# **ED2024**

18th International Technology, Education and Development Conference

4-6 March 2024 Valencia (Spain)

## CONFERENCE PROCEEDINGS



Sharing the Passion for Learning



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Sharing the Passion for Learning

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#### **INTED2024 Proceedings**

18th International Technology, Education and Development Conference March 4th-6th, 2024 Valencia, Spain

#### Edited by

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#### **Preface**

The INTED2024 Conference Proceedings contain the papers presented at the 18th International Conference of Technology, Education and Development, held in Valencia, Spain, from the 4th to the 6th of March 2024. INTED takes place annually and its aim is to bring together academics and researchers to continue the exchange of innovative ideas and research. Participants from over 78 countries joined INTED2024 to learn about the changing world of education and learning technologies.

INTED's focus is on Education and Educational research. Since many international education experts attended the conference, participants were able to network and collaborate with other delegates from around the world, participating in thematic sessions, networking activities, workshops and interactive sessions. The keynote speeches are available at IATED Talks: iated.org/talks.

The INTED2024 Proceedings, exclusively in English, are included in the IATED Digital Library: library.iated.org. The INTED2024 International Program Committee was composed of lecturers and researchers from multiple countries. A blind peer review process was followed to guarantee the quality of the final publication, in which the following points were evaluated: information content, relevance to the educational field, general structure, clarity of contents, originality, and relation to the conference topics and disciplines.

IATED endeavors to publish original and high-quality research papers. Following the expected ethical standards, all authors that published their papers in the INTED2024 Proceedings signed the IATED copyright transfer form. More information about the publication ethics of IATED is available at iated.org/publication\_ethics.

We wish to extend our most sincere thanks to all who contributed to the INTED2024 Proceedings. Thanks for your dedication and for sharing your passion for learning.

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#### **INTED2024 Keynote Speakers**

#### Mike Sharples - The Open University (UK)



Keynote speech: Social Generative AI: A Future for International Education

Development of Generative Artificial Intelligence is following the same path as the World Wide Web: research, breakthrough, integration into workplace tools, development of apps. For the Web, the next major development was social media and services. I suggest we will soon see the emergence of "Social Generative AI" – AI systems interacting with humans and with other AI tools in complex social networks. Social Generative AI will have

profound implications. In education it will offer new roles for AI as a conversational partner and collaborator; it will break down language barriers and connect people across cultures. However, Social Generative AI may also erode trust in information and create networks of interacting machines beyond human control. In my talk, I will propose we develop social AI for education that is not only effective and ethical but also caring and founded on good pedagogy. The result could be a future for international education that merges human empathy and experience with social artificial intelligence.

#### Biography:

Mike Sharples is Emeritus Professor of Educational Technology at The Open University, UK. He gained a PhD from the Department of Artificial Intelligence, University of Edinburgh on Cognition, Computers and Creative Writing. His expertise involves human-centred design and evaluation of new technologies and environments for learning. He provides consultancy for institutions worldwide including UNESCO, UNICEF, universities and companies. As Academic Lead for FutureLearn.com he led pedagogy-informed design of the open learning platform. He is an Associate Editor of the International Journal of Artificial Intelligence in Education. He is author of over 300 published papers in the areas of educational technology, learning sciences, science education, human-centred design of personal technologies, artificial intelligence and cognitive science. His recent books are Practical Pedagogy: 40 New Ways to Teach and Learn and Story Machines: How Computers Have Become Creative Writers, both published by Routledge, and An Introduction to Narrative Generators, published by Oxford University Press.

#### Sarah Newman – Harvard University (USA)



Keynote speech:
Facing this Moment Critically & Creatively: AI Pitfalls & Opportunities for Educators

Many educators are intimidated and overwhelmed by the rapid availability and uptake of AI tools like ChatGPT. How do these tools change the value of skills we've held dear to learning — and expression — such as writing? How do they exacerbate inequities between learners? What do they mean for the role of educators? And what can, and should, we do right now?

New technologies have always changed how we learn, and how we teach. As an educator and AI researcher who leads the AI Pedagogy Project, I will offer recommendations (and some warnings) about how to best face this moment. We need to be both critical and creative. We need to separate AI hype from reality. As overwhelming as it feels, the introduction of these AI technologies offers a chance to revisit and revise what hasn't been working in education, while protecting what is most important. Centered on the value of interdisciplinarity, informed by technology ethics, and leveraging the opportunity that this indeed is, this talk will offer pitfalls to avoid, and concrete recommendations that educators can apply immediately.

