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DESIGN-THINKING: PRACTICE OF CUSTOMER EXPERIENCE RESEARCH

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ДИЗАЙН-МЫШЛЕНИЕ: ПРАКТИКА ИССЛЕДОВАНИЯ КЛИЕНТСКОГО ОПЫТА

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Keywords

Design thinking; Educational technologies; Technological entrepreneurship; Customer discovery; Knowledge Management.

Abstract

The purpose of our research is to find new tools for analysing hidden client needs (pains), regulating the sequence of reasoning when making decisions during the creation of innovative projects. We propose an approach of a creating a map of studying the customer experience of interaction with the product in which we can use Customer Jorney Map (CJM), method of triads and model PEDPL: Pre-Experience, Experience, Post-Experience, Lost-Experience). An important segment of model PEDPL is analysis "Lost Experience" when we can study new processes out-of-plane current business, an alternative to the use of a known product, expansion of functions, the reincarnation of the user experience in another plane, taking into account unrealized characteristics and interests of consumers (cultural characteristics, preferences, habits, traditions, etc.). This analysis can account for all patterns of the user experience in the product. This methodology puts in evidence new approaches to structuring information, which is important for immersing in user experience, understanding their problems and finding new solutions. Scientific novelty consists of proposed new tools for visualizing associative thinking, constructing a sequence of steps and methods for studying consumers, isolating the problem, developing an idea. The article presents a quest for the rector and the mayor, solving the problem: how easy and inexpensive to make a comfortable life of a short-sighted person in the city and University. In the preparation of the prototype used such methods of design thinking as the map of empathy, the method of the triad, CJM, PEDPL, SAP business origami. The results of the application can be in demand when developing a new Internet service or mobile application, or, for example, to develop a brand strategy, when it is important to explore the hidden needs of the client.

Ключевые слова

Дизайн-мышление; образовательные технологии; технологическое предпринимательство; выявление потребителя; управление знаниями.

Аннотация

Целью нашего исследования является поиск новых инструментов анализа скрытых потребностей (болей) клиента, регулирующих последовательность рассуждений при принятии решений при создании инновационных проектов. Мы предлагаем подход создания карты изучения клиентского опыта взаимодействия с продуктом, в котором мы можем использовать карту пользовательского пути (CJM), метод триад и модель PEDPL: предварительный опыт, опыт, пост-опыт, потерянный опыт. Важным сегментом модели PEDPL является анализ «потерянного опыта», когда мы можем изучать новые процессы вне плоскости текущего бизнеса, альтернативу использованию известного продукта, расширение функций, перевоплощение пользовательского опыта в другую плоскость с учетом нереализованных характеристик и интересов потребителей (культурные особенности, предпочтения, привычки, традиции и т.д.). Этот анализ может учитывать все закономерности взаимодействия пользователя с продуктом. Эта методология предъявляет новые подходы к структурированию информации, что важно для погружения в пользовательский опыт, понимания проблем и поиска новых решений. Научная новизна состоит в том, что предложены новые инструменты визуализации ассоциативного мышления, построения последовательности шагов и методов исследования потребителей, выделения проблемы, разработки идеи. В статье представлен квест для ректора и мэра, решающий проблему: как легко и недорого сделать комфортной жизнь недальновидного человека в городе и университете. При подготовке прототипа

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использовались такие методы дизайн-мышления, как карта эмпатии, метод триады, CJM, PEDPL, SAP бизнес оригами. Результаты работы приложения могут быть востребованы при разработке нового интернет-сервиса или мобильного приложения, или, например, при разработке стратегии бренда, когда важно исследовать скрытые потребности клиента.

Introduction

The main reason for the turn to the trend of development of creative abilities of people lies in the emergence of new opportunities and challenges that are associated with the explosive nature of ICT development and orientations to the digital transformation of activities. Competencies are important to support digital projects, not only technical knowledge and skills in information and communication technologies. In order to solve the problems in the conditions of uncertainty created by the digital space, developed soft skills are important for the staff, including communication, teamwork, emotional intelligence, critical thinking and creativity and readiness for innovations.
Design approach and other creative techniques are used at the business school, and the results are actively implementing leading corporations, creating innovative business culture, applying meetings, strategic sessions, brainstorming. The tools of design thinking to complete client requests, to find a new value for them and to develop a customer-centric business propositions.
This paper presents the methods of design thinking: visualization tools (map of empathy, user path, stakeholders), tools of Customer Development, guerrilla Ethnography, POV-focus, hot prototyping. We have experience in conducting design sessions using the PEDPL model, the method of comparing analogies and consumer travel maps in the construction of the University educational programs sales funnel. These tools made it possible to revise the approach already used to promote a new course in the market of educational programs, to find points that will interest new customers, to identify ways to improve the experience of students who study at the University. The article presents a prototype quest, which shows the user path of the rector and the mayor. This quest is to show the leaders that there are simple and inexpensive ways to make the life of a myopic young man more comfortable in the city and University. In the preparation of the prototype used such methods of design thinking as the map of empathy, the method of the triad, CJM, PEDPL, SAP business origami.

1. Methodology and approach of design thinking

Design thinking is an approach to design innovative solutions-oriented person. Approach studying and developing his tools at the HPI School of Design Thinking, Potsdam, school of design thinking d. school at Stanford [16, 18, 6). The method is taught in more than 60 universities around the world.
The Design thinking approach is aimed at developing a person's creative abilities through empirical rules and experience, emotional intelligence and recognition of the value of other people's opinions. The ideas that formed the basis of the approach were formulated by foreign and Russian scientists and thinkers, including G. Simon, G. Altshuller, G. P. Shchedrovitsky, N. P. Bekhterev, N. Yu. Grashevo, M. Michalko, E. de Bono, S. Blank, etc.
One of the founders of the philosophy of project thinking or design thinking (Design Thinking) is called Herbert Simon, the Nobel laureate, whose ideas are currently in demand by engineers, system engineers, programmers in projects of artificial intelligence, information processing, complex systems. In 1969, Herbert Simon [26] for the first time presented reflections on the nature of organized complexity, the importance of human thinking development through empirical rules, experience, the ability to adapt to the conditions of high environmental uncertainty. At about the same time, Heinrich Altshuller, a Soviet scientist and inventor, published his first works, where he presented the theory of solving inventive problems (TRIZ). In TRIZ, this methodology is now actively used by engineering laboratory for "creative problem solving" [1] also contains an algorithm experimental treatment innovative ideas based on the "mental processes of technical creativity" and building thought processes.

2. How create business values from digital technology?

The rapid change in the attitude of society towards information and digital technologies makes it necessary to actively revise the main areas of activity by converting them into digital ones. New industries appear again and again, derivative demands for products and services are formed, boundaries of feasibility of business ideas are expanded, forms and essences of products, its consumer value are changed. The key trends of digital transformation are the growing importance of customer experience (client focus) and the introduction of personal component in interaction with the brand (brand personification), transformation of the operating model for the possibility of flexible restructuring of the company's business processes under changing market conditions and new breakthrough technologies, where Hyper-awareness, informed decision-making, rapid execution become very important conditions, as well as the introduction of digital thinking into the corporate culture of the organization.
The globalization of the economy and the blurred boundaries of intercountry allow you to create cross-team for effective and efficient task execution. Now it is important for the company to remain the leader of the digital market that its staff be able to work in a team and understand the values of customers by analyzing their needs and preferences. An employee of a digital leader company should not have a narrow specialization, but interdisciplinary knowledge and broad competencies in various sectors of the economy. Companies need the competence of innovators and creative abilities, the ability of the employee to think outside the box and find alternative options in uncertain conditions. These are just a few of the opportunities that design thinking techniques and tools provide.
And this is just a little list of features that provide techniques and tools of design thinking (Figure 1).
Today we have passed out of the knowledge economy in experience economy [20], where the leader will be the one who understands the consumer and his needs, who is showing empathy for your client [20]. On the Forum in November 2017, the Head of Sberbank German Gref said that the centralized platform ecosystems can provide 360 degree services to ensure our client's needs: «Who will be able to cover more needs of the customer will win the race». In December 2016 Herman Gref participated in the project on study of customer experience to understand how conveniently arranged office and business processes for people with disabilities.

