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Quality Indicators for Health Service Design Processes

Operationalised D9 Principles of Digitalisation

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Quality Indicators for Health Service Design Processes:
Operationalised D9 Principles of Digitalisation

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Abstract

Digital health service design processes were selected for Quality Indicator (QI) development because health service digitalisation affects many customers, shows vast variation in care quality and outcomes, and is costly to health service systems. The D9 principles of digitalisation have been created by the Ministry of Finance to improve customer orientation and productivity of public services in Finland. However, any framework of principles guiding practice must specify and operationalise ethical values to make them practicable, measurable, and comparable. The QI artifact should support and measure health service design process quality by providing interactive checklists of best-practice solutions extended with codified knowledge and visual management to facilitate quality improvements.

Information architecture of the QI artifact was created with Action Design Research method. The QI framework was generated from individual interviews of practitioners and focus group interviews of managers in target organisation. All participants were involved in health service design processes in distinct roles. Interviews were analysed with deductive content analysis. Artifact iterations were determined by existing theories.

A practicable QI framework was created as the QI artifact information architecture to measure D9 principle adherence in health service design processes. The Customer Efficiency Label and the Customerisation Label should be used to provide customer-oriented services by transforming management attitudes and practitioner collaboration, to improve understanding of customer orientation and digital technologies, and to manage quality improvement work in health service organisations. Future development should include validation of selected QI observables. Moreover, QI artifact features should be developed into a Health Service Design System that could revolutionise health service systems by standardising practical activities that provide for higher customer value at lower customer cost.

Keywords
health service design, quality indicators, operationalisation, principles of digitalisation, customerisation

CONTENTS

1 INTRODUCTION

Justification of publicly funded services must be argued more precisely, as digitalisation requires reformation of procedures, processes, and services (Ministry of Social Affairs and Health, 2016). Ministry of Finance (n.d.) have created the D9 principles of digitalisation to improve customer orientation and productivity of services in Finnish public administration. However, any framework of principles guiding context-specific practice must specify and operationalise ethical values to make them practicable, measurable, and comparable (Hallensleben & Hustedt, 2020).

The Quality Indicator (QI) artifact can be used to support and evaluate design process quality of health services by providing checklists of best-practice solutions. Existing QIs were not identified, thus new QIs were developed for this specific context. The created artifact will both collect and report design process QI data (Westby et.al., 2016). Digital health service design of Siun sote was selected for QI development because service digitalisation affects many customers, shows vast variation in care quality and outcomes, and is costly to the health service system (Reponen et.al., 2021). Additionally, digitalisation provides opportunities to change health service practices and to improve quality of care as well as health outcomes. The recommended design process interventions will be within the control of practitioners and managers whose performance will be measured. (Westby et.al., 2016.)

2 QUALITY INTERVENTIONS IN HEALTH SERVICE DIGITALISATION

2.1 Quality management of health service processes

Quality can be defined as a measure of the extent to which a good or service satisfies the customer or meets established standards, for instance. Quality comprises of several key factors affecting satisfaction including service acceptance, timeliness, selection, and cost, for example. Health service quality can be defined as optimal care delivered from the appropriate provider in an appropriate setting in an appropriate manner to suit customer's unique circumstances. Service quality management aims to ensure that customer expectations and accepted production standards are met. A service producer should always attempt to maximise customers' perceived value. Services must be customised to individual preferences of customers to increase service value. As value is the internal satisfaction a customer receives when consuming a good or service, the customer-evaluated key factors are perceived and weighted differently by each customer at different points of time. Quality is therefore a dynamic concept varying over time and between customers. (Ross, 2014.)

Practitioners can be supported in quality management with personal accountability, clear expectations, and constructive honest feedback. In current just-in-time operational environments the consensus is that decisions are best made as close to customer as possible. Thus, facilitative leaders must support and build confidence in practitioners' decision making instead of controlling their behaviour. Practitioners must know what is expected of them. Practitioner performance expectations must therefore be clearly defined and communicated to all practitioners (Reilly, 2017).

Organisational expectations are either standards or goals. Standards are general expectations that contribute to efficiency. Mutually accepted standards support daily activities and conduct in the organisation by focusing on processes. Goals motivate people to improve from current state of operation by focusing on the future. Standards should be given higher priority than goals because goals without standards demotivate.

Standards should be set to provide guidelines of how to achieve goals that are aligned with organisational objectives. The best standards and goals are mutually accepted, realistic and measurable. (Reilly, 2017)

Health service quality is challenged by vast volumes of service interactions and high variation of customer characteristics. Health service systems also face a challenge of improving customer outcomes by changing how services are delivered. System is a set of interrelated elements assembled to achieve a goal. System thinking recognises this to resolve root causes of problems within work processes. Change must always be based on measured system performance because measurement is needed to identify what the current situation is and whether a change is needed. Moreover, management must be based on measurement because without measured information managers do not know if and where a change is needed. Measured information is also required to evaluate whether the correction effects to system performance are positive or negative. (Ross, 2014.)

System output is the end result of input transformation within a process. System outcome is the value of service output to a customer. Traditional health service focus on system output will guide service production emphasis towards internal processes. Organisational focus on system outcome transforms the mission of an organisation towards production of services that are valued by customers. Thus, system outcome should be used as the definitive measure of system effectiveness. System outcome determines the ability of a system to function as designed and satisfy customers. This fundamental change in health service provider behaviour requires valid and reliable data of service outcomes instead of subjective outcome data or service output data. Service process outcome will always deviate from producer vision and customer expectation if the service is not adequately designed or if the service production process is not planned adequately. (Ross, 2014.)

Health service improvements aim to identify and rectify remediable shortcomings in health service delivery processes. These shortcomings are results of weaknesses in human or system performance. Improved health outcomes are achievable through methodical reviews of systems and performance within these systems. Changes in culture, leadership, teamwork, and communication are all necessary traits of quality

initiatives. An organisation must be able to define and measure what it produces in order to manage its operations effectively. If management is not effective, the organisation will be unable to fulfil its mission. (Ross, 2014.)

Standardised work aims to develop best practises for tasks to be performed with highest possible quality and least possible waste. Standardised work should be developed in groups by people who complete the tasks. Standardised process improvements are ways to promote standardised processes across an organisation. A standardised process defines how the sequenced tasks should ideally be completed and allows for process duplication regardless of who completes the process. Checklists guide practitioners through these processes. Checklists are utilised as supportive tools of standardised work reminding of best practice. Checklists ensure that no important tasks of a process are forgotten or neglected. Checklists also require an owner of a process to control that all obligations are completed. Checklists are not intended to substitute trust in employee capabilities, but to improve processes that support practitioners' work. (Mannon & Collins, 2015.)

Visual tools support quality management by facilitating data management or indicating a need to act. Trust and culture are only two components of quality management, but they are vital for visual management. The term visual implies observation of management. Visualisation generates transparency of quality and facilitates openness in organisations as visualisation enables improved understanding of performance. Practitioners may view shared performance metrics as a component of transparency if they trust leadership and believe in the metrics. Practitioners can be proud of visible metrics they improve. Openly shared metrics improve transparency even when they perform poorly, as they give the impression that issues are being worked on rather than hidden away. Visual metrics become supportive tools for practitioners, managers, leaders and executives to learn and improve when goals and performance are openly shared. (Mannon & Collins, 2015.)

2.2 Health service quality indicators

All customers have different perceptions of quality because every customer comes to health services with different expectations. Quality is also a term that can have various meanings to people, but health service organisations should have one ultimate quality objective – to increase customer value through improved service delivery. Quality cannot be created separately; it always encompasses all aspects of processes. Thus, all aspects and causes of satisfaction and dissatisfaction must be considered to master health service quality. Health service quality maximisation is concerned with producing the highest customer value possible at the lowest customer cost possible. (Mannon & Collins, 2015.)

Quality must be clearly defined in a health service organisation for the practitioners to understand what quality is and to take ownership of quality in their work. General quality definitions usually refer to standard and requirement conformance with zero defect. This definition can be applied throughout health services. Health service quality can be categorised to process quality and customer satisfaction. All aspects of process and satisfaction quality should be measured, collected and analysed to provide quality services. All points at which the health service system interacts with a customer are points of potential quality improvements. These measurable points of quality are all intrinsically linked and count for different expectations from all stakeholders. In health service organisations it is important to define quality by the customer or from customer's perspective instead of the organisation delivering services. (Mannon & Collins, 2015.)

Quality indicators (QIs) are a common approach to promoting care quality and achieving required standards of processes by categorising and measuring quality. QIs have value and use in guiding clinical practice or health service delivery, for example. QIs in clinical practice can be specific and measurable aspects of treatment intervention that define the minimum standard of care patients can expect. QIs of health service delivery may identify care gaps, inform health service delivery, support accountability, or promote transparency in health services. Applicable QIs need a

framework for development, selection, implementation, measurement, and reporting. (Westby et.al., 2016.)

QIs are considered to implement practical guidelines into practice and facilitate impact evaluation of guideline implementation. QIs differ from practical guidelines by permitting assessment and monitoring of quality gaps related to structures, processes, or outcomes of care. Therefore, QIs operationalise recommendations by transforming guidelines into actionable and measurable assertions. QIs and quality measures must adhere to the criteria applied to their development to be accepted and implemented. A QI statement is less open to interpretation than a guideline statement. A QI conforms to objective measurement and reporting of whether a required process indicator was fulfilled or not. Health service decision makers can use QIs to set benchmarks or evaluate benchmark achievement, guide quality improvement, and compare health service delivery. (Westby et.al., 2016.)

Standardised work observations are intended to focus on identifying issues and increasing consistency in collaboration. Detailed observations are vital when an improvement opportunity is identified because they provide the foundation for root cause analysis that must be performed before current state is adjusted. (Mannon & Collins, 2015.) Standardised work observations can be introduced to managers and practitioners based on visual and documented progression of design processes. Managers can set clearly defined performance expectations based on an assessment instrument because QIs can be used to evaluate achievement of benchmarks and to guide quality improvements or strategic planning. (Westby et.al., 2016.)

Healthcare professionals may find selection and implementation of QIs challenging. Thus, generic QIs with broad applicability are appropriate. Other challenges to using QIs in health service processes may include time constraints, perceived burden on stakeholders, limited access to appropriate QIs, complicated tools, limited management support, as well as lack of perceived value and importance of the QIs. Practitioners must understand the value and role of QIs in process evaluation to engage in QI efforts. Involved stakeholders should be familiar with the methods used to identify, collect, report, and implement their process QIs. Stakeholders should

contribute to the identification and implementation of QIs to ensure that the selected measures are relevant, feasible, meaningful, and acceptable. (Westby et.al., 2016.)

The QIs of a measurement artifact should be provided with specified applicable data collection tools, a transparent scoring process, and expected acceptable performance level indicators. Manual audit charts may be costly and time-consuming as well as contain biased or missing information. Ideally, QI data collection will be part of routine operation through standardising of documentation or embedding of QIs in digital applications. QI data should be made available at the point of work to guide decision making and inform planning in real time. Automated QI tools can be effective means of assessing process quality and reporting it to decision makers to inform them of changes in performance. Automated QI data collection will provide timely information and remove recall bias from evaluation. (Westby et.al., 2016.)

2.3 D9 principles of digitalisation

The D9 principles of digitalisation were published by the Finnish Ministry of Finance (n.d.) in 2016 as a government key project. The nine principles are shown in Figure 1. Ministry of Finance (n.d.) have created the D9 principles of digitalisation to improve customer orientation and productivity of services in Finnish public administration. The D9 principles of digitalisation are presented as commonly agreed rules to support digitalisation of all public administration services (Valtiovarainministeriö, 2017).

We will provide services based on customers' needs.

We will designate an owner for every service and its implementation.

We will cut unnecessary red tape.

We will provide open data, open access to information and open interfaces for businesses and citizens.

We will build easy-to-use and secure services.

We will make full use of the existing public and private online services.

We will produce benefits for our customers quickly.

We will ask for new information only once.

We will also serve in case of disruptions.

Figure 1. D9 principles of digitalisation (Ministry of Finance, n.d.).

Customer orientation of services aims to highlight customer needs, goals and annoyances in public services. Reformation of old practices is expected to provide customer benefits by increasing cooperation focused on life or business events. Cutting unnecessary red tape eliminates services that do not add value to end users, but on the other hand emphasises the importance of customer contact opportunities whenever customer feels the need. Involving customers in service design is expected to provide for smooth and effortless service use. (Valtiovarainministeriö, 2017.)

The entire public service lifecycle must strive for paramount data security and personal data protection. Well-functioning services must be provided to every resident irrespective of personal disabilities or used equipment, software, or service channel. Quick benefits for customers require that the service features and functionalities are developed together with customers and adjusted based on customer experiences. Intuitive service processes guarantee that the customers do not need to pay special attention or have special skills to use the service. (Valtiovarainministeriö, 2017.)

In case of disruption the customers must be clearly informed of how to proceed with their transactions. Thus, disruptions must be prepared for. Information given by customers to public administration should be asked only once. Therefore,

interoperable information must be exchanged. Moreover, acquiring new customer information should be as effortless to customers as possible. Standard interfaces and open source design should form common digital capital as existing services can be utilised more extensively. (Valtiovarainministeriö, 2017.)

All information and interfaces should be opened to public, unless a specific reason to limit access exists. This way information can be shared for service development without disrespecting data protection. The service owner must be responsible for service operation throughout the service lifecycle. Service owner should facilitate collaboration of stakeholders and advance service development. Moreover, contacts between service owners should facilitate co-development of different services. (Valtiovarainministeriö, 2017.)

Many of these principles are reflected in legal requirements for organisations of public administration (Laki digitaalisten palvelujen tarjoamisesta 306/2019). Digital technologies may have a disruptive impact on health services but, on the other hand, provide health service innovation opportunities with correct models of practical guidance (Harrington & Burge, 2018). Ministry of Social Affairs and Health (2016) have published a digitalisation policy derived from the D9 principles of digitalisation to guide decision making towards customer-oriented digitalised health services, but the policy contains no practical guidance.

2.4 Operationalisation of principles

McLaren (2003) defines principles as context-dependent abstract rules that guide decision making. However, raw principles based on any framework are not suitable for ethical problem solving or decision making. Operationalised principles, on the other hand, provide valuable tools for detecting and devising solutions. Vaguely formulated principles cannot guide decision making, but operationalised principles enable conscious prioritising of value trade-offs. (Cancu, 2020.) Operationalisation is described by McLaren (2003) as an expert-defined association process of principles and facts, in which extensional definitions of principles are generated by linking abstract rules to facts.

Artificial Intelligence (AI) is a highly context-specific and ethically complicated technical discipline, where principles operationalised by an organisation enable informed evaluation and decision making within the organisation (Cancu, 2020). Lack of specificity creates uncertainty and impedes the work of oversight bodies that cannot measure implementation if principles remain vague. If implementation cannot be measured, it hinders enforceability of guidelines. Thus, a guiding framework is needed to define how the principles should be guiding practice. The framework guiding practice must specify and operationalise ethical values to make them practicable, measurable, and comparable. An operationalised ethics framework can be used by system users or developers, as well as regulators or oversight bodies. (Hallensleben & Hustedt, 2020.)

Understanding the differences and relationships of core principles and instrumental principles is paramount to successful operationalisation of useful principles. Instrumental principles can be evaluated, selected, and prioritised by organisations to best secure their core principles. Suitability of principles is always dependent on context and objectives of the organisation. For instance, interactive checklist tools have been created for operationalisation of vague AI principles to guide practice. These tools should facilitate the support of core principles by supporting or substituting instrumental principles as necessary. Core principles can never conflict with each other, as they are intrinsically valuable. (Cancu, 2020.)

The strategy of Siun sote (2020) indicates customer orientation and embedded service digitalisation as desired means to improve resource productivity. Customer-oriented services and increased service productivity were primary aims of D9 principles of digitalisation (Ministry of Finance, n.d.). Thus, customer orientation and service productivity were designated as the core principles (Cancu, 2020) of target organisation in this study. The D9 principles of digitalisation were initially utilised as instrumental principles (Cancu, 2020) supporting the two core principles.

Simple visual indicators to guide decision making can be generated by adopting Hallensleben & Hustedts' (2020) model of combining Values, Criteria, Indicators, Observables (VCIO) approach to a nuanced labelling approach, such as the energy

efficiency label for instance. The structure of VCIO adoption framework in this thesis research is visualised in Figure 2.
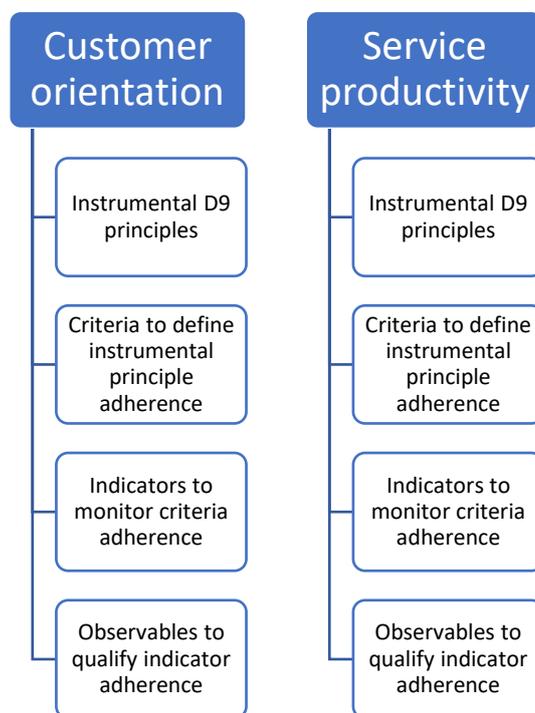
Figure 2. The VCIO approach adapted to operationalisation of D9 principles (modified from Hallensleben & Hustedt, 2020).

