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Foreword

The development of ethical competence is a continuous process in which the individual and professional growth of actors is enabled in continuous, diverse interactive relationships with themselves, other people, communities, culture and societal changes at both national and global level. Diverse changes and events concerning the society and ecosystems reflect in the daily lives of individuals. The ethical operational model structures, supports, helps to understand and promotes and enables ethical activities in different sectors of employment. In the increasingly digitising operational environment, it extends to each individual's own life and professional development.

The description of the ethical operational model examines ethical activities both as an entity formed by acts (reflective process of ethical activities) and as a wider entity formed by elements related to the operational model (ecosystem and the digitising operational environment of the social and healthcare sector).

The ethical operational model has been developed in the SotePeda24/7 project in a two-year co-creation process involving different parties, the work package Future work and ethical competence.

1 Purpose of the ethical operational model

The work in the social and healthcare sector includes various problem areas and risks where it is possible to make mistakes or where there is no unambiguous correct answer. Every day, social and healthcare professionals and managers use ethical judgement in their work, in which case the customer-oriented activities in social and healthcare services are based on the ethical competence of professionals. At the same time, customers and patients reflect on ethical issues and assess the competence of professionals through the solutions and meeting experiences related to their own situation. As digitalisation continuously creates new ethical questions, it is important to consider them among professionals as well as together by professionals and customers in different forums and situations. The ethical operational model has been developed to support ethical reflection in particular.

The operational model is a qualitative description of the way in which, for example, work can be considered, or a task performed (Engeström 1995, 106). For example, in Innokylä's (2020) development work, an operational model refers to a concise description of a developed and proven solution that others can use. The operational model defines the idea, purpose, target group, description and concrete use of the model and its benefits.

The objective of the ethical operational model created in the SotePeda24/7 project is to work as a tool in the identification, ethical evaluation and decision-making of ethical issues as well as in ethical activities in the digitising operational environment of the social and healthcare sector and education. The model emphasises a professional's ethical sensitivity and motivation as well as the use of dialogue in solving ethical problems. The model is based on the ethical basis of the social and healthcare sector and aims to take into account the ethical challenges posed by digitalisation and new technology. The model focuses on individuals who, through the ethical activities process, receive the services they need at the moment – high-quality and ethically sustainable social and healthcare services. The ethical operational model structures and strengthens the ethical thinking and activities of students, professionals and the wider population. The model can be used both in ethics teaching and in different operational environments at work to reflect on ethical issues, make decisions and reach solutions. The ethical operational model is not separate from the activities, but is integrated as part of the work, services and teaching in the social and healthcare sector.

The ethical operational model concretely shows what kinds of issues and expertise are associated with ethical activities and problem-solving in an increasingly digitising operational environment. These include ethical sensitivity and identification of ethical issues, ethical assessment and decision-making, action in ethical issues as well as enabling and promoting ethical activities. Problem-solving can take place at an individual or communal level. In many cases, ethical questions related to digitalisation may be new and multi-threaded, in which case ethical reflection in dialogue will help solve problems, but also develop preventive measures in similar situations.

"The objective of the ethical operational model created in the SotePeda24/7 project is to work as a tool in the identification, ethical evaluation and decision-making of ethical issues as well as in ethical activities in the digitising operational environment of the social and healthcare sector and education."

The ethical operational model has been developed in the SotePeda24/7 project in a two-year co-creation process involving different parties, the work package Future work and ethical competence. Operational model: the purpose of use, description of the operational environment, actors, theoretical outline, elements of the model, utilisation and description of the use of the model have been structured on the basis of the material collected during the process from discussions between the operators from Diak, Karelia, Hamk and Lab.

2 Ethical operational model

2.1 Parts of the ethical operational model

The ethical operational model consists of five sections (figure 1) that form an entity and are continuously interacting with each other. The sections are constantly changing, and they are reflected in the operational environment's changes.