#### Biography:

Sarah Newman is Director of Art & Education at metaLAB at Harvard University, a project of the Berkman Klein Center for Internet & Society. Her work explores the social, ethical, and pedagogical dimensions of artificial intelligence and other emerging technologies through research, art, and teaching. Newman leads the AI Pedagogy Project, a resource to provide educators materials for responsible engagement with AI technologies. Newman's research focuses on data transparency. She co-founded and serves as Research Lead of the Data Nutrition Project, which aims to mitigate bias in data-driven systems through tools and educational practices. Newman holds a BA in Philosophy from Washington University in St. Louis and an MFA in Imaging Arts from the Rochester Institute of Technology. She is also an installation artist who has exhibited work in New York, Miami, Berlin, London, and Rome, and has attended artist residencies in Germany, Italy, and Sweden. Previous honors include: AI Grant, Harvard Assembly Fellow, Harvard Berkman Klein Fellow, a Rockefeller AI Resident, Artist-in-Residence at Northeastern School of Law, and a grantee of the Notre Dame Tech Ethics Lab, a grantee of the National Endowment of the Arts, and winner of the 2022 Ars Electronica Award for Digital Humanity.

#### **Conference Tracks & Sessions**

The INTED2024 conference program is available online at https://iated.org/inted2024

#### ORAL SESSIONS MONDAY

Fostering Critical Thinking

Virtual Reality

Learning Analytics & Data Science Experiences

Post-Pandemic Scenarios in Education

**Exchange & Mobility Programmes** 

Barriers to Learning & Inclusive Practices

Science Popularization and STEM Education

English as a Medium of Instruction

Challenge and Problem-Based Learning

Augmented Reality

Digital Assessment

From COVID to Construction: Creating a Sense of Belonging

Intercultural and Multicultural Education

**Inclusive Education Teacher Training** 

Learning Factories & Remote Laboratories

AI and Chatbots in Language Learning

Game-Based Learning

**Extended Reality** 

Feedback and Assessment

Technology Enhanced Learning

**Employability Trends and Challenges** 

Equality, Diversity and Inclusion

**Teaching STEM** 

English for Special Purposes

Active Learning Experiences

e-Learning Experiences

Assessment in the Era of Generative AI

21st Century Skills

Tales from the trenches of Entrepreneurship Education and Innovation in HEIs

Special Education

Computer Science and Cybersecurity Education

Online and Technology-Enhanced Language Learning

#### POSTER SESSIONS MONDAY

Emerging Technologies in Education Pedagogical Innovations in Education

#### ORAL SESSIONS TUESDAY

Making Learning Accessible to Diverse Students Students' and Teachers' Perceptions of AI Virtual Learning Environments Digital and AI Skills for Educators Workplace & Lifelong Learning 1 Curriculum Design Experiences Mathematics in Higher Education English as a Foreign Language Service Learning & Community Engagement

Generative AI in Education

Mentoring & Tutoring

Pre-service Teachers' Experiences Workplace & Lifelong Learning 2 Quality in Education **Promoting STEM Careers** Student Wellbeing

Pedagogical Innovations

Generative AI Chatbots

MOOCs & Open Educational Resources

Professional Development of Teachers

Entrepreneurship Education

Educational Management and Digitization

Science Outreach and Communication

Student Safety and Protection

Collaborative & Team-Based Learning

Research on Generative AI in Education

Blended and Hybrid Learning

ICT Skills among Teachers

University-Industry Cooperation

Leadership in Education

STEM in Schools

Health Sciences Education

Student Engagement

Application of AI in Education

Mobile Learning

Unlocking the Potential: Quality and Growth in Initial Teacher Education

**Education for Sustainability** 

Institutional Cooperation in Education

Architecture & Civil Engineering Education

Transnational Medical Education: AIWMU Joint Medical Education Program

#### POSTER SESSIONS TUESDAY

**Educational Trends and Experiences** Challenges in Education and Research

#### VIRTUAL SESSIONS

#### **DIGITAL & DISTANCE LEARNING**

MOOCs & Open Educational Resources Blended & Mobile Learning LMS & VLEs e-Learning Experiences Distance Education in COVID-19 Times

#### DIGITAL TRANSFORMATION OF EDUCATION

Data Science & AI in Education Learning Analytics & Educational Data Mining Digital Transformation 21st Century Skills

#### INNOVATIVE EDUCATIONAL TECHNOLOGIES

Virtual & Augmented Reality Social Media in Education Videos for Learning **Technology Enhanced Learning** 

#### **TEACHER TRAINING & ED. MANAGEMENT**

ICT & Digital Skills Teacher Training and Support Professional Development of Teachers **Educational Management** 

#### **ACTIVE & STUDENT-CENTERED LEARNING**

Gamification & Game-based Learning Flipped Learning Problem & Project-Based Learning Pedagogical Innovations Active & Experiential Learning Cooperative & Team-Based Learning