3 RESEARCH AIM AND PURPOSE

The aim of this research process was to define the information architecture (Garrett, 2011) of an ensemble IT artifact, a nuanced labelling instrument (Hallensleben & Hustedt, 2020) that classifies adherence to D9 principles of digitalisation in public health service design processes. In order to measure valid indicators of selected principles objectively, the research questions were as follows:

1. How to specify quality indicators as decision making criteria of a public health service provider adhering to D9 principles of digitalisation in the design processes of their digital services?

2. How conformance to these decision making criteria could be labelled objectively?

The purpose of this research was to improve service design process quality of Siun sote digital health services by increasing organisation's adherence to D9 principles of digitalisation. Codified knowledge (Hansen et al., 1999) combined with competence management (Sein et al., 2011) would improve organisational competence. The use of suitable process management should provide for desired results of digitalisation (Rousku et al., 2017). This thesis project aimed to start a development process of Quality Indicator (QI) artifact and provide its implementation recommendations. The generated QIs will be targeted at managers and practitioners involved in design processes of digitalised health services. In addition to recommended health service design indicators and observables, the artifact can be adapted to other contexts by creating new feasible and applicable QIs into the framework with a similar approach.

4 METHODOLOGY

4.1 Action Design Research

This research used the Action Design Research (ADR) method derived from Design Research (DR) in the Information Systems discipline. ADR is a methodology to emphasise organisational context in development of an IT artifact. (Sein et al., 2011.) The ADR method was applied to this thesis process because QIs should be based on a rigorous, transparent, and systematic approach of synthesising expert opinions (Westby et.al., 2016). QIs in this artifact were developed by extracting QI statements from a combination of expert consensus and high-quality evidence. Synthesised evidence from literature and expert interviews specified the context, characteristics, process requirements, and expected outcomes for each indicator (Westby et.al., 2016). Diverse perspectives were gathered from experts in diverse areas of health services and different organisational positions.

Any framework of principles guiding practice must specify and operationalise context-dependent values to make them practicable, measurable, and comparable (Hallensleben

& Hustedt, 2020). Action Design Research (ADR) addresses a problem in an organisational context by learning from intervention and building an innovative IT artifact. The Organisation-Dominant ADR approach was selected because the emphasis of this research was on creating new knowledge rather than creating new technology. (Sein et al., 2011.) ADR has been utilised in various development contexts (Haj-Bolouri et al., 2017; Malou Petersson & Lundberg, 2016; Sein et al., 2011) that pertain to the context of this study. Context specificity inherent to operationalisation of principles (Cancu, 2020; Hallensleben & Hustedt, 2020; McLaren, 2003) is emphasised in an ADR process (Sein et al., 2011).

ADR processes develop IT artifacts in specified organisational contexts concurrently generalising outcomes for research knowledge (Sein et al., 2011). Consequently, each ADR process considers two stakeholder groups: the research target organisation and the research community. Thus, research outcomes will benefit a specified problem of client organisation as well as a class of similar problems. (Haj-Bolouri et al., 2017.) This study incorporated one Alpha version and one Beta version (Sein et al., 2011) of the QI artifact. The artifact's Alpha version delivered specific and generalised content requirements (Garrett, 2011) and Beta version delivered specific and generalised information architecture (Garrett, 2011) of a QI artifact measuring adherence to D9 principles of digitalisation.

The QI artifact emerged from interaction with the target organisation in an ADR process (Sein et al., 2011). Both artifact versions employed two Plan, Do, Study, Act (PDSA) cycles (Institute for Healthcare Improvement, 2021) to achieve added knowledge and functionality (Mullarkey & Hevner, 2019; Sein & Rossi, 2019). The iterative process sequences and stakeholder contributions in this research are shown in Figure 3.

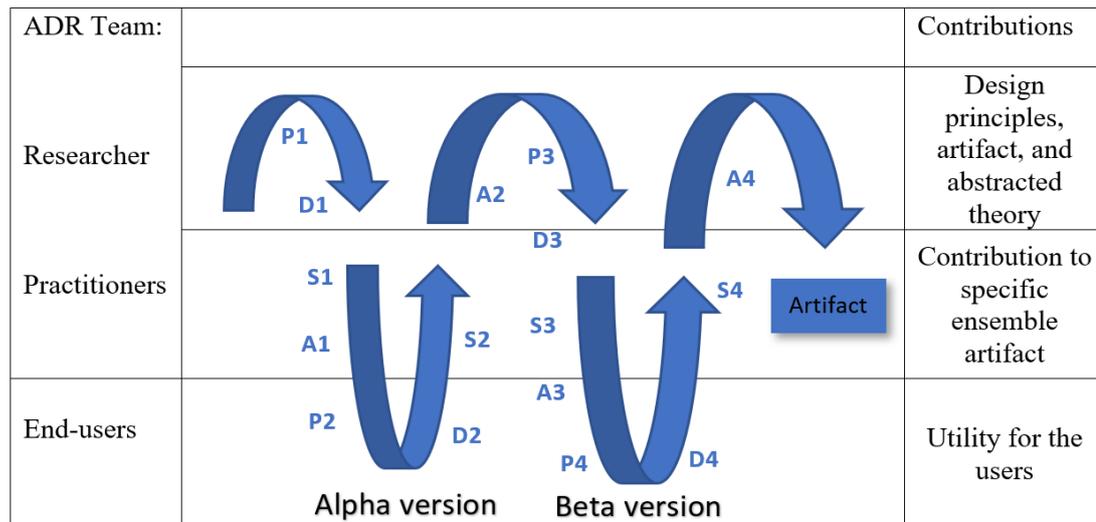| ADR Team:		Contributions
Researcher	P1 D1 P3 A2 D3 A4	Design principles, artifact, and abstracted theory
Practitioners	S1 A1 S2 S3 S4 Artifact	Contribution to specific ensemble artifact
End-users	P2 D2 A3 P4 D4	Utility for the users
	Alpha version Beta version	

Figure 3. The adapted Organisation-Dominant Action Design Research (ADR) process (modified from Sein et.al., 2011).

In order to define content requirements (Garrett, 2011), research question 1 was answered with Alpha version and derived generalisations of the first and second PDSA cycles. Content requirements were defined by discussing format, purpose, size, and responsibilities of artifact's content features. Research question 2 was answered by defining information architecture in Beta version of the artifact. Therefore, the Beta version discussed cognitive processing of information, that is information structures and conveyance. These tenets of understanding and using information are critical in information-oriented organisational artifacts. (Garrett, 2011.)

Organisation-Dominant approach should be selected for ADR efforts in which primary innovation is sourced from organisational intervention. The effects of roles and interaction within the ADR team is emphasised in ADR processes that structure decision making situations in organisations. (Sein et al., 2011.) To address different roles and achieve comprehensive interaction, the ADR team representatives from Siun sote comprised of four practitioners with different professional roles currently participating in design processes of new digital service solutions. Two director level executives were thesis mentors in the mandating organisation. Their contacts and authority were utilised to secure organisational commitment and to set up roles and responsibilities to the ADR process (Sein et al., 2011). Prospective end-users to participate focus groups were targeted from Siun sote managers involved in design processes of new digital service solutions.

Each of the four PDSA cycles contained detailed interview plans, interview preparations, interview execution, data analysis, confirmation of interview findings from secondary sources, artifact iterations and theory generalisations. Interview plans were updated and refocused after the previous interviews were analysed. Thesis plan contained an initial design of the IT artifact that is always defined by the researcher in ADR processes (Sein et al., 2011). Initial criteria design was based on literature to confirm artifact's adherence to existing theories and knowledge (Malou Petersson & Lundberg, 2016). Data collection preparations of Plan phases included interview questions, interview arrangements, and preparations for the selected analysis method.

The first and third Do phase comprised of interaction with practitioner ADR team members conducted with semi-structured individual interviews, which has been established as an effective and reliable research method for operationalisation (Granström et al., 2020) as well as ADR processes (Sein et al., 2011). The second and fourth Do phase comprised of focus groups that can define problems and viable solutions by utilising user intervention (Sein et al., 2011). Both focus groups were therefore conducted with Siun sote personnel in managerial positions.

All four Study phases of the research process included translated individual interview or focus group transcriptions and data analysis activities. Reliability of artifact data was further improved by assessing each artifact iteration based on existing theories (Sein et al., 2011). Data was anonymised in the beginning of data analysis when translations of recordings were made to ensure anonymous reporting. Act phase of first PDSA cycle created recommendations of general content requirements in health services as well as preliminary artifact content requirements. Second Act phase defined general requirements and created the final content requirements. Third Act phase created general recommendations of information architecture for health services as well as preliminary artifact information architecture. Fourth Act phase defined the general information architecture for health services and created the final artifact information architecture.

Ethical recommendations published by the Finnish Advisory Board on Research Integrity (2012) and ARENE (2019) were adhered to in this study. Sensitive personal

data was not collected. All interview data was anonymised in transcription and translation phase. Thus, participant identification is not possible from analysed or reported data. Every participant submitted specific informed consent (Appendix 2) in writing before partaking in recorded interviews via Microsoft Teams. Secondary data for initial artifact design and artifact iteration assessment (Sein et al., 2011) were collected from scientific articles, professional journals, public organisations, and other dependable professional publications. Only references published in the year 2010 or after (if declared) were accepted, with the exception of three original theories. To obviate plagiarism, all reporting and citing followed SAMK (2020) referencing instructions and the report was inspected by Ouriginal plagiarism checker before final submission.

Research data collection and data analysis were incorporated into artifact versions, as they are performed throughout the ADR process (Sein et al., 2011). Thesis reporting commenced in February 2021 and the report was elaborated throughout the process. Research permit was applied from mandating organisation after research contract was signed by researcher, SAMK representative and Siun sote representative. No contacts to research participants were initiated before the research permit of target organisation (Appendix 3) was received. The thesis process is reported in English language. Data collection in target organisation and artifact build were performed in Finnish language. Research outcomes will be presented to mandating organisation in Finnish language.

There was no cost of research or artifact build. The research was completed, and artifact information architecture was built using Microsoft 365 software, credentials and hardware provided to researcher by Siun sote. Artifact build was limited to researcher, other Siun sote practitioners did not participate in artifact build. Siun sote have received unlimited rights to use the created QI artifact in their own organisation. All other IPR of content generated in this ADR process remain with the author.

4.2 Data collection

Qualitative research data may be collected with interviews, questionnaires, observations, or documented secondary sources. These different data collection

methods can be used parallel, as alternatives, or combinations depending on research problem and resources. (Tuomi & Sarajärvi, 2018.) This research combined interviews with documented secondary sources. Secondary sources were used as an auxiliary data collection method to address interaction influence of interviews. Moreover, secondary data was used to support initial artifact design and artifact iteration assessment (Sein et al., 2011).

Qualitative research may be conducted with various interview methods. Interviews are flexible means of abstract phenomenon research data collection, as they allow the researcher to direct data collection towards research topic. Interview directions are selected with questions. Researcher may adopt an active role in structured interviews, thematic interviews may only need an interview topic given by the researcher. Semi-structured interviews enable important but unexpected findings as well as true unlimited ideas and opinions of participants about predetermined topics. (Puusa & Juuti, 2020.) This research used semi-structured interviews because the theoretical framework of outcomes was predetermined but open ideas and opinions were pursued. Appendix 4 contains interview guides of each interview round in Finnish language.

Interview questions must be concrete and related to the theoretical framework of the research. The style and content of interview questions depend on research objectives and the selected interview method. Moreover, the possibility of researcher asking participants for explanations or added detail increases the flexibility of interview methods. Group interviews add interview flexibility in comparison to individual interviews. The researcher may focus attention and questions to individuals or the group as a whole. Additionally, interview observations and analysis may be focused on individuals or the whole group. A group interview will produce rich and versatile results, if the group members discuss among each other and the researcher is able to direct them to stay on topic. (Puusa & Juuti, 2020.) Researcher acted as interview moderator in all interviews. No individual participant analysis was made. Focus groups were analysed as groups and data of individual interview rounds were merged before analysis to guarantee anonymity of selected participants and to simplify reporting.

Another methodological benefit of interviews is the ability to select participants who can be identified to have knowledge and experience in the topic of research. Group

interviews should be arranged when cultural consensus of a group or shared meaning of participants is pursued. (Puusa & Juuti, 2020.) Purposive sampling (Morgan, 2020) was used in this research to identify participants for individual interviews and focus groups. Individual interview participants were selected on the criterion of practitioner participation in ongoing digital service design processes in the target organisation. Focus group participants were selected on the criterion of management position in ongoing digital service design processes in the target organisation.

Participant interpretations are a key methodological limitation of interview research. The researcher must be able to separate participants' personal interpretations of the topic from the researched phenomenon. Researcher must also be able to create an environment of trust to extract open and active participation. Participants interpret phenomena from personal experience of their organisation when research is aimed at members of organisation. Moreover, researcher bias is always present in interview research. Researcher always affects the execution and results of interviews with personal perceptions, understanding and selected theoretical framework of the research topic. Reciprocal interpretation takes place in interaction of the interview situation. (Puusa & Juuti, 2020.) Researcher bias was high in this research, as researcher is an employee in the organisation effectively interviewing colleagues. Moreover, interview content and source selection were largely biased towards researcher preference. However, close professional relationship with participants provided for trust as well as open and active participation in all interviews.

Non-verbal communication, such as pauses, facial expressions or eye contact for instance, can be a valuable asset in interviews because a researcher may utilise them to interpret participants' intentions. Interviews aim at extracting as much valuable and versatile information of the topic as possible. Therefore, delivering interview topic, questions, or other material to interviewees in advance is considered favourable in interview research. However, delivering materials in advance may impair research results by directing or limiting participant thought processes. (Puusa & Juuti, 2020.) Thus, Alpha version interview material (Focus group 1, 2021; Interview 1, 2021) was not delivered in advance to avoid participant directing or limitation. Beta version interview material (Focus group 2, 2022; Interview 2, 2021) was provided to participants in advance on an Excel file for familiarisation, but interview questions

were not delivered in advance. Non-verbal communication was not recorded, observed, nor evaluated in this study.

Focus groups provide insights to what participants think. More importantly the researcher may find insights to why they think that way, even though participants are not observed in their natural environment. These insights emerge from the need of participants to explain their perspectives and opinions to minimise discrepancy in the conversation. Sharing similarities and comparing differences uncover reasons behind participant opinions and attitudes. The researcher may collect valuable data by listening to active conversations when common ground is generated. The researcher may observe interaction of participants, but this research concentrated purely on the content of discussions. (Morgan, 2020.) Focus group participants explained their opinions actively to each other. Similarities were shared and differences were compared in every question that participants commented. Focus group 2 (2022) had two questions where nobody commented, because nobody found information in the practicable framework to be missing or misplaced.

Focus groups can convey participant perspectives, which may contain experiences, perceptions, opinions, beliefs, or attitudes relating to the topic. Researcher influence in focus groups facilitates more discussions and more detailed information about the research topic in comparison to participant observation. Focus groups do not generate detailed information about each participant, but they provide for participant insights in social context. Thus, group interaction means that participant perspectives are dynamic. (Morgan, 2020.) Focus group participants even expressed change of opinion due to active discussion in the sessions. Moderator presented a few prompts to guide conversation and asked for more detailed explanations in both focus groups. Participants asked for more detailed questions or rationale in both focus groups.

Individual interviews generate more detailed ideas than focus groups. Individuals always produce more ideas of equal or better quality than a group of equal size. However, the range of different views is more extensive in a group. Focus groups need to assemble eligible participants who meet a specific set of criteria. Bringing them together at the same time to the same place may be demanding. Purposive sampling is a method of participant selection where participants are carefully selected according

to their ability to meet the selected criteria. Researchers must find people with experiences and knowledge needed to discuss the research topic. Additionally, participants must feel comfortable discussing the topic with each other and favourably be interested in what other participants have to say. (Morgan, 2020.)

Focus groups require a workable group to be collected and collaborative interactions need to be generated between the participants. The participants are able to manage their own discussion if engagement among the participants is high and the research topic is meaningful to participants. A few questions and taking notes may be sufficient methods for researcher when participants have experience with the topic. If participants are motivated to discuss the topic, participants usually take turns interacting with each other rather than with the moderator. Typical size of a social research focus group is six to eight participants. Smaller groups are recommended if participants' level of engagement is high. Matching group size with topic engagement will allow every person to participate and the discussion to flow smoothly. (Morgan, 2020.) Participants interacted with each other actively, the moderator could concentrate on taking notes and only clarifying some questions in Focus group 1 (2021). In Focus group 2 (2022) the moderator was more involved in discussion, as proposed QI artifact content and architecture were discussed. The moderator observed that discussion flowed smoothly in both focus groups, but in the first group (Focus group 1, 2021) every participant did not share opinions during discussion.

Recruitment problems are the most common source of failure in focus groups. Successfully gathering participants requires careful thought and adequate resources. Effectiveness in recruitment starts with initial contact. Participants must know why their help is needed and why their participation is highly valued. The initial contact should be clear about what will be expected and when participation is needed. Overrecruiting one or two extra participants ensure that the focus group will not fail because of missing participants. Repeated groups are an approach where at least two rounds of groups are conducted with the same participants. The most common use of repeated groups is to develop material generated in earlier groups. (Morgan, 2020.) Director level research mentor from the target organisation handled initial contacts to focus group participants to facilitate participation. This was a successful undertaking, as all 10 selected participants took part in Focus group 1 (2021). Focus group 2 (2022)

was used to ask for feedback and development ideas to practicable framework based on previous interviews. Focus group 2 (2022) had 6 participants, as the rest were required to participate other meetings at that time.

