E-LEARNING DESIGN THINKING AND DESIGN DRIVEN INNOVATION

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ABSTRACT

E-learning, knowledge sharing, design thinking education and design driven innovation innovation are all key elements of this case study.
The E-learning platform about Design Thinking is born as a result of the growing pervasiveness of this approach to innovation in different application contexts: from strategic consulting to digital transformation, from the design of digital experiences (UX / UI) to the development of new experiences. of consumption. The extraordinary amount of acquisitions in recent years of design firms by strategic consulting firms or major digital solution providers demonstrates the growing pervasiveness of Design Thinking. The phenomenon highlights the strategic value that the methodologies, approaches and tools of Design Thinking assume in different contexts.
In particular, the platform aims to be the reference point for the community of innovators who adopt pioneering approaches such as Design Thinking in creating value for their companies. The goal is to develop a group of actors interested in exchanging views on the latest developments in Design Thinking, analyzing both the strengths and weaknesses of this approach to become a solid and updated reference point for all Design Thinkers. Such roles are not always easy to explain, since they differ from case to case, but Design Thinking in Italy is – and will increasingly become – a definite value and a competitive tool. Design can and must be a fundamental part of every single company's production, communication and distribution strategy. The e-learning platform launched by Università Telematica San Raffaele Roma's "Design thinking innovation" is intended to demonstrate that design is neither a sole interest nor an exclusive prerogative of large companies or those operating in sectors that have traditionally been design oriented. In fact, design driven education and innovation is a basic lever for competitiveness and internationalization that is available in every sector.
Creating an e-learning platform is an important opportunity of building a new designing and community identity; a significant chance to meet and a landmark not only for professionals, but also for creative people working outside established enterprises (from every countries).
Conclusions are about Design Thinking education and possible future developments, the role of design as a key competitive variable for the system, the new professionals and the winning models.

KEYWORDS

Design Thinking, Elearning, Design Driven Innovation, Long Life Learning, Knowing How to Make System, Training Professionals

1. INTRODUCTION

In this particular historical moment where the subdivision of our days into deadlines, commitments and routines has definitely weakened, we have all had to reconsider and pay more attention to a fundamental aspect of our life, which has returned to be in our hands and that perhaps we had unlearned to manage time.

Time is a concept that we have always considered of fundamental importance. Each design methodology has its own particular interpretation of time: the Lean approach, the Agile one, etc. Today more than ever it is time for Design Thinking, a methodology to which we feel more connected and which in this period we have the opportunity to analyze with a different eye than usual.

Constantly working with this methodology has profoundly taught how important it is to know how to "live time" and respect it in the right way and above all to know how to listen to it, not only when I plan as a professional, but in general as an approach as a person. We therefore tried to try to analyze Design Thinking by separating only the concept of time in order to underline how important it is to understand the "breath of time" in order to face design and everyday life in the right way.

In the design approach of Design Thinking it is immediately clear how central the concept of time is: looking at the representations of the two main models - the 5 phases of Design Thinking and the Double Diamond represented below - one immediately perceives the clear division into phases (subdivision of time), their arrangement (chronological development) and the close relationship of connection they have (principle of consequentiality).

The first lesson that these models want to convey is in my opinion therefore precisely the importance of starting a design process trusting the process, not rushing and preparing to face each phase with the correct attitude.

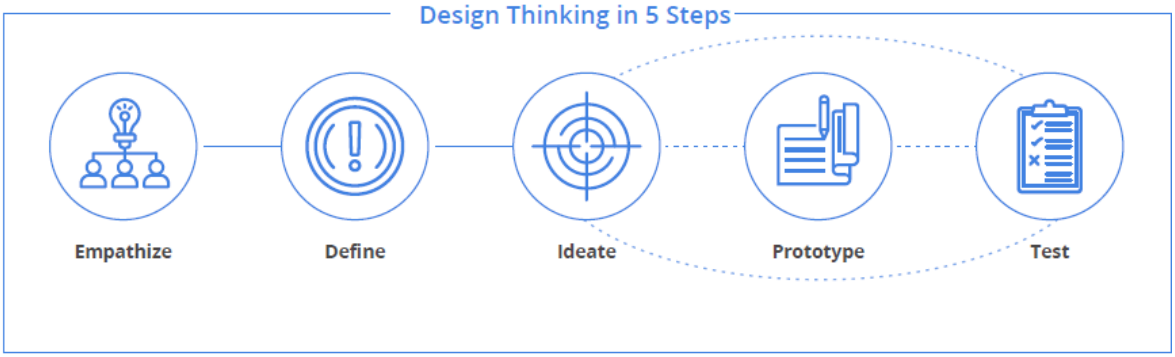


Figure 1. Design thinking: A 5 Stage Process – Stanford d. School

But how does time move within these phases?