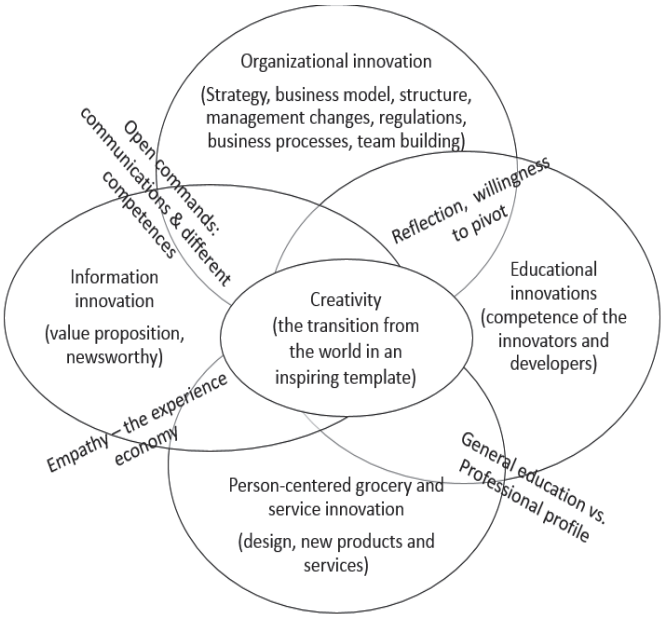

Fig. 1. Design Thinking - methods of innovation for companies
Рис. 1. Дизайн-мышление - методы инноваций для компаний

3. Design thinking philosophy is the organization of the team's thinking activities for customer research and innovation

3.1. Theoretical part: Our experience of using Design thinking tools in learning and the Board game "Design thinking"

The concept of design thinking is the ability to work with implicit knowledge and empathy that is important in terms of trend orientation of the modern business person. The key steps of the process - empathy, focus, generation, choice, prototyping and testing – are supported by different variations of many instruments. The philosophy of design thinking is built around design work in a multidisciplinary team and establishing communication between the participants, the interdisciplinary exchange of knowledge, iteratively processes and reflection. This approach is based on divergent and covergent thinking, and also includes systems thinking through a variety of processes and analysis from different points of view. Unexpected discoveries provided through such methods as: warm-up, gamification, effects of constraints, the change of scale (space, time) and anchoring on random stimuli and focusing on the questions "How we might?", "It turns out he needs..", the emphasis on the process, not the result. Starting in 2015 we introduce the methodology of design thinking in various courses: "Business modeling", "Internet entrepreneurship", "Marketing", "business Models in digital markets", "decision making Methods", etc. It is possible to form their vision of how to organize the process of solving problems where the analyzed situation is vague or lies outside the ready-made solutions.

In our research we use various tools of design thinking such as Empathy map, Customer Journey Map (CJM), Stakeholder Map, SCAMPER, Pinocchio, Matrix of Costs/Effects , Lego Serious Play (LSP), etc. [13]. Some techniques were modified to suit our needs [27, 2]. Part of the tools that we use to solve the problems of product development technology entrepreneurship or process improvement sessions in educational and management environment, is shown in Figure 2 [8, 6, 13, 12, 18, 17, 19].

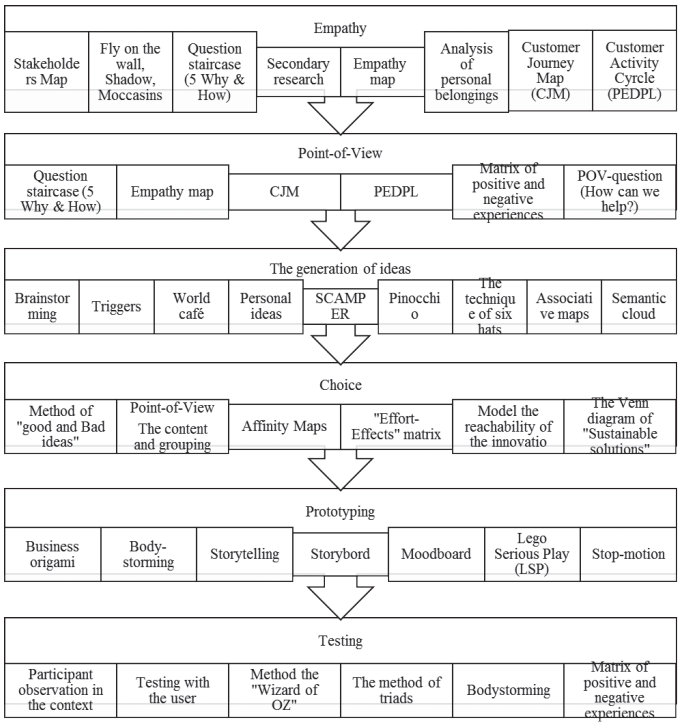

Fig. 2. The tools of Design thinking
Рис. 2. Инструменты дизайн-мышления

A variety of tools and opportunities for a comprehensive study of the problem and start the creative thinking contributed to the development of our Board game "Design thinking" (Figure 3).

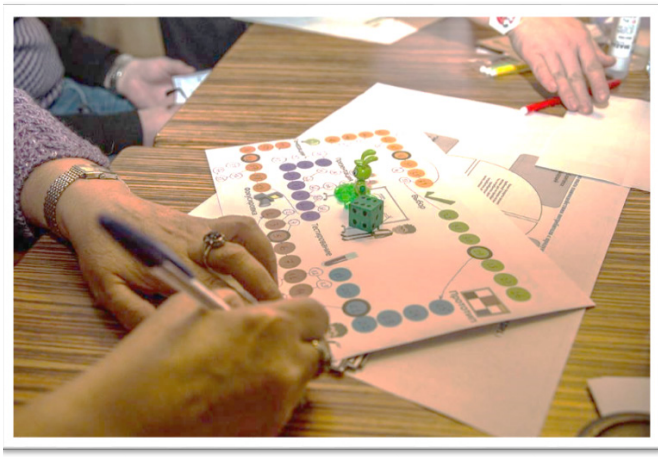

Fig. 3. The game "Design thinking"
Рис. 3. Игра "Дизайн-мышление"

3.2 Materials and methods: The Model PEDPL or How we can explore the client experience of interacting with the product

In the last year, we have been actively using the methods of design thinking in solving the problems of professional education and the organization of the educational process at the University. Important issues of the development of educational programs are discussed by University staff, students, employers at the round table with the help of design thinking tools: what new opportunities can be offered for

the development of educational programs, what internal resources to use, how to promote the brand of the program?

We developed a model to explore the client experience of interacting with the product PEDPL. This model can be used in conjunction with a map of empathy, and CJM. PEDPL – an acronym of English words: Pre-Experience, Experience, Post-Experience, Lost-Experience. An important segment is "Lost" (figure 4). All development possibilities can be drawn in this segment: new processes out-of-plane current business, an alternative to the use of a known product, expansion of functions, some direction to reach an initial goal, the reincarnation of the user experience in another plane, taking into account unrealized characteristics and interests of consumers (cultural characteristics, preferences, habits, traditions, etc.). This analysis can account for all patterns of the user experience in the product.

The participants of the design session develop a strategy for the development of educational programs, formulate new forms of interaction with potential customers. Participants of the design sessions note that the main achievement is the opportunity to discuss acute problems, share experience with colleagues. Design thinking is one of the main trends of the digital economy. And education should be actively reconstructed in the era of constant change under the new requirements of the labor market, using the opportunities offered by digital technologies. The University teaches a digital generation student. The process of education at the University today should be built so as to prepare graduates to solve complex problems in their professional activities. They must be determined to achieve results through empathy and engagement, collaboration and innovative thinking.

We include up to 10 tools in the scenario of the design session, because we believe that the constant repetition of certain actions contributes to rethinking the complex problem from different points of view and is important for achieving a better result through. Thus, we use the stakeholders map (stakeholders Map) to register actions and connections, to determine the target audience, to identify the subject of the study. Next, the participants make a map to reveal the needs of the target audience. They conduct interviews using the ladder of questions, and correct their initial perception of consumers. They use the triad method to compare their solution to similar two products, then describe the differences and identify the benefits. So they better reveal emotions in relation to the product or competitor's product, the motives of the purchase. When researchers build a sales funnel, they paint the Customer Journey Map (CJM), which also helps to take the place of the customer and describe his experience. Adding to CJM method triads allows you to analyze and find the best experience with similar products (see Figure 4).