#### ASSESSMENT, MENTORING & STUDENT SUPPORT

Assessment & Evaluation Mentoring & Tutoring Student Support & Motivation Student Wellbeing Developing Soft and Transversal Skills

#### **EDUCATIONAL STAGES & LIFE-LONG LEARNING**

From Pre-school to Secondary Education Vocational Training Transition to the Job Market Developing Entrepreneurship in Education Life-Long & Workplace Learning

#### **QUALITY & IMPACT OF EDUCATION**

Quality in Education Learning Space Design Service Learning & Community Engagement Social Impact of Education

#### **INCLUSION & MULTICULTURALITY**

Inclusive Education Diversity Issues Special Educational Needs Multicultural Education

#### LANGUAGE LEARNING AND TEACHING

Foreign Languages New Technologies in Language Learning Intercultural & Sociocultural Competences

#### **DISCIPLINE-ORIENTED SESSIONS**

Architecture & Interior Design Health Sciences Education Sustainable Development Goals in Education Business & Tourism Education

#### STEM EDUCATION

Mathematics & Statistics Engineering Education Computer Science Education STEM Experiences

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# DESIGN THINKING AS AN ENABLER OF CHANGE IN THE TECHNOLOGICAL MARKET: A PRACTICAL CASE STUDY OF COMPANY'S INNOVATION AND DIFFERENTIATION

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# Abstract

Design Thinking is among the most debated topics of the last 20 years. Although in the early years, its importance was relegated to the boundaries of the Design discipline, it has subsequently become an integral part of the management world debate as well. This is because different studies demonstrated how using Design Thinking in companies can generate a competitive advantage, produce customer orientation, support better decision-making, and thus contribute to innovation in organisations and to their transformation. Several scholars have also discussed how adopting Design Thinking in a company can facilitate the achievement of radical business innovations.

This study shows a practical case of a leading international electrotechnical company that decided to approach Design Thinking to differentiate itself. They had realised that their technological innovations were taking a long time to find their place in the market.

The article will show and discuss the different steps of the intensive (theoretical and practical) Design Thinking course and the results achieved (and declared) by the company thanks to the change of mindset undertaken to update and differentiate its offer.

Keywords: Design Thinking, Design Education, Divergent Thinking, Convergent Thinking, Case Study Research.

#### 1 INTRODUCTION

To facilitate the development of new products and services while simultaneously taking advantage of the associated opportunities for value creation and capture, organizations may adapt their business processes, technological capabilities, operations, and distribution channels. This makes organizational innovation an invaluable complement to product innovation [1]. It has been shown that innovation frequently necessitates some degree of flexibility about existing operations and established routines [2] [3], as well as the coordination of diverse organizational actors [4] various knowledge domains [5] and stages of the innovation process [6].

In recent years, various research and debates in the literature have shown how a valid response to developing new products and services in companies can be the adoption of Design Thinking.

There have been numerous attempts to implement Design Thinking (DT) in companies since the mid-2000s. The need for fresh perspectives that are impartial toward a convergent strategy is the reason it has been brought to business with such vigour [7] [8]. Building ambidextrous organizations that realize both effective management and innovation is necessary [9]. This distinctive feature has been embraced by some academics who have used it to create a tool for business development [10] [11]. Others have tried to include it in management education [7].

According to the literature, Design Thinking initially emerged in the second half of the 20th century during the historical argument between Simon and Schön's design science and the natural sciences. Successively, other prominent design scholars have developed the concept of these designerly ways of knowing through their research, building on their theories [12] [13].

In the various definitions given over time, it has become apparent that it is no longer associated with "the way designers think and work" but its boundaries have expanded, as have the contributions it can make.

According to more recent research, Design Thinking is an effective strategy and practice for companies looking to innovate [8] [10] [14]. It is a set of instruments and techniques that help businesses confront and resolve complicated issues.

Kolko [15] states that the definition of this approach is constantly evolving and currently states that designers' primary responsibility is to deliver the right solution by "organizing complexity [and] finding clarity in chaos" through a combined process of synthesis of technological, cultural, and aesthetic trends that take into account the needs of consumers and businesses. Thus, Design Thinking is increasingly seen as a way of thinking when tackling uncertain and unusual problems with ambiguous causes and solutions.

This study aims to propose a practical case of a leading international electrotechnical company that decided to approach Design Thinking to differentiate itself and innovate its offer on the market.

They had realised that their technological innovations were taking a long time to find their place in the market. This is a problem that has always been seen concerning technological innovations, which are often radical, but which do not consider the market space they will have to attack upstream. Design Thinking, on the other hand, allowed them to understand the user perspective, grasping the market needs and accelerating the time to market of some of their proposals. To better implement and understand the Design Thinking approach, the company decided to have its key figures undertake a Design Thinking course consisting of both theoretical and practical parts. As a result, the company not only learned how to understand the most appropriate destination market for its proposals, but also realised that its offer was not enough. Consequently, one of the results of the path was the generation of new service streams related to their product offering. The company had always offered only product-level solutions and had never considered the service perspective, which today is a crucial aspect for customers, that even influence their provider's selection.