Common ground can be facilitated with a homogenous group of participants sharing a similar perspective on the topic. Talking to peers in a focus group alleviates judging of others and allows for shared experiences, perspectives, and vocabulary. However, two ethical issues must be addressed when working with colleagues in a focus group. Things that are said in the focus group may incur consequences afterwards. Moreover, differences in hierarchy among the participants may incur hesitance to participants in front of someone who has control over their future. (Morgan, 2020.) The selected focus group was rather homogenous, as all participants were managers from mainly different parts of the organisation. Moreover, participants were instructed to share no sensitive or personal information in the group.

Participant selection is paramount to focus group design because it influences the selection of appropriate questions and moderating strategies. Participants involve themselves in active discussions when they are engaged with the topic and share a large degree of common ground. Common ground and topic familiarity enable relatively specific questions straight from the beginning of the interview. If interview questions are aligned with participant engagement, the moderator may allow the participants to control their own discussion. (Morgan, 2020.) This was achieved, as the moderator rarely needed to facilitate discussion. However, moderator was required to step in to move discussion forward to next questions in both sessions.

Focus groups and individual interviews should be viewed as complementary rather than competing methods. Combining individual interviews and focus groups is categorised into multimethod research. Individual interviews may be utilised as an input or a follow-up to focus groups. Preliminary individual interviews may support participant selection and interview guide generation. (Morgan, 2020.) Individual interviews were utilised as input forming interview guides of focus groups in this research. Preliminary interview guides were prepared before the interview process was launched to secure a research permit from the target organisation. These guides were always modified after previous interview round to match any changes in plans.

The researcher should avoid examples, yes/no questions, and leading questions to guide and facilitate discussion towards the topic without influencing participant perceptions severely. Examples should only be used when participant responses need to be limited to a predetermined set of thoughts. (Morgan, 2020.) This is why no examples were given in Alpha version interviews (Focus group 1, 2021; Interview 1, 2021) but Interview 2 (2021) and Focus group 2 (2022) needed to contain examples. The recommended QI framework could not have been discussed without examples.

The researcher must prepare for interviews because researcher may affect the collected research data with their behaviour and questions. Thus, inexperienced researchers ought to conduct test interviews before actual research interviews. (Puusa & Juuti, 2020.) The researcher must consider how long each question may be discussed when creating questions to interview guide. That will dictate how many questions can realistically be asked within the interview. (Morgan, 2020.) The researcher is experienced in interview research, no test interviews were conducted. Every interview guide comprised of six questions. One hour was reserved for each individual interview, they lasted from 36 to 58 minutes. Two hours were reserved for both focus groups, they lasted 1h 36min and 1h 53min.

Every interview should be started with general introduction to the context of the interview. The strategy is to introduce the nature of the discussion and let the questions clarify the topic in more detail after the introduction. Introduction should emphasize the importance of hearing as many thoughts and ideas as possible. Participants may introduce themselves briefly before the first question. (Morgan, 2020.) Every interview was started with interview introduction. It contained introductions of research, interview topic, roles, and confidentiality. Focus group introductions also contained the rules of the group. All participants were requested to discuss actively and share open opinions. No participant introduction was necessary as they were colleagues.

Minimising researcher input and control maximises observation of participant perspectives. Structured approaches typically involve narrow questions that emphasise researcher's agenda. Participants should be able to provide proceeding depth and detail

on the agenda that the moderator provides. Funnel-shaped interview is a strategy for providing proceeding depth and detail. One or two broader questions at the beginning advance to the narrower middle of the funnel consisting of three to five more focused questions. A final wrap-up question can be used as a tip of the funnel to provide closure to the interview and provide researcher insights on what to consider when analysing the data. Semi-structured moderating approach supports the funnel-style interview guide well because the moderator can learn what interests the participants at the less structured beginning of the interview. The moderator can then allocate more time to topics that interest the participants and are likely to generate active discussion. (Morgan, 2020.) The funnel-shaped interview strategy was selected for this research and deemed to function well. Topics of each interview question have been translated to the data analysis framework presented in Appendix 1. Some questions were handled in a few minutes, some required 30 minutes to be addressed.

The order of questions may be altered depending on how the discussion of topic evolves. The moderator may not influence participants by approving or disapproving the content of discussion. Moreover, the moderator should avoid asking leading probe questions. (Morgan, 2020.) The order of questions was not changed in interviews, but the participants were allowed to discuss topics related to other questions without limitation if they were mentioned or discussion went to that direction.

The first step of data analysis is to capture the data, most commonly with digital audio or video recording devices. All participants are present at the same time in synchronous groups, but the primary advantage of online focus groups is that the participants do not need to be assigned to one location. Video-based online groups use real-time video connections as the medium of communication. Disadvantages of online focus groups comprise of access to and familiarity with the used technology, limitations of nonverbal interaction affecting discussion and moderation, as well as less defined role of the moderator compared to face-to-face groups. Decision of selecting online groups and their forms must be based on the nature of the topic and the characteristics of the participants. Typically, the moderator makes every participant visible in their own window, windows being arranged in a grid on each person's screen. The moderator and participants then use shared audio connection to ask and respond to questions.

However, participants are likely to address more of their comments to the moderator rather than to each other in a video group. (Morgan, 2020.)

Online interviews were selected because Microsoft Teams platform is in daily use with all participants and Covid restrictions were in place. Every interview meeting was recorded to organisation's SharePoint as video and automated transcription. Only researcher had access to all recordings, research participants had access to recordings of their own interviews. Nonverbal communication was not in the interest of the research. Participants were not asked to turn on their video connections, as it is not customary in the organisation. Two participants had video feed on during interviews, but they were not observed. Interview data was collected and stored using equipment and credentials provided to researcher by Siun sote as employment equipment. Eight individual interviews and two focus group interviews were conducted in this research.

4.3 Data analysis

Data analysis aims at describing, interpreting and understanding the researched phenomenon. The outcome of data analysis are justifiable interpretations and conclusions of research topic. Material description allows readers to understand the research context. Qualitative research data analysis starts during data collection with researcher presence, analysis is performed throughout the research process. Thus, researcher must recognise the effects of personal preconceptions on data collection and analysis of qualitative research. However, interview observations are not scientific findings on their own. Third level interpretation of the research topic is performed, when a researcher arranges, analyses and reports the collected observations. (Puusa & Juuti, 2020.)

Qualitative data analysis can be approached from two perspectives. First, the researcher needs to handle the data several times to identify different themes, classes and categories of data. On the other hand, the researcher gets acquainted to the topic by reviewing existing theories and research. This affects the categorisation process of data analysis. All data analysis should be systematic and transparent. Data analysis

method should be selected based on research objectives and the collected data. (Puusa & Juuti, 2020.)

Data analysis is closely intertwined with synthesis. The researcher must separate data and individual observations for analysis, but also synthesise them to produce and report scientific evidence. Comparing and combining observations increase research reliability by providing diversified views to data. Successful research is achieved with data abstraction, which refers to transferring individual observations to meta-analysis. Research results must be interpreted and explained after the analysis process. (Puusa & Juuti, 2020.)

Data sets describe the researched phenomenon, data analysis transforms that description to a clear written format. Content analysis is an objective method to organise collected documentation to be utilised in the interpretation process without losing information of data sets. Content analysis is performed by describing available documentation in writing. The documentation can be in any form, such as diaries, articles, interviews, or discussions, for example. Data must not be structured before content analysis, but data sets must always be converted to written format. The organised data set is not a research result, reasonable conclusions based on content analysis are research results. (Tuomi & Sarajärvi, 2018.) All interviews were analysed through a coding process because literature on the analysis of qualitative data apply similarly to focus groups and individual interviews. Coding facilitates identification of the most important topics across the full set of interviews. These important topics are utilised as themes that have organised the analysis and reporting frameworks of this research. (Morgan, 2020.)

Analysing and reporting detailed nonverbal behaviour was beyond the scope of this research. No attention was paid to which participant gave which pieces of information, even though it was evidently possible with the use of recorded video meetings. Once the data was recorded, speech was transcribed into text. Transcribing and translating the data was used to immerse in and understand nuances of raw data. Translating the data from Finnish into English language in the transcription process highlighted the fact that the resulting written version is always a step away from the original data

(Morgan, 2020). The translated transcriptions were done verbatim, the purpose was to capture content of the discussion instead of detailed verbal expressions.

Content analysis is a methodological framework that enables versatile views on the collected data. Content analysis is a tool to simplify and structure complicated empirical data for interpretation. Analysis process can be recorded in phases to enable review and evaluation of analysis decisions. (Puusa & Juuti, 2020.) Traceability of decisions is important because content analysis is an interpretative and meaning-oriented process. Traceability and structure of content analysis is provided with a codebook, which organises and defines the themed codes. Deductively developed codebooks utilise predetermined codes derived from existing theory or research literature. (Morgan, 2020.)

Deductive content analysis is performed by utilising an existing theoretical framework. Deductive data classification is performed on a framework constructed from previous theories, models or concepts. Deductive content analysis must always be started with the creation of an analysis framework. (Tuomi & Sarajärvi, 2018.) The frameworks used for deductive data analysis in this research are reported in Appendix 1. Each theme in analysis frameworks is a translation of one interview question topic, all interview questions are included in these frameworks. This research used the analysis process flow recommended for qualitative research projects by Tuomi & Sarajärvi (2018). Analysis process flow of this research is explained in Table 1.

Table 1. Data analysis process of this research.

Phase	Activity
1.	Data frameworks were created for deductive analysis. (Appendix 1)
2a.	Interesting content was separated from transcribed data.
2b.	Invaluable content was omitted from analysis framework.
2c.	Valuable content was marked and placed in analysis framework.
3.	Framework data was coded, themed and classified.
4.	An interpretation of findings was reported.

Data analysis framework in Appendix 1 was created based on interview question topics. Questions were selected based on elements of user experience (Garrett, 2011) that were used to structure QI artifact build. Interviewees were guided towards the research context by predetermined questions. Transcribed data was reviewed by researcher and interesting content was separated from original transcript documents. Interested individual interview data was combined at this stage to form a comprehensive understanding of all interesting data.

Valuable data from each interview round was separated to new documents under sections derived from data analysis framework topics. The separated data was coded, themed and classified by identified subclasses from literature. Data was colour coded and arranged according to subclasses of every analysis framework theme. Each framework theme contained 2 to 6 classified subclasses. Researcher interpretations were made based on synthesised classified data from every interview. Finally, researcher interpretations of each classified subtopic were reported in research results.

5 RESULTS

5.1 Information architecture of the QI artifact

Participants identified multiple purposes for utilisation of this artifact. The tool could be used to evaluate how current service portfolio adheres to D9 principles of digitalisation. Based on that evaluation it would be possible to identify investment opportunities to improve service quality. Measured adherence to D9 principles of digitalisation would reduce uncertainty from service improvement work, which in turn would provide for customer and organisation benefits of digitalisation. Prioritising digitalisation efforts based on benefit potential is imperative. In the future, ministries and other authorities could potentially observe welfare areas' efficiency and effectivity of service resource use with such quality framework. (Focus group 1, 2021; Focus group 2, 2022.)

Participants identified several benefits to utilising this artifact. The tool could facilitate understanding of where the most significant gaps in adherence to D9 principles of digitalisation are. Potentially, the Quality Indicator (QI) tool could even evaluate how effective operational changes have been to close the gap. Digitalisation may generate new services or new approaches to delivering services, and the QI tool could guide development of these new service approaches to suit service needs. Overlapping and redundant work could be eliminated with comprehensive digitalisation. Moreover, faulty services that do not function properly or people cannot use could be identified and fixed with this framework. (Focus group 1, 2021; Focus group 2, 2022.)

Current service design processes of the organisation were described as diffused, sporadic or fragmentary. Structured methods of design process guidance or clearly defined responsibilities were not described in interviews. It was stated that currently guidance of digital service development processes is generally poor in quality because unity and comprehensive understanding of development needs, responsibilities and processes are missing. Lack of unity and comprehensive understanding ascribe to variation in ways of defining the need for and guiding the progress of digital service design processes. (Focus group 1, 2021; Interview 1, 2021.) Design structures and

guidance provided by directors, project plans, or external consultants were defined by practitioners. (Interview 1, 2021.)

Support and guidance from ICT unit was expected, but ICT unit resources were seen as insufficient to actively guide the vast amount of concurrent ongoing design processes in the organisation (Focus group 1, 2021). Perception of received or offered guidance of design processes varied largely. Some participants stated that there have been little or no guidance in the organisation, whereas some participants conceived that they had received copious instructions and support from managers or specialists. (Interview 1, 2021.) It was also speculated that if service design process guidance activities currently exist in the organisation, they are mainly invisible or ineffective (Focus group 1, 2021; Interview 1, 2021).

Control over digital services has been diffused, which has led to various problems in service processes. Service ownership and control would need to be closer to customers to ensure that the designed digital services benefit customers and match the desired service processes. Some projects have failed close to launch of the new or improved service due to data protection issues or dysfunctional equipment. Practitioner uncertainty and failed development projects have resulted also from vague service ownership and management responsibility. Moreover, limited availability of managers due to occupied personal schedules have prolonged development projects. Overlapping projects have been completed due to deficiencies in comprehensive control, current state analysis or target setting of design processes. Often practitioners or service units do not know of all services already available in the organisation. (Focus group 1, 2021; Interview 1, 2021.) Insufficient digital service management resources were concluded to stem from relatively low priority given to digitalisation in the organisation (Focus group 1, 2021).

The organisation has massive benefit potential to be extracted from service digitalisation. Understanding of digitalisation and its requirements will be enhanced with a digitalisation strategy in near future. It has already been understood in the organisation that digital services are large entities that need to combine technical solutions with appropriate customer service activities. Moreover, it was clear to participants that digital tools are useless if people cannot use them. (Focus group 1,

2021; Interview 1, 2021.) Managers know that information must be collected and used to improve operations (Focus group 1, 2021). Practitioners have received design process support from competent individuals from within the organisation, but also from external specialists. Some design processes have already been structured and organised by utilising guiding documentation. Importantly, practitioners have courage and motivation to experiment with new solutions and the general atmosphere of development activities was described as supportive. (Interview 1, 2021.)

Documentation was seen as means of collaboration, enhancing communication and transparency among stakeholders. Communication to customers and employees should be equal and understandable. For instance, problems, improvement opportunities and contact persons could all be identified more efficiently with the use of transparent documentation. Documentation was also valued as a tool to transfer knowledge for when employees change, or if process quality was audited. According to participants, current documentation of social and health services is strictly limited and fragmented. Some participants stated that documentation of service design processes has lacked resources, requirements and skills in producing effective evaluation of testing, for example. (Interview 1, 2021.)

Open documentation available to users and customers was requested by participants because it could enable change towards a customer-oriented service culture in the organisation (Interview 1, 2021). Documentation of user experiences and service design processes would provide insights to investment needs, process deviations, root causes of problems, trends and effects of changes, target definition and performance evaluation for instance. For these purposes, the documentation in this QI tool should provide definitions and explanations as to what certain observables contain. In addition to providing a structured template to define what to consider in a health service design process the tool needs to provide for an evaluation framework of performance. The consensus of interviews was, that observation document acceptance should be clearly indicated as "yes" or "no". More complicated evaluation scales of observables or vague success requirements could waste time and be difficult to manage. (Focus group 1, 2021; Focus group 2, 2022; Interview 2, 2021.)

Understandable documentation with clearly stated requirements could be used to describe each service. A service licence was proposed to indicate and compare system performance of service processes. The service licence could be a process management document that indicates the purpose of a service, as well as the target state and performance of a service design process with simple visualisations. Performance documentation should provide information on requirement adherence as well as deviations. Visualisations should be supported by numerical data and written justifications. Process performance could be evaluated periodically to monitor progression. Supportive documentation should be created as a guideline framework and used for every service design process. Existing documentation practices and forms could partially be utilised to define requirement adherence. (Focus group 1, 2021; Interview 1, 2021.)

Responsibility of creating documentation to record work should be on the people who do the work. This responsibility is not separated in health service production, and it should not be separated in health service design either. In both contexts the employee should assume responsibility to make their work visible and available to others. In the case of this ensemble artifact, there will be a multitude of different documentation requirements as it is intended to provide documentation of the entire health service design process. Documentation responsibilities should be shared because a service design process necessitates versatile collaboration and is highly time consuming. Thus, responsibilities of creating and inspecting documentation should be clearly indicated and agreed upon by all stakeholders at the beginning of a service design process. Documentation may be lacking, or content and structure of created documents may vary in each process, if ownership of artifact documentation is not indicated to one person managing the design process. Documentation management should include structured templates and instructions on which documents to use and how to use them. Systematic design process document audits could allow for employee feedback and identification of process deviations. (Focus group 1, 2021; Interview 1, 2021.)

No consensus was found for responsibility of deciding how strictly the D9 principles of digitalisation should be adhered to when adherence can be measured. Some participants wanted the responsibility to be with one director, some wanted the process owner to decide the target, different multidisciplinary groups of directors were also

suggested. (Focus group 1, 2021; Interview 1, 2021.) Lowered hierarchy and decreased top down management were desired to facilitate employee motivation and empowerment (Interview 1, 2021). The importance of ownership approach and service approach implied target setting responsibility belonging to the unit where the design process is executed (Focus group 1, 2021). Whichever instance decides what the design process target is in relation to D9 principle adherence, the requirement could be lower than the actual target to provide practitioners with flexibility, motivation and opportunities to learn and improve (Interview 2, 2021).

To manage process responsibilities, management commitment to design and manage digital services as well as a mutually agreed framework of activities which imply adherence to D9 principles of digitalisation were deemed necessary by several participants (Focus group 1, 2021; Interview 1, 2021). Structured documentation based on research evidence was requested to be utilised throughout the organisation to provide for congruence, comparability, collaboration and clearly defined expectations. A common structure of documentation should at least standardise document content, instructions, visualisations, as well as methods and locations of recording documentation. (Interview 2, 2021.)

How documentation requirements are determined would be the paramount aspect of QI artifact functionality and effectivity to consider. How to determine what suffices if a binary yes/no approach was used to determine whether a document is done well enough, or if documented activities have contributed enough to the designed service? How to determine the scale if a different sufficiency approach was selected? Moreover, who could decide, and on what criteria, which of the principles or documents should be prioritised? Can it be determined which of the documents must be compulsory to advance the design process to subsequent phases or even to launch the service? (Focus group 1, 2021; Interview 2, 2021.)

Time and consistency would be lost if each design process needed to determine and find their own documentation method. Standardised methods could be applicable quickly in different processes to ensure tool suitability for the task. Standardised documentation instructions would facilitate congruence of criteria understanding and adherence. Uniform visualisations were considered to be convenient means of progress

evaluation and practitioner motivation. (Interview 2, 2021.) Practitioner motivation to improve adherence to visualised D9 principles of digitalisation could be further enhanced by empowering people involved in the design process to decide on targeted results within QI observations and strive for the best solution they can produce (Interview 1, 2021). It was noted that it could be demotivating and lead to decreased process performance if all principles did not need to be adhered to. However, it was also noted that a digitalised service may function well even if all D9 principles of digitalisation were not adhered to in a measurable way. (Focus group 1, 2021.)

Managers were requested to divide each of the nine principles of digitalisation to ones that support intrinsic values of customer orientation and service productivity. The consensus was that this division is highly debatable, if not impossible to make. Five principles were identified quickly to support service productivity, but it was argued that at least some of them would be inherently customer oriented principles. Principles identified in this group to support service productivity the most were related to unnecessary red tape, asking for new information only once, utilising existing digital services, naming an owner to service and its execution, and opening information and interfaces to public. Moreover, it was debated in the group if customer orientation would inherently benefit the organisation and provide organisational productivity benefits when customer need was matched. Focus group participants discussing this question unanimously agreed that all nine principles of digitalisation would support customer orientation. (Focus group 1, 2021.)

Adherence to D9 principles of digitalisation must always be adjusted to the context of designed service. For instance, health service criteria would not directly suit social services that the target organisation also produces. Organisational values, customer orientation and service productivity in this context, should not be variable across the organisation even though they need to be updated periodically to adapt for changes in the operating environment. (Interview 1, 2021.) The national D9 principles of digitalisation cannot be changed in the organisation either, they are generic principles that can be applied in different contexts. A selection of criteria, indicator and observable requirements for each purpose would provide flexibility and could improve context-specific design outcomes. However, all criteria, indicators and observables in the QI framework should always be comparable. Ability to compare measured

components of different processes would allow for aggregated information and root cause analysis of performance. (Focus group 1, 2021; Interview 1, 2021.) In the context of digital health service design, it would be problematic if indicators were varied between different services, as it would easily generate user inequality. It was stated that health service indicators should not be interchangeable, even though their data source or calculation method could potentially be variable. (Focus group 1, 2021.)

Ahlstrom (2014) recommends the use of simple tools that everyone can and want to use for quality interventions. Microsoft Excel is a pervasive tool widely available for generation of quality management applications. Use of Excel instead of dedicated quality management software provides all stakeholders the opportunity to understand underlying logic behind the calculations of quality applications. (Ross, 2014.) Siun sote uses the Microsoft 365 software platform throughout the organisation. The QI artifact is, at the moment, based on information structures created on Excel sheets. Necessary documentation could be created using Microsoft Office tools and published using the SharePoint-based Intranet. PowerAutomate could probably be used to count D9 adherence (i.e., process performance) scores based on stored documentation that would serve as indicators and observables. PowerAutomate could rely on metadata features of necessary documents. Service tier indicators could be available to all employees in Intranet, organisation tier visualisations based on accumulated scores could be available to public on Siun sote website. However, comprehensive and effective health service system approach (Komashie et.al., 2021) should be introduced by creating a universal Health Service Design System from this QI architecture. The recommended information architecture of the ensemble QI artifact is encapsulated in Figure 4.
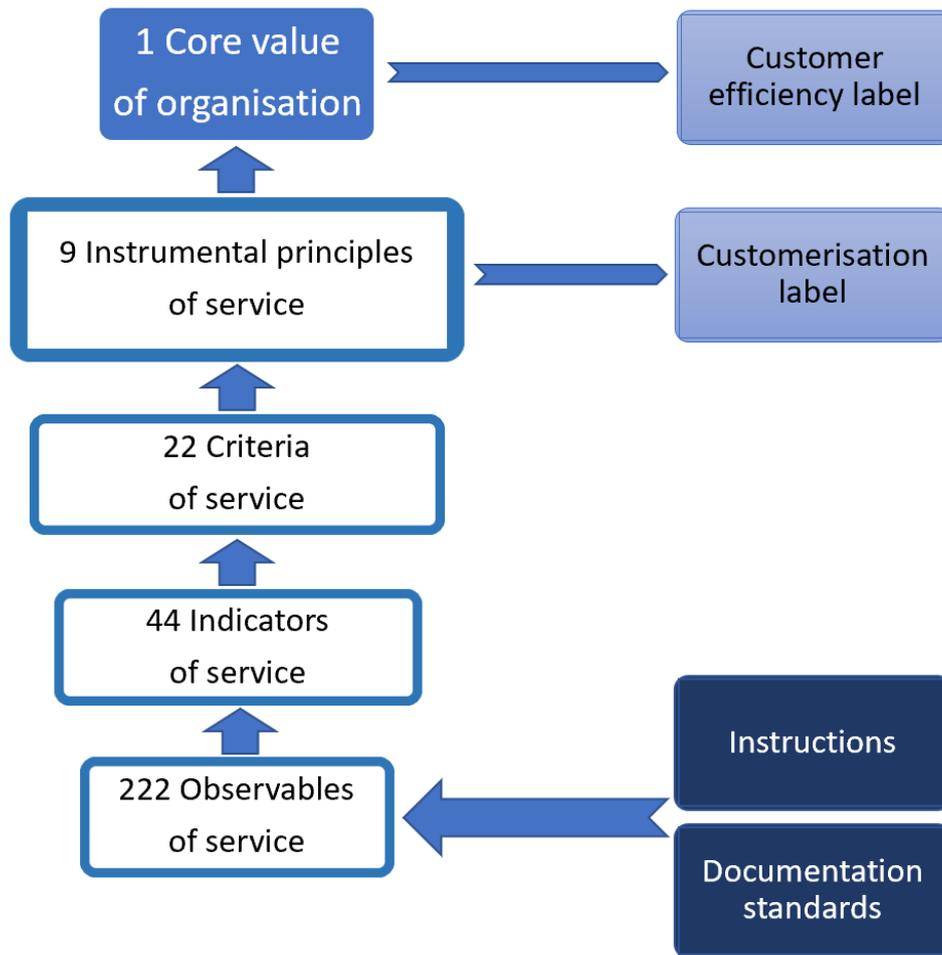
Figure 4. Encapsulated information architecture of the ensemble QI artifact.

5.2 Practicable QI framework to guide decision making

Customer orientation is based on understanding customer need and expectations. Thus, customer benefits should be prioritised, and customers should be involved in service design processes. Both internal and external customers should be involved proactively by asking their opinions, but also reactively by capitalising on customer feedback. A good service supports the customers on their journey. Customer orientation in digital services could enable innovative tools for people who can and want to use them. (Interview 1, 2021.) Customerisation (Wind & Rangaswamy, 2001) is the customer-centric strategic approach that has revolutionised mass customisation in many service industries by enabling individual service needs and expectations to be addressed with digital technologies. Supporting customers with digital tools would dispose of many

traditional labour and time intensive workflows, such as phone calls or physical visits related to service transactions, for instance (Interview 1, 2021).

Service process benefits should be identified and measured for both the customers and the organisation (Interview 1, 2021). Measurable benefits should transform attitudes and activities (Parviainen et.al., 2017) to overcome failures in productivity improvement when attempting to extract benefits of service digitalisation (Stenborg et.al., 2021). Customer orientation in Finnish health services is defined (THL, 2021) as an "approach where service enablers see clients as individuals and active bodies, organise their activities based on the clients' needs and resources and enable the clients to act as equal partners with experts and professionals". Customer orientation in health service production should be promoted with an architecture capable of involving customers in their personal care or services by facilitating individual responsibilities and commitment (Vuokko et.al., 2020).

Currently, understanding customer need is not perceived to be systematic in the organisation. Participants had experienced that customer orientation was not pursued in many design processes. Organisational benefit objectives, such as resource cutbacks for example, are often prioritised over customer expectations. Moreover, it was stated that customer feedback is rarely utilised comprehensively, and questionnaires do not provide deep enough understanding of customer needs. To enhance customer orientation, participants proposed the inclusion of customers, who understand their individual service need and user characteristics, to each phase of the service design process. More active customer feedback collection and feedback utilisation were also requested by participants. Defining individual service paths would offer possibilities to streamline or rectify service operations. (Interview 1, 2021.)

Integrated services and systems guide organisations in resource allocation and collaboration to support customers with their individual service needs. Service entities and chains must be defined to enable maximum performance of integrated service processes. (Koivisto et.al., 2020.) Individual service paths must be defined to cater for service needs of individual customers with systematic, personalised and progressive service solutions (THL, 2021). Customer preferences indicate practicable service solutions and service performance indicators to customer-oriented service providers

(Salampessy et.al., 2020). These customer preferences and value perceptions can be defined, for example, by designing a service based on Garrett's (2011) elements of user experience. Customer trust is a requirement of customer-oriented service processes, as the customer should be in the centre of service development and digitalisation. Digital security and protected personal data processing enable service users to generate trust. (Rousku et.al., 2019.)

Participants associated unnecessary red tape with redundant customer transactions and practitioner activities. For instance, customers should be empowered to complete service activities independently when applicable. This would reduce the volume of practitioner contacts but could also prevent customers from needing to contact several instances to get their personal problem solved. Banking and online shopping were given as good examples of how customers are accustomed to dealing with their transactions independently by using digital tools. (Interview 1, 2021.) Operation of these industries have been revolutionised by the customerisation method that empowers customers to use services independently with digital technologies (Wind & Rangaswamy, 2001). Digital health service tools could similarly provide improved allocation of transactions. Improved allocation would enable customers to get their problem solved with fewer contacts and less waiting. (Interview 1, 2021.)

Participants identified problems that would need to be solved to remove unnecessary red tape. Firstly, it is not clear in the organisation how customer experience should be valued or measured. This often results to situations where customer orientation is claimed to be achieved, even though in fact the service has organisational focus. Secondly, there is a distinct lack of data on user experience or expectation. Thirdly, information does not move with the customer, but customers might need to give same information in different parts of the organisation. Fourthly, customers nor practitioners do not necessarily know which of the various services offered the customer should use. Practitioners perceived that red tape could be reduced by improving collaboration and online services, increasing process automation, producing transaction measurement data, improving customer guidance, or focusing on customer experiences instead of organisational traditions of transactions. (Interview 1, 2021.) Parviainen et.al. (2017) have published a national evaluation framework of digitalisation efforts containing

practical recommendations on how to measure necessity, benefits and productivity of customer-centric public services.

Customers must be able to trust that everything they send to health services is secured. That is why data protection and IT security specialists should be involved throughout the service design process, already from service need definition phase. Insecure service components should be identified before testing. (Interview 1, 2021.) DevSecOps is a process methodology created to support secure software development. Adopting DevSecOps to development processes requires effective changes in culture, tooling, and design processes. DevSecOps emphasises the importance and enables the creation of embedded and structured system security. These are generated by secure design practices to be implemented from the start of process planning. (Anjaria & Kulkarni, 2021.) Personal data security is based on strong digital identification of users, but identification technology requirements should not exclude people from health services or induce inequality in service availability (Vehko et.al., 2020).

A major threat to digital service security is that many customers and practitioners do not understand the requirements and implications of user behaviour or technical solutions. Moreover, variability in IT security specialist opinions has been observed. This is unsettling, as it was also stated that health service development projects are often dependent on external security experts and system providers because practitioners involved in design processes often lack competence and understanding of digital security components. (Interview 1, 2021.) The Information Management Act (Laki julkisen hallinnon tiedonhallinnasta 906/2019) lists information security requirements applicable to public administration organisations in Finland. National recommendations on practical application of information security requirement have been created to facilitate fulfilment of these requirements (Valtiovarainministeriö, 2021). Moreover, national instructions on secure digital work practices (Kirves & Rousku, 2021) and digital security management practices (Digi- ja väestötietovirasto, 2021) have been published. National Cyber Security Centre have created a universal measurement framework with instructions to guide organisations in evaluation and development of cyber security in their activities and systems (Traficom, 2020).

Ease of use must also be considered throughout the service design process and service lifecycle. Ease of service use was recommended to be an intrinsic value for the organisation. For services to be perceived as easy and secure by customers, service users must be educated and supported in both disciplines. It was deemed as a significant national problem that resources are wasted on development of new solutions that cannot be used at all or function poorly. (Interview 1, 2021.) Ten usability heuristics are a tool to evaluate and improve usability of digital interfaces. A functional interface will improve user experience and continuity of digital health service solutions. (Aldekhyyel et.al. 2021.) Moreover, the ten elements of user experience by Garrett (2011) can be used to improve comprehensive user experience systematically and iteratively, thus increasing users' ability and willingness to use the digital service. Usability, user involvement and user support has been included in national quality criteria of public administration online transaction services (Valtiovarainministeriö, 2018).

Universal design and familiar solutions were described as solutions to improve accessibility and usability of digital health services. Getting different customer groups involved in designing and accustomed to using digital health services will require immense communication efforts and rapport building. Availability of health services must be secured to different customer types; it can be improved with accessible digital services. For instance, designing user interfaces together with customers from all segments would improve ease of use. (Interview 1, 2021.) The Web Content Accessibility Guidelines (WCAG) are a universally accepted technical framework of securing accessibility of online content (W3C, 2018). Adherence to the latest WCAG framework is mandatory to Finnish public administration organisations (Laki digitaalisten palvelujen tarjoamisesta 306/2019). Adopting existing solutions that are provably easy to use and secure would have extirpated many failed development projects. Sufficient testing from early on in the design process would enable creation of more functional services when new solutions are needed. (Interview 1, 2021.)

Service availability was also associated with offering customer benefits quickly. Customers should always know when and how services can be contacted, or alternatively when the service provider will contact the customer. Customer uncertainty and queuing should be removed from service systems. Service and contact

timeliness should be determined by the customer, not by what is convenient for the organisation. This was seen as another trait of customer-oriented service culture that should be promoted. Digital service functionality is critical to timeliness also due to different expectations compared to physical service channels. (Interview 1, 2021.) It was stated that customers get frustrated and impatient much quicker when waiting in online services compared to physical service transactions (Focus group 2, 2022; Interview 1, 2021).

Genuine customer service promises would provide a framework for the organisation to organise and prioritise its activities and customers to know what to expect. Process automation could reduce or in some cases even remove customer waiting times. Ideally, customers would receive an immediate response 24/7. The response should provide each customer with necessary service or guidance. (Focus group 2, 2022; Interview 1, 2021.) Fluent service operation enabled by methodical user support and guidance is promoted in the national online service quality framework (Valtiovarainministeriö, 2018). Rousku et.al. (2019) have provided instructions for service process automation.

Some health services must be available, and work must be recorded, in all situations regardless of disruptions. Otherwise, life or health could be severely threatened. Services should be planned to endure technical disruptions and the organisation should always know when there is a disruption in their system. Customers should be informed of how they can contact services when primary service channels and technical systems are dysfunctional. Backup systems or phone lines could be easily overwhelmed when important digital services face disruptions and practitioners should have all necessary information at their disposal even if their primary tools were not available. Therefore, risk of disruption in critical systems should be diversified with backup systems and processes. (Interview 1, 2021.)

The organisation has prepared for disruptions in critical health services (Focus group 2, 2022). However, it was concluded by participants that disruption preparation and service execution in case of disruptions could and should be drastically improved. Moreover, understanding of disruptions and backup systems should be improved. Customers should be informed of expected schedules and activities of disruption

situations. In addition to planning, disruption situations should be practiced. (Interview 1, 2021.) Activities necessary to prepare for technical system disruptions as well as necessary activities to prepare for data security breaches are instructed by governmental organisations (Digi- ja väestötietovirasto, 2021; Rousku et.al. 2019; Valtiovarainministeriö, 2018).

Information should be available when needed. It may cause frustration, mistakes, or danger if information is not available when needed. Information must move and be discovered by users. Decisions may not rely on customer recall; it is even more imperative to find recorded information when that information is detailed. Information is abundant in health services and is easily absconded in current systems. Participants perceived that the organisation should be responsible for finding and utilising existing information, this responsibility should not be on the customer. Moreover, practitioners should be able and allowed to trust information given by customers to avoid measuring or asking repetitively. Uncertainty regarding legal implications of trusting existing knowledge or information sharing between systems have been observed. (Interview 1, 2021.) Customer-oriented storing, sharing and utilisation of existing information would be enabled by combining the MyData approach (Poikola et.al., 2018) with the national VIRTA-architecture (DigiFinland, 2021).

Participants stated that both national solutions and smaller private providers have their place in the complicated network of health services. Existing solutions are sources of ready or modifiable solutions to suit the need quicker than a completely new solution. Existing solutions of own organisation should be known first to avoid unnecessary projects. A framework and specialists were requested to be available to evaluate potential solutions before applying resources to testing and system integration. (Interview 1, 2021.) Ross (2014) has recommended a multifaceted benchmarking approach to find, evaluate and adopt existing solutions in pursuit of increased health service quality.

It was stated by participants that significant time and other resources are wasted testing solutions that cannot eventually be utilised for some particular reason. Moreover, launch of new features have sometimes rendered existing necessary functionalities dysfunctional. A need for more agile and effective in-house testing processes was

identified. Stronger national collaboration in service development was also requested to identify and evaluate existing solutions and to improve data use, for example to access larger data sets to train AI. (Interview 1, 2021.) Interoperability must be confirmed on all operational levels (European Commission, 2017) to empower customers and ensure improved health outcomes in the digital transformation of health services (Kouroubali & Katehakis, 2019). The VIRTA-architecture (DigiFinland, 2021) would additionally support adherence to national interoperability requirements for public health services (Pentikäinen et.al., 2019).

Health data is produced together with customers. Participants were adamant that personal health information should be available to people, who should be able to access and use their own data to their benefit as well as decide who can access their data. Customers should have personal data ownership because it could facilitate transition towards a more active and effective customer role in health services. Opening information and interfaces to public must be done selectively and safely. This has been problematic and highly restricted due to limited understanding and inflexible IT systems. (Interview 1, 2021.) The MyData approach (Poikola et.al., 2018) is a solution to personal health data ownership. Open data has multiple potential benefits to organisations and the society (Koski et.al., 2017), but open data requires a structured technical publication interface to function (THL, 2020). In addition to functional technical interfaces, safe and effective service resource integration and service process value, co-creation requires a unified management framework to create a service ecosystem with desired stakeholder benefits (Michalke et.al., 2020).

Participants identified and discussed various aspects of service ownership. They associated ownership to personal responsibility of service system development or maintenance. Moreover, they connected service ownership with a detailed and controlled management framework that should be in place before any important design processes are initiated. Vague ownership has resulted to sporadic service development, uncertainty of expectations, and deprivation of service control, for example. Thus, the process quality management framework should address responsibilities of decision making and knowledge generation, for instance. Some participants stated that they would be relieved if they could know who they are accountable to and for what they are accountable. Additionally, clear objectives of development were requested from

service owners. It was recommended by participants that ownership and responsibility should be shared for two reasons. Firstly, there should be multiple levels of responsibility because tasks need owners similarly to service ensembles. Secondly, no skillset or knowledge should be in possession of only one person because people and their roles change in the organisation. (Interview 1, 2021.) The RACI (Responsible, Accountable, Consulted, Informed) framework has been used in IT organisations to facilitate task ownership, responsibility allocation and information sharing of project work with a simple matrix approach (Costello, 2012).

Participants had positive attitudes towards the recommended QI framework that was based on interview and literature findings. They identified recommended observables, and related observation documentation stipulation, as important features to comprehend and execute in digital service design processes. More specifically, it was stated that these observables would need to be considered and solved in a well-functioning service. The framework was considered to facilitate design process success and to contain some aspects that have previously not been considered in the organisation. Participants suggested the framework to be used for discussing tasks, responsibilities, phasing, and objectives of health service design processes, for example. (Focus group 2, 2022; Interview 2, 2021.)

The recommended QI framework inflicted confusion among the participants too. The framework contained so many tasks and documents to complete, as well as variety of information to understand, that participants were concerned of resources and skills to manage all. In addition to vast amount of requirements, participants were conscious that the stipulation to document is not a clear enough expectation or objective to practitioners. The recommended observables would need structured documentation templates and instructions on how to document. Moreover, it was ambiguous to participants who should be responsible to generate the stipulated documentation of each observable and whether all observables would need to be completed in all design processes. (Focus group 2, 2022; Interview 2, 2021.) The vast amount of observables and some technical documentation stipulations were stated or suspected to evoke feelings of ignorance, confusion, or evasion. Additionally, there was doubt of how such design framework containing customer segment documentation, for example, could support individuality and integrity of customer orientation. (Interview 2, 2021.)

Participants identified no information that would clearly be missing or in wrong location within the QI framework (Focus group 2, 2022; Interview 2, 2021). However, several participants stated that defining whether everything was located logically would need further and more detailed familiarisation with the Excel sheets. Moreover, headings on criteria and indicator levels could be revised in some instances. Participants stated that the best way to determine whether all information was in correct location would be to test the framework in practice, to apply it to an existing design process. (Interview 2, 2021.)

The recommended QI framework contained terminology that was perceived to be inexplicable in some cases (Focus group 2, 2022; Interview 2, 2021). Most of the inexplicable terminology related to automation, ICT technologies, service design, data management and digital security. Moreover, acronyms derived from English language, such as UX, DevSecOps, or GDPR for instance, were perceived inexplicable. However, participants argued that terminology should not be changed. Instead, they stated that this framework would be an effective tool to learn terminology needed to communicate with technical experts. Additionally, constructs of QI observable requirements would become familiar to users if terminology, paradigms, and applicable tools to complete activities would be explained. Participants recommended a glossary of terms, instruction material and user education to support practitioners in the use of this QI framework to successfully complete digital health service design processes. (Interview 2, 2021.)

5.3 Adherence labels of decision making criteria

Large variation was found in visualisation expectations of participants. Practitioners generally preferred a bar chart with coloured horizontal bars over a radar chart for visualisation of principle adherence (Interview 2, 2021). However, managers gravitated towards a radar chart for the same purpose (Focus group 2, 2022). Output of interviews was, that top tier visualisation should be prioritised, but visualisations were needed on lower tiers of the QI framework to guide practice more effectively. Focus group participants and one interviewee gave intriguing suggestions of

combining a radar chart with the visualisation of D9 principles of digitalisation. These two visualisations have been merged in Figure 5 to create a Customerisation Label intended to visualise service tier performance in regard to D9 principle adherence. The Customerisation Label is intended to be an articulate graph to indicate in which D9 principle of digitalisation measured principle adherence could be improved and how much. (Focus group 2, 2022; Interview 2, 2021.) Customerisation was selected to title the label instead of digitalisation to introduce customer-centric mentality and operational strategies (Wind & Rangaswamy, 2001) that are required to transform focus of public health services to customers and their individual health benefits (Mannon & Collins, 2015; Vuokko et.al., 2020).

Figure 5. Customerisation Label to visualise measured adherence to D9 principles of digitalisation on service tier.

The Customerisation Label would need to encompass functionalities to support detailed adherence evaluation of indicators and observables. All visualisations should support iterative processes and motivational sub target setting. This could be enabled by functions that guide the user throughout the process with instructions and progress evaluation. It was reminded by a participant that instruments like this may not visualise work of individual practitioners, the most detailed visualisation tier should measure team performance. All visualisations were requested to be openly available in the organisation. Additionally, practitioners recommended that service or organisational level visualisations would be available to public to facilitate transparency. (Interview

2, 2021) Scaling, prioritising and weighting of observable tier variables must be defined before any QI visualisation is launched (Interview 2, 2021; Focus Group 2, 2022). These were not within the scope of this research, functionalities will be defined in later user experience elements (Garrett, 2011).

A modified energy efficiency label was spontaneously requested by one participant as an editorialising visualisation to illustrate ensemble performance on top tier (Interview 2, 2021). Focus group 2 (2022) did not dismiss this idea of aggregated efficiency label on organisational level. Thus, researcher decided to recommend the use of Customer Efficiency Label to be used on the top tier of information architecture. The suggested Customer Efficiency Label that visualises organisation's measured adherence to D9 principles of digitalisation is illustrated in Figure 6. Customer Efficiency Label visualises the aggregated adherence to D9 principles of digitalisation in service design processes on organisation tier. The D9 QI framework has been constructed to produce a desired system outcome, that is customer value (Ross, 2014) at the lowest possible customer cost (Mannon & Collins, 2015), in health service design processes with the selected QI observables. Hence, customer orientation is the selected core value of target organisation that is supported with this QI framework. Thus, an organisation achieving top level scores in Customer Efficiency Label is able to match customer need by designing customer-oriented health services (THL, 2021) with their customers and other stakeholders.
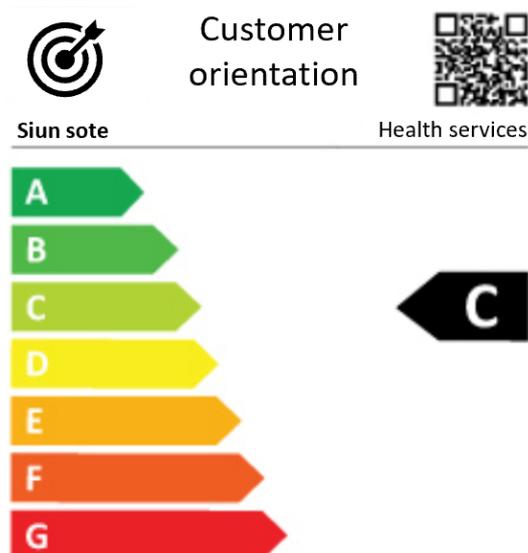

Figure 6. Customer Efficiency Label to visualise measured customer orientation of an organisation.

6 DISCUSSION

6.1 Research

Researcher engagement refers to change of view throughout the research process (Tuomi & Sarajärvi, 2018). Researcher view changed little; the largest change was that service productivity does not need to be measured separately from customer orientation in this VCIO framework in this context. Data collection methodology and techniques were described, minor problems were reported. Research participant selection, contacts, and use were described in detail. Methods to guarantee anonymity were reported. Participants did not read the report before publication because reporting time was limited, no significant research knowledge was created with this research, and individual interview participants had no possibility to identify which sections of results came from their own interview. The research was conducted between February 2021 and February 2022.

Reliable researchers reflect on their subjectivity and interaction with research participants. Conscious reflection of researcher bias and influence on the research process adds credibility of the research. Preconception of topic is based on researcher's personal knowledge and experiences on the subject. They direct researcher's decision making and data collection. Subjective experiences from research target organisation will create preconceptions about the organisation and its operation, for instance. However, affiliation to research context may benefit the study by facilitating interview arrangement and execution. (Puusa & Juuti, 2020.) Researcher's previous understanding and experience of service design as well as design processes in the target organisation provided for greater details and adjusted the focus of practicable content in the QI artifact. Personal connections to participants provided for open and detailed opinions and examples regarding the QI framework. Crucially, open and detailed expressions of improvement need in organisation's processes were acquired.

Tuomi & Sarajärvi (2018) propose credibility, transferability, validity and confirmability to be included in the reliability framework of qualitative research. Puusa

& Juuti (2020) add ethicality, reactivity and misinterpretation into research reliability consideration. Reliability framework of this research is described in Table 2.

Table 2. Research reliability evaluation framework.

Factor	Execution in this research
Credibility	Researcher bias was evident due to research method selection. Integrity was achieved in this research, as execution followed the plan and there were no violations of research terms. Conceptualisation and interpretation were based on combining theoretical knowledge and participant perspectives. Participants were described in as much detail as possible without compromising anonymity. Data sets are accurate descriptions of research context and participant perceptions because interaction was open, and similarities were found in data set comparisons. Uncertainties due to opinion variance were reported.
Transferability	Research results are transferable to other Finnish public health service organisations with similar problems and needs. The generated QI framework could be further developed on national level because QIs are based on national or international secondary sources. No organisation-specific QI sources were used. Selected research methods have been utilised in similar research. Reporting was transparent, as methods and results were described in detail and descriptively. Due to context specificity and researcher bias, it would be unlikely that identical results would be generated in another research process. However, similar results could be found in similar contexts by following the selected research methods.
Validity	Research process has been inspected by thesis mentors. The research had little outside influence, as it was performed within one organisation to be used in one intended context. Perception congruence of participants was high, except for opinions about label visualisation and process management responsibility allocation. The research had various random variables: no systematic literature reviews were made, the whole research

	framework was based on researcher decisions, researcher background and knowledge had substantial influence on research decisions. Researcher influence belongs to all ADR processes and interview research. Research mentors could have guided researcher decisions if they had more time to comment. Systematic literature reviews could have been conducted if solution specific interviews had not been prioritised. Participant perceptions were in line with selected literature. Selected research methods were followed meticulously. Validity of practicable QIs should be confirmed with further research and proof of concept should be confirmed by testing the QI tool in service design processes.
Confirmability	Researcher interpretations and decisions were not evaluated by outsiders. Therefore, the researcher used theoretical frameworks to reflect on subjectivity throughout the process.
Ethicality	Selected ethical frameworks were followed meticulously, no ethical deviations occurred. Research results serve the interest of Finnish health service organisations and their customers. Research reporting was neutral.
Reactivity	Researcher influence was high due to selected research methods. However, participants were allowed to deviate from planned topics within timeframes. Most questions were not leading, at the end of the research participants were led to certain direction with examples. This was needed to acquire feedback on recommended structure and content of the QI tool.
Misinterpretation	Misinterpretation was not likely in the research. Colleagues understood each other and minor misconceptions were corrected by the researcher or participants themselves with prompts or clarifying statements. Terminology was explained if it was not understood by participants. Researcher interpretations were confirmed with the second round of interviews and use of literature. Last question of first interview round was misaligned, participants asked for examples to comprehend the question.

Research must always be evaluated in relation to existing knowledge. Usability of research refers to the significance, meaning the ability of the research to change operation, in the field of the research. (Tuomi & Sarajärvi, 2018.) Existing knowledge confirms that such QI frameworks can guide practice in health services (Westby et.al., 2016) and that health service system approach can improve patient and service outcomes (Komashie et.al., 2021). Several participants (Interview 2, 2021; Focus group 2, 2022) stated that they want to utilise the QI framework in their work because it would support their service design activities. This would suggest that with adequate user support and mutually agreed objectives (Reilly, 2017) the artifact will improve design processes by engaging practitioners to use the QI tool. Participants stated that the QI artifact is needed in daily work of health service design (Focus group 2, 2022).

Qualitative research should produce precise, useful and comprehensible results (Puusa & Juuti, 2020). This research produced precise results in the form of 9 Excel sheets containing practicable QI observations to evaluate D9 principle adherence. Moreover, precise visual management recommendations for the QI artifact were published. Recommended applicable D9 principle operationalisation framework was created. However, these are not the complete ensemble QI artifact. Features such as functionalities or user interfaces (Garrett, 2011), for example, need to be developed for the quality tool to fulfil its purpose as a comprehensive Health Service Design System. Comprehensive system approach could significantly improve health service delivery (Komashie et.al., 2021).

6.2 QI Artifact

Structured work ascribed to measuring will improve health outcomes (Mannon & Collins, 2015). Participants (Focus group 1, 2021; Focus group 2, 2022; Interview 2, 2021) stated that discussing these topics is beneficial to health service design process management of target organisation. Moreover, the benefits of codified knowledge (Hansen et al., 1999) derived from the created QI artifact were identified to possibly facilitate collaboration, standardise information and activities, enhance understanding and improve transparency of design processes (Focus group 1; Focus group 2, 2022; Interview 1, 2021; Interview 2, 2021).

This artifact has potential to transform health services of target organisation towards a customer-oriented culture (Ross, 2014) and structured process management methods (Rousku et al., 2017) suitable to advance digitalisation. Interview 1 (2021) and Focus group 1 (2021) discussed current state of digital health service design. Participant consensus was that the organisation is determined to strive for customer orientation, but in practice their activities do not support that objective methodically. Participants (Focus group 2, 2022; Interview 2, 2021) stated that the practicable QI framework, specifically the recommended observables and their documentation requirements, would provide for structures to methodically support customer orientation.

Clarity of practitioner expectation management as well as responsibility allocation (Reilly, 2017) could be facilitated with this QI artifact. Participants (Focus group 1, 2021; Focus group 2, 2022; Interview 1, 2021; Interview 2, 2021) were decisive that design process responsibilities must be defined and shared, ownership of the service and design process tasks must be clear, and the objective of a design process must be defined. Moreover, the same participants argued that the practicable QI framework would support these imperative success attributes, if documentation requirements were defined in the organisation or design team.

Participants (Focus group 2, 2022; Interview 2, 2021) perceived the recommendations to be practicable and useful in supporting and evaluating digital health service design processes. Potential use beyond the original purpose of the artifact was identified, as the framework was desired to be used also for digital health service quality evaluation (Focus group 2, 2022). However, observables in the recommended VCIO framework should be adjusted (Salampessy et.al., 2020) and validated (Peerboom et.al., 2020) before use of the decision making framework outside its intended ethical context (Cancu, 2020).

Inclusion of customers in the selection of publicly reported QIs will provide for more relevant data that could affect customer behaviour more comprehensively. However, customers do value service outcome indicators more than internal process quality indicators. (Salampessy et.al., 2020.) No external customers of target organisation were included in this research because service outcome QIs were not created. The

creation of internal design process QIs with ADR method (Sein et.al., 2011) required inclusion of professional users and internal customers to the QI artifact build process and to the evaluation of recommended service design process QIs.

Paramount to clearing implementation barriers, stakeholders of different backgrounds and positions must be engaged in QI artifact development and QI selection from the beginning of the creation process. Stakeholders are more likely to support QI implementation when they understand the context and engage in discussion on the ramifications of implementing QIs. It is imperative for QIs to require minimal effort from practitioners, and to permit consistent interpretation and widespread applications in various contexts. (Westby et.al., 2016.) Thus, further artifact development following the elements of user experience (Garrett, 2011) should involve practitioners and managers from different organisations and, preferably, with more versatile skillsets. For example, only a few practitioners selected to this research had technical backgrounds, which limited evaluation of technical QI observable recommendations. Moreover, managing artifact development on national level would inevitably provide larger data sets in addition to more versatility. This should improve the reliability (Tuomi & Sarajärvi, 2018) of QI artifact development results.

Validation of observables in the QI framework is required, as participants (Focus group 2, 2022; Interview 1, 2021) stated that all content seemed relevant and suitable at this stage, but they might feel different when using the tool. Moreover, they stated that important missing observables may be identified if the QI framework was tested and evaluated in more detail. Universally accepted approaches or tools for QI development or evaluation of methodological QI quality do not exist (Westby et.al., 2016). The validity and universal comprehensibility of individual Quality Indicators and QI observables used in the QI artifact framework could be evaluated by applying a slightly modified Quality Indicator and Quality Measurement Criteria framework created by Westby et.al. (2016). Slight modifications will be necessary to adjust into the context of digital health service design processes that support clinical practice processes. The recommended observable evaluation framework for the created QI framework is shown in Table 3. In addition to QI validation, this evaluation framework could be used for the imperative prioritisation and valuation process of QI observables articulated by participants (Focus group 1, 2021; Focus group 2, 2022). Validity,

feasibility, and value of every QI observable could be determined in detail, for instance, by a group of experts allocating a 7-point Likert scale (Peerboom et.al., 2020) to each statement of QI observable evaluation criteria presented in Table 3.

Table 3. D9 principle adherence framework QI observable evaluation criteria. (modified from Westby et.al., 2016).

Criterion	Definition statements
Important	Observable is of high importance (high volume or value, safety). Observable is important to improving process quality and service outcomes. Observable is subject of significant practice variation or suboptimal performance.
Valid	Observable is based on evidence-based synthesis of high-quality evidence and there is sufficient expert consensus to support it. Observable statement represents established solutions. Observable produces clear benefits to design process stakeholders.
Reliable	Data reproduction is likely regardless of observable administrator or if the same person administers the observable repeatedly. Observable allows for minimal measurement error.
Feasible	Requirements of observable data collection are easy to understand. Required data are available to be collected in electronic systems, databases or registries. Data can be collected with minimal effort at minimal cost.
Acceptable	Aligns with practitioner and customer values and industry practice. Observable is within the control of design process stakeholders. Observable is useful for decision making at multiple levels.
Measurable	Observable can be measured as binary "yes" or "no" variable. Observable is capable of detecting changes to the quality of health service design process.

Main purpose of the QI artifact is to improve service design process quality of Siun sote digital health services. Effectiveness refers to the ability to produce desired outcomes (Ross, 2014). Effectiveness evaluation of the QI artifact could be performed with a standardised self-assessment survey created by Ahlstrom (2014). It is a

questionnaire aimed at practitioners engaged in improvement work to determine current state of multiple improvement process attributes on a numerical scale. If results of the survey improve after implementing the QI tool in a design process within the design team, the QI artifact has been effective. Another purpose of this thesis was to increase target organisation's adherence to D9 principles of digitalisation. This hypothesis could be tested by applying the QI artifact to service design processes performed before artifact implementation and service design processes performed after artifact implementation. If higher D9 principle adherence scores are indicated after implementation, the QI artifact has been effective.

In lack of a gold standard method for evaluating reported reliability and transparency of Quality Indicator (QI) generation processes, they may be evaluated with the Aggregating QI Methodological Approach Characteristics Framework. This framework can be used to report the methodological process approaches used in QI topic selection and extraction of recommendations. (Kötter et.al., 2012.) Table 4 indicates the extraction process framework of D9 Quality Indicators in this research. The QI artifact is generated and capable to reform professional practices. To improve reliability (Tuomi & Sarajärvi, 2018.) of recommended QI framework by generating new research knowledge, it would be advisable to concentrate purely on peer review research knowledge in QI generation instead of the practical guidelines partially used in this research.

Table 4. Reported topic selection and recommendation extraction of D9 Quality Indicators (modified from Kötter et.al., 2012).

Topic selection	Criteria of topic selection	Topics were selected based on associations generated from Interview 1 (2021). For more detailed criteria, see Table 3. D9 principle adherence artifact Quality Indicator evaluation criteria.
	Development of QIs from	(Parviainen et.al., 2017); (Stenborg et.al., 2021); (Vuokko et.al., 2020); (Koivisto et.al., 2020); (Salampessy et.al., 2020); (Garrett, 2011); (Rousku et.al., 2019); (Anjaria & Kulkarni, 2021); (Vehko et.al., 2020); (Laki julkisen hallinnon tiedonhallinnasta 906/2019); (Valtiovarainministeriö, 2021); (Kirves & Rousku, 2021); (Digi- ja väestötietovirasto, 2021); (Traficom, 2020); (Aldekhyyel et.al. 2021); (Valtiovarainministeriö, 2018); (W3C, 2018); (Laki digitaalisten palvelujen tarjoamisesta 306/2019); (Poikola et.al., 2018); (DigiFinland, 2021); Ross (2014); (European Commission, 2017); (Kouroubali & Katehakis, 2019); (Pentikäinen et.al., 2019); (Koski et.al., 2017); (THL, 2020); (Michalke et.al., 2020); (Costello, 2012)
	Criteria for selection of participants	Members of target organisation. Experience and knowledge of digital health service design processes in target organisation. Practitioners to

		individual interviews, managers to focus group interviews.
	Criteria for selection of guidelines	National or international guidelines, frameworks confirmed by research, frameworks used in public administration, and legal requirements that are able to solve problems or support objectives identified in Interview 1 (2021).
	Participants listed	List of participants is not provided as research was reported anonymously.
	Critical appraisal	Yes, QI framework content was discussed in Interview 2 (2021) and Focus group 2 (2022).
	Used guidelines listed	Yes, each practicable QI framework literature source is listed in this table and reported in results.
Recommendation extraction	Extraction of all/ a selection of recommendations	Both. Smaller and more detailed source frameworks were utilised fully. Selection was made from some source frameworks as they did not fully comply with intended use.
	Criteria for recommendation selection	Recommendations were selected based on issues identified by practitioners in Interview 1 (2021). Overlapping recommendations of different sources were excluded from final QI framework.
	Potential indicators listed	Yes, QI subjects and sources are reported in results and definite observations are listed in Excel file delivered to mandating organisation.

7 CONCLUSIONS

The combination of VCIO approach and simple visualisation (Hallensleben & Hustedt, 2020) was perceived by participants (Focus group 2, 2022; Interview 2, 2021) as a suitable approach to enhance transparency of service design processes, facilitate performance evaluation, as well as increase motivation to improve. More specifically, the Quality Indicator (QI) framework was said to contain practical activities that would improve service quality and resource productivity if performed in service design processes (Focus group 2, 2022; Interview 2, 2021). The national health service digitalisation recommendations (Ministry of Social Affairs and Health, 2016; Virtanen et.al., 2022) have been operationalised with this approach to effectively strive for desired reformation (Parviainen et.al., 2017) of service perceptions, procedures, and processes. Moreover, national strategic objectives of customer-centric social and health service system development (Sosiaali- ja terveysministeriö & Kuntaliitto, 2015) are supported by the selected QI observables that transform vague ethical values into practicable, measurable, and comparable (Hallensleben & Hustedt, 2020) process management activities to enable successful digitalisation efforts (Rousku et al., 2017).

Action Design Research (ADR) method (Sein et.al., 2011) was used to create the information architecture (Garrett, 2011). Thus, the generated QI framework will also benefit other health service organisations with similar problems (Haj-Bolouri et al., 2017). National health service improvements (Ministry of Social Affairs and Health, 2016; Virtanen et.al., 2022) could be achieved with this QI framework. To capitalise on digitalisation by catering for customer needs and to achieve population benefits in our welfare society (Virtanen et.al., 2022), this QI tool could be adopted to all Finnish health service organisations that struggle (Parviainen et.al., 2017; Stenborg et.al., 2021) to transform attitudes and succeed in service quality improvements assisted by digital technologies. Guidelines used to create the QI framework of this artifact were national or international guidelines and recommendations (Table 4). Thus, there should be no obstacles to further develop and launch this QI artifact on national level. Effectivity of public health service digitalisation with measured process performance (Parviainen et.al., 2017) as well as measurement of direct and indirect results of quality interventions (Stenborg et.al., 2021) should be improved with this QI tool.

Focus of this research was initially on digital health service processes. However, it became evident to researcher that digitalisation should not be promoted as an exquisite solution that automatically improves customer orientation or service productivity (Parviainen et.al., 2017; Reponen et.al., 2021). Thus, reported results and recommendations are focused on service customerisation (Wind & Rangaswamy, 2001) instead of digitalisation (Stenborg et.al., 2021). Digitalisation should never be the primary purpose of development efforts (Parviainen et.al., 2017), but digitalisation should be used to support the primary target such as service process quality improvement, for example.

Customer efficiency and customerisation were selected to title the QI labels instead of digitalisation to introduce customer-centric mentality and operational strategies (Wind & Rangaswamy, 2001) that are required to transform orientation of public health services to customers and their individual health benefits (Vuokko et.al., 2020). In two decades, customerisation has revolutionised service and product delivery strategies as well as customer need definition approaches in many industries (Interview 1, 2021; Wind & Rangaswamy, 2001). Public health services would need to follow suit by understanding customer need and pursuing customer benefit innovations instead of organisational benefit or adoption of digital technologies (Focus group 1, 2021; Interview 1, 2021; Parviainen et.al., 2017; Virtanen et.al., 2022).

Health service systems must aim at improving customer outcomes with fundamental improvements in service delivery, which requires changes in health service provider behaviour and operation (Mannon & Collins, 2015; Ross, 2014). Public health services currently focus on system output, which directs service production orientation towards internal processes. Instead, service design and production orientation must be shifted to customer value and health outcomes. (Focus group 2, 2022; Interview 1, 2021; Ross, 2014; Vuokko et.al., 2020.) Individualisation of service implementation will improve customer orientation of services as digital services may be used to replace or complement locally accessible services depending on customer need and capability to use digital technologies (Virtanen et.al., 2022). Customer efficiency and customerisation (Wind & Rangaswamy, 2001) visualisations will further expedite the shift in attitudes by improving comprehension of service quality and facilitating transparency of health service quality definitions (Mannon & Collins, 2015).

The QI artifact is created to define quality (Mannon & Collins, 2015) by the customer or from customer perspective (Salampessy, 2020). The practicable QI framework will allow health service decision makers to define and evaluate design process quality gaps, guide quality improvement and compare customer orientation of health services (Westby et.al., 2016). This operationalised ethical framework can be used by service designers, as well as regulators or oversight bodies (Hallensleben & Hustedt, 2020). For instance, the QI framework could be utilised to evaluate health service maturity (Reponen et.al., 2021) from customer value perspective instead of service volume or technology acceptance profiles of an organisation. The QI artifact could also be used to improve deficient IT security skills (Reponen et.al., 2021) in health service organisations. National collaboration and adherence to D9 principles of digitalisation (Valtiovarainministeriö, 2017) could be ensured with the QI artifact. Service equality among customers of health service organisations (Virtanen et.al., 2022) could be promoted by improving service availability and productivity with this QI tool. If applied on national level, the QI framework could reduce service inequality of Finnish population (Reponen et.al., 2021) because health outcomes would be improved systematically by defining quality and reducing process deficiencies (Ross, 2014).

Health service stakeholders can mutually define, accept and achieve measurable goals of health service design processes (Reilly, 2017) with this standardised customer orientation framework. This comprehensive practical guidance will provide for systematic health service innovation opportunities (Harrington & Burge, 2018). Moreover, a standardised checklist of best practices will enable high quality intervention performance with diminutive waste (Mannon & Collins, 2015), which could be the necessary solution to counteract increasing health service IT costs (Reponen et.al., 2021) and suboptimal public service digitalisation outcomes (Stenborg et.al., 2021). Preferably, patient and service outcomes would be significantly improved (Komashie et.al., 2021) by generating a universal Health Service Design System. Ideally, QI data will become an integral part of routine health service design through standardised documentation combined to instructions and digital applications easily available to guide decision making in real time (Westby et.al., 2016). Therefore, this QI artifact should be further developed by stakeholders (Westby et.al., 2016) to ensure that the selected requirements are relevant, feasible, meaningful, and acceptable.

The QI artifact information architecture must contain instructions and standardised documentation to enable actionable observables (Interview 2, 2021; Westby et.al., 2016). Standardised documentation will provide for codified knowledge that will enable practitioners and managers to understand features or requirements and to define solutions with less effort and uncertainty (Hallensleben & Hustedt, 2020; Hansen et al., 1999). This will reduce design process deviations and ultimately improve health service quality as well as service productivity (Mannon & Collins, 2015). Observables of the QI artifact should be provided with specified applicable data collection methods, a transparent scoring process, and expected acceptable performance level indicators (Westby et.al., 2016). Significance of these features was emphasised by participants (Focus group 2, 2022; Interview 2, 2021). Standard guidelines and goals should be mutually defined and accepted to facilitate self-management and assumed responsibility of practitioners (Reilly, 2017). Thus, these attributes must be defined together with prospective artifact users to ascertain best practices (Mannon & Collins, 2015) and to set quality standards and targets without demotivating stakeholders (Reilly, 2017).

The QI artifact should be developed into an interactive checklist tool (Cancu, 2020) that could motivate stakeholders to achieve goals with mutually agreed practical standards (Reilly, 2017). Scaling, prioritising and weighting of observable tier variables must be defined before the QI tool is launched (Interview 2, 2021; Focus Group 2, 2022). These were not within the scope of this research because functionalities will be defined in user experience elements (Garrett, 2011) forthcoming in later iterations of artifact build. Perception congruence of participants was high, except for opinions about management responsibility allocation (Focus group 1, 2021; Interview 1, 2021) and label visualisation (Focus group 2, 2022; Interview 2, 2021). These features should be rigorously defined in the QI artifact to guide practice effectively (Peerboom et.al., 2020; Westby et.al., 2016). Health service organisations should introduce quality management tools, structures and responsibilities to define and improve service quality systematically and successfully (Mannon & Collins, 2015; Reilly, 2017).

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THE DATA ANALYSIS FRAMEWORK

INDIVIDUAL INTERVIEW ROUND 1: Practitioners

Current service development guidance	Associated criteria for each principle	Documentation ideas for criteria	T3 indicator and T4 observable documentation	Responsibility: documentation and adherence	Labelling adaptation for various needs
Interviewee responses: how digital health care service development is controlled currently?	Interviewee responses: which criteria of principle adherence the practitioners associate with each of the nine principles?	Interviewee responses: how could adherence to principles be documented?	Interviewee responses: how could VCIO framework tier 3 indicators and tier 4 observables be documented?	Interviewee responses: who should be responsible for creating documentation and who should decide how meticulously the principles must be adhered to?	Interviewee responses: on which tier of the VCIO framework requirements must be adjustable or interchangeable to match different context requirements?

FOCUS GROUP INTERVIEW ROUND 1: Managers

Current service development guidance	Purpose and potential use of labelling instrument	Customer orientation vs. service productivity	T3 indicator and T4 observable documentation	Responsibility: documentation and adherence	Labelling adaptation for various needs
Interviewee responses: how digital health care service development is controlled currently?	Interviewee responses: what could an instrument labelling adherence to principles of digitalisation be used for?	Interviewee responses: which principles support intrinsic values of customer orientation and which support service productivity?	Interviewee responses: how would you like VCIO framework tier 3 indicators and tier 4 observables to be documented?	Interviewee responses: who should be responsible for creating documentation and who should decide how meticulously the principles must be adhered to?	Interviewee responses: on which tier of the VCIO framework requirements must be adjustable or interchangeable to match different context requirements?

INDIVIDUAL INTERVIEW ROUND 2: Practitioners

Opinions on proposed content structures	Data location	Missing data	Comprehensible content	Data visualisation options	Distinct figure improvement
Interviewee responses: what do you think of the data structures in Excel file delivered with invitation?	Interviewee responses: does something seem to be in wrong place?	Interviewee responses: is there something important missing from data structures?	Interviewee responses: is something in content difficult to comprehend?	Interviewee responses: which of the three figures illustrate adherence to principles most comprehensibly in your opinion?	Interviewee responses: how could clarity of this distinct figure be improved?

FOCUS GROUP INTERVIEW ROUND 2: Managers

Opinions on proposed content structures	Data location	Missing data	Comprehensible content	Data visualisation options	Distinct figure improvement
Interviewee responses: what do they think of the data structures in Excel file delivered with invitation?	Interviewee responses: does something seem to be in wrong place?	Interviewee responses: is there something important missing from data structures?	Interviewee responses: is something in content difficult to comprehend?	Interviewee responses: which of the three figures illustrate adherence to principles most comprehensibly in your opinion?	Interviewee responses: how could clarity of this distinct figure be improved?

SPECIFIC INFORMED CONSENT FORMS OF EACH INTERVIEW ROUND

Suostumus osallistujille / Focus group 1

Hei,

sinut on kutsuttu osallistumaan ryhmähaastatteluun, jonka tekee Ilari Hurmekoski. Hän haastattelee Siun soten asiantuntijoita opinnäytetyöhönsä, joka tehdään Siun soten toimeksiantona. Opinnäytetyö tehdään osana Satakunnan ammattikorkeakoulun Welfare Technology, MBA -koulutusohjelmaa. Tutkimuksen tavoite on määrittää digitalisoinnin periatteiden noudattamista mittaavan työkalun tietorakenne. Opinnäytetyön tarkoitus on parantaa Siun soten sähköisten terveydenhuoltopalvelujen sunnitteluprosessin laatua lisäämällä digitalisoinnin periaatteiden hyödyntämistä.

Jos päätät osallistua tutkimukseen, sinut kutsutaan osallistumaan kahteen focus group - tyyliseen ryhmähaastatteluun, joiden kesto on noin yksi (1) tunti. Yhteensä ryhmähaastatteluihin tarvitaan aikaa noin kaksi (2) tuntia, molempiin ryhmähaastatteluihin lähetetään erilliset kutsut ja suostumuslomakkeet. Haastatteluihin saa osallistua työajalla.

Ryhmähaastattelu suoritetaan etäyhteydellä Microsoft Teamsin kautta ja haastattelusta tullaan tekemään videotallenne. Videotallenne litteroidaan sisältöanalyysiä varten. Siun sotelle luotavan työkalun lisäksi tutkimusprosessilla etsitään toimivia yleisiä käytäntöjä julkisen terveydenhuollon sähköisten palvelujen kehittämiseen.

Osallistumisesi tähän tutkimukseen on täysin vapaaehtoista. Jos päätät osallistua, voit myös lopettaa ryhmähaastatteluun osallistumisesi vapaasti milloin haluat. Kesken lopetetusta osallistumisesta ei aiheudu osallistujalle sanktioita eikä kesken jäänyt ryhmähaastattelu sido osallistujaa mihinkään.

Tutkija säilyttää kaikki tutkimukseen liittyvät tiedot salasanalla suojattuina. Tutkimukseen osallistuvien henkilöiden tarkan tunnistamisen mahdollistavat tiedot poistetaan raportoinnista. Pyydämme sinua ystävällisesti huomioimaan, että tällaisessa ryhmätilanteessa täydestä luottamuksellisuudesta ei voida mennä takuuseen. Osallistujia pyydetään kunnioittamaan toistensa yksityisyyttä olemalla puhumatta osallistujien henkilöllisyydestä ja ryhmähaastattelun sisällöstä haastattelutilanteen ulkopuolella.

Halutessasi voit kysyä lisätietoja tutkimusprojektista suoraan tutkimuksen tekijältä: Ilari Hurmekoski / 050 574 8511 / ilari.hurmekoski@siunsote.fi.

Pyydämme sinua ystävällisesti tallentamaan nimelläsi ja kutsun hyväksymisen päivämäärällä varustetun lomakkeen itsellesi. Täytetty ja tallennettu lomake pyydetään ystävällisesti lähettämään sähköpostilla osoitteeseen ilari.hurmekoski@siunsote.fi ennen haastatteluun osallistumista.

Osallistun tämän tutkimuksen ensimmäiseen 10.12.2021 järjestettävään ryhmähaastatteluun vapaaehtoisena:

Kutsun hyväksymisen päivämäärä:

Kutsun hyväksyvän osallistujan nimi:

Suostumus osallistujille / Focus group 2

Hei,

sinut on kutsuttu osallistumaan ryhmähaastatteluun, jonka tekee Ilari Hurmekoski. Hän haastattelee Siun soten asiantuntijoita opinnäytetyöhönsä, joka tehdään Siun soten toimeksiantona. Opinnäytetyö tehdään osana Satakunnan ammattikorkeakoulun Welfare Technology, MBA -koulutusohjelmaa. Tutkimuksen tavoite on määrittää digitalisoinnin periaatteiden noudattamista mittaavan työkalun tietorakenne. Opinnäytetyön tarkoitus on parantaa Siun soten sähköisten terveydenhuoltopalvelujen sunnitteluprosessin laatua lisäämällä digitalisoinnin periaatteiden hyödyntämistä.

Jos päätät osallistua tutkimukseen, sinut kutsutaan osallistumaan kahteen focus group -tyyliseen ryhmähaastatteluun, joiden kesto on noin yksi (1) tunti. Yhteensä ryhmähaastatteluihin tarvitaan aikaa noin kaksi (2) tuntia, molempiin ryhmähaastatteluihin lähetetään erilliset kutsut ja suostumuslomakkeet. Haastatteluihin saa osallistua työajalla.

Ryhmähaastattelu suoritetaan etäyhteydellä Microsoft Teamsin kautta ja haastattelusta tullaan tekemään videotallenne. Videotallenne litteroidaan sisältöanalyysiä varten. Siun sotelle luotavan työkalun lisäksi tutkimusprosessilla etsitään toimivia yleisiä käytäntöjä julkisen terveydenhuollon sähköisten palvelujen kehittämiseen.

Osallistumisesi tähän tutkimukseen on täysin vapaaehtoista. Jos päätät osallistua, voit myös lopettaa ryhmähaastatteluun osallistumisesi vapaasti milloin haluat. Kesken lopetetusta osallistumisesta ei aiheudu osallistujalle sanktioita eikä kesken jäänyt ryhmähaastattelu sido osallistujaa mihinkään.

Tutkija säilyttää kaikki tutkimukseen liittyvät tiedot salasanalla suojattuina. Tutkimukseen osallistuvien henkilöiden tarkan tunnistamisen mahdollistavat tiedot poistetaan raportoinnista. Pyydämme sinua ystävällisesti huomioimaan, että tällaisessa ryhmätilanteessa täydestä luottamuksellisuudesta ei voida mennä takuuseen. Osallistujia pyydetään kunnioittamaan toistensa yksityisyyttä olemalla puhumatta osallistujien henkilöllisyydestä ja ryhmähaastattelun sisällöstä haastattelutilanteen ulkopuolella.

Halutessasi voit kysyä lisätietoja tutkimusprojektista suoraan tutkimuksen tekijältä: Ilari Hurmekoski / 050 574 8511 / ilari.hurmekoski@siunsote.fi.

Pyydämme sinua ystävällisesti tallentamaan nimelläsi ja kutsun hyväksymisen päivämäärällä varustetun lomakkeen itsellesi. Täytetty ja tallennettu lomake pyydetään ystävällisesti lähettämään sähköpostilla osoitteeseen ilari.hurmekoski@siunsote.fi ennen haastatteluun osallistumista.

Osallistun tämän tutkimuksen toiseen 11.1.2022 järjestettävään ryhmähaastatteluun vapaaehtoisena:

Kutsun hyväksymisen päivämäärä:

Kutsun hyväksyvän osallistujan nimi:

Suostumus osallistujille / Individual interview 1

Hei,

sinut on kutsuttu osallistumaan yksilöhaastatteluun, jonka tekee Ilari Hurmekoski. Hän haastattelee Siun soten asiantuntijoita opinnäytetyöhönsä, joka tehdään Siun soten toimeksiantona. Opinnäytetyö tehdään osana Satakunnan ammattikorkeakoulun Welfare Technology, MBA -koulutusohjelmaa. Tutkimuksen tavoite on määrittää digitalisoinnin periaatteiden noudattamista mittaavan työkalun tietorakenne. Opinnäytetyön tarkoitus on parantaa Siun soten sähköisten terveydenhuoltopalvelujen sunnitteluprosessin laatua lisäämällä digitalisoinnin periaatteiden hyödyntämistä.

Jos päätät osallistua tutkimukseen, sinut kutsutaan osallistumaan kahteen yksilöhaastatteluun, joiden kesto on noin yksi (1) tunti. Yhteensä yksilöhaastatteluihin tarvitaan jokaiselta osallistujalta aikaa noin kaksi (2) tuntia, molempiin yksilöhaastatteluihin lähetetään erilliset kutsut ja suostumuslomakkeet. Haastatteluihin saa osallistua työajalla.

Yksilöhaastattelu suoritetaan etäyhteydellä Microsoft Teamsin kautta ja haastattelusta tullaan tekemään videotallenne. Videotallenne litteroidaan sisältöanalyysiä varten. Siun sotelle luotavan työkalun lisäksi tutkimusprosessilla etsitään toimivia yleisiä käytäntöjä julkisen terveydenhuollon sähköisten palvelujen kehittämiseen.

Osallistumisesi tähän tutkimukseen on täysin vapaaehtoista. Jos päätät osallistua, voit myös lopettaa yksilöhaastatteluun osallistumisesi vapaasti milloin haluat. Kesken lopetetusta osallistumisesta ei aiheudu osallistujalle sanktioita eikä kesken jäänyt yksilöhaastattelu sido osallistujaa mihinkään.

Tutkija säilyttää kaikki tutkimukseen liittyvät tiedot salasanalla suojattuina. Tutkimukseen osallistuvien henkilöiden tarkan tunnistamisen mahdollistavat tiedot poistetaan raportoinnista. Tutkimuksen haastatteluihin osallistuvia pyydetään kunnioittamaan toistensa yksityisyyttä olemalla puhumatta osallistujien henkilöllisyydestä ja yksilöhaastattelun sisällöstä haastattelutilanteen ulkopuolella.

Halutessasi voit kysyä lisätietoja tutkimusprojektista suoraan tutkimuksen tekijältä: Ilari Hurmekoski / 050 574 8511 / ilari.hurmekoski@siunsote.fi.

Pyydämme sinua ystävällisesti tallentamaan nimelläsi ja kutsun hyväksymisen päivämäärällä varustetun lomakkeen itsellesi. Täytetty ja tallennettu lomake pyydetään ystävällisesti lähettämään sähköpostilla osoitteeseen ilari.hurmekoski@siunsote.fi ennen haastatteluun osallistumista.

Osallistun tämän tutkimuksen ensimmäiseen PVM järjestettävään yksilöhaastatteluun vapaaehtoisena:

Kutsun hyväksymisen päivämäärä:

Kutsun hyväksyvän osallistujan nimi:

Suostumus osallistujille / Individual interview 2

Hei,

sinut on kutsuttu osallistumaan yksilöhaastatteluun, jonka tekee Ilari Hurmekoski. Hän haastattelee Siun soten asiantuntijoita opinnäytetyöhönsä, joka tehdään Siun soten toimeksiantona. Opinnäytetyö tehdään osana Satakunnan ammattikorkeakoulun Welfare Technology, MBA -koulutusohjelmaa. Tutkimuksen tavoite on määrittää digitalisoinnin periaatteiden noudattamista mittaavan työkalun tietorakenne. Opinnäytetyön tarkoitus on parantaa Siun soten sähköisten terveydenhuoltopalvelujen sunnitteluprosessin laatua lisäämällä digitalisoinnin periaatteiden hyödyntämistä.

Jos päätät osallistua tutkimukseen, sinut kutsutaan osallistumaan kahteen yksilöhaastatteluun, joiden kesto on noin yksi (1) tunti. Yhteensä yksilöhaastatteluihin tarvitaan jokaiselta osallistujalta aikaa noin kaksi (2) tuntia, molempiin yksilöhaastatteluihin lähetetään erilliset kutsut ja suostumuslomakkeet. Haastatteluihin saa osallistua työajalla.

Yksilöhaastattelu suoritetaan etäyhteydellä Microsoft Teamsin kautta ja haastattelusta tullaan tekemään videotallenne. Videotallenne litteroidaan sisältöanalyysiä varten. Siun sotelle luotavan työkalun lisäksi tutkimusprosessilla etsitään toimivia yleisiä käytäntöjä julkisen terveydenhuollon sähköisten palvelujen kehittämiseen.

Osallistumisesi tähän tutkimukseen on täysin vapaaehtoista. Jos päätät osallistua, voit myös lopettaa yksilöhaastatteluun osallistumisesi vapaasti milloin haluat. Kesken lopetetusta osallistumisesta ei aiheudu osallistujalle sanktioita eikä kesken jäänyt yksilöhaastattelu sido osallistujaa mihinkään.

Tutkija säilyttää kaikki tutkimukseen liittyvät tiedot salasanalla suojattuina. Tutkimukseen osallistuvien henkilöiden tarkan tunnistamisen mahdollistavat tiedot poistetaan raportoinnista. Tutkimuksen haastatteluihin osallistuvia pyydetään kunnioittamaan toistensa yksityisyyttä olemalla puhumatta osallistujien henkilöllisyydestä ja yksilöhaastattelun sisällöstä haastattelutilanteen ulkopuolella.

Halutessasi voit kysyä lisätietoja tutkimusprojektista suoraan tutkimuksen tekijältä: Ilari Hurmekoski / XXX XXX XXXX / XXX@XXX.XX.

Pyydämme sinua ystävällisesti tallentamaan nimelläsi ja kutsun hyväksymisen päivämäärällä varustetun lomakkeen itsellesi. Täytetty ja tallennettu lomake pyydetään ystävällisesti lähettämään sähköpostilla osoitteeseen XXX@XXX.XX ennen haastatteluun osallistumista.

Osallistun tämän tutkimuksen toiseen PVM järjestettävään yksilöhaastatteluun vapaaehtoisena:

Kutsun hyväksymisen päivämäärä:

Kutsun hyväksyvän osallistujan nimi:

RESEARCH PERMIT OF TARGET ORGANISATION

Siun sote – Pohjois-Karjalan sosiaali- ja terveyspalvelujen kuntayhtymä	Päätöspöytäkirja Tutkimuslupapäätös	1 / 1
██████████		02.11.2021 § 6/2021
Siun sote - Pohjois-Karjalan sosiaali- ja terveyspalvelujen kuntayhtymä		

Operationalised principles of digitalisation labelling instrument of adherence to D9 principles - Ilari Hurmekoski - YAMK-opinnäytetyö

4326/13.00.01.00/2021, § 6/2021

Selostus asiasta Uusi tutkimuslupahakemus.

Päätös Myönnän tutkimusluvan hakemuksen mukaisesti.

Perustelut Perustelut ilmenevät tutkimuslupahakemuksesta.

Lain, asetuksen tai kunnallisen säännön kohta, johon päätös perustuu

Pohjois-Karjalan sosiaali- ja terveyspalvelujen kuntayhtymän hallintosääntö luku 3, 2 §
Laki viranomaisten toiminnan julkisuudesta 621/1999

Muutoksenhaku Ohje on päätöksen liitteenä.

Allekirjoitus ja virka-asema

Tämä asiakirja on allekirjoitettu sähköisesti asianhallintajärjestelmässä. Allekirjoituksen oikeellisuuden voi todentaa kirjaamosta.

02.11.2021

████████████

INTERVIEW GUIDE OF FOCUS GROUP 1

Esittely:

Tervetuloa, kiitos osallistumisestanne. Mukava nähdä, että näin moni haluaa auttaa tutkimuksen tekemisessä ja pystyy osallistumaan. Ovathan kaikki osallistujat täyttäneet ja palauttaneet ryhmähaastattelun suostumuslomakkeen minulle sähköpostilla?

Teidät kutsuttiin ryhmähaastatteluun, koska haluan kuulla teidän kaikkien ajatuksia ja kokemuksia aiheesta. Tänään aiheena on digitalisaation periaatteiden noudattamista mittaavan työkalun sisältövaatimukset. Pääsette keskustelemaan työkaluun tarvittavan sisällön käyttökohteista, laajuudesta, sekä tietojen sijainnista ja työkalun käyttövastuusta.

Roolitus:

On tärkeää muistaa koko ajan, että tämä on teidän ryhmänne. Suurimman osan ajasta te kutsutut osallistujat keskustelette keskenänne.

Minulla on muutama kysymys, joista toivon teidän keskustelevan aktiivisesti. Minun tehtäväni on kuunnella keskusteluanne ja varmistaa, että kaikki tarvittavat aiheet saadaan käytyä ryhmän kanssa läpi. On tärkeää, että kuulen mahdollisimman monen ajatuksia ja mielipiteitä aiheista.

Ryhmän säännöt:

Ryhmän tuloksellista keskustelua varten toimintaa ohjaa muutama perussääntö.

1. Teidät on kutsuttu tänne, jotta kuulen teidän erilaisia mielipiteitänne. Ryhmähaastattelun onnistumiseen tarvitaan kaikkien osallistumista keskusteluun.
2. Ryhmässä puhutaan vuorotellen, saatte itse jakaa puheenvuorot haluamallanne tavalla.
3. Kunnioitetaan jokaista mielipidettä ja pidetään keskustelu ystävällisenä, kiitos.

Luottamuksellisuus:

Tutkimukseen osallistujien kommentit ja tiedot käsitellään luottamuksellisesti. Raporttiin ei tule mitään osallistujien tunnistamisen mahdollistavia tietoja. Minua kiinnostaa mitä te ryhmänä ajattelette, minua ei tutkimuksessa kiinnosta kuka sanoo mitä. Toivon siis, että keskustelette avoimesti.

Avoimen keskustelun mahdollistamiseksi toivon, että jokainen kunnioittaa toistensa yksityisyyttä. Tämän ryhmähaastattelutilanteen ulkopuolella ei saa puhua ryhmässä puhutuista asioista eikä ryhmään osallistuneista henkilöistä. Silti teitä pyydetään olemaan jakamatta salassa pidettäviä henkilökohtaisia asioita tässä ryhmässä, koska ne eivät ole tutkimuksen kohteena eikä niiden salassapitoa voida ryhmätilanteen luonteen vuoksi täysin luvata.

Esittelyt:

Taidatte kaikki olla jo tuttuja keskenänne? Minä olen Ilari Hurmekoski Joensuusta. Olen vielä vuoden loppuun Siun sotella töissä rakenneuudistushankkeessa ja opiskelen samalla Satakunnan ammattikorkeakoulussa Welfare Technology MBA koulutusta, jonka

opinnäytetyöhön tämä ryhmähaastattelu sisältyy. Aiemmat koulutukseni ovat BBA in International Business ja sairaanhoitaja.

Haastattelun tallentaminen:

Nyt kun on päästy ryhmähaastattelun tunnelmaan kiinni, voidaan aloittaa tilanteen tallentaminen ja kysymyksistä keskusteleminen. Oletteko valmiita?
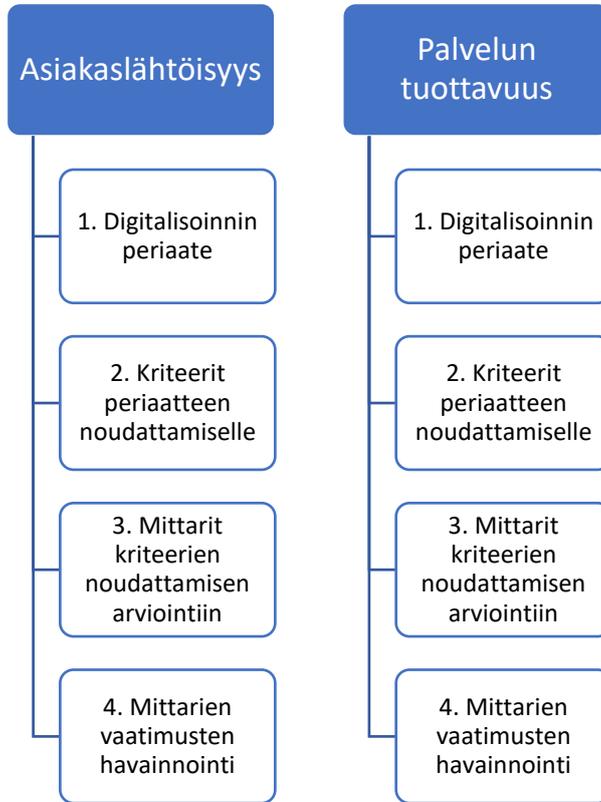
Kysymykset:

1. Aloitetaan nykytilan kartoittamisella. Miten Siun sotessa ohjataan sähköisten terveyspalveluiden kehittämistä nykyisin?

