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Design for All

How Design Research Drives Sustainability

Guest Editor:
Prof. Dr. Brigitte Wolf
Design research + Design theory

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Guest Editor:

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Her background is in Industrial Design and Psychology. She received her doctoral degree in Psychology. Her professional background includes working in a design studio as well as acting as Vice Director of the German Design Council and serving as UNIDO consultant at the Oficina Nacional de Diseño in Havana, Cuba, where she also lectured at the Instituto de Diseño Industrial.

Her teaching experience spans master's programs at the Lucerne School of Design and Art, ecosign Academy in Cologne, the doctoral program at the University of Teheran and workshops for students and professionals in Brazil, Cuba and Argentina.

She was honored with the title Assistant Professor at ISDI (Havana) and Adjunct Professor at the University of Teheran. She curated the traveling exhibition Designing the Environment for the Goethe Institute and initiated the international Sustainable Summer School.

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Editorial

Design Research as Applied Science

Dr. Brigitte Wolf

I feel very privileged to be invited as a guest editor of the June/July 2025 edition of the acknowledged Design for All journal. I thank Mr. Sunil Bhatia (who is successfully publishing this magazine since 20 years) for giving me the chance to share my thoughts about design research and research methodologies. In this magazine I present a small variety of examples of design research. I appreciate the dedication of this year's magazines to woman in design research, because experience tells us that many design researchers are female. This might be related to the fact that design research needs social competence – which is a female strength.

I am grateful to all design researchers who accepted my invitation and submitted a paper for this issue of the designforall magazine. The articles published in this edition present design research projects and theoretical reflections about design and designers. The invited authors are women from different countries and cultures. Finally, nine design researchers gave some of their valuable time and managed to write a paper, although they are all very busy researchers and have a variety of projects on their agenda. All of them have been working with me on various projects.

As editor of this issue, I take this opportunity to briefly share my approach to design research: Design research is an academic discipline which has developed and gained more visibility and acknowledgement during the last years. It is a growing discipline and

makes more and more designers to understand human behavior and human experience within their material and immaterial environment. Cultural changes, new technologies, and social values determine living experiences. It is obvious that the complexity of our everyday life is increasing, and new challenges occur in all parts of society.

Design research is not a science and will not be a science in the future. It differs from scientific academic research, which is focusing on the generation of new scientific findings through the verification of hypothesis and theories using quantitative methods. On the contrary design research is applied research focusing on the understanding of problematic situations with the intention to improve peoples' lifes. In many cases 'wicked problems' appear which cannot be solved easily. Design research is a discipline focusing on understanding the interplay/relation between society, environment and technical innovation aiming for improvements.

Research problems are encountered in everyday life and therefore create research processes addressing the experiences of all different stakeholders. Understanding different points of view is crucial for the research process to come up with concepts acceptable to all involved. The aim is to achieve insights and understanding of peoples' everyday life and the challenges they are facing. For this kind of research empathy and collaboration with the targeted group of people is a prerequisite. Consequently, qualitative research methods adopted from different social sciences, like psychology, sociology, ethnology, anthropology are borrowed and modified. Especially participative research methods play an important role and offer the chance for all people involved to have a say. None of these methods was developed for design research, therefore methods need to be modified and

tailored especially for design research purposes and new methods need to be developed.

At the starting point the definition of the research subject is usually very open and research questions are not yet clearly defined. During the research process which consists of secondary (literature) research and primary field research the knowledge base increases and the subject of research will be more clearly defined during the research process. The emphasis of design research is directed to what is called 'social design' - in private or professional life. Other than in classical design disciplines, like industrial design or communication design there is no final solution on the spot, instead it is often an ongoing process of implementation and improvement.

In the design research literature different approaches towards design research are mentioned. The articles in this magazine's issue emphasize on research 'for' design and research 'about' design. The intention of research 'for' design is to deliver insights and knowledge to improve people's lifes including human interaction with their environment, the social interaction with each other and the role of artifacts. The intention of research 'about' design is to reflect in a critical and philosophical way about what designers do, how they do it and what has been achieved already. As a discipline, design research cannot rely on measurable theories. Instead, design creates theoretical assumptions through the analysis of insights and observations. In this way of proceeding critical reflection is a must in every step of the research process.

May the published articles in this issue provide inspiration to the readers and stimulate further design research activities.

Dr. Sylke Lützenkirchen

Dr. Sylke Lützenkirchen studied communication design and completed her doctorate in design sciences under Prof. Dr. Brigitte Wolf.

As a design researcher, she is currently investigating companies in the phase of digital and sustainable transformationat the FernUniversity in Hagen. She sees creativity as a starting point on the way to a data-driven organization and says: "AI has come to stay – with creative power, we can design it in a useful way". In her research the focus lies on the needs of companies and employees when introducing new technologies and AI. What support and potential do creative processes offer? The results lead to qualification concepts, guidelines and new forms of participation.

As a communication designer, she founded the Office for communication design and supports medium-sized companies and organizations in communication. An important focus of the office is on management consultancy and co-creative concept development with clients. The consulting and development are human centered and thus tailored to the target group needs of her respective clients.

In her work, she draws on her knowledge of current scientific and applied design research. She teaches design strategy and communication design at various national and international universities, holds lectures, webinars and seminars, publishes and presents at international congresses.

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Design for all: Sustainability solutions through digitalization and AI – The "Twin Transition Innovation Lab". Creativity as a catalyst for involving employees in the development of digital sustainability solutions in SMEs.

Dr. Sylke Lützenkirchen

Abstract:

Today's companies are facing serious challenges. Their business models are put to the test. Competition is high and companies are being forced to transform their processes, particularly due to digitalization. The volatile sustainability regulations are also proving to be unmanageable for many companies. Here the combination of sustainability and digitalization can lead to meaningful concepts and a structured start to the necessary transformation processes as part of a twin transition. This article explores how a specific transformation with a lot of benefits for the company and employees can begin and how to identify suitable fields of application for each organization. With the "Twin Transition Innovation Lab" this article highlights a model as an efficient way to identify specific sustainability potential for each company, develop co-creative digital solutions and implement company-specific applications. The approach emphasizes the involvement of employees from all areas of responsibility and expertise throughout the entire process of digital and sustainable transformation, ensuring that the outcomes are tailored to their specific needs and preferences. Results indicate that it is an efficient

start to develop tailor-made and precise fitting ideas and implement handleable and practicable digital sustainability solutions.

The "Twin Transition Innovation Lab" model offers companies a useful and profitable introduction to the dual transformation process by customizing their approach to digitalization and sustainability. In summary, the article shows how digital sustainability solutions can be jointly developed and implemented in companies in a way that is useful for employees, for the company and highly relevant for society.

Keywords: ***digitalization; AI; sustainability; twin transition; co-creativity; Applied Design Research; SMEs; transformation***

Introduction

Companies are currently facing a wide range of challenges. They are under increased competitive pressure and are being forced to transform their business processes, particularly as a result of digitalization. Entire business models are being put to the test. The volatile legal regulations in the area of sustainability at a global and regional level are also proving to be an unpleasant, almost unmanageable task for many companies and are currently becoming an additional burden (Jacob, 2019).

Therefore, this paper aims to fill this gap so that companies, especially SMEs, are able to master this task and make a confident start to the necessary digital and sustainable transformation ahead of them. This paper will first introduce the topics of sustainability, digitalization and twin transition. In the following a "Twin Transition Innovation Lab" as applied design research model will be presented. Here, all process

steps of the model will be explained in detail. Using this model, companies can develop their firm-specific, co-creative approach interdisciplinary together with their employees, which will be discussed at the end. In the following remaining introduction, this paper will continue with a deep dive into sustainability, digitalization and twin transition.

The extraction of raw materials causes high costs worldwide - for the environment, for people and for the economy (Unnerstall, 2021). An economy that requires more and more new (primary) raw materials is therefore not economically, ecologically or socially sustainable in the long term. The aim of a circular economy, for example, is to preserve the value of raw materials and products for as long as possible, to use materials sparingly and to keep them in. This ultimately strengthens the resilience and innovative power of companies and society (Banthien & Rompf, 2024). In general, the circular economy makes an important contribution to securing the supply of raw materials. It increases the resilience of supply chains and the resilience of the economy through the increased use of secondary raw materials and resource efficiency and reduces the primary demand for raw materials. It can stimulate new technologies and business models and thus increase value creation and productivity throughout the economy. Together with the accelerated use of digital technologies, this is associated with great opportunities. The topics here are: Avoidance, reuse, recycling, product design, primary and secondary raw materials in production, trade and consumption (Kammerer & Kappe, 2024).

The same applies to the area of climate neutrality. With the European Green Deal, the EU member states want to become climate-neutral by 2050. Greenhouse gas emissions are to be reduced by at least 55% by 2030 compared to 1990 levels. This requires a reorientation of the economy and society (German Federal Statistical Office, 2025). The reduction of CO_2 emissions is essential for companies and society, as it plays a central part in the containment of climate change. As stated by the IPCC (2023), climate change will generate grave ecological and economical damage worldwide. The report emphasizes that drastic emission reductions are necessary to limit global warming to 1.5°C or 2°C. Companies that reduce emissions at an early stage therefore strengthen their competitiveness, as according to a study by the OECD (2022), climate-friendly business models are increasingly winning over investors and customers. Therefore, climate risks and emission reductions are explicitly assessed as key elements for the future viability of companies. These are both physical risks due to extreme weather events, production downtime and higher operating costs, as well as transition risks due to changes in regulations and market requirements (TCFD, 2021; IPCC, 2023) such as political, legal or social changes; as well as reputational risks in the event of inaction (e.g. due to loss of customers or investors) or technology risks (e.g. outdated processes).

When companies actively implement sustainability, they must take economic, environmental and social aspects into account. These areas, also known as the three pillars of sustainability, are described as ESG criteria (E = environment, S = social, G = governance). In addition to the topics of circular economy and climate neutrality, the environment also includes areas such as resource efficiency, water

consumption, waste management and health protection and supports the area of corporate governance (G) with its activities. This "corporate governance" relates to factors such as the development of a sustainable business model, the promotion of innovation (twin transition), process optimization, cost efficiency, job security and the promotion of economic growth. "If sustainability in all its diversity is to be more than just an alibi or fig leaf, it must be practiced by managers and employees in companies on a daily basis. This requires broad cultural acceptance. It must occupy a prominent position in the value structure of the company and decisively permeate the thinking, behavior and actions of all company members" (Bodenstein, 2024 p. VI).

Sustainability issues are aimed at global climate and environmental policy goals and at the same time open up great opportunities for growth, employment and competitiveness (Kammerer & Kappe, 2024). However, this can only succeed if companies can pursue a direct economic benefit (Bodenstein, 2024). In addition to the benefits for the global society, there must also be a positive effect for the environment and companies. Companies benefit from resilience and investments in their own future viability, such as competitive advantages, customer loyalty, financial security and cost savings. Nevertheless, the resulting demands on companies are more extensive and complex than ever before (Ponstein, 2025). Small and medium-sized enterprises (SMEs) in particular are often still at the very beginning. Despite all these justified motivations, it is a major challenge for most companies to find a meaningful entry into the field of sustainability. Only with the innovative strength and creativity of

companies can the challenges realistically be overcome (Bodenstein, 2024).

Looking at Winkler et al. (2023) digitalization is one of the two mega-trends of the 21st century alongside sustainability. Both have great transformative power and can potentially reinforce each other (Winkler et al., 2023). They will dominate the future of companies and our society in the coming decades (Jacob, 2019). Calculations show that even accelerated digitalization can make a substantial contribution of up to 58% to achieving German climate targets by 2030 (Holst, 2021). Nevertheless, many companies feel disoriented when it comes to expanding digitalization and getting started with artificial intelligence (AI) applications. Moreover, digitalization and AI are not static phenomena but are constantly evolving in directions that no one can reliably predict at the moment and are thus often complicated to plan strategically (Langer & Landers 2021; Sartori & Theodorou 2022). Adding onto that, employees are often not willing to explore ways for digital technologies and accept changes that are connected with digital transformations.

Therefore, in the fields of digitalization/AI and sustainability not only the technical perspective is important, but also the socio-technical approach (Ludwig, 2016), the organizational perspective, and the need for a company culture that is open-minded to change and continuous learning (Westerman et al., 2014). As a result, digitalization and AI are not only and primarily viewed from the perspective of technical possibilities, but in contrast, should be developed from the usefulness and applicability for employers and employees. In the following model it will be shown how exactly a socio-technical pers-

pective can also involve "non-technicians" in the design of technical applications such as AI, how sustainable knowledge can be enriched and whether this can be achieved using creative methods.

Digital technologies can help many SMEs to become more sustainable and reduce their emissions without any economic losses. Furthermore, digitalization and AI can provide companies with more efficient and leaner business processes, cheaper and faster production, and the development of new sales markets or optimized use of resources through the automation of routine activities. Here, the fields of application are just as diverse as the possible uses – whether in production, logistics, marketing and sales or administration. In addition, there is not only untapped potential for increasing efficiency or reducing costs but also for reducing the workload of employees and improving customer service, as well as the aspect of ecological sustainability (Lundborg, 2023).

Successful match: Sustainability and Digitalization as Twin Transition

In general, green and digital transitions are two main trends that will shape the future for many, taking the example of the European Union (Muench et al., 2022). When sustainability and digitalization are combined, both can lead to a meaningful approach and a structured entry into necessary transformation processes as part of a Twin Transition, i.e. a double transformation. In doing so, the twin transition describes the interaction, mutual reinforcement and parallel implementation of the digital and sustainable transformation according to Fraunhofer (FIT, 2025). It is understood as a change towards a sustainable economy that is supported by modern technologies and digital solutions. Looking at the study of the European Union (Muench et al. 2022), twin transition refers to uniting the two transitions, which could accelerate

necessary changes and bring societies closer to the level of transformation needed.

Companies can derive the following benefits from investing in a twin transition (Thoma, 2024):

- **Efficiency, resource and cost savings through process streamlining, energy savings, circular economy and the use of digital technologies.**
- **Improved competitiveness through innovative products and services that meet customers' increased sustainability requirements.**
- **Access to new markets in areas where customers are increasingly prioritizing environmental compatibility and social responsibility.**
- **Reduced risks through improved management, especially of risks associated with environmental impact, social issues and governance (ESG risks).**
- **Positive brand perception. Increased loyalty of environmentally and socially conscious consumers through sustainability and digital innovations.**
-

For example, challenges arising from a reporting obligation (Corporate Sustainability Reporting Directive - CSRD) for companies or their suppliers – if they are required to provide key figures – can be supported by digital applications. However, suppliers often still do not have the necessary means to measure the most important key figures. They lack a strategy for connecting the numerous data sources centrally, making them accessible at all times and placing them in the right context with data (Thoma, 2024).

In addition, companies are generally structured very diversly and also have a very specific core business that sets them apart from their competitors in the market. Therefore, each company has its own very specific approach to this issue, but many struggle to find a starting point that is fully in line with their objectives (Lundborg, 2023). As a consequence, SMEs are faced with completely new challenges that require considerable effort and the adoption of new methodologies (Lundborg, 2023).

It is therefore important and will be of existential economic and social significance in the future to provide every company with company-specific access to digitalization and sustainability. As a result, the following research questions were considered: What exactly can twin transition look like for your own company and what could be a useful field of application? How can these be identified by the approach of "design for all"?

"Design for all" and how to start developing company-specific applications in Twin Transition

To find specific approaches to new methodologies in Twin Transition, the federal and state governments and the European Commission started to support companies in the initial phase. This research is part of this support (2021-2026) and took place in the Zukunftszentrum KI NRW (Eng.: AI Future Center of North Rhine-Westphalia) which is one of in total 12 Future Centers across Germany. The Future Centers are intended to support SMEs with socio-technical digitalization (Brödner, 2013) and getting started with AI in the area of sustainnability. The funding bodies aim to explore digitalization and sustainnability through a participatory approach centered on employees and

their needs. This socio-technical approach goes beyond a purely technology-centered perspective (Ludwig, 2016). This is particularly relevant to the qualifications of employees and the selection and definition of processes (Lundborg, 2023). There is a clear lack of skills that would enable orientation in the current times (Ulrich & Frank, 2021). This is why it is important to teach not only technical skills but also critical thinking and creativity to solve real-world problems. Especially in China, these approaches seem to be a popular option for fostering problem solving (Global Times, 2024). This already concludes Basadur "In a stable world, efficient organizations may be successful. But in a changing world, organizations also need creativity as an ongoing process" (Basadur, 2011, p. 86). Creativity, as "the ability to create meaningful new forms" (Florida, 2004, p. 6), is the fundamental source of economic growth (Holm-Hadulla, 2011). Business enterprises and individuals can only be successful if they accept constant learning and change processes as challenges. This is where learning in times of digitalization becomes relevant (Elsholz, 2021).

Even Ludwig et al. (2024) realized some important key competencies in their study: "creativity, agility, problem-solving capability as well as expertise about innovation" (Ludwig, 2024, p. 109). They conclude that the following questions should be clarified within the company: "How can employees become actively involved in the development of digitalization solutions? How can digitalization solutions be developed across departments? What mindset is required for the agile and efficient development of digitalization solutions? How can digitalization and AI potentials be identified and evaluated within the company?" (Ludwig, 2024, p. 109).

This paper now will give an example of how creativity as an agile process design can contribute to the development of solutions in transformation. Specifically, this paper will dive into ways how creativity can easily be adopted by employees, even non-technicians. The ways in which the concept of "design for all" can enable learning in times of digitalization are discussed below.

But first, let us take a step back. What exactly is "design for all" and how is it impacting companies? The concept "design for all" is a well-established concept rooted in the principle of inclusion. It prioritizes the design of products and environments that are inherently usable by all people, without the need for further adjustments (BMAS, 2011). Accordingly, the design of the built environment, products, and services should reflect the full range of human capabilities, needs, and preferences, avoiding solutions that single out or stigmatize specific user groups (Leidner, 2008). Alongside "design for all" and accessibility, other frameworks with similar objectives include Universal Design – prominent in the USA and Japan – and Inclusive Design, widely adopted in the UK. "Design for all" is distinguished by its consideration of the entire creation process – including development, user orientation, and user involvement – as well as market orientation, covering both design and distribution (Neumann et al., 2014). Everyday products designed according to the principles of "design for all" should be characterized by ease of use, adaptability to various user needs, market orientation, high aesthetic quality – on the premise that only visually appealing products can appeal broadly – and user-centeredness (Neumann et al., 2014). User-centeredness involves integrating user needs and perspectives at an early stage of the development process. Contemporary design approaches aim to make pro-

ducts and services accessible throughout all phases of life while prioritizing user-centeredness. This may include the ability to use a product for example with only one hand – benefiting users who are permanently disabled (e.g., those with only one arm), temporarily impaired, or experiencing situational limitations, such as carrying a baby with one arm (Hampf, 2025). Furthermore, "design for all" should also address the needs of user groups that are currently underrepresented and individuals in the workforce (Klein-Luyten, 2009).