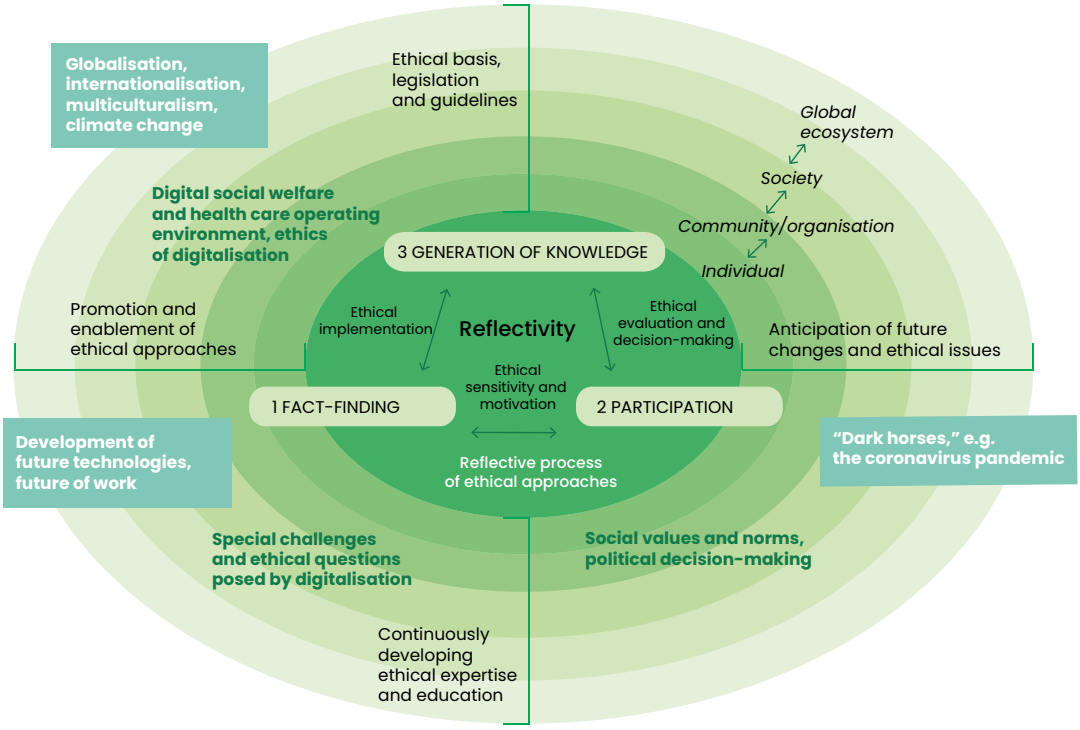

Fig. 1 Ethical operational model.

Ethical operational model's sections:

1. Reflective process of ethical action
2. Factors guiding and promoting ethical activities
3. Perspectives to be taken into account in digitalisation
4. Circles that interact with ethical activities (individuals, communal, societal and global)
5. Future scenarios

The reflective process of ethical action is at the model's core, which is described later in the article (figure 2). It can be used to reflect and process ethical issues or problems identified in activities as a communal learning process. The process can be utilised at the level of the individual/employee, work community, organisation and society. Factors guiding and promoting ethical activities contribute to the realisation of the reflective process of ethical activities. In ethical problem-solving, professionals base their judgement on legislation and ethical guidelines as well as on the ethical basis of the social and healthcare sector. Ethical activities are promoted and facilitated, for example, through ethical management and organisational structures and operational culture. The continuous development of professional ethical competence enables the implementation of ethically sustainable and high-quality service and care with customers.

Anticipating future changes helps prepare for new ethical challenges. Digitalisation and the increasingly developing technology bring new ethical questions for inspection, as has been demonstrated by the development of artificial intelligence, for example. Professionals working in the social and healthcare sector must know what kind of digitising operational environment we live in and what kind of technology we use in the customer services and care as well as in the organisation's activities and how we should seek ethically sustainable solutions for them. Those studying for a profession must also understand what kinds of impacts technology has and what kinds of new ethical questions it generates. Understanding the societal perspective is important. Forecasting future scenarios and their probability can be difficult, as the coronavirus pandemic has shown in 2020. The ethical questions related to them, intertwined with digitalisation, are worth ethical reflection. The circles that interact with ethical activities described in the ethical model highlight how global ethical issues, such as the climate change, affect the ethically sustainable activities of different actors and communities and vice versa.

2.2 Reflective process of professional ethical action

An ethical problem or an ethical issue requiring a solution often becomes apparent in situations that a social and healthcare professional has felt somehow significant: success, failure, new, surprising, etc. The situation involves the need to structure it by gathering diverse information (such as experience, observation or theoretical data). The reflective process of ethical action is initiated during the *information acquisition phase* (figure 2). Information is obtained as extensively as possible by identify-

ing related ethical situations and different solutions. *Ethical sensitivity and motivation* are needed especially in identifying ethical situations.

The *participation phase* of the process assesses the functionality of earlier solution models and considers what is special in the situation in question. Based on these, different *solution alternatives* are suggested, taking possible ethical guidelines into account, and their consequences are *assessed*. During the *data creation* phase, the values related to the situation, such as human dignity and its vulnerability, and their order of importance are considered, ethical *conclusions are drawn, deciding* which of the solution alternatives are to be implemented and why. At the same time, it is also assessed whether the solution is new and whether it requires new operational methods and instructions that should be developed. The concrete measures for developing operational methods and guidelines are also *ethical implementation*. The last two phases emphasise ethical assessment and decision-making. In many cases, ethical questions related to digitalisation may be new and multithreaded, in which case ethical reflection in dialogue will help solve problems and also develop the participants' competence.