2. Kiitos, siirrytään työkalun kehittämiseen. Millaisia käyttökohteita voisitte Siun sotessa löytää digitalisaation periaatteiden mittaamiselle?

3. Näytän teille Valtiovarainministeriön luomat digitalisoinnin periaatteet, joiden on tarkoitus ohjata julkishallinnon sähköisten palvelujen kehittämistä. Pyydän teitä jakamaan nämä periaatteet asiakaslähtöisyyttä ja palvelun tuottavuutta tukeviin. Yksi periaate voi mahdollisesti tukea myös molempia. Mitkä periaatteista kuuluvat mielestänne asiakaslähtöisyyttä tukeviin ja mitkä periaatteista tukevat mielestänne palvelun tuottavuutta?

4. Näytän teille toisen kuvan. Millaista dokumentointia toivoisitte Siun sotessa järjestettävän 3 tason mittareille ja 4 tason havainnoille?

5. Pääsette nyt keskustelemaan hetkeksi vastuista. Kenen tulisi mielestänne olla vastuussa työkalun käytön vaatimasta dokumentoinnista ja kenen tulisi päättää miten tarkasti periaatteita tulee noudattaa?

6. Työkalun tulisi ohjata erilaisia sähköisten terveyspalvelujen suunnitteluprosesseja. Millä tasoilla saisi olla muuttuvia mittareita tai kriteereitä erilaisten kehittämisprosessien tarpeisiin?

Kiitos osallistumisestanne tutkimukseen ja aktiivisesta sekä avoimesta keskustelusta koko haastattelun ajan. **Tilaisuuden tallentaminen lopetetaan nyt.** Seuraavassa haastattelussa päästään keskustelemaan periaatteita mittaavan työkalun rakenteesta ja sen tarjoaman tiedon ymmärrettävyydestä.

Asiakaslähtöisyys / Palvelun tuottavuus

Asiakaslähtöisyys	Palvelun tuottavuus
1. Digitalisoinnin periaate	1. Digitalisoinnin periaate
2. Kriteerit periaatteen noudattamiselle	2. Kriteerit periaatteen noudattamiselle
3. Mittarit kriteerien noudattamisen arviointiin	3. Mittarit kriteerien noudattamisen arviointiin
4. Mittarien vaatimusten havainnointi	4. Mittarien vaatimusten havainnointi

INTERVIEW GUIDE OF FOCUS GROUP 2

Esittely:

Tervetuloa, kiitos osallistumisestanne tähän toiseenkin ryhmähaastatteluun. Mukava nähdä, että näin moni haluaa edelleen auttaa tutkimuksen tekemisessä ja pystyy jälleen osallistumaan. Ovathan kaikki osallistujat täyttäneet ja palauttaneet myös tämän toisen ryhmähaastattelun suostumuslomakkeen minulle sähköpostilla?

Teidät kutsuttiin ryhmähaastatteluun, koska haluan kuulla teidän kaikkien ajatuksia ja kokemuksia aiheesta. Tänään aiheena on digitalisaation periaatteiden noudattamista mittaavan työkalun tietorakenne. Pääsette keskustelemaan työkalun luokitteleman sisällön luotettavuudesta sekä ymmärrettävyydestä.

Roolitus:

On tärkeää muistaa koko ajan, että tämä on teidän ryhmänne. Suurimman osan ajasta te kutsutut osallistujat keskustelette keskenänne.

Minulla on jälleen muutama kysymys, joista toivon teidän keskustelevan aktiivisesti. Minun tehtäväni on kuunnella keskusteluanne ja varmistaa, että kaikki tarvittavat aiheet saadaan käytyä ryhmän kanssa läpi. On tärkeää, että kuulen mahdollisimman monen ajatuksia ja mielipiteitä.

Ryhmän säännöt:

Ryhmän tuloksellista keskustelua varten toimintaa ohjaa samat perussäännöt kuin viimeksi.

4. Teidät on kutsuttu tänne, jotta kuulen teidän erilaisia mielipiteitänne. Ryhmähaastattelun onnistumiseen tarvitaan kaikkien osallistumista keskusteluun.
5. Ryhmässä puhutaan vuorotellen, saatte itse jakaa puheenvuorot haluamallanne tavalla.
6. Kunnioitetaan jokaista mielipidettä ja pidetään keskustelu ystävällisenä, kiitos.

Luottamuksellisuus:

Tutkimukseen osallistujien kommentit ja tiedot käsitellään luottamuksellisesti. Raporttiin ei tule mitään osallistujien tunnistamisen mahdollistavia tietoja. Minua kiinnostaa mitä te ryhmänä ajattelette, minua ei tutkimuksessa kiinnosta kuka sanoo mitä. Toivon siis, että keskustelette avoimesti.

Avoimen keskustelun mahdollistamiseksi toivon, että jokainen kunnioittaa toistensa yksityisyyttä. Tämän ryhmähaastattelutilanteen ulkopuolella ei saa puhua ryhmässä puhutuista asioista eikä ryhmään osallistuneista henkilöistä. Silti teitä pyydetään olemaan jakamatta salassa pidettäviä henkilökohtaisia asioita tässä ryhmässä, koska ne eivät ole tutkimuksen kohteena eikä niiden salassapitoa voida ryhmätilanteen luonteen vuoksi täysin luvata.

Esittelyt:

Taidataan kaikki olla jo tuttuja viime kerralta? Haluatteko kerrata lyhyesti viimeksi läpi käydyt periaatteet sekä niihin liitettävät kriteerit ja mittarit?

Haastattelun tallentaminen:

Nyt kun on päästy ryhmähaastattelun tunnelmaan kiinni, voidaan aloittaa tilanteen tallentaminen ja kysymysksistä keskusteleminen. Oletteko valmiita?

Kysymykset:

1. Aloitetaan työkalun sisällön rakenteella. Tämän haastattelutilanteen kutsun liitteeksi oli laitettu edellisen haastattelukierroksen perusteella luotu sisältörakenne Excel tiedostossa. Oletteko ehtineet tutstumaan taulukoihin, millaisia ajatuksia näiden sisältö teissä herättää?

2. Katsotaan luotuja kriteereitä ja mittareita yhdessä vähän tarkemmin. Näyttääkö jokin tieto olevan väärässä paikassa?

3. Näyttääkö jostain kohdasta puuttuvan tärkeää tietoa?

4. Onko jokin kohta tai termi taulukossa vaikea ymmärtää?

5. Näytän teille nyt kolme erilaista kaaviota. Missä näistä mielestänne periaatteiden noudattaminen kuvautuu selkeimmin?

6. Miten tätä selkeintä kaaviota saataisi mielestänne muokattua vielä helpommaksi ymmärtää?

Kiitos jälleen osallistumisestanne tutkimukseen ja aktiivisesta sekä avoimesta keskustelusta koko haastattelun ajan. **Tilaisuuden tallentaminen lopetetaan nyt.**

INTERVIEW GUIDE OF INDIVIDUAL INTERVIEW 1

Esittely:

Tervetuloa haastatteluun, kiitos osallistumisestasi. Mukava nähdä, että haluat auttaa tutkimuksen tekemisessä ja pystyt osallistumaan. Varmistan vielä, että olet täyttänyt ja palauttanut yksilöhaastattelun suostumuslomakkeen minulle sähköpostilla?

Sinut on kutsuttu yksilöhaastatteluun, koska haluan kuulla ajatuksiasi ja kokemuksiasi aiheesta. Tänään aiheena on digitalisaation periaatteiden noudattamista mittaavan työkalun sisältövaatimukset. Keskustelemme työkaluun tarvittavan sisällön käyttökohteista, laajuudesta, sekä tietojen sijainnista ja työkalun käyttövastuusta. Käytetään keskustelun referenssinä kokemuksiasi uuden sähköisen palvelun kehittämisprojektissa, kuulen mielelläni kokemuksiasi myös muiden asiakkaille tarjottavien sähköisten palvelujen suunniteluprosesseista.

Roolitus:

Minulla on muutama kysymys, joista toivon meidän keskustelevan aktiivisesti. Minun tehtäväni on kuunnella ja varmistaa, että kaikki tarvittavat aiheet saadaan käytyä läpi. On tärkeää, että kuulen mahdollisimman avoimia ajatuksia ja mielipiteitä aiheista.

Luottamuksellisuus:

Tutkimukseen osallistujien kommentit ja tiedot käsitellään luottamuksellisesti. Raporttiin ei tule mitään osallistujien tunnistamisen mahdollistavia tietoja. Minua kiinnostaa mitä te asiantuntijat ajattelette, minua ei tutkimuksessa kiinnosta kuka sanoo mitä.

Toivon, että keskustelemme haastattelun aikana avoimesti ja luottamuksellisesti. Tämän haastattelutilanteen ulkopuolella ei saa puhua haastattelun aikana puhutuista asioista.

Esittelyt:

Ollankin jo valmiiksi tuttuja. Kuten tiedät, olen vielä vuoden loppuun Siun sotella töissä rakenneuudistushankkeessa ja opiskelen samalla Satakunnan ammattikorkeakoulussa Welfare Technology MBA koulutusta, jonka opinnäytetyöhön tämä yksilöhaastattelu sisältyy. Aiemmat koulutukseni ovat BBA in International Business ja sairaanhoitaja.

Haastattelun tallentaminen:

Nyt kun on päästy haastattelun tunnelmaan kiinni, voidaan aloittaa tilanteen tallentaminen ja kysymyksistä keskusteleminen. Oletko valmis?
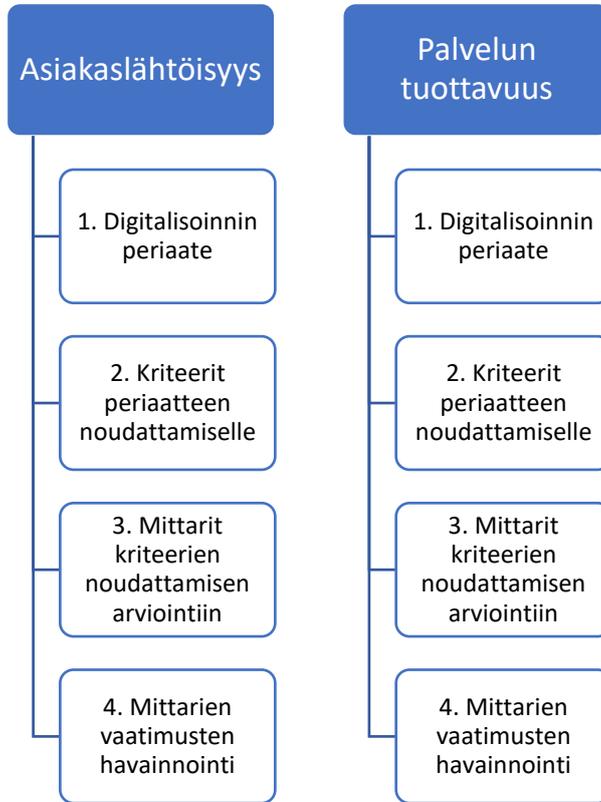
Kysymykset:

1. Aloitetaan nykytilan kartoittamisella. Miten Siun sotessa ohjataan sähköisten terveyspalveluiden kehittämistä nykyisin?

2. Kiitos, siirrytään työkalun kehittämiseen. Näytän sinulle Valtiovarainministeriön luomat digitalisoinnin periaatteet, joiden on tarkoitus ohjata julkishallinnon sähköisten palvelujen kehittämistä. Käydään yksi periaate kerrallaan läpi, millaisia kriteereitä sinulle tulee mieleen näiden periaatteiden noudattamisesta?

3. Miten mielestäsi Siun sotessa voitaisi dokumentoida näiden kriteerien noudattaminen?

4. Näytän sinulle toisen kuvan. Millaista dokumentointia voitaisi Siun sotessa järjestää 3. tason mittareille ja 4. tason havainnoille?

5. Keskustellaan hetki vastuista. Kenen tulisi mielestäsi olla vastuussa työkalun käytön vaatimasta dokumentoinnista ja kenen tulisi päättää miten tarkasti periaatteita tulee noudattaa?

6. Työkalun tulisi ohjata erilaisia sähköisten terveyspalvelujen suunnitteluprosesseja. Millä tasoilla saisi olla muuttuvia mittareita tai kriteereitä erilaisten kehittämisprosessien tarpeisiin?

Kiitos osallistumisestasi tutkimukseen ja aktiivisesta sekä avoimesta keskustelusta koko haastattelun ajan. **Tilaisuuden tallentaminen lopetetaan nyt.** Seuraavassa haastattelussa päästään keskustelemaan periaatteita mittaavan työkalun rakenteesta ja sen tarjoaman tiedon ymmärrettävyydestä.

Kehitämme palvelut asiakaslähtöisesti.

Poistamme turhan asioinnin.

Nimeämme palvelulle ja sen toteutukselle omistajan.

Rakennamme helppokäyttöisiä ja turvallisia palveluita.

Avaamme tiedon ja rajapinnat yrityksille ja kansalaisille.

Tuotamme asiakkaalle hyötyä nopeasti.

Hyödynnämme jo olemassa olevia julkisia ja yksityisiä sähköisiä palveluita.

Pyydämme uutta tietoa vain kerran.

Palvelemme myös häiriötilanteissa.

Asiakaslähtöisyys / Palvelun tuottavuus

Asiakaslähtöisyys

1. Digitalisoinnin periaate

2. Kriteerit periaatteen noudattamiselle

3. Mittarit kriteerien noudattamisen arviointiin

4. Mittarien vaatimusten havainnointi

Palvelun tuottavuus

1. Digitalisoinnin periaate

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Esittely:

Tervetuloa haastatteluun, kiitos osallistumisestasi myös tälle toiselle kierrokselle. Mukava nähdä, että haluat edelleen auttaa tutkimuksen tekemisessä ja pystyt jälleen osallistumaan. Varmistan vielä, että olet täyttänyt ja palauttanut myös tämän toisen yksilöhaastattelun suostumuslomakkeen minulle sähköpostilla?

Sinut on kutsuttu yksilöhaastatteluun, koska haluan kuulla ajatuksiasi ja kokemuksiasi aiheesta. Tänään aiheena on digitalisaation periaatteiden noudattamista mittaavan työkalun tietorakenne. Keskustelemme työkalun luokitteleman sisällön luotettavuudesta sekä ymmärrettävyydestä.

Roolitus:

Minulla on muutama kysymys, joista toivon meidän keskustelevan aktiivisesti. Minun tehtäväni on kuunnella ja varmistaa, että kaikki tarvittavat aiheet saadaan käytyä läpi. On tärkeää, että kuulen mahdollisimman avoimia ajatuksia ja mielipiteitä aiheista.

Luottamuksellisuus:

Tutkimukseen osallistujien kommentit ja tiedot käsitellään edelleen täysin luottamuksellisesti. Raporttiin ei tule mitään osallistujien tunnistamisen mahdollistavia tietoja. Minua kiinnostaa mitä te asiantuntijat ajattelette, minua ei tutkimuksessa kiinnosta kuka sanoo mitä.

Toivon, että keskustelemme haastattelun aikana jälleen täysin avoimesti ja luottamuksellisesti. Tämänkään haastattelutilanteen ulkopuolella ei saa puhua haastattelun aikana puhutuista asioista.

Esittelyt:

Ollankin jo valmiiksi tuttuja. Voidaan ohittaa esittelyt tällä kertaa. Haluatko kerrata lyhyesti viimeksi läpi käydyt periaatteet sekä niihin liitettävät kriteerit ja mittarit?

Haastattelun tallentaminen:

Nyt kun on taas päästy haastattelun tunnelmaan kiinni, voidaan aloittaa tilanteen tallentaminen ja kysymyksistä keskusteleminen. Oletko valmis?

Kysymykset:

1. Aloitetaan työkalun sisällön rakenteella. Tämän haastattelutilanteen kutsun liitteiksi oli laitettu edellisen haastattelukierroksen perusteella luotu sisältörakenne Excel tiedostossa. Oletko ehtinyt tutustumaan taulukoihin, millaisia ajatuksia näiden sisältö sinussa herättää?

2. Katsotaan luotuja kriteereitä ja mittareita yhdessä vähän tarkemmin. Näyttääkö jokin tieto olevan väärässä paikassa?

3. Näyttääkö jostain kohdasta puuttuvan tärkeää tietoa?

4. Onko jokin kohta tai termi taulukossa vaikea ymmärtää?

5. Näytän sinulle nyt kolme erilaista kaaviota. Missä näistä mielestäsi periaatteiden noudattaminen kuvautuu selkeimmin?

6. Miten tätä selkeintä kaaviota saataisi mielestäsi muokattua vielä helpommaksi ymmärtää?

Kiitos jälleen osallistumisestasi tutkimukseen ja aktiivisesta sekä avoimesta keskustelusta koko haastattelun ajan. **Tilaisuuden tallentaminen lopetetaan nyt.**