The article is articulated into four main sections. In the first part, the theoretical background reviews the concept of Design Thinking and the importance it acquired over the last years to innovate organizations. The methodology follows, describing how the research has been structured and the different sources of data that have been used inside the study. Later, the section about results shows the different activities performed to sustain the path that the company decided to take to adopt Design Thinking to innovate its offering, as well the related output achieved. The last part discusses the benefits that have emerged from this study, describing the benefits recognised by the company in adopting Design Thinking within their processes.

#### 2 THEORETICAL BACKGROUND

Innovation has always been primarily inspired by design [16]. Over time, design has evolved and grew, taking on different functions in different situations. With time, it has become evident that one of the most promising design techniques for promoting innovation in organizations is Design Thinking.

In the past twenty years, academics in the fields of design, business, and management have critically examined Design Thinking. The benefits of Design Thinking for innovation, the creation of strategic options, and management education have been largely consolidated by recent studies [17] [18] [19]. The evolution of the design discipline itself, which is gradually moving toward ways of thinking and acting, focused on designing solutions, intangible products addressing complicated challenges, is the source of this growing interest in design approaches, methods, and tools [20].

As a result, managers started approaching the foreign field of design for their managerial objectives [21]. They also developed an interest in the creative process of designers and the tactical advantage that Design Thinking can offer to both designers and non-designers [14]. Brown [14] defines Design Thinking as a discipline that aligns people's needs with technology feasibility transforming it into a profitable business strategy that offers customers value and market opportunity.

For Martin and Christensen [22] "Design Thinking is a distinctive approach that businesses need to use to dive into unknown territory and solve new heuristics".

For Zurlo [23], Design Thinking is the phenomenon that most defines the connection between design and management.

Furthermore, it has been shown that Design Thinking positively impacts customer orientation [24], innovation and organizational change [10], improved decision-making [21], and competitive advantage [8].

Traditionally, Design Thinking relies on the designer's ability to simultaneously take into account: 1. the needs of people and novel conceptions of well-being; 2. the material and technological resources that are available; and 3. the opportunities and limitations of a project or organization. The ability to be both analytical and empathic, logical and emotional, methodical and intuitive, guided by plans and limits but

spontaneous, is required of the designer in order to integrate these three components [26]. To distinguish this type of dualistic reasoning from logical deductive and inductive reasoning, some scholars in design refer to it as "abductive thinking" [8] [13]. Abductive thinking, then, involves considering possibilities for the future from fresh angles and without regard to preexisting models. Additionally, it is a mode of thinking where rationality is not as significant as sentiments and emotions [27].

Design Thinking is a continuous cycle of idea generation (abduction), prediction of consequences (deduction) and testing and generalisation (induction). It is now recognized as an essential part of management education because it offers students the ability to formulate and solve general organizational problems - a crucial skill in the business world. According to Dorst [28]: "Framing is, perhaps, the most difficult of the tasks in the innovation process. It requires taking in a lot of data, and making sense of that data. It requires the ability to see patterns, to parse the important information from the less important information, and to create models that yield insights that can be shared across an innovation team. It often requires an innovation team to reframe, moving it away from its original perception of what the innovation project is about to a new focus."

The research on Design Thinking is expanding, as some advocates draw attention to various facets of the approach [10]. Some recent studies emphasize the need of applying Design Thinking to the technological environment and accelerating digital transformation [29], while others highlight its significance in helping large organizations' top management teams [30] or in research departments' R&D [31].

For those reasons, private organizations are becoming increasingly interested in implementing strategies and techniques derived from the design disciplines. They are focusing on the use of Design Thinking (DT) in innovation initiatives. In recent years, a lot of organizations have chosen to use Design Thinking as an innovative strategy.

Design thinkers make sure that the products of their innovation effort are meaningful, affordable, and add value to the human experience by regularly including end users in the iterative co-creation and testing of ideas and prototypes [32]. By doing this, Design Thinking challenges the technology-driven perspective that permeates many innovative companies: companies first assess what they can realistically develop based on the work and results from their R&D laboratories, then promote their new goods and services through marketing campaigns in the hopes that they will meet consumers' needs [33].

Organizations use Design Thinking for many different reasons, including to attract and retain highly creative employees, improve customer experiences, break down organizational silos, promote internal teamwork, and effect fundamental changes in organizational and social systems [34]. They also use it to foster innovation, particularly disruptive innovation, and internal changes in mindsets, perspectives, and behaviours (i.e., a change in organizational culture).

Research has shown that organizations that prioritize design in their strategy for creating value exhibit superior performance.

This study aims to demonstrate how the adoption of Design Thinking can actually represent a differential value with high innovative impact. To expand the boundaries of Design Thinking research, the practical case examined was an electrotechnical company, leader in its sector. It is well known that technological innovations can lead to radical breakthroughs, but very often there is a lack of demand in the market. The case therefore aims to demonstrate how the adoption of Design Thinking, putting the user at the centre and at the beginning of the innovation process, can bring about considerable innovations even within purely technological markets.

Specifically, the study aims to answer the question "How Design Thinking can facilitate innovation within technological markets?" and also "What kind of innovations can be achieved through the adoption of Design Thinking in technological markets?"

# 3 METHODOLOGY

This paper aims to demonstrate, through a practical case study, how Design Thinking can act as an enabler of change in the technological market, supporting companies to innovate and differentiate themselves.

Given the paper objective, and the subsequent need to address "how" questions, the case study methodology is the most suitable one. In fact, the literature determines the case study methodology as the most appropriate [35] [36] for responding to "how" questions to assist investigations [37].

The case study methodology facilitates the comprehension of the role that Design Thinking has in supporting companies' differentiation and innovation processes. Furthermore, scholars specifically suggest adopting this methodology when the deep investigation of a single compelling case [38] is fundamental to understand how a specific approach can foster organizational innovation [39].

# 3.1 Empirical setting

The case study analysed involves an electrotechnical company founded in the 1980s, active in the fields of robotics, energy, and automation. Although this company is a leader in its fields, in the last years, they realized that their ability to innovate and create new products had come to a standstill and that their technological innovations required a long time to find their place in the market. For these reasons, the company decided to internally introduce Design Thinking to differentiate itself. Indeed, this approach allowed them to deepen their understanding of users' perspective, to better identify market needs and accelerate their time to market. However, to better implement and understand the Design Thinking approach, the company decided to let some of its key figures attend a Design Thinking course organized by a team of experts, including design researchers, service designers and product designers. This course aimed at transmitting both the theoretical and practical implications of Design Thinking, to guide the company in structuring the research and design process effectively and have the possibility to gain the most benefits from the introduction of Design Thinking in the company.

# 3.2 Data collection and analysis

The Design Thinking course, corresponding to the active collaboration between the team of experts and the company lasted six months. During this period:

- a) the theoretical principles and practical implications of Design Thinking were transmitted to the company, through a series of lectures and practical activities;
- b) a new R&D process was co-developed by the company's people and team of experts, exploiting the principles of Design Thinking;
- c) the developed process was put in practice to address a selected design challenge, so that the team of expert could guide the company during the activities and train the participants.

During the diverse phases, a series of open discussions and interviews were performed to gain data on the effectiveness of introducing the Design Thinking approach into a technology-oriented company.

Specifically, four people were selected for the interviews. Three from the R&D team and one global product manager. The aim of the interviews was to investigate *how* the introduction of Design Thinking in the R&D processes had been useful to enable innovation and differentiation in the company.

Because every interview was recorded and transcribed down, researchers had full access to the data, allowing them to analyze the information gathered and optimize the study's outcomes [25]. A complete transcription is required in order to perform an accurate analysis [40]. Following transcription, MaxQda was adopted to analyse the data and have a better-structured framework for doing the analysis. Thematic analysis [25] was supported by MaxQda software, which gave the possibility to find, examine, and report patterns in the data. Three researchers performed the analysis. The research team invited two independent researchers to combine their findings and provide further commentary on the findings after a first-hand discussion.

#### 4 ACTIVITIES AND RESULTS

The project activities were executed under the management of a team of design researchers. The team collaborated closely and provided guidance to a team of engineers and product manager of the involved company. The primary objective was to transfer the competencies through a collaborative execution of tasks applying DT by working on a real product of the company with complex characteristics. The team of design researchers and the team of engineers and product manager formed together the project team.

The work was structured into four phases: Discover, Define, Develop, Deliver, following the standardized phases that the literature associates with Design Thinking. A complete overview of the activities carried out within each process step is shown in Figure 1.

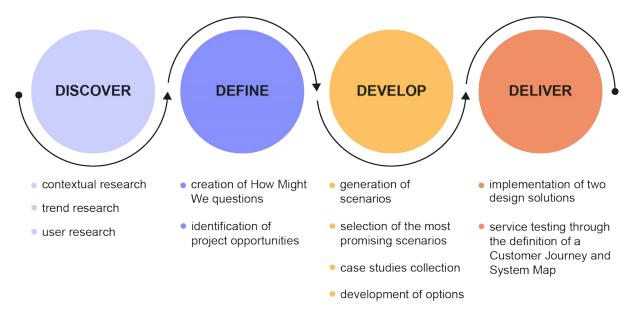


Figure 1. Project activities divided into the four phases of the design process (The authors, 2024).

