UNIVERSITY OF TURKU

ABSTRACT

	Bachelor's thesis
x	Master's thesis
	Licentiate's thesis
	Doctor's thesis

Subject	Futures Studies	Date	20.4.2021
Author	Anni Maria Halkilahti	Student number	
		Number of pages	108 p. + appendices
Title			
Supervisor(s)	M.Soc.Sc. Sari Söderlund, D.Sc. (Econ.) Ville Lauttamäki		

Abstract

Strategic foresight helps organisations prepare for the future and seize the opportunities in the fast-changing operational environment. Foresight is, by definition, participatory activity and can be used, for example, as a management technique. Interest in participatory decision-making has increased in recent years. Accordingly, in strategic foresight literature, the needs to better understand how organisation members' participation in foresight should be organised and what is the value participation could generate.

This study examines human *participation* in *organisational foresight*, a concept that refers to strategic foresight practised in an organisational context. Participation includes organisation members' participation in organised foresight activities and informal future-oriented discussions and actions, and utilisation of foresight thinking, methods, and tools. In this study, participation is examined from the intersection of foresight system, organisational characteristics and individual organisation members. This study aims to identify elements in the foresight system and organisational context that support or impede participation.

The theoretical framework of this thesis draws on organisational foresight, participation in foresight and foresight systems. This study examined three frameworks, The Maturity Model of Corporate Foresight (Rohrbeck 2011), Certified Foresight Professional -programme's Foresight System Framework and a systems view of foresight (Dufva 2015) to build an understanding of the systems' essential elements related to participation. All seven informants were Certified Foresight Professional programme -alumni and represented different organisations. The empirical data was acquired by a questionnaire and interviews and analysed using the pragmatic iterative approach by Tracy (2013).

The results of the study indicate that supportive elements for human participation in organisational foresight include: integration of organisational processes, clear responsibilities and expectations related to foresight, implementation or educational processes that equip and motivate organisation members to contribute to foresight, organisation members' possibilities to impact on their work and develop their capabilities, and promoting benefits of foresight. Imbedding elements are related to, e.g.lack of systematic processes, lack of shared aims for participation and lack of time for foresight.

Key words	futures studies, foresight system, strategic foresight, participation, collaborative development, organisations, organising
Further information	

Oppiaine	Tulevaisuudentutkimus	Päivämäärä	20.4.2021
Tekijä(t)	Anni Maria Halkilahti	Matrikkelinumero	3
		Sivumäärä	108 s. + liitteet
Otsikko			
Ohjaaja(t)	VTM Sari Söderlund, KTT Ville Lauttamäki		

Tiivistelmä

Strateginen ennakointi auttaa organisaatioita valmistautumaan tulevaisuuteen ja tarttumaan mahdollisuuksiin, joita toimintaympäristön nopeat muutokset tuovat esiin. Ennakointi on määritelmällisesti osallistavaa ja sitä voidaan hyödyntää esimerkiksi johtamismenetelmänä. Kiinnostus osallistavaan päätöksentekoon on ollut kasvussa viime vuosina. Strategisen ennakoinnin kentällä on ilmaistu myös tarve ymmärtää paremmin, miten organisaatioiden ennakointi pitäisi järjestää ja millaista lisäarvoa osallistavuus tuottaa.

Tässä tutkimuksessa tarkastellaan ihmisten osallistumista organisaatioiden ennakointiin. Käsitettä käytetään tässä tutkimuksessa organisaatioissa hyödynnettävän strategisen ennakoinnin synonyyminä. Osallistumiseksi lasketaan organisaation jäsenten osallistuminen sekä järjestettyyn ennakointitoimintaan että epämuodollisiin tulevaisuuteen suuntaaviin keskusteluihin, ja toiminta, jossa yksilö hyödyntää ennakointiajattelua, menetelmiä ja työvälineitä omassa työskentelyssään. Tässä tutkimuksessa osallistumista tarkastellaan ennakointijärjestelmän, organisaation ominaispiirteiden ja yksilön leikkauspisteestä ja pyritään löytämään sekä ennakointijärjestelmästä että organisaation tasolta tekijöitä, jotka joko tukevat tai haittaavat organisaation jäsenten osallistumista ennakointiin.

Tutkielman teoreettinen viitekehys koostuu organisaatioiden ennakoinnista, ennakoinnin osallistavuudesta ja ennakointijärjestelmästä. Lähemmässä tarkastelussa oli kolme ennakointijärjestelmämallia, Rohrbeckin (2011) organisaation ennakoinnin kypsyysmalli, Certified Foresight Professional (CFP) -ohjelman ennakointijärjestelmämalli ja systeeminen näkökulma (Dufva 2015). Nämä auttoivat muodostamaan käsityksen ennakkojärjestelmien osatekijöistä, jotka liittyvät osallistavuuteen. Tutkielman kaikki haastateltavat olivat suorittaneet CFP-ohjelman ja työskentelivät eri organisaatioissa. Tutkimuksen empiirinen aineisto kerättiin kyselyllä ja haastatteluilla ja analysoitiin Tracyn (2013) muotoilemalla laadullisen sisällön analyysin menetelmällä.

Tutkimuksen tulokset osoittavat, että ihmisten ennakointiin osallistumista tukevat elementit liittyvät organisaatiokulttuuriin ja organisaation eri prosessien integroimiseen, ennakointiin liittyviin odotuksiin ja vastuunjakoon, ennakoinnin toimeenpanoon ja koulutusprosesseihin, motivaatiotekijöihin, organisaation jäsenten mahdollisuuksiin osallistua ennakointiin, organisaation jäsenten mahdollisuuksiin vaikuttaa työhönsä ja kehittää osaamistaan, sekä ennakoinnin hyötyjen viestimiseen osallistujille. Osallistumista haittaavat tekijät liittyvät esim. systemaattisten prosessien puutteeseen, osallistumisen tavoitteiden epäselvyyteen sekä liian vähäiseen ennakointiin käytettävissä olevaan aikaan.

Ennakointijärjestelmän toimeenpano ja osallistumiseen liittyvien toimintamallien juurruttaminen ottaa aikansa. Organisaatiot, jotka tavoittelevat osallistumiseen perustuvia ennakointiprosesseja tai ennakointikulttuuria, saattaisivat hyötyä viitekehyksestä. Tämä tutkimus esittelee yksinkertaisen viitekehyksen, jossa yhdistyvät osallistumista tukevat ja haittaavat elementit.

Asiasanat	tulevaisuudentutkimus, ennakointijärjestelmä, strateginen ennakointi, osallistavuus, osallistava suunnittelu, organisaatiot, organisointi
Muita tietoja	

UNIVERSITY OF TURKU
Turku School of Economics

HUMAN PARTICIPATION APPROACH TO ORGANISATIONS' FORESIGHT SYSTEMS

IDENTIFYING ELEMENTS THAT SUPPORT OR IMPEDE ORGANISATION MEMBERS' PARTICIPATION IN ORGANISATIONAL FORESIGHT

Master´s Thesis
in Futures Studies

Author:
Anni Maria Halkilahti

Supervisors:
Ph.D. Ville Lauttamäki
M.Sc. Sari Söderlund

20.4.2021 Turku

The originality of this thesis has been checked in accordance with the University of Turku quality assurance system using the Turnitin OriginalityCheck service.

Table of contents

Table of Contents

List of tables and figures:

1 INTRODUCTION AND RESEARCH QUESTIONS

Changes in all the time complexifying world have become more challenging to control. That has increased the popularity of futures research since the late 20th century. (Niiniluoto 2003, 7.) Foresight and preparedness for the future can assist organisations to build highly needed capabilities, such as agility (Pouru et al. 2019, 84) and resilience (Rohrbeck & Kum 2018, 114), and help to perceive opportunities and threats (Slaughter 2002, 2). Foresight, for example, can be utilised as a management technique for planning, decision-making and creating shared visions (Malaska 2017, 63, 65). Consequentially, strategic foresight can help managers understand the increasing uncertainty and act upon it (Rohrbeck et al. 2015, 1). However, managers may not cope with the task by themselves. The most actionable, engaging and impactful visions and plans for the future may not be the ones created by the management only but collaboratively developed. When members of the organisation can build a shared vision, they are more interested in considering actions to achieve that (Senge et al. 1994, 300).

Doyle (2011, XV-XVI) argues that inviting and including people in the decision-making and problem solving the implementation of the results is more likely to succeed. To manage dynamic business environments, organisations have begun to utilise their members' expertise and capabilities in planning-related activities (Darkow 2015, 10-11). Decision-making processes that include multiple perspectives, various participants, and broad information can allow an organisation to create more complex solutions to tackle the environment's turbulence (Ashmos et al. 2002, 191). The increasing orientation towards decentralised decision-making has affected strategy development processes, which face requirements to benefit from the human capital already in the organisation (Darkow 2015, 11). Ashmos et al. (2002,191) argue that inviting members from all levels of a system into decision-making can help individuals become autonomous. That, in turn, could lead the organisation to ponder a broader scale of possible strategies to adapt to the turbulence of the environment (Ashmos et al. 2002,191). The locus of leadership in organisations has started to shift from the centre towards organisations' boundaries and even further – to the crowd (Scharmer & Kaufer 2013, 191).

Iden et al. (2017, 90) have identified participation as a success factor for organisational foresight. Organisational foresight should, by definition, be participatory and involve multiple stakeholders (Rohrbeck et al. 2015, 2). Rohrbeck and Gemünden (2011, 231) argue for the importance of seeing the results of corporate foresight exercises from the users' perspective. Including individuals with varying world views and backgrounds could help avoid gaps in identifying disruptions, threats and opportunities (Day & Schoemaker, 2005, 138). Andriopoulos

and Gotsi (2006, 57) argue that a company can be an innovative forerunner by expecting and enabling its personnel to explore the future by established processes regularly. At the highest level of foresight maturity, an organisation has all its members looking out for weak signals (Rohrbeck 2011, 98).

The interest in broad participation has increased, but Sarpong et al. (2013, 615) argue that the empirical evidence on the roles ordinary members of organisations have in supporting or hindering organisational foresight is scarce. Darkow (2015,11) found a research gap concerning middle management's participation in organisational foresight and strategy building, including themes such as who is included or how they contribute. Two distinctive ways of thinking exist simultaneously: on the one hand, top management has an essential role in making sense of the signals and insights (Rohrbeck et al. 2015, 4), and on the other hand, members of an organisation could take 'agency' in the foresight systems and initiate foresight activities together (Dufva 2015, 48).

In recent years, the aims to integrate foresight with existing processes, create routines that enable new perceptions about the future, and understand how foresight should be organised to gain maximal benefits have been of great interest (Rohrbeck et al. 2015, 4-5). However, more research is needed to understand how to organise foresight activities and what makes participation important in foresight systems (Rohrbeck et al. 2015, 7). Hines and Gold (2015, 100) argue that organisational futurists have paid little attention to building a continuous foresight capability in organisations. Accordingly, more empirical research on the mechanism of how organisations build capability to forward-looking search is demanded (Rohrbeck et al. 2015, 7).

Although foresight literature has identified participation as an essential feature of organisational foresight, many questions remain: what the concept of participation includes and excludes, how organisations should organise participation in practice, who should participate and how, and when participation is broad enough to create value? Consequentially, every organisational futurist planning or implementing a foresight system needs to figure those questions out by themselves.

However, as intellectual skills and competencies are ever more valuable assets for organisations (Hutzchenreuter 2006, 709), it is reasonable to expect that there will be a demand for a deeper understanding of how to support organisation members to learn these skills, including foresight. How to build organisational foresight systems that empower and encourage members of an organisation to build their intellectual capital and share their ideas and collaboratively innovate for their organisation to thrive? Additionally, the emerging operational model of networked foresight, which refers to collaboration among organisations to tackle complex futures-

related issues (Rohrbeck et al. 2015, 6), could benefit from foresight supportive organisational cultures and members of the personnel, who fluently communicate about foresight and share insights related to emerging issues.

This study aimed to examine the organisation of participation in a foresight system. However, it turned out to be extremely difficult to map a whole system to locate participation, as participation appears in organisational foresight systems and around them in various ways. Additionally, the concept of 'organising' can have a tone that refers to formal and centrally organised activities, excluding the informal and self-organising activities, and utilisation of foresight as integrated with other practices. Consequently, this study chose to include all forms of participation the informants expressed to understand what participation is and the elements that frame or set preconditions for participation. Thereupon, the approach of supporting and impeding elements for participation emerged: Although the whole foresight system is impossible to map, the factors that influence how the organisation members are enabled or supported to take part in foresight, or in contrast, what act as barriers for participation, can be identified.

Frameworks on foresight systems provided a context or background to understand the foresight system's preferred elements and possible aims. Three frameworks were selected for closer examination because they cover a broad range of perspectives and approaches to foresight systems. The frameworks differ, yet they share similarities as well: the Maturity Model of Corporate Foresight (Rohrbeck 2011), Certified Foresight Professional -programme's Foresight System Framework and a systems view of foresight (Dufva 2015), emphasise in slightly different terms, for example, the importance of communication, networks, culture and individual characteristics such as creativity, curiosity or proactivity, as elements that can connect with participation. To summarise, since foresight systems are embedded in operating organisations, participation in organisational foresight is dependent not only on how foresight is planned and organised but also on the characteristics of the organisational context and potential participants.

By the selected data collection methods, questionnaire and interviews, it was possible to examine what organisational futurists from different organisations consider as relevant issues concerning participation, what challenges they have faced during the implementation processes of participatory practices and the solutions they have developed to tackle these challenges. Answers to the research questions were searched by inviting alumni of the Certified Foresight Professional –programme to answer a questionnaire and semi-structured interviews. The questionnaire data provided background information on the organisations and helped the researcher learn more about the organisations' foresight practices. The interview data was analysed using

a pragmatic iterative approach, which allows to combine the meanings that emerge from the data with existing models and theories (Tracy 2013, 183).

All the seven organisations that participated in this study have organised their foresight systems differently concerning participation. Accordingly, the scale of success factors for organisation members' participation in foresight the informants described is broad. The organisations have selected different participation approaches, from structured processes to aiming at building a foresight culture. Although the practices or aims seem, at first glance, even contrasting, they can be positioned on the same spectrum in many cases. Moreover, the respondents reported on similar experiences. For example, all organisations have to decide how to select the participants: whether they use explicit or implicit criteria. Organisational futurists need to adjust the organisation of foresight practices and expectations on how foresight could be utilised in the organisation according to the organisation members' understandings on what foresight is, what is relevant for the future and what are the individuals' interests and ability to contribute to foresight. In all responding organisations occur informal foresight related discussions. However, organisations have challenges to utilise the insights systematically to serve foresight. Altogether, the respondents argued that the implementation is an ongoing process, and a sufficient level of participation, in their opinion, has not been achieved yet. The need for more systematic processes emerged.

This study's results indicate that organisation members' participation in foresight can be supported with several elements embedded in the foresight system: for example, by providing foresight education that assists the organisation members to build their foresight capacity, providing group support, designing and utilising of user-friendly and intuitive mechanisms and tools that assist participation, with the use of understandable language, integrating foresight processes with other ongoing development processes in the organisation, and sharing with the organisation members' relevant up to date foresight related content produced internally or externally.

Equally important as a supportive factor for participation can be the appeal and good reputation of foresight among the organisation members, reported by most respondents. Organisation members who had participated in foresight activities had perceived foresight as something new and exciting and participation as an opportunity to ponder about issues beyond the everyday work-life. Accordingly, that could be a possible angle when promoting foresight for potential participants and organising activities: foresight tools and method could systematically help turn this interest into systematic input for organisational development processes.

Additionally, there appeared to be elements that can act as either supporting or impeding. For example, the success of introducing and implementing participatory foresight depends on the foresight function's ability to respond to organisation members' potential fears on change, pre-assumptions considering foresight thinking or willingness to think beyond the business-as-usual. Likewise, all organisation members' access to foresight reports and other materials, which many respondents emphasised, supports participation only if they are easy to find, understand and utilise.

Nevertheless, the organisational context and its characteristics create a backdrop for all organisational foresight and affect how participatory foresight processes are implemented and how they succeed. For example, lack of time for foresight is an organisational level challenge, so is the lack of transparent and well-organised communication. They can be impeding elements if there is no push from the organisation side and inside the foresight system to change them systematically. The culture of creativity and ideas sharing that already exists in an organisation is highly probable to influence how convenient organisation members are pondering together alternative futures and sharing their insights across the organisation. However, if the organisation's innovation and development processes are not connected with the foresight function, participation in those processes is not related to participation in organisational foresight, although all would have a long-term perspective.

This study suggests that integrating foresight with other organisational processes is essential to support human participation in organisational foresight. The elements that support participation include: accessibility of information, use of foresight in building a strategy and a shared vision, use of foresight as a module in organisational processes, having clear responsibilities related to foresight, implementation or educational processes to the extent that organisation members will be equipped to contribute to the foresight and if expected, independently and in various contexts, providing organisation members possibilities to impact on their work and develop their capabilities, providing concrete benefits of foresight for participation and ways of using the new knowledge in participants' work.

This study proposes that organisations aiming at participatory foresight processes or participatory foresight culture could benefit from some guidelines, framework or checklist that could assist in evaluating the foresight systems and organisational context from the perspective if they contain elements that can act as supporters for participation or opposite, act as barriers for participation. As it seems possible to run a functioning participatory foresight system in multiple different combinations, a framework could help customise the best combination of supporting

elements and solutions to tackle the organisational level challenges. This study presents the elements that support and impede participation in foresight in the form of a framework.

This study aims to answer the following research questions:

Research question 1: Which elements in an organisational foresight system support or impede human participation in foresight?

Research question 2: Which organisational characteristics support or impede human participation in organisational foresight?

2 THEORETICAL FRAMEWORK

This study's theoretical framework is built on the concepts related to futures studies and, more precisely, on foresight, the pragmatical aspect of the academic field of futures studies (Malaska 2017,64). Foresight as applied futures research is a participatory method that aims at creating a shared long-term vision (Malaska 2017, 65). Foresight can be utilised in organisations and institutions, for example, as a management technique, and for planning and decision-making (Malaska 2017, 63, 65). Foresight is not a goal but assists in making decisions by considering the future from multiple perspectives (Van der Duin 2016, 7).

In futures studies, future is considered as open, and it can consist of potentially endlessly alternative futures. Amara (1981, 25) argues that the futures field rests on three premises: the future is not predictable, the future is not pre-determined, and individual choices can influence future outcomes. This statement invites concern future as something that can never be thoroughly known but can be impacted by taking action now. However, the desired outcome is not guaranteed (Amara 1981, 25).

Future is not value-neutral, and what is the desired future depends on the individual or organisation. Niiniluoto (2003, 9) argues that future studies aim to strategically consider how to act to achieve the objectives we value and avoid what we consider as threats. Several different methodologies and approaches are used to explore the possible, probable or preferable futures that reflect the three premises mentioned above (Amara 1981, 25-26).

Knowledge of the basic assumptions of futures studies can help organisations to broaden their perspectives of future alternatives. Foresight underlines the need to scan the horizon as broadly as possible and be open to the unexpected and potentially threatening surprises and long-term changes instead of relying too heavily on forecasts, desires, and expectations on continuities.

The fundamental concepts of this study include organisational foresight and foresight systems. This chapter is organised as follows to examine these concepts thoroughly: First, organisational foresight provides an overview of the aims, methods and benefits of strategic foresight in the organisational context. Second, participation in foresight is discussed. Third, the relation of organisational culture and foresight provides detailed approaches to foresight and its connectedness to organisational characteristics. Fourth, the concept of foresight system is investigated in detail by unfolding three different foresight system frameworks: The Maturity Model of Corporate Foresight (Rohrbeck 2011), Certified Foresight Professional -programme's Foresight System Framework (Certified Foresight Professional -training 2016-2019) and a systems

view of foresight (Dufva 2015). To conclude, a conceptual framework for this study is presented.

2.1 Organisational Foresight

Strategic foresight refers to practices that help organisations gain advantage and lead positions in future markets (Rohrbeck & Kum 2018, 106). Strategic foresight can be utilised to ground an organisation's future success. It can help make sense of change factors, prepare organisations for change, and support proactivity to steer towards the preferred future (Rohrbeck et al. 2015, 1-2). The time horizon for foresight varies: 3-15 years can be considered as mid-range (Kuosa 2012, 51) and depending on the industry, 'long-term' can vary from five to over twenty years (Vecchiato & Roveda 2010, 1531). Strategic foresight can be understood as integrating futures methods and strategic management (Slaughter 2002, 1), which occasionally causes difficulties when trying to differentiate strategic foresight from strategic management (Darkow 2014,11) or strategic planning. However, in practice, foresight function can be located in different places in an organisation and depending on the implicit and explicit aims, methods in use and resources to systematically practise foresight, foresight can serve multiple different purposes even simultaneously.

The concept of strategic foresight has been used overlapping with 'organisational foresight' (Rohrbeck et al. 2015; Sarpong et al. 2013) and 'corporate foresight' (Rohrbeck et al. 2015; Vecchiato 2015), which Rohrbeck et al. (2015, 5) also describe as 'strategic foresight applied in organisations'. Rohrbeck et al. (2015, 5) suggest that both the organisational approach and national policymaking informing foresight go under the label of strategic foresight, whereas Kuosa (2012, 12) distinguishes 'participatory foresight' from 'strategic foresight', the former being a bottom-up approach and the latter affecting top-down with less participation. However, Rohrbeck et al. (2015, 1) argue that having a precise terminology would support the development of the academic field of corporate foresight. A definition of corporate foresight in the Special Issue of *Technological Forecasting and Social Change* from 2015 incorporates participatory approaches and can be considered one practical definition that covers strategic foresight approaches at large:

> *"Corporate foresight permits an organisation to lay the foundation for future competitive advantage. Corporate Foresight is identifying, observing and interpreting factors that induce change,*

> *determining possible organisation-specific implications, and triggering appropriate organisational responses. Corporate foresight involves multiple stakeholders and creates value through providing access to critical resources ahead of the competition, preparing the organisation for change, and permitting the organisation to steer proactively towards a desired future. "*
> (Rohrbeck et al. 2015, 2)

However, to avoid any confusion and be more precise, and as the target under examination includes a variation of organisations of different sizes, this study prefers the concept of 'organisational foresight'. Nevertheless, it will be used in turns with 'strategic foresight' to avoid repetition.

Organisations turn into foresight practices to cope with rapid changes and complex environment (Rohrbeck et al. 2015, 1). The traditional tools, such as forecasting, extrapolation and market intelligence, may no longer be enough to assist in making long-term strategic decisions and evaluating viable options and possible risks in turbulent environments. Strategic foresight can help managers interpret future uncertainty (Rohrbeck et al. 2015, 1), recognise opportunities and warnings, and enable fast reaction (Slaughter 2002, 2). Capability to recognise, anticipate and respond to change can be critical for organisations' survival (Rohrbeck 2011, 1). With the foreknowledge and understanding of the future uncertainties and possible change trajectories, organisations can explore a broad set of strategies and test them against possible futures. That enables the organisations to grasp opportunities immediately when they are at sight. (Slaughter 2002, 1-2.) Organisational foresight can encourage a quick response to change to gain a competitive advantage (Rohrbeck & Schwarz 2013, 1594).

In addition to supporting strategic planning and decision making (Vecchiato 2015, 257-258), organisational foresight can contribute to organisational capacity building and organisational learning. Participation in organisational foresight activities can change the participants' mental models (Boe-Lillegraven & Monterde 2015). Futures capability can support anticipation and preparedness for alternative futures (Dufva 2015, 32). Foresight's benefits as organisational learning can vary from managers discovering more about available strategic options to numerous organisation members better understanding the ongoing change (Bootz 2010,1592-1592). In addition to those, Bootz (2010, 1593) stresses that foresight studies, which include both a targeted aim to support strategic decision making and mobilisation of a broad set of individuals

to consider possible changes, could be considered knowledge management and "tools to drive change".

Strategic foresight can contribute to innovation generation by taking a strategist, initiator or opponent role and helping to identify and exploit the potential of disruptive change (Rohrbeck & Gemunden 2011, 240). Additionally, organisational foresight could potentially contribute to risk detection (Rohrbeck & Schwartz 2013, 1598), innovation management (Rohrbeck 2012, 448), exploration of new markets, products and services (Slaughter 2002, 1), and policy-making (Slaughter 2002, 1). Slaughter (2002,1) argues that strategic foresight could help organisations bring big issues as cultural evolution, sustainability and purpose of human into consideration when making decisions today.

Dufva et al. (2015, 101) categorise foresight contributions in three groups: knowledge creation and use of knowledge, creating and enhancing networks and connections, and learning new capabilities for the future. Heger and Boman (2015, 161) argue that for network organisations, the value of foresight potentially arises from building a shared vision.

Organisations utilise different methods and tools to conduct strategic foresight. Vecchiato (2015, 258) has used several sources to identify the methods organisations widely use to support decision-making and strategy processes: environmental scanning, product and technology roadmaps, scenarios and real options. Kuosa (2012, 100-133) has listed several methodological approaches that can be utilised for foresight, for example, trend analysis, pattern management, creative visioning, early warning systems and strategic management. Additionally, organisations use information technology and digital tools to support strategic foresight (Durst et al. 2015, 91-92). Moreover, all existing futures research methodology is available.

In addition to carefully selected methods and tools, participants have an essential role in successful foresight processes. Participation and criteria for selecting participants will be further discussed in the next chapter. Hines (2002, 337) underlines the need to integrate futures studies' approach into the organisational context. Moreover, Rohrbeck (2011, 21) proposes integrating organisational foresight into existing functions could improve organisations' change resistance.

However suitable the preparations from the perspective of foresight function, foresight can face several challenges. Hines and Gold (2014, 103) have identified four impediments to foresight: foresight competes for attention, is perceived as threatening, is viewed as intangible and capacity for foresight is lacking. Furthermore, the use of foresight is not systematic (Hines &

Gold 2014, 100, 101), and Rohrbeck (2011, 158) concludes that although organisations examined for building The Maturity Model of Corporate Foresight had best practices in some foresight related capabilities, none of them operated an extensive and solid foresight system.

2.2 Participation in foresight

Multiple foresight definitions include a mention of its participatory nature (e.g. Malaska 2017, 65; European Foresight Platform 2010). Popper (2008, 78) argues that the level of participation should be even higher in foresight compared to what can be achieved with other methodologies. Rohrbeck and Schwarz (2013, 1600) suggest that some stakeholders' insufficient integration and involvement could connect with the disappointments on value creation of foresight.

The concept of participatory foresight can be approached from different perspectives. Kaivooja (2017, 96) argues that participatory foresight as a concept contains five elements: it promotes a participatory environment, implements participatory planning, utilises participatory methods, stimulates participatory foresight and organises foresight processes in the form of participatory processes. Havas (2005, 9) argues that participatory foresight projects or programmes should include the following three criteria: First, they incorporate participants from at least two different stakeholder groups. Second, they distribute preliminary results among anyone interested, including those who have not participated in the foresight activity, by a selected medium (e.g. workshops, on the internet, newsletters, printed documents). Third, they invite everyone, participants and non-participants of the foresight activity, to provide feedback. (Havas 2005, 9).

Iden et al. (2017, 90) have identified participation, and Rohrbeck (2012, 440) especially internal stakeholders' participation, as success factors for organisational foresight. To respond to the turbulent environment, organisations may need various interpretations, multiple informants and various kinds of information (Ashmos 2002, 191). Including individuals with varying word views and backgrounds could help avoid gaps in identifying disruptions, threats, and opportunities that can follow from individuals' tendency to ignore signals against their assumptions (Day & Schoemaker 2005, 138). Andriopoulos and Gotsi (2006, 57) argue that a company can be an innovative forerunner by expecting and enabling its personnel to explore the future by established processes regularly. At the highest level of foresight maturity, an organisation has all its members looking out for weak signals (Rohrbeck 2011, 98). Radical changes require joint visioning, planning and execution (Rohrbeck et al. 2015, 7).

In addition to foresight's contribution to innovativeness through multiple varying and even opposite perspectives, involving organisation members in foresight can provide several benefits. First, foresight can add to the knowledge capital of the participants and the organisation. Moreover, when foresight capability builds up step by step, it can grow from the individual's ability to organisational capability (Slaughter 1996). Second, participation in foresight activities can impact individuals' mental models, affect decision-making and facilitate change (Boe- Lillegraven & Monterde 2015, 81). Third, participation can increase the impact of foresight. Individuals who participate in foresight activity aiming at strategy building can be more committed to implementing the strategy (Darkow 2014, 12). Organisational foresight, which includes internal stakeholders' active participation, can generate more actionable outputs (Rohrbeck 2010, 44). To summarise, the implications of involving members of the organisation in foresight processes can reach beyond the field of foresight and impact assimilation, dispersion, and utilisation of new knowledge.

Although participation is an essential feature of contemporary strategic foresight (Daheim & Uerz 2008, 330) and the importance of and need for participation are widely accepted, more research is called for. Rohrbeck et al. (2015, 7) argue that there is a demand for more knowledge on organising foresight exercises and understanding the importance of participation in corporate foresight systems (Rohrbeck et al. 2015, 7). Professional futurists, who often conduct foresight, have paid only a little attention to building continuous and dynamic foresight capabilities within the organisations (Hines and Gold 2015, 100). Empirical studies on how organisational members enable and hinder organisational foresight are scarce (Sarpong et al. 2013, 615). Darkow (2015,11) argues that little research has focused on participants in strategy processes apart from top management, strategy function and consultants.

The issue of possible and preferable participants and their sufficient amount has remained unclear. Even though there exist multiple definitions of organisational foresight, it is challenging to find a thorough and widely accepted description of who should be included in participatory foresight - and who can be excluded or are less valuable for the focal organisation. It has been argued that foresight processes should include at least two stakeholder groups (Havas 2005, 9) or multiple stakeholders (Rohrbeck et al. 2015, 29). Top management involvement is seen as pivotal in organisational foresight as it increases continuity and impact (Daheim & Uerz 2008, 326). An amount of experts has been in use to measure a foresight process's quality (Kettunen 2015, 65). Conversely, Dufva (2015, 48) argues that foresight should aim at participants' diversity instead of quantity.

Diversity can mean more possibilities for everyone to contribute to organisational foresight or a more exclusive selection of individuals invited to participate to ensure diversity related to qualities and expertise. However, the perspective on diversity can also be related to expected output: does a foresight process aim to generate ideas, build a shared and actionable vision or produce a report, for example. Ogilvy (2002) argues that a scenario workshop's output is more likely to be creative if the participants are selected according to their diverse expertise (Ratchcliffe 2005, 12). Nekkers (2016, 15-16) suggests considering multidisciplinary and people of different ages, professional education and work experience when inviting participants in a scenario process. Ratcliffe (2005, 18) argues that selecting "the right people" for the scenario exercise is essential. For ideas and insights about periphery Day and Schoemaker (2005, 138, 140) suggest listening to individuals who think unconventionally. However, the last reference can be interpreted in two ways: whether it is vital to identify, invite and listen to especially the outliers, or it is essential to keep the foresight as an open space, where anyone can feel welcome to share their insights with another. In reality, organisations' foresight functions may have pressure to produce something tangible from every activity. Hence, there may be various and practical criteria for participation.

Organisations benefit from understanding what kind of participation they expect and need. That could help them defining who should participate and how (Dufva 2015, 44-45.) Dufva (2015, 44-45) has described three modes of participation: legitimation, expert opinion and broad engagement. Legitimation refers to informing the participants of a predetermined and desired future and persuading them to accept that. The role of participation is to support the process initiators' perceptions. Expert opinion, instead, refers to the participation of the experts, who use their expertise to explore and find the future. The experts can provide their interpretations, but instead of surprising insights and alternatives, the process produces a probable future view. However, a small group of experts with diverse backgrounds can potentially produce views that a broad heterogeneous group can not. A buy-in of the expert views from the majority can be challenging to organise. Broad engagement, which refers to the participants' quantity, does not always ensure better ideas and insights of future. At worst, it can end up with consensus-based views that no one is pleased with. However, by broad participation, different kinds of participants can be invited to interact with each other, consider alternatives and shape the future. (Dufva 2015, 44-45.)

In this study, participation comprises of organisation members' participation in terms of using foresight tools or attending in organised foresight activities; participating in informal discussions and activities related to future, ideation and changes in the operational environment;

spreading the word about foresight; implementing and utilising future-oriented thinking, methods and tools in different contexts.

One perspective on whom to invite is to understand all organisational members as potential and valuable participants. Slaughter (1996, 753) argues that every human has the capacities of foresight and forward-thinking. Berghout et al. (2007, 74) emphasise foresight as "the ability, competence and art" of forward-looking search, making sense of the findings and evaluating the future developments' impact on presence. Following the definition, Van der Duin (2016,7) argues that the ability to probe into the future not only requires talent and creativity but consists of a set of skills that can be learned. The possibility of the organisation members expressing their findings or opinions regardless of their job title, status, or area of expertise could support foresight (Sarpong et al. 2013, 218). In the Maturity Model of Corporate Foresight, Rohrbeck (2011, 97) describes individual capabilities to accentuate to increase organisational foresightedness: curiosity and receptiveness, open-mindedness and passion, broad knowledge, deep knowledge, strong external networks, strong internal networks. To summarise, if an individual does not find oneself competent for anticipation or does not possess certain abilities, the skills and competencies to foresee and make sense of the operational environment changes can be learnt. Consequently, the tools, methods and atmosphere that enable learning become essential in supporting participation.

However, using specific methods in an organisational foresight process or a system do not straightforwardly equal broad participation. Popper (2008, 82) argues that multiple factors influence the selection of methods, and the selection processes can be incoherent and guided by intuition. For example, a workshop can imply an interactive foresight method, where expert and non-expert stakeholders work together and bring in the process aspects even contrary to each other (Popper 2008, 65-66). Conversely, in everyday language, a workshop can refer to any meeting setting opposite to lecture and with no apparent connection with the participants' diverse backgrounds. Scenario processes can include various methods that involve multiple participants, or the activities can target top management. Environmental scanning is a method of futures studies; making sense and interpreting the environment are human capabilities or organisations' abilities. Hence, organisation members can monitor the environment and utilise the information also without using a specific method. In conclusion, by analysing only methods used in organisational foresight, it is challenging to identify and determine the nature of participation.

The organisation members' motivations and knowledge can be mapped considering participation and expertise (Slaughter 2002, 2). After having done that, there are several approaches

to organising foresight to evolve as a participatory foresight system. Three approaches or practices are addressed here.

First, an organisation can introduce foresight through education. Voros (2003, 11) argues for an implementation approach, where education and introduction of foresight concepts come first and methodology through foresight exercises second. The order is based on the idea that by developing a personal, yet simultaneously shared foresight vocabulary, the organisation members can fluently communicate about foresight related issues with each other also in informal encounters. That, little by little, makes talking about future natural. (Voros 2003,11-12.)

Second, an organisation can emphasise foresight tools and methods that include participation. In the Foresight Diamond, Popper (2008, 66) has categorised foresight methodologies based on their characteristics, and the corners of creativity and integration include science fictioning, simulation gaming, role-play, brainstorming and workshops. However, Popper (2008,84) argues that based on the study examining a broad scale of different foresight studies, and methods they exploit, creativity and interaction-related methods are underutilised. Scenario processes, as mentioned earlier, often involve phases that benefit from multiple perspectives. Additionally, workshop is a participatory method, and Van Alpen (2016, 177) argues that a workshop's success is related to the participants. Information technology -based foresight support systems and tools that some organisations use can include participatory features. Furthermore, a method can invite participation by features that enable efficient communication. Accordingly, Römgens (2016, 145) underlines that a roadmap can be a valuable tool for communicating the desired future among the different participant or participating groups.

Third, an organisation can articulate the benefits of foresight. Iden et al. (2017, 100) conducted an extensive literature review and identified that opportunities to widen professional knowledge and update knowledge in specific areas could act as personal motivations to participate in organisational foresight. When multiple perspectives are brought together, surprising insights can emerge (Van Alpen 2016, 177). That can motivate some potential participants to join. Boe-Lillegraven and Monterde (2015, 78) argue that incentives can be effective at the beginning of learning a new foresight tool. To encourage organisation members to continue to use the tools, social and cognitive rewards can become more valuable (Boe-Lillegraven & Monterde 2015, 78, 80). To summarise, the list of the approaches is by no means exhaustive but introduces the variety of perspectives present in the foresight literature.

If organisational foresight aims at organisational learning and to change the organisation's thinking, continuous participation in foresight becomes essential. Boe-Lillegraven and Monterde (2015, 75) report that employees who continuously used technology radar evaluated it

more beneficial. Dufva (2015, 47) emphasises continuous involvement in foresight processes and reflection on perceptions. The practice supports learning, and practice, combined with feedback on the results, enhances learning even faster (Arnold & Randall 2010, 414). Equally important, when organising the participation and learning possibilities, is to understand the shift organisational training has taken from a top-down process, where the skills updating needs are identified, and access to formal training is granted by the management, to more informal and interest-based learning, where employees co-create knowledge (Arnold & Randall 2010, 425). Similarly, as Dufva (2015, 48) suggests, participation in a foresight system could be enabled for various agents or members of the organisation, the way they could initiate foresight activities themselves and together, instead of being controlled from the top.

Co-ordinating multiple participants with varying visions, motivations, capabilities and networks in an organisation's foresight systems can be challenging. However, as collaborative or networked foresight between organisations (Rohrbeck et al. 2015, 6), also referred to as open foresight (Wiener et al. 2017, 684), is expected to increase, understanding of how to align the aims, enable collaboration and support the sharing of insights among various individuals who take part in foresight activities, can become ever more essential. Similarly, Wiener et al. (2017, 695) argue that organisational culture can have an essential role in fostering or inhibiting openness for participation in open foresight.

2.3 Organisational culture and foresight

A foresight system is typically implemented in an operating organisation, which means the aim is to find a fit between foresight and the organisational culture (Boe-Lillegraven & Monterde 2015, 68). Organisational culture can both support organisational foresight and impede it. Organisational culture, where organisation members are encouraged to explore and share their findings across the organisation, can support organisational foresight (Rohrbeck 2010, 82). Foresight friendliness of the organisation can pave the way for adapting the idea that foresight thinking can be helpful and valuable (Boe-Lillegraven & Monterde 2015,78). On the contrary, non-receptive climate and cultural heritage can prevent actions the foresight knowledge could have generated (Rohrbeck et al. 2008, 20).

Since organisation culture and management styles can be challenging to change (Boxall & Purcell 2011, 185), a foresight system should be designed the way it is compatible with the focal organisation’s existing culture. However, Ratchiffe (2005, 6) argues that to make room for new foresight-based planning, corporate culture and managers thinking need to change. In

the long run, if a critical mass has assimilated foresight, it could be foresight that changes the culture (Boe-Lillegraven & Monterde 2015, 69).

Organisational culture includes management styles, values, formal and informal communication, behavioural expectations, and underlying assumptions. A culture that supports learning can diminish change resistance and help implement new thinking and working types. Foresight becomes an integral part of an organisation faster if it can be attached to working and thinking already familiar to the organisation. However, in many organisations, foresight use is episodic (Hines & Gold 2015,101), which may decelerate it becoming part of the organisation culture.

One key feature of foresight supportive culture is informal communication. If members of an organisation effectively share future insights, that can compensate for the lack of formalised foresight processes (Rohrbeck 2011, 82). Communication across divisions and hierarchies can be part of a mechanism that helps organisations build their foresightedness (Rohrbeck 2011, 150-151). Additionally, Pouru et al. (2019, 88) argue that processing futures knowledge in formal and informal discussions with colleagues can help assimilate and transform it.

Ratcliffe (2005, 6) emphasises the importance of values. There can be values that assist in creating a shared vision and bring people together. Appreciation for 'not knowing' and admittance that the future is unknown can increase foresight understanding (Ratcliffe 2005, 6). By encouraging listening and building upon each other's ideas, organisation members can challenge pre-assumptions and organise signals they have identified (Dufva 2015, 37). Accordingly, an atmosphere where multiple and opposite insights can be pondered together requires trust.

Boe-Lillegraven and Monterde (2015, 69) argue that for foresight to appeal to the potential participants, the organisation needs to share the understanding that foresight has value, although the individuals' interpretations on the value of foresight would differ. One way to communicate the value of foresight could be the promotion of explicit and detailed benefits of foresight to all organisational levels. Consequently, this could increase individuals' engagement in foresight.

However, foresight system can be built the way that participation in foresight is not dependent on personal motivations, but foresight is a perspective on everything that is done. Foresight can be implemented by creating organisational routines or integrating foresight with existing processes, thus creating organisational practises that facilitate the interpretation, use and enrichment of future insights (Rohrbeck et al. 2015, 4). Similarly, Pouru et al. (2019, 89-90) suggest creating a connection between foresight knowledge and the organisation's everyday reality.

To conclude, foresight systems are built according to some ideas or ideals on the organisational culture and on how individuals would act in the system. The culture in mind can be the

existing culture of an organisation or a culture the foresight system could generate. Organisational culture can support or impede the organisation's foresightedness, and changes in organisational culture change the foresight system. However, in many organisations, foresight needs to compete for attention (Hines & Cold 2015, 103). That could mean that embedding foresight in the everyday reality of an organisation can take time. Therefore, to become something organisation members spend time apart from official and organised foresight activities, foresight may need to convince the potential participants of its value and applicability.

2.4 Foresight system

Organisational foresight can be organised in various ways: from separate processes and projects to a thoroughly thought and systematically implemented foresight system, which at best evolves depending on the participants and organisational needs. Organisational foresight systems consist of several elements, including foresight projects, processes, activities, tools, formal and informal communication, and observations on changes in the operational environment. Regardless of many organisations having implemented foresight systems, comprehensive systems are rare (Rohrbeck 2011, 158).

Foresight system is only one concept among the concepts to describe the organisation of foresight. In the foresight literature, concepts such as systems, processes, exercises, layers, projects, activities, capabilities, programmes and methodologies appear overlapping, and their meaning depends on the author. Dufva (2015, 40), for example, distinguishes a process view and a systems view of foresight. In a systems view of foresight, the foresight system is inclusive, broad, and can not be controlled, whereas, in a process view, the process owner or practitioner can control the expert-focused process (Dufva 2015,40). Additionally, Dufva (2015, 29,46) defines foresight as a system that operates through processes, although adding that the process view can have systemic or systematic qualities (Dufva 2015, 10). Amanatidou and Guy (2008) use the terms foresight system, foresight process and foresight exercises in one article. In the Maturity Model of Corporate Foresight, the foresight system has a process dimension (Rohrbeck 2011,102). Additionally, some well-known models present foresight as a process (e.g. Voros, 2003; Popper; 2008) that can be utilised within or without an established foresight system.

In this study, the foresight system is the concept used as a frame or context for organisational foresight. However, there are several frameworks concerning foresight systems and multiple interpretations of how a desirable foresight system could function and what elements the system

should consist of. This thesis builds on three different approaches to foresight systems to cover various perspectives: The Maturity Model of Corporate Foresight (Rohrbeck 2011), Certified Foresight Professional -programme's foresight system -plan evaluation framework (Certified Foresight Professional -training 2016-2019) and a systems view of foresight (Dufva 2015).

This thesis approaches human participation as an element of an organisational foresight system. The other features or aims of a desirable foresight system depend on the view or framework, organisations' culture and practices, and organisations' needs. All three frameworks or views examined for this thesis are different yet also share similar features: they emphasise the value of communication, members of the organisation, and continuity of organisational foresight.

In the empirical part of this study, the respondents from organisations that run foresight systems describe human participation related to organisational foresight: how participation is organised, encouraged or appears in their organisations. The foresight system -plans were not available for a detailed investigation due to the confidentiality of the content, thus leaving it impossible to know the systems' original aims. Consequently, the researcher examined three foresight system frameworks to understand foresight systems and to ask the right questions. This examination of existing models could, in any case, have been the only option to try to map a system. As Dufva (2015, 46) argues, dynamic systems constantly change and evolve, and all perceptions of the system can be only subjective and partial.

The three selected frameworks or views are presented as follows: First, the Maturity Model of Corporate Foresight, which helps organisations build a foresight system or evaluate an existing one, to achieve a high foresight capability (Rohrbeck 2011). Second, the Certified Foresight Professional -programme's Foresight System Framework (Certified Foresight Professional -training 2016-2019) that includes five categories of characteristics for a successful foresight system and is used in the programme to assist in building and to evaluate foresight system -plans by the programme participants. Third, a systems view of foresight, where, compared to the process view, foresight is not only a series of centrally organised foresight projects, but the foresight knowledge emerges from the interaction between individuals (Dufva 2015). To summarise, all the systems mentioned above can be operated together and understood as complementary. To some extent, they are conceptual, as the functioning system can not only follow the plan, but it needs to be agile enough to adapt to changes in the operational environment and the needs and capabilities of the organisation.

2.4.1 The Maturity Model of Corporate Foresight

The Maturity Model of Corporate Foresight is a framework that helps evaluate the corporate foresight capability level and guides in designing corporate foresight systems (Rohrbeck 2011, 107). Additionally, the framework has been utilised to analyse SMEs' future orientation (Pouru, 2016). As the Maturity Model of Corporate Foresight includes multiple aspects related to the organisation's members' capabilities and possibilities, it seems a relevant tool for any organisation looking for a participatory approach to the organisational foresight system.

The original Maturity Model of Corporate Foresight consists of three elements: context, capabilities and impact. Six criteria to describe the context can be used to assess an organisation's need for foresight: the company's size, nature of strategy, corporate culture, source of competitive advantage, the complexity of the environment and industry clock speed. Capabilities are structured in five dimensions (information usage, method sophistication, people and networks, organisation and culture) and measured with 21 criteria. The impact is divided into four categories and evaluated with 12 criteria. (Rohrbeck 2011, 76.) In 2018, Rohrbeck and Kum (2018, 106) decomposed the model and divided the capability dimension 'people and networks' into two components. They also added a process layer consisting of three steps: perceiving, prospecting and probing (Rohrbeck & Kum 2018, 106). However, as the content of the capability dimension 'people and networks' did not change, this study refers to the original.

Usage of the Maturity Model is simple and includes three steps: First, deciding the maturity level the organisation aims at (Rohrbeck 2011, 104). The recommended levels are either medium or high, and lower than the 'medium' level is not recommended at all (Rohrbeck 2011, 104-105). Second, choosing between structural or cultural approaches as a starting point for building the foresight system (Rohrbeck 2010, 104). No one selects either-or, but a combination of elements from both approaches (Rohrbeck 2010, 102). The structural approach emphasises information usage capabilities, method sophistication, people and networks, and partly organisation, whereas the cultural approach emphasises the rest of the capability dimension organisation and culture (Rohrbeck 2010, 101). If an organisational culture already exists and supports individuals to bring about their ideas, implementing a foresight system based on cultural capabilities can be a good match (Rohrbeck 2010, 106).

Third, decide the maturity levels to aim at for individual capabilities (Rohrbeck 2010, 104). The maturity levels of the aspects of the capabilities dimensions are described from poor or rudimentary (Level 1) to best practice (Level 4) (Rohrbeck 2011, 90). Rohrbeck (2011, 90) suggests that if a company does not immediately score level four, descriptions of different levels

can improve. However, not all organisations need to aim at the highest level in all the five capabilities dimensions, but to the optimum level instead (Rohrbeck 2011, 104). To conclude, multiple possible combinations can lead to a mature foresight system.

Consequently, as this thesis concentrates on human participation in organisational foresight instead of evaluating the foresight systems' maturity, the focus below is primarily on the five capability dimensions and their highest maturity levels. These descriptions could assist in perceiving the desired characteristics of organisational foresight systems and how they consider human participation.

1. Capability dimension 'Information usage'

Information usage is divided in four aspects: reach, scope, time horizon and sources. At the highest maturity level (level 4), the criteria for the aspects are described as follows:

- Reach: Scanning in current business, adjacent business, and white spaces
- Scope: Scanning in all areas (technology, political, competitor, customer, and socio-cultural environment)
- Time horizon: Pro-active scanning in long, medium and short term in place
- Sources: Use of many sources that provide a competitive advantage

(The list modified from a table in Rohrbeck 2011, 91-92)

2. Capability dimension 'Method sophistication'

Method sophistication is divided in four aspects: integration capacity, communicative capacity, match with problem, match with context. At the highest maturity level (level 4), the criteria for the aspects are described as follows:

- Integration capacity: Methods integrate, scope, reach and time horizon of foresight
- Communicative capacity: Methods help internal and external communication
- Match with problem: Methods are deliberately selected to match the business issue
- Match with context: Type of method and effort is consistent with context of company

(The list modified from a table in Rohrbeck 2011, 94)

3. Capability dimension 'People and networks'

People and networks is divided in three aspects: external network, internal network and characteristics of foresighters. At the highest maturity level (level 4), the criteria for the aspects are described as follows:

- External network: Building and maintaining a network of external partners is encouraged and perceived as important for every employee
- Internal network: Every employee is expected to build and maintain formal and informal networks to other units and functions
- Characteristics of foresighters: Foresighters have a strong internal and external network and deep and broad knowledge and are passionate, curious, and open minded

(The list modified from a table in Rohrbeck 2011, 96)

4. Capability dimension 'Organisation'

Organisation is divided in five aspects: mode, integration with other processes, formal diffusion of insights, accountability and incentives. At the highest maturity level (level 4), the criteria for the aspects are described as follows:

- Mode: Both continuous and project-based foresight is triggered bottom-up and top-down
- Integration with other processes: Foresight is linked to corporate development, strategic controlling, and strategic and innovation management
- Formal diffusion of insights:Future insights are integrated into most decision making processes and can be brought onto boards by the foresight unit
- Accountability: Every employee is responsible for detecting weak signals, foresight unit serves as information hub
- Incentives: Incentives are recognition from senior management and financial rewards

(The list modified from a table in Rohrbeck 2011, 98)

5. Capability dimension 'Culture'

Culture is divided in five aspects: willingness to share across functions, readiness to listen to scouts and external sources, informal communication, organisation's attitude toward the periphery, and willingness to test and challenge basic assumptions. At the highest maturity level (level 4), the criteria for the aspects are described as follows:

- Willingness to share across functions: Excellent: Ongoing information sharing on many levels
- Readiness to listen to scouts and external sources: The organisation is open. Building and maintaining an external network encouraged
- Informal communication: Future insights are diffused effectively and reach the relevant decision makers through informal communication
- Organisation's attitude toward the periphery: Active and curious: Scanning the periphery is commonplace
- Willingness to test and challenge basic assumptions: Basic assumptions are explicit, much talked about, and frequently challenged

(The list modified from a table in Rohrbeck 2011, 99-100)

Through the research process to build the Maturity Model, Rohrbeck (2011, 114) identified a set of best practices. For the dimension' culture', Rohrbeck identified a mechanism that could be enough to sustain a sufficient foresight capability in an organisation. The mechanism includes 'putting every employee on the lookout',' creating a corporate culture that promotes cross-divisional and cross-hierarchical communication' and 'executive-board programs that allow bottom-up initiatives to grow fast'. (Rohrbeck 2011, 150-151). In other words, by inviting all members of the organisation to identify and collect signals, ensuring that every member of the organisation can communicate, receive and share information, and encouraging and enabling all individuals to ideate and develop their ideas at a rapid pace, the organisations can ensure a high level of foresightedness. The improved communication was suggested even for the organisations that had built their foresight system mainly on the structural approach (Rohrbeck 2011, 151).

2.4.2 Certified Foresight Professional -programme's Foresight System Framework

All respondents of this study's empirical part have carried out a seven-month Certified Foresight Professional (CFP) -programme at Turku School of Economics Executive Education and Development at the University of Turku (TSE Exe). Henceforth, the foresight system -plans they created during the course and later implemented in their home organisations, have been built and evaluated according to a foresight system framework by CFP-programme.

The framework consists of five categories of characteristics and several aspects relevant when building a successful foresight system for an organisation. The framework is based on foresight literature, research and best practices from the field of organisational foresight (Söderlund 2019). The students in the programme work closely with the top management of their home organisations to build systems that fit in the organisations and answer the organisations' strategic needs for organisational foresight. This communication and identification of the needs and aims are prerequisites for a successful and functioning foresight system. (Söderlund 2019.)

This framework's value in this study, among the other two frameworks related to foresight systems, is in its familiarity to the respondents, helping build a shared discourse on foresight systems between the researcher and respondent. Additionally, the framework is relatively detailed and practical for both building and evaluating a foresight system. However, it does not include general criteria for the different aspects but encourages the organisational futurist to figure them out according to their organisations' needs. Noteworthy in the framework related to this thesis is that every category includes aspects related to human participation.

Table 1 Certified Foresight Professional -programme's Foresight System Framework

Category	Aspects
Description of the foresight culture:	Value base, identity, commitment, assertiveness, team learning, mental model, creativity, sensibility, attractiveness, balance between divergent thinking and realism, connection with organisation culture, stakeholders
Methodological choices:	Methods of processing futures knowledge, balance between facts and creativity, balance between the journey and the destination, systematicity, foresight team and stakeholders, networks, proportion of quantitative and qualitative information, big picture
Technical execution:	

	Facts and concepts, understanding of processual nature, cycles, data collection, functionality, utilisation and communication, participation, connection with other operations, orderliness, co-ordination, productivity, in-house or outsourced production, virtual and online working, platforms, social media and distribution, roadmaps and reports
Knowledge base:	Critical examination of the sources of foresight knowledge, temporal and spatial dimension, the balance between external environment and internal world (mental models), versatility, futures thinking and alternatives, practical and theoretical aspects
Development possibilities and self-reflection:	Conclusions, Continuity, social processes, balance between analysis and intuition, flexibility, impact evaluation (in connection with the objectives), operability of the processes and effectivity of contents

(Certified Foresight Professional -training 2016-2019)

2.4.3 A systems view of foresight

Dufva (2015, abstract) finds process view on foresight problematic, as it often draws on experts and other stakeholders gathering and producing futures knowledge apart from everyday operations of organisations and concentrates on outcomes. Instead, Dufva (2016) presents a systems view of foresight. In a systems view of foresight, foresight consists of continuous and parallel processes, embraces contrasting opinions, supports broad participation, and affects the participants' perceptions of futures (Dufva 2015, 40). Dufva (2015,19) locates foresight activities in the innovation system and together calls them a foresight system. A foresight system constantly changes and becomes visible through foresight processes (Dufva 2015, 29). The situations the futures knowledge is created mainly occur in the context of processes. The futures knowledge is the conclusion of the interaction between the participants, who in this approach are called agents. (Dufva 2015, 29-30.)

The value of the systems view in the context of foresight systems for this study emerges from the change in mindset from process orientation to systems orientation. The systems view emphasises the systemic qualities, which mean that a single foresight unit can not entirely control the system, the system is continuous, and there are constantly activities and processes going on in the system that create new connections and insights and change the system (Dufva 2015, 46). In this view, the means to produce knowledge are closely connected with the system's ability to enable the agents' 'agency', collaborative knowledge creation and connections be-

tween these processes (Dufva 2015, 12). However, Dufva (2015, 48) argues, to be able to benefit from the possibilities the systems view provides, foresight practices need to be organised in a new way.

Elements of a foresight system

Dufva (2015, 31) defines the foresight system through six elements that fit under three categories: category 'capabilities' includes cognitive schemes; category 'relations' mediating events, agents and strategic objects; and category 'process knowledge' memory objects and metaphors.

First, capabilities include the ability to conduct foresight and think in new ways (Dufva 2015, 32). Capabilities can range from individual to organisational and societal skills and mindsets that support anticipation and preparedness for alternative futures (Dufva 2015, 32). The capability to scan the environment and fast reconfigure to respond to change, which can be considered future capability, is a dynamic capability (Teece et al. 1997, 521). Futures capability includes understanding the contextual nature of futures knowledge and its various interpretations (Dufva 2015,31).

Second, relations and interaction are affected by the agents' capabilities and mediating events (Dufva 2015, 31, 32). Mediating event is a 'temporary virtual or physical gathering or information exchange between agents, an intervention or a presentation' (Dufva (2015 30,). For example, foresight activities are mediating events. Agents include stakeholders, participants, and experts, and by using the concept 'agency', their ability to act in a system is emphasised (Dufva 2015, 29, 30). Strategic objects are shared understandings of the processes' agents and foci (Dufva 2015, 30).

Third, process knowledge refers to different types of knowledge. Memory objects can be 'tangible outcomes of the foresight process' and have written or visual form. They represent explicit transferable knowledge (Dufva 2015, 28, 30). Metaphors are content-related and shared perceptions occurring in a foresight process and represent the type of knowledge that can lose its meanings when transferred to other processes (Dufva (2015, 29, 31).

Dufva (2015,32) emphasises the importance of interaction and connections between agents in futures knowledge creation. The mediating events, e.g. workshops or surveys, influence the agents' interpretations, understanding, and possible actions upon strategic objects (Dufva 2015, 30-32). Decisions on who is welcome to participate in the process, how and when, facilitated or interfere the interaction between agents (Dufva 2015, 47). Futures knowledge emerges from the network of perceptions the agents possess (Dufva 2015, 13). All these interactions create

new knowledge, something that did not exist before, which builds the capabilities that create new knowledge through interactions (Dufva 2015, 32). However, futures knowledge is constantly changing as links between concepts are added and removed (Dufva 2015, 13).

The system is impossible to control, but the strategic objects and mediating events are a way to make the knowledge visible in a helpful form. The strategic objects help guide the agents' attention on relevant topics and create a shared understanding of the processes' aims. Nevertheless, foresight activities do not always need to concentrate on a specific strategic object, be it a strategic need or a problem that needs to be solved. (Dufva, 2015,47.)

Since the systems view is not a straightforward, practical framework, it provides categories or levels scarcely for practical use to build or evaluate a foresight system. However, from the human participation perspective, the message seems clear: in a desirable foresight system, the agents can proactively interact, create and share. Nevertheless, at least some facilitated processes are needed to assist in bringing the new knowledge into use. Simultaneously, the futures knowledge may not need to be centrally collected or interpreted but can be utilised right in the place it is created. Instead of organising massive projects, small-scale processes can be more impactful (Dufva, 2015,46). For example, the foresight exercises should create knowledge that participants can accept as plausible or accessible and use to guide present action (Dufva 2015, 12). Additionally, Dufva (2015, 48) argues that participant selection criteria should change from emphasising quantity to promoting diversity. Expertise would be defined by the capability to embrace and communicate various future perceptions instead of mastering subject matter (Dufva 2015, 48).

2.5 Conceptual framework for this study

This study's conceptual framework consists of three slightly overlapping perspectives: foresight system, individuals, and organisational characteristics. 'Foresight system' serves as a context for organisational foresight and includes methods and tools, aims of organisational foresight, and dimensions, aspects and elements described in the abovementioned foresight system -frameworks. 'Individuals' refers to organisation members as participants or potