

Meaningful Innovations in Healthcare

Design for future services and successful implementation

Ida Christine Opsahl

Department of Design

NTNU, Norwegian University of Science and Technology

ABSTRACT

The Norwegian healthcare sector faces major challenges including manual processes, lack of interaction between systems and service providers, along with an ageing population with increasingly complex health issues. Developing and implementing innovative services is costly and time-consuming. To create truly meaningful innovations, it is important to proactively figure out what is of long-term value for users, organizations, ecosystems and society. Most innovation projects fail due to weak implementation processes. Therefore, it is equally important to design the implementation process.

This article highlights challenges, propositions to meet them, and how to ensure a good implementation process. Additionally, it discusses what is of long-term value for each of the four levels: users, organizations, ecosystem, and society in Norwegian healthcare. The article concludes that the healthcare sector will benefit from cultivating the long-term values for each of the four levels. This should be used to create an overall, long-term goal, where healthcare services radically bring value to stakeholders and society. How to reach this goal should be decided upon through co-creative processes and multidisciplinary teams. Introducing incremental changes towards this goal, focusing on good innovation leadership and communication, in addition to guiding the culture towards openness for change, will secure successful implementation of the meaningful innovation.

KEYWORDS: meaningful Innovation, implementation, healthcare services, design for the future

1. INTRODUCTION

The Norwegian healthcare sector faces major challenges and consist of a complex landscape of interconnected systems. The development and implementation of innovative services are expensive and time-consuming processes. Combined with the accelerating development of technology, it becomes increasingly important to design for the future inhabitants, healthcare personnel, ecosystem of healthcare providers and society. As innovation involves difficulties and risks of failure, Hekkert and Dijk (2011b) (as cited in Kuhn, 1993), state that investors often needs to feel the urgency for change, and find ways to cope with resistance towards change from employees

on all levels in the organization. To do so, new ideas, directions, methods, modes of innovation and process management may need to be developed and incorporated.

Several studies have discussed healthcare challenges and propositions to meet them. Increasingly focus has shifted towards if service design and co-creation leads to more effective service innovation. On the other hand, Krüger (2010) states that 70% of all innovation projects fail. Therefore, it is important to design the supportive ecosystem around the innovation to be implemented (den Ouden, 2012). This article explores how to design and implement meaningful service innovations in this domain.

The goal is divided into more comprehensive parts highlighted through the following questions: How can we radically change the meaning of future services? How can we combine meaningful innovation and implementation? How can we balance radical with feasible?

1.1 Method

The study is based on literature reviews from online research papers, and books on innovation, implementation, trends in healthcare and approaches to design for the future. Additional ideas and information is supplemented from the course: Strategy and Changes in Technology Companies, taught at NTNU during the fall 2018.

2. DEFINITIONS

2.1 Service Design

There are multiple definitions of service design. According to DOGA (2018), it is defined as “a user centric process where the designer focuses on creating holistic and optimal service experiences”. Continuously, it is about gaining an understanding of the users based on qualitative research and stakeholder involvement through co-creation. Services tend to be divided into smaller sequences where interactions of touchpoints between stakeholders and systems are mapped out. Combined with visualizations, this is used to make the service more tangible and get a holistic overview. Designing a service is according to Lockwood (2010), a complex and dynamic process that requires multidisciplinary teamwork. Solutions are improved over time based on feedback, and prototypes are used to initiate communication between designers, team members and external stakeholders.

2.2 Meaningful Innovation

Innovation is according to Innoco and Sintef (2013), defined as something that is new, useful and utilized that creates added value. It can be a product, service, way of working and so on. Value is a frequently used term, with different meanings in different contexts. According to den Ouden (2012, p. 7), meaningful innovation means to find solutions to societal challenges by coming up with

new value propositions for users, organizations, ecosystems and society. This demands a holistic view of the system to coordinate conflicting requirements and needs into desired solutions. Furthermore, it creates “an ‘experience’ for the user, ‘doing well’ for the organization, ‘doing good’ for the total ecosystem and creating a ‘transformation’ at societal level”. Only if the innovation change behaviour and create long-term value for users, it will be impactful on society, and most likely disrupt the industry.