# 4.1 Discover

During the Discover phase the team executed a series of activities aimed at comprehending the product and defining the course of action. These included *contextual research* to establish the foundation of the project, *trend research* to explore opportunities beyond the product's immediate scope, and *user research*.

The contextual research, was conducted with an analysis of the product's state of the art. This involved a guided discussion that was aimed at identifying the innovative features, weaknesses, strengths and opportunities by taking into account the product, users and contexts. The segment analysis was also executed to assess the promise of different segments, allowing the team to focus on the most promising ones and exploit the true technology potential. To conclude the contextual research the project team gathered data not only related to direct competitors, but also innovative startups, through a benchmark analysis, by comparing the products based on the same parameters used for the state of the art.

To open the company to innovation possibilities starting to emerge, the trend research helped frame the context in which the new product would be introduced. This facilitated anticipation of emerging needs and demands to identify potential innovation drivers.

User research involved some preliminary activities to define the right goal for this phase. This led to the selection of a qualitative method involving user, experts and stakeholder interviews to understand the entire process. Collaboratively, the project team determined the right profiles to interview, topics to be investigated and interview protocols. The interviews where guided by the research team, with at least one person from the company present throughout the meeting, actively participating in the discussion.

#### 4.2 Define

The steps of the previous phase yielded research findings that facilitated the *creation of How Might We* (HMW) *questions* and the *identification of project opportunities* to pursue.

To conclude the metadesign phase, all the insightful information gathered from the activities thus far was compiled into findings. The outcome was a list of technology values to be considered, an understanding of most promising segments, features of interest, interactions and functions with the product and technology that needs to be considered, contextual constraints, ecosystem and strategic opportunities.

Drawing insights from the findings, the research team organized a co-design workshop to explore the various opportunities that had emerged, by using a collaborative online board. This activity helped the participants to engage in the process and share their knowledge and perspectives. The workshop aimed to extrapolate HMW questions, from which four were deepened and refined by the project team, highlighting the interest points, impact on the product, stakeholder gains, challenges and values for the company.

The HMW questions where then assessed and mapped in terms of timeframe to understand the project opportunities. This involved distinguishing between questions that could be addressed in the near future those that can't have an immediate response, but need to be kept into account from the beginning in order to create a future-proof product.

The result of the metadesign activities underscored the importance of incorporating the service dimension to leverage the technology potential and strategic opportunities related to the product.

# 4.3 Develop

In the Develop phase, the results and directions defined on the previous phase were utilized as a starting point for the *generation of scenarios*. The team then performed the *selection of the most promising scenarios* and for each of them a *case studies* collection. These steps guided the *development of options* for the design solution.

To do so, each of the HMW created in the previous phase was developed and transformed into individual scenarios. This involved describing the related context, identifying the stakeholders involved and their role in the potential design solution, the potential design outcome resulting from further development of each scenario, and incorporating keywords and images to help visualize the scenarios. For each scenario factors and open points were discussed and addressed, to create a synthesis of all the four scenarios with a list of values and challenges to consider.

The different scenarios were combined into different options to guide the company in an open discussion, ultimately selecting two scenarios that would help the company in defining the desired product direction solution based on the most promising opportunities. The first scenario selected focused on the development of a product and interaction solution, while the second was oriented toward the development of a service solution.

For each chosen scenario a series of case studies were collected based on selection criteria relevant to the respective scenario. The case studies were analysed to find common characteristics, related to the product and interaction for the product scenario and focusing offering formulas for the service scenario. The analysis led to scenario insights that contributed to understanding the possible design directions.

By pairing different products and interaction directions for the product scenario and defining the required assets for the service scenario, a series of options were proposed, also highlighting the related benefits for the company and for the users, in order to facilitate on the selection of the best choice for implementation.

# 4.4 Deliver

The Deliver phase was executed through the *implementation of two design solutions* in response to the selected scenarios, one focusing on the product and its interaction and the other related to the service. To verify the proposed solutions, the team carried out the *service testing through the definition of a Customer Journey and System Map*.

After selecting the options in the previous phase, the product direction concept was initially proposed in three variants for discussion with the company to gather feedback. The process of definition of the design direction of the product, involved a series of technology and interaction hypothesis simulated through 3D models and rendering to test the feasibility with the company though an active and continuous open discussion and feedback with the involved engineers. The goal was to implement and finalize the design direction for subsequent product development.