Situations requiring ethical reflection in the work of the social and healthcare sector often occur in a very short time, almost in a blink of an eye. Based on their own intuition and ethical judgement, an ethical actor, such as a social and healthcare professional, must solve a demanding dilemma quickly. In this case, the ethical sensitivity and ethical assessment of the situation are particularly emphasised, which is evident in the choices made and the activities carried out: what decisions have been made and how they have been implemented.

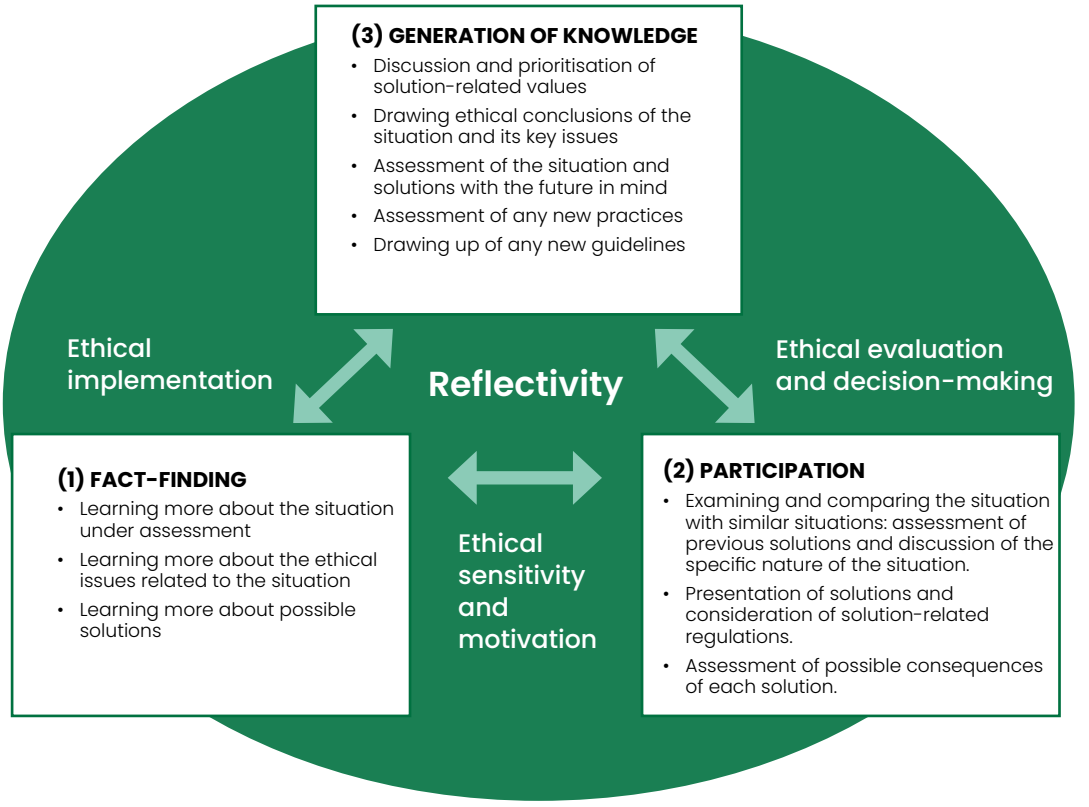

Figure 2. Reflective process of ethical action.

In the description of the reflective process of professional ethics activities, three theoretical outlines have been utilised to find solutions to the new ethical questions brought about by digitalisation in the multi-actor operating environments in the health and social care sector.

The *model of trialogical learning* (Paavola & Hakkarainen 2005; Paavola 2012) is the pedagogic background of the reflective process. The learning process is structured as phases of information acquisition, participation in activities and data creation as an alternation between individual and dialogical reflection. (Paavola & Hakkarainen, 2005; Paavola 2012). Reflection is at the heart of the learning process, in which experiential and theoretical knowledge combine and become the competence of both the individual and the community and renew activities. The reflective learning process, either for the student or work community, can also be examined from a social constructionist perspective, in which the core idea is that reality is formed in a process that gives meaning, forming in interaction between people. The information transmitted in interaction has gained colour through the meanings given by people and it changes in social interaction. Language and the words used play an important role in building reality. (Burr 1995, Gergen 1999.)

Monological learning refers to the idea of acquiring information. Knowledge and skills are seized, so to speak, internalised. *Dialogical learning* refers to emphasising interaction and the idea of learning as inclusion. Learning becomes visible as interaction in the working environment and in expert discussions. Similarly, co-development marks *trialogical learning*. Learning becomes visible in various products, artifacts. (Paavola & Hakkarainen 2005.) In the last model, trialogical learning, we have also compared decision-making with the metaphor of creating knowledge.

An *ethical operational model that has been developed for the ethical examination of questions related to the ethics of artificial intelligence* (Koivisto et al. 2019) was also used in the ethical examination of issues related to the phases of trialogical learning.

Learning can be examined from three viewpoints in the trialogical model. The ethical activities and ethical competence can also be viewed from three different perspectives. The ethical activity models used are *James Rest's components of professional ethical activities* (Rest 1994; in Finnish Juujärvi, Myyry & Pesso 2007), which include ethical sensitivity and motivation, ethical evaluation and decision-making and ethical implementation. All components of professional ethics are involved in all phases of trialogical learning, but their emphasis in different phases may vary depending on the situation.

2.3 Factors guiding and promoting professional ethical activities

The entire ethical operational model can also be examined as four fields formed by the vertical and horizontal axes, in which the factors guiding and promoting professional ethical activities are structured, including 1) ethical foundation, legislation and guidelines, 2) constantly developing ethical competence and education, 3) anticipating future changes and ethical questions, and 4) promoting and enabling ethical activities (table 1).

Table 1. Factors guiding and promoting professional ethical activities.

1. Ethical basis, legislation and guidelines	3. Anticipating future changes and ethical issues
• Values and norms of society, political decision-making • Ethical basis • Ethical legislation and guidelines as well as strategies, standards and criteria related to digitalisation and ethics (international, EU, national) • Ethical principles (social and healthcare sector + digitalisation) • Ethical communities and networks (such as IMIA, ACM, IEEE)	• Ethical issues related to future scenarios; the "dark horses", such as the coronavirus pandemic, globalisation, internationalisation and multiculturalism, climate change, technological development, future work • Ageing society, digital exclusion • Sustainable development
2. Constantly developing ethical competence and education	**4. Promotion and facilitation of ethical activities**
• Ethical competence • Ethical value assessment, continuous ethical evaluation • Continuous learning of ethics • Development and training of ethical competence • Identifying skills shortages related to digitalisation (citizens, customers and personnel) and developing competence	• Ethical management • Structures enabling ethical activities (such as ethical forum) and creating an operational culture (such as the courage to raise ethical issues) • Multiagency work • Development, procurement and use of ethically sustainable digital services • Management of risks

Professional ethical activities in the social and healthcare sector are based on an ethical basis. Legislation (national, EU) (see appendix 1 of the publication), national strategies and programmes (such as the Well-being AI and robotics programme), various national and international ethical guidelines (such as ethical principles of the social and healthcare sector, profession-specific ethical guidelines) (see appendix 2 of the publication) and recommendations concerning the digitising social and healthcare work, services and the development of technology used in it have been renewed in recent years. These also guide professional ethics in the work of the social and healthcare sector.

Ethical competence is the basis of all activities. In multisectoral social welfare and healthcare work, compliance with generally accepted ethical principles and legislation is basic ethical competence. Ethical competence is having sensitivity to hear and understand another person, and its foundation is empathy, honesty and confidentiality. The starting points for ethical competence are respecting your fellow people, always seeing a person and their life valuable, and the ability to be reciprocal and have dialogue with others. (Koski, Vesterinen, Malkavaara, Heino & Tauriainen 2019, 99–101.)

The changing operational environment, digitalisation, renewal of operational methods, digitalisation of internal processes and services in multi-actor cooperation require ethical evaluation and implementation skills in particular. Professionals are required to understand the social and healthcare sector as a whole and its future, to be able to ensure

a customer's right to self-determination and privacy, as well as to be confidential in the development and implementation of digital and electronic services. Especially ethical competence means having a sensitivity to anticipate and identify ethical challenges, an ability to raise ethical issues and to address ethical problems.

Ethical reflection is used to find different solutions for challenging ethical situations, recognising the related personal values and beliefs. Ethical decision-making is used to make a justified selection of different solution alternatives based on critical consideration and analysis. The ability to make ethical assessments based on ethically sustainable choices and the ability to direct ethically and in an encouraging manner allow organisations to act ethically. The significance of ethical competence as a constantly developing competence area has increased in the digitising social and healthcare services and the operational environments at work. Skills shortages related to digitalisation in both citizens and professionals are also ethical challenges, which is why it is important to identify them and develop competence. For example, a digital skills shortage can cause hazardous situations in the customer's service or care. Ethical competence should be a red thread in education and professional activities.

By promoting and enabling ethical activities, ethical competence is ensured. The continuous development of ethical competence and ethical activities must be made possible in organisations and training. This is supported by ethical management and structures and culture that enable ethical activities. The development, procurement and use of ethically sustainable digital services reduce the associated ethical risks.

2.4 Notable perspectives in digitalisation

The four fields of the ethical operational model also show perspectives that are emphasised as the society and organisations become more digital. These include the operational environment of the digitising social and healthcare sector and the ethics of digitalisation, the special challenges and ethical issues brought about by digitalisation as well as the societal values and norms and political decision-making.

"Recognising the special challenges and ethical questions brought about by digitalisation is important in ethical activities and in the development of new ethical guidelines."

Social and healthcare professionals play a key role in changing global situations. For this reason, too, it is important to know the digitising operational environment of the social and healthcare sector, the technology utilised there and their impact on the customer's service and care. In addition, we must be aware of what ethics is and how to act in an ethically sustainable manner in the digitising social and healthcare's operational environment. Recognising the special challenges and ethical questions brought about by digitalisation is important in ethical activities and in the development of new ethical guidelines. A checklist can be used to support the identification of ethical questions (see appendix 3 of the publication). Ethical action in the new ethical issues brought about by digitalisation requires the creation of a shared and extensive understanding in the multi-actor operational environments. The digitising society is guided by the society's values, norms and political decision-making. Legislation on digitalisation has been reformed in recent years. This also brings new competence challenges to professionals working in the social and healthcare sector.

2.5 Ethical activities and dialogue in different operational environments

Environment's significance for the reflective process is structured in the ethical operational model through intersecting circles around an individual. In the model, the circles are located at individual, community and organisational levels, both at national and global level. These circles have dialogue in both directions. The ethical activities of an individual are considered to be in direct dialogue with the community and organisation level. In an individual's reflective process, it may be important to structure and develop matters together with the members of the work community. On the other hand, the community and organisation level contains a lot of norms and values that guide, for example, an individual's decision-making processes. For example, national and international regulations on the development and use of digital technology have an impact on the organisations and communities. Observing the levels makes it possible to make changes visible and to examine new ethical dilemmas from the perspective of different structures.

The circular version of the ethical operational model contains interface surfaces to the ecosystem discussions of competence and learning. The concept of an ecosystem is combined with the ideas of different theoretical trends (Virolainen et al. 2019). For example, in Bronfenbrenner's disposition (see 1979; Saarinen et al. 1994, 99; by Härkönen 2009), which is often applied in pedagogy, environments in direct interaction are closest to individuals, i.e., the microsystem, and the society's values and norms are in the most remote circle, i.e., the macrosystem. The circles describing the dialogue between close environments are left between the above-mentioned circles, i.e., the mesosystem and the exosystem, which also take into account dialogue in relation to the environments in which the individual is not involved. (Bronfenbrenner 1979; Saarinen et al. 1994, 99; by Härkönen 2009).

2.6 Future scenarios

Scenarios related to the future are the framework for the ethical operational model. Their identification is important in order to anticipate their impacts on the social and healthcare sector, its digitalisation and the ethical activities of customers and professionals in the social and healthcare sector. A recent example of this was the coronavirus pandemic that began in spring 2020, which led to a rapid increase in the need for and supply of remote services. In many ways, the pandemic has been an eye-opening social experience of what a sudden global change can bring about. In addition to the situation bringing much uncertainty, suffering and economic misery, there is also another side to be seen. The world has become increasingly digitised. In the short term, new types of customer-oriented digital services have been developed in the work of the social and healthcare sector. On the other hand, new ethical questions have come to light on a weekly basis. We can discuss how ethical perspectives have been taken into account in the coming years. This question has no research-based answer yet. However, we can see how the global phenomenon affects individuals' activities and behaviour – ethical responsibility for themselves and others.

"The pandemic has been an eye-opening social experience of what a sudden global change can bring about."

2.7 The ethical operational model as a whole

When utilised in different situations, an ethical operational model enables the development of ethical competence in vocational education and extensively in employment. The operational model was originally created for education and work in the social and healthcare sector, but by developing the model its application seems to extend to different fields of work and activities (table 2).

The purpose of the operational model has become clearer during the development process, as well as the possible operational environments and users of the model. When the model is used, examining its elements in ethical reflection allows both the individual and the community to develop their understanding and competence on ethical issues and find solutions to them. An ethical operational model is a tool for developing ethical competence.

Table 2. An operational model for the needs of the digitising social and healthcare sector.

Purpose of use	**The purpose of the ethical operational model is to** • work as a tool in the identification, ethical evaluation and decision-making of ethical issues as well as in ethical activities in the digitising operational environment of the social and healthcare sector and education. • structure and strengthen the ethical thinking and activities of students, professionals and the wider population. • concretely highlight what kinds of issues and competences are related to ethical problem-solving and ethical activities in the increasingly digitising operational environment.
The model's operational environment	• The digitising operational environment of the social and healthcare sector
Actors	• Teachers and students of upper secondary and higher education institutions • Multisectoral professionals working in the social and healthcare sector
Theoretical background	**The model is based on the ethical basis of the social and healthcare sector. Three theoretical models have been applied in the reflective process of the model's ethical activities:** 1. The *model of trialogical learning* is used as a pedagogic model. 2. *James Rest's model of professional ethical activities* is used to describe elements of ethical activities. 3. The ethical operational model developed for the ethics of artificial intelligence is used to ethically examine matters related to the stages oftrialogical learning.
Model elements	**Ethical operational model's sections:** 1. Reflective process of ethical action 2. Factors guiding and promoting ethical activities 3. Perspectives to be taken into account in digitalisation 4. Circles that interact with ethical activities (individuals, communal, societal and global) 5. Future scenarios
Description of the model's use	The model's use is described in the article: Ethical operational model, chapter 2 The model also includes the following summaries or tools: Appendix 1: Central rules guiding digitalisation Appendix 2: Ethical principles and guidelines guiding digitalisation Appendix 3: Checklist for the identification and evaluation of ethical questions related to digitalisation
Usage	**The model can be used and applied in many situations and operational environments** • in ethics teaching and planning the development path of ethical competence in curricula • in the assessment and development of ethical competence in education and employment • operational environments in employment (such as customer work and the development and implementation of digital services), identification of ethical questions, reflection, decision-making and the creation and implementation of solutions • in research and development work, such as in the planning and testing of digital services and technologies in an ethically sustainable manner • development of the business world • in the ethical management of digitalisation
The model's development status	Prototype

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Appendix 1

Central rules guiding digitalisation

Table 1. Acts and degrees relating to the ethicality of digitalisation in the healthcare and social welfare services

YEAR	Acts and degrees relating to the ethicality of digitalisation in the healthcare and social welfare services
2020	Act on Information Management in Public Administration 906/2019, effective 1.1.2020
	Act on the Secondary Use of Health and Social Data 552/2019 (Translation not available)
	Act on the Provision of Digital Services 306/2019, effective 1.4.2019. Executes the Directive 2016/2102 (EU) on the accessibility of the websites and mobile applications of public sector bodies
2018	Data Protection Act, 1050/2018
	Regulation (EU) 2016/679 General Data Protection Regulation
	Regulation (EU) 2017/729 on medical devices
	Regulation (EU) 2017/746 on in vitro diagnostic medical devices
	Ministerial Act, Ministry of Social Affairs and Health, on timing of the implementation of the eArchive 1257/2015 (Translation not available)
	Act on Social Care Client Documentation 254/2015 (Translation not available)
2015	Act on Social Welfare Professionals 817/2015 (Translation not available)
	Social Welfare Act 1301/2014 (Translation not available)
	Arrangement of the State's common ICT services is based on the Act on the Arrangement of the State's Common ICT Services 1226/2013 (Translation not available) and Government decree 132/2014 (Translation not available) and Act on the Operation of the Government Security Network 10/2015 and decree 1109/2015 on the public administration security networks (Translation not available).
2010	Health Care Act 298/2010
	Decree of the Ministry of Social Affairs and Health of the medical records 298/2009 (Translation not available)
	Act on the Electronic Processing of Client Data in Healthcare and Social Welfare 9.2.2007/159, several amendments, the latest in 2019
	Right to protect privacy is provided in different acts, e.g. Act on the Protection of Privacy in Working Life 759/2004, Information Society Code 7.11.2014/917, Data Protection Act, Administrative Procedure Act 6.6.2003/434
	Act on Electronic Services and Communication in the Public Sector 21.1.2003/13, amendments 534/2016
2000	Act on the Status and Rights of Social Welfare Clients 812/2000
	Medical Research Act 9.4.1999/488
	Personal Data Act 523/1999
	Act on the Openness of Government Activities 621/1999
	The Constitution of Finland 731/1999
	Archives Act 831/1994 (translation not available)
	Act on Health Care Professionals 559/1994
1992	Act on the Status and Rights of Patients 785/1992
1961	Copyright Act 8.7.1961/404 (incl. amendments), Directive (EU) on copyright and related rights in the Digital Single Market and amending Directives are being prepared in Ministry of Education and Culture, Finland, and will become effective in the beginning of 2021.
1889	The Criminal Code of Finland 39/1889, incl. amendments. Renewed since 1991.

Appendix 2

Ethical principles and guidelines guiding digitalisation

Table 1. Ethical principles and guidelines guiding digitalisation in the healthcare and social welfare services

BODY	YEAR	ETHICAL PRINCIPLE OR GUIDELINE	SOURCE
Ethical principles/ national bodies			
The National Advisory Board on Social Welfare and Health Care Ethics ETENE	2001	Shared values in health care, common goals and principles	ETENE-publications 3/2001
The National Advisory Board on Social Welfare and Health Care Ethics ETENE	2010	Technology and ethics in professional and informal social and health care	ETENE-publications 30 (Available in Finnish)
The National Advisory Board on Social Welfare and Health Care Ethics ETENE	2011	Ethical grounds for the social and health care field	ETENE-publications 34
Ministry of Finance	2018	Ethical information policy in an age of artificial intelligence -report	Selonteko, VM/2527/00.01.00.01/2017 (Available in Finnish)
Research ethics / national bodies			
The Finnish National Board on Research Integrity TENK	2019	The ethical principles of research with human participants and ethical review in the human sciences in Finland	Finnish National Board on Research Integrity TENK guidelines 2019
	2012	Responsible conduct of research and procedures for handling allegations of misconduct in Finland (the RCR guidelines)	Guidelines of the Finnish Advisory Board on Research Integrity 2012
Open Science and Research	2014	The Open Science and Research Handbook	The Open Science and Research Handbook v. 1.0
Field specific ethical guidelines			
Social services/ Talentia Union of Professional Social Workers	2017	Work, values and ethics – Ethical guidelines for social welfare professionals	Work, values and ethics – Ethical guidelines for social welfare professionals
Health care/ The Finnish Nurses Association	1996	Ethical guidelines for nurses	https://sairaanhoitajat.fi/wp-content/uploads/2020/01/Sairaanhoitajien-eettiset-ohjeet.pdf (Available in Finnish)
Health care/ The Finnish Nurses Association	2015	eHealth strategy of the Finnish Nurses Association 2015–2020	https://sairaanhoitajat.fi/wp-content/uploads/2020/01/eHealth_RAPORTTI-_ENGLANTI.pdf

BODY	YEAR	ETHICAL PRINCIPLE OR GUIDELINE	SOURCE
Health care/ The Finnish Association of Public Health Nurses	2017	Ethical guidelines for public health nurses	https://www.terveydenhoitajaliitto.fi/files/317/Terveydenhoitajan_eettiset_suositukset_21.6.2017.pdf (Available in Finnish)
Rehabilitation/ Finnish Association of Physiotherapists	2014	Ethical guidelines for physiotherapists	https://www.suomenfysioterapeutit.fi/wp-content/uploads/2018/01/Fysioterapeutin_Eettiset_Ohjeet_2014.pdf (Available in Finnish)
Healthcare/ The Finnish Medical Association	2014	Code of medical ethics	https://www.laakariliitto.fi/en/ethics/
Finnish Social and Health Informatics Association	2015	A code of ethics for health informatics professionals	https://stty.org/images/Terveystiedon_tietojenk%C3%A4sittelyn_ammattihenkil%C3%B6iden_eettiset_ohjeet.pdf (Available in Finnish)
The Finnish Information Processing Association, TIVIA	2002	Code of ethics for information technology professionals	Microsoft Word - FIPA ethics code - unofficial translation (2) (tivia.fi) (Unofficial translation)
International bodies, examples			
International Medical Informatics Association (IMIA)	2002, 2016	IMIA Code of Ethics for Health Informatics Professionals	https://imia-medinfo.org/wp/wp-content/uploads/2015/07/IMIA-Code-of-Ethics-2016.pdf https://imia-medinfo.org/wp/wp-content/uploads/2015/07/Handbook-for-revised-Code-of-Ethics.pdf
NASW, ASWB, CSWE & CSWA	2017	Standards for technology in social work practice.	https://www.socialworkers.org/includes/newincludes/homepage/PRA-BRO-33617.TechStandards_FINAL_POSTING.pdf
AI Now	2017	AI Now 2017 Report	https://ainowinstitute.org/AI_Now_2017_Report.pdf
Association for Computing Machinery (ACM)	2018	ACM Code of Ethics and Professional Conduct	https://www.acm.org/code-of-ethics
IEEE	2018	Ethically Aligned Design, Version 1 and 2	https://standards.ieee.org/content/dam/ieee-standards/standards/web/documents/other/ead1e.pdf?utm_medium=undefined&utm_source=undefined&utm_campaign=undefined&utm_content=undefined&utm_term=undefined
European Commission	2018	Artificial Intelligence, Robotics and 'Autonomous' Systems	http://ec.europa.eu/research/ege/pdf/ege_ai_statement_2018.pdf
European Commission	2019	*Ethics Guidelines for Trustworthy AI.*	https://ec.europa.eu/futurium/en/ai-alliance-consultation/guidelines

Appendix 3

Checklist for the identification and evaluation of ethical questions related to digitalisation

Checklist for the identification and evaluation of ethical issues related to digitalisation in the healthcare and social welfare sectors

Instructions for use: Select the subject of ethical review. It can be, for example, planning the use of a digital service in the customer's service or care. Use the form to assess the ethical aspects and questions of the use of the technology in the customer's service or care in accordance with ethical principles. The bullet point issues below the ethical principles/points are examples. In the "other" section, you can add things that are not mentioned in the examples. The checklist helps to assess which ethical aspects have already been considered and where further attention needs to be paid to and possible development measures to be taken into account.

ETHICAL PRINCIPLES AND PERSPECTIVES	YES (X)	OBSERVATIONS
Respect for persons • respect for human dignity, integrity and rights • agreeing on the use of the digital service/equipment, conscious consent, e.g. conscious use of robots in customer service and suitability for users' needs • the development of digital services and applications will enable citizens to be involved and participate • other:		
Justice • compliance with legislation and ethical guidelines • respect for the rights and obligations of the parties • implementation of the principles of diversity and non-discrimination • fair access to technology and right to access to technology • other:		
Aspects of humanity, empathy and interaction • the customer's experience of genuine, human encounter and interaction, even though the encounter takes place on-line via technology • fair treatment of people • considering aspects of human and technological interaction, e.g. whether technology replaces human interaction • multidisciplinary and multi-operative work in digitalisation • other:		
Equality • equal access to digital services, accessibility, equality • prevention of inequality • other:		

Protection of privacy and confidentiality, Data management • protection of privacy and right to one's own data • confidentiality and data protection and security issues, e.g. protection of equipment, responsibility in the use of technology • implementation of the customer's legal protection • data ownership and sharing issues • other:		
Right to self-determination • freedom of choice; Voluntary use of technology • customer decision-making right, e.g. sharing of one's own data • customer's informed consent or refusal to use the digital service • other:		
Responsibility • ensuring the know-how of users, customers and professionals • digital service/equipment design for customer needs and manufacturing according to regulations • responsibility for the functionality and risks of the technology/digital service (compensation issues) • accountability of different parties (technology developers, marketers, public actors, customers and organisations using the service) in the development and use of digital technology (e.g. artificial intelligence) or service • other:		
Trust • trust in digital equipment and services (approval, commitment) • customer's confidence that their data will be processed, stored and used in accordance with data protection and security guidelines (GDPR) • professional's confidence in the information provided by the customer • other:		
Doing good and avoiding harm • awareness of the ethical objective of the digital service • awareness of ethical problems related to digital service/technology • courage to deal with ethical problems • prevention of misuse of customer and employee data • technology-related errors, liability and control issues, e.g. security of information generated by artificial intelligence and its algorithms and prevention of potential errors • other:		
Evaluating risks and benefits • identifying the opportunities and constraints of digitalisation and digital services • acceptability of digital service/technology, e.g. user accepts the technology and finds it useful • ethical evaluation in the development of the digital service and in the procurement and deployment process, e.g. for whose needs are the technology developed and used? • other:		

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Security, reliability and operational reliability of digital service/information systems • safe operation of technology (e.g. equipment safety, reliability of operations) • transparency, explainability and traceability of technology policies (e.g. AI algorithms) • risk of technology hacking • technological ethical challenges (e.g. genetic engineering) • customer and professional security in digital services • ethical issues related to data management, information management and secure communication • other:		
Social perspective • implementation of the sustainability perspective of digital services • ethical assessment of the social and environmental impact of technology and its compliance with societal values • compliance with common agreements; Control-related agreements • social acceptability of technology • other:		

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The objective of the ethical operational model created in the SotePeda24/7 project is to work as a tool in the identification, ethical evaluation and decision-making of ethical issues as well as in ethical activities in the digitising operational environment of the social and healthcare sector and education.

The model can be used both in ethics teaching and in different operational environments at work to reflect on ethical issues, make decisions and reach solutions.

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