1. Empathize

Get to know who you are planning for by entering "his shoes".

Empathize is the time of knowing and listening, you cannot think of being able to skip this phase and rush to the next phase; it is the time of research (qualitative and quantitative), it is the time to open your eyes, to be receptive, to ask questions, to explore in order to gather as much information as possible, it is not the time to sit, but the time to move within the design space with all the means we have available; it is the time of design curiosity and enthusiasm.

2. Define

Analyze all the information you collected in the first phase and formalize the question you want to answer, your point of view and your design direction.

Define is the time of interpretation and reflection, it is the moment when you stop looking and stop to look at everything from above. It is the time to put in order, to create connections, to select, to interpret, to discard. It is perhaps the time where attention is maximum because it is the time of choice, the time in which one's own design space is identified, decided which direction to take and which personal point of view to adopt.

3. Conceive

Propose as many solutions as possible to answer the design question identified above.

Ideate is the time of freedom, after the time of knowledge (Empathize) and the time of interpretation (Define) is the time to design. It is the most creative time of the whole process, the time of the "storm of ideas", of the "assault on the brains" (brainstorming); if in the Empathize phase we moved in the design space, here we move mentally to reach and formulate as many ideas as possible.

4. Prototype

Once you have selected the best idea, it is time to start making it concrete, or making part of it concrete.

Prototype is the time to do, the time to try, to compare, the time to question the ideas we have designed. In Design Thinking this time is anticipated compared to other approaches precisely because it is central to the importance of making concrete as soon as possible everything that until now has only been in our heads. It is the time when the idea opens up to the outside world for the first time, the time of confrontation, interaction and listening again to really understand what works and what doesn't.

5. Test Let the people for whom it was designed try the solution to see if it responds to the problem we wanted to solve.

Test is the time of testing, the time where the idea comes to life, where the static solution becomes fluid entering the real world. It is the time of attention and openness to see and receive all the feedback (direct and indirect) of those who interact with the solution.

So what did Design Thinking teach me as a designer, but above all as a person? It made me understand that in design, as in everyday life, there is a right time for everything.

What would happen if we immediately rushed to the Ideate phase, skipping the two very important phases of Empathize and Define? How many things would we risk losing?

If we put a solution on the market without having tested it, how much would we risk not knowing if it really meets the needs of the market?

This approach most of all shows us well how everything has its time, and every time needs to be faced with the right mental predisposition; even if we are all more comfortable in some phases of the process rather than in others, the important thing is to learn to trust the process itself, to live the moment without rushing ahead with the thought or without dwelling too much, to be able to adapt to time in a fluid and proactive way. We give things time and channel our thoughts into a project: it is the best way to satisfaction!

We can therefore commit ourselves to giving the right time to things, having time help us to channel our thoughts towards a goal, and knowing how to adapt to the time we are living by learning it to live in the right way.

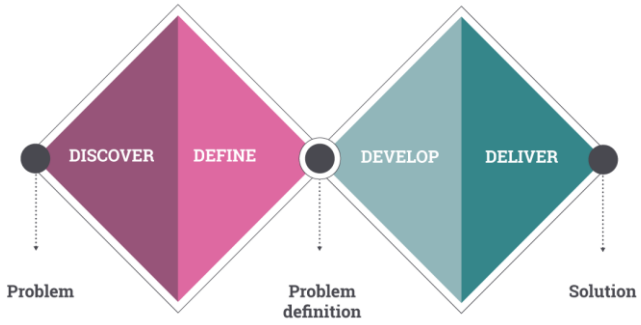


Figure 2. Double Diamond Design Thinking – Design Council

2. E-LEARNING DESIGN THINKING

Being able to understand, thanks to the ability to deal with and solve problems with the tools available, with the ability to ignite empathy and understand people's needs and desires, together with what is important and essential for them.

