIGNING THE PLURIVERSE

Design + Sustainability 101 tackles the challenge of sustainable development and increasing complexities in innovation as well as natural ecosystems. This outstanding research work has addressed design-intensive and design thinking organizations in Finland comprehensively. The findings help to understand the value, functions and opportunities that design can have: discovery, strategy, shared insights and collaborative human-centricity. These reflect not only the roles for design in organizations, but the skill-sets of designers:

[1] use of creativity: tools and methods that support individual and organizational creativity, opportunities for finding novel solutions through iterations of testing and evaluation;

[2] strategic thinking or strategizing: managerial skills, sensemaking with graphic design, enabling prioritization and decision-making through prototyping;

[3] empathy: illustrating or enacting customer journeys and service offerings, enabling emotions for a human experience; and

[4] collaboration: being able to manage and facilitate a co-design process and interdisciplinary dialogue.

This has been achieved by promoting design through successful cases and testimonies as well as enabling resources that help in scaling up design. Design thinking has been very much design doing for managing processes and creating outputs.

The role of design is expanding not only to new areas in society and business, but to the interfaces between art, science and nature. Design has proven its ability in navigating surplus information, finding interesting pieces of data and identifying key people. Could design have a stronger role in fuzzier, even foggy front ends and unsolvable, wicked problems? Furthermore, design has had a long-term ethos for addressing environmental sustainability, questions of equity, as well as the need for improved livelihoods. Designers' roles as producers, mediators, educators, explorers, problem-solvers, and advancers of humanity or humility provide a strong sounding board for sustainable transformation. Yet, should this be taken a few steps further? Could design address pluriversal questions and design for the pluriverse, offering new ideas for democracy, value systems and power balances between the global South and North? And further, could design promote not only human centricity but ecocentric design where humanity is not separate from nature, but one part of the living organisms at the center of design efforts? There is a lot of space to rethink design futures and see what kind of roles it will take.

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LEVERAGING DESIGN IN ORGANIZATIONS

Introduction:
Leveraging design in organizations

There are several different models for depicting the degree to which design is integrated into organizations, such as the Danish Design Centre's Design Ladder, the Design Value Scorecard, and the InVision typology of designers as producers, connectors, architects, scientists and visionaries in organizations[6]. Study upon study has shown that most companies continue to be on the very first steps of whichever model you look at, with untapped potential for design abound[7].

We asked the designers we interviewed where they would place their organizations. Although the degree of utilization naturally varies across projects, teams and units, the results suggest that most Finnish organizations that employ designers are on a solid process level.

Design maturity

Designers' assessment of the design maturity of their organizations.

n = 101 organizations

References

6 The Danish Design Centre (2001), The Design Ladder, http://danskdesigncenter.dk/en/design-ladder-four-steps-design-use; Westcott et al., (2013), The DMI Design Value Scorecard: A new measurement and management model, Design Management Institute Review, 24(4), 10-16.; Buley et al. (2019), The new design frontier, Invision.

7 BEDA (2017), BEDA Cluster: Measuring Design Value as a key factor of successful innovation. The Bureau of European Design Associations; Buley et al. (2019), The new design frontier, Invision.

LIMITED DESIGN UTILIZATION

In 13 out of 101 organizations, design was still severely underutilized, applied only in a small portion of projects or as a finishing touch. In another 16 organizations, the designers saw the organization as moving towards more comprehensive utilization, but not quite yet on the level of integrated processes. Such companies could be found from all organization types interviewed.

> *The role of design is still more of a supportive one, supporting the main projects. Not so much integrated into the organization's operations in a central way*
>
> **– Designer in an IT consultancy**

In most cases, the low design maturity of the organization was seen in the narrow scope of design. Design was involved late in development processes, if at all – involvement was characterized as sporadic. With late involvement, design was typically limited to incremental changes and fine-tuning.

> *Sometimes individual product development projects can get quite far before there is anyone from our team involved. Or it might be that we are partly involved, for example the industrial designers are involved, but I'm not participating from the user interface side. Then when I see it there is a screen and rotating knobs, I'll ask whether anyone from the user interface design team has taken a look at it, and it's like 'Oh yeah, we hadn't really thought this has a user interface at all'.*
>
> **– UX manager in a medium-sized company**

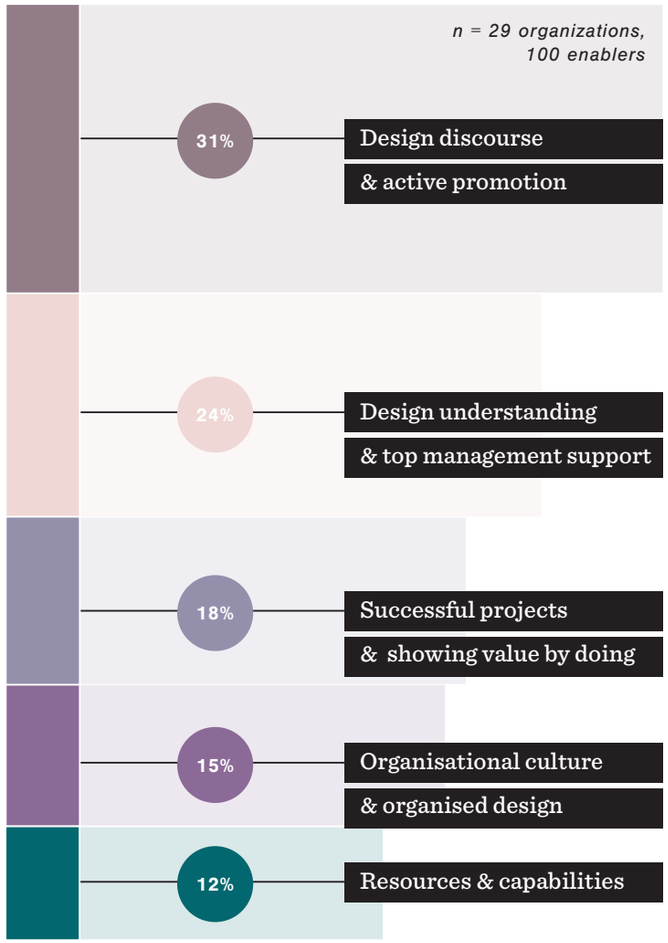
> *We are still on a level of dot-like narrow and occasional doing.*
>
> **– Service designer in a public service organization**

Design was typically not understood widely in the organization, and designerly ways of working frequently clashed with the culture and processes of the organization. Changing this was seen as slow and time-consuming, and designers differed in how much they prioritized such efforts, as typically there were just a handful of designers in the company.

> *Of course, we could try to market the matter internally and make it more known and understood, and show some numbers about how design driven companies usually do better, and all this basic argumentation. In a way, you could advance the utilization of design like this, but if there's no direct demand for it, then it's quite hard work to bring it in.*
>
> **– Design manager in a large company**

> *Change is terribly slow. You just really have to roll up your sleeves and grab that spoon or shovel, and start shoveling. In a way, just latch on to all cases where someone comes in asking for your input. I sure as hell can come and give you my input! You need to be really humble and join all of those cases, sharing and discussing: 'ok, this is what customer-centricity could mean in your specific case.*
>
> **– Design manager in an IT company**

Fingerprints of limited design usage: Enablers



The biggest enabler of creating value on lower levels of design utilization was active promotion of design approaches and value, making design visible and heard, and talking about design in a way that resonated with different stakeholders. Collaboration was a key avenue for increasing design understanding in the organization.

> *I need to bring design into the conversation, but it also needs to make sense from a business point of view. So I already identified a few people who I know I can get the buy-in from. It's crucial to use these people as allies and co-work with them in order to draft a plan.*
>
> **– Design lead in an information communication firm**

> *Increasingly, design is also about internal communication and narrative. It is highlighted in many matters, for example in our kickoff days or whenever the whole of our Finnish and export team is gathered together. Almost without exception, after the CEO's speech, there is a speech by me or a visiting designer, because we want to create that vision and belief for the future of this entire field, in what we are doing and what is at our core.*
>
> **– Design director in a retail organisation**

Using design methods in high-visibility projects and internal development were also seen to have helped pave the way of design utilization as reference points and showcases. In lower design maturity organizations, this often means starting small and demonstrating the value through hard work.

> *The evidence speaks for itself, so to speak. You should first be able to do something that shows or proves the value, and then through that gain visibility inside the organization. And when the visibility and value in the organization have been gained you can get resources, this is the order in which things happen. So, first you have to find a pilot or a spearhead with which to build evidence and that won't happen without the initiative of designers or individual people – that some product manager, portfolio manager, or strategy manager wants to show, or then a designer or design team is given the chance to succeed.*
>
> **– Design director in a multinational corporation**

At times though, the negative effects from insufficient design were a way to showcase the value of design and spread its role in the organization through cautionary tales. Demand and design discourse could also be built through outside pressure, with clients or internal collaborators requiring more customer-centricity or focus on the user experience. Customer experience and design becoming a trend and popular topic also played a role in enabling design doing and justifying design's role.

> *The request for design has come from outside. That you have to show that customer experience is important and how you take care of it. We've had to show the process, to show how it is done.*
>
> **– Service designer in a large organization**

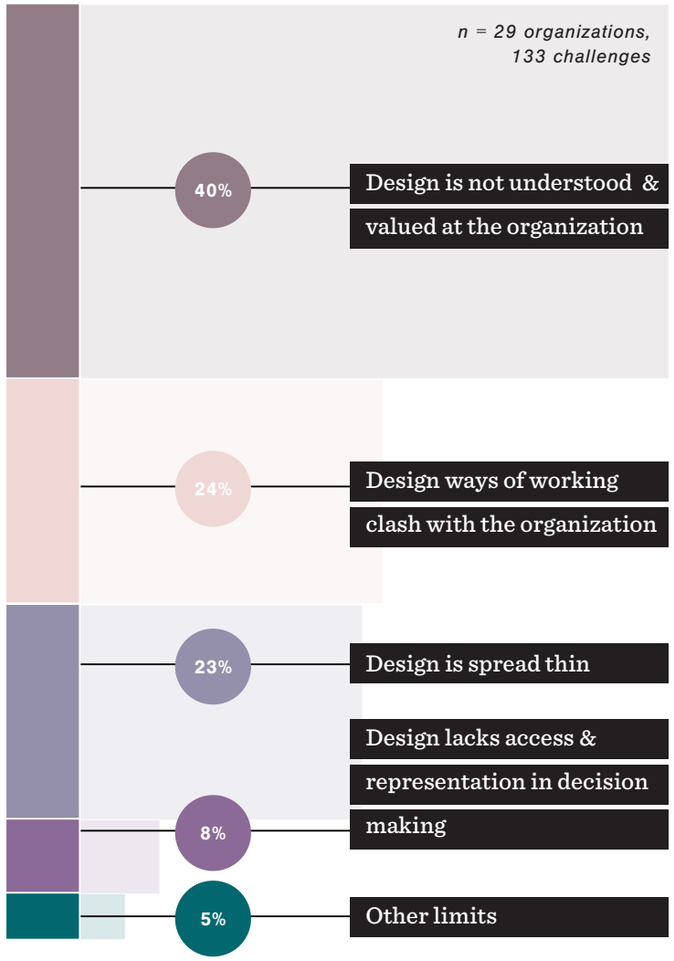
> *Our manager is a visionary, or someone who has the ability to look further out. And I also think that the effort is to some extent due to pressure, as our partners are a bit ahead of us in acquiring design.*
>
> **– Designer in a large organization**

Indeed, getting a foot in the door had often been enabled by management support and advocation of design and customer- centricity, even if design was not yet fully understood.

> *My boss believes in design and in evidence-based doing, which design thinking represents to us. So of course that is how we aim to make design one of the important levels of what we do as an organization.*
>
> **– Lead designer in a large manufacturing corporation**

> *The commitment from upper management helped a lot at our company. A few years back we got a new, very design oriented CEO who came from a strong brand company, who began leading that 'hey, we need to have a design strategy.'*
>
> **– Head of design in a large consumer good company**

Fingerprints of limited design usage: Challenges



Design was often misunderstood in companies on the lower levels of design maturity, leading to too narrow scopes, late involvement and insufficient resourcing. Lack of understanding was seen as an issue both in-house as well as by design agencies offering services to such companies, limiting the organizations' ability to utilize design:

> *Designers are still regarded as the artsy 'scarf people'. Those are the comments that we get. That 'Hey, let's give it to the designer, they'll make something pretty. Do your magic here.' It is not magic. It is systematic work, dammit.*
>
> **– Design lead in large company**

> *There is a huge gap between how designers see design and how customers see design. In practice, it usually culminates in customers often not understanding what they are buying, so they are more dependent on the promises that designers make, the kind of references they have, and so on. This leads to a huge variety in skills and capabilities.*
>
> **– Designer in an agency**

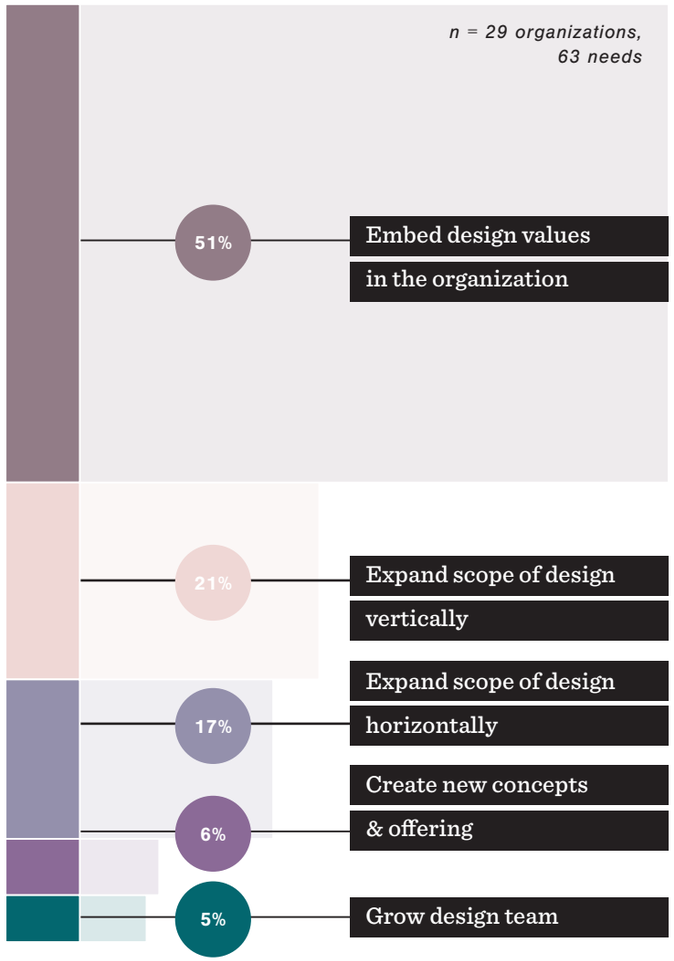
Frequently, misunderstandings and lack of value stemmed from designerly ways of working being at odds with the established culture and practices of the rest of the organization.

> *There's this 'expert myth' that has to be maintained, for example in consulting houses, that no matter what the meeting the person from the consulting company is attending, they have to know more than the others in the room. But design is not a traditional expert task, where you have a specific education and then you dictate what should be done. Rather, design is about weaving a kind of web and bringing people together.*
>
> **– Manager in a consultancy**

As a result, design was often under-budgeted and understaffed:

> *Progress is really dependent on thrust. We would need even more critical mass, a broader team, a slightly bigger footprint, so that we could stretch to more places. While we're not on the verge of rocket science here, for some, human-centered design is just a little more unfamiliar. And through that comes that caution and a certain type of fear, the 'I've always done this thing in this particular way'; that if we were to rethink the approach now, it always creates a certain set of risks, and what if it goes wrong. And what if this and what if that. It is the threshold of change that we just have to step over, and it doesn't really happen without widening our own foothold in the organization.*
>
> **– Unit leader in a large company**

Fingerprints of limited design usage: Next steps



Advancing customer-centricity in the organization was seen as a key next step to make more room for design involvement and resourcing. The designers were working to create recognition for the need to collect more customer insights and user research, as well as creating a more holistic understanding of the customer experience.

> *My biggest concern here is how to produce that shared and consistent customer experience..*
>
> **– Service designer in a public service organization**

Many designers saw service design and design thinking training for non-designers as a way to advance these values, others focused on more systematic processes and tools. Efforts could also be more informal.

> *I think inspiration and creativity is what we need now. What we need more than anything is inspiration. We need to inspire people to make change. Not to draw wireframes all day long. If we can't inspire hope and positivity and these kinds of emotional feelings, then I think we're going to have a hard time meeting the things we need to do in the future.*
>
> **– Design lead at a consultancy**

Designers highlighted the need to cover more areas of design and gain more decision making power, in contrast to late and occasional involvement. They recognized the need to still make a convincing case for design before this could be done:

> *My next step will be to start investigating, for example, how much projects cost that we will then have to fix. In other words, numerical justifications, especially euro-based argumentation, are a huge help in building the business case for why to invest in design. For example, when design has been involved in the beginning and the project has been done properly the first time as planned, there are no disruption requests or adjustment requests at the end, so does it affect customer satisfaction and customer retention. Or then if a design sprint has been carried out to identify new needs: how many projects have been started from it, and what size customer relationships have been produced from that one starting point?*
>
> **– Design director in a technology company**

DESIGN AS AN ESTABLISHED PRESENCE IN THE ORGANIZATION

In most cases, the interviewed designers placed their organization on the process level of the Danish Design Ladder. In 29 out of 101 organizations, design was seen as an integrated and established part of creating new offerings. In contrast to lower levels of design utilization, design was brought on early in the product and service development process and a variety of design specialties were typically represented in the organization.

> *We designers are fully part of our product development teams. In terms of a software product, then it's this Batman and Robin, or Asterix and Obelix combination, where the product owner and UX designer think about what to do at each level. There, planning with a further vision is integrated into the team.*
>
> **– Head of design in a large technology company**

> *We are generally involved in those processes and in those projects in which we should be, and are a part of the planning process; as such, we do get to be involved at the right stage already. Designers don't get these late requests that 'we've now done something and it turned out to be a bit bad to use or something, so can you please do something about it."*
>
> **– Design manager in an industrial technology company**

A further 20 out of 101 organizations were seen as moving towards a strategic level, with design being integrated into organizational processes and building up influence on strategic decisions. In these organizations, the design typically had an increasing focus on developing processes and operations in the company in addition to developing its offerings. However, design was still seen more on the execution side of things than as strategic understanding and direction.

> *If we place what is being designed on a continuum, so that at the other end is adding organizational understanding –either customer understanding or understanding the business environment, or whatever it is – and at the other end is where tangible artefacts are produced. Then we are still more at the artefact side at all points in the value that we are internally understood to produce.*
>
> **– Head of design in a large company**

> *I wish that design was already at a strategic level, but it's not. At the moment, I would say that it is integrated into our operations quite tightly; we are certainly not at some early stage. All the design work is well organized and design development is planned, we know how we are taking design forward internally. But reaching a strategic level, I don't think it will happen for another ten years at least, unfortunately.*
>
> **– Designer in a large company**

Notably, some organizations that positioned themselves on this level had markedly higher levels and extent of design utilization than many organizations self-described on the strategic level. Most organizations that the designers described to be moving towards a strategic level had some initiatives or units where design was involved in creating strategy, but this was not comprehensive in the organizations. Some felt that design should have been represented in the board or leadership in order to be counted as truly strategic, and characterized their organization as still on the process level.

> *My work influences strategic decision-making, and I see that as my guideline and my goal. I support business planning*

and internal processes and so on. But I don't think it's there at the top level; it would require us to have a design director and a leader on the management team. Although I can contribute information to the management team, it's not as two-way as I would like.

– Service designer in a utility company

Organizations that were perceived to be in this established level of design utilization were found throughout the organizational types and sizes included in the study. Having an established level was particularly common for mid-sized and large organizations. Typically, there was already at least a small design organization in the company and at least one design manager. Indeed, the need for design leadership was more pronounced than on lower utilization levels, as designers would often face a double challenge of needing to advocate design outwards as well as spend more effort on supporting a joint understanding in their own ranks.

“

When we started to be a larger group, the challenge of unified design began to quickly rise. We started getting the first people who no longer had this shared understanding that 'Hey, we are here conquering the world together.' Rather, they came to a slightly more set table and were maybe not so well integrated into that first goal, so we've needed set up joint information sharing events.

– Head of design in a large technology company

However, designers often represented an exceedingly small portion of employees and the level of utilization varied across the organization depending on the unit, project, and product. Indeed, while designers saw underutilized potential and a need to cover a larger portion of operations and offering, many design teams had what could be considered an outsized impact in terms of just their numbers in the organization, crafting development processes and informing strategy. In contrast to lower levels of design utilization, designers on this level were fairly uniform in actively advocating for comprehensive design usage beyond its current extent in the organization.

“

For example, we did a mapping of all the product managers and considered how design friendly they are and who doesn't understand design at all. This way we can then modify our communication so that we might get them to join in on this mindset.

– Designer in a manufacturing company

There was a strong desire to promote more customer-centricity, more agile operations and create more value through design in the organizations. However, many designers noted that pushing for change did not necessarily win you friends in organizations.

“

When I was a consultant, it was very fruitful when I was able to go into an organization for a particular problem and could quickly see their key challenges after poking around for a bit. And I was able to point these issues out to them and move on. But then when you're inside the organization, there are long term careers here too, and those problems become personified. People get to know you better and there are certain tensions that come when being critical is a central component of a designers' work. You bring out those shortcomings and challenges, and it's not always comfortable.

– Designer in a public service organization

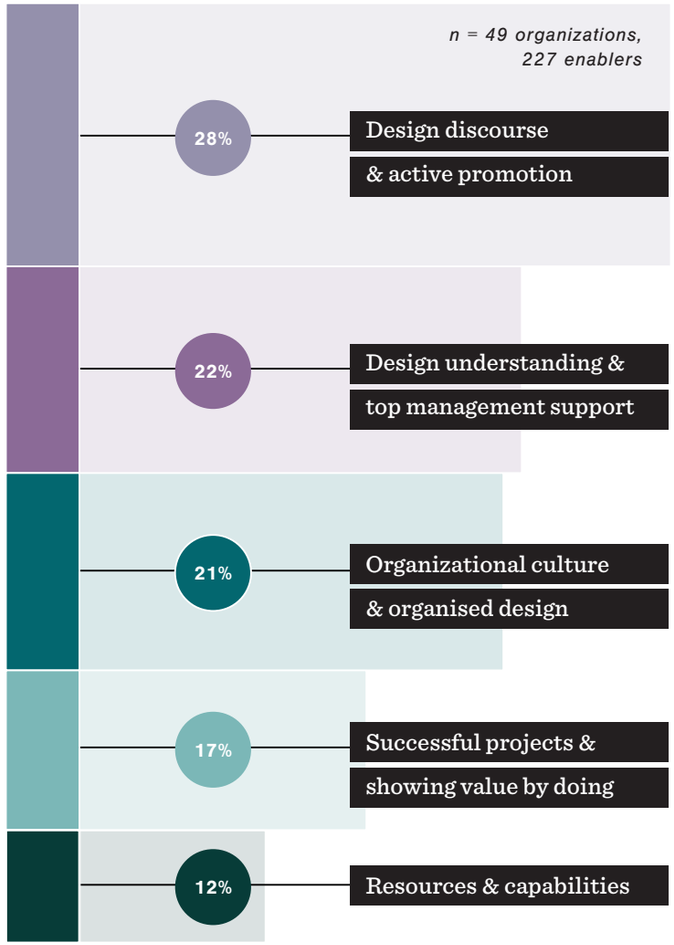
On the other hand, many designers felt that on this established level, they could redirect their energy to design doing as well as expanding into more strategic impact, as the basic premise of having design was less frequently called into question anymore.