The definition of the new service was carried out by implementing a concept based on the most promising option and establishing its Value Proposition. The service was developed and tested by creating a Customer Journey to illustrate all the phases of the proposed service, describing the interactions, functions, touchpoints and stakeholders involved at each stage. A System Map was also created, to showcase and help the company see the connection between all actors in the service and the values they exchanged.

The service's feasibility was tested by the engineers and product managers through the development of a Business Model Canvas. These tools aided in understanding how the new proposal would fit in relationship to the current company model.

The development of the two solutions not only facilitated the company's understanding but also opened up a new opportunity to leverage the untapped potential of the product technologies.

#### 5 DISCUSSION AND CONCLUSIONS

This paper contributes to understanding how Design Thinking can support companies' innovation and differentiation processes, acting as an enabler of change in the technological market. Specifically, the benefits highlighted in this study are the results of the integration of the Design Thinking approach into the company's well-established R&D process through a dedicated intensive course that provided methodological and practical support by a team of experts. Indeed, the company under analysis recognized the need of being accompanied during the Design Thinking introduction process to fully grasp its implications and better implement it.

For years, the company had developed technology-driven innovations, thus starting from its latest developed technology to create a new product proposal and launching it on the market. However, as also stated by the diverse interviewees, it recently found itself at a standstill in terms of new products development. By internalizing the Design Thinking approach, employees were able to understand how a change of perspective was needed. One of the main aspects addressed was the importance of understanding users' needs, looking not only at the potential buyer of the solution but also at all the other involved users, from the installers to the workers that would use it every day. This approach required a change of mindset for the employees, that were used to a diverse research process that put technology at its core. Nevertheless, they embraced it once they fully and practically understood its actual benefits, seeing how a deeper comprehension of users' needs could provide significant insights that could guide the design activities. The different interviews conducted confirmed this aspect, as one of the R&D engineers declared

"I was hesitant about this new approach, because it requires to dedicate some time to understand users' perspective. However, after having experimented it, I understood how could really provide us with new topics to explore and address through our technology development".

Once this research approach was effectively introduced into the R&D process, it impacted the whole of it, fostering discussions on how the available technologies could acquire new meanings, creating value for all stakeholders involved. Consequently, the *extended team* (composed by the company's employees and by the experts) was able to co-generate new solutions with a design-driven approach to innovation, instead of the previously employed technology-driven approach. Indeed, one of the most tangible benefits of the introduction of Design Thinking in this company was the widening of its offer, including new solutions addressing the discovered users' needs. In particular, the company activated a new service stream related to their product offering, thus both differentiating itself from the other players in the market and highlighting the value of its own products. Moreover, this new service stream became a way for the company to establish a long-lasting relationship with customers, by providing them additional services even after the product purchase. As one of the involved employees stated

"our newly developed products differ from our previous offer, both in terms of economic value and product lifespan. Thanks to these services we can explain to clients why they are worth the investment and maintain a closer and longer relationship with them".

The introduction of the Design Thinking approach was therefore welcomed by the company, especially once the concrete benefits were seen. This allowed the *extended team* to co-develop a new R&D process, exploiting the Design Thinking principles. By supporting the involved employees in it its definition, the team of expert ensured that the company could continue to benefit from the recently adopted approach even after the end of the course. The possibility to replicate and adapt the learned process and mindset was critical for the company because it needed to establish new work relationships and collaborations to develop the newly designed offer. Indeed, the novel products as well as the introduction of a service stream required and, at the same time, enabled the integration of new technicians, new internal units and temporary external collaborators.

This research therefore highlights the positive impact of Design Thinking on company's innovativeness and differentiation in the technological market.

However, although the case study methodology underlines how an emblematic case can be highly representative as a pivotal example, the scope of the study might be expanded. The course and activities developed for this company should be proposed – with the necessary adjustments – to other companies active in the technological market to see whether they also recognise the same benefits mentioned above.

# **REFERENCES**

- [1] Camisón C, Villar-López A. Organizational innovation as an enabler of technological innovation capabilities and firm performance. Journal of business research. 2014;67(1):2891–902.
- [2] Burns T, Stalker GM. Mechanistic and organic systems. Classics of organizational theory. 1961;209–14.
- [3] Tushman ML, O'Reilly III CA. Ambidextrous organizations: Managing evolutionary and revolutionary change. California management review. 1996;38(4):8–29.
- [4] Dougherty D. Interpretive barriers to successful product innovation in large firms. Organization science. 1992;3(2):179–202.
- [5] Bresman H. Changing routines: A process model of vicarious group learning in pharmaceutical R&D. Academy of Management Journal. 2013;56(1):35–61.
- [6] Dougherty D, Hardy C. Sustained product innovation in large, mature organizations: Overcoming innovation-to-organization problems. Academy of management journal. 1996;39(5):1120–53.
- [7] Boland R, Collopy F. Managing as Designing: Stanford University Press. 2004;
- [8] Martin RL. The design of business: Why design thinking is the next competitive advantage. Harvard Business Press; 2009.
- [9] O'Reilly III CA, Tushman ML. Organizational ambidexterity: Past, present, and future. Academy of management Perspectives. 2013;27(4):324–38.
- [10] Brown T. Change by Design: How Design Thinking Can Transform Organizations and Inspire Innovation [Lingua inglese]: How Design Thinking Transforms Organizations and Inspires Innovation. New York: Harper USA; 2009. 264 p.
- [11] Liedtka J, Ogilvie T. Designing for growth: A design thinking tool kit for managers. Columbia University Press; 2011.
- [12] Cross N. Designerly ways of knowing. Design studies. 1982;3(4):221–7.
- [13] Cross N. From a design science to a design discipline: Understanding designerly ways of knowing and thinking. In: Design research now. Springer; 2007. p. 41–54.
- [14] Brown T. Design thinking. Harvard business review. 2008;86(6):84.
- [15] Kolko J. Abductive thinking and sensemaking: The drivers of design synthesis. Design issues. 2010;26(1):15–28.
- [16] Utterback JM, Ekman S, Sanderson SW, Vedin B arne, Verganti R, Tether B, et al. Design-inspired innovation. World Scientific; 2006.
- [17] Beckman SL, Barry M. Innovation as a learning process: Embedding design thinking. California management review. 2007;50(1):25–56.
- [18] Glen R, Suciu C, Baughn C. The need for design thinking in business schools. Academy of management learning & education. 2014;13(4):653–67.
- [19] Garbuio M, Lovallo D, Porac J, Dong A. A design cognition perspective on strategic option generation. In: Cognition and strategy. Emerald Group Publishing Limited; 2015.
- [20] Zurlo F, Cautela C. Design strategies in different narrative frames. Design Issues. 2014;30(1):19–35.
- [21] Liedtka J. Perspective: Linking design thinking with innovation outcomes through cognitive bias reduction. Journal of product innovation management. 2015;32(6):925–38.
- [22] Martin RL, Christensen K. Rotman on design: The best on design thinking from Rotman magazine. University of Toronto Press; 2013.
- [23] Zurlo F. Designerly way of organizing. The design of creative organization. AGATHÓN| International Journal of Architecture, Art and Design. 2019;5:11–20.
- [24] Kumar V, Whitney P. Daily life, not markets: customer-centered design. Journal of Business Strategy. 2007;

- [25] Braun V, Clarke V. Using thematic analysis in psychology. Qualitative research in psychology. 2006;3(2):77–101.
- [26] Pombo F, Tschimmel K. Sapiens and demens in design thinking–perception as core. In: Proceedings of the 6th International Conference of the European Academy of Design EAD. 2005. p. 257.
- [27] Tschimmel K. Design Thinking as an effective Toolkit for Innovation. In: ISPIM Conference Proceedings. The International Society for Professional Innovation Management (ISPIM); 2012. p. 1.
- [28] Dorst K. The core of 'design thinking' and its application. Design studies. 2011;32(6):521–32.
- [29] Liedtka J. Putting technology in its place: Design thinking's social technology at work. California Management Review. 2020;62(2):53–83.
- [30] Wrigley C, Nusem E, Straker K. Implementing design thinking: Understanding organizational conditions. California Management Review. 2020;62(2):125–43.
- [31] Magistretti S, Dell'Era C, Verganti R, Bianchi M. The contribution of design thinking to the R of R&D in technological innovation. R&D Management. 2022;52(1):108–25.
- [32] Norman D. Design, business models, and human-technology teamwork: As automation and artificial intelligence technologies develop, we need to think less about human-machine interfaces and more about human-machine teamwork. Research-Technology Management. 2017;60(1):26–30.
- [33] Verganti R, Dell'Era C. Design-driven innovation: meaning as a source of innovation. 2013.
- [34] Dunne D. Design thinking at work: how innovative organizations are embracing design. University of Toronto Press; 2018.
- [35] Eisenhardt KM. Building theories from case study research. Academy of management review. 1989;14(4):532–50.
- [36] Yin RK. Applications of case study research. sage; 2011.
- [37] Easton G. Case research as a methodology for industrial networks: a realist apologia. In: IMP Conference (11th). IMP; 1995.
- [38] Siggelkow N. Persuasion with case studies. Academy of management journal. 2007;50(1):20–4.
- [39] Eisenhardt KM. What is the Eisenhardt Method, really? Strategic Organization. 2021;19(1):147–60.
- [40] Lapadat JC, Lindsay AC. Transcription in research and practice: From standardization of technique to interpretive positionings. Qualitative inquiry. 1999;5(1):64–86.