This is where the proposed model becomes relevant, as it involves users affected by changing and evolving work processes in the early stages of designing and implementing new applications. This broadens the employee's professional perspective and represents high added value for the company and society. In this way employees can get involved in the design of AI applications relevant to their workplace, by using their domain knowledge to influence the design of the application and their workplace according to their needs and ideas. This works specifically well, as the ideas for getting started a new application were developed based on their needs and have a specific and direct reference to other areas of responsibility in the company.
This leads us to applied research in human-centered digitalization, with the aim of integrating employees into the digitalization and sustainability processes – which means the concept of "design for all". On the one hand, it gives everyone in a company access to the field of digitalization and sustainability. On the other hand, the domain knowledge of employees is highly relevant for achieving meaningful improvements in sustainability. "Design for all" needs to be integrated in the development process of company specific and future-

oriented sustainability transformation. With this domain knowledge, it is possible to develop company-specific agile solutions (Lützenkirchen, 2024).

This is in line with the concept of applied design research (ADR). The primary goal is to generate data that is useful for the economy through the application of scientific methods (Wolf, 2025 a). ADR – a subfield of Design Science – occupies an interdisciplinary space between art, technology, science, and the economy. Theories developed in this context often emerge from specific practical objectives and are directed towards applied use (Mareis, 2014). This discipline is concerned with scientific knowledge about artifacts, as well as design itself as a scientific discipline (Cross, 2006), and the social and societal dimension of design (Mareis, 2014).

The aim of ADR is to develop design-based strategies that enhance the sustainable performance of companies in a global market (Wolf, 2025 a). Design makes technology usable to humans in the form of products and services. The most successful companies are those that understand the wants, needs, and challenges of their users. Therefore, it is crucial for users to have sufficient awareness of their habits and lifestyles. To achieve this, qualitative methods, as part of empirical social research, can be used to explore user requirements, anticipate changes and trends in daily behavior, and recognize the complex impacts of the socio-cultural environment surrounding users (Wolf, 2025 b). Design Research as design facilitation and applied solution development in transformation has a high impact in co-creative developing workplace-oriented solutions in digitalization and sustain-

ability. Following, the application of a creative lab, such as "Twin Transition Innovation Lab", can be understood as ADR.

Applied Design Research (ADR) as co-creative development in companies

What is the basis of ADR? The intent is to learn experimentally how to discover problems, opportunities and recognize that such learning is the beginning of innovation (Basadur & Basadur, 2011). A creative mindset, an open approach and the reciprocal use of divergent and convergent methods are of crucial importance in the implementation of all creative processes. Guilford pointed out early, that creativity is a "natural resource" of humans (Guilford, 1968) and the distinction he offered in his "Structure of Intellect-Model" between convergent and divergent thinking and the dialectics of order and chaos proved to be enormously useful today (Holm-Hadulla & Wendt, 2020).

ADR enables the development of a wide range of ideas using diverse methods. These include team-based decision-making, which supports a focus on user needs and practical feasibility, as well as iterative loops that facilitate refinement and continuous development. Additionally, pain-and-gain analyses highlight benefits for both employees and the organization. Co-creative collaboration and deliberate shifts in perspective significantly enrich the idea space. Furthermore, involving employees in creative processes fosters a sense of ownership and responsibility, while also feeling valued and helping to generate practical, user-centered solutions. By using creative formats, employees gain access to agile, team-oriented and cross-divisional methods and learn how to use "professional empathy" by developing tailor-made solutions.

It requires a great deal of creative know-how and the involvement of employees to identify the company's specific potential. Based on this ADR specific ideas and digital solutions can be developed and practical applications implemented. Design and the creative processes associated with it can bring about change and transformation through ADR based on observation. Due to concrete needs, through research and learning, design can create solutions that meet the needs of all (i.e., design for all). Companies can react flexibly to change because of observation and ADR through creativity.

This ADR led to the questions: What exactly can twin transition look like for your own company and what could be a useful field of application? How can employees be qualified so that they can become involved in the process? How can useful applications be identified by the approach of "design for all"?

While exploring different solutions for SMEs, different methods were examined. Working in and with the field, the "Twin Transition Innovation Lab" further explained in the following, has had the greatest impact and the best future viability. In detail, it will be demonstrated how the "Twin Transition Innovation Lab" can create solutions that meet the needs of all. With the "Twin Transition Innovation Lab" this article highlights an efficient way to identify specific sustainability potential for each company, develop co-creative digital solutions and implement company-specific applications. The focus lies on all employees in the areas of responsibility for the new project and expertise while they are involved in the entire development process of digital and sustainable transformation through their specific expert perspective (domain knowledge). This is shown as an efficient way to

develop tailor-made and precise fitting ideas and implement handleable and practicable digital sustainability solutions. Using a creative approach, this paper explores the potential benefits of the "Twin Transition Innovation Lab" for SMEs and examines how specific areas of application can be identified for both organizations and their employees. The creative method of "Twin Transition Innovation Lab" highlights two workshop formats as a "Problem Space" and "Solution Space". They are supplemented by different phases of knowledge enrichment and lead to the design of IT applications in sustainable areas. Examples are presented of how iterative and co-creative processes can be carried out, how different employees can be involved and how the necessary skills can be taught. Finally, the impact of a co-creative approach on the quality of digital solutions in sustainability is discussed.

How to carry out the "Twin Transition Innovation Lab"?

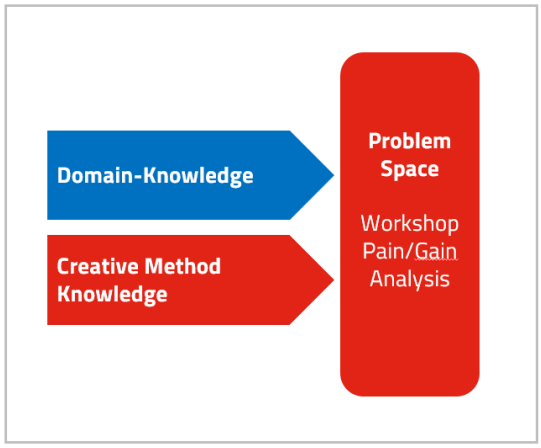

Fig. 1: Problem Space: Workshop Start

Problem Space: To develop effective, actionable, and meaningful sustainability solutions for a company, it is essential to involve a group of employees that reflects a broad and representative cross-section of the organization. They possess the domain knowledge from

their workplace - hereinafter referred to as "Domain Knowledge Carriers". The Twin Transition Innovation Lab starts with 8 to 12 or even more "Domain Knowledge Carriers" and one or two people with Creative Method Knowledge - in the following referred to as "Creatives". Together they investigate the "Problem Space" of the workshop (see Fif. 1). The workshop will be designed, moderated and organized by the "Creatives". They ensure a creative, open and trustful working atmosphere, and a communication level where everyone feels valued and welcomed despite their different professional backgrounds and hierarchical levels (Lützenkirchen, 2024). In addition, the "Creatives" provide the necessary materials, structure, preparation and follow-up.

The workshop starts with the "Pain-Gain-Analysis". Here the "Domain Knowledge Carriers" must answer various questions that describe their pains in the context of work. Examples of these questions can be found in Table 1:

Questions in the context of "Pains"
What causes frustration, anger and headaches in the work process?
Which activities are time-consuming and cost time, effort and financial resources?
What is cumbersome, complicated, incomprehensible, not very motivating
What mistakes are often made because they are too complicated or incomprehensible?
Which current solutions are not sufficient, what is missing?
What technical and social risks do employees shy away from?

Table 1: "Pain"-Questions in Problem Space

Once many 'pain' points have been collected, the associated benefits for employees are analyzed. Questions that are helpful in identifying the benefits are listed in Table 2:

Questions in the context of "Gains"
What is the employee looking for most?
What support would make employees happy?
What would they wish for? What do they dream of?
What would make the work easier?
Why have similar solutions been well received by employees so far?

Table 2: "Gain"-Questions in Problem Space

This "Problem Space Workshop" will last about 2 hours, plus a short introduction to the workshop concept, which should be added at the beginning. The topics worked out in the area of pains and gains are noted on cards and clustered by the moderators or "Creatives". This collection is the foundation for the "Solution Space" which follows (see Fig. 2).

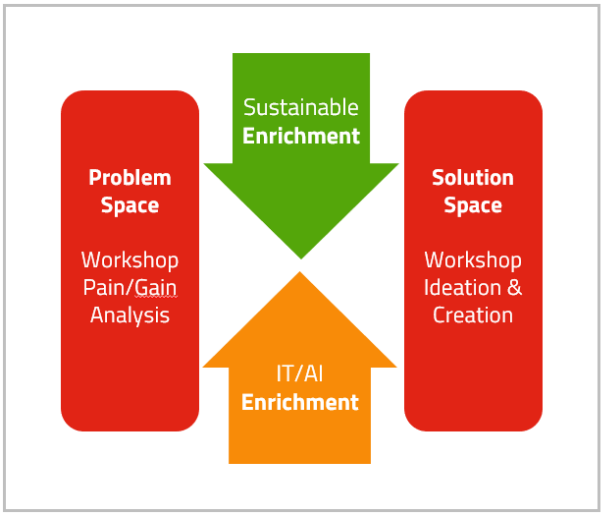

Fig. 2: Solution Space: Workshop Second Step

Enrichment: In the next step the "Solution Space" will be prepared through two "Enrichments". The first one, the "IT/AI Enrichment" starts with an introduction to digitalization and AI. Questions are in which way IT/AI works, what the benefits are, what the risks are, and which examples exist? The second one "Sustainable Enrichment" starts with an introduction to sustainability: What are the basic features of sustainability, what are principles of the circular economy, energy saving, what are the main interesting facts, what could be the benefit for governance and employee? Both enrichments are followed by examples of digital solutions in sustainability which show practical hands-on applications in the field of sustainability with digital application. Those examples could be demonstrated and explained in a PowerPoint presentation, using demonstrators or examples which will be mapped out as best practices on the internet, social media, YouTube videos etc. Even the "Domain Knowledge Carriers" could be motivated to search for good practices of digital solutions in sustainability as examples.

In the space of enrichment, it is important to find a communication mood with little technical language, understandable for everyone and focusing on information that is useful for strategic decisions. The enrichment parts take around two hours each.

Solution Space: In the following the employees are well prepared with visualizations, examples and mental pictures, so the second workshop "Ideation & Creation" can start. The "Domain Knowledge Carriers" will be divided into groups of four. They take one of the relevant topics derived from the "Problem Space" and start with the ideation process. In the manner of brainwriting they individually think about solutions

in digitalization and sustainability. Everyone writes down as many spontaneous ideas as possible on cards (10 minutes). Questions from Table 3 may serve as orientation:

Questions in the context of "Ideation" (Brainwriting)
What digital support in sustainability (twin transition) would be particularly helpful in solving the problem?
Can solutions to the problem be found in the areas of circular economy, climate neutrality, resource efficiency, water consumption, waste management, health protection, etc.?
Which areas of the company can be supported by the solution? Expansion of a sustainable business model, promotion of innovation, process optimization, cost efficiency, job security, promotion of economic growth?

Table 3: Brainwriting-Questions in the Solution Space

Everyone then presents their brainwriting solution ideas to the group of four. They are discussed, concretized and prioritized in a matrix with the tangents usefulness and feasibility (Lützenkirchen, 2024). In a further step, some of the ideas evaluated as feasible and useful are presented to the entire group, which means all "Domain Knowledge Carriers", and discussed. Here too, a prioritization matrix or a 'dotmocracy/dot-voting' method is used to jointly evaluate all the ideas that have emerged in terms of their usefulness and feasibility. The "Domain Knowledge Carriers" can thus develop a wide variety of application ideas and enrich them from different perspectives to create a meaningful and practice-oriented solution. In the best-case scenario, some "Domain Knowledge Carriers" also assume responsibility in the subsequent implementation phase.

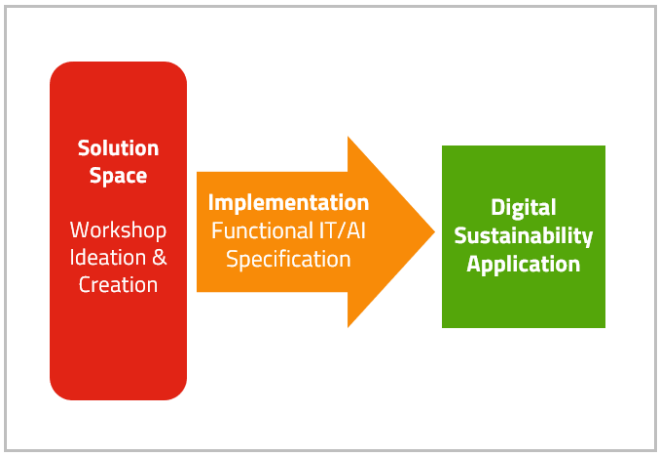

Fig. 3: Functional Implementation

Implementation: Before the application idea is implemented (see Fig. 3), the following questions summarized in Table 4 should be clarified:

Questions in preparation for the implementation
Which areas of the company are affected by the new application as an interface?
Which data is required?
What hurdles can occur during implementation?
What in the company should remain unaffected by the change?
What are the new activities of the employees who will use this application?
What skills are required from them?
What exactly does the Twin Transition project look like for employees?
What are the benefits for employees?

Table 4: Preparation questions for implementation

Once these points have been clarified, a "specification sheet" with the necessary specifications for the IT implementation can be drawn up. This serves as the basis for programming the technical implement-tation of the Twin Transition solution.

In this way, a Twin Transition application is created as a Digital Sustainable Application. This should be checked precisely by the "Domain Knowledge Carrier" and compared and tested with domain knowledge (feedback). A cycle as a new round of the "Twin Transition Innovation Lab" can begin. As part of improvement and optimization of the application, the application can be further developed based on detailed feedback. It starts with a specific gain analysis in relation to the Twin Transition application that has now been developed as a solution. This is followed by the steps already completed in a very specific form and questions. As with an artistic artifact, a tailor-made application is developed, which is co-creatively developed by the "Domain Knowledge Carriers" from their working knowledge. In this way, in addition to a tailor-made application result, employees gain in-depth knowledge of digitalization/AI, sustainability and creative process design skills.

The working process all in all will take about 4-6 hours to complete the workshops (each at least 2 hours) and 4 hours for the whole enrichment section. The timeline for the implementation differs with the complexity of the Twin Transition solution and could not be predicted in general.

Findings and Discussion

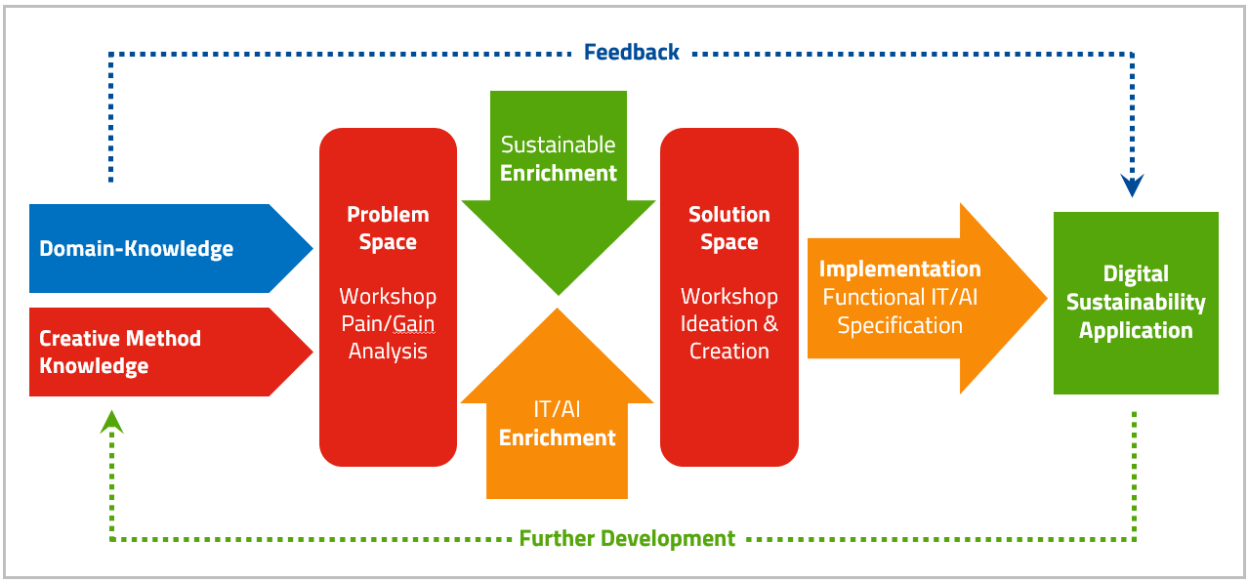

Fig. 4: The Twin Transition Innovation Lab

Working in and with the field has shown that the process described above (see Fig. 4) has the most impact and future perspective. Therefore, the "Twin Transition Innovation Lab" in its phases, "Problem Space", "Enrichment" and "Solution Space" is very suitable. The lab is considered a well-functioning approach for starting the digital and sustainable transformation in SMEs and investing in the future viability of the company together with the employees as "Domain Knowledge Carriers".

In addition, it can be concluded that creative methods and processes can have a significant impact on the transformation and realignment of companies. This can also enable SMEs to independently recognize their potential for applications in the field of sustainability and the use of AI in their own company, identify the necessary steps and implement solutions. Crucial here are a creative mindset, an open approach and the reciprocal use of divergent and convergent methods in the

implementation of all these creative processes (Lützenkirchen, 2024). Therefore, the implementation of this methodical approach to identify initial and diverse ideas for getting started with sustainable solutions and AI applications can be regarded as successful, leading to a huge diversity of the workshop outcomes. The divergent phase of the creative process makes it possible to identify many heterogeneous and application-specific areas of use. Further, the relaxed atmosphere, the playful approach and the focus on the personal needs of the participants are conducive to the large number of ideas. Afterwards all ideas are prioritized in terms of feasibility and benefits in a convergent phase as a useful roadmap for the company.

This methodical approach can help employees to become partners in sustainable and digital transformation. The use of creative formats has shown in previous research, that a continuous and test-based approach makes sense to enable them to react flexibly to technological leaps. The employees (here "Domain Knowledge Carriers") are involved in the process from the beginning which leads to less resistance, more motivation and better fitting results. In addition, participants in SMEs often identified with the ideas derived from the process, developed clear ideas about solutions – even without IT and sustainable knowledge – and voluntarily took responsibility for implementations. This means that resistance can be overcome, even in companies whose employees have a negative attitude towards AI (Lützenkirchen, 2024) and sustainability (which occurs less frequently). Starting with easy and fast implementable applications and frequent testing contribute to the success of the applications.

It is particularly important that the moderators (in this case "Creatives") provide a convincing introduction to the creative atmosphere and different creative methods within the "Twin Transition Innovation Lab". The lab can only succeed if the moderator is able to enable a co-creative working environment, formulate targeted work assignments, open the idea space and prioritize the ideas in a structured manner. If moderators do not have the mindset of creatively trained people, it will take some practice to achieve satisfactory results.