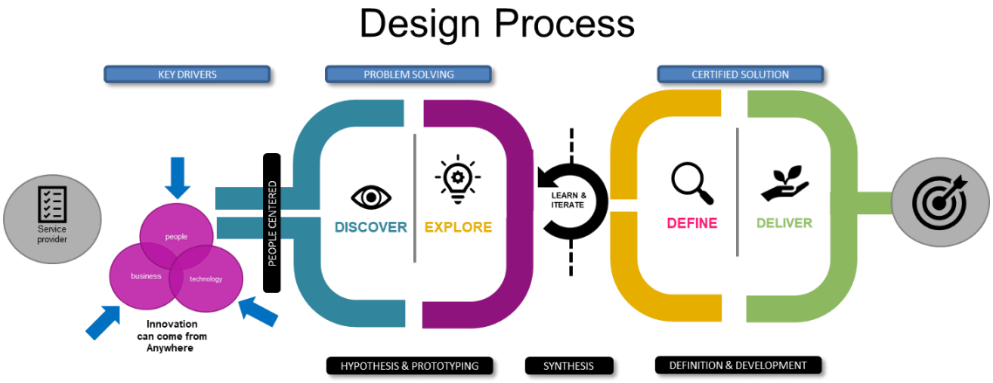


Figure 3. Design Thinking Process

Strategy is the ability to understand what is fundamental for your company starting from the point of view of the analysis of processes, models and who is running the game at that moment, to get to get a prototype, that is the ability to create, build and use our tools, with the intent to facilitate alignment and co-creation within the company. This is what design is all about:

- EMPATHY
- STRATEGY
- PROTOTYPING

this is called DESIGN THINKING

The word "Design" - in this specific context - refers to the ability to use the means that our community possesses and consciously manages: prototyping, manual activities in general, the visual arts, the creation of "things" (products, packaging, graphics, architecture, fashion, experiences, digital, etc.). What makes Design Thinking unique is the art of combining Human Empathy and Business Strategy with the ability to design and prototype.

Design Thinking has finally. Design Thinking has given value to Design by elevating it to something worthy of consideration, leveraging and investing in the entrepreneurial world and business leaders in each category, creating the opportunity to shift the attention of companies and the industry sector towards the world of Design. For this reason it must be promoted and made to grow, in order to put the world in a position to leverage the mentality, processes and knowledge of our design community and guide innovation, growth in the business world and above all evolution. Human.

All of the above, therefore, offers the possibility of creating value for the company, shifting the objective from companies that have focused on marketing (or tech-R & D) to companies that welcome creativity and design and that offer the possibility to create together for their target audience.

3. HOW TO CREATE SIGNIFICANT EXPERIENCES

How is it possible to design objects that are meaningful to people?
According to the interpretation provided by Donald Norman in his book "Emotional design", 3 levels of interaction occur every time we interact with a brand / product.

1. The VISCERAL RELATIONSHIP

can be identified with the so-called "WOW effect"; it is the same reaction that occurs when you see a beautiful woman / man or a beautiful landscape - it is a shopping experience that occurs when we feel butterflies in the stomach, it is something beyond rationality - we can love or hate a object, but in any case a reaction occurs. Whenever we design something, we build a co-system of stories by communicating and sewing mini-stories for the target in front of us. Heart and Brain are closely connected to each other; it is necessary to find a balance point between rationality and emotionality.

2. EXPRESSIVE / EMPATHIC RELATIONSHIP

We want to show, talk, inform and tell everyone about our experience. Social Media is the perfect platform to do this. Pride and Joy connect us with a particular experience.

Satisfaction & Emotional loyalty: this case, for example, is represented by the queue of people queuing in front of an Apple Store waiting to buy the latest model of mobile phone that they have never seen or tried before: this represents an emotional attachment and loyalty to brand. Spontaneous Communication & PR: the Public and Consumers become the Ambassadors of the brand & create communication around it.

- The VISCERAL effect translates into PURCHASE
- The INTERACTIVE effect translates into RE-PURCHASE
- The EXPRESSIVE effect means RECOMMENDATION, ADVICE

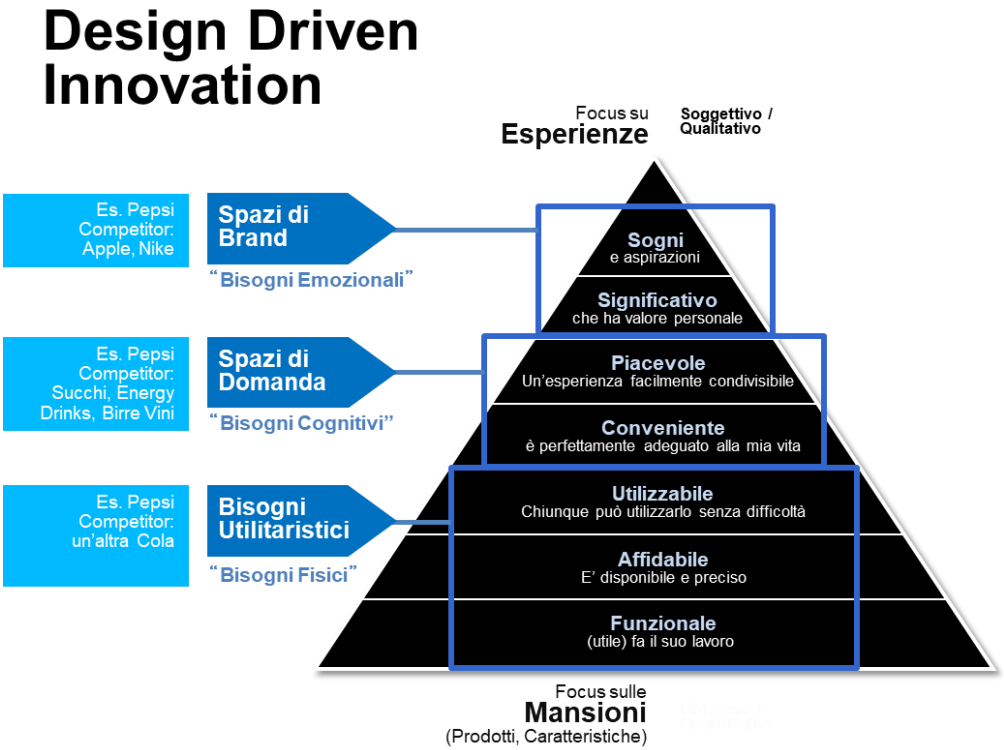


Figure 4. Design Driven Innovation- Jacob Nielsen

4. WHAT DOES IT MEAN TO THINK LIKE A DESIGNER? HOW TO LEARN?

The qualities listed above refer to the world of design, but not only. For designers, there are other qualities - additional capabilities that define the designer's philosophy. We can recognize them in people who are not designers but who belong to our world. These are the characteristics that identify the designer's philosophy:

Synthetic. Designers can immediately imagine the big picture. Their thinking is adductive and holistic.

Refined. Designers are refined - in the process as well as in the solutions.

Multilingual and narrator. Designers are able to convey understandable and important messages for different target audiences inside and outside the organization.

Intuitive. Designers do not stray from the magic of intuition. They recognize the role of the mysterious and visceral spark that the idea can play in the innovation process. And what is important is that they are able to manage intuition within business boundaries and processes.

Arguments. Designers are dialectical by definition. They easily move from one topic to another, from marketing to technology, from anthropology to communication and research. This ambiguity is part of their essence.

They are completely at ease in the face of the conflict between rationality and soul, between functionality and style, process and intuition. In fact, they always travel to the center of the storm! Looking for new solutions, designers comfortably navigate the line between what is feasible and what is not

Lovers. Designers are interested in the human being. They are not interested in consumer satisfaction but are in love with their customers. Try to transfer this concept into your personal life: when you want to please someone, do whatever it takes to satisfy their needs. But if you love someone - husband / wife, children, parents - you will do much, much more than they expect of you. You will surprise them by entering the sacred field of what is magical, extraordinary and unforgettable.

Design is at a crossroads. Companies try to understand how to welcome and use Design to their advantage.

We are creating a new role and a new space for design within the industrial society. It is a change that the new generations will be able to read in the history of design that has yet to be written.

Designers are in luck. As professionals, they are philosophers and thinkers but also actors.

They translate ideas into action. For the companies they work for, exploiting resources for the benefit of customers or companies, they also have the opportunity to shape the world.

They truly have the opportunity - and the responsibility - to shape the world better. Their mission is to "dream" of the things that can increase the practical, emotional and poetic value to the life of each individual - and not to create useless, unsustainable products that pollute our world both from an ecological and a visual point of view. They want to design meanings, not products.