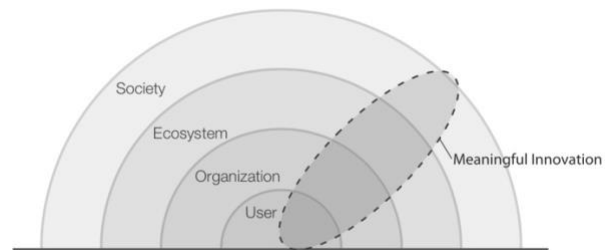


Figure 1: Four levels of value, den Ouden (2012)

The user is the ultimate target of innovation and the person expected to use the system or service. It is important to get a deep understanding of motivations and differences between individuals to change user behavior.

The organization provides sustainable value for itself by providing added value for customers and users. Additionally, providing jobs is of value to their employees.

The ecosystem consists of all stakeholders with a direct or indirect role in the different phases of innovation. Competences and relationships are important, and value creation requires mutual commitment and dependences.

The society consist of users, organizations and ecosystems, and is the highest level of value. Understanding societal issues is often the basis for transformational innovations.

According to Hekkert and Dijk (2011a), products and services help people relate to the world and enables them to experience things differently. Therefore, the relations products and services enable influence how meaningful they are. By first defining what relations the service should enable,

then make sure the final design provides this, the design will be meaningful to people.

2. DESIGN FOR THE FUTURE

The world we know today is constantly changing. Because the development and implementation of concepts take time, the design might be outdated when they finally are realized. Hekkert and Dijk (2011a), continue to say that to design for the future, we need to define future user concerns. Doing so enables us to come up with value propositions for people, communities and society for the long term.

DOGA (2018) defines strategic design as *“the process of redefining how problems are approached, identifying opportunities for action, and helping to deliver more complete and resilient solutions”*. The approach is future oriented and commonly used in relation to big challenges. According to Roos, von Krogh, and Boldt-Christmas (2014, p. 241), companies decide on a strategy by identify alternatives through analyzing internal and external factors and map out current situation and where they want to be in the future. Alternatives are tested to see if they correspond to the company’s culture, vision and strategic goals. Another commonly used design approach in strategy is Design Thinking, which according to Dam and Siang (2018), is an innovation facilitating process existing in the confluence of inspiration, conceptualization and implementation. It is useful in handling the unknown, or to reframe problems to make sure the right problem is solved.

According to the futurist, Steffen (2015), we should seek to understand pressing forces in society and use it in combination with imagination to anticipate possible futures and build empathy to understand future user’s motivations and concerns. Moreover, Roos et al. (2014, p. 84), adds that we can point out trends and signals of change in political, economic, sociocultural, technological, environmental, and legal conditions to identify opportunities and risks and highlight areas of strategic interest in the market. This can be done in teams using brainstorming tools. Backcasting’ is according to Schroeder, Tilley, and Keene (n.d.), a

scenario-based foresight methodology, where a future situation is proposed by pointing out signals of change, issues with stakeholders and the current state. The team then develop possible steps to reach the future from the present, considering dimensions like technology, sociocultural, organizational and so on. Optional steps are explored for comparison and decisions are based on feasibility. With a new frame of reference, Hekkert and Dijk (2011b), state that the concept can be transferred into roadmaps where partial steps towards the future goal, that is attractive to users, organizations, and society, is mapped out. This proactive attitude increases the chance of meaningful innovation.

Furthermore, Hekkert and Dijk (2011b), state that to design for the future, the designer must gather as much insight from as many stakeholders as possible. Understanding possible future contexts, enables us to come up with value propositions. The design that addresses the shared concern of most individual future users is the most relevant and meaningful design to the society. Moreover, the solution’s meaning by ‘why’ it is needed is a greater driver for market competition than ‘what’ is needed, as people use and buy products for deep reasons, connected to psychological satisfaction and functional utility.

3. VALUE FOR USERS

In the following sections, challenges, trends, response to challenges and relevant design aspects for each of the four value levels in the Norwegian healthcare will be highlighted. Starting with the users, then organizations, ecosystems and society. A summary is provided in table 1.

3.1 Challenges for users

As discussed in Bjørkquist, Ramsdal, and Ramsdal (2015) (as cited in Norwegian Directorate of Health, 2012 pp 42-43), it is anticipated that the need for care will increase, while fewer resources will be available to provide the care. Improved efficiency in healthcare will according to den Ouden (2012), reduce social interaction between healthcare personnel and patients. The feeling of loneliness this creates, can for some, lead to

depression and health related anxiety, causing more medication and frequent doctor visits, constituting higher costs for society. While new technology enhance safety, Christie and Mørk (2018), warn that it can make patients more vulnerable if it doesn't work or is hard to use. They continue saying that today's healthcare services are fragmented, and inhabitants must sometimes gather and share information themselves, leading to ineffective and manual processes. This influences the time it takes to provide necessary care. Thakur, Hsu, and Fontenot (2012), state that the implementation of a new service causes changes that might temporarily interrupt care routines, constituting a risk for patient safety. The time patients can stay in hospitals will be reduced, causing more ill patients to be sent home without providing them with necessary help.

3.2 Trends and responses to challenges

According to Christie and Mørk (2018), preventative care and to create holistic services has received increased focus, using technology to follow up patients remotely, and enhance the interaction and coordination between services. Charlesworth, Butler, and Davey (2015), continue saying that digital tools like telephone and video-streaming consultations will provide education, support and preventive care, and can facilitate self-management so most care will be delivered in the home or community. Furthermore, they state that reduced medication is important, which requires that doctors are increasingly informed about what their patients want. When patients are informed about their own condition, their own options, and potential outcome of treatment, they choose less treatment and care. Moreover, Elwyn et al. (2010), say that greater involvement of patients in their own care often results in better experiences, less dependencies, and sometimes even a better outcome for health. According to Charlesworth et al. (2015) (as cited in the Economist, 2012), self-tracing is a trend, where technology collects and analyzes data about an individual's activity. This movement helps patients to take a more active role in healthcare and place greater emphasis in monitoring, prevention and wellness. Improvements in technology and databases will according to Thakur et al. (2012),

enable good communication between doctors, patients and other staff.

3.3 Design aspects

According to Vik (n.d.), the healthcare sector increasingly sees the value of design methodology to ensure that solutions meet actual user needs, instead of being technology driven. This is done by building deep empathy and understanding of behaviors, needs, emotions and the context for the solution. Continually, the implementation process needs to be designed by educating and preparing the users for change. Involving the users is the key to ensure successful implementation. According to Hekkert and Dijk (2011b) (as cited in Gaynor, 1996), design-driven innovation helps focusing on what will create meaning for future user's needs, hence radically change the meaning. Additionally, den Ouden (2012, p. 71), states that there are three strategies towards changing user behavior: The first is to provide feedback on what impact the user's behavior constitutes, leaving the change up to the users. The second is to trigger certain behavior through the way the solution is designed, which is slightly more forceful. The third way is to use forced functionality by creating strong obstacles, leaving the user with no choice. It is important to consider both intended and unintended outcomes of behavior as persuading people might have undesired effects. Providing a combination of a goal and feedback is an effective way to encourage behavior change.

4. VALUE FOR ORGANIZATIONS

The Norwegian healthcare is divided between two main service providers. Municipalities are responsible for the Primary Healthcare Services, providing continuous and generalized care. Four regional hospital trusts administer the Specialized Healthcare Services, responsible for hospitals and special treatment for people in their region. Some healthcare services are also organized in fellowship between municipalities and the state.

4.1 Challenges for organizations

According to den Ouden (2012), it is predicted that we need half the workforce to work in healthcare as people have increased quality of life and live

longer. Maintaining healthcare level as it is today, will be expensive. The healthcare sector is funded by tax money with few possibilities to negotiate. Continually, it is regulated by a series of laws, with a complex legislation that is not always easy-to-follow (Roos et al., 2014, p. 61). According to Charlesworth et al. (2015), hospitals are only brief suppliers of specialized treatment for acute needs, while municipalities are responsible for the holistic treatment and continuous care for their patients 24/7/365. To participate in their own treatment, patients need to be informed about their condition and options. Hence, the organizations need to find ways to inform the patients. It will be a challenging task to gain a deep understanding of unmet user needs. Traditional hospitals will also be reduced, leading to increased homecare and hospitals at home. To reduce costs, Christie and Mørk (2018), report that hospitals cut down the time patients can stay, leading to increased pressure on the municipality's resources and competency, as they become responsible for more ill patients.

Digitalization and electronic health records will according to Charlesworth et al. (2015), improve accuracy and accessibility of healthcare services greatly, but data security and privacy, needs to be managed appropriately. According to Christie and Mørk (2018), today's healthcare services are characterized by ineffective, expensive and manual processes. The services are experienced as fragmented due to difficulties with integration between service providers. It is also a challenge that the need for healthcare increases while there is a shortage of health personnel to deliver the services. According to Roos et al. (2014), implementation of innovative solutions involves an allocation of organization and resources on several levels. Christie and Mørk (2018) continues emphasizing that when responsibility and roles shifts between levels, it shakes established work and power structure, creating friction towards change. Additional barriers for change are according to Roos et al. (2014), attitudes, organizational cults and cultural norms, how content employees are with the current situation,

fear of change, poor leadership, lack of flexibility, poor communication, and slow processes.

4.2 Trends and responses to challenges

According to Bjørkquist et al. (2015) (as cited in Tether, 2002), cooperation between users and suppliers can provide a significant understanding of user behaviours. Furthermore, Thakur et al. (2012) (as cited in Fitzgerald et al., 2002), state that co-creative and multidisciplinary teams are valuable as implementing innovation in healthcare is more effective when interactivity between employees are encouraged and believed in. Digitalization of healthcare services are according to Christie and Mørk (2018), necessary and a possibility creating factor for solving the challenges with integration between service providers. Nevertheless, an emphasis on technology is not sufficient alone. Communication and trust is vital, and requires meeting points and communication channels. Digital tools need to be systematically evaluated based on what degree they support following principles: collaboration, patient-orientation, adjustment to complex practices and to what degree it creates real value for the patients. According to Roos et al. (2014, p. 404), smaller changes are less troublesome than complex innovations and larger changes. Implementation can be made easier and less stressful by encouraging open organization culture, two-way communication and interaction between top management and employees. A culture that provides better chances of innovation is characterized by the following: It consists of autonomous work groups with individual talents combined with collaborative skills. It has a flat structure with open and clear communication based on trust, it encourages flexibility under responsibility, and focus on continuous learning. According to Hekkert and Dijk (2011b), *"Successful implementation of innovation depends on the company's ability to manage the innovation process in terms of people, time and money in addition to the quality of the idea"*. According to den Ouden (2012), it is also important to find a value proposition that fit the organization's strategy, provide an opportunity for sustainable

business and states what tangible and intangible benefits it creates for users.

4.3 Design aspects

Successful integration of design and business relies according to Roos et al. (2014), on a common understanding and language. The implementation process challenges leaders and the organization as it implies change. Therefore, good innovation leadership is to know which forces to deal with when managing changes, and to discover, establish and improve effective routines to be incorporated in the organization. Christie and Mørk (2018), points out that leaders also need to understand what to do to stabilize new practices and what dependencies and friction works across services. Continuously, Lockwood (2010) says that design leaders should, in addition to create new approaches to innovation, assist a user-centered cultural transformation of the organization. For transformations to happen, it is important to gain support from someone close to the center of power. Employee's innovative behavior depends, according to Thakur et al. (2012) (as cited in Vogus & Welbourne, 2003), on the management's ability to roll the innovation out in an effective way, and how they maintain positive relations to employees by engaging in extensive information sharing. For healthcare, Christie and Mørk (2018), state that information should flow from department levels to a higher management levels. Organizations should according to den Ouden (2012, p. 75), aim at recognizing unsolved problems, unmet needs, and insufficiencies that users are not even aware of.

According to Lockwood (2010, p. 23), an important skill for the designer is to practice strong commitment, articulate visions and contribute to creating a design culture. They need to think of the organization as interrelated systems and understand where to focus to constitute major cultural impact. They should pay attention to knowledge, ideas and insights coming from employees interacting in formal or informal settings. Furthermore, it is crucial to create a shared view of problems or opportunities within the organization and agree upon the desired outcomes in an ideal, future world. The every-day

lives of people providing today's services will according to Vik (n.d.), be affected by the implementation of innovative service concepts. It is important to prepare the whole organization for these changes, which can be done by carefully designing the implementation process.

5. VALUE FOR ECOSYSTEMS

5.1 Challenges for ecosystems

The division between the Specialized- and Primary Healthcare services in combination with increased specialization will according to Christie and Mørk (2018), lead to more complex borders between organizations, professions and services. Hence, effectiveness, coordination and information flow between services is challenging. Changing the interplay between stakeholders, pushing them to collaborate more closely is a tough task. Vik (n.d.) states that healthcare is not always successful when implementing new solutions. This is because of departmentalized and hierarchical structures, many people are affected and the fact that interrelated systems and processes affect each other. According to den Ouden (2012, pp. 82-85), it takes many stakeholders to provide necessary knowledge and expertise on user needs, to create impactful innovations. This often requires renewal of the ecosystem. Innovation in ecosystems are complex. An understanding of value propositions and how members of the ecosystem can contribute to this is crucial.

5.2 Trends and responses to challenges

Christie and Mørk (2018) (as cited in Aanestad & Olausen, 2010) say standardization is important to secure effective coordination between healthcare service providers. If this is the case, it needs to be applied to infrastructures, protocols, tools to handle patient data, flow of patients, information and communication between stakeholders. These technologies are commonly customized for decentralized development projects, which create or uphold fragmentation if it is not possible to integrate with other project's solutions. Big investments are made to develop larger and more user-oriented web platforms. Nevertheless, these projects meet strictly governed information security and data protection challenges. Christie

and Mørk (2018), proposes that stakeholders should be held accountable for collective value creation instead of focusing on their own activity level. According to Lockwood (2010, p. 23), we should place incentives into the system to provide extra motivation for adopting new ideas wherever possible.

5.3 Design aspects

Service design processes are well suited to deal with complex practices that involve focusing on the whole ecosystem instead of looking at separate problems (Lockwood, 2010). Prototypes can initiate dialogue between designers and external clients to help mapping out touchpoints between service providers, and they can be gradually improved based on feedback. Visualization is according to Sevaldsen (2009), another tool for communication and creativity, used to propose new solutions when dealing with interconnectedness. According to Lockwood (2010, p. 23), it is important for the designer to identify factors for difficulties and to collaborate with necessary people to change these parts of the ecosystem. The focus should be to create holistic services that fit together in a larger ecosystem, using tools to make services more manageable. Collaboration in networks, will according to den Ouden (2012, p. 77), enable organizations to combine different expertise, experiences and viewpoints to provide more insights on unmet user needs into one solution.

6. VALUE FOR SOCIETY

6.1 Challenges for society

CCSDI (2018) report that population changes includes increased number of elderly people and more people living with chronic diseases. Charlesworth et al. (2015) add growing socioeconomic inequalities to the list. Continually, they say that belongingness, meaning, motivation and a sense of achievements are important factors for rehabilitation and a good life. On the

other hand, finding ways to provide inhabitants with meaningful lives- their whole life, is a challenging task. Over-diagnosis and over-treatment constitute considerable risks and costs, leading to less medicating. According to Roos et al. (2014), development in technology, political decisions and change of power structures are potential barriers for change and innovation. Frustration from patients that doesn't receive necessary treatment and overworked healthcare personnel will lead to pressure on those making the decisions to do something about the situation. Impactful innovations require according to den Ouden (2012, p. 88), a change of individual behavior, and are only impactful when the majority adapts to the changes sustainably.

6.2 Trends and responses to challenges

Patients and healthcare personnel drive change as they push leaders to do something about the situation. Design methodology is more widespread now as it focuses on stakeholder and individual user needs through the design and implementation process.

6.3 Design aspects

According to Lockwood (2010, p. 23), The designer needs to be a system thinker. Doing so can be achieved by looking at major systems, recognize what drives them and understand how complex systems interact with each other to create a whole. A good start is to invite all key stakeholders to an intent workshop to establish the scope and issues needed to be addressed in the design. The goal for this is to create a shared view of the problem and agree upon the desired outcomes of the ideal future world.

Additionally, it is important to create a collective societal ownership of the problem and facilitate strong engagement among the people of all levels with an interest in influencing the outcome.

	Challenges	Trends and response to challenges	Design aspects
USERS	Increased need for care Less social contact between patients and health personnel Loneliness- frequent doctor visits Technology makes vulnerable Fragmented services Help not provided fast enough Home from hospitals without necessary follow-up	New technology enhance safety Increased focus on preventive care Self-tracing for monitoring, prevention and wellness. Digital tools- education and fast communication over distance Involvement of patients in care Homecare	Use design methodologies to meet user needs User involvement in development and implementation Prepare users for change Design for future user's needs
ORGANIZATION	Shortage of personnel Ineffective, expensive and manual processes Fully informed patients Hierarchical structures Municipality- pressured resources and competency Data security and privacy Interruption of patient care Barriers against change	Co-creative & multidisciplinary teams Technology enhance safety Digitalization solves challenges of integration between services Meeting points and two-way communication Local and cross-sectional change of practices Build supportive culture for change	Create shared view of language, problem or opportunity Good innovation leadership Design leaders- support cultural transformations Bottom-up information sharing: Department to management Design implementation process Shared view of desired outcome
ECOSYSTEM	Complex borders between services and organizations Interrelated services Technologies customized for decentralized projects Effectiveness, coordination and information flow Stakeholder collaboration Implementing new solutions	Standardization to secure coordination and communication Develop larger, user-oriented platforms Encourage interaction between departments and organizations Hold stakeholders accountable for collective value creation Incentives to provide motivation	Use service design tools: make service more manageable Design holistic services that fit together in larger ecosystem Map out touchpoints between stakeholders, use prototypes and visualization Identify factors for difficulties Collaborate on change
SOCIETY	Population changes Socioeconomic inequalities Less medicine Change of power-structures Reduction of hospitals Quality of healthcare services	Increased use of design methodology to ensure needs of patients and health personnel Establish clusters for innovation and design for healthcare Smaller innovations are less troublesome to implement	System thinker- understand how complex systems interact Create shared view of problem or opportunity, Agree on desired outcomes for the future Create collective engagement

Table 1: Challenges, response to challenges and design aspects for the four value levels in healthcare

7. DISCUSSION AND CONCLUSION

After splitting up the overall goal for the article, the separate parts will now be discussed to connect everything together.

Meaningful innovation is when long-term value is added for users, organizations, ecosystems and society. This requires a holistic view of the complex healthcare sector to see how conflicting

interests and requirements can be combined into appropriate solutions.

7.1 Long-term value for users

Based on the findings in this article, long term value for users is to ensure they feel safe, are fully informed and involved in their own treatment and care. Technologies and digital tools need to be accessible, reliable, adapted to user needs, and easy to operate. Preventive care, rapidly provided

help and social contact with patients is prioritized, and the services are experienced as continuous and so well-functioning it feels like one, holistic healthcare service. Users are involved in the continuous design and implementation of services and they feel heard and prepared for the changes.

7.2 Long-term value for organizations

For organizations, long term value is to enable employees to focus on their core expertise, by automating manual processes and hire enough people to provide preventive and necessary care. Digitalization and technological tools are used to support effective communication with other professions and services. Co-creative processes, meeting points and two-way communication makes employees feel involved in, and prepared for the changes through bottom-up information sharing. Innovation leaders guide the organization towards a supportive culture for change. They also help guide the implementation process, and to create a shared language and shared view of the desired outcome.

7.3 Long-term value for ecosystems

For ecosystems, long term value is to ensure good collaboration and frictionless flow of information between members of the ecosystem. One way to do this is to standardize technology and systems. Members are collectively responsible for value-creation for inhabitants and to motivate employees to adopt new ideas. Innovation labs and clusters for co-creation are good initiatives.

7.4 Long-term value for society

For society, long term value is that inhabitants are informed, involved in care and receive necessary preventive care, reducing the need for treatment and medication. The overall quality of healthcare services works so well, it exceeds inhabitants' and healthcare provider's needs. Decision makers are informed about how trends and changes in population influence the future healthcare sector, and they are prepared to meet these changes. A shared view of the desired outcome for the future, enables a collective engagement and involvement of stakeholders to improve the healthcare system.

7.5 Recommendations

To radically change the value of future services, design teams should understand pressing forces, trends and gather as much information they can about as many stakeholders as possible. Analysis of internal and external factors is of help to identify opportunities and risks for the future. Co-creative clusters can utilize each other's competency and use design methods to synthesize gathered insights into future user concerns, desires, and possible future contexts, so the right problem gets solved.

As large and radically different projects are harder to implement, the road towards the desired future goal should be divided into smaller steps to be incrementally introduced. This way the final goal can radically change meaning while being feasible for implementation. Involvement of users and stakeholders through co-creative processes and multidisciplinary teams, create a shared view and collective ownership to the process. Roadmaps should be created in collaboration to concretize which step each stakeholder need to take in different dimensions to reach the goal. Design leaders should seek to understand how to stabilize new approaches, and prepare people for change through carefully designing the implementation process. New communication channels should be established using intranet, internet, meeting points, and two-way communication.

More research must be conducted to define what creates long-term value for users, organizations, ecosystems and society. After defining this for each level, experts and politicians should be challenged to rethink if there are more optimal ways to organize the healthcare sector for the future. Is the division between the Specialized and Primary healthcare services appropriate? Based on findings from this article, it is recommended to shift the focus from being reactive to proactive when it comes to dealing with the healthcare societal challenges. If we agree on an ideal healthcare system that holistically provides value for each level in the far future, and introduce incremental steps towards this goal from the present, we will be able to create more

meaningful healthcare services. The opposite would be to continue adapting today's incorporated and complex healthcare services to meet the challenges, continuing to patch it together into a holistic system.

REFERENCES

- Bjørkquist, C., Ramsdal, H., & Ramsdal, K. (2015). User participation and stakeholder involvement in health care innovation – does it matter? *European Journal of Innovation Management*, 18(1), 2-18.
- CCSDI. (2018). About CCSDI. Retrieved November 19, 2018, from <https://www.ccsdi.no/about-ccsdi>
- Charlesworth, K., Butler, C. D., Jamieson, M., & Davey, R. (2015). The future healthcare?
- Christie, W. H., Thomas, & Mørk, B. (2018). Innovasjon og samhandling i helsevesenet: En praksisbasert tilnærming. *Praktisk økonomi & finans*. [Innovation and interaction in healthcare: A practical approach]
- Dam, R., & Siang, T. (2018). 5 stages in the Design Thinking Process. Retrieved from <https://www.interaction-design.org/literature/article/5-stages-in-the-design-thinking-process>
- den Ouden, E. (2012). *Innovation Design. Creating Value for People, Organizations and Society*: Springer.
- DOGA. (2018). Hva er en nordisk designressurs? [What is a Nordic design resource?] Retrieved from <https://doga.no/verdien-av-design/nordiske-designressurser/>
- Elwyn, G., Laitner, S., Coulter, A., Walker, E., Watson, P., & Thomson, R. (2010). *Implementing shared decision making in the NHS*. *BMJ*, 341.
- Hekkert, P., & Dijk, M. v. (2011a). Reframing Method. Retrieved from <https://www.reframingstudio.com/reframing-method>
- Hekkert, P., & Dijk, M. v. (2011b). *Vision in design: a guidebook for innovators*. Amsterdam: BIS Publishers.
- Innoco, & Sintef. (2013). Hva er innovasjon? [What is innovation?] Retrieved from <https://www.sintef.no/prosjekter/n3-kommunenes-innovasjonsverktøy/>
- Krüger, W. (2010). Implementation: The core task of change management. *Strategy—process, content, context*, 212-224.
- Lockwood, T. (2010). *Design thinking: integrating innovation, customer experience, and brand value*. New York: Allworth Press.
- Roos, G., von Krogh, G. R., Johan, & Boldt-Christmas, L. (2014). *Strategi: en innføring* [Strategy: an introduction] (6. utg. ed.). Bergen: Fagbokforl.
- Schroeder, K., Tilley, R., & Keene, C. (n.d.). Backcasting. Retrieved from <http://designresearchtechniques.com/casestudies/backcasting/>
- Sevaldsen, B. (2009). About Systems Oriented Design. Retrieved from <https://www.systemsorienteddesign.net/index.php/sod/about-sod>
- Steffen, A. (2015). Designing for People Who Don't Yet Exist. Tomorrow in Progress. Retrieved from <https://medium.com/tomorrow-in-progress/designing-for-people-who-don-t-yet-exist-7f2019a9e74>
- Thakur, R., Hsu, S. H. Y., & Fontenot, G. (2012). Innovation in healthcare: Issues and future trends. *Journal of Business Research*, 65(4), 562-569. doi:<https://doi.org/10.1016/j.jbusres.2011.02.022>
- Vik, S. (n.d.). Innovations in Health Care - from Paper to Reality. Retrieved from <https://eggdesign.com/stories/read/taking-innovations-in-health-care-from-paper-to-reality-a-story-about-user-centric-implementation>