Although applied design research has already been sufficiently described (Mareis, 2014; Wolf 2025; DMI, 2025), the application in SMEs in relation to digitalization/AI and sustainability is insufficiently discussed and could become highly relevant in the future. It is therefore advisable to pay more attention to applied design research even in the area of design for all.

In summary, the model of "Twin Transition Innovation Lab" gives companies a helpful and profitable start to the transformation process by developing their own individual approaches to digitalization/AI and sustainability.

Conclusion and Outlook

Creative methods allow a constructive approach to the use of AI and sustainability in all areas of the company. Some topics are relevant for most companies, while others are company-specific and relate to the individual core business and needs of the respective company. At this point, the diversity and company-specific idea generation should be emphasized. The high benefit to employees through their involve-

ment in the development process and the company benefits are also of great value. Thanks to easy-to-use interfaces, a wide range of AI applications in the field of sustainability can therefore contribute to the topicality of the business model and the competitiveness of SMEs. Using creative methods, "Domain Knowledge Carriers" can identify which AI applications and sustainability issues make sense, and which applications will provide real value. This must be developed specifically for each company. Creative processes are helpful and useful for this. It should be improved if the open form of creative method can be transferred in other sectors, and which are the formats they must be supplemented.

This applied research proposed that creative processes in the form of Twin Transition can be used to identify specific potential for areas of application in SMEs in an agile manner. It remains socially and economically essential to provide employees and companies with a low-threshold introduction to AI applications and to involve them in participatory processes when getting started with AI. This is especially true when the participants come from as many different parts of the organization as possible. In summary, the article highlights a way in which digital sustainability solutions can be jointly developed and implemented in companies so that they are useful for employees, for companies and highly relevant for society.

Due to the constant further development of AI and the changing regulations and concepts in sustainability, it is particularly difficult for SMEs to keep up with the development processes in twin transition. It therefore remains an important task for policymakers to work out what low-threshold access to knowledge enrichment in the field of

sustainability and AI will be possible in the long term, especially for SMEs, e.g. through public funding.

In conclusion, as already mentioned in the WEF Future Skill Report (2023), the aim should be to consider creativity as a driver of socio-technical processes and to give it more weight in the application and teaching of digital and sustainable transformation.

Acknowledgments:

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DESIGN STRATEGY AND NEW SCENARIOS

Virginia Borges Kistmann

Abstract

The present article discusses design management and methodologies in the context of contemporary scenarios that are characterised by volatility, uncertainty, complexity and ambiguity, or VUCA. Based on the literature, it considers design activity from a managerial perspective, as well as encompassing its processes and problem-solving activities. Furthermore, the text extends the discussion to encompass the notion of design in relation to so-called 'wicked problems' in complex systems. In conclusion, the article explores the potential for articulating these themes. The findings of the study suggest that values play a pivotal role in the preservation of identity, and that design activity is a concomitant factor in this process. This is alongside intuitive thinking when it comes to defining strategies. It demonstrates the significance of methodologies that facilitate the integration of processes and, consequently, the utilisation of novel technologies. It is finally posited that conducting in-depth research on the subject is imperative.

Keywords

VUCA scenario, design management, design methods, wicked problems, design thinking.

INTRODUCTION

This article makes a theoretical contribution to design strategies in response to changing scenarios, focusing on design management and methodology. These currently new scenarios are represented by the acronym VUCA, where volatility, uncertainty, complexity and ambiguity are present. This context shows the need for new ways of thinking about design strategies, since prescriptive and structured methods are still widely used in design management and projects and it raises the issue that this article aims to address.

The term 'strategy' originated in the military and was later adopted by administrators and designers. It refers generically to the way in which objectives can be achieved. Sun Tzu's famous work, The Art of War (TZU, 2025), remains widely read to this day.

In the 1980s, concepts originally attributed to Sun Tzu became popular and inspired several authors, particularly in the field of administration, where they became associated with the term 'management'. From its Greek military origin, the term 'strategy' can be defined as a plan or method of action designed to achieve specific objectives or results in a company. In a figurative sense, it can also be synonymous with skill, cunning or cleverness, which can be related to design expertise.

Through a strategic action, design involves positioning a company in a market. In order to achieve this, it is necessary to create a scenario that will guide the company in the short or long term. This ultimately aids the definition of product development policy and provides feedback on the entire process. Consequently, there is a constant search for strategies that enable differentiation in the market.

Therefore, a future situation is the target of both design and strategy. In this way, design is constituted by manifestations that can be plans, projects or working hypotheses, towards the construction of a new synthetic reality (BUCHANAN, 1992).

Thus, this text begins by examining the use of strategy in a set of academic works in this field. It considers design activity from a managerial point of view, as much as in terms of projects, processes and problem solving. The approach consists of a discussion of the themes of design and strategy, exploring the connections between them. The present work also explores methodologies that exhibit enhanced speed and adaptability to novel scenarios. It does so by presenting a range of design actions that address the unstable scenarios confronting us. In this context, designers are individuals or groups who create plans to achieve specific goals.

Furthermore, the text explores how companies need to have a strategic intent and plan to achieve their long-term goals, while facing markets as a complex system in design management. So, it discusses the possibilities of articulating these strategies, particularly in the context of short-term strategies such as 'design thinking' and 'strategic design'. And it examines how this has happened since the beginning of the 20th century, with a non-intentional design strategy. And finally, supported by the articulation between these aspects, considers design in complex systems, drawing on Buchanan's concepts.

The study is presented in three topics: design management as strategy; design strategy and methods; wicked problems and design strategy; and final considerations.

DESIGN MANAGEMENT AS A STRATEGY

Design becomes more effective within organisations when it permeates all actions and becomes a core competence[1]. By doing so, design contributes to the company's strategic actions by establishing new internal relationships and achieving results in supply systems. In this case, a transversal, interdisciplinary, design-related approach is necessary, known as 'design management' (MOZOTA, 2003 ; WOLF, 1994). Design management provides a new perspective on how to structure a company's existing potential and offers new types of innovation-focused resources.

The design management process is a complex approach that seeks to systematise design activity by formalising companies' internal processes through administration. This requires dialogue to be promoted between designers and project stakeholders to facilitate organisational integration and to consider internal and external perspectives.

It is important to note, however, that strategies are necessary at each of its levels to achieve the desired outcomes. At the strategic level, for instance, the objectives of the design in relation to the company's general behaviour and strategic intent must be defined. The aim at the tactical level is to develop strategies that align design with various business sectors, thereby increasing synergy and facilitating processes such as production, marketing, and professional qualification. At the operational level, design strategies are defined in

[1] Core competence is defined as a value and differentiates it and which is reflected in its competitive position.

detail. At this level, design strategies are thoroughly researched to find solutions to identified problems.

But a retrospective analysis of the historical context reveals that at the close of the 19th century, William Morris and his associates established the British Arts and Crafts movement, a paradigm of strategic foresight. Drawing upon the vision of John Ruskin, a critic of industrial capitalist society, William Morris, also a socialist, sought to create a world in which crafts and art were integrated.

This idea gave rise to the company, which from 1875 adopted the name Morris and Co, and enjoyed worldwide success, with its products being offered in a variety of ways and still being sold today (PARRY, 1996).

It could be argued that this strategy was unsystematic, or even innate. Nevertheless, Morris and his group had a strategic intention for the company linked to a mission, a vision and established values for what they considered to be the role of design. The range of considerations was extensive, incorporating the production method adopted and environmental issues concerning respect for nature. The latter aspect is characterised as an action focused on interior design and architecture. The designs were distinguished by the incorporation of floral, botanical and zoological elements, as exemplified by the accompanying figure.

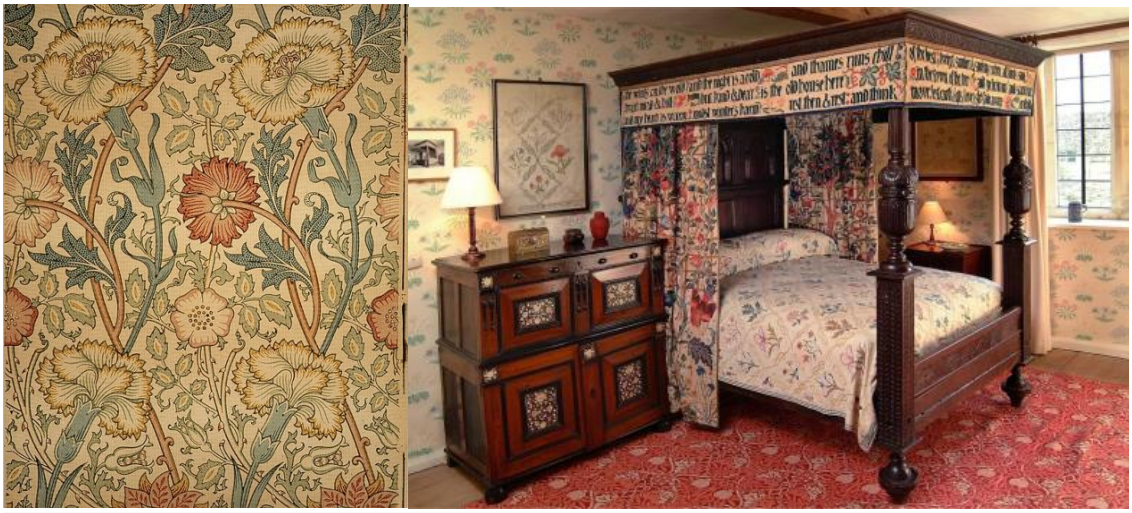

Figure 1. Pattern for wallpaper designed by William Morris (1834-1896) and room decoration with Morris and Co. products.

Source:https://www.metmuseum.org/art/collection/search/337071; https://blogs.bl.uk/business/2021/03/design-for-a-better-life.html.

Consequently, the company's strategy was predicated on a worldview, replete with values and a mission to be fulfilled. In a similar fashion, the company's products translated into an aesthetic approach that associated art, in the sense of beauty, and artisanal production. This constitutes a strategy in terms of both process and result, becoming a core competence.

This example suggests that design actions, and consequently their strategies, may not have been systematically conceived or systematically programmed based on a clearly defined strategy. It can thus be posited that design can be both unsystematic and unintentional. But, from the 1950s onwards, studies relating design to competitive performance intensified in response to threats to products in international competition during the post-war period.

New industrial arrangements arose during this time, increasing competitiveness between companies in different countries in a capitalist context. Consequently, design management emerged as a

shift towards administrative aspects. At the International Design Conference in Aspen in 1951, for instance, the central theme was 'Design as a Management Function' (DMI, 2025).

Initially, Farr (1953 ; 1966) and Archer (1965 ; 1974) focused on the functional aspects of design. It was considered imperative to initiate an investigation into the requirements for a new product, to define the time and budget for its development, to establish the briefing and to deliver it to the designer and/or design team and other related specialists, and to create and manage a clear communications network. In order to achieve this objective, it is imperative that all the actors involved are engaged in the new product development process. In addition, the function of designers with regard to project coordination throughout the production line, packaging and accompanying communication material was pertinent.

This affected how companies behaved, leading to an expansion of corporate vision through the adoption of design policies aimed at improving customer experience and increasing competitiveness in the market. The Italian company Olivetti, for example, used design to strengthen its brand, adopting a strategic approach that led to its success in the 1970s. This strategic approach is evident in the poster that the company developed. As well as presenting the product itself, the poster shows how the product can be used, its formal details, and how it fits with the company's image in the design of the name and the letters on the keys. It thus demonstrates the desired future of a corporate design strategy.

Figure 2. Poster by Olivetti presenting the Valentinne typewriter designed by Ettore Sottsass.

Source :https://designdobom.com.br/2020/05/icones-do-design-a-maquina-de-escrever-valentine/

Still in the 1970s, the Design Management Institute was established in the USA. The DMI is responsible for the Design Management Journal and the Design Management Review, both of which are still in publication today (DMI, 2025). However, the field of design management expanded in subsequent years. After a lull in the 1980s, the 1990s saw design management emerge as distinct field, with contributions from authors in England, France, Germany and the United States. There was a tendency towards maintenance in the 2000s, but it was still mainly European and American authors.

From the 2010s onwards, an increase in the number of publications was noticed, also indicating an expansion to authors from Asia and

South America. Nevertheless, recently, publications on design management have expanded less[2].

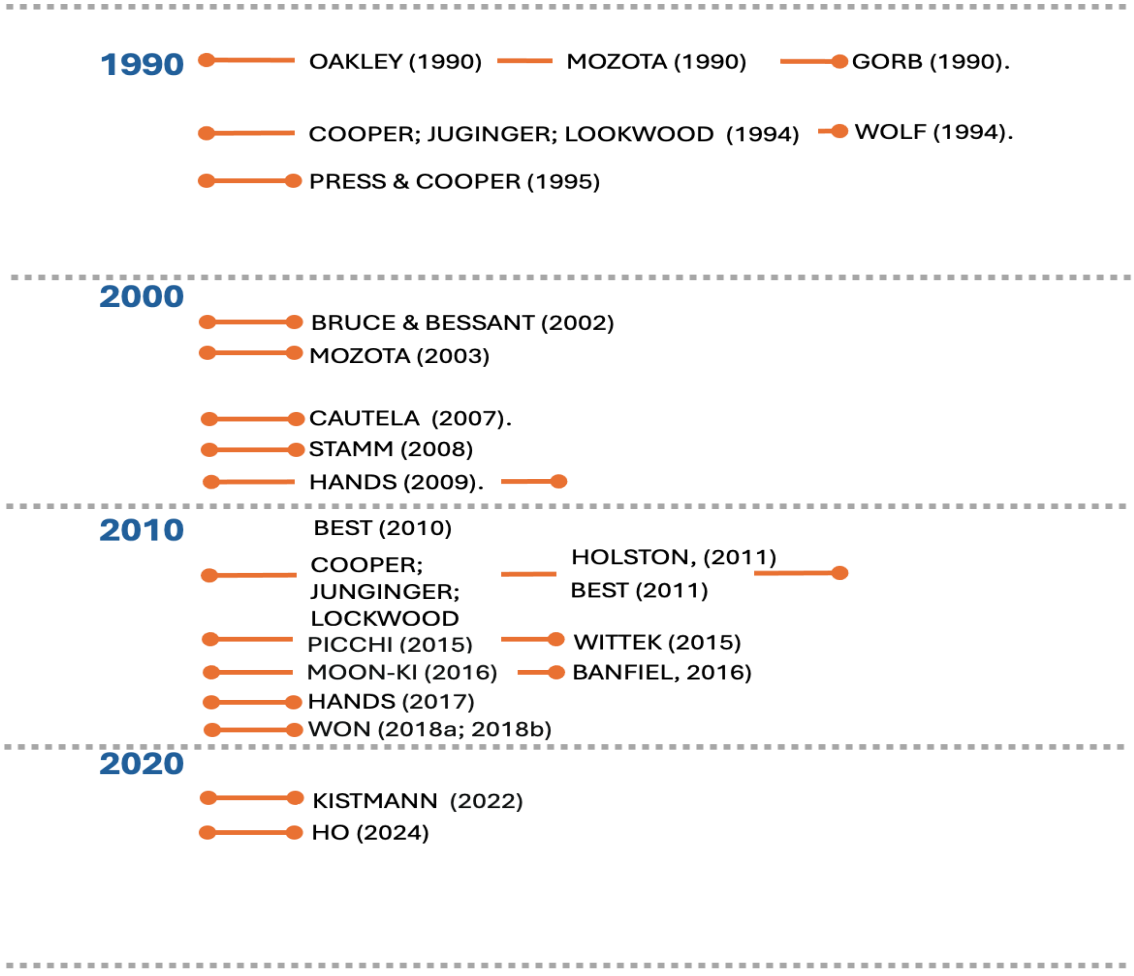

Figure 3. Design management literature between 1990s and 2020s. Source: The author.

These publications relate design to the field of management, integrating design into organisational structures and emphasising its importance for company success. They are based on traditional administration, where management is largely about control.

Recent management studies still emphasise the importance of managerial aspects, albeit with new context. In this sense, the

[2] It is important to note that the study considered a range of publications predominantly in English, and it is possible that many others may exist in other languages and may not be accessible.

prescriptive approach to design management based on traditional business schools is criticised. The argument is that today's society is too complex, volatile, uncertain and ambiguous to allow for programmed, systematic and linear action.

In contrast, start-ups have been shown to offer a means of experimentation with greater autonomy, with the potential for unexpected outcomes, while concomitantly accelerating the design process (JONES, 1970). The term 'start-ups' is used to denote either small companies that focus on market niches, or companies that are established predominantly within larger corporations and which are exploring new market niches. The objectives of some initiatives are rooted in lifestyle, whereas others are oriented towards achieving social impact. The outcomes of these processes are rapid growth and high profitability. It can be seen as a response to the new challenges we are currently living, however, in certain instances, they can also have a negative impact on sustainability.

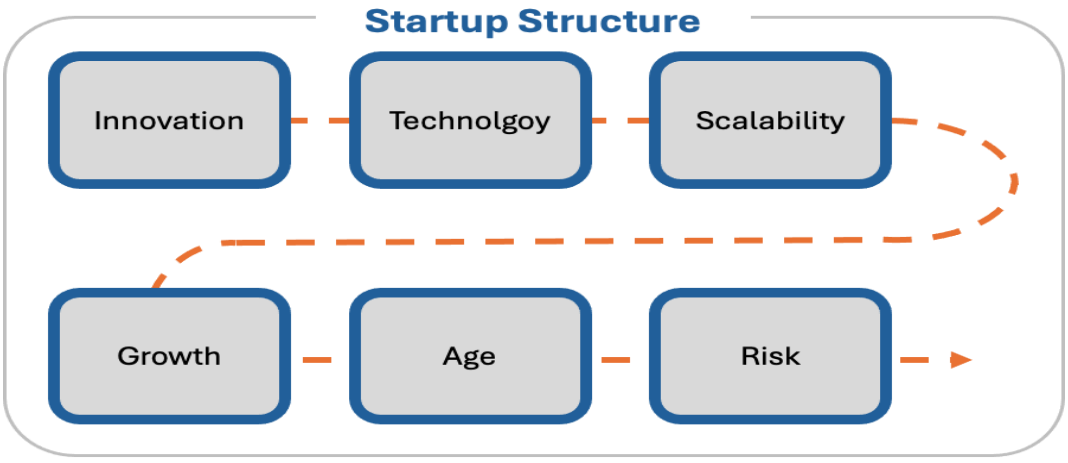

Figure 4. Startup structure.

Source : The author

From another perspective, Hamel (2012) redefines strategic planning, requiring a new management approach. Strategic planning must now

be carried out in an increasingly open and participatory way. From his point of view, it can be said that design should be managed through collaborative activities, both internally and externally.

DESIGN AND PROJECT STRATEGIES

The process of envisioning the future of organisations involves formulating strategies generally associated with how organisations position themselves in the market also in the short term. Traditionally, the initiation of a problem-solving process, is characterised by intentionality and systematicity, that results in the deliberate and methodical interference with the organisational strategy in its entirety. This interference is achieved through the adoption of specific strategies aimed at the realisation of predetermined objectives.

It can be posited that, in principle, the processes of planning, executing manoeuvres and devising strategies are inherently human activities. In our quotidian lives, we engage in the formulation of strategies that are directed towards the resolution of problems. Regarding the concept of design, this activity is considered as being intrinsic to its practice and it is an irrefutable fact that every design activity is inextricably linked to a particular problem, the resolution of which is imperative for the successful completion of the activity (BERNSEN, 1989). While the problem calls for an analytical approach, the solution necessitates a synthetic approach.

It is evident that the problem and its solution can be observed in a multitude of design methodologies, particularly within a linear structure. The primary objective of such methodologies is to facilitate the process in a logical manner. These include the provision of feedback and the management of demands that designers encounter

in professional practice when dealing with situations involving deadlines and costs. In this sense, its aim is to identify the best solution to a given problem. Absent such a systematic approach, the solution may prove ineffective and potentially incur financial or temporal losses.

From the 1960s onwards, several design methodologies emerged with the aim of ensuring greater security in the results produced by designers, reducing the time required to find solutions and, consequently, lowering the costs of production. This aspect has been explored by authors such as Archer, Jones, Bonsiepe, Baxter and Bürdek, between others.

These methodologies adopted a Cartesian principle, structuring the system into subsystems and directing the process in a network that expanded and concentrated until the final solution was achieved. It is widely acknowledged that such structures generally comprise seven distinct stages, namely: the initial briefing, problem analysis, research, concept development, prototyping, testing and implementation.

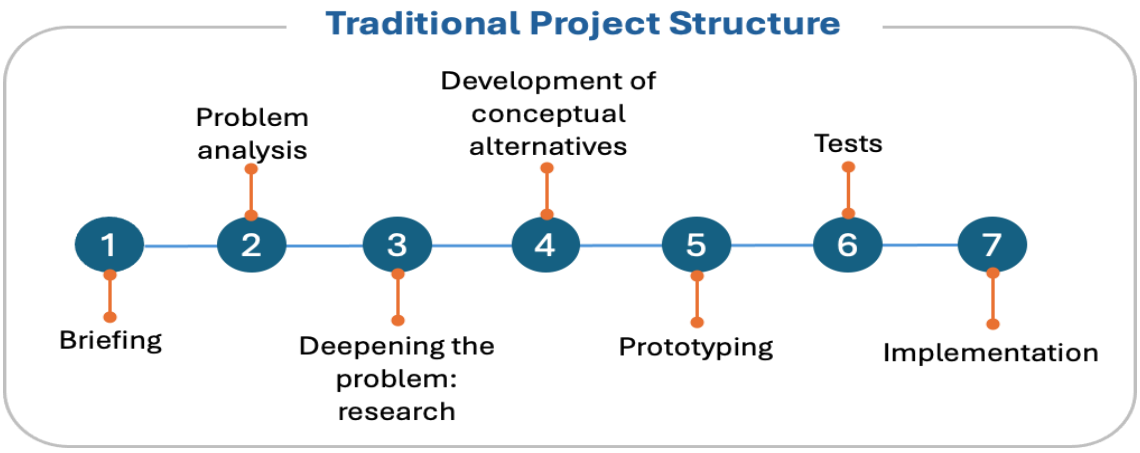

Figure 5. Traditional project structure.

Source : The author.

In the course of time, methodologies founded upon ergonomic studies have come to the fore. Subsequent to this, issues concerning user participation have gained increased prominence, and their experience has been considered central to the search for optimal solutions. These were complemented by methodologies that employ prototypes as a means of accelerating the design process, with the objective of identifying solutions that align more closely with consumer preferences.

More recently we found the designation 'design thinking' among them. This was named and adopted by the company Ideo, denoting a design approach that includes several stakeholders. The term 'design thinking' is linked to a concept developed by Richard Buchanan (1992). He published the article Wicked Problems in Design Thinking, in which he advocated for a novel approach, "design thinking", predicated on integrative disciplines, as opposed to specialised ones. For him, the prospect of generating knowledge that transcended the realms of literature, and the laboratory was contingent upon the presence of disciplines that seamlessly integrated knowledge, communication and action (BUCHANAN, 1992). This approach had a significant impact on the organisational structure of the highly successful company, IDEO (2025).

Since the 1990s, the concept has been expanded, explored and disseminated using integrative thinking from various disciplines as well as the use of an expansion and contraction aspect (BROWN, 2009; AMBROSE & HARRIS, 2011). Following this, with the expansion of the use of 'design thinking', the British Design Council proposed a graphic representation to explain how its structure operates. This graphic

representation is called the Double Diamond (DESIGN COUNCIL, 2025).

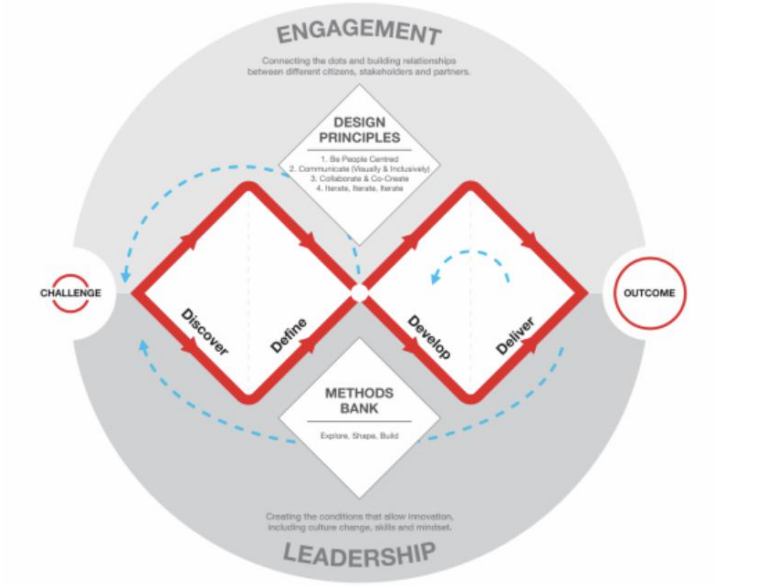

Figure 6. Double Diamond.

Source: Design Council, 2025.

In 2011, in a manner close to Buchanan's propositions, Best (2011) explores the potential of 'design thinking' as a catalyst for innovation and transformation. Her work delves into the significance of design in this context, emphasising its role in facilitating innovation and change processes. The analysis further explores the integration of 'design thinking' with strategic considerations, offering a comprehensive exploration of its application in both innovation and change management scenarios.

The integration of 'design thinking' into various disciplines, including business administration, has led to its notable growth and evolution. It has emerged as a prevalent tool within numerous corporate entities. In a similar manner, the term 'strategic design' is utilised in numerous publications addressing issues related to innovation through design.

The "design thinking" is therefore predicated on a process that expands in the discovery and development stages and is synthesised in the definition and discharge stages. Its present approach incorporates feedback loops through principles and method banks, as well as engagement and leadership. This vision aligns, to a certain extent, with the design process as a recurrent cycle of expansion and contraction, or exploration and synthesis like in Jones (1970).

The concept developed by Buchanan had also a significant impact on the so called 'metadesign' and 'strategic design'[3], terms that was later coined to describe a novel approach to the methodology of design, with the emphasis placed on the creation of new meanings for future scenarios. Buchanan emphasises the importance of creating new discourses, specially from its 'four orders of design', where creation of new environments can be created.

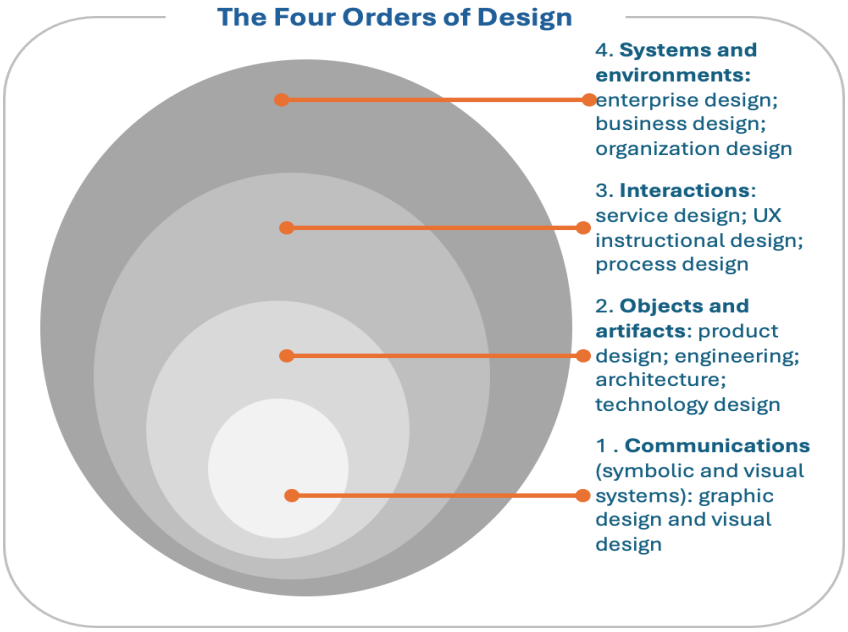

Figure 7. The four orders of design accordingly to Buchanan's.

Source : The author, based on Buchanan.

[3] ***The assertion that design is not strategic is arguably erroneous, given its inherent strategic dimension.***

In line with this, researchers at the Politecnico di Milano demonstrated a particular relationship between systems that integrate products, services and communication strategies. These systems are based on a network of actors who generate and develop value, creating new scenarios. (ZURLO, 2007 in CAUTELA, 2007 ; MANZINI, 2014 ; POLIMI, 2021). Best (2011) also highlighted how 'strategic design' is imperative at the operational level, to facilitate the establishment of new businesses, new service systems and new applications.

It is also possible to establish a link with Buchanan's (1992) work and more integrated approach, namely product/service system design. The original focus of product/service system design on environmental strategy was expanded in response to the growth of Information and Communication Technology - ICT. Consequently, the concept has become increasingly prevalent in various commercial contexts, particularly in the domain of online shopping.

In addition, the concept of 'design-driven innovation' has emerged as a significant factor in augmenting the role of design in innovation (NORMAN & VERGANTI, 2012). In this case, the definition of problems is problematic, new meanings and metaphors are being sought, and the emphasis on technological advancement is being inverted, as meaning-driven innovation (Fig. 8). Verganti (2012) nevertheless also underscores the significance of a network of stakeholders and interpreters in enhancing a company's capacity for innovation. In response to the prevailing circumstances, the field of design evolved, leading to the emergence of a new paradigm known as meaning-driven design (NORMAN & VERGANTI, 2012). The meanings of products are strengthened by overlapping, in some cases, technological innovations and often financial effects.

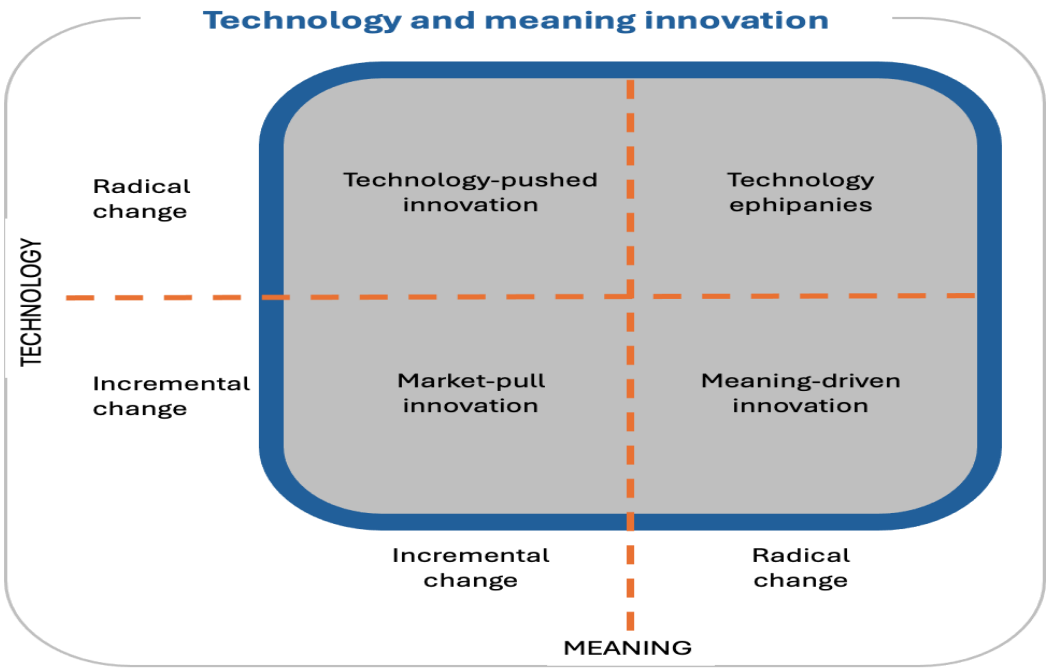

Figure 8. Relationships that can be established between technology and meaning in design.
Source : The author, based on Norman & Verganti.

The relationship that is established between technology and meaning can be radical in nature, to the extent that its extreme adopts. Nevertheless, it can also be regarded as radical in terms of meaning, even when it is based on incremental technological innovation.

Similarly, the term 'strategic design' defines a process for creating strategies where the designer assumes the roles of interpreter, guide and materializer of novel organisational structures. It is evident that the design in question has a significant role to play in the realm of innovation. By facilitating the delineation of processes and the actualisation of their application in products and services, it serves to further the development of novel concepts, as evidenced by the pioneering contributions of designers (ALVARADO, 2014).

All these approaches are aligned with what Buchanan (1992; 2016; 2019) calls 'places of invention' and the creation of new discourses.

The defining characteristic of this phenomenon is the commonality exhibited by the various manifestations in terms of their cognitive approach to problem-solving. Consequently, it assumes a pivotal role in the realm of innovation, as its modus operandi facilitates the formulation of novel inquiries, the identification of hitherto unexplored constraints, and the repurposing of extant discourses.

WICKED PROBLEMS AND NEW SCENARIOS

The examination of Cartesian thought by philosophical discourse commenced in the middle of the 20th century. In 1968, Feyerabend (1968) contested the 'The discourse of method' from Descartes (1637) approach to scientific thinking.

In design, this criticism was expressed specially from 1950 onwards, a period which witnessed the emergence of a critical approach within the domain of Postmodern design.

Figure 9. Postmodern furniture from different designers organized under the name Memphis.

Source : https://commons.wikimedia.org/wiki/File:Memphis-Milano_Design_Collection.jpg

Postmodern design emerged as a response to the rational crises that beset the incapacity of science to address global issues. A novel conceptual framework has been developed to address the intricacies of contemporary contexts, that in its aesthetic aspect was a way to create new meanings.

In parallel, a systematic approach aimed at enhancing comprehension and formulating effective solutions, emerged from the field of biology. This approach was pioneered by Bertalanffy in the 1950's (2010), who also criticised the Cartesian approach. His General Systems Theory, which, due to its comprehensive and non-limiting theoretical contribution to integrating fields of knowledge, seeks to develop principles that cross the various fields of science. This conception results in the vision of organisations as a whole and not as separate parts, formed by a number of internal and external variables that influence the feedback system (BERTALANFY, 2010). This systemic approach contributed to the theory of design, serving as a model for the development of systems, as we can saw already in Jone's (1970)

Design Methods: seeds of human futures.

Bertalanffy's approach is analogous to the autopoietic vision of Maturana and Varella, insofar as it enables a new conceptualisation and configuration of phenomena. Furthermore, it facilitates the integration of subjects of different natures from a global perspective (MATURANA AND VARELLA, 1995).

From these standpoints, the configuration of existing or proposed relationships proves to be of paramount significance in the establishment of organizational frameworks, thereby delineating the identity of the system in question.

Bomfim (1993) clearly stated that several factors interact in the development of projects. The inherent complexity of these factors frequently hinders our ability to discern the interplay between them. Consequently, in the contemporary era, design problems are often referred to as wicked or complex problems.

This phenomenon is especially evident in the contemporary era. As Alvarado (2014) asserts, the economic globalisation and the rapid pace of technological advancement engender a highly dynamic and volatile environment for corporate entities. In this context, markets are characterised by hyper competitiveness, with consumers presenting new needs and seeking lower prices, affecting brand loyalty. Consequently, companies are compelled to differentiate themselves in order to generate a sustainable competitive advantage, as tangible assets are no longer sufficient, rendering innovation essential. In such contexts, the presence of complex problems becomes particularly evident. These systems are characterised by a lack of clarity in their formulation, resulting in confusing information that is accessible to a significant number of clients and decision-makers.

This is especially apparent in the contemporary era, which is characterised by its volatility, uncertainty and contradictions. Consequently, the conventional methodologies employed are inadequate. Consequently, while the linear method is predicated on a specific problem with defined conditions, the design of complex problems suggests a general indeterminacy.

In order to provide a more comprehensive analysis of the operational mechanisms of design thinking, Buchanan (2016) has proposed an

articulation of this concept in the form of a plurality of factors, as illustrated in Figure 10 below.

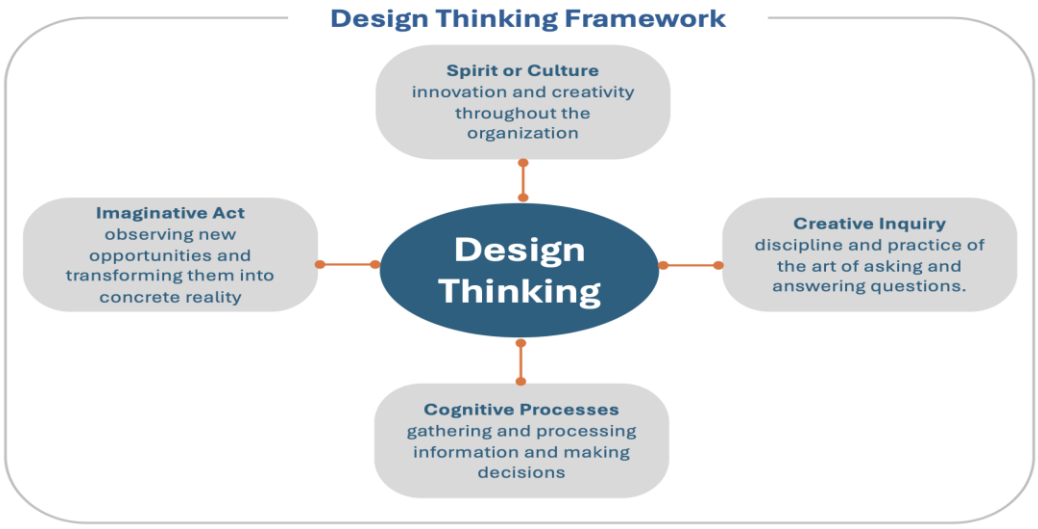

Figure 10: The framework of design thinking.
Source: The author, based on Buchanan.

As previously seen, the term design thinking has expanded in design field since de 2000, but it originally comes from Buchanan's (1992) studies, which advocate the integration of design and directly impact design management and project activities. The conception and planning of the artificial, whether as a plan, project or working hypothesis, in which there is an intention of operations with a significant impact on human experience, is an important consideration. In essence, design consists of the construction of a material and/or immaterial world. Moreover, as it is an integrative discipline, it should not be regarded as a technical specialisation: The concept of 'places of invention' is employed in the context of design, whether in relation to this or that design.

In this manner, an organisation's strategic positioning is defined by offering a new narrative through design, defining its performance and generating products, services, systems or businesses that are imbued

with meaning for customers. From managerial perspective, it is essential to employ a transversal, interdisciplinary approach related to design. This approach necessitates the facilitation of dialogue between designers and the relevant stakeholders involved in the projects, with a view to achieving organisational integration, thereby complementing both internal and external perspectives.

It is from this standpoint that the concept of design management emerges. In this process, design management can be understood as the administration of the design process in its entirety. Design management has been demonstrated to facilitate the reformulation of organisational culture, thereby promoting competitiveness and enhancing the lives of individuals (BUCHANAN, 2016).

Any how, in all cases, design can be considered a discipline that ultimately deals with the construction of a material world that is linked to its own socio-cultural and economic contexts. Design can be defined as the conception and planning of the artificial, whether as a plan, project or working hypothesis, in which there is an intention of operations with a significant impact on human experience. As demonstrated, the elements under consideration are based on creation and imagination, as well as on logical and organisational processes. Consequently, when considering the management of the company, it can be stated that all these four contexts should be taken into account.

FINAL CONSIDERATIONS

In light of the VUCA scenarios with which we are confronted, traditional methodologies and management approaches to design are indicated to be in need of revision, as is the linear process itself.

Furthermore, there is a necessity to advance in terms of complex systems programmes.

The importance of scenario research is increasing, as it is a valuable tool for identifying new trends over both the short and long term. In this particular instance, it is imperative to consider a group of individuals who possess a wide range of expertise. This should include professionals who are accustomed to intuitive approaches when it comes to envisioning the future.

In general, in order to adapt to the characteristics of VUCA scenarios, it is important to bear in mind that flexibility is key. In this sense, feedback is important in showing new directions to follow. Using new AI technologies to structure the design of projects could offer different options for various scenarios.

In an uncertain and inconsistent scenario, it is important to adapt constantly. Training teams to adapt and foresee helps them to stay ahead of the game. Methods such as Sprint can provide a faster response, which is important for achieving agility in a rapidly changing environment.

In the face of instability, resilience is important. Designers and companies must be resilient to maintain focus, look to the future and adapt constantly. Teams must have clear and transparent internal and external communication, and continuous learning must be incentivised.

The research also demonstrates that the unplanned strategic function of design, which emerges from an initial concept based on well-established values, is important in guiding design activities. Drawing upon the existing body of work produced by Morris and considering

the aforementioned points, it is possible to conclude that values assume great importance when companies are faced with unstable scenarios. Indeed, maintaining a company's identity is greatly facilitated by upholding its values.

Concomitantly, the conceptualisation of design as a core competence is imperative to ensure optimal outcomes in volatile and dynamic scenarios. This is due to the fact that it enables companies to maintain a comprehensive and integrating activity, thereby facilitating the adaptation of programmes to emerging demands. Moreover, it is imperative to emphasise that the provision of effective solutions, which are able to address specific temporal concerns, in conjunction with the fundamental competencies inherent in design, constitutes the pivotal factor in the preservation of a company's distinct identity.

From this standpoint, design can formulate long-term strategies that bolster a company in scenarios where the future is uncertain. It is the responsibility of design at the strategic level to reinforce these elements, namely the vision, mission and values, and to specify the specific competences to be acquired. These competencies must then be broken down at the tactical level, with the aim of strengthening their role, as well as guiding design at the operational level, so that it can propose short-term solutions.

In this sense, with the increase in the complexity of projects, due to scenarios resulting from the high volatility, instability, complexity and ambiguity present in today's markets, design actions increasingly demand an agile and impermanent posture, demanding strategies that are based on new meanings to be produced.

The amalgamation of the various methods contributes to the innovative role of design, since this way of thinking allows us to re-ask questions, point out new restrictions and recycle old debates. It is evident that methodologies such as 'design thinking' exhibit a more dynamic process with constant feedback, thereby demonstrating a correlation with the new scenario, which is characterised by greater consistency. In addition, the models proposed by Milan's concept of 'strategic design' appear to be applicable to the present situation. This could potentially facilitate the establishment of new businesses and start-ups, thereby enabling them to respond strategically to future demands. In this sense, innovation based in technology, design-oriented innovation based upon the creation of meanings plays an important role.

In the context of sustainability, it is imperative to contemplate a transition from large-scale enterprises to small-scale entities. This shift has the potential to diminish financial investments and facilitate the dissolution of companies, thereby enabling them to engage more closely with local communities. This approach can facilitate more expeditious and effective responses in terms of design.

From a design research perspective, the present context provides an opportunity for research that could assist in the development of complex design systems, which in turn could lead to greater consistency in a changing scenario. It is vital that theoretical investment is recognised as playing a significant role in design research and investigation.

Nevertheless, it is imperative to give due consideration to the role of artificial technologies in facilitating this process, as they have the capacity to offer more expeditious responses to the problem. In this

sense, research aimed at recognising and anticipating scenarios, together with the creation of new methodologies, as well as the perspective in which the designer begins to contribute to the creation of new ones, reinforcing their strategic characteristics, is of particular importance. Finaly, it is imperative to give due consideration to the role of artificial technologies in facilitating this process, as they have the capacity to offer more expeditious responses to the problem.

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The nature of design in a feminine key

Silvia Fernández

Abstract

The feminine nature of the project can be compared to the discrete but efficient characteristics of plant life in the form of sociability, without command centers, able to adapt very quickly to the enormous environmental changes. Until the last few decades, design activity in a feminine key had not been recorded by history. And it is revealing itself as a persistent and professionally rigorous work. It is a matter of questioning in a deeper way the predominant value system. Design as a bridge for social transformation.

Keywords

Design. Women. Feminism. Nature. History. Transformation.

Jean-Jacques Rousseau proposed to a friend ”Go out, madame! Walk too! Pay attention to what you don't see! Write down your discoveries!”(1) Referring to his passion for the vegetable world. That widespread and unique universe for which the concept “plant blindless” or “botanical blindness” was coined - a term created by two botanists James H. Wandersee and Elisabeth Schussler - which defines the inability of human beings to see or perceive plants in their own environment.

What causes botanical blindness? Most likely the nature of the plants themselves, even though the world depends on them. Thus in a forest, the jungle, the steppe, a garden, a square or in a pot, they cover the ground or gain height, their rootedness, their slow but fluid vital movements, the sounds they emit - audible to the human register, their form of "sociability" that is characteristic of "their own modular construction is the quintessence of modernity, a cooperative, distributive architecture, without command centers, able to resist perfectly to repeated catastrophic effects without losing functionality and capable of adapting very quickly to enormous environmental changes. " In that sense they are two asynchronous universes with respect to the animal universe.

The biologist Stefano Mancuso - director of the International Laboratory of Plant Neurobiology - affirms that everything that man designs tends to have a central brain that governs and organs that respond to these commands, an archaic hierarchical and centralized design, which has the advantage of rapid responses, although not always correct, but it is a very fragile system and lacks innovation. This is the case of the computer, but also the management of a company, the organization of the State and of institutions or the traditional family (2). Mancuso himself argues that without any organ compatible with a central brain, plants are able to perceive the surrounding environment with a sensitivity superior to that of animals, actively compete for limited resources in the soil and atmosphere, accurately assess the circumstances, process a sophisticated cost-benefit analysis, and define and take appropriate actions in response to environmental stimuli. "Any centralized organization is inherently weak. Plants embody a much more resilient

and modern model than the animal; they are the living representation of how solidarity and flexibility can be associated.” (3)

The discreet but efficient characteristics of plant life can be homologated to the feminine universe of the project -of design-, of production and of women's public life in general and of domestic life, of course. Until the last decades, the activity of design in a feminine key had not been registered by history -not even by the present-, which was not very sensitive to the existence and persistence of feminine design. Or it was underestimated.

From the perspective of primary categories such as patriarchy and androcentrism, which are used to explain the subalternity of women in society, a Copernican turn has been taking place in recent years, but it is not yet far enough in scope to move towards a profound social transformation where values proper to the feminine nature prevail, such as solidarity and a sense of community, based on trust, care, responsibility and equity. In order to gain depth, it will be necessary to continue to deconstruct social categories based on male dominance and continue to identify the factors that particularize them.

There are subtle factors such as the established narrative because, for example, we must be very attentive to linguistic biases. Donna Haraway, biologist and philosopher, professor emerita of History of Consciousness at the University of Santa Cruz, argues that modern science has produced narratives about itself and about reality. One of its main constructs is nature, that is to say, nature was invented in its instrumental/productivist conception, as an antagonistic otherness, as a threat, for which control over it has been justified.

According to the above, there is human nature, conceived separately from nature in general, in such a way that it has its own foundation. This narrative construction determines the dichotomy: "human being versus nature" that led the planet to the degree of exploitation and plundering of our days and does not allow us to understand that human nature is part of an integrated and interdependent system with other natural systems.

Other factors such as seeking to stand out above others, overvaluing one's own production, seeking renown or fame, establishing competition over concurrence, favoring dissent and discord, enjoying aggressive environments, despising efforts for association, belittling and underestimating those who appear to be inferior in conditions, are some of the biases that demand attention and awareness to generate actions that will bring them to light, over fear.

The history of design that is being revealed in the last decades in a feminine key shows a persistent and rigorous professional work that understands the nature of materials, the demands of production technologies in each historical moment, empathy with the user and commitment to the dimension of design as an interface between the user and the object. Each object, each system dialogues with the tension inherent to each design between use value and symbolic value, a singular way of intervening in the environment and of establishing links with responsibility, discretion and detail.

The curators of the exhibition Here We Are! 1900 - Women in Design, 1900-Today, Viviane Stappmanns, Nina Steinmüller, Susanne Graner (4), argue that giving women a space in a male-dominated working

world and historiography is only part of the debate. It is also about questioning the prevailing value systems in a deeper way. These questions have reached the field that concerns us today: has our vision been too narrow, too Eurocentric, too non-inclusive?

If we want our practice to have a positive impact on the future, it is essential to critically analyze the past and present in order to develop innovative models and methods. Discussions of feminism and design also provide ideas and inspiration for a new way of working, one that values cultural and ecological sensitivity, encourages interdisciplinarity, and is based on collaboration and experimentation. As we can see, many are already putting this approach into practice. The transformation towards values of solidarity, equitable distribution, deconstruction of power, equity, adaptability, flexibility, care, will be the bridges that design must build to society.

Translate by Deepl.

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(3) op. cit., Mancuso, Stefano.

(4) Organized by Fundación Proa, Buenos Aires in collaboration with the Vitra Design Museum, Germany, April-July 2025.

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Opportunities for strategic design development to improve the quality of life in old age

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Abstract

This article deals with the topic of "Design for ageing in the context of demographic change in Germany". As ageing always takes place in social contexts, the ageing process is automatically integrated into societal, technical, political and social change processes. To this end, the needs of ageing people in the context of demographic change in Germany were examined using qualitative interviews with men and women aged 65 and older who live alone. The "variety management" approach developed on the basis of the results of this empirical study is presented below and placed in relation to the design.

Keywords

demographic change, diversity management, qualitative interviews, grounded theory

Due to demographic change, one in three people (34%) (cf. Statistisches Bundesamt 2011, p. 11) in Germany will be aged 65 or older by 2060. The ratio of younger generations to older generations will also change. In addition, the proportion of older and younger people living alone in Germany will increase in future (cf. Opaschowski 2008, p. 66 and 529). In order to enable older people to use their living environment independently, even in the context of demographic change, the design of the everyday living environment will play a key role in the future (cf. Lehr 2008, pp. 37-47). The term "design" refers to the creation of industrially manufactured goods and the communication measures for the sale of these products. Design mediates between technology and practical application, between production and use and between manufacturer and user (Wolf 2009, p. 20). Through this mediating role, design shares responsibility for the usability of the everyday environment in old age.
The research presented below was conducted as a dissertation under Prof. Dr. Brigitte Wolf at the Chair of Design Theory: Methodology, Planning, Strategy at the University of Wuppertal and published in 2019. The aim of the research was to close the existing gap in design research described below. To this end, new data was collected and evaluated using the empirical study "Everyday life in old age" presented below. The research result ("variety management") was then tested for using in a practical design process.

Classification of the research work in the design for older age

Within design, there are various approaches that are aimed at senior citizens as well as people with disabilities. These are universal design,

inclusive design, barrier-free design, accessible design, design for all and transgenerational or lifespan design.

All of these approaches pursue the goal of developing products and applications that can be used by all people regardless of their mental and physical abilities or age (cf. Gassmann and Reepmeyer 2011, p. 106). The design approaches mentioned also all deal with the compensation of disabilities or deficits caused by the ageing process. The special needs of older people aged 65 and older living alone with regard to the everyday, designed environment in the context of demographic change in Germany have not yet been investigated. In order to close this research gap, new data on the everyday lives of older people aged 65 and older in Germany was collected by means of an empirical study, as described below.

Older people, the ageing process, functional age and the needs of older people

For the purposes of the research, the term "older people" is defined as the age group of men and women in Germany aged 65 and older. In 2009, a fifth of people in Germany were already over 65 years old (cf. Statistisches Bundesamt 2011, p. 7). The proportion of older people in the population is higher in rural areas than in urban areas (cf. Statistisches Bundesamt 2011, p. 9). The ageing process is determined by various factors that vary greatly from person to person and is part of the individual life course. The individual phases of childhood, youth and adulthood have an impact on later life (Mayer and Baltes 1999). This lifelong process of ageing is heterogeneous. As ageing processes take different courses and show different

developmental trajectories, the physical and mental abilities in old age also vary, as do the individual's state of health and social integration. Although the individual ageing process is influenced by the earlier years of life, it is malleable. It can be supported, optimized and varied through appropriate and suitable interventions. This goes hand in hand with the contexts in which the ageing process takes place. These cultural, individual and social contexts offer opportunities to positively and successfully influence the ageing process (cf. Tesch-Römer 2012, pp. 3-4). These contexts are also shaped by the everyday, designed material and digital living environment. Through the mediating role of design, it has an influence on the social conditions of the ageing process. It therefore offers an opportunity to positively influence this process.
The age group of older people is a heterogeneous, highly diverse group. It differs *"in health and functional states, in ambitions and interests, in capabilities and support systems"* (World Health Organisation 2016, p. 23). This is because various factors and influences result in ageing people being younger or older than their biological age in terms of their physical or mental skills.
The term "functional age" describes although how different mental, emotional, and physical abilities are able to function. These individual abilities are not related to chronological age. Instead, they are influenced by social and biological factors that have an impact throughout a person's entire life (cf. Kaiser und Lehr 2012, p. 14).
In Germany, negative factors were associated with ageing until the 1960s. Until then, the deficit model of aging prevailed. This negative image combines the image of older people, whose deficits come to the fore and who are only uninvolved recipients and persons in need of assistance who receive benefits (cf. Kaiser und Lehr 2012, p. 15).

Research on ageing has now proven that this image does not correspond to reality. Scientific studies have shown that an active lifestyle in particular is associated with a long life (cf. Kaiser and Lehr 2012, p. 15) and that ageing is associated with the acquisition of skills (cf. Lehr 2010, pp. 36-37). The new image of ageing based on these findings is the activity model.

Active aging refers to the process of improving the opportunities available to people as they age, enabling them to maintain their health, participate in social life in their communities, and ensure their own safety. This process then leads to an improvement in individual quality of life (cf. World Health Organization 2002, p. 12).

Presentation of the research: field of research, methods of data collection and analysis, the sample

The empirical study "Everyday life in old age" was conducted to gain new insights. The research field of the study is men and women over the age of 65 who live alone in the district town of Offenburg or in the neighboring community of Ortenberg (Baden) in the Ortenau district of Baden-Württemberg in Germany. The qualitative research method of qualitative interviews in the form of an open survey was used to collect data.

The aim was to gain new, unknown insights into the object of research (cf. Hohl 2000, pp. 143-144) and to generate an independent, new theory (Hermanns, p. 114). The analysis of the collected data and the development of a new theoretical approach (see Hermanns, p. 114; Strauss 1998, p. 19) was carried out according to the methodology of "Grounded Theory" according to STRAUSS (Strauss 1998). The interview form used for the qualitative interview is based on the

understanding interview (Kaufmann 1999) and the qualitative interview (Kvale 2007) in terms of the methodical questioning technique and interview conduct (empathic interviewing). The ethnographic interview (see Friebertshäuser et al. 2013, pp. 445-446), the ero-epic interview (Girtler 2009) and aspects of interaction ethology (cf. Willems 2008, pp. 43-44) form the methodological basis for the design of the qualitative interview setting.
The sample itself consists of 14 participants (n = 14), seven of whom are women and seven of whom are men. The interviewees (m/f) were between 66 and 99 years old at the time of the survey, with an average age of 78.57 years. The female interview participants were between 67 and 85 years old at the time of the survey, making the average age of the female participants 74.43 years. The male interviewees were between 66 and 99 years old, making the average age of the male participants 80.72 years. The interviewees (m/f) all lived alone at the time of the survey, and their living situation varied. Four of the interviewees (m/f) lived in an apartment in an assisted living facility (at various facilities), three of the interviewees (m/f) lived in an apartment, five of the interviewees (m/f) lived in their own home, one of the interviewees (m/f) lived in an apartment with an additional room for a future care professional and one of the interviewees (m/f) lived in a private residential model for living in old age: a residential building for older people.

Methodological approach and implementation of the analysis

The analysis was carried out according to STRAUSS (Strauss 1998), STRÜBING (Strübing 2014a) and BÖHM (Böhm 1994) and was conducted according to the coding paradigm (see Strauss 1998, p. 46;

see Strübing 2014a, p. 25; see Böhm 1994, p. 132). The analysis went through the five steps shown in Figure 1: In the first step, open coding, the data was broken up (cf. Strübing 2014a, p. 16), examined, compared, coded, conceptualized and categorized (cf. Wiedemann 1991, pp. 442-444). The individual interviews were collected one after the other, transcribed directly (see Kuckartz 2010, pp. 38-48) and coded openly.

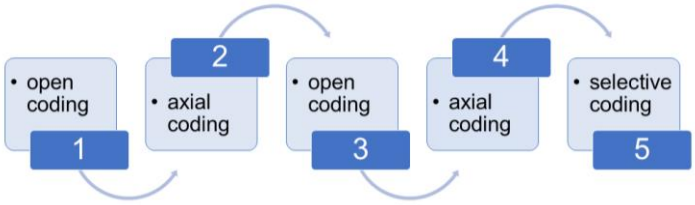

Figure 1: Methodological approach according to grounded theory

The analysis process ran iteratively and cyclically during all five analysis stages according to STRAUSS. The five steps mentioned consisted of many individual analysis cycles, in which not only the newly collected material, but also the already analyzed data were repeatedly included in the analysis process as required by STRAUSS (see Strauss 1998, pp. 46-47). According to STRAUSS (see Strauss 1998, p. 46), the findings from the coding process then flowed directly into the next interview (see Figure 2).

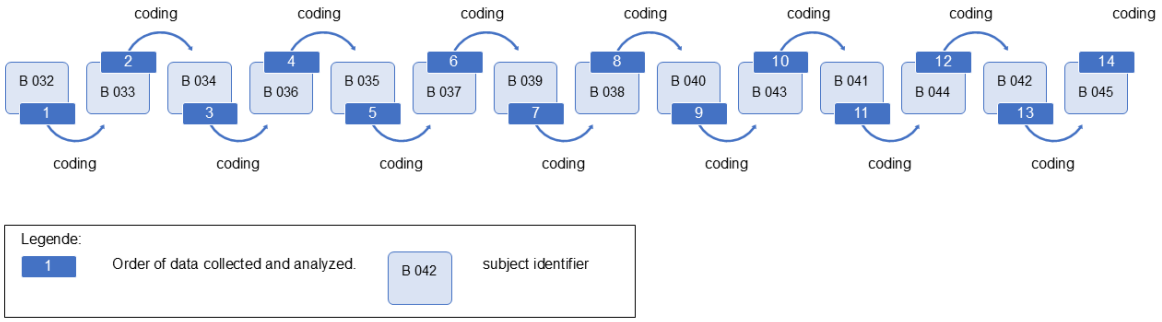

Figure 2: Order of analysis of the collected data

The conceptual process of coding according to grounded theory was, in STRAUSS's sense, a mental process that was closely linked to the collection and examination of new data (cf. Strauss 1998, p. 45). In the first phase of open coding, in STRAUSS's sense, the data were analyzed often, microscopically and in detail (see Strauss 1998, p. 61). To this end, each transcribed interview was, in STRAUSS's sense, coded in detail (see Strauss 1998, p. 61) multiples times and intensively, line by line, and memos were written (see Strauss 1998, pp. 46–47). These initial evaluations resulted in several codes that comprised preliminary content concepts.

In the second step, the data was then coded axially according to the coding paradigm developed by BÖHM (see Böhm 1994, pp. 130–134; see Böhm 2008, p. 479). In the process, the existing concepts were refined and differentiated (see Böhm 1994, p. 130). The axial coding revealed three phenomena : phenomenon variety, phenomenon alone, and phenomenon rest. In addition, approaches for further concepts were found, so that the data material was examined again openly for further concepts. As a result of this second round of open coding, the three phenomena phenomenon variety, phenomenon alone, and phenomenon rest were identified, along with further concepts that were found during the second open coding. The codes found up to that point were then dimen-sionalized. The phenomena found were recoded axially.

In order to formulate a model of the analysed phenomenon area or a theory which is anchored on the objects (cf. Böhm 1994, p. 134), the

data were finally coded selectively. Once the core category and its characteristics and dimensions had been defined, the other relevant categories were placed in relation to the core category. This procedure was carried out schematically and systematically in guideline of the coding paradigm (cf. Böhm 1994, p. 136). The result of the selective coding was the object-anchored theory of "variety management."

For quality assurance purposes, theoretical and analytical memos were written to accompany the research process (cf. Strübing 2014a, p. 88). The approaches and interim results found in the data were also presented for discussion to colleagues not involved in the research (m/f) by means of « Peer debriefing » (Flick 2006, p. 334) at the biannual doctoral colloquia held by Prof. Dr. Brigitte Wolf at the Chair of Design Theory at the University of Wuppertal (cf. Flick 2006, p. 334, see Strübing 2014a, p. 88). Throughout the research process, the data was examined using generative questions (cf. Strauss 1998, p. 50; for the exact wording of the generative questions, see Böhm 1994, p. 127; see Böhm 2008, pp. 477–478). Theoretical sampling was used as a further quality assurance measure. The targeted selection of cases for data collection allowed the theory formation process to be finely controlled in line with STRÜBING's approach (see Strübing 2014a, p. 88). The last two cases collected towards the end of the data collection phase were continuously analyzed in the subsequent phases after the completion of data collection in accordance with theoretical sampling. The data obtained could thus be integrated into the comparison strategies (minimal or maximal) according to the respective state of theory development (cf. Strübing 2014a, p. 30). In the course of the analysis, the mapping procedure in the sense of Adele Clarke was also used. At the beginning of the third analysis

phase (second open coding), additional situation maps were created (see Strübing 2014a, p. 108). The maps were created in accordance with STRÜBING (cf. Strübing 2014a, p. 110) parallel to the analysis process. They were developed in parallel with the creation of analytical memos and coding (cf. Strauss 1998, p. 33) in the ongoing analysis process, becoming increasingly detailed and comprehensive (see Strübing 2014a, p. 108). The mapping process resulted in a large number of different maps. In the course of the research, the maps developed their own character, which only partially corresponds to the situation maps, maps of social worlds, or position maps proposed by CLARKE (see Strübing 2014a, pp. 103–111). The maps created, which in their early version most closely resemble CLARKE's situation maps, represent the relationships between the individual categories and concepts, as well as their points of reference. The chosen mapping process significantly supported the theory-oriented analysis of the data, which generated theory in the course of the analysis process. By combining the essential methods of iterative-cyclical procedures, theoretical sampling until theoretical saturation, constant comparison using generative questions, the writing of analytical memos, and coding (cf. Strübing 2014a, p. 93; see Strübing 2008, p. 30) in combination with the mapping method according to CLARKE, a very dense analysis of the data in the sense of grounded theory was achieved. The analysis of the data was carried out in accordance with STRAUSS until the theory was saturated (cf. Strübing 2014a, pp. 32–33; see Böhm 2008, p. 484). The core category plays a special role in this process. The other categories are mostly related to the core category, which is why they are particularly dependent on modification and qualification (cf. Strauss 1998, p. 66). The theory of

variety management that was developed thus meets the quality criteria and requirements for a good grounded theory.

Results of the data analysis : categories found

The central categories (main categories) are the categories presented below: Variety, Rest, and Alone (see Figure 3).

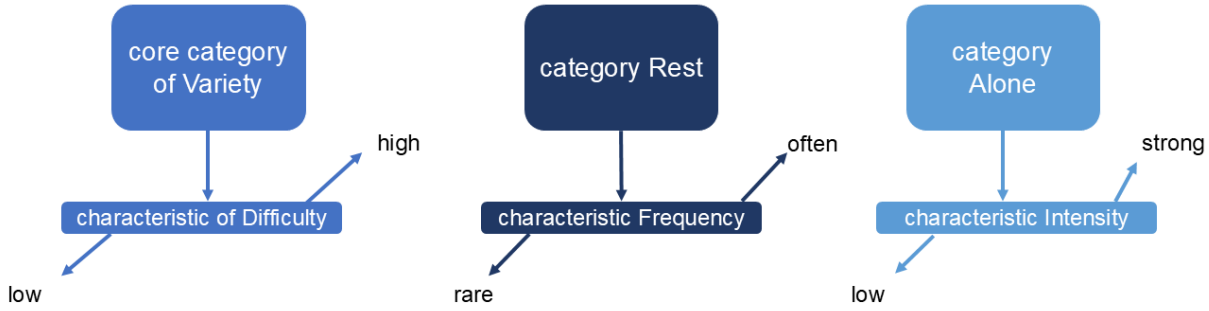

Figure 3: The categories and their characteristics

- **The core category of Variety with the characteristic of Difficulty in the dimensional expression low or high: The core category of Variety is characterized by the fact that the interviewees (m/f) are "thrown off" their everyday rhythm, i.e., their own pace, by external surprising or unpleasant factors. Variety is thus a change in one's own routine state of well-being or comfort zone. This variety represents a challenge of various kinds. It can consist of a temporal, emotional, physical, organizational, etc. change. The central characteristic of the core category Variety is the difficulty of the change : depending on the dimensional characteristic, the difficulty of the change is low or high.**
- **The category Rest with the characteristic Frequency in the dimensional form rare or often: The category Rest stands for moments of varying lengths of physical and/or mental rest in everyday life. These are used to recharge one's batteries. This**

does not refer to extreme, complete, permanent rest. Rather, rest serves the purpose of taking a break. The central characteristic of the category Rest is the frequency of rest: depending on the dimensional value, rest is needed often or rarely.

- **The category Alone with the characteristic Intensity in the dimensional form low or strong: The category Alone stands for being alone in everyday life. All interviewees (m/f) lived alone at the time of data collection. As a result, their everyday starting point was being alone in their daily lives. However, they differed in terms of whether they had a network that supported them in their aloneness or whether they felt alone (or left alone). The category of widowed people cannot be reduced to the loss of a spouse, but is supplemented by other factors such as the loss of friends of the same age and the lack of new contacts (both with people of the same age and with younger people). The central characteristic of the Alone category is the intensity of being alone: depending on the dimensional expression, the intensity is strong or weak.**

Variety management

Within the framework of selective coding, the three categories were in accordance with the coding paradigm according to STRAUSS (Strauss 1998, pp. 56–65; see Strauss 1991, p. 57) systematically and schematically related to the core category (Böhm 1994, p. 136). The result of the analysis according to grounded theory is the theory of variety management (see Figure 4). This describes how older people living alone manage variety in their everyday lives. The three categories already described—core category Variety, category Rest,

and category Alone — are relevant here. Looking at the three categories individually, without considering their relationships (relationships) to each other, the frequency of rest occurs in 9 out of all 14 cases. The low intensity of the category Alone also occurs in 9 out of 14 cases. The difficulty of the core category high Variety was also found in 9 out of 14 cases. When examining the relationships between the categories, relationships were found between all three categories. However, the strongest relationship is between the causal condition of variety and the strategy for coping with variety. The analysis also showed that the theory of variety management is not a closed process, but rather a cyclical model. This is caused by the fact that the strategy (category Alone) indirectly causes the core category Variety as a consequence. Coping with variety management is therefore a variety. This cyclical model is a special feature of the theoretical approach (see Figure 4).

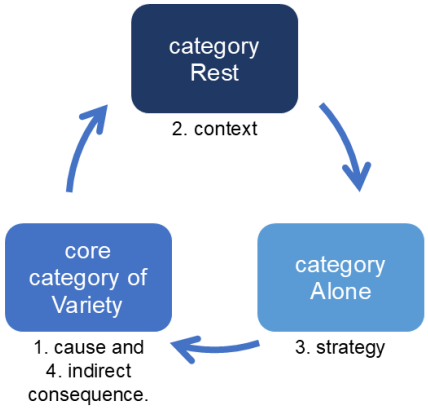

Figure 4: Theory of variety management (cycle model)

All cases examined, with their respective characteristics, could be classified in the detailed cycle model of variety management (see Figure 5). The causal condition for the occurrence of variety management (A) is the core category Variety with the characteristic

difficulty (low or high). The category Rest with the characteristic frequency (rare or frequent) forms the contextual conditions of variety management. The category Alone with the characteristic intensity (low or high) is the strategy for coping (actions for coping) with variety management.

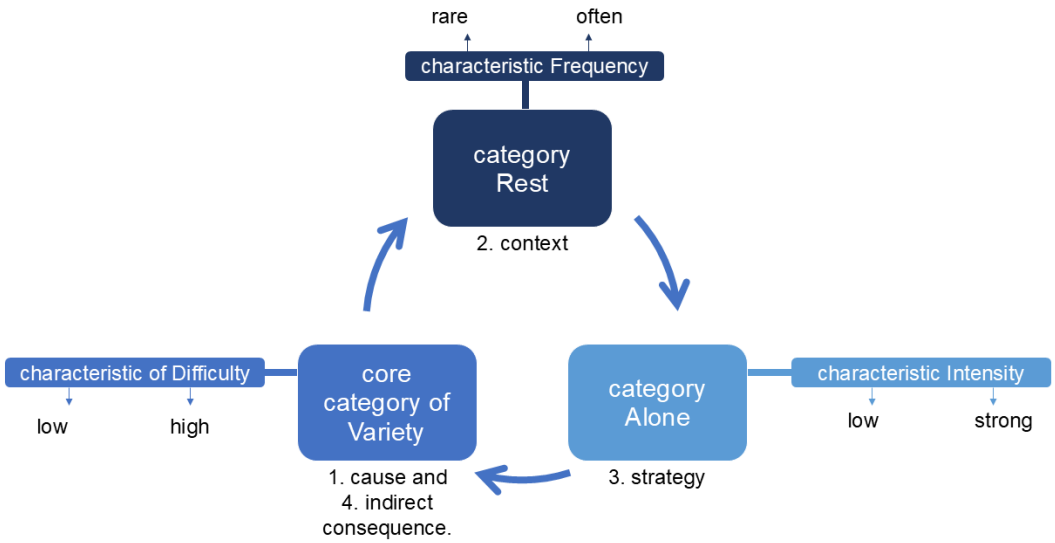

Figure 5: Detailed cycle model of variety management

In the analysis based on grounded theory, no cases were found in which variety management did not occur. The theoretical approach of variety management therefore has a broad scope, as all the case domains surveyed can be integrated into the approach. As the sample was compiled in a rural region in accordance with the expected future living conditions in the demographic change in Germany as described, the theoretical approach of variety management is thus integrated into the associated broader framework conditions. The individual cases in the sample could be assigned to two opposite poles (opposite pole I and opposite pole II) and two gradations (see Figure 6). These represent the changes in variety management associated with the ageing process within the theoretical approach.

The two gradations and the two opposite poles also show how the characteristics of variety management change within this ageing process. While on the one hand the difficulty of variety increases steadily, at the same time the need for rest or breaks increases, i.e. the frequency of the Rest category increases and the intensity of the Alone category also increases. These changes associated with ageing increase the challenge of managing variety in everyday life. The opposite poles and the two gradations also show that the cycle model of variety management is not static. As the characteristic values of the categories show, it can change within the ageing process. The cases that could be assigned to the two opposite poles each have the same characteristic values corresponding to the respective opposite pole. In these cases, the characteristic values of the categories of variety management are therefore identical. The cases that were found as gradations between the two opposite poles show slight differences in the characteristics of variety management. However, they could be assigned to two clusters (referred to as gradations).

Figure 6: Opposite poles and gradations

Opposite pole I. has proven to be the central model of variety management. The high difficulty of the core category of Variety in 5 out of 14 cases is the main causal condition for variety management. The frequency of Rest in 5 out of 14 cases is the essential element in

the context (interaction between the actors) of variety management. The low intensity of the Alone category in 5 out of 14 cases is the central strategy of the interviewees (m/f) for managing variety. Together with others (= low intensity of the Alone category), the high level of variety is therefore managed in the majority of cases. Rest breaks are often taken in the context of variety (= frequency of rest often). As the opposite pole I. shows, the central strategy for coping with variety is to cope with it independently but together with others.

Importance of variety management for the design

Variety (see core category Variety), which can evoke a sense of adventure, curiosity, excitement and joy for younger people, can become a burden of varying degrees in older people. Variety can also be caused by a new product design or a new technological development. In order to cope with this change, it is important to have opportunities to rest (see Rest category) while using the design. In the design context, these can be mental, physical or emotional breaks that are integrated into a service design, an interface design, a game design or even a product design. In the event that a variety cannot be managed alone (see Alone category), the design should already include support options. For example, this could be learning support, advice, personal contacts or even direct service offers. Due to demographic change, the number of men and women aged 65 and older in Germany will increase. This will presumably increase the need for design solutions based on the theoretical approach of variety management in all phases (opposing poles and gradations). In future, a design should therefore already be examined during the development process with regard to the associated variety, the category of Rest in context. For concrete design practice, this means:

- **before introducing a new design, check what variety it will create for the older target group,**
- **to check whether there are enough opportunities for users to take a break or rest while using the design,**
- **ensure that support services for managing variety are integrated into the design. It should be possible to access these services on their own initiative and easily according to their individual needs. Within a strategic design development process, it should be investigated from the outset what support can be provided by the design for managing variety (see Figure 7).**

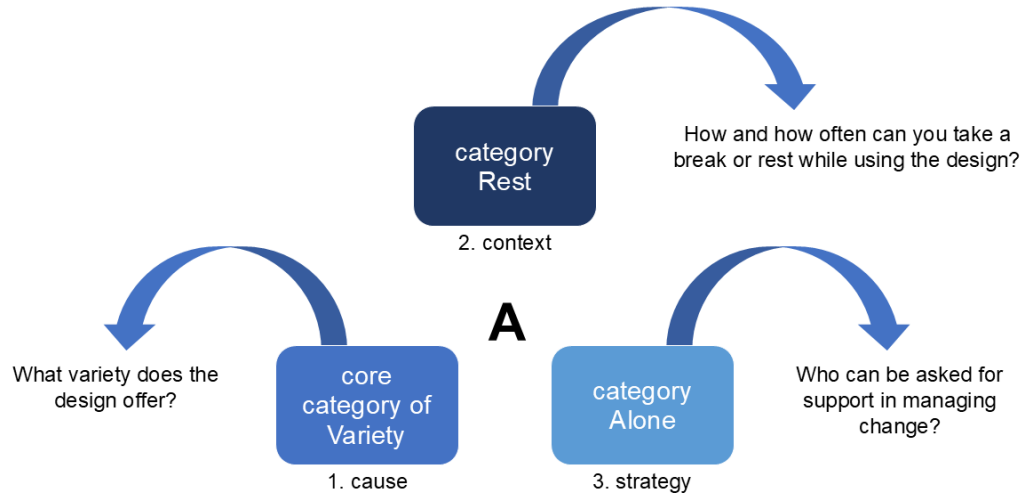

Figure 7: Importance of the core category Variety, the category Rest and the category Alone for the design

The integration of the three categories of the theoretical approach of variety management into the strategic design development process enables the cross-disciplinary development of design solutions that meet the age-specific needs of men and women aged 65 and older who live alone in the context of demographic change in Germany. In this way, they can contribute to independence in old age. The theoretical approach can be integrated into the strategic design

development process in all design disciplines. While previous design approaches have primarily focused on the physical limitations associated with old age, the theoretical approach of variety management is dedicated to the independent lifestyle of older people aged 65 and older who live alone and the associated use of the designed, everyday living environment. On the one hand, design solutions can be created in the future that minimize variety management. On the other hand, practical design solutions can be developed that enable the management of variety in old age. In practice, the approach can be used across design disciplines and industries in at least five different ways:

1. to review and then further develop an existing design (cross-disciplinary),

2. to develop a new design (cross-disciplinary) that is aimed at the mass market and therefore also includes the target group of people over 65 living alone in the context of demographic change,

3. to develop a design that is specifically aimed at the target group of over-65s living alone in the context of demographic change,

4. to introduce new technologies into a niche or mass market,

5. and for the strategic development of all other design components associated with the design (from product design to the associated services and marketing of the products).

Possible applications of variety management in design practice

The practical applicability of the theoretical approach of variety management was tested in practice once after the empirical research was completed. To this end, a service design was developed for an

everyday service for the elderly in the rural region of Ortenau in southern Germany. This is specially adapted to the needs of men and women aged 65 and older living alone and is based on the findings of the qualitative study "Everyday life in old age". The everyday service was developed using the Service Design Thinking strategy and innovation method (Stickdorn and Schneider 2016) and the Business Model Generation innovation method (Osterwalder and Pigneur 2011 and Joyce, A., Paquin, R., & Pigneur, Y. 2015). Four methodological tools were selected from the Service Design Thinking tools according to the four development stages of Service Design Thinking (exploration, creation, reflection and implementation) and implemented one after the other (cf. Stickdorn and Schneider 2016). These are the tools personas, scenarios, desktop walkthrough and triple layered business model canvas shown in Figure 8.

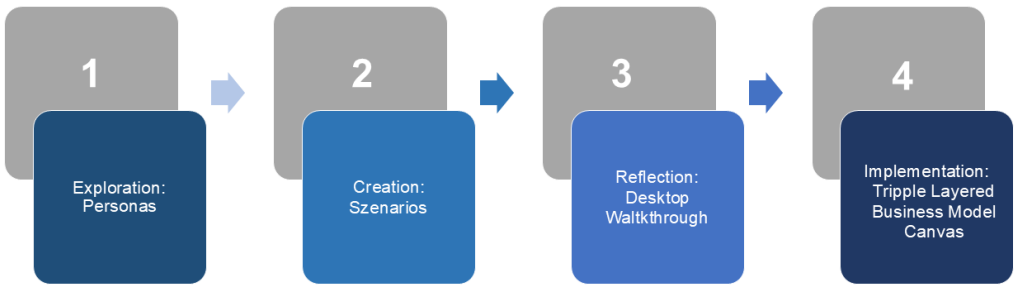

Figure 8: Chronological order of the tools used

The aim of the strategy development was to make the everyday lives of men and women aged 65 and older living alone in the rural region of Ortenaukreis easier through the services of a non-profit company. The theoretical approach of variety management was already used in the first development step - the personas. The personas were created according to COOPER (Noessel et al. 2014, Cooper 1999, cf. Cooper et al. 2010, p. 119). To construct the personas, the behavioral variables were first identified. The number of variables found can vary for

different projects (cf. Cooper et al. 2010, p. 119). Within the persona development for the service in old age, 21 behavioral variables were found for the role of a senior living alone. In contrast to classic personas, the behavioral variables of the personas also include the three categories of variety management: the core category Variety, the category Rest and the category Alone. This simple step enabled the theoretical approach of variety management to be incorporated into the strategy development. The result of the strategy development is the Triple Layered Business Model Canvas for a service for everyday life in old age in Ortenau.

Conclusion

Design (across disciplines) can support the independent lifestyle of ageing people in their own homes in the context of demographic change by building on the theoretical approach of variety management in design development. To achieve this, design development must take place at a strategic level. The involvement of users in strategic design development, for example through co-creation processes, is essential. The theory of variety management can be applied to strategic design development in all design disciplines. The aim of strategic design development based on the theory of variety management must be to ensure that variety can be managed according to an individual need for rest and according to an individual characteristic of the category Alone. It should be emphasized that - as the practical application of the findings has shown - the theory of variety management is particularly suitable for the development of products in the field of service design.

The results of the study also raise the question of the extent to which the theory of variety management can also be used for other older

target groups, such as people in need of care or affected by dementia or Alzheimer's disease. There is a need for further research in this area. Due to the high social relevance of the topic, the question also arises as to how the current and future findings of this field of research could be incorporated in greater depth into academic design training at universities and colleges in Germany.

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Letter from the Chairman's Desk

By Sunil Bhatia PhD

My earliest encounter with the idea that a product can guide its users came during a physics lesson on synchronization. Our teacher narrated a story to explain the concept. She told us about a suspension bridge built by the British government that had to be closed on its inauguration day, fearing collapse due to unexpected vibrations.

A curious student asked, "Madam, was the vibration caused by wind over the river?"

She replied, "No. The designers had accounted for environmental factors like wind and potential structural stress. What they hadn't anticipated was the collective behavior of people walking across the bridge."

She explained that as people walk, they shift their body weight from one leg to the other. Individually, this movement seems minor. But collectively, as many people stepped in rhythm, the bridge began to experience synchronized vibrations. People unconsciously started matching their steps with others around them. This tendency to imitate the behavior of others becomes especially apparent in moments of collective crisis or danger. It is not a conscious act but a subconscious one—an instinct for survival. To maintain balance, people widened their stance, eventually leading to a unified, marching-like rhythm.

The designers were aware that synchronized army marches could generate dangerous vibrations, which is why soldiers are instructed to break step while crossing a bridge. But they had not anticipated similar behavior from civilian crowds. This incident shows how products—or in this case, structures—can influence and guide user behavior in unexpected ways.

A similar phenomenon occurs when an audience claps. At first, the applause is random, but soon a synchronized rhythm emerges. The product—or the context—subtly guides collective behavior.

We see this in physics experiments too: place multiple pendulums near each other, and although they swing at different rhythms initially, they eventually synchronize.

At the biological level, I witnessed this while designing a sewage system for a women's hostel. Initially, each student had her own menstrual cycle. But after a few months of living together, their cycles began to synchronize. To accommodate this, I installed larger drainage pipes to prevent blockages caused by the simultaneous disposal of sanitary napkins. Here, human biology influenced design decisions.

I also recall a time when water scarcity made bathing impossible. Over time, my body began to itch due to the accumulation of dead skin cells. I realized that the practice of bathing may have originated as a response to such discomfort. The itching, in a way, guided the habit of regular cleaning. Similarly, neglecting to clean our homes leads to microbial buildup, which can harm our health. These aren't conscious decisions but responses to biological and environmental cues.

The widespread use of the comb can also be seen in this light. The body demanded attention to the discomfort of tangled hair. People

first used their fingers to untangle, which eventually led to the invention of the comb. Washing with alkaline water followed, and hair care routines evolved. In the plains, people often oil their hair to keep it in place due to the absence of strong winds. By contrast, people living in coastal regions, regardless of gender or age, tend to grow long hair. The constant pressure of strong winds on short hair often causes mild headaches. To counter this, they tie their hair—a subconscious adaptation to environmental discomfort that ultimately guided the invention of hair bands and combs.

Clothing, too, was a brilliant invention to protect against weather but eventually became a breeding ground for microbes. This led to the development of detergents—products designed to eliminate microbes through the action of surface tension and water.

I once witnessed a mother elephant give birth. As the newborn fell to the ground, the mother gently nudged it to stand. It reminded me of human childbirth, where the umbilical cord must be carefully handled to avoid complications. The cord, in this way, acts as a guide—nature teaching us care, compassion, and precision.

Doctors often warn that in old age, constipation can lead to heart attacks. The strain of defecation puts pressure on the heart, sometimes fatally so. This guides us toward fiber-rich diets, showing how bodily needs shape lifestyle choices.

Universal behaviors like eating, crying, laughing, and defecating influence how we design our environments. For example, the squatting position during defecation requires two footrests—not only for balance but to keep the body elevated above waste. In the absence of proper design, people instinctively shift forward to avoid contact.

Our products, habits, and behaviors often emerge not from deliberate instruction, but from nature's gentle guidance.

My grandmother was an eyewitness to the Jallianwala Bagh Massacre in Amritsar, Punjab. A large crowd had gathered on Baisakhi Day to demand freedom from British rule. In response, Brigadier General R. E. H. Dyer surrounded the garden with Gurkha and Sikh infantry from the British Indian Army. Jallianwala Bagh had only one exit; the other three sides were enclosed by buildings. After blocking the exit, Dyer ordered his troops to fire on the unarmed crowd.

I once asked my father, "If thousands were present, why didn't they escape the bullets?"

He replied, "The garden's high walls made escape impossible. The only exit was blocked by soldiers, who lay on the ground with guns fixed on tripods. They fired at people standing more than a foot above ground. Running created a stampede. Some women and children jumped into the dry well in the garden, and many died from the crush of others falling over them."

Now, as I reflect on it in old age, I see how even the gun guided people's behavior. The guns were so heavy they had to be mounted on fixed tripods. This design required soldiers to lie down to shoot. Perhaps some clever people realized this and lay flat on the ground to avoid the bullets. When the soldiers paused to reload, they got up and ran. It was the weapon that dictated the crowd's movements.

This recalls how domesticated animals are controlled by piercing their noses and attaching ropes to the ring. When the rope is pulled, pain forces them to move in the desired direction.

I remember a winter night when a family member got up from bed saying, "I need to relieve myself or I won't sleep well." Soon after, each family member followed. It was like a chain reaction—one person's action triggering the rest. It reminded me of how a decaying fruit in a basket can cause others to rot unless separated in time.

While explaining this "product guides user behavior" concept in class, I had a realization about evolution. A product that keeps guiding its users and adapts along the way creates a feedback loop—that process is evolution.

Take blood groups as an example. They're classified based on proteins on red blood cells. The most intriguing is blood group 'O', which lacks certain proteins and is considered a universal donor. Its prevalence might be a result of regional infections over time, shaping immunity. In my view, the ultimate evolutionary goal of human blood might be to attain the 'O' group status—a product of continual adaptation.

Just imagine how design would differ if humans had tails, or didn't evolve opposable thumbs, or still walked on all fours. Evolution has guided us, and our designs have evolved accordingly.

I'm also delighted to present the June 2025 Vol-20 No-6 special issue, guest edited by Dr. Brigitte Wolf, Professor Emerita of Design Theory at the University of Wuppertal. She was also Professor of Design Management at the Köln International School of Design (KISD), TH Cologne, and served as Head of Design Theory at the German University in Cairo. She also lectured on Brand, Identity, and Design Management at Inholland University in Rotterdam. With a background in industrial design and psychology, and a doctorate in psychology, she has curated ten unique articles for this special issue, each offering fresh insights into sustainability.

I suggested to her that the July issue was becoming too voluminous—we've received consistent feedback to restrict each issue to a maximum of 150 pages due to download challenges. She graciously agreed to split the issue across two editions: June 2025 (Vol-20 No-6) and July 2025 (Vol-20 No-7).

Enjoy reading.

With Regards

Dr. Sunil Bhatia

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Forthcoming Issues

Year 2025 declared as Women's Designer

July 2025 Vol-20 No-7

Dr. Brigitte Wolf

Brigitte Wolf is Professor Emerita of Design Theory at the University of Wuppertal and was also Professor of Design Management at the Köln International School of Design (KISD), TH Cologne. She served

as Head of Design Theory at the German University in Cairo and as Lector of the Brand, Identity, and Design Management research unit at Inholland University in Rotterdam.

Her background is in Industrial Design and Psychology. She received her doctoral degree in Psychology. Her professional background includes working in a design studio as well as acting as Vice Director of the German Design Council and serving as UNIDO consultant at the Oficina Nacional de Diseño in Havana, Cuba, where she also lectured at the Instituto de Diseño Industrial.

Her teaching experience spans master's programs at the Lucerne School of Design and Art, ecosign Academy in Cologne, the doctoral program at the University of Teheran and workshops for students and professionals in Brazil, Cuba and Argentina.

She was honored with the title Assistant Professor at ISDI (Havana) and Adjunct Professor at the University of Teheran. She curated the traveling exhibition Designing the Environment for the Goethe Institute and initiated the international Sustainable Summer School.

August 2025 Vol-20 No-8

Shannon Iacino is a Professor of Industrial Design and Design for Sustainability at Savannah College of Art and Design. Her work

specializes in leveraging technology to advance the principles of the circular economy and design for social good. With a background in sustainable design and emerging technologies, Shannon integrates innovation and ecological responsibility into her teaching and research. Her work emphasizes creating systems and products that minimize waste, promote resource efficiency, and address societal challenges. Through interdisciplinary design projects, Shannon collaborates with students and communities to develop impactful solutions that balance technological advancement with sustainable practices.

September 2025 Vol-20 No-9

Jessica NOËL-SMITH

BSc(hons) MArch ARB RIAS _ PhD Researcher, Architect / Founder of Beyond Access , University of Stirling

Jessica Noël-Smith is a chartered Architect, advocate, and academic specialising in accessible and age inclusive design practice. Over the past 20 years Jessica has gained a variety of interdisciplinary experience including working in the disability sector, architectural practice, social housing, and consulting on dementia design as an

Associate for the Dementia Services Development Centre, University of Stirling. Jessica's latest research contributes to a new interdisciplinary cluster at the University of Stirling which focusses on accessible environments. Her PhD thesis examines the ethical, moral and sociological impacts of contemporary accessible architectural design practice, revealed by the lived experiences of disabled people and the gap between technical compliance and human rights.

In 2024, Jessica founded Beyond Access - a consultancy supporting designers and placemakers to go beyond mere compliance when creating accessible and life-long inclusive environments. Services include training, design review, access auditing and ad-hoc project support.

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New Books

https://www.morebooks.shop/shop-ui/shop/book-launch-offer/74414a1df61c3d2ea8bf46ae7e3c0cf31769f261

it is available on www.morebooks.de one of the largest online bookstores. Here's the link to it: https://www.morebooks.de/store/gb/book/design-for-all/isbn/978-613-9-83306-1

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HOW WE LIVE: Through the Products that We Use

Authored by : Sugandh Malhotra,

Professor, IDC School of Design, IIT Bombay (INDIA)

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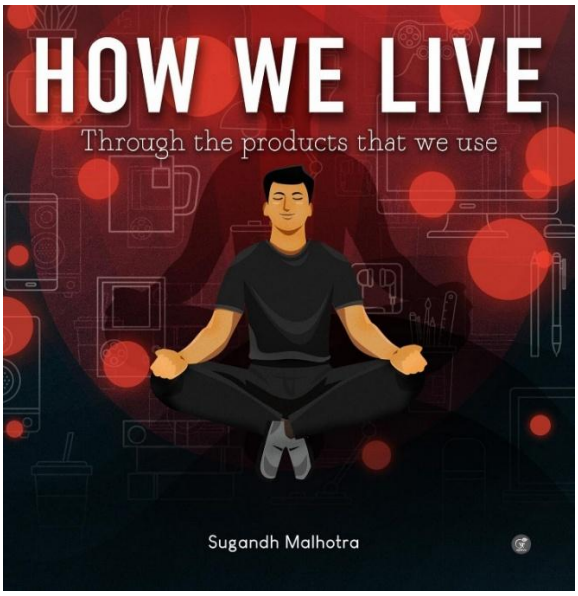

Products tell stories about their users, their likes, tastes and journeys. 'How We Live' book aims to outlay, document and study the used products and create a persona of the users through a brief narrative. This visual documentation book is an excellent resource to observe and acknowledge the subtle differences in choices that are driven by nuances other than personal preferences.

Available at: Amazon.in, Amazon.com, Astitva Prakashan

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MOVE MUMBAI: Kaali Peeli and Beyond

Authored by : Vivek Kant, Sugandh Malhotra, Angshuman Das, Tekhenutso Theriah

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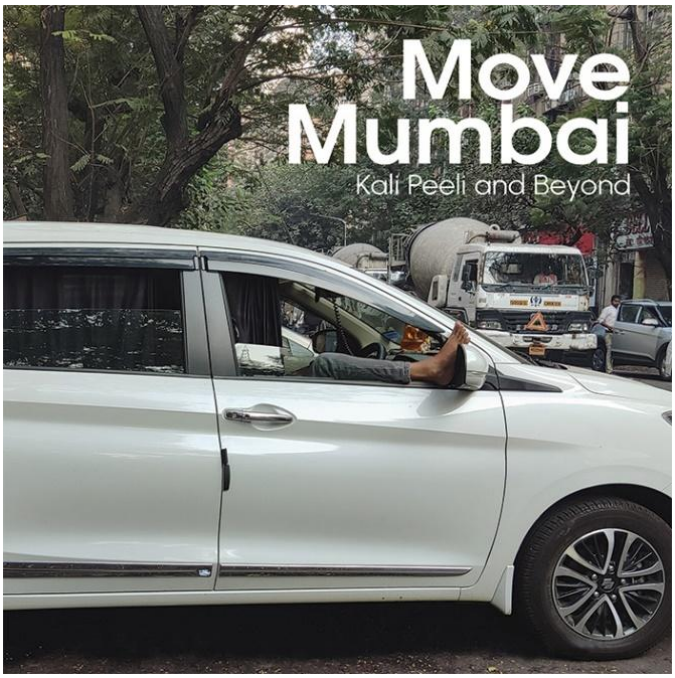

Move Mumbai" is an incredulous yet everyday traffic story from the streets of Mumbai captured through a series of photographs. We closely observe how Mumbaikars use their vehicles, and live with and around them. From cab drivers to bus passengers, from goods carriers to bikers, to children, and pedestrians, Mumbaikars encounter hundreds of vehicles daily while commuting between any two places whether they may or may not be in one themselves. While a two-wheeler motorbike is designed to carry two people. Mumbaikars still manage to fit multiple, especially younger children, in ways that a designer would typically not envision. This reflects in certain ways the economic constraints faced by many Indian families, the cultural value placed on integrated family living, and their resourcefulness. This is one of the many ways in which the city dwellers have appropriated vehicles. We hope that the readers relook at these everyday images with a new pair of eyes to understand the seemingly mundane yet incredulous images of the mobility of Mumbaikars.

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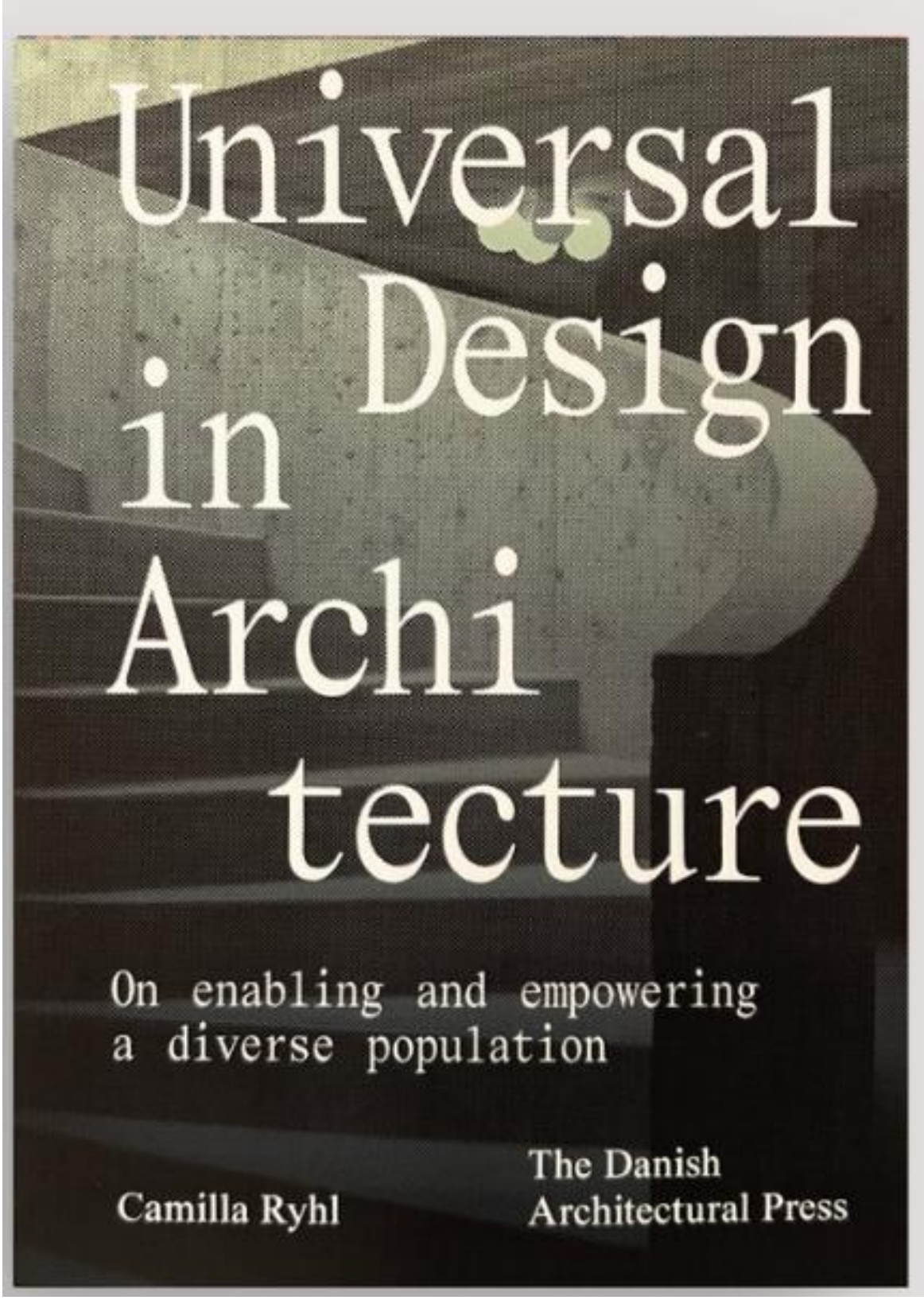

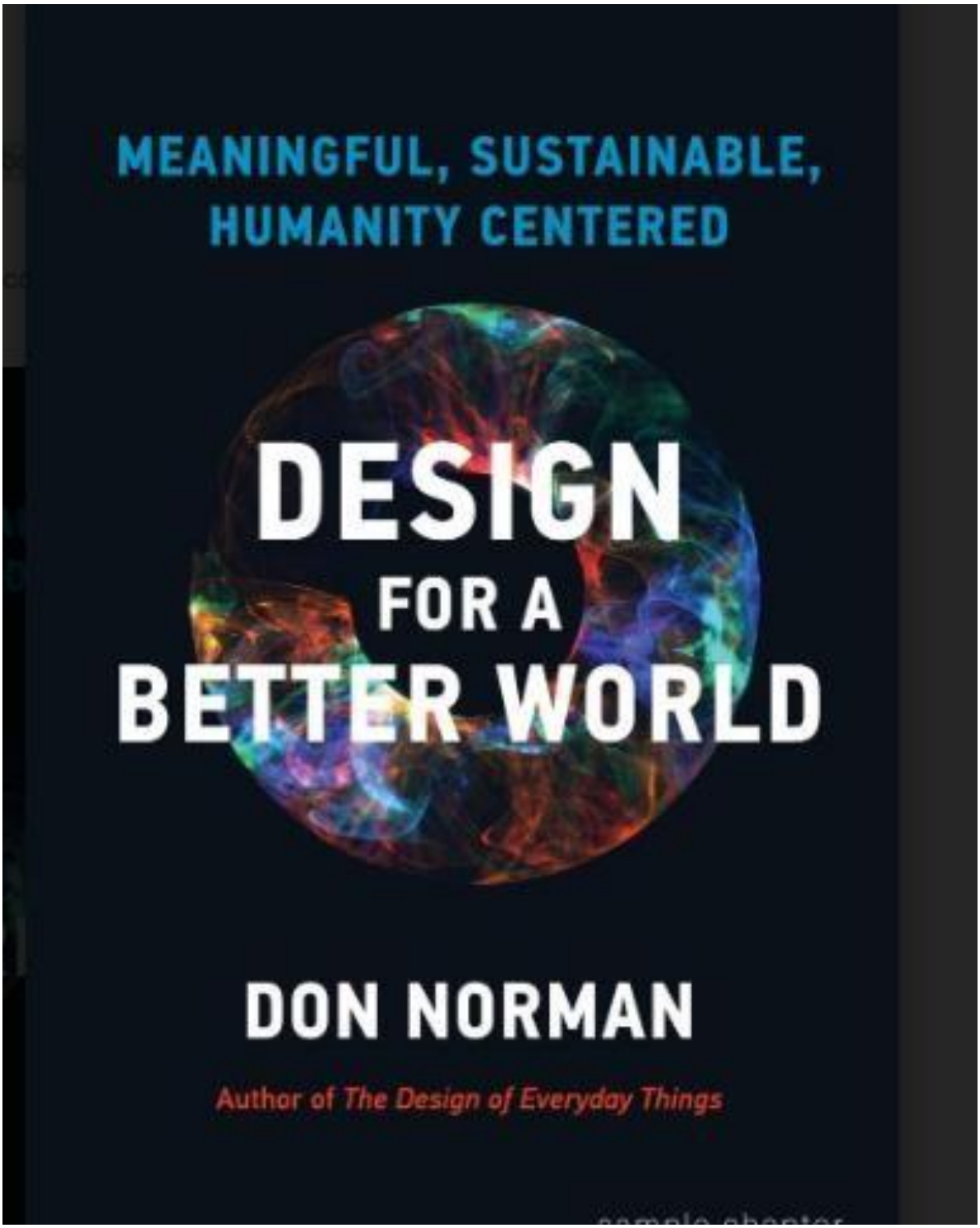
MEANINGFUL, SUSTAINABLE,
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Author of The Design of Everyday Things

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Emilio Rossi (Editor)

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News

1. 'In Perspectives' challenges design industry to rethink inclusion from the inside out

Developed by Montreal-based studios Six Cinquième and Never Was Average, this human-centred framework offers a timely and practical way for design professionals to embed equity, empathy and humility into their everyday practice.

In a time when much of the creative industry is quietly retreating from the promises made in 2020, a group of Montreal-based designers is offering a bold, human-centred alternative. 'In Perspectives' is a new initiative from design studio Six Cinquième in collaboration with Never Was Average that's not just a response to the shifting cultural winds around DEI—it's a reframing of how inclusion can live in the day-to-day work of design. Backed by the Bureau du Design de Montréal and supported by the Ministère de la Culture et des Communications du Québec, the project is part of the city's wider Quality Toolkit initiative, which aims to equip creatives with tools that lead to better, more inclusive outcomes. What makes 'In Perspectives' different is its grounding in lived experience. Rather than offering a prescriptive checklist or generic guidelines, the framework is built on stories, dialogue, and real-world application.

Over a year in development, the project involved co-creation workshops with BIPOC designers and community members, in-depth documentation of lived experiences, and a shared commitment to humility. Miro Laflaga, co-founder of Six Cinquième, says: "The answers don't come from the designers; they come from the people we are designing with. It takes humility to be real with yourself and say, I don't have all the answers – and that's okay."

The result is a resource that encourages design professionals to step back from universal assumptions and lean into complexity. As Harry Julmice, co-founder of Never Was Average, explains: "Universal design gets talked about like it's the gold standard. But for many of us, it doesn't feel that way. When your lived experience exists outside the assumed norm, universalism starts to feel like code for someone else's normal."

Instead, the framework invites designers to embrace intersectionality, nuance, and contextual relevance. That shift can be uncomfortable – but that's the point. 'In Perspectives' isn't about comfort; it's about truth. It asks who design truly serves and what it means to create from a place of care, curiosity, and community.



The team behind the project were intentional in their collaborative approach. Rather than speaking for under-recognised groups, they invited those communities in from the start. Workshops became spaces for difficult, necessary conversations about exclusion, visibility, and the emotional impact of design decisions.

Ash Phillips, co-founder of Six Cinquième, says: "We didn't want to lead with assumptions. The goal was to address pain points for both designers and community members by listening first."

This dialogue shaped the structure and language of the toolkit, which blends practical steps with reflective prompts. From inclusive facilitation techniques to examples of co-creation, it offers an approach that's less about process and more about mindset. For Six Cinquième and Never Was Average, the project needed to remain actionable while also leaving room for growth and learning.

To ensure the work wasn't extractive, the team built in accountability from the outset. "We weren't interested in a top-down consultation process," says Joanna Chevalier, co-founder of Never Was Average. "We wanted real conversation—unfiltered, unstructured, outside of systems built by institutions or corporate agendas."

That community-first ethos also shaped how the project was designed and produced. The two studios handled the visual identity, research, and development in-house, allowing for consistency and cultural fluency. The result is a digital experience that feels accessible, warm, and grounded in real-life contexts.

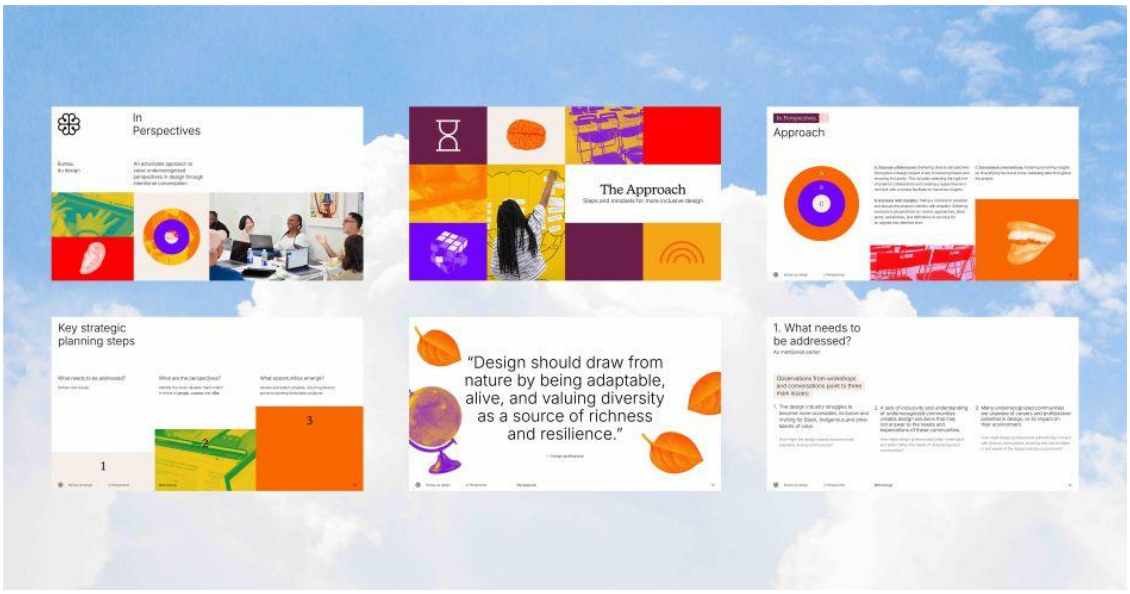
Importantly, 'In Perspectives' doesn't just speak to big institutions or government-led projects. It's designed for everyone. Whether you're an independent designer, a small studio, or a creative director at a larger agency, the framework invites you to reflect on your role, your influence, and your responsibility.

That reflection can start with small shifts. "One of the most important things designers can do is reconsider who their work is really serving," says Miro. "Our power doesn't lie in serving algorithms or shareholders – it's in putting people at the centre of our practice."

Ash adds, "It comes down to intention. Designers have a lot of power over how people experience the world. So, what impact do we want to have? That's a mindset shift—one that starts with acknowledging that our process can shape real outcomes for real people."

Part of what makes 'In Perspectives' resonate is its grounding in Montreal's design legacy—a city known for its creative talent and cultural diversity. However, as the team points out, the challenges the project addresses aren't unique to Canada. Around the world, design communities are grappling with questions of representation, inclusion, and access.

"Montreal's multicultural lens gave us the self-awareness to question our own industry," says Ash. "But the toolkit is designed to travel. Diversity might look different in every city, but the need for inclusive practices is universal."



As the backlash against DEI initiatives intensifies across sectors, this project feels especially urgent. For Harry, it's about staying the course even when the cultural mood shifts. "The reality is that society is becoming more diverse every day. If organisations want to remain relevant, they need to adapt. 'In Perspectives' helps translate values into long-term, sustainable practices."

That long-term view is key, and rather than offering quick fixes, the project champions patience, dialogue, and accountability. It asks designers to show up fully, be vulnerable, and remain curious. For studios looking to take the first step, the advice is simple: start with intention and stay open.

"Ask yourself what you want your legacy to be," says Joanna. "Is it a perfect portfolio built on the same old process? Or is it the impact you've had by designing in ways that are more human, more generous, and more honest?"

With 'In Perspectives', the team at Six Cinquième and Never Was Average isn't just offering a framework—they're inviting a mindset shift. One that acknowledges the complexity of human experience and the power of design to shape it. In doing so, they're building a path forward that doesn't just include more people but starts with them.

(Courtesy: Creative Boom)

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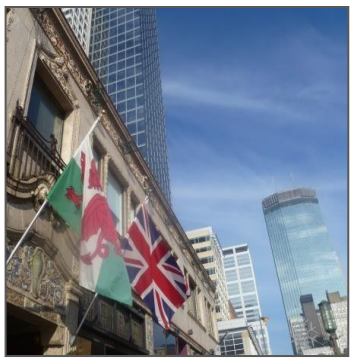

Programme and Events

World Design Congress
Design for Planet
London 2025

9-11 September 2025

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ethical leadership
a new frontier for design
June 3-7, 2025 | Nantes, France
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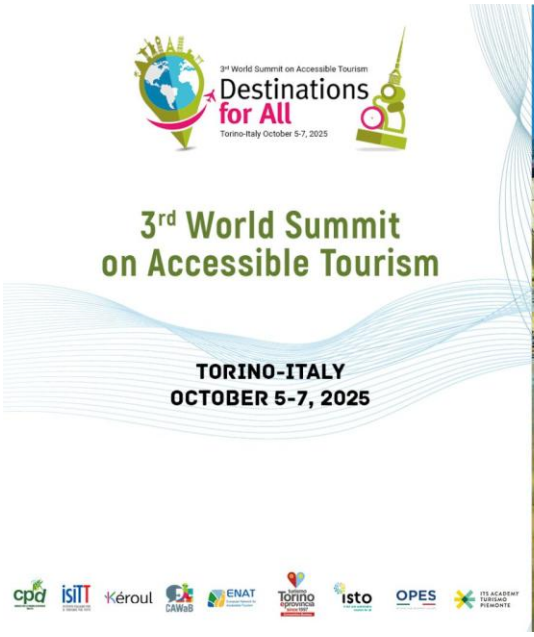
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A NEW GLOBAL AGENDA FOR ACCESSIBLE TOURISM
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STUDENT SERVICE DESIGN COMPETITION!

OBJECTIVE:
The competition aims to leverage students' creativity and service design skills to address real-world challenges faced by India's social sector. Solutions must be innovative, actionable, and culturally sensitive, motivating NGOs to implement them effectively.

ELIGIBILITY AND PARTICIPATION:
Open to undergraduate, postgraduate, and doctoral students enrolled in academic institutions during 2025.

KEY DATES:
Registration Deadline: **Feb 15, 2025**

Submission Deadline: **Jun 15, 2025**

Announcement of finalist teams: **Aug 15, 2025**

Final Presentations: **Oct 6-8, 2025,** at the ServDes25 Conference

Announcement of Winners: **Oct 8, 2025,** at the ServDes25 Conference

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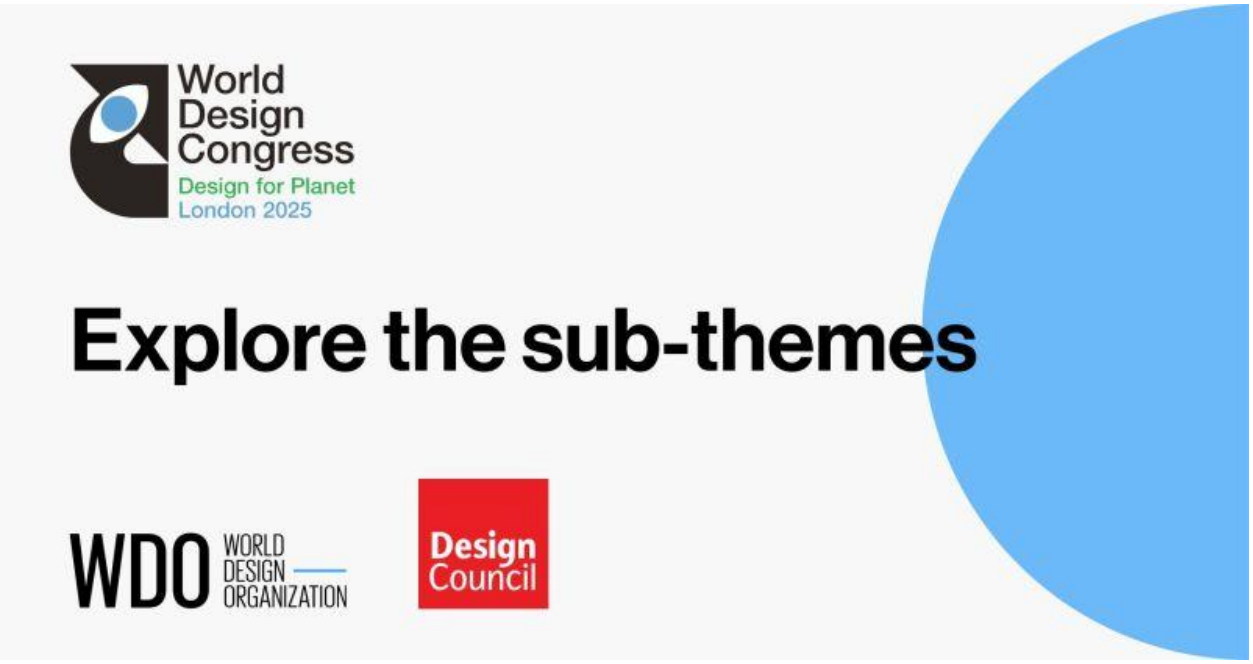

Are you curious about submitting a paper or poster to the World Design Congress in London this September? In line with the hashtag#DesignforPlanet theme, swipe to learn more about the first submission sub-theme of Shifting Paradigms — From Extractive to Regenerative Design, which aims to highlight work that showcases the transformative potential of design in addressing planetary health.

Don't miss out! Submissions are open globally until 31 May 2025.

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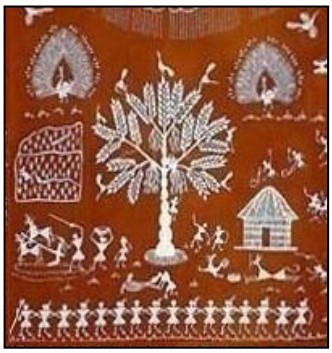

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