5. DESIGNERS ARE PEOPLE WHO LOVE PEOPLE

Loving a person means taking care of them and their world. Therefore, design the environment that surrounds it, and make every interaction with it, every experience comfortable.

Designers have the wonderful opportunity to get in touch with everyone's life, every day, providing fun, convenience, safety, pleasure based on what they design. All these moments can become potential fragments of a broader social happiness only and exclusively if they are guided by a positive approach, with a positive purpose and intent and only and exclusively if they are designed with a view to sustainability thought at 360 °.

It must be done in accordance with nature and naturalness. Sustainably. Sustainability considered from an ecological and visual point of view, of beauty, without visual contamination; sustainability from a social, respectful perspective, which affirms everything that is user-friendly; sustainability from an emotional, engaging, stimulating point of view.

Our society is changing so quickly and on every front that it is essential to radically innovate even the world of design. Change takes place through technologies, techniques, tools and means that are increasingly effective and complex, but increasingly and better usable. The transparency of complexity is the trump card of our time, and the Designer can no longer create anything that goes beyond this principle. The creative process within large companies is closely linked to the transdisciplinarity aspect, which becomes indispensable to the creation project for overcoming the limits of the individual disciplines concerned. In this regard, it is important to remember that on 6 November 1994 the “Charter of Transdisciplinarity”, drawn up by Basarab Nicolescu, Edgar Morin and Lima De Freitas, was signed in Arràbida (Portugal). According to its signatories, the Charter aims to be an expression of the attitude of the scientists of our time to lead science and its knowledge beyond the boundaries in which sectorialized knowledge tends to confine them. This also includes an ethical dimension, because, in an era of great advances in knowledge, the lack of dialogue and the circulation of knowledge increases the inequality between those who possess such knowledge and those who do not. These principles are applicable to different fields, not only to the human sciences but also to art, literature, poetry and the inner experience of each one. And also to Design. The human being is much more than a "complex structure" at the center of the various disciplines of study. Those who, like the designer, must be aware of their limits of knowledge, which can only be overcome through transdisciplinarity in the approach to the project.

Today young creatives should be prepared for everything: marketing, business, technical design, packaging, technologies, etc .: how can you have such a "holistic" preparation?

The world of education should change, and also the universities that prepare the talents of tomorrow, to offer a preparation that allows an "easier" integration of recent graduates into the world of work and companies. Companies themselves must know how to manage career development: how to train young talents and follow their path to success. The paradox of the modern era of education is that very often, the training process starts from elementary school education, which includes many generic "subjects", to evolve up to university level and then with masters, on increasingly specific topics. Where the "institutional" training stops, with the entry into the company, the company itself finds itself entrusted with the task of providing again a 360-degree training on the most disparate fronts, just as it happened in elementary and middle schools.

If the designer chooses the path of the independent profession, he himself will bear the weight of his own training, and establish its methods, times, areas and opportunities.

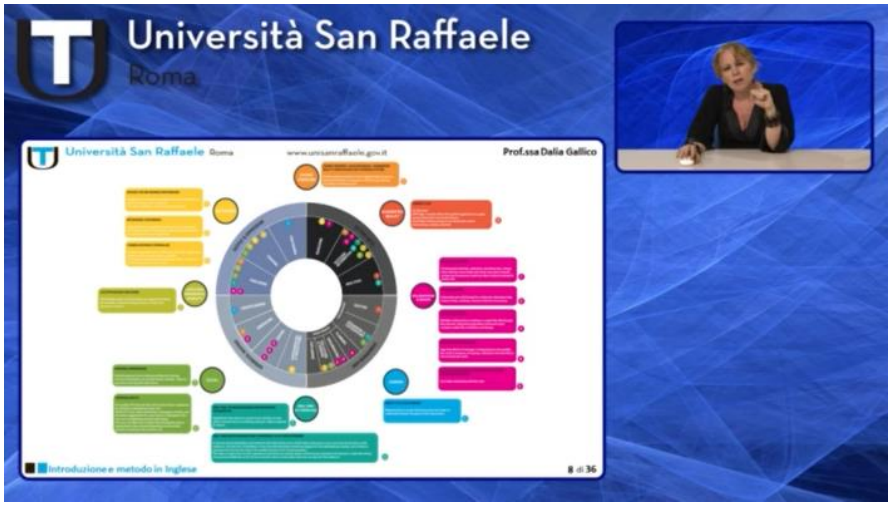
In both cases in Italy more than elsewhere the economic and social crisis involves scarce investments, if not real cuts, precisely in the fields of culture and education. Culture is now a luxury item. It is the economically most prosperous companies, and not the institutions, that can still invest in development and research. In science, as in design. But the 'raw materials' on which to invest, creativity and talent, are still many on the Italian territory.

6. TECHNOLOGICAL APPLICATIONS AND CHARACTERISTICS

As part of the project devoted to the dissemination of high quality material in Design, University San Raffaele Roma with the portal is designed to allow easy and flexible access to a big potential user arena. In this sense, the portal is based on some of the most widely used, reliable and functional tools in the field of content management, electronic commerce, and technology training. Inside the portal, the Joomla and VirtueMart platform is integrated in conjunction with Moodle for the sale and use of online courses. The implementation of the online sales system for the site is concerned with the Moodle, Joomla and VirtueMart platforms. The latter is an add-on for Joomla cms that allows you to extend its capabilities to create and manage an e-commerce portal. This tool, in conjunction with an API implementation, enables the integration of Moodle courses with the sale and purchase auto-subscription.

The basic component of VirtueMart covers the basic features of an on-line shop (online catalog submission, file download, cart), but add-ons that implement additional functionality such as product search or preview in. The shop management allows you to modify the seller and related product information by entering basic information (name, identifier), advanced (weight, unit of measure, size, related products) and images (Picture of the article).

Streaming video with Vimeo provider. To increase the portability of the contributions and to exploit the potential offered by streaming video, it has been chosen to use a professional broadcast service.



Figures 5. Screenshot E-learning Design Thinking lessons

7. CONCLUSION

The Design Thinking E-learning platform develops specific research lines that leverage the main results obtained in previous editions in relation to the role that Design Thinking can play in innovation projects.

Transformations in the way consultants interpret Design Thinking. The applications of Design Thinking by innovators: This line of research investigates the similarities and differences in the pioneering adoption of Design Thinking by innovators in different sectors (e.g. Finance, Energy, Information and Communication,

Public Administration) and professional roles (e.g. C-levels, Design, Research and Development, Marketing, IT);

The evolutions of Design Thinking enabled by emerging startups: this line of research identifies emerging startups that provide interesting technological solutions (for example, Artificial Intelligence, Big Data, Rapid Prototyping) to enhance Design Thinking processes.

The Design Thinking market: identification and measurement of established and emerging domains (sectors, types of projects and challenges) in which consulting organizations exploit Design Thinking;

Design Thinking in the digital age: role and adoption of digital technologies (artificial intelligence, big data, internet of things, augmented reality, additive manufacturing, etc.) able to enhance the approach to Design Thinking;

Transformations of Design Thinking: adoption of different types of Design Thinking (Creative Problem Solving, Sprint Execution, Creative Confidence, Innovation of Meaning) and complementary methodologies (Agile, DevOps, Inclusive Design, Speculative Design, etc.);

Design Thinking value: measurement of the value generated by Design Thinking (project results, radicalism, commercial success).

The Organization for Design Thinking: analysis of the organizational structures adopted by innovators to manage innovation projects based on Design Thinking; skills for Design Thinking: analysis of the skills and attitudes required of innovators to manage projects based on Design Thinking;

Design Thinking in the digital age: role and adoption of digital technologies (artificial intelligence, big data, internet of things, augmented reality, additive manufacturing, etc.) capable of enhancing the Design Thinking approach;

Design Thinking value: measurement of the value generated by Design Thinking (project results, radicalism, commercial success).

The classification of digital tools: identification and classification of digital tools capable of supporting Design Thinking processes;

global offer of digital tools to support Design Thinking: map and classification of digital tools based on digital technologies (such as artificial intelligence, big data, internet of things, augmented reality, etc.) capable of supporting Design Thinking processes ;

suppliers of digital tools to support Design Thinking: identification of start-ups and technology developers who enable Design Thinking processes;

pioneering adoptions of digital tools to support Design Thinking: development of case studies on pioneering adoption of digital tools capable of supporting Design Thinking approaches.

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