> *Design has globally become something that is recognized as important in many companies. Design agencies no longer need to justify their existence. The same applies to in-house design; you no longer need to march into meetings standing tall, ready to fight, with the attitude that 'I'll really convince them this time around if I just get a chance.' The status of designers is starting to get closer to what engineers have always had, this necessary expert position.*
>
> **– Head of design in a large retail company**

Both progress and untapped potential were reported, with increasing ambition level but still limited understanding and resourcing at the organization at large to deliver fully on the promise of design.

> *We are involved in the product development process, but when it comes to more foundational development, and thinking through where the resources of the firm will be focused or what to do next, design isn't necessarily seen there.*
>
> **– Design manager in an industrial technology company**

Fingerprints of design as an established presence: Enablers



In organizations where design was more integrated or on the process level, the most prominent enablers were the active promotion of design, the design discourse together with management support and organizational understanding of design and organizational culture supporting design activities. Managers and leaders pushed for and found roles for designers, and created opportunities for designers to make their work seen and heard though providing access to new forums and avenues. Particularly in moving towards strategic influence, top management created a "windshield" for designers to have more space to operate behind.

> *Interaction is the basis of everything, and it also takes a visionary person in the right position. The fact that we've had, for example, [a high-ranking politician] who has been very design-friendly and has supported our work in top management; they've given us needed shelter against various storms, which has been a very good thing. There's a strong will in top management that this is slow but we'll endure it, that design doesn't have those strong performance goals that pressure immediate results. Rather, we have time to let such a change happen.*
>
> **– Designer in a public service organization**

> *Throughout the years, this growth in skills and doing has taken place at the grassroots level; there are enough of the right kind of people in the right places to do things, and we can then start to raise the level of ambition upwards. I'm still happy that it was done this way around, because the doing is now on a sustainable basis. And now for the last year or two, we've been putting effort into the strategic side of things. For example, the final round of [the corporate] strategy sessions is in progress, and in half a year I have been able to get our designers into prominent positions both to lead the work and to participate in that work.*
>
> **– Design manager in a large company**

Having design-minded leaders and an organizational focus on customer-centricity enabled design being involved in new product development and other development processes early on. Overall appreciation for design in the organization left more time and energy to do design rather than focusing on convincing others. Product owners and other collaborators having experiences working with designers helped to increase design activities, for example through crafting more strategic design briefs.

> *We have a long-standing collaboration, for example with product managers who have worked with our team or designers for a long time, and have learned that design can be a source of insight and understanding.*
>
> **– Design manager in a consulting company**

Public design discourse and seeing how other organizations invest in design was a recognized factor in organizations on the process level. External pressures such as good examples from competitors, demand from customers for better customer experiences and the market changing towards more customer-centricity all supported design investments.

Training and sharing design methods with non-designers was prominent in organizations utilising design on a process level. Various of programs, guidelines, bootcamps and project-based learning usually focussed on service design and understanding user experiences. As a result, these trainings formed communities, ambassadors or networks of people

who were interested in using design approaches in their own work.

> *We have a practice that when starting a new project, the project team is always trained. It's a very natural way to start a new project to hold a half an hour or full hour of training; it is a good foundation for moving forward. And then the information remains there, so when those people get involved in other projects later on, what they've learned gradually spreads nicely.*
>
> **– Design manager in a large technology organization**

> *We have our own design process, we've explicated that this is what it looks like. Then we communicate to the projects 'okay, now we're at this point in the design process,' so that they can understand the scope and it also serves as expectation management. So for example if we are in the empathize phase of the process, we are not yet producing anything concrete but rather we go through these process phases iteratively.*
>
> **– Design manager in an infrastructure company**

Indeed, having a systematic approach and well-organized structure in design were also seen as important enablers to have design approaches integrated into processes.

Showcases continued to be important, but enablers on this level included wider scale visibility and transparency efforts, as well as collecting quantifiable evidence on design impact in the organization. Design was also seen to respond to the need for more data-driven development and management through AB-testing, user studies and customer analytics.

> *We've made design visible in many projects and also taken it to really prominent places in the company, for example to the lobby so that all employees will go past it every day and see it. That way they can come and ask questions, and get to see those intermediate stages.*
>
> **– Program director & designer in a consulting company**

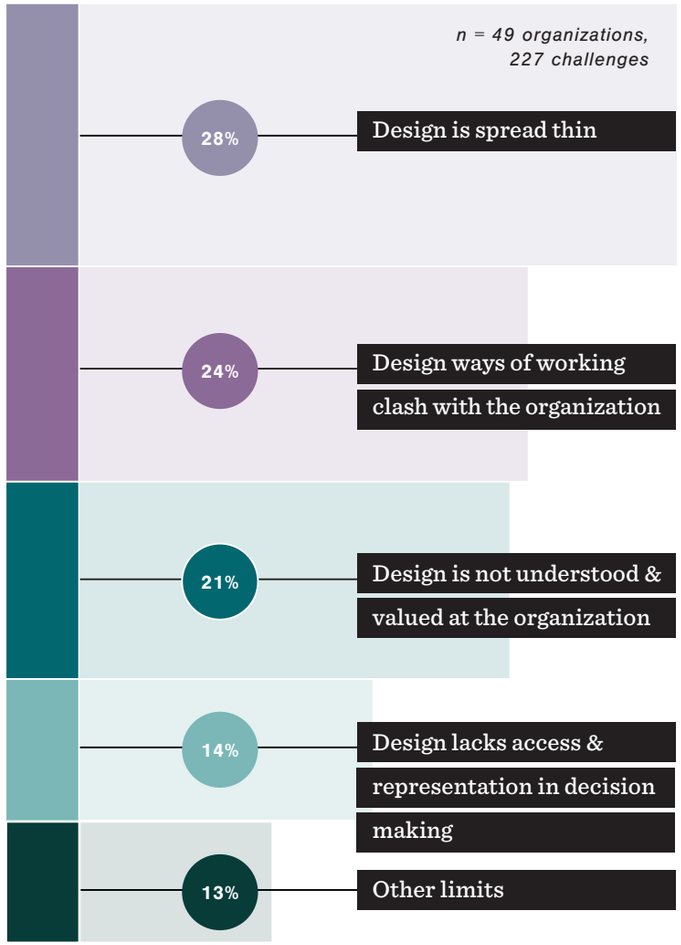
> *The data in my opinion also enables the validation of design as valuable. After all, a lot of design work is done on a data basis and various options are validated through extensive testing, A/B testing. And then if something is not considered important, we collect data from our analytics and then justify its value. I think that relying on raw data contributes to the work of proving the value of design.*
>
> **– Designer in a healthcare organization**

Unlike on lower utilization levels, design-friendly organizational culture and ways of working, as well as having the right resources and talent were also frequently brought up as enabling factors. Open, action-oriented, experimental, customer-centric and collaborative organizational cultures were seen to support and enable design activities.

> *We've grown with an attitude of curiosity, with this 'design push' as one colleague once laughed a bit. That we go around the organization, asking around that 'Hey, would there be anything for a designer to do around here.' Well, there were things to do, and since we have an open and approachable work culture, we can join in the doing and demonstrate our impact; we have grown to a comfortable size through this process. Going around curiously to explore and find out the places where design can be squeezed into.*
>
> **– Head of design in an industrial company**

> *I think we've been very successful in that people can talk openly and criticize openly. We have brought this design critique culture into our organization and there are all sorts of pair reviews and other associated things. There are also a variety of competency development teams and practices.*
>
> **– Director in a consulting company**

Fingerprints of design as an established presence: Challenges



Resourcing design presented somewhat of a chicken-and-egg problem, with limited resources holding back design expansion. For example, in several organizations, design systems were developed "on the side," as non-design leaders did not grasp the value or labor needed in design efforts. Designers often struggled for more access to decision making beyond product development.

> *There are a lot of strategic positions that we don't have any access to in terms of their discussions. In my opinion, there is also a power tension assumption in that when designers gain power, that power is lost by someone else.*
>
> **– Designer in a public organization**

> *Design is not quite on the same level as, for example, sustainability, because in the case of sustainability, investors already understand what it is and why it is important. They are not quite on the same level of understanding in terms of design, which means that it is not treated with the same seriousness in the group's strategy.*
>
> **– Manager in a communications company**

Design was seen to clash with siloed and stiff companies. Incentives did not match the customer-centric visions of the organizations, leading to a focus on efficiency, cost-savings and sales volumes. Customers were examined on the level of isolated interactions rather than customer journeys, let alone holistic experiences across time.

> *If you take a look at our strategy slide online, we have a very customer-centric strategy. We want to be the best in serving the customer. That is our vision. Then at the same time, the middle management's bonus salary and personal targets are to a great extent focused on, for example, cost effectiveness.*
>
> **– Design manager in a industrial technology company**

> *Even though we've noted in our business strategy that we want to be the most customer-centered company in our industry, our CEO maybe isn't emphasizing this strongly enough to management. Because if we just try to shout this out as a unit in this matrix, it's a bit powerless at times*
>
> **– Design lead in an infrastructure company**

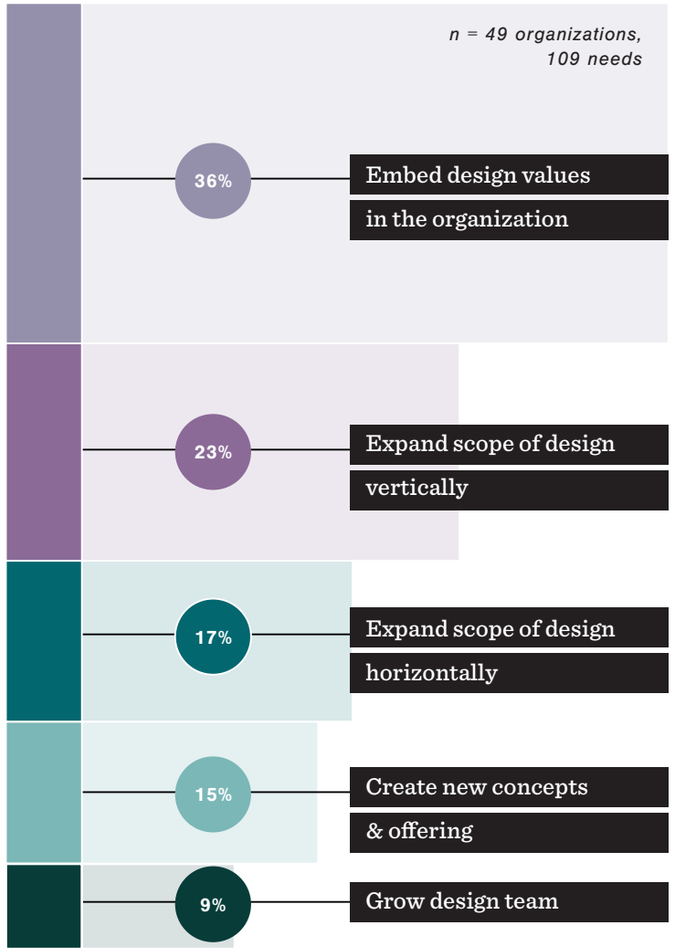
Many organizations were also seen to place insufficient focus on development and innovation in general.

> *In this type of giant company by Finnish standards, we are playing it pretty safe. We don't get terribly excited by new things. We monitor, make scenarios, we have management with a sensitive ear to see what opportunities there are, but repeatedly fail to test them out and invest in them.*
>
> **– Design manager in a large company**

> *We have people and know-how, but they are not being leveraged. We have all the prerequisites to do things much, much better than our competitors. To do innovative things from a customer value and customer experience perspective. It doesn't mean any big innovation incubators, but really developing the current business. But as I said, there is no room for it when the organization does not truly identify that design phase; there is only the implementation phase*
>
> **– Design manager in a financial company**

Design culture and values were also often still seen as differing from the surrounding organizational culture in many cases. This could limit designers' desire to seek leadership positions in the organizations, with some seeing that it was easier to operate outside of the norms as individual contributors or consultants.

Fingerprints of design as an established presence: Next steps



Increasing customer-centricity remained a key goal, but on this utilization level of design, the focus was more often in creating more systematic and holistic solutions. Designers collected data from their own organizations to identify key bottlenecks and development needs. They highlighted the need to scale design impact beyond designer involvement through developing processes, developing further tools and training for non-designers.

> *We often even build projects as tailor-made. Our work would be a little more systematic and structured if we had certain building blocks ready to go, so we wouldn't have to rethink them every time. It's the kind of internal work that is done whenever we have time, but that extra time might not exist.*
>
> **– Senior designer in an agency**

> *Everyone is able to use those particular methods, ways of thinking, and models in their own work, whatever they do; in trying to understand what the purpose of this is, what the meaning of this is, how this can serve better and how this can bring added value. I would like us to have a different mindset throughout our company, that there's a little designer within each of us – a smaller or larger one.*
>
> **– Design manager in a industrial technology company**

Systematicity could also be sought on the offerings side, looking, for example, at modular solutions. In general, designers continued to also target their efforts in offerings, looking to increase innovation and value either through more direct, un-mediated contact with customers, more time dedicated for gathering insights or, conversely, more resources to act on gathered insights. On the more limited, albeit established, utilization degrees ofuse of design, many organizations either incorporated design thoroughly into insight work or execution, but not yet comprehensively to both.

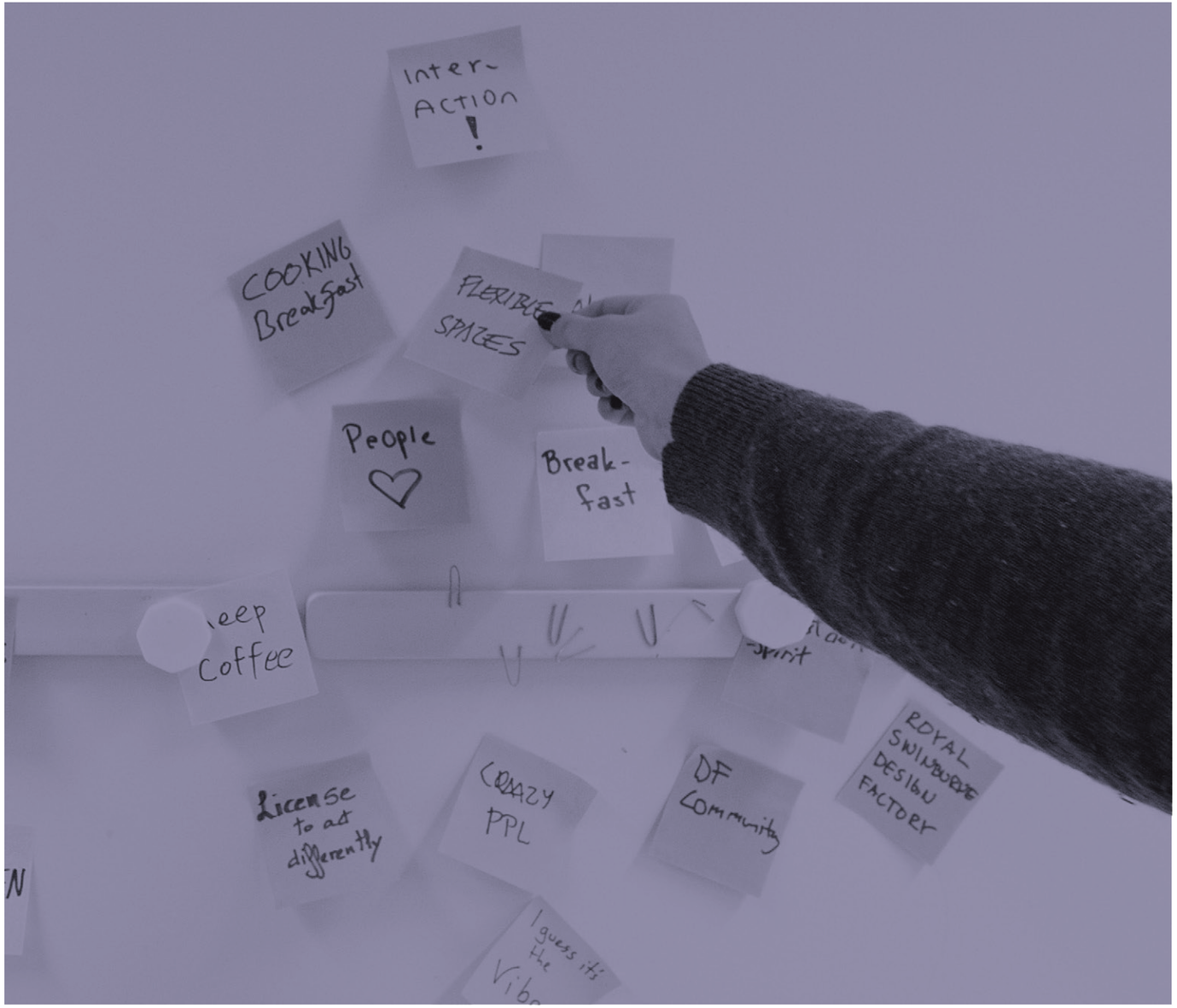
> *We should certainly do more and more problem framing and early phase work to bring about more transformative approaches.*
>
> **– Design manager in a technology company**

> *We always talk about customers in our daily life. From a company value point of view, we don't lack customer centricity and our culture is already very deep there. But I think there still needs to be some formal way to make it concrete in our implementation. So, talking about this and caring about the customer is the first step. But then the second step is using design approaches, methodologies and tools in order to really weave this kind of value into our offerings.*
>
> **– Team lead in a manufacturing company**

Moving closer to a strategic level, many designers emphasized the need for dedicated positions for leading customer experience across product and service lines instead of having it diced into different business siloes, for example under business leads. They advocated such positions to upper management and in general aimed to increase working with top management to reach the organization at large.

> *We should bring many different parts of the organization together more, and we do it in joint projects and on an ad hoc basis. But what we do in the concept phase for that product concept, getting the whole user journey and different competencies involved in a multi-disciplinary way, we should rise up to help at the whole company level with that instead of simply helping individual projects.*
>
> **– Head of design in a large manufacturing company**

> *I'm currently making a proposal to the very top management of our organization on how to bring in customer-centricity with concrete methods and approaches. So how could that be possible, and how we can get rid of the structures that prevent it from being done.*
>
> **– Lead designer in a public service organization**



DESIGN AS STRATEGIC INSIGHT & DOING

Finally, designers in 23 organizations saw the level of design utilization as strategic. This included nearly all interviewed small companies and design agencies – indeed, these were also the organizations where designers were in high-ranking positions and had the largest proportion of representation relative to other professionals in the organization. Designer founders stated that to them, design was the natural way of doing strategy. In micro-sized companies, it could be the only way of creating and implementing strategy:

> *The role of design is strategic pretty much by default, because that's really the only way we know how to think.*
>
> **– Designer founder in a small company with physical offering**

> *The whole existence of the company is based on design, so it is also used on a strategic level. It's in use by and far everywhere.*
>
> **– Designer founder in a service company**

As startups grew, design could retain its strategic role through the continued involvement of the designer founders despite the ratio of designers to other employees falling. This could be seen, for example, in organizational cultures closely aligned with design values, such as continuous prototyping and exploration, in addition to the roles of the designer founders in decision making. Similarly, design agencies and consultancies had design represented throughout the organization, including in strategic decision making.

> *We've been a leading pioneer, and we have always had a designer on the board of directors. So we have a professional board, but there has also been design representation. And we have always taken a very strong role in developing design methods and, in that sense, have been a pioneer in the field.*
>
> **– Director in a consultancy**

Some designers in mid-sized and large companies and public organizations also placed their organizations on the fourth step of the Danish Design Ladder, on a strategic level. Key criteria here included high-positioned designers or design teams, organizational cultures compatible with design values or design influence on strategy. Often, this required a direct line of communications to the top management of the organization and their support, built over time.

> *We've recognized, CEO included, that strategic service design is one of the things that will save us from our current situation. And then, on the other hand, there are those little successes. We have a clear plan, a clear work model. From the beginning, we have had notes from customer experience and human-centered transformation and they have now been systematically implemented, with small and large successes one at a time. As a result, the value of good design has been demonstrated and more and more integrated in our strategic and visioning discussions.*
>
> **– Head of design in a large company**

> *I report directly to our CEO, and my job is to do strategic development. I am responsible for the strategic development of our entire conglomerate.*
>
> **- Designer in a construction company**

Here, criteria sometimes overlapped with those used by others still seeing their organizations as only proceeding towards a strategic level. For some, design influencing strategy through offering insights on what should be focused on or implementing strategy was seen as sufficient criteria for high design maturity; others required participation in creating and deciding on the strategy. However, even then, design was rarely a dominant way of doing strategy or systematically included in strategic decision making. Conversely, some organizations with comprehensive usage of design and an established role in strategic decision making still saw much untapped potential in the degree to which design could inform the business model of the company and saw themselves still more on the level of design as process rather than strategy.

Within strategy, design was reported to take part in one or several of five roles:

[1] Finding new perspectives and insights that could inform strategy, typically through customer value

[2] Supporting creating a shared and holistic understanding of issues, typically through visualizations

[3] Identifying new business value and making decisions opening up new business potential, improving the competitive position of the company

[4] Participating in strategic decision making as an assigned representative, typically standing for a user or customer insight perspective

[5] Generating enthusiasm for exploring new strategic directions, typically through tangible representations or new exemplary offerings

Much more often, design was able to influence rather than direct strategic decisions, with facilitation and “raw material” for strategic decision making being the most common forms of interaction between design and strategy.

> *To me, strategic design means going into the realm of management, making complex issues visible and tackling what are the issues we are solving. So understanding the root causes and the holistic picture, and bringing these discussions into management forums and even into political decision making.*
>
> **– Design director in a public service organization**

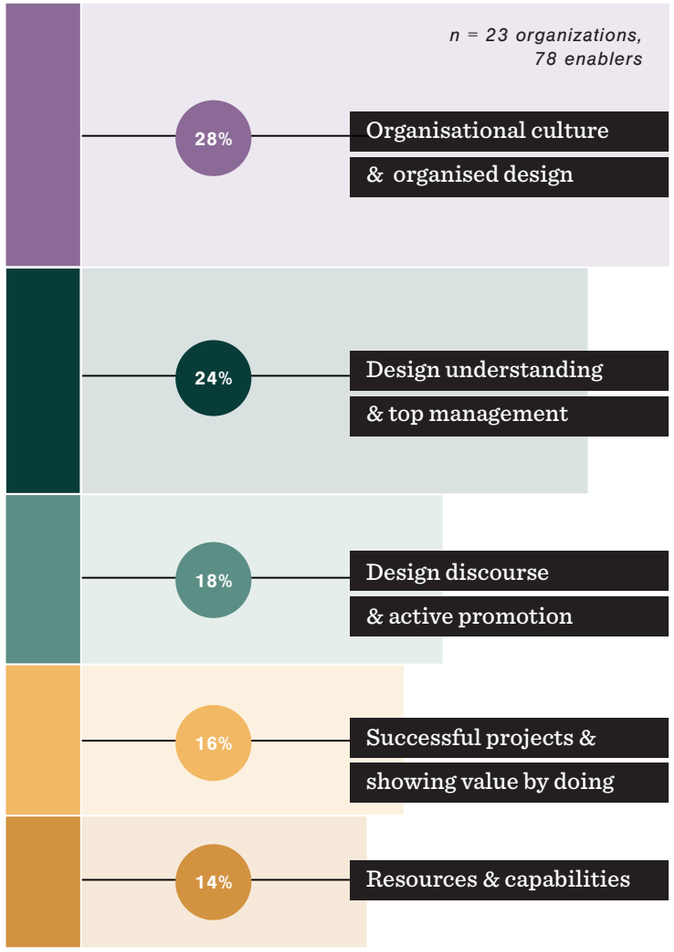
> *When we get this type of very high strategy and vision project, I always want to have a tangible outcome. Tangible so that it’s not just a deck of PowerPoints of your strategy, but it’s how you translate this vision into an artifact. So you embed it with vision, with a real service that you can see and test and tell about in the organization of the customer, but also test it with potential users. Again, going back to design doing, it’s really thinking by doing. The point of coming up with a vision is to get a buy-in inside of the organization and it’s so much easier when you can see what could be the end result.*
>
> **– Design director in a consultancy**

Surprisingly, many companies with a long history or legacy of design saw themselves on a strategic level, but described a predominately aesthetic role for design. In these cases, design could be “in the DNA of the company” but had a relatively narrow scope. In several cases, design was equated with creative visionaries, rather than the day-to-day industrial, graphical and other design work. Strategic design here was

seen as high end design. In contrast, companies newer to design typically highlighted the role of design in customer understanding, customer experience and user safety and wellbeing. Strategic design, in these cases, was more about finding new insights to feed into strategic decision making.

Finally, consulting companies had one set of criteria of strategic design in their own organization, typically focusing on the business model, processes, and employee experience of the consultancy, whereas client projects varied on which level of design utilization they operated. Client projects were considered strategic when they either informed or influenced the strategy of the client – this could either be through a project focusing on offerings (opening up new business areas) or working directly on the strategy content or process of the client organization. Alternatively, some strategic client projects focused on building the design capabilities of the client organizations, which was seen to have a strategic impact for the client.

Fingerprints of design as strategic insight: Enablers



In organizations where design was used strategically, organizational culture and having clear structures and systems for design were key enablers. Cultures that enabled experimentation, flat hierarchy, transparency and openness, embraced trust and freedom, and encouraged ideation and innovation were seen to promote design utilization on a high maturity level.

> *Our value and culture is that we do a lot together, cheer each other on and celebrate even small wins. And we have an open atmosphere of trust where you get to do and try and fail as well. There is a good team spirit and we do not compete with each other, but rather we work together. These are the enabling factors.*
>
> **– Lead service designer in a small company**

> *People have strong interests in certain things and if places were assigned, or people were forced in different directions, then maybe design would not grow into such a strategic position. But then when that freedom is given and responsibility is given, you know, 'figure it out', it feeds motivation. It becomes much more meaningful.*
>
> **– Lead designer in a consulting company**

Having design on a strategic level required strong leadership and management involvement and a deep understanding of the breadth and holistic nature of design. Small organizations often had designer founders or owners, but also non-design executives who understood design as a strategic differentiation could provide sufficient support.

> *Management understands it thoroughly. They understand what forms of design there are, what design mindsets or methods can do, to what it can be applied, and how wide that spectrum is.*
>
> **– Design director in a consulting company**

Design was often formally recognized as a key function and a part of decision-making processes. Clear structure, roles and design organizations were seen as important enablers.

> *Design directors basically are focused on selling design and working with the sales teams to sell design, really adding the value of design. Having a clear division of roles and collaboration helps, to make sure that everything is present from the proposal level.*
>
> **– Designer in a consulting company**

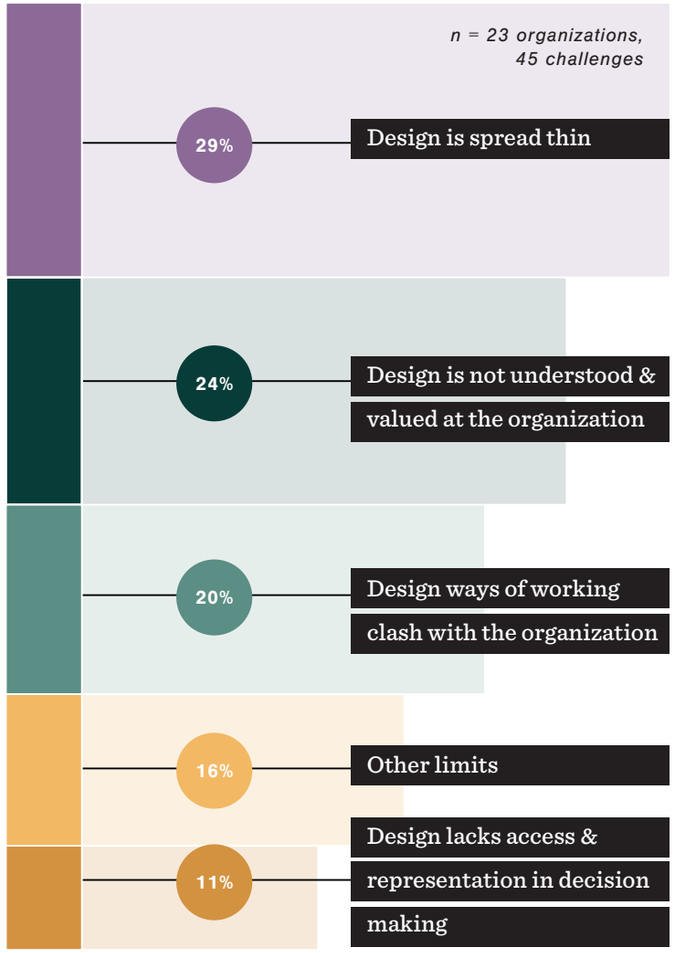
Even on a strategic level, many designers continued to highlight the importance of first starting small and showcasing the value of design through doing. Also external validation and gaining a good reputation could strengthen design utilisation.

> *The more publicity we get from different internal and external channels, the more the organization gets excited about it.*
>
> **– Lead service designer in an infrastructure company**

> *Of course the design awards we've received do show that we've done something right and we're going in the right direction. They then get quite a lot of media coverage and that media then generates revenue; people notice us and go to buy our products.*
>
> **– Design executive in a consumer goods company**

Finally, strategic recruitments, having people in right positions and building design competence in-house had enabled design utilisation on a high maturity level.

Fingerprints of design as strategic insight: Challenges



Although design had a strategic impact, it often continued to be spread thin with limited resources, particularly for internal development rather than in offerings..

> *The problem in Finland is that there is a lot of talk about service design and it is already on the map, maybe business leaders have heard about it, yet in-house designers remain quite isolated.*
>
> **– Service designer in a large company**

> *There is a really big gap between being holistic and everyday reality. Maybe twice in one lifetime you will have the chance to do a project like it was taught in school, because there are never budgets so big that you could really do really good research and really look for those weak signals somewhere amidst the ocean.*
>
> **– Designer in an agency**

In large companies, organizational structure could limit design utilization on a strategic level. For example, design could be organized as an in-house service provider reacting to the needs of business units and product lines. Similarly, consultancies reported many companies still having limited resources for longer term, strategic investment in design and smaller, non-designer founded organizations continued to offer limited access to decision making.

> *As we are sort of an in-house design subcontractor, it is very reactive for the organization as a whole, even though in design we have always built the future and actively shared it. We have taken a proactive stance, although they may not have asked for it.*
>
> **– Design manager in a large technology company**

> *It infuriates me that I don't belong to the management team in this group, it makes my role really weird – that I am in charge of strategic development, but I don't belong to that core team.*
>
> **– Design manager in a medium-sized company**

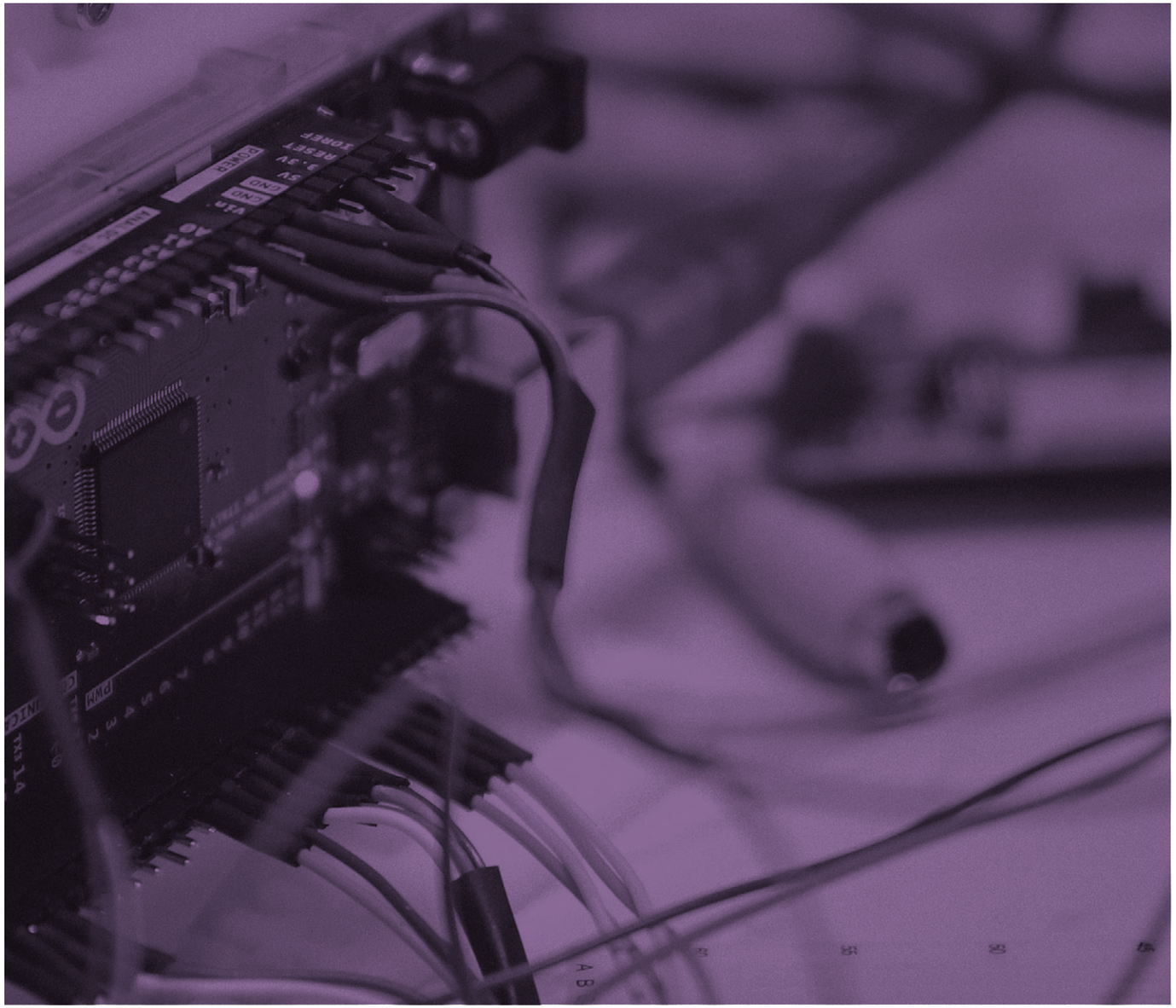
Indeed, some design leaders reported they still needed to operate somewhat "undercover" to be effective:

> *We rarely talk about design, but it's easy to talk about customer-centricity. It's certainly good to have taken up words like customer validation, it sounds kind of exciting. We have started bringing new vocabulary there.*
>
> **– Lead designer in large industrial company**

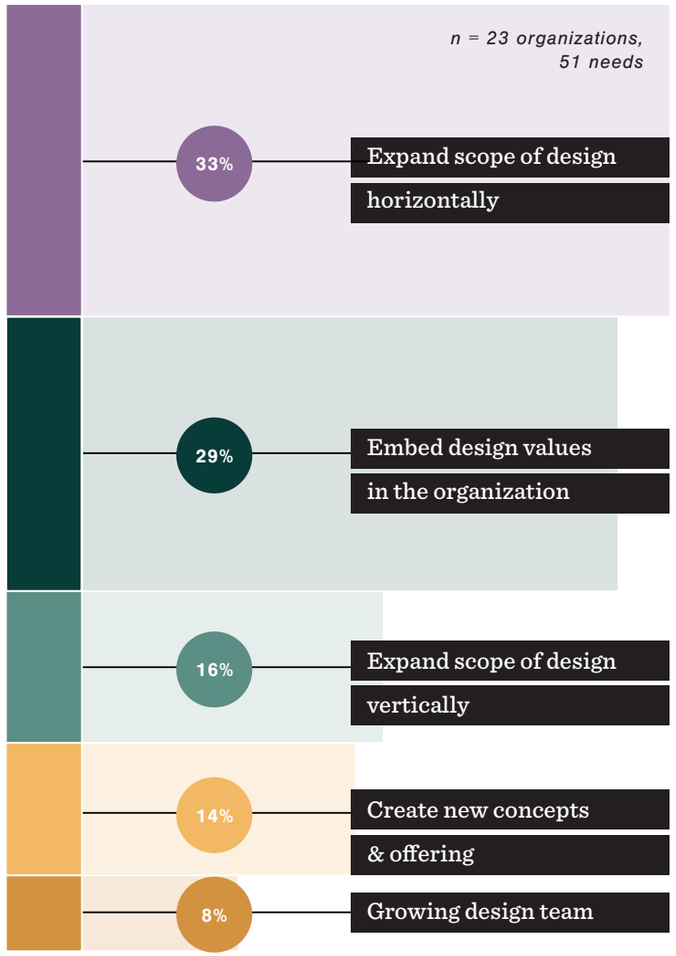
Rather than associating these challenges with design specifically, many designers saw these reflective of organizational capabilities for innovation, strategic development and change in general.

> *People have a bit of a learned helplessness sometimes. They feel that in a big company it is not even worth trying to change anything, since it will not change anyway. But then, once they get over this to try something with completely new ways of working and across teams in a whole new way, then those successes have begun to materialize. This has accelerated change. But, the traditional mindset combined with the fact that these things are so complex has slowed things down.*
>
> **– Design manager in a large company**

> *It's easy in such a traditional field to be very focused on what others are doing; it's often thought that I don't know whether we should do it either if others aren't doing it already.*
>
> **– Lead designer in a large company**



Fingerprints of design as strategic insight: Next steps



> *Clarifying that joint strategic goal and systematically building towards it together.*
>
> **– Head of design in a medium-sized company**

While designers continued to look to increase the impact and scope of design, specifically, on this level many next steps were targeted at the organization at large. Many designers were working to expand design efforts into employee experiences, particularly coupled with customer experiences and analytics of the two.

> *Employee experience and customer experience, I would like to start building how they are the same thing to a greater extent. That X is experience to the power of two instead of being EX and CX. It would be good to get that overall picture of it, how these both support and measure, how we can validate and develop that activity in line with our values and get customer experience in line with our values and strategy even more systematically.*
>
> **– Director in a design agency**

Many were looking to create better metrics also for a holistic understanding of the organization and incorporating design targets into the measurable goals of the organization, rather than for the design teams only.

> *We should develop an understanding and analytics about the business, in terms of how money moves and by what logic and how those can be developed and boosted for the better.*
>
> **– Head of design in a consumer goods company**

Designers were also looking to improve the innovation processes of the organizations, particularly for the perspective of more participatory practices involving employees, customers and citizens and making space for more radical innovation and long-term future thinking.

> *Sure, it's great that we have Orchid and that anyone can log ideas in there, including factory workers and office workers. You don't have to be an innovator. But maybe I still feel like we should be able to involve people more widely in the projects. We have that kind of tacit knowledge inside the company, so we have really long working relationships, years of knowledge out there that should somehow be harnessed. Combined with the fact that we have a sales field that gets feedback directly from the sales community, the retailers. We need help those meet each other, that source of demand and then listen to a wider group of people in the organization besides those in leadership positions.*
>
> **– Design manager in a large company**

> *I would like to come up with answers on how to fit radical innovation into these intense development processes that are really nailed down and locked in.*
>
> **– Director in a consumer goods company**

Designers were also excited to expand innovation efforts into new frontiers for the organization. For example, new raw materials, digitalization and circular economy were seen as arenas where design could spearhead efforts in the organization to look into new opportunities.

Commentary:

CREATING A VOCABULARY FOR STRATEGIC DESIGN

In recent years, the utilization of design in Finnish organizations has broadened and deepened. The Design+Sustainability 101 report results indicate that organizations are gradually adapting design in a more fundamental and comprehensive way. Narrow, late-stage add-on design is no longer the most common approach. Instead, an increasing number of organizations have integrated design into their processes. Additionally, utilization of design at the strategical level of organization is already relatively widespread.

An interesting observation based on the interviews is that the large and medium-sized enterprises that represent the largest volume of companies utilizing design are seldom the ones that utilize design at the strategic level. Rather, strategic leveraging of design prevails in “design native” smaller enterprises, growth companies and consulting companies, who see design as a key to growth and success. While the larger operators incorporate new trends in renewing their operations, pre-existing structures continue to act as the scaffolding for operations. A similar type of dynamic has been previously observed in relation to adopting user-driven and environmentally friendly approaches in organizations: while the larger companies do adopt new practices, they rarely pioneering the reforms.

Another interesting observation has to do with the drivers and challenges related to utilizing design: it is difficult to discern any one clear development path or prominent factor without more fine-grained analysis of the data. One reason for this may be that “design” varies significantly across different organizations. It makes a big difference whether you are implementing industrial design in mechanical engineering, service design in healthcare, fashion design in the textile industry or agile design in the development of IT system. Customer-centered and agile approaches are generally compatible with leveraging design, but development paths may be surprisingly diverse.

For instance, while studying the use of user-driven innovation approaches, we have discovered that hierarchical models to climb up on do not necessarily reflect the realities of utilization very well. The actual needs within organizations vary by case and situation. In our research, one out of five organizations using user-driven innovation approaches integrated the new approach to a fundamental and deep level of utilization, but more often the development orientation changed over time - even several times. Indeed, a good starting point for developing user-driven innovation approaches and design alike in organizations is to consider how and where these can best support the organization at present and how changing needs for utilization can be effectively identified.

Anna Valtonen

Professor of Strategic Design

Aalto University

Commentary:

LEVERAGING DESIGN IS BECOMING MORE PREVALENT ACROSS FINNISH ORGANIZATIONS

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Sampsa Hyysalo

Professor of CoDesign

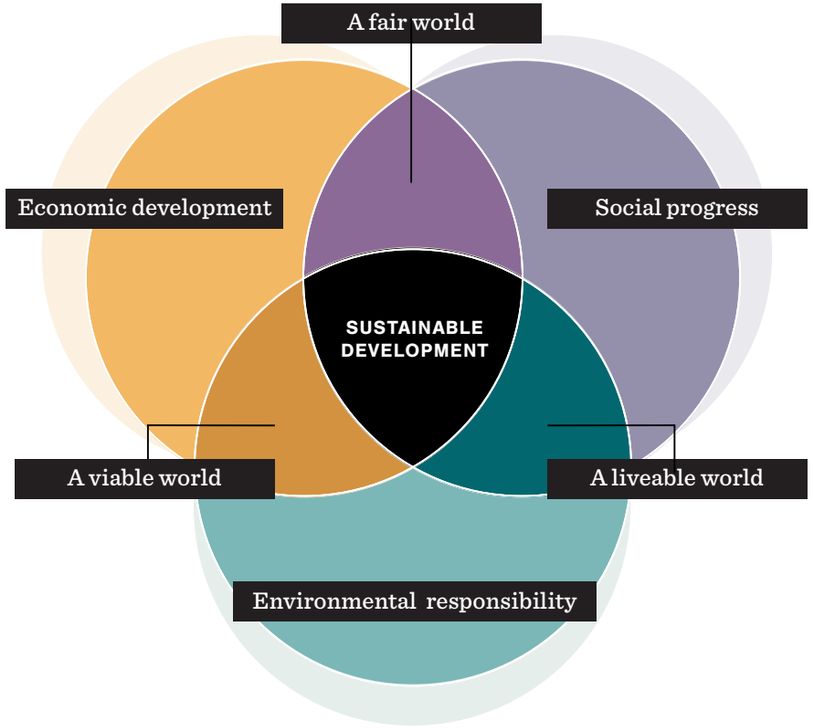
Aalto University

DESIGNING SUSTAINABILITY

- Towards environmental sustainability
- Towards social progress
- Towards economic development
- Integrating sustainability dimensions
- The role of designers in advancing sustainability in organizations

Sustainable development

Based on Science for Environment Policy (2015) Indicators for sustainable cities. In-depth Report 12. SCU, UWE: Bristol. Available at European Commission - Science for Environment Policy.



Introduction: Designing sustainability

Holistic sustainability can be seen to build on three pillars of social, environmental and economic development – or in more popular terms, the triple bottom line of people, planet and prosperity (profit). In practice, though, these dimensions can seem contradictory, with many decision makers feeling that they need to choose between reducing inequalities between people, preserving the planet, or ensuring financial stability and profit. The challenges we face are complex and systemic, requiring comprehensive transformative change[1]. Here, design has much to offer with its suitability for future-oriented decision making in uncertain conditions.

Although the landmark Brundtland report in 1987 defined sustainability from a very human-centered perspective, the emphasis on sustainable development has mostly been on environmental responsibility. Design can play a pivotal role in balancing all three pillars of sustainability and advancing transformative change. Indeed, when describing sustainable design, the designers in the 101 interviewed organizations varied between practical approaches and visionary perspectives. In this section, we discuss how the designers operationalized sustainable design, offer examples in terms of how design has been leveraged in the three sustainability dimensions and their interconnections, as well as what designers themselves see as the key ways they can help to advance sustainability in organizations.

Like design at large, sustainable design has yet to arrive at a commonly recognized definition in the field. While many of the interviewed designers emphasized the ambiguity and context-dependent meaning of the term, there was a strong underlying ethos of ethics, holistic considerations and quality of life centricity, reflecting the responsibility felt by designers to do no harm while creating value for society. The role of design at the organization as well as the field of the organization were key determinants of how well the designers felt they were able to carry out this ethos.

Designers connected their work most frequently to environmental sustainability, followed by social sustainability, with economic sustainability as the least frequent connection. Here, we saw that designers had a clear view of what environmental sustainability entails, with several interviewees citing multiple projects they'd been part of, using established methodologies, such as life cycle thinking, along with highlighting environmental sustainability as part of their organization's vision, mission, and strategy. The connection between design and environmental sustainability was particularly pronounced when dealing with physical goods, exploring renewable material options, circular solutions and energy reductions. Taken together, it seems clear that environmental sustainability efforts are not limited to sustainability teams, but are widely advanced by designers across different types of units and organizations.

For social sustainability, some aspects were frequently highlighted and worked on, such as usability and accessibility, while others were rarer and unsystematic, such as ensuring diverse participation and social cohesion. While the designers described an inherent focus on people and human needs, the sustainability dimension of this connection was less articulated than in the context of the value of design in the organizations overall. This seemed to be connected to less articulated social sustainability efforts in organizations

overall. While some designers mentioned legislation and organizational visions concerning accessibility, many reported examples were individual passion projects and initiatives not yet integrated into organizational policies.

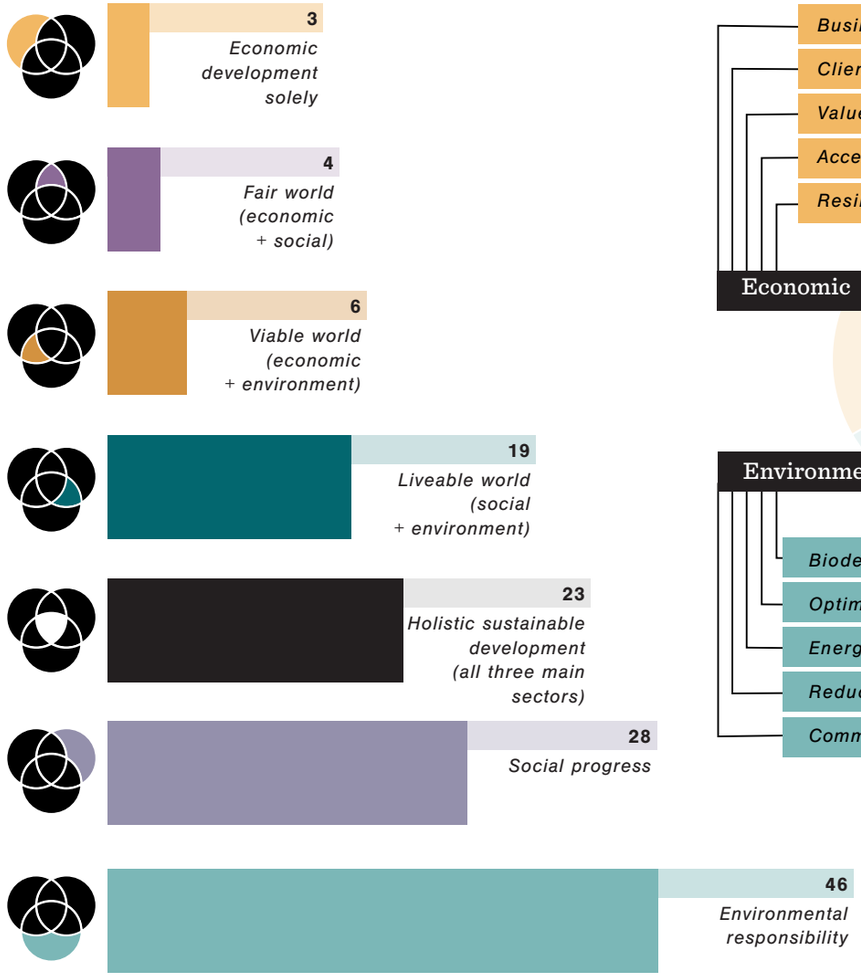
Compared to environmental and social sustainability, economic sustainability was the lagging pillar. Despite the focus on business viability and securing overall added value in design in many organizations, the meaning and practice of economic sustainability remained unclear in many cases. Many designers also noted that economic sustainability fell under the jurisdiction of other units and functions in their organizations. Thus, limits in the current role and use of design, combined with the ambiguity of economic sustainability as a concept, seem to have somewhat held back efforts. Nevertheless, the results illustrate that business model viability, value of offerings, accessibility and reach of offerings, as well as resilient ecosystems offer a starting point for exploring new opportunities for economic sustainability through design.

References

1 Gaziulusoy & Erdoğan Öztekin (2019). Design for sustainability transitions: Origins, attitudes and future directions. Sustainability, 11(13), 3601.

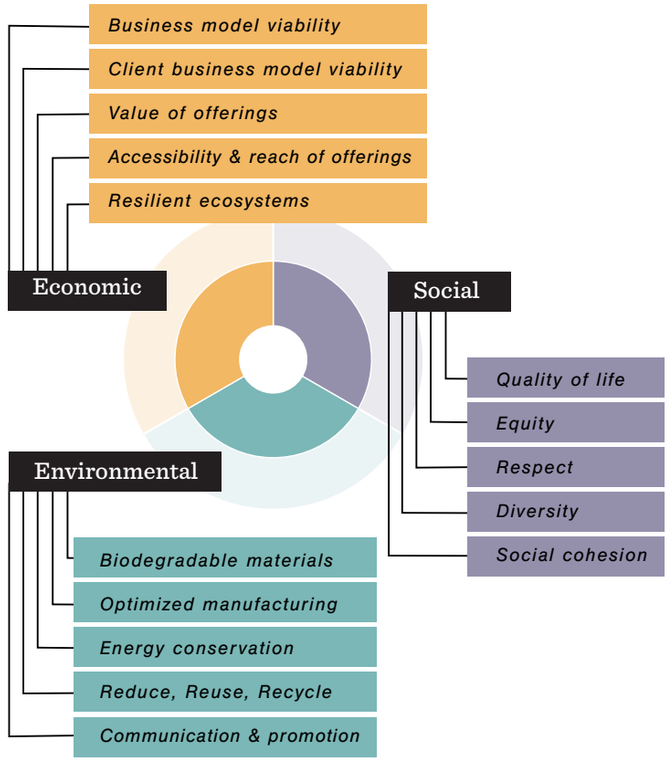
Defining sustainable design

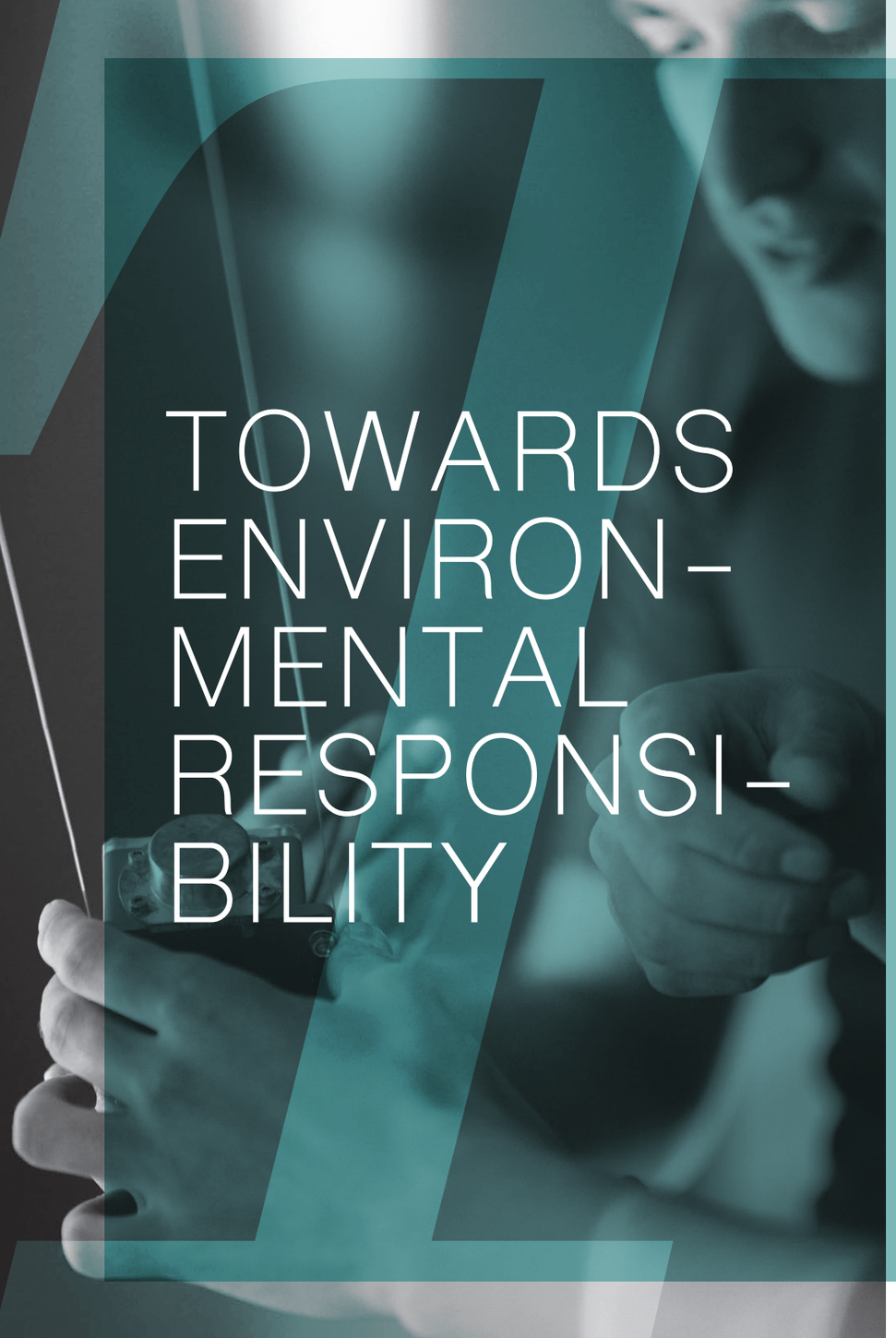
Numbers are based on 129 excerpts out of 101 interviews.



Sustainable design contributions

Key areas of design contributions towards sustainability in the 101 organizations.



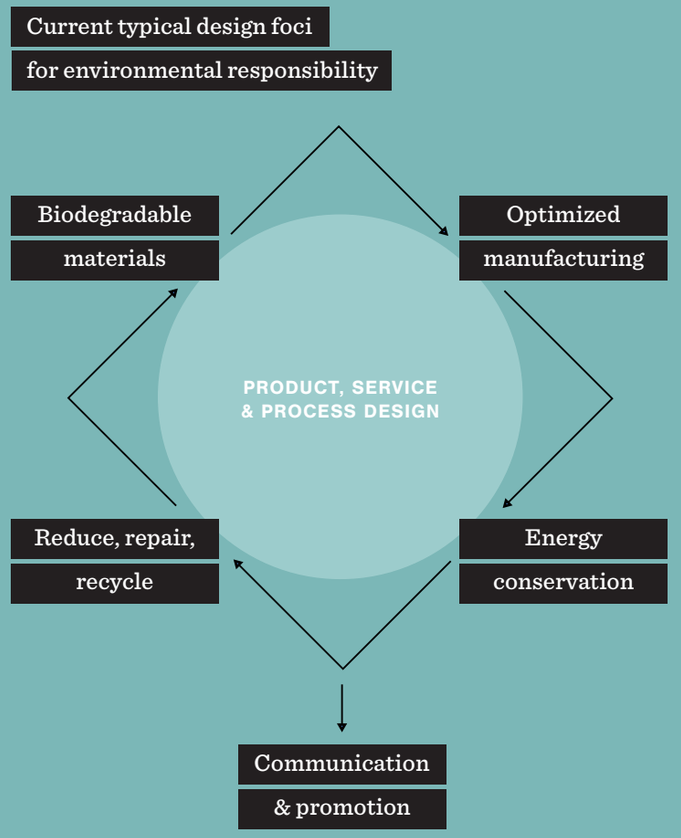


TOWARDS ENVIRON–MENTAL RESPONSI–BILITY

> *We need to think about the entire life cycles of the products we make. Instead of just selling as much as possible and maximizing profits, we have to think a bit further about the implications. If a product is sold, what is its life cycle? How is it returned? How to fix it? How to make it reusable? How is it recycled? How to make it carbon neutral or at least offset its carbon footprint? Service design tools are really good for modelling different scenarios and thinking a bit further.*
>
> **– Maria Solovjew, Impact Design Lead, Adventure Club**

Reflecting on how design currently contributes towards environmental sustainability in their organizations, the interviewed designers noted several phases of the lifecycle of their products or services where environmentally sustainable design can play a role. Common areas included working towards raising environmental awareness in the organization and improving material origins, ways of sourcing, manufacturing, distribution methods, and the energy consumption of their products along with their durability and recyclability. Here, the designers shared examples of both communicating their own green initiatives to inspire in the organization as well as working to enable others to be more environmentally friendly.

While virtually all of the interviewed designers mentioned ways to support environmental sustainability in their work, their reasoning for doing so varied. Most comments revolved around customer demand, regulation and organizational culture. YIT's Lead Service Designer, for example, mentioned opting for more expensive construction using wood, not just because of legislation, but because customers demand it – the material choice thus representing a competitive advantage in addition to reflecting environmentally responsible action



Energy conservation	**67**
Biodegradable materials	**61**
Optimized manufacturing	**54**
Reduce, repair, recycle	**46**
Communication & promotion	**78**

Based on 258 examples from 101 organizations

as an organization. In other organizations, customer demand had facilitated switching to e.g. more sustainable materials, packaging, and getting desired certifications. Some Design Leads, such as the ones at Elisa and VTT, even shared instances of engaging customers in order to align customer expectations with their sustainability efforts in workshops and interviews.

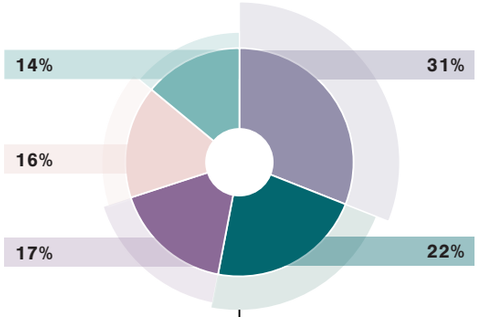
In addition to current legislation, many organizations anticipated changes. For example, anticipated EU regulations of chemicals in packaging or stickers were a design driver at Tikkurila, which decided to be ahead of the game and completely rethink their packaging. Sustainability principles were described as ingrained in the working culture in several organizations, present at every project and throughout the design process. This supported efforts to constantly look for ways to improve products and services in favor of the environment – including considering whether the new product is even necessary. For example, Jori Larres, a program director at Idean at the time of the interview, explained that:

> *We need to challenge this thinking a bit, so that you don't always need to start from scratch when developing something. First, let's see if we can use something existing or whether there is a need for this at all. Or, we might modify some service to include this as well to solve the problem. Instead of always creating a bunch of new things.*

However, it is worth noting that while environmental responsibility was the most widely discussed and integrated dimension of sustainability, there were still many organizations where designers reported limited influence and connection to environmental sustainability. Interviewees also differed on whether they focused on the offerings, operations or both in their consideration. As such, much untapped potential still remains in leveraging design for environmental responsibility.

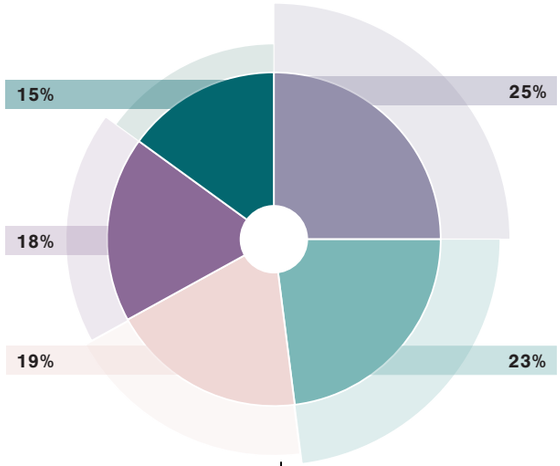
Environmental sustainability across different types of organizations

Small companies took the lead in examples of environmental sustainability, with an average of 3.8 excerpts in the interviews reflecting working with environmental sustainability. Large organizations followed suit with an average of 3.1 excerpts and medium organizations with an average of 2.5 excerpts.



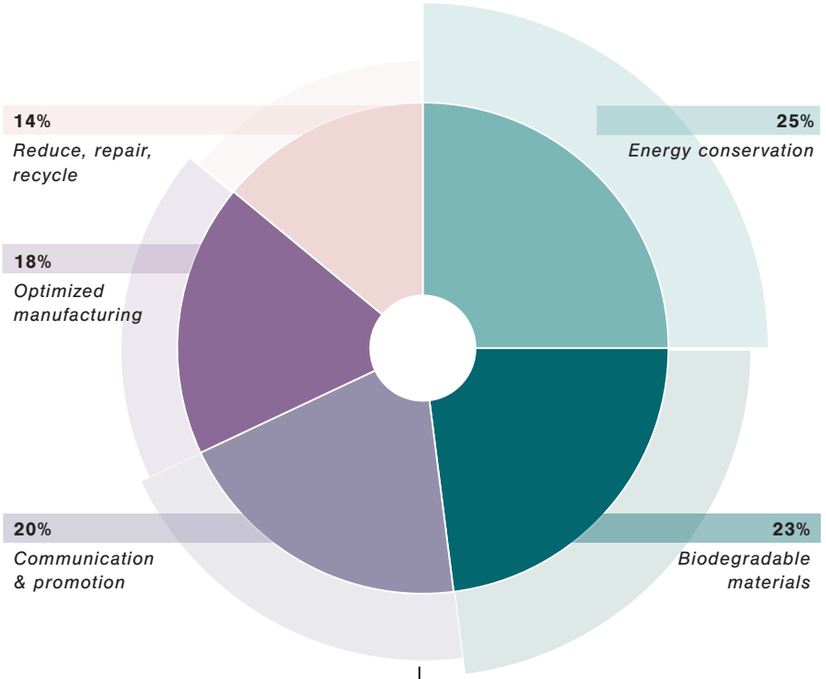
Designers in small organizations

n = 64 excerpts in 17 organizations



Designers in medium-sized organizations

n = 96 excerpts in 38 organization



Designers in large organizations

n = 142 excerpts in 46 organizations

Biodegradable materials

Over 10% of the interviewed designers (all from professional, scientific and technical activities, manufacturing, retail trade or repair industries) reported a move towards bio-based or unprocessed materials. Often, this was connected to replacing plastic parts, such as at Fredman Group, where they now offer biodegradable waxed paper as an alternative to plastic wrap. In many cases, designers searched for and developed new material options, such as in the case of Fiskars launching a pair of scissors made of recycled steel and a biocomposite consisting of recycled plastic and cellulose. Additionally, five designers mentioned first looking for materials that were already recycled or using surplus materials at the company before sourcing new ones, for example at Fazer, where oat husk is used to make bread bags. Meyer Turku's Head of Design shared that they actively avoid hazardous materials (e.g. in paint, batteries, coatings, particles, lead), simplifying recycling and disassembly

> *For example, we currently have big questions in sustainability from the perspective that by 2030, all of our products should be made from renewable raw materials and/or recyclable materials. I have raised the question of what to do with, for example, existing IoT devices and how they are produced sustainably. We continuously research new alternatives regarding how to improve those. Our IoT devices inherently make professional kitchens more sustainable by reducing food waste and enhancing food safety.*
>
> **– Elina Halinen, Design and Development Director (Digital solutions) at Fredman Group**

Designers' involvement in more sustainable material decisions could range from complying with organizational policies to taking initiative to search for and develop better options. Many companies, for example Finnair, have opted to only collaborate with suppliers with sustainability credentials, and keep the sourcing close to home in order to monitor and guarantee environmentally sustainable practices. Prioritizing local materials was said to benefit both the environment (less transport, easier to monitor and minimize impact), as well as the durability of the products due to using materials that are more acclimated to regional conditions, as shared by the Partner & Designer of Kuja Studio. Interestingly, designers in consultancies were often found to actively push for and look for opportunities to use bio-based and recycled materials in their client projects, such as Pentagon Design renewing the Mysoda home carbonator using a biocomposite material developed by UPM Formi EcoAce.

Optimized manufacturing & production

Several designers shared examples of reducing the environmental impact of the manufacturing process by optimizing material usage. For example, the Head of Product Design at Aivan noted that not wasting materials or having unnecessary parts is both cost-effective and creates lighter products that are more comfortable for customers. Other designers emphasized reducing environmental impact through increasing their prioducts efficiency or effectiveness of their products. For example, at Elisa the number of antennas was reduced while keeping the same functionality, thus reducing required production and maintenance. Similarly, Metsä Board's Packaging Services Director shared an example of successfully reducing carbon emissions by 30%, just by using less and lighter material, as well as removing a plastic film. Additionally, design managers at, for example, Huld and Kesko had been part of optimizing distribution from an environmental point of view. Many designers had a role in contributing towards prioritization as well as in looking for the bigger picture in considering which issues to tackle first. For example, committed to the Science Based Target initiative to limit the global temperature rise to 1.5°C, Cargotec set a target to reduce emissions at least 50% across its value chain by 2030. For the 2021-2024 period, their target is to already reduce their CO2 equivalent emission by 1 million tons.

Energy conservation

Most energy reduction efforts revolved around calculating carbon footprints while products were in use. Many cases discussed the enormous impact of data usage, with for example designers from Adventure Club emphasizing that googling cat videos is comparable to driving a car in terms of carbon footprints. As a result, considering the effect of design on data usage and energy consumption were seen as a key issue in environmental sustainability efforts in many organizations. For example, the CEO of Avidly noted rewriting code as one way to increase efficiency and reduce energy usage. Designers also shared examples of initiatives regarding energy usage in the office, either by switching to wind or solar energy, or by reducing energy needs with more insulation or LED lights. For example, GoFore's Head Of Good Growth Offering noted that digitalization had already surpassed the total carbon emissions of the entire airline industry (pre COVID-19). These realizations and many others, sparked awareness and efforts to widen our sustainability considerations.

Reduce, repair, recycle

Designers also sought environmental sustainability by making their products long-lasting. For example, at Vaisala each product has a lifespan of 10–20 years, and at Pentagon Design, products are consciously made less trend-dependent so they can withstand the test of time, both intended to reduce the need for additional consumption. Hakola Huonekalu Oy's CEO & Creative Director described how they navigate the balancing act of choosing recycled, yet durable materials and educate their customers to optimize their environmental responsibility. Additionally, designers considered circular economy approaches, with for example Lassila & Tikanoja processing waste and reusing it for new applications, and Agile Work creating modular spatial designs to ensure compatibility and durability, as well as selecting furniture with ease of repair and recycle. Designers also shared examples of enabling recycling on the consumer side. For example, Solita designed littala Vintage service for Fiskars, rewarding consumers with gift cards when returning old products, reaching both customers buying new products and customers preferring vintage ones. In a similar vein, designers at Loihde Factory and Fortum have worked on improving the user experience of recycling, and at Huhtamaki, the aim is to design all products to be recyclable, compostable or reusable by 2030.

> *We always strive to ensure that the customer only buys the same category of product once in their life from us. They're built to last. If that customer wants to give them up at some point, they also have resale value. The products are also serviceable, and we instruct customers on how those products are serviced and maintained.*
>
> **– Matti Puomio, Partner & Designer, Kuja Studio**

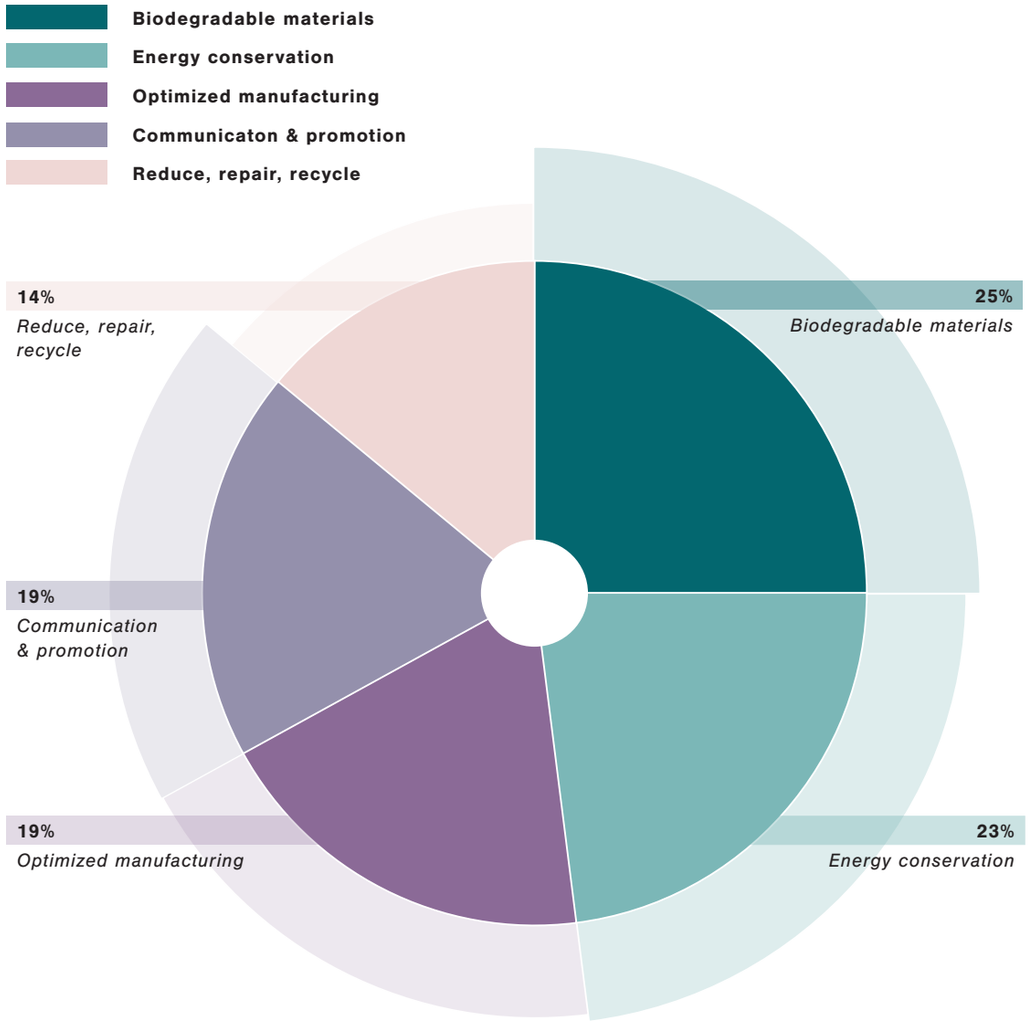
Communicating, branding, & supporting

In addition to creating more environmentally sustainable offerings, many designers brought up the importance of making such benefits apparent to the customers to enable informed decision making. Here, design efforts often centered around transparency and communication about the environmental impact of their products. For example, S-Group shows the carbon footprint of purchased products in their mobile app, ABB EnergySave calculates how much energy is saved in customer application with AC drive control, and Rockseri Oy showcases obtained certificates on their website.

Other forms of communication were more aimed at making environmentally conscious consumption more attractive. For example, Holiday Club Resorts Oy has electric car charging points near the main entrance of their hotels, and Vincit has made the more sustainable option the default to nudge customers to choose it. On the business-to-business side, Lassila & Tikanoja is supporting customers to measure and reduce their carbon footprint and to communicate the impacts further to their own customers, and Adventure Club supported a startup (Puro.earth) in building the world's first B2B marketplace for carbon removals. Internally, designers at VTT developed frameworks and methodologies to design sustainable solutions with specialists, and at Kuja Studios, designers conducted workshops across the organization to enhance understanding of ecological footprints.

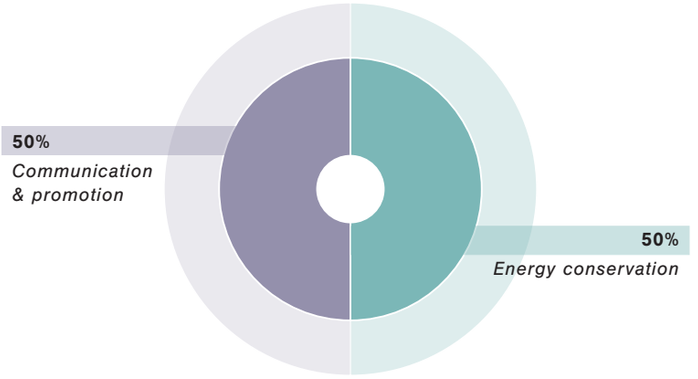
Environmental sustainability across different types of organizations

Design contributing to environmentally sustainable solutions was more commonly highlighted in private than public organizations – designers in companies and consultancies in private companies had an average of 3.1 interview excerpts discussing environmental sustainability, whereas designers in public organizations had one.



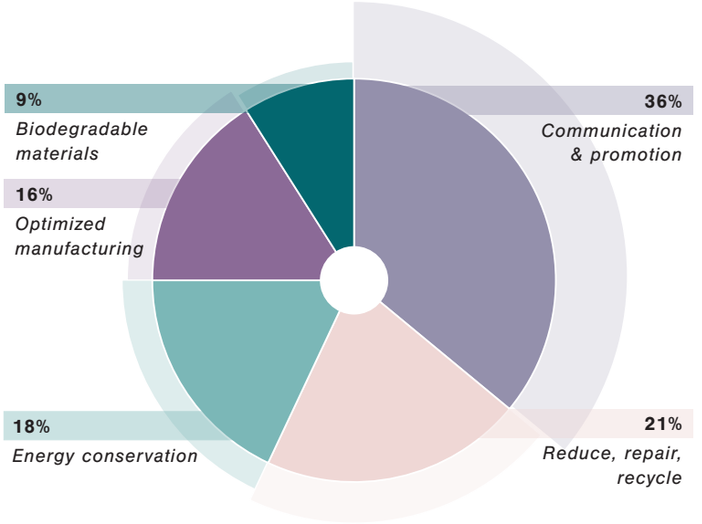
In-house designer in private companies

n = 215 excerpts from 66 organizations



In-house designers in public organizations

n = 6 excerpts from 6 organizations



Consultancies

n = 81 excerpts from 29 organizations

IN PRACTICE:

Livable world

Energy renovations at the City of Helsinki

One project that the City of Helsinki has undertaken has to do with developing energy renovation services for housing associations, helping with such considerations as adopting geothermal heating systems, installing heat recovery systems or switching to windows or roofs with better thermal insulation. The service offering itself is strongly tied to environmental sustainability, with a team of experts aiming to help housing associations in planning, internally selling, and eventually launching energy renovation projects. While contributing to the energy efficiency of individual houses, the program as a whole also supports the City of Helsinki in reaching its carbon neutrality goals. The social sustainability dimension can be seen in the city's human-centered approach that respects the needs of both the energy renovation team and the various housing associations, by developing and providing the renovation team with necessary tools to deliver the value proposition. This,in turn, enables the team to educate and enable housing associations to make knowledge-based decisions on their energy solutions.

Environmental responsibility

Designing a wrist band as a passion project at Polar

The design team at Polar came across the possibility of using textiles in their wrist bands, when they found a material woven from recycled PET that still has the feel of textile. Immediately, the team became interested in trying to create a product from this material in collaboration with the wrist band manufacturer that was using the material. It became a passion project of the design team in which they quickly came up with a suitable design. The wrist band was well received internally and by the market, although the use of recycled materials was not used in the marketing to brand the product as an "eco" version. While the recycled material was undercover in the final product, it was very much the design driver for the effort. Creating sustainable products or using recycled materials is beneficial whether the consumers know about the materials' sources or not, and sometimes making less of a deal out of it can help to normalize the use of new material options. Designers at Polar are aiming to continue such material experiments, looking forward to trying new Finnish fiber material innovations that could potentially be used in their upcoming products.

A viable world

Predicting demand for products to save resources by Solita for Amer Sports

Working together with Amer Sports, the designers and developers at Solita have been working on predicting demand and supply chains more accurately and transparently to enable conserving both planetary and monetary resources. Amer Sports, a sporting goods company with brands such as Salomon, Peak Performance and Suunto, operates with multiple products in the global market. To be able to produce just the right amounts of products, they needed predictability – that is, actionable data on supply and demand. The solution was a data platform that makes predicting demand and the supply chain more accurate and transparent, enabling a genuinely data-driven culture of operation. For example, with the help of the easy-to-use platform it's now possible to manufacture just the right number of products of a particular brand and model, and have the right amount of them in the right stores. This has saved millions of euros and cut carbon emissions, providing a win-win case from both economic and environmental perspectives.

Environmental responsibility

Local production of Clean Kit at Finnair

Designers at Finnair take the time to understand different materials, their origins, and how they are sourced. For the interior design of planes, weight reduction is the main driver in environmental responsibility in order to reduce fuel usage. However, design also considers a much broader scope. When COVID-19 hit, Finnair launched the Clean Kit, providing passengers with hand sanitizer and surface wipes. Here, Finnair's design set a personal challenge to make this as sustainable as possible. One of the subgoals here was to reduce the amount of plastic compared to what other airline providers were using, and the design team explored sustainable materials. Additionally, they looked to source locally, preferably in Finland. The kit became a paper envelope made from Finnish paper in Finland, illustrated by the print designer Reeta Ek. The hand sanitizer included in the package came from Kyrö Distillery, a Finnish rye distillery using 100% Finnish rye. Only the plastic lining used in the paper sachet to prevent liquid from leaking came from overseas. While these design decisions were at times challenging and expensive, the design team and Finnair learned a lot from the process that will help streamline subsequent efforts. "No, you don't have to get everything from China."

TOWARDS SOCIAL PROGRESS

> *It's great to hear how engineers who've been in the company even up to 35 years, whenever we began a design project, always start thinking about how to increase children's playfulness and activeness, like 'this design needs to be more activity-promoting' and 'let's suggest adding this element to the client, so we can make people even more active.'*
>
> **– Kirsi Svärd, Group Design Manager, Lappset**

The interviewees covered multiple facets of social sustainability, highlighting the promotion of quality of life, equity, and diversity. However, social cohesion, included in many definitions of social sustainability[2], was a less-recognized value. Conversely, many designers emphasized respect towards various stakeholders in their ecosystem, capturing a holistic orientation towards those less often included in social sustainability frameworks. Designers tended to emphasize external stakeholders and advancing benefits for customers and users through the organizational offering. However, some examples were also shared where designers worked to improve social sustainability for internal stakeholders.

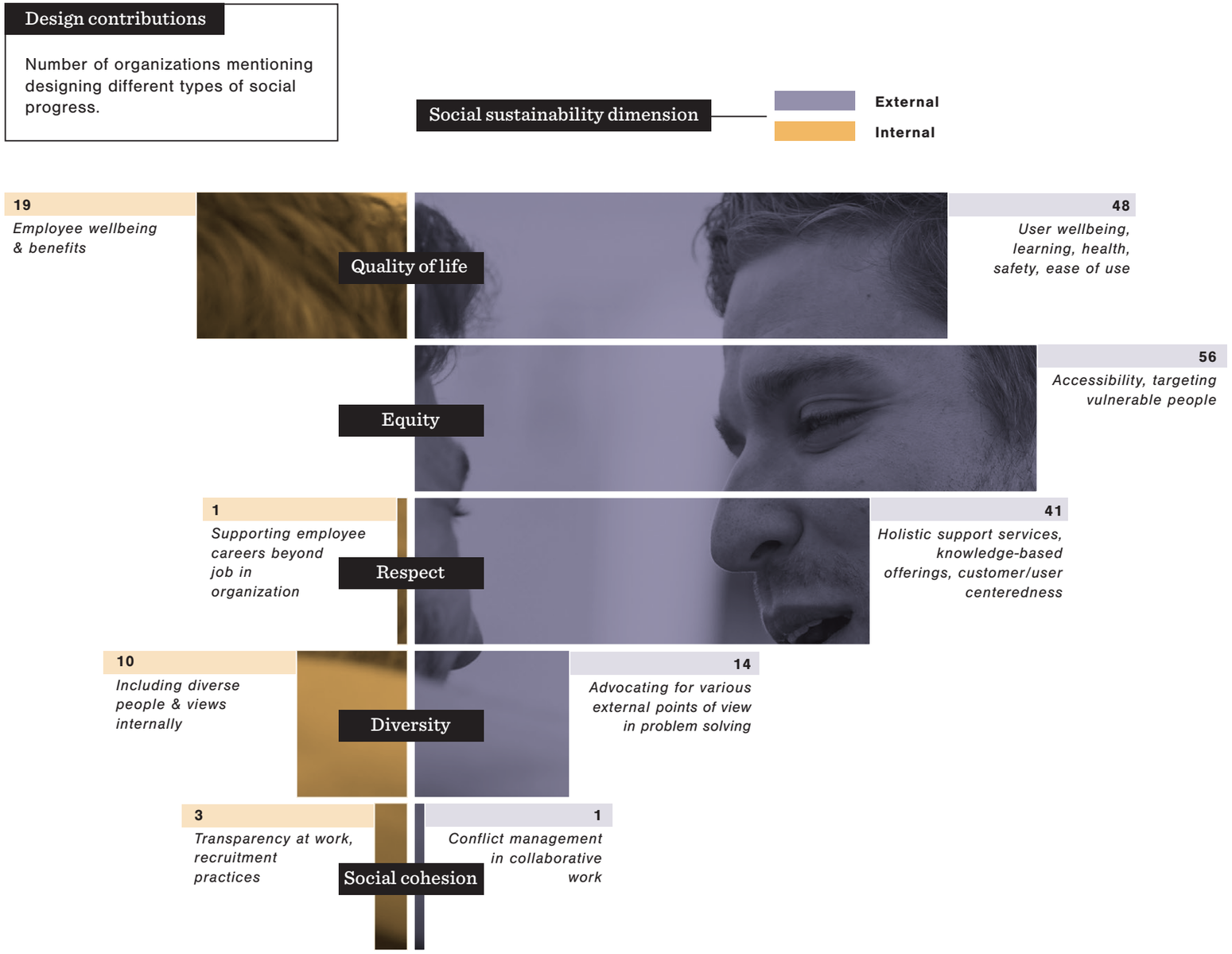
Enhancing quality of life

Socially sustainable work was often aimed at improving people's basic quality of life by targeting customers' and users' wellbeing and safety. Many designers also highlighted their impact on others' quality of life on a less fundamental level, such as through ergonomic design, ease of assembly, and understandable instructions. On the more fundamental side, companies were, for example, bringing a patient-centered approach to healthcare system design, helping children be comfortable at school, and enabling people to exercise effectively. As a practical example, a designer from Adventure Club described how they had been part of designing and implementing an application for reducing youth social anxiety. The app, Chillaa, targeted the vulnerable population of pre-teens and aimed at increasing their quality of life through improved mental health. Furthermore, it had also been developed in collaboration with local medical professionals and extensively tested in a controlled trial to ensure effectiveness – in other words, delivering on the promise of social sustainability improvement.

Internally, working on quality of life related projects was perceived as inherently "good" by several interviewees. A few design managers mentioned that they had seen their designers get motivated by doing these "projects with real impact," and even heard people in job interviews mention them as a key motivator for desiring to work in the company. Almost a fifth of the interviewed designers, typically in leadership positions, highlighted consciously investing in the quality of life of their employees through activities such as ensuring that the tools fit the job, providing organizing project reflection sessions, and giving chances for mobility in the organization as well as ensuring above-industry-average salary and extensive occupational healthcare benefits.

References

2 Magis (2010). Community resilience: An indicator of social sustainability. Society and Natural Resources, 23(5), pp.401-416.; Hodgson, (2008) Social Sustainability Assessment Framework, Presented at Sustainability Assessment Symposium: Progressing Practice in Western Australia, 24-25 September 2008. Available: http://integral-sustainability.net/wp-content/uploads/sas4-2-hodgson.pdf



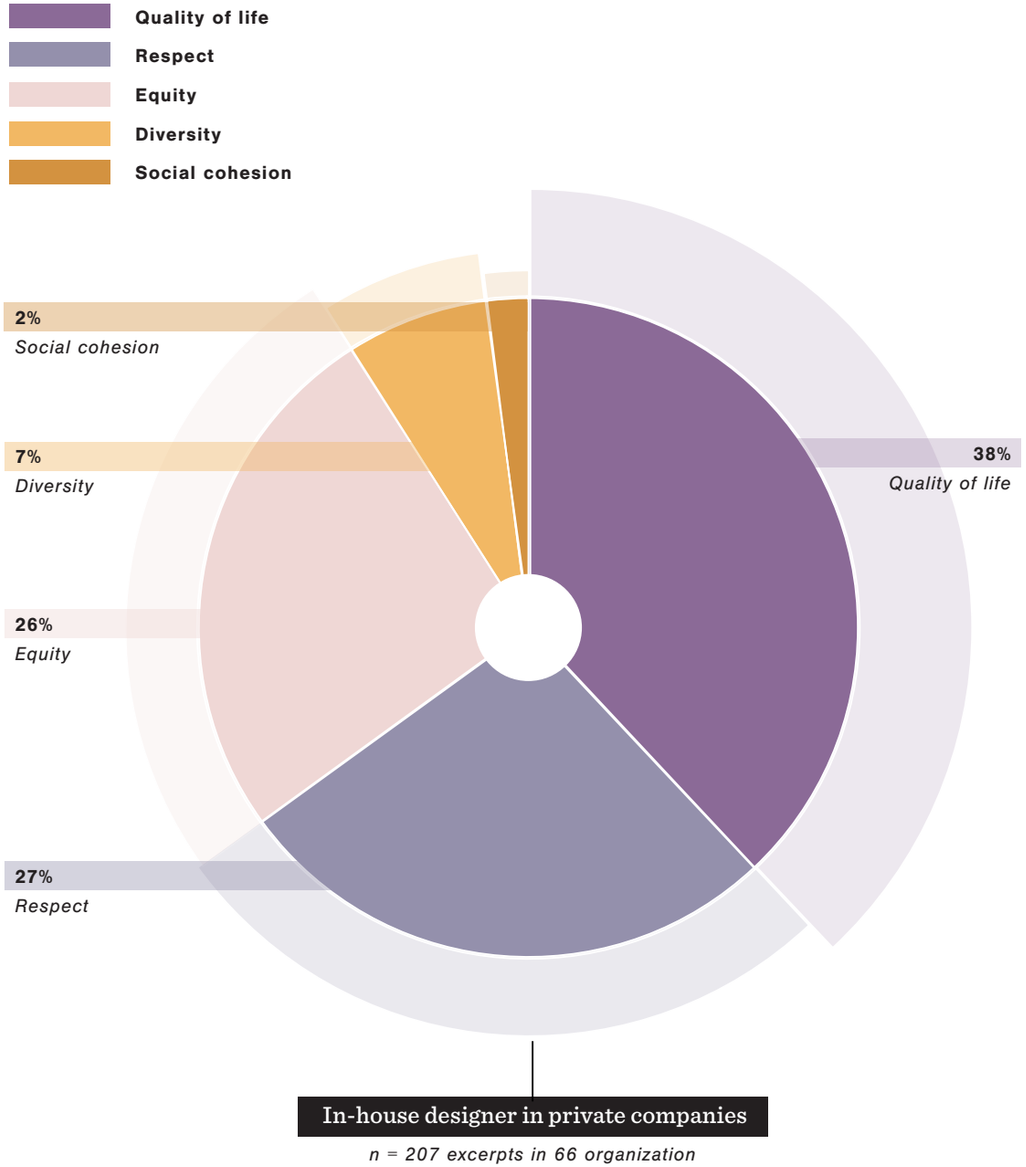
Equity to underserved & vulnerable groups

Increasing equity through design was discussed primarily by making the produced value attainable to a broader group of people, particularly underrepresented or overlooked groups. At the most straightforward level, this meant fulfilling accessibility requirements. However, many interviewees mentioned going beyond what is legally required, such as the Finnish Tax Administration working to better involve Swedish-speaking Finns and people with disabilities when collecting user insights, as well as Oura contributing data to better represent women in algorithm design and research, and VR, whose Senior Service Designer emphasized the importance of working trams and trains for all users, which is why they did extensive user tests with “wheelchair users, the hearing impaired, the visually impaired, and cognitively restricted passengers.” Also, various projects had specifically targeted their offering to produce value for people in vulnerable positions, such as young children, individuals in low-income neighborhoods or people with disabilities, thus promoting equity at a societal level.

While improving external equity was the most common type of social sustainability example provided by designers, equity was also the only social sustainability area where no internal examples were mentioned in the interviews. As such, working on internal equity, such as promoting equal opportunities, may represent untapped potential for leveraging design to improve sustainable employee experiences by implementing tools and approaches already used in designing customer experiences and external offerings.

Social progress across different types of organizations

Designers working in public organizations had a strong emphasis on social progress in practice, discussing working with social responsibility in an average of 6.8 excerpts per interviews, compared to 3.5 excerpts in companies.

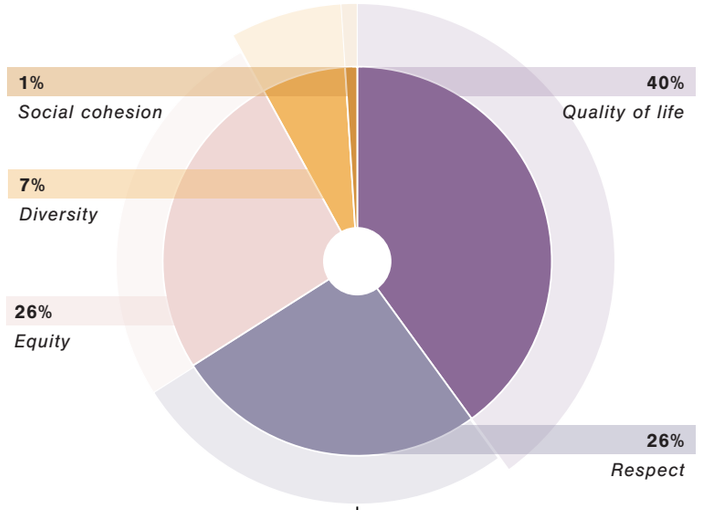


In-house designer in private companies

n = 207 excerpts in 66 organization

In-house designers in public organizations

n = 41 excerpts in 6 organization



Designers in consultancies

n = 121 excerpts in 29 organizations

Respectful value creation

Many of the social sustainability examples shared by the designers reflected high levels of respect towards the stakeholders of their work, be it users, clients, or colleagues. This respect was evident through comments about a holistic value focus, adopting others' perspectives, and providing knowledge-based value.

Many designers also described initiatives encouraging moderate and healthy use of products that could be overused by consumers, such as sweets by Fazer and gaming by Rovio. This included efforts to provide users with information on adverse effects, collaborating with parties that treat the adverse effects, and involving collaborators in design decisions affecting package sizes, for example. This illustrates a shift away from transactional business that maximizes consumption to sustainable value that takes into consideration not only offering usage but what happens before and after.

Seeking to adopt others' perspectives further highlighted the move beyond a transaction focus, with a designer from Kela, for example, speaking about prioritizing helping citizens over bureaucracy:

> *The customer is the only reason for our existence, and the most important reason for whatever we do. Kela is not an end in itself, nor just an agency that follows the law, but rather we're based on an ideal of a welfare state. Of course, we have to obey the law, but even the law exists for the citizens' best interest, and we are, in fact, obliged to bring customer insights to legislators. So, we're not here to just run through a process. We're here to bring value to the end-customer.*
>
> **– Maria Leinvuo, Lead Designer, Kela**

Knowledge-based offerings were characterized by a preference to fully understand problems and their context before providing solutions. In practice, this was enabled by the use of user-centered design research techniques, enabling supporting customers with regards to their goals and expertise. This applied in business-to-business as well as business-to-consumer cases, as shown by designers from, for example, SEOS Design and OP Financial Group:

> *We often collaborate more with the end-users than our clients do. It's impossible to design an operating room and go tell an anesthesiologist how they should work, or a surgeon how they should operate on a shoulder. The process begins from the user, the person, and understanding that person's needs.*
>
> **– Pekka Kumpula, Managing Director, SEOS Design**

> *We try hard to think about people's holistic situation and a solution for that, instead of, so to speak, blasting them full of different products and services.*
>
> **– Tuomas Manninen, Head of Design Director, OP Financial Group**

While customers seemed to come first in examples as well as discourse, the results suggest that similar design contributions could be extended into employee experiences with relative ease. However, examples of this were rare. Still, Yeply described designing support for their employees with learning and career advancement beyond their work there, for example by focusing workplace learning on universally useful things.

Diverse input

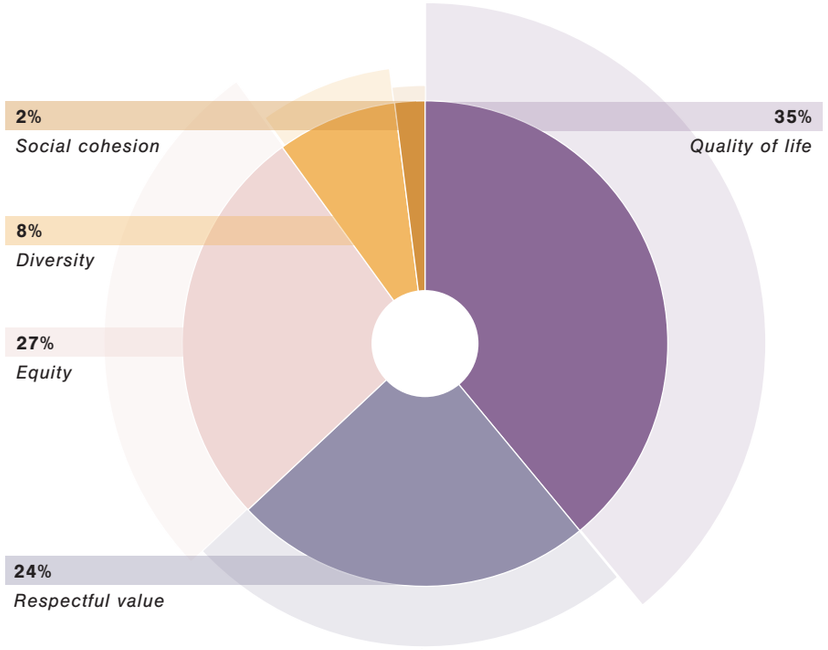
Designer efforts connected to diversity were focused on bringing multiple points of view into the design of organizational offerings, both externally and internally. Externally, interviewees mentioned purposefully making sure that they gather understanding of a broad range of people whose needs might be relevant. In practice this meant, for example, altering the cost of offerings to target new income levels in B2C, and extending user research efforts into small minorities in public organizations. In this same vein, a designer at the Finnish Ministry of the Interior had advocated for involving organizations working with undocumented migrants in a related development project, instead of completely relying on internal experts on basic human rights. Internally, seeking diverse input can mean activities like polling all employees about workplace factors, conscious activities to reduce one's bias towards different kinds of people and situations, as well as actively working as a "translator" between different parts of an organization.

Supporting social cohesion

Social cohesion, focusing on communality, a sense of belonging, and connectedness, was the rarest dimension of social sustainability in the discussed design examples. One consultancy mentioned adopting a referee and conflict resolution role when collaborating with multiple other stakeholders, which can be interpreted as enhancing the sense of community in such projects. Internally, designers talked about activities that enhance social cohesion in their organizations, for example through highlighting openness in internal communications. However, while social cohesion was rare in examples of social sustainability brought up by the designers, acting as a glue and facilitator across groups was widely discussed as a key value of design in organizations in general. This suggests that social cohesion could be a natural goal as well as a key method for improving social sustainability through design, warranting further consideration.

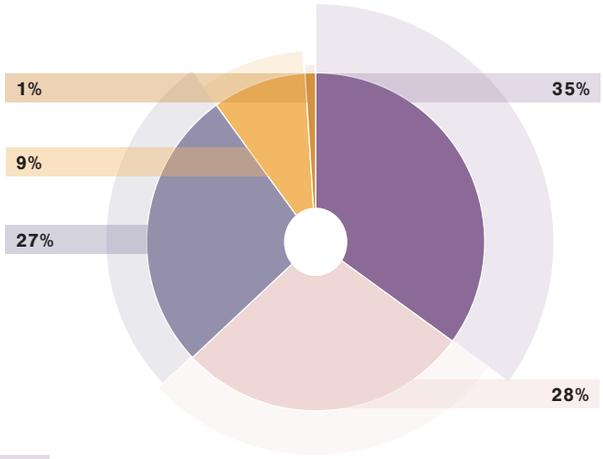
Social progress across different types of organizations

Similar to environmental responsibility, social responsibility was discussed more in the interviews of designers in smaller organizations, with an average of 4.9 excerpts per interview in small organizations, 3.8 in medium organizations and 3.0 in large organizations.



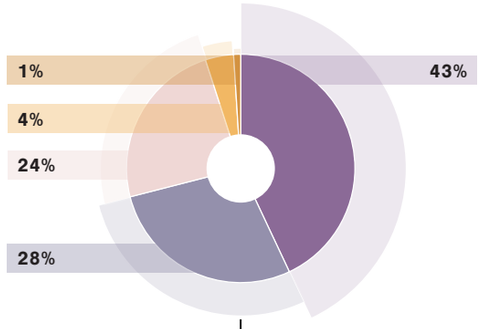
Designers in medium-sized organizations

n = 146 excerpts in 38 organizations



Designers in large organizations

139 excerpts in 46 organizations



Designers in small organizations

n = 84 excerpts in 17 organizations

IN PRACTICE:

A fair world

User understanding & business decision making at Mehiläinen

A designer at Mehiläinen saw that designers have the potential to influence business decision making, such as in how to promote services to different groups of people and what kinds of offerings should exist in the company. This potential was thought to grow from the nature of designers' work, where they continuously interact with customers and users, and interpret resulting datasets. This gives designers a bottom-up perspective on how the company's offerings work, which often is more detailed than the top-down view of senior management. In essence, involving designers in business decisions could help form an equilibrium between a top-down vision and the bottom-up reality, in the end forming a more coherent and realistic plan. In terms of sustainability, this plurality of views supports the company's economy while also including the social constraints of reality.

Social progress

Designing for children's rights at Elisa

A design manager at Elisa was approached by UNICEF Finland as part of UNICEF's initiative to assess children's online safety. While the manager considered the topic important, the approach seemed somewhat bureaucratic and demotivating. Instead of brushing the topic aside, Elisa initiated collaboration with UNICEF, eventually leading to co-creation workshops around how to design services for children. Elisa's designers found this project motivating to work on, seeing that it could be of interest to many parties and the few existing frameworks and tools did not adequately solve the problem. The team opened the initiative for all stakeholders from design agencies, industry and academia, including companies like LEGO, Toca Boca, and Frog getting involved in international conferences and events. Currently, a Designing for Children's Rights (D4CR) association has been founded to push these topic areas forward. The association publishes and updates the Designing for Children's Rights Guide, along with organizing global events and workshops. This case shows how companies can use their designer know-how to proactively create valuable collaborative efforts beyond their company's scope, simultaneously building intangible value for the organization, such as improved organizational image for both current and future employees and helping to retain and attract talent.

Social progress

Diverse collaboration & experimentation at the Finnish National Agency for Education

After observing that merely funding development initiatives in Finnish municipalities rarely resulted in lasting positive change, designers at the Finnish National Agency for Education organized a peer learning program on experimentation together with 12 volunteering municipalities. The program focused on various social sustainability dimensions in education, such as why students drop out and how their families could be more involved. Each municipality formed a multidisciplinary team, with participants ranging from principals to nurses, to carry out experiments. The lessons learned from these experiments were then discussed in what the team coined as "evaluation aquarium" discussions, where the aim was to collaboratively redirect the experimentation efforts into meaningful directions and to disseminate key takeaways. This program has resulted in public guidelines for experimentation in education, and a webinar series to teach experimentation to a broader audience. This case highlights diversity and collaboration as ways of transforming organizations toward social sustainability.

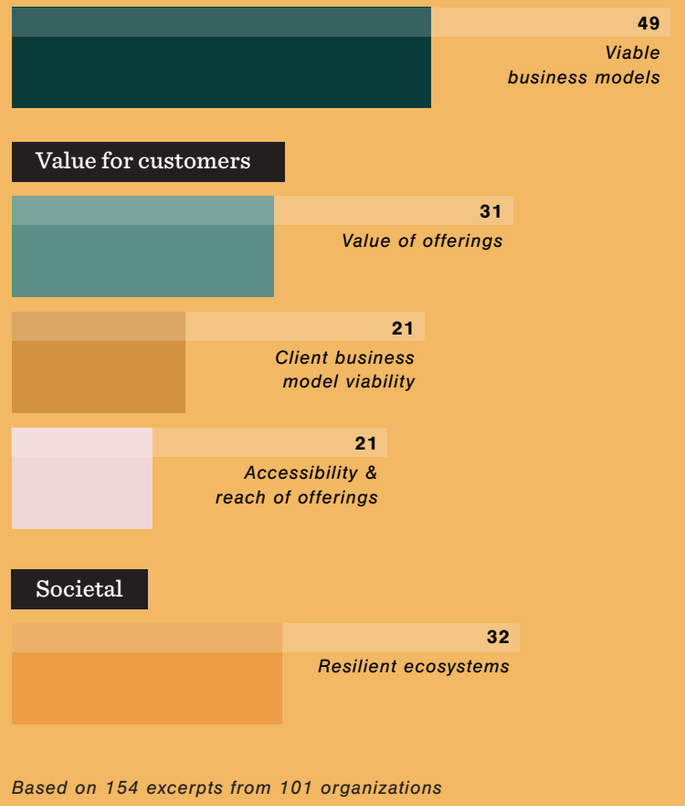
TOWARDS ECONOMIC DEVELOP–MENT

> *Economic sustainability is probably in a way the most straightforward. It's about doing design and solutions resource-wise. For example, in designing seating for airplanes, trains or for others, everyone would like to have more space, but how economically wise that is, is another thing.*
>
> **– Pekka Murto, Senior Design Researcher, Service & UX Designer, Digitalist Group**

While economic sustainability was less often integrated into the designers' work compared to environmental and social sustainability, the designers did note several current considerations. Here, different spheres of influence were recognized, ranging from the internal organization to its customers, surrounding society and economic viability of specific industries. However, in many cases, economic sustainability did not have a clear operationalization relative to design efforts, and 15% of the interviewees noted that economic sustainability was 'not on their table,' due to it being handled by other employees or departments in the organization.

Layers of economic sustainability considered in the designers' work

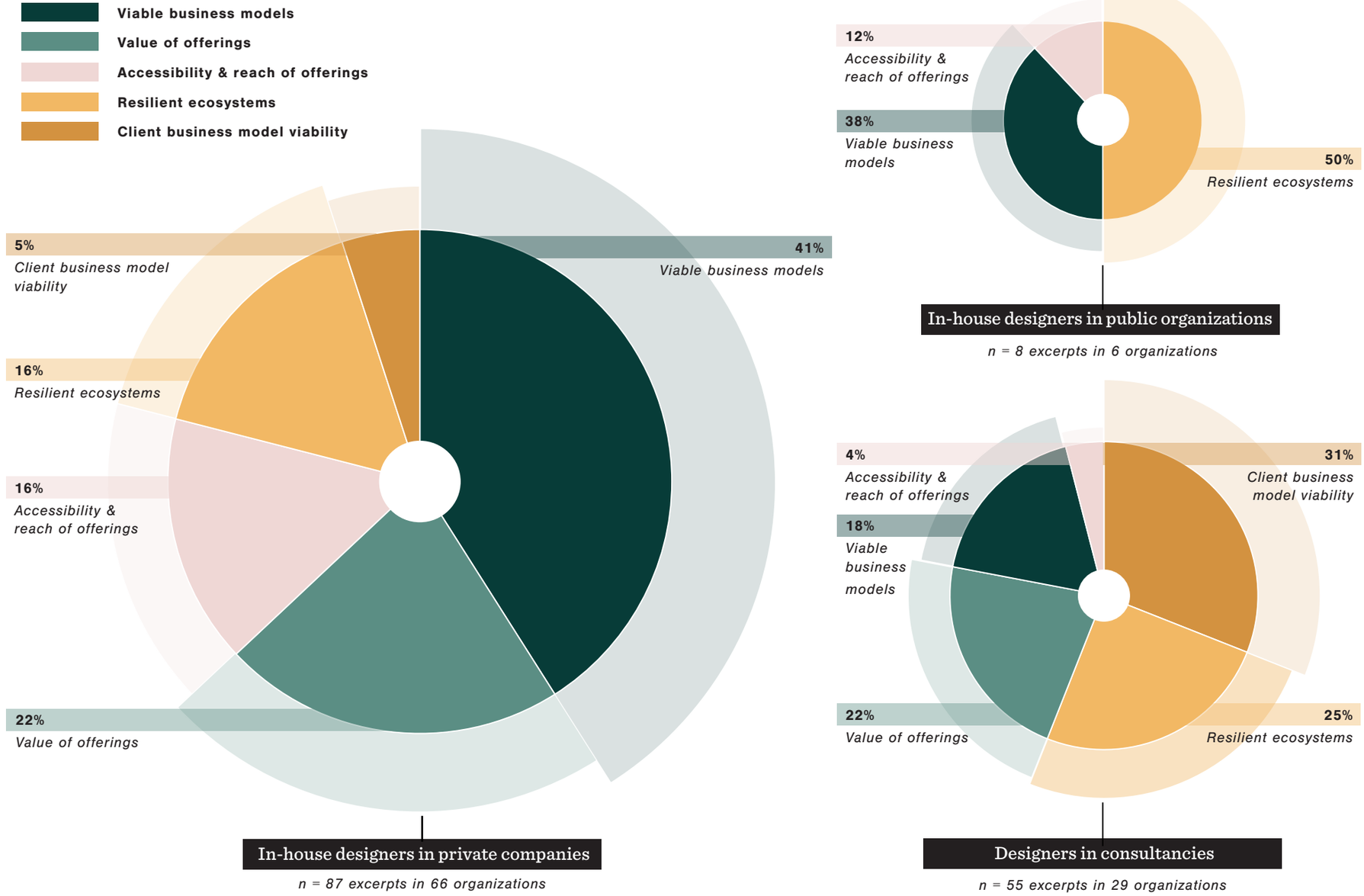
31 designers expressed some trouble in thinking about what 'economic sustainability' could mean in their context.



Based on 154 excerpts from 101 organizations

Economic development across different types of organizations

Designers across organizational types brought up similar amounts of economic development issues, but the focus varied – in public organizations, the focus was on resilient ecosystems, whereas in-house designers in private companies focused on their own organization's business model viability and consultants on supporting the performance of their clients.



Viable business models

On a basic level, designers considered their own organization's economic situation and financials when conducting their design work, contributing towards the viability of the business through, for example, taking production costs and supply chain efficiency into consideration in product or service development. For example, in addition to its environmental benefits, Design Director Antti Olin at Isku highlighted the economic sustainability of focusing on timeless design in developing offerings.

> *If you aim to develop for the sharpest peaking trends, those tend to also go out quicker. That creates an economic burden with the product development phase, taking for example 200, 000 euros and a year or more in time, but then leaving just a few years for the life cycle of the product.*
>
> **– Antti Olin, Design Director, Isku**

Many designers also described enabling others in the organization to better consider viability, for example through supporting business case formulation to validate projects in the organization. Designers would often assist in developing business cases and tools as sales support, drawing a link between the value of design and profitability of the organization.

> *When we've developed a concept or a solution for something, we have to do a business case and calculations of the profit expectations at the same time.*
>
> **– Mikko Koivisto, Head of Customer Experience & Design, Helen**

Some examples of advancing economic sustainability in the organization also included employment and labor market considerations, such as making sure that salaries were kept at adequate levels.

Value for customers: business model viability, accessibility & value of offerings

Designers could also work towards improving economic development for their organizations' clients and the end-users of their offerings. Two common considerations emerged regarding business-to-business and business-to-consumer customers alike: accessibility and reach of offerings as well as business model viability. Accessibility and reach revolved around pricing, with companies for example keeping tabs on B2B customer's financial requirements in outsourced design work. Additionally, designers played a role in assessing the value of offerings so that the pricing was on a feasible level for public organizations. For example, economic accessibility already plays a key part in scoping development projects at Nanso, through determining how much materials can cost and so forth to ensure pricing at a level that is accessible to as broad a group of consumers as possible.

Business model viability, in turn, consisted of clear value propositions and supporting customers' prosperity. These could either reflect creating value for the investment of customers or, in the case of many consultancies, such as Deloitte, increasing the long-term viability of client organizations by designing business models that are interesting for the stakeholders immediately, while taking into account emerging

trends such as environmental responsibility to ensure a future for the organization.

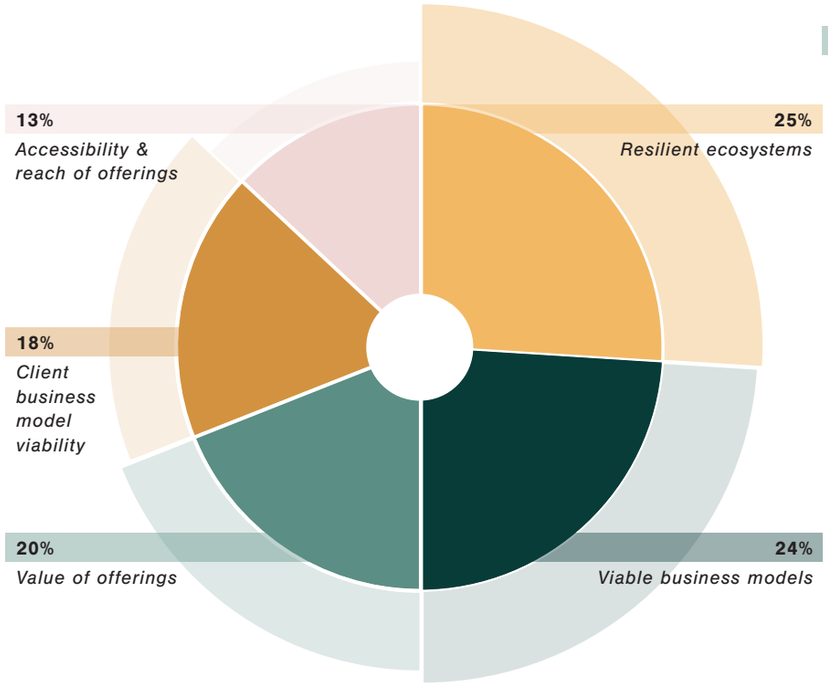
> *Economic sustainability is tied strongly to the service, where the income stream comes from, and it has to be again integrated to design and to how value is created. For what and which values are people willing to pay, and who is going to pay for it. Are we creating value for the stakeholders or for the users, and who does the income come from? They are all very much linked together.*
>
> **– Jenni Seppä, Head of Design, Industry62**

In some cases, specific industries' economic viability was considered in client projects and with company customers. For example, this could mean supporting carbon renewal organizations' financials with their environmental efforts or designing cost saving manufacturing tools for the steel industry, as in the case of Valmet focusing on efficiency in their supply chain.

> *The modularity project changes the organization, it changes the ways of working, it changes the product. You cannot do it half way, you have to do it big. This way we get to improve the system, controlling the costs systematically, reducing them. At the same time, the machine's appearance, pleasant user experience, quality and safety are built into a modular architecture, which means that all of these themes serve customers in every machine sold.*
>
> **– Jussi Salojärvi, Senior Manager, Industrial Design, Valmet**

Economic development across different types of organizations

Small organizations had less of a lead in discussing economic sustainability than environmental and social dimensions. Economic accessibility was more frequently brought up by designers in medium and large organizations.



Designers in medium-sized organizations

n = 62 excerpts in 38 organizationss

Designers in large organizations

n = 53 excerpts in 46 organizations

Designers in small organizations

n = 35 excerpts in 17 organizations

Resilient ecosystems

Regional ecosystems and the Finnish economy beyond the business of the organizations or their direct customers were also brought up when discussing economic sustainability. This included designers working with projects related to basic necessities and infrastructure, for example working on the financial side of the healthcare and social services renform (SOTE) together with government officials, or using new AI technologies to draw economic predictions in post-COVID-19 society, as well as a product designer in a sport manufacturing industry recognizing the effect of their product to reduce lifestyle diseases and therefore reduce the associated costs to society.

In addition, designers in organizations operating in the private sector also made note of working to elevate the wealth in a region or in the Finnish economy overall through tax revenues or job creation. Moreover, when working with or in the public sector, economic sustainability as a way to use public money wisely and cost-efficiently was emphasized. Furthermore, many design agencies and consultancies brought up examples in which working for public organizations had brought both economic and societal benefits. For example, Kuudes has worked with the topic of mental health, tackling both mental welfare as well as work absences.

Out of our hands

Over a fourth of the interviewed designers were uncertain about how economic sustainability linked to design in their organization or even industry, struggling to identify what economic sustainability would mean in practice or how their work might advance it. On the other hand, 16 designers noted that economic sustainability was, so to speak, ‘not on their table’.

> *I feel like we don’t maybe have anything like economic sustainability. It doesn’t ring any bells and at least consciously we are not doing anything that relates to that. I’m sure we could contribute to it, but I can’t think of anything that could be it. I kind of feel like that side here is out in the ‘bigger hands.’*
>
> **– Designer at a large organization**

IN PRACTICE:

A fair world

Ecosystem of Death at the Finnish Digital Agency

Working on economic and social sustainability, the Finnish Digital Agency collaborated with Siili Solutions on a project called 'Ecosystem of death' (Kuoleman ekosysteemi) to redesign the complex and bureaucratic funeral processes and necessary tasks associated with an individual's death. Initial steps involved mapping and ideating the services and goals of over 50 stakeholder organizations involved in this process. The core problem causing this complexity has been that no one organization has been responsible for the customer experience, and thus the experience has not been assessed in its entirety. The effort is a complementary component of large institutional level collaboration between the Finnish Digital Agency and the Finnish Tax Administration, involved in streamlining genealogy inquiries and inheritance tax processes. Together with tax authorities, banks, funeral homes and other stakeholders involved in this funeral process, the aim was to reduce complexity involving extensive paperwork, signing papers and organizing memorials, all in the midst of emotional turmoil. This expensive process associated with the death of a loved one has become a financial burden for people waiting to cover the costs from the assets of the deceased, taking time to be resolved. Made together with banks and insurance companies, amongst others, calculations showed that streamlining the process would result in significant economic savings at a society wide level in Finland, all stemming from a digitized customer-centred approach that was shared by all stakeholders.

> *The system has been in quite a disturbing state and now we've made a vision of how it should go. We have included strongly both the social and economic lenses.*
>
> **– Laura Järveläinen, Senior Service Designer, the Finnish Digital Agency**

Economic development

Participatory budgeting & Borough Liaisons in the City of Helsinki

Participatory budgeting has been gaining popularity around the world as a way for citizens to better influence how public funds are allocated and to encourage taxpayers to participate in the process of the city's economic decision making in their neighborhoods. In Finland, as a case in point, the City of Helsinki's OmaStadi initiative has worked as a way for the citizens to have a say in the development of their surroundings. Helsinki's city design manager explains that they have applied a user-centered design approach for Helsinki, which includes seven Borough Liaisons in their respective districts, who are supporting equality in participatory budgeting and reaching out to Helsinki's diverse community of citizens for their input in the process. The deeply participatory process included a brainstorming phase, where the public submitted their ideas, a co-creation phase where the public collaborated with the city's experts to turn their ideas into cost-estimated proposals and, finally, the citizens voted on these finalized proposals. Their goal: to allocate 8.8 million euros to various initiatives ranging from improving playgrounds to creating light ferry connections between Tervasaari and Sompasaari.

A fair world

AI & the post-COVID19 economy at Accountor

Accountor's artificial intelligence innovation lab combined forces with Aalto University to build models with financial data of thousands of Finnish companies to predict Finnish gross domestic product and other economic metrics. Carefully utilizing highly controlled data and crafting analysis mechanisms, the lab team built a tool to see how, for instance, the COVID-19 pandemic has affected Finnish businesses and industries. The tool has been recently used to provide knowledge to organizations and the ministry on the necessary adjustments to keep organizations and the economy afloat amidst the pandemic.

> *We have been doing this kind of work daily since the beginning of the COVID-19 pandemic, but now updating the metrics on a weekly basis to see how the businesses are doing. It has been all in all for the common societal good and we haven't asked for compensation for it or anything, but obviously it has brought some good visibility to our company. It purely started with the idea that maybe we could be able to help in this situation and then just went for it.*
>
> **– Jukka Kortesoja, Head of Design, Accountor**

TUG OF WAR INFLUENCES

Outside-of-job-description sustainability: designers' passion projects or dormant decisions

For many designers, sustainability was not seen as an integral part of their work. For some, the lack of organizational discourse on sustainability had led to relegating sustainability considerations to specific departments or higher-up executives, or simply being unfamiliar with reflecting on their own work in this light. Several designers mentioned that they hadn't really thought about sustainability relative to their own work, with for example one design manager noting that *"I'll be thinking about sustainability a bit after this interview, despite it not having come on my table before."*

On the other end of the spectrum, some designers proactively developed personal passion projects in the absence of organizational sustainability efforts. Many designers noted that while sustainability considerations were prominent in only a fraction of their own work or the organization, these were nonetheless highly motivating to carry out. Sustainability projects were described as the most pleasurable to do thanks to their genuine impact, and several designers noted feeling proud to work for a sustainable company. This motivating nature of sustainability shone through in comments, such as *"the reason I work in this field is precisely these sustainability and ethical aspects"* and *"I think it's kind of 'feel good' work when you think about how to use this sector's limited resources to help those who need it most."*

Organizational incentives for sustainability: necessary tradeoffs or in it for the long haul

Some organizations view doing sustainable business as a process of managing trade-offs, typically focusing on the interconnections between different sustainability dimensions. For example, products that are environmentally sustainable in the long term (e.g., recyclable, long-lasting, locally sourced) were typically also economically harmful in the short term, requiring investments in design and manufacturing. Several interviewees mentioned how in such trade-off situations, environmental and social sustainability tended to lose to economic gains. This was sometimes framed as "cold business thinking" and as a fundamental way in which companies had to work: *"Yeah, the profit many times bypasses other initiatives. We start working on sustainability when we can see that it would turn a profit for us. That's usually the angle of approach for listed companies."*

In contrast, other designers noted that their organizations explicitly gave room to pursue their own values and passion projects. For example, a design manager in a large company explained giving room for projects like this in an initiative to design interfaces for children: *"I told our designers that with this project, we have a chance for real impact, and a few got excited and began working like dogs and on their own initiative. For projects like this, I gladly give lots of time from our designers. If someone wants to work on them, they always can."* Giving room for employees to explore can in its own right provide business value, and smaller sustainability projects could later be expanded and integrated into organizations if they end up demonstrating business value. Indeed, some companies showed evidence of a paradox strategy[3], where the need for financial results was initially downplayed but might later be demanded.

Other organizations also noted the importance of sustainability considerations as a motivator, contributing to the employee experience and enhancing long term capabilities of the organization. In smaller companies, such as the consultancy Industry62, individual employees' opportunity to focus on sustainability was manifested through the overarchingly open and self-guided work culture, as explained by their Head of Design:

> *We are owned by our employees, so our values strongly highlight freedom and one's possibility to define their own work, as well as solving meaningful problems and creating meaning. One of our values is also that you can say no to projects if they don't match your own values.*

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3 Ozanne et al., (2016). Managing the tensions at the intersection of the triple bottom line: A paradox theory approach to sustainability management. Journal of Public Policy & Marketing, 35(2), pp.249-261.

BUILDING TOWARDS HOLISTIC SUSTAIN-ABILITY

While many interviewees highlighted their important work in individual sustainability dimensions, whether in terms of increased use of renewable materials or new diverse recruitment practices, some still expressed feeling that this was insufficient. One's ability to work on holistic sustainability that has environmental, social, and economic dimensions tied together, could be hindered by various aspects such as limited opportunities to propose new initiatives at work, the organization's scope and the prevailing financial situation. With countless possible variables in sustainability initiatives, such as internal-external focus, project scope, company core business, timeframes, etc., ways of implementing holistic sustainability are multi-faceted. We believe that this complexity should not prevent action – any effective progress is better than no progress! However, it is equally true that there is a need to constantly raise ambition levels to tackle sustainability more holistically.

Most practical examples of designing sustainability addressed only one or two dimensions; however, the interviewed designers also shared 23 case examples where all three dimensions of sustainability had been taken into consideration. On the other hand, each of the three pillars of sustainability in itself covers a vast and diverse range of potential considerations. For example, while both Vahanen-yhtiöt and Valmet showed an emphasis on economic sustainability in the practical examples below, Vahanen-yhtiöt focused on improving their clients' economic sustainability, whereas Valmet's modular board machine concept improved internal economic sustainability through better organizational knowledge retention, which, by proxy, improves the quality of Valmet's offerings for their clients.

In this section, we provide a handful of examples illustrating how Finnish design efforts have worked to build organizational capabilities outliving individual design projects in different types of organizations. Indeed, bringing together environmental responsibility, social progress and economic development can start anywhere, but it certainly becomes easier when baked into design processes.

IN PRACTICE:

Holistic development

Enabling clients' holistic sustainability at Vahanen-yhtiöt

Vahanen-yhtiöt, a Finnish consultancy specialized in construction and real estate, used service design to create a way for lower income residents in less affluent areas to maintain their apartment buildings. This raises the value of the properties and residential areas, impacting the economic aspects of society, but also makes these buildings and infrastructure more energy efficient, playing into the environmental side as well. Overall, the project focused on creating a way to systematically empower Vahanen clients to manage their housing associations' finances in the long-term, so that they could fund necessary renovations that improve not only overall quality of life but also the environment friendliness of the apartments. During the development process, for example Duplo bricks were used to demonstrate the economic side of changing the city landscape and urban planning. Here, each Duplo represented a certain value and when added or removed, changed the cost of the overall plan. This promoted the building of a shared understanding of costs amongst participants, as the economic side is often difficult to capture.

> *"The core idea was to look at how people living in the suburbs are able to live with and pay for expensive plumbing repairs and renovations. Especially when the house prices are lower and people in general have a lower income, so it is harder to get loans to fund these renovations. This is a huge question to solve. Of course it affects the ecological, the social and is very much tied to the economic side of things*
>
> **– Katja Soini, Design Director, Vahanen-Yhtiöt**

Holistic development

Locking in sustainable decisions through modularization at Valmet

The OptiConcept M board machine was Valmet's answer to a global market shift, from paper to board, and from larger to smaller machines. While the underlying motivation for designing the machine model was in internal economic sustainability, namely to reduce costs and capture previously-lost market share, the end result also embodies environmental and social sustainability. First, environmental sustainability is emphasized in the optimization of metal structures, resulting in reduced raw material use, and in increased overall environmental efficiency compared to past generations of board machines (e.g., up to 30% savings in energy and freshwater use). Second, the social side, namely ease of manufacturing, use, and maintenance, is considered through the use of design-for-manufacturing principles, maintenance bridge locations and standardization, as well as various jigs that make manufacturing and installation fool-proof even with limited training. Lastly, economic sustainability was addressed through a thorough modular way of thinking in OptiConcept M. In previous machines, many decisions (e.g., placement of maintenance bridges and stairways, as well as support structures) had been made separately project-by-project, thus resulting in an abundance of tacit information on what solutions worked best. With OptiConcept M, these decisions were "locked in", and modularization options were created for aspects that would need customization for different clients. This not only formalized organizational learning, in that good usability and environmental sustainability decisions would be retained, but also helped ensure that engineers and designers at Valmet wouldn't need to reinvent the wheel in subsequent projects, ultimately reducing costs. This "design for redesign" approach also inspires a different supply chain structure for board machines, where limited design options moved the process from engineering-to-order toward configuration-to-order, arguably streamlining internal processes while also providing customers with higher quality and more cost-effective machinery as the modular structure better retains past engineering knowledge.

IN PRACTICE:

Holistic development

Selling holistic sustainability to external investors at Yeply

Yeply, a startup providing a mobile bicycle repair service, consciously highlighted their environmental and social sustainability in their latest crowdfunding round, in hopes of convincing investors not only of their growth potential but also of their capability to “bring more good than bad into the world.” While Yeply’s aim, similarly to Vahanen-yhtiöt, is to provide a holistically sustainable service to their customers, this case further highlights how Yeply attempted to turn their sustainable approach into internal financial gain, by marketing it to external funders. Economically, their business aims to be affordable to the everyday person, as opposed to premium versions of a similar service in the US. Environmentally, they talk about not only being more environmentally conscious as a company, constantly searching for alternative mobility solutions for their maintenance van and using fewer toxic chemicals in cleaning, but also promoting environmentally friendly behavior by enabling cycling, a green form of transport and recreation. Socially, the enabling of bicycling was also highlighted, as it can have health benefits and provide indirect savings in healthcare costs. Also, it could be argued that Yeply aims to bring various ease of use and ease of access aspects into bicycle maintenance, showing respect for people’s time and effort in this regard. The funding campaign gathered nearly 1 million euros, nearly doubling its initial target, indicating that holistic sustainability can pay off.

Holistic development

Building client capacities at Demos Helsinki

At Demos Helsinki, a design consultancy “for a fair, sustainable, and joyful next era," designers engage in capacity building as part of their roles. This includes the public sector where they support civil servants in adapting new approaches to policy making. Often, these policies themselves are targeted at promoting environmental and social sustainability. Demos offers a more iterative approach to policy making with experimentation, giving partner organizations more insights into what’s working, what’s not, and whether the effects are indeed beneficial from a social and environmental point of view. These improved processes save time and money, providing an economic incentive for governments. Thus, in this offering all aspects of sustainability overlap. However, as Demos’ designer noted, the difficulty comes in when translating the learnings of the training sessions into practice. In their best cases they also support and coach civil servants through the process of implementation, which requires long-term commitment, since these changes don’t occur overnight at large scale, but take their time.

Holistic development

Combining proven business strategies with a sustainability-oriented core offering at Virta

Virta is the fastest growing electric vehicle (EV) charging platform in Europe, with a primary focus on B2B services. Their operations exemplify how a company whose scope is inherently tied to an aspect of sustainability - environmental sustainability achieved through electric mobility in the case of Virta - can follow roughly the same strategies as any other company with a similar business model and still be holistically sustainable. Economically speaking, Virta strives for growth in terms of reaching more clients who might either use charging stations or act as a charging station provider for others. As a platform company, it thus enhances network effects in the long term, as EV charging service providers will profit from higher numbers of EV drivers who will can then more easily find charging stations. Virta is also preparing for their growth in a socially sustainable way. The market is shifting from the tech-savvy and risk-tolerating early adopters of electric vehicles toward larger mainstream masses who tend to gravitate to easier and more comfortable experiences. By improving the ease of use of their EV driver services, Virta is also inevitably and consciously enabling growth for EV charging service providers.

Design efforts across the different dimensions of sustainability

Number of organizations with examples of each type of sustainability efforts.

1.9/5 ENVIRONMENTAL

1.7/5 SOCIAL

1.0/5 ECONOMIC

Average amount of sustainability dimensions discussed per interview

Environmental sustainability dimensions

- *Biodegradable materials* **34**
- *Optimized manufacturing* **39**
- *Energy conservation* **46**
- *Reduce, repair, recycle* **36**
- *Communication & promotion* **43**

Social sustainability dimensions

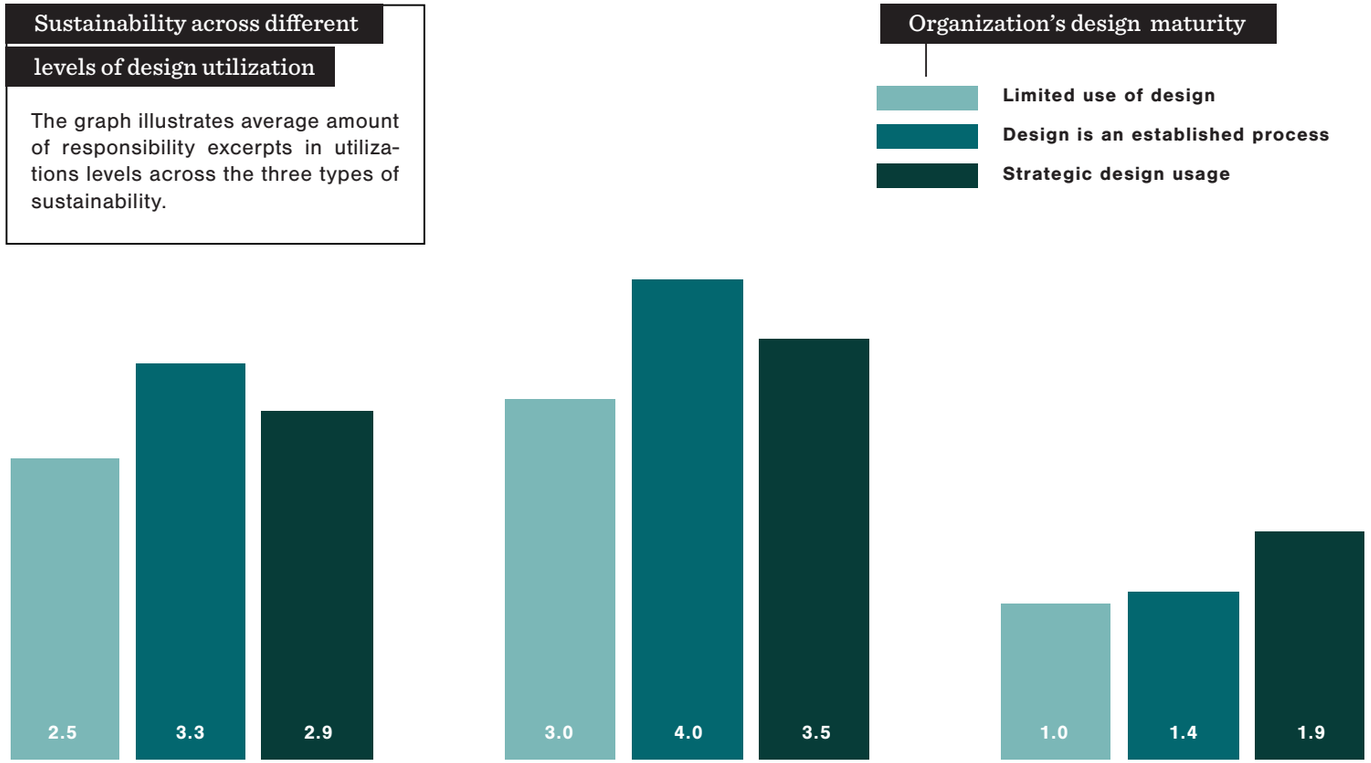
- *Quality of life* **57**
- *Equity* **56**
- *Respect* **41**
- *Diversity* **21**
- *Social cohesion* **4**

Economic sustainability dimensions

- *Viable business models* **38**
- *Client business model viability* **12**
- *Value of offerings* **21**
- *Accessibility & reach of offerings* **14**
- *Resilient ecosystems* **21**

Sustainability across different levels of design utilization

The graph illustrates average amount of responsibility excerpts in utilizations levels across the three types of sustainability.



Environmental responsibility

Differences were fairly small across environmental dimensions on different utilization levels, which suggests that even designers operating with tighter constraints are able to advance sustainability in organizations.

Social progress

Quality of life was the most common dimension of social progress on utilization levels, with the portion of diversity and social cohesion rising with the level of design utilization.

Economic development

Moving from lower levels of design utilization to more comprehensive degrees, the focus on business model viability increased.

Commentary:

DESIGN & SUSTAIN-ABILITY GO HAND-IN-HAND

Products, services, or technologies cannot be sustainable on their own, as sustainability is a property of systems rather than of individual system components. Moving towards sustainable futures requires large-scale systemic change – structural change of socio-technical-ecological systems that meet the needs of society. Since the early 1980s, the field of sustainable design has expanded its focus from technical problem solving in the short term to systemic problem-solving in the longer term. Anthropocentric formulations of sustainability have also started to be challenged, with early signs that design is shifting from human-centricity to Earth-centricity. We can see the emerging edge of research and practice at the sixth level of innovation in the sustainable design field[1];

[1] material and component innovations
[2] product innovations
[3] product-service system innovations
[4] socio-spatial system innovations
[5] socio-technical system level innovations, and
[6] socio-technical-ecological system (planet level) innovations

The Design+Sustainability 101 report provides valuable and comprehensive insights to understand sustainability-related perspectives and practices in design teams in Finland and to position them across the six innovation levels. It is clear that there is a certain level of maturity, seen in efforts such as new material innovation, process optimization, increasing energy efficiency, awareness-raising and education through branding and communication activities, and supporting social targets such as cohesion, equity and diversity. In addition to tangible, technical and skills-based roles that design is already undertaking within and across organizations, there are also emerging roles that design can uniquely play in the systemic change processes society is currently going through. These roles relate to how information is received, processed and synthesized, but they tend to be overlooked in both organizations as well as in innovation policies[2].

Integrating design as a strategic function across organizations rather than positioning it as an isolated practice is key for design being able to effectively contribute to systemic transformations to sustainable futures. With the currently increasing emphasis on rapid generation of action-oriented knowledge, solution piloting and experimentation through real life laboratories through mechanisms such as the New European Bauhaus and the European Green Deal, the skills and knowledge that design can uniquely contribute to sustainability are placed at center stage. Design in its essence is a future-making activity – organizations no longer have any choice but to take sustainability innovation on board fully, representing an urgent need for full, strategic design integration in organizations.

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Leader of NODUS Sustainable Design Research Group
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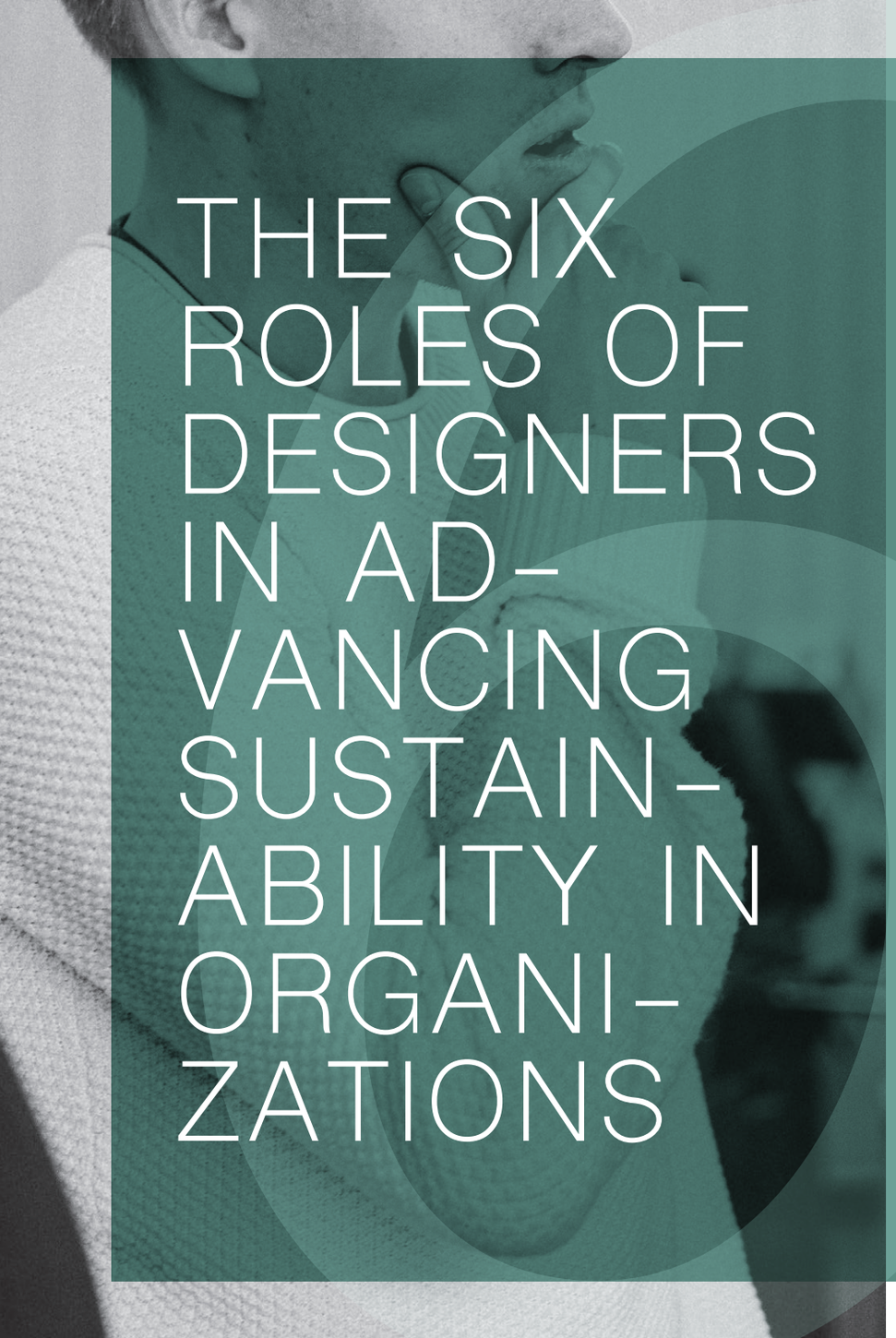
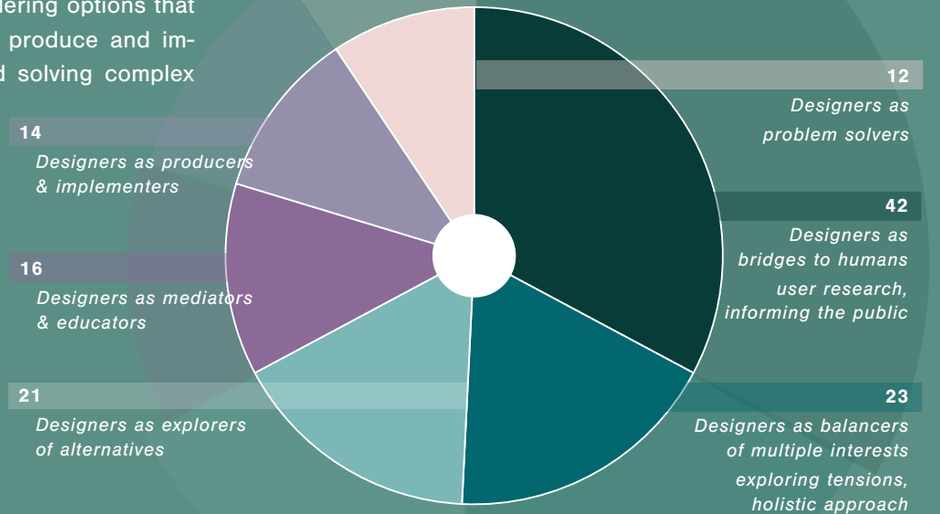
2 Gaziulusoy & Ryan (2017). Roles of design in sustainability transitions projects: A case study of Visions and Pathways 2040 project from Australia. *Journal of Cleaner Production*, 162, 1297–1307. https://doi.org/10.1016/j.jclepro.2017.06.122



THE SIX ROLES OF DESIGNERS IN ADVANCING SUSTAINABILITY IN ORGANIZATIONS

> *Design thinking has already proven that it's an avenue for making a strong difference in many things, that's the biggest value design can bring in the big picture. Of course, design can also create good life, usability, and beauty in things. While there certainly are some limits to design and design thinking, the rise of this way of thinking has really benefited development on several fronts.*
>
> **– Sauli Suomela, Owner & Design Director, Pentagon Design**

Designers in the 101 interviewed organizations saw various roles for themselves in relation to advancing sustainability in their organizations and industries. They saw their strengths as focusing on bringing in a human perspective, being comfortable with conflicting constraints, considering options that others wouldn't think of, knowing how to produce and implement ideas, educating their peers, and solving complex problems in general.



Designerly ways of advancing sustainability

Based on 128 excerpts from 101 organizations

Designers as bridges to humans

When asked what design in particular can bring to the table in advancing sustainability, the most common response was the human connection. In their role as customer-centricity advocates in organizations, designers can form two-way connections with users. As design researchers, they apply their tools to better understand what the users really want or need, strengthening the social pillar of design, by doing user research beforehand, and checking in during the development. This way, fewer resources are wasted both in terms of time and materials, with economic and environmental benefits. Simultaneously, designers use their social design skills to improve accessibility and ease of use,such as for older people, and generally consider marginalised groups more. Additionally, designers mentioned making environmental responsibility more mainstream, for example by creating visualizations of how to repair or maintain products.

> *We need to build bridges between people and create that shared understanding and harmony. And even maybe burst bubbles in the sense that we help people to understand the reality of other people, apart from just the one you are living in.*
> **– Maria Hausen, Head of strategic design, Yle**

Designers as balancers of multiple interests

Designers prided themselves on their ability to approach issues from multiple directions. Not shying away from the tensions this might bring, this leveraging designers' capabilities to support shared understanding, one of the key overall values that design brought to the organizations. The interviewees also talked about the ability and necessity to balance all three pillars, including social, environmental, and economic constraints and requirements at every stage, embracing their role as new opportunity seekers. Some interviewees specifically highlighted the balancing act between environmentally friendly products and economic costs of production. Sometimes the struggle was in one pillar, such as the environmental challenge of choosing either durable or more responsibly sourced materials.

> *No sustainability dimension can be ignored, they all have to be taken into account, giving them a kind of priority. And the role of design is precisely at the heart of determining that, to take a stand on the degree to which a company or service or product addresses each of these issues. And with what emphasis. We may not be able to reach one hundred percent of each of them, but we can set them high as a target value, and then strive to achieve it. Design alone doesn't solve a problem, but design can significantly contribute to the improvement of that problem-solving ability towards something better.*
> **– Otso Lindfors, Senior Design Strategist, Wörks**

Designers as explorers of alternatives

Many designers also highlighted bringing in boldness and wild cards to come up with ideas as a key contribution of design in sustainable development. Indeed, this was similar to design providing new approaches and increasing exploration and experimentation in organizations. Several designers saw their role as challenging existing norms which might not yet take into account the three pillars of sustainable development. Often, designers saw their contribution as imagining products and services in completely new, more responsible ways. They also emphasized the environmental connection to achieving a more circular economy, as it requires courage and imagination to explore many options, however implausible they might seem.

> *Design brings a readiness to start testing things right away, even before they exist. That you don't need to be very far before you can already start testing. And another thing is a different way of thinking. The mindset is so different, designers are the ones who challenge. They ask questions all the time that would otherwise go unanswered.*
> **– Santeri Vanhakartano, Senior Designer, Elisa**

Designers as mediators & educators

Many designers also highlighted the role of the designers as glue for collaboration in their own organizations as well when it came to sustainable development. As change agents and mediators, they facilitated conversations between various parties to align perspectives, for example by distilling the essence of internal communications or by creating prototypes to support collaboration in sustainable development. Additionally, designers can take on the role of educators to bring in more social responsibility through customer-centricity, for example by implementing structured methodologies in projects or by developing easy-to-use tools that everybody can take advantage of, as Maria Uhari-Pakkalin, Director and Head of Design at SOK, explained:

> *You have to understand the needs of the users, customers, and stakeholders alike, and the design toolkit is useful there. But in my opinion it shouldn't be only the design team using it, but rather the whole organization. It's that mindset that needs to be ushered into the organization.*

Designers as producers & implementers

Particularly when coming from a background of product development, designers can also bring in technical expertise of materials that are long-lasting, or otherwise environmentally friendly. Designers considered the entire process from needs identification to the end of the product's life cycle in order to reduce the environmental impact, also taking into account what recycling or waste management options are available in the implementation location. Design was seen to simultaneously create a holistic view while digging into the devil in the details.

Designers as well-rounded solvers of complex problems

Finally, some designers highlighted the design approach in general as a way to tackle complex and uncertain issues, abundant in sustainability efforts. Tools or techniques mentioned included, for example, breaking problems down into subproblems, moving between abstract and concrete, making the intangible tangible, and prototyping and conducting experiments.

Kommentti:

LEADING CREATIVITY AS A FUTURE RESOURCE

The findings of the Design+Sustainability 101 report show that design already plays a clear role in sustainable development and value creation in many areas. In the current examples, the connection to customers and stakeholders has been emphasized in particular. In these areas, design and the creative industries at large have also gained an established foothold. There are signs already indicating that the role of designers as producers and implementers will be further linked to the circulation of materials going forward. Choices made in the design phase can ensure that materials are circulated in a timely and efficient manner. Design education is already considering what circular design might look like when the starting point is repairability and recyclability in contrast to short-term cost-efficiency.

However, the most exciting prospect for promoting sustainable development can be found in the ability of creative professionals to address complex problems. There are no simple and linear solutions to grand, systemic challenges. Professionals across the different fields of creative industries, such as designers, architects and artists, master the non-linear workflow of creative processes, but the broader potential in making use of these capabilities remains widely untapped. We face a branding challenge - creative industries continue to be perceived in a more restricted sense than what they are capable of in building in the future.

Harnessing creative competence to holistically and sustainably create value requires the ability to communicate creative processes and ways of thinking in the realm of organisational leadership. It is not enough to develop creative skills in organizations, but we also need to develop the ability to manage these assets. We need new competencies for leading creativity, a new way of thinking about organizations that extends to the highest levels of management.

A pathway for this development can be seen – for example, design thinking has taken the world by storm in a relatively short time. In order for these new approaches to be ingrained as part of company operations on a wide scale, the next step is to develop competencies and practices for leading creativity. This, indeed, is a strategic profiling factor for Aalto University. Business schools across the world are scurrying to build creative competence, but here in Finland, we already have world-class creative competencies ready at hand. Now is the time to open the door between creative industries and business and start designing sustainable change on the systemic level.

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WAY FORWARD

Design, in essence, is about imagining and implementing a desired future.

One prototype, sprint, blueprint, product, service, and process at a time, design approaches take us towards something new. This transformation isn't something with an end point; it reflects a toolkit that can be brought along for an ongoing journey towards a better future. However, on any journey, it helps to know where you are now to accurately map the course of where you want to be. Similarly, Design+Sustainability 101 does not offer a definitive answer on how design can or should be leveraged to create sustainable value and impact. Rather,

we take stock of where design currently is to highlight key signposts and support discussions on where it could and should be going in the future.

Design gaining foothold in organizations

Based on interviewing designers in 101 organizations operating in Finland, design has gained a solid foothold in organizations across a variety of industries, types, and sizes. Designers highlighted the value that design brought into their organizations through *enhancing exploration capabilities, discovering strategic direction, mediating a shared understanding, and advancing customer-centricity.*

Interestingly, there seemed to be something of a divide in design legacy when it came to the role and understanding of design in organizations. In many organizations, design was still a fairly new addition, gaining momentum initially with a variety of design experts through digital and online development. In such contexts, design had a strong connection to user experience in B2C and B2B organizations alike, expanding into user-centered exploration, strategic direction and shared understanding. Other organizations had deep *roots in design,* with design representing an established strategic positioning for the organization. Many of these organizations were leading the curve in generating value through design in a multitude of arenas. However, in some organizations steeped in design traditions, designers had to battle an established but relatively narrow view of design. Here, designers could struggle to gain opportunities beyond input on offerings, with clear divisions constructed also between creative and implementation roles.

In light of the study results, design operated firmly in the realm of offerings in most organizations. Design was commonly an established part of product development processes, but overarching development processes in the organizations rarely reflected designerly ways. On a positive note, designers in most organizations no longer felt their profession or role was contested on a fundamental level. Consultants and in-house designers alike reported seeing *a clear shift in the past decade or so in the appreciation and spread of design.* Rather than acting as lone warriors in the organizations, many had a team around them along with support from high-ranking managers. They were also making inroads to organization-wide processes and decision making beyond designing better offerings.

However, on a strategic level, designers often still lacked a seat at the table. Even when designers reported operating on a strategic level in the organization, design typically had the role of influencing decision making through input and facilitation. Designers making decisions about the strategic direction of the organization was mainly seen in small companies and design agencies. Designers in most large organizations represented a small minority, even compared to the subgroup of product and service development professionals, let alone the entire workforce of the organization. In many organizations, more effective metrics to demonstrate the business case for design are needed to increase the reach of design. Given these limitations, design had an out-sized impact relative to its representation in the organization in those instances where designers were present.

Need-based development, material advancements & energy conservation leading the way

Similar to differences in leveraging design, the 101 organizations in the study varied in the degree to which sustainability was integrated into their strategy and operations. In some organizations, sustainability projects were still personal passion projects, whereas codified design principles for sustainable design in all development efforts represented the other end of the continuum - most organizations fell somewhere in-between. The results suggest that there is both a steady baseline of effort towards sustainability and a great deal of untapped potential to expand it wherever designers are found.

Environmental sustainability emerged as the pack leader in comparison to social and economic sustainability in the current study. This pillar was emphasized in designers' definitions of sustainable design and there was *a clear vocabulary* to discuss design decisions relative to environmental impacts. While some practical examples of designing environmental responsibility reflected specialty campaigns and product lines, *material choices and energy consumption were typically integrated into all design efforts.* The most common specific issue advanced by designers was the development and uptake of new environmentally friendly materials.

Designers often took the role of *exploring and championing new alternatives* and collaboratively finding new opportunities in complex systems relating to environmental sustainability. The case examples described by the interviewed designers covered an average of 1.9 dimensions of environmental sustainability found in the data: energy conservation, biodegradable materials, optimized manufacturing, recycling, reducing and repairing solutions, and communicating and promoting environmentally friendly solutions and behavior. While this represents the highest average amongst the sustainability efforts, it also means that there are many *untapped opportunities to tackle more dimensions simultaneously* in terms of environmental responsibility.

Opportunities for design

Recommendations for broadening design for environmental sustainability based on the research.

How might we, for example...

- ***make our products or services less trend-dependent so they can withstand the test of time?***
- ***choose bio-based or recycled, yet durable materials?***
- ***decrease the amount of materials and energy needed to produce and transport products?***
- ***increase the efficiency of data usage in our operations as well as for our users?***
- ***recycle materials ourselves, or process waste to give it a new life elsewhere?***
- ***ease transitioning to cleaner energy solutions in our operations as well as for our users?***
- ***increase modularity, or otherwise ease the repairing of our products?***
- ***enable or promote recycling on the consumer side?***

Social sustainability was closely aligned to the fundamental ethos of design as a need-based and human-centered profession.

Overall, designers emphasized designing for user, customer and stakeholder value in all of their efforts. *Addressing human needs was highly motivating* for designers, and many even mentioned the opportunity to work on quality-of-life issues as a key reason for choosing to work in a specific company. Design managers also recognized this, striving to create such opportunities for staff to retain talent in addition to doing good.

> *I chose to work in this field because of my ethical stance. In the nineties, I almost quit my industrial design studies because I thought my only path was to go into some company and design cellphones that break after 1.5 years. I ended up doing human-centered design since it focuses on designing for a reason; for a real need that's been deliberated and examined.*
>
> **– Design Director at a medium-sized company**

Although *acting as a bridge to humans and being balancers of multiple interests* were key dimensions of designers' work, the connection to social sustainability specifically was less pronounced. Compared to environmental responsibility, social progress was more often a general aim than explicit criteria or set of goals for design decision making. Furthermore, many of the example initiatives addressing quality of life, equity, respect, and diversity were *individual examples in the design work of the organizations*, rather than something systematically addressed in all design work. This is not to say that these aspects were not taken into consideration in most design work, but rather that the connection was less recognized. Part of the answer may lie in simply *better recognizing and articulating how the value that design brings through exploration, strategic direction, shared understanding, and customer-centricity links to social progress*. For example, social cohesion was rarely brought up in the examples of designing social progress, despite highlighting the role of designers in connecting organizational actors and stakeholders and promoting a shared understanding.

However, more remains to be done in this arena, too. Similar to environmental responsibility, most design initiatives addressed only a few dimensions of social sustainability at a time. Conscious attention to quality of life, equity, respect, diversity and social cohesion can help to identify opportunities for cross-cutting benefits integrated into design efforts. In addition, while enhancing social sustainability in offerings for the benefit of users and customers offered a natural starting point, the results suggest that there is much *untapped potential in applying socially sustainable design in organizations toward improving the basis of their own operations*. For example, while public organizations were ahead of most companies in their scope regarding external social progress, limited resources were reflected in limited contributions to internal social progress efforts.

Opportunities for design

Recommendations for broadening design for social sustainability based on the research.

How might we, for example...

- ***improve user wellbeing, health, learning and safety with our offerings?***
- ***amplify unheard voices and address power imbalances through design practices?***
- ***promote employee wellbeing through meaningful, fair and supported work practices?***
- ***better cater to underserved and vulnerable user and customer populations in our offerings?***
- ***broaden the accessibility and inclusiveness of our offerings and operations?***
- ***ensure diverse input gathered internally and externally is reflected in design decisions?***
- ***enable our customers and stakeholders to represent and address societal issues in their decision making?***
- ***support productive conflict management in complex initiatives?***

Economic sustainability was clearly the most difficult pillar for designers to articulate.

Almost a third of the interviewees expressing some hesitation on what this might mean in their work and field. It was also the only pillar of sustainability where many designers felt it was beyond their current reach. This may be connected to limits in the overall scope of design in the organization – *designers' contribution to economic development increased with the design maturity of the organization*. Another issue at play seemed to be the overall unclarity of economic sustainability, as many designers did report a clear connection between design and business performance in their organization. Indeed, viability is one of the three tenets of design thinking, together with desirability and feasibility.

In contrast to social sustainability, *design contributions to economic sustainability were more common in the organization than externally*. Designers typically incorporated considerations of business profitability and longevity in design decisions already in product development, for example thinking about the development investments in relation to the offering's life cycle on the market. Efficiency improvements in manufacturing and supply chains often produced both environmental and economic benefits. In cases where designers were able to operate on a strategic level, they also contributed to the *viability of the overarching business model* of the organization as well as to identifying new business opportunities. In this same vein, design consultants also did business model design for their client organizations.

Design efforts for economic development were perhaps *most codified in terms of pricing considerations*, considering the economic accessibility of offerings to different types of potential customers and users. Economic accessibility and viability could also reflect considerations of the value added for the customer, as well as the longevity of positive impact. Some initiatives specifically aimed for the better financial health of consumers and clients, while others targeted local economies and the viability of public services. Another dimension in which economic sustainability could be more integrated to overall design efforts came from *prioritizing local and sustainable partners* to improve the resilience of the economy.

Opportunities for design

Recommentdations for broadening design for economic development based on the research.

How might we, for example...

- ***direct development investments to long-lasting competitive advantages?***
- ***improve the efficiency of our production, operations and supply chains?***
- ***enhance customer retention and acquisition through value adding offerings?***
- ***enable pricing our offerings on a level that is broadly accessible to potential customers but viable for our organization?***
- ***support our users' and customers' financial stability?***
- ***create improved business models for our own organization and our customers?***
- ***ontribute towards the resilience of the local economies we operate in?***
- ***identify and leverage opportunities for collaborative synergy in our industry?***

A human-centered pathway for creating sustainable value & impact

Taken together, the results show that there are many positive examples of design contributing to sustainable value and impact. While holistic transformations are required for designing a sustainable post-pandemic future[1], any positive impact is better than being paralyzed by the breadth and complexity of sustainability. The current study shows a baseline of sustainability efforts already incorporated in design efforts in Finland, and clarifies opportunities for moving that needle further in organizations by broadening sustainable design to:

[1]

Integrate sustainability considerations to a more comprehensive array of design efforts in a systematic manner rather than relegating them into passion projects or one-off initiatives.

Design can help reframe challenges to find opportunities that contribute towards both sustainability and the bottom line, rather than forcing half-hearted compromises. User research, stakeholder mapping and examining the flow of value in ecosystems can help to make the business case for comprehensive sustainability efforts. Furthermore, similar to the Netimpact report by Upright[2], the current study suggests that sustainability is already a factor in attracting and retaining talent. While there is much left to do, design can help to make efforts and progress visible to employees in addition to customers, helping organizations to pick up speed in sustainable value creation.

[2]

Cover more pillars of sustainability in addressing environmental, social and economic sustainability alike and tackling a wider array of the dimensions in these areas.

Key here is assessing where your particular organization is already active, and where sustainability remains more of a passion project or personal goal. Design can help to balance multiple interests and facilitate a shared understanding across multiple stakeholders to develop a concerted effort in the organization for holistic sustainability. User research and mapping tools can be turned inwards to examine where bottlenecks and points of leverage lie in the organization currently; prototypes, scenarios and concepts can further help to rally the troops for sustainable development by turning abstract strategies into tangible solutions to be explored.

References

1 Gaziulusoy et al. (2021). Design for Sustainability Transformations: A Deep Leverage Points Research Agenda for the (Post-) Pandemic Context. Strategic Design Research Journal.

2 Upright (2021). Net Impact Report 2021. Chapter 7. Why we work. https://netimpactreport.com/chapter-7

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