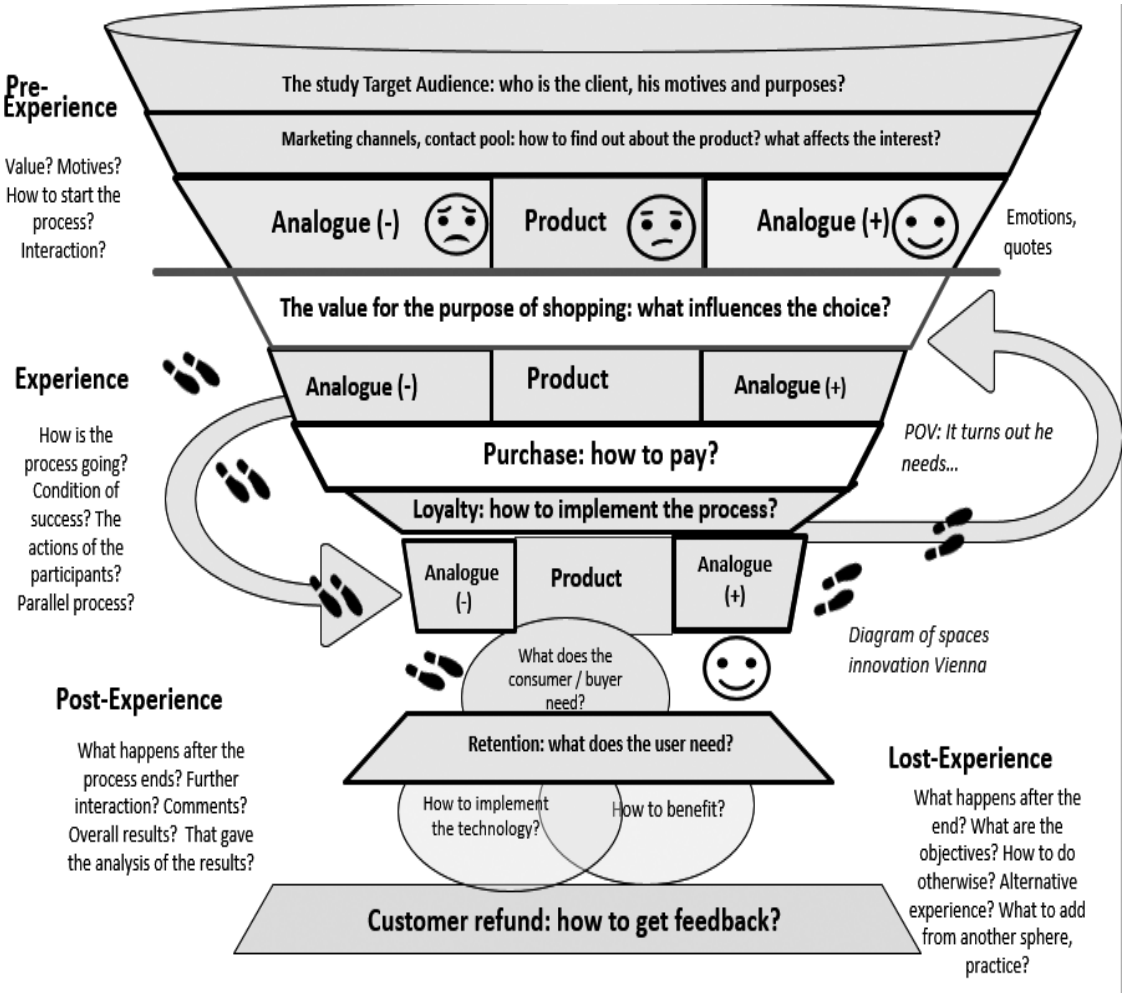

Fig. 4. CJM, the method of triads and PEDPL in the sales funnel

Рис. 4. CJM, метод триад и PEDPL в воронке продаж

We use the PEDPL model in addition to CJM to study the client experience of interacting with the product. PEDPL - acronym of English words: Pre-Experience, Experience, Post-Experience, Lost-Experience. The Lost segment is important (see Figure 5).

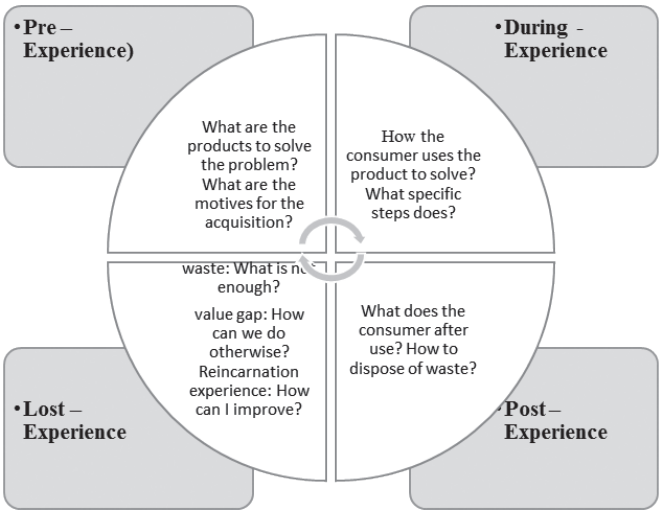

Fig. 5. Model PEDPL: Pre-Experience, During-Experience, Post-Experience, Lost-Experience

Рис. 5. Модель PEDPL: предварительный опыт, опыт, пост-опыт, потерянный опыт

In the segment "Lost" can be written out all the opportunities for development: new processes outside the plane of the current business, alternatives to the use of the known product, the possibility of expanding functions, other areas to achieve the original goal, the reincarnation of user experience in another plane, taking into account unrealized features and interests of the consumer (cultural characteristics, addictions, habits, traditions, etc.). So you can find what was not taken into account, and therefore lost in the product, but to highlight the patterns of user experience.

3.3 Research result

Figure 6 shows the results of the quest prototype creation. Prototype of quest: the user's way of the rector and the mayor to show how to make the life of a short-sighted young man more comfortable in the city and the University. This prototype is a road map (route) to show the problems and challenges of a myopic person in the city and University. Two important leaders, the mayor and the rector of the University, from point A (the rector's office at the University) to point B,C, D, etc. (University, laboratory, toilet, dining room, lecture hall, the road to the University campus, bus stop, shop) must pass the route in special glasses and with a gadget that simulate for them poor vision. On the route, they will encounter myopic problems (poor view of the door number, poor University navigation, poorly read fonts, poor lighting, unsafe streets, unfriendly environment for pedestrians and cyclists, indistinguishable inscriptions on houses and buses), but they will be shown how to solve these problems in a simple and cheap way. This flashmob "don't hurt the pedestrian" in order to teach to operate the pedestrian and the cyclist with the huskies, which will appeal to the bonuses on the portal "active citizen", and dislike that the offender will lead to the Board of shame. These are bright multi-colored doors, signs, inflatable large figures, large inscriptions - all for easy navigation. It's good lighting in the workplace. These are buses that can call when approaching the stop, and the driver can sound the stop where the University buildings are located. And much more. The basis of the study was the Map of empathy, the triad method, CJM, PEDPL).

Fig. 6. Prototype of quest: the user's way of the rector and the mayor to show how to make the life of a short-sighted young man more comfortable in the city and the University (The basis of the study was the map of empathy, the triad method, CJM, PEDPL, SAP business origami)

Рис. 6. Прототип квеста: пользовательский способ ректора и мэра показать, как сделать жизнь недальновидного молодого человека более комфортной в городе и университете (основой исследования стала карта эмпатии, метод триады , CJM, PEDPL, SAP бизнес оригами)

Participants of the design sessions discuss important issues of professional education and professional development of teachers and managers of the Financial University with the help of design thinking tools. They define brand development strategies; possibilities of changing the classroom space to remove restrictions for the disabled; search for motivation tools or ways to change the curriculum for students who study in the evening after work; new forms of interaction with potential customers. Thus, the brand promotion strategy of the educational program "Business Informatics" has become one of the results of the business game business game "Key stages of Design Thinking: from empathy to prototype". The participants have created and launched a social media series of comics about a cat Bishka who is the friend of all business of computer science.

But the participants always note the main achievement of the design session, which is the opportunity to discuss acute problems, share experiences with colleagues.

Discussion and conclusions

Recently I received an invitation to speak at the section of the Forum dedicated to new technologies, I was asked a question: can the techniques of design thinking and technologies of collective intelligence to make a person smarter artificial intelligence? Techniques of design thinking (DM) can't make one person stronger artificial intelligence (AI). AI is built on the algorithms and rules engine. The current situation is characterized as a technological singularity, i.e. a black hole, where rules do not work. And DM allows to solve problems in an uncertain setting. But the self-organizing neural networks are already

today implemented in AI. And we know many examples when it is already running (for example, AlphaGo). In contrast to AI design thinking relies on people's emotions and empathy. However, today research is being conducted into the development of emotional robots. And unfortunately, negative emotions yet are best able to reproduce because they best reflect the changes in a satisfactory condition of the system [15].

They say that if we try to reproduce the functioning of the brain, repeating its electrical connections, is about the same as to look for the speaker in the radio. However, we must understand that the human intellect all the time necessary to maintain in good condition, as we began to think about the care and preservation of our physical body. A child is born with a full set of neurons of an adult, but his intellectual development is entirely dependent on building communication between neurons. It is communications that provide the whole complicated thought process, is the guarantee of our high intellectual potential. However, as is typical for any system, biological mechanisms of the human brain by creating new neuronal connections, leading to overproduction. In this case, the period cut-off occurs, and about four out of ten connections is lost at high speed (up to 100,000 points per second) [14]. If we unilaterally to develop in the same professional field, we lose the skills that were inherent in our early childhood. We forget the knowledge possessed recently. Combating laziness of the mind and the development of communications between neurons, is another important task that is solved by Design thinking. Creativity occurs through the rupture pattern of thinking that allows to produce, on the one hand, quick decisions, but on the other, prevents you from thinking outside the box and plunges us into a state of inhibited perception of the world. This means the cut-off processes in our brain are accelerated. And mankind may well become the image of the lazy, parasitic robots, stationary people of the future, which is drawn in the cartoon "Wall-e".

We need to remember about the social phenomenon of human consciousness: it develops primarily when interacting with other people. The social nature of information is that it is "a reflection of the presentation of our considerations," as it was determined one of the famous scientists-Cybernetics A. D. Ursula [25]. In fact, the sharing of lessons stored in a materialized form of experience is through information. Collective thinking in the information society becomes wise as well as people with age, but faster than the intellect alone.

The achievable power of super-Intelligence 170 000 times higher than human ability. Which corresponds to Moore's law (doubling in 2 years global computing power) and self-accelerating development. Kurzweil measured the ratio of productivity growth over $ 1,000 to the mental ability to process information. According to the classification of Kurzweil's already in 2025 we'll get to parity ratio to continue moving exponentially. In 1985 this ratio was 1: 1 trillion, in 1995, 1: 1 000 000 000 in 2005 to 1: 1 000 000, 2015 at 1: 1 000 (this is a superior mouse brain). In 1967 British philosopher Philip Ft offered to discuss the problem known today as "the trolley Problem". It is very well told in the film "the Philosophers": you have to make a choice that it is better to save a man lying on the tracks, or passengers of a trolley rolling at him, or otherwise, will fall into the abyss? Today, this philosophical problem is again the most discussed. Voting "Machine morality" is held At the Massachusetts Institute of technology. Its purpose is to define the rules of decision for an unmanned car in critical situations. How the drone would do if his brakes failed at the crosswalk, and to make a choice between 3 runners and 3 children, or crash into a concrete barrier, putting in danger the lives of his passengers, but to save the life of 1 pensioner, 1 pregnant woman, 1 to a homeless person or 1 criminal? There is quite a topical issue, the rules of robotics Isaac Asimov may be necessary to add?

AI will be smarter than humans, of course. But the question remains, will AI smarter than humanity? Here the responsibility belongs to the people who should keep in mind about designing your life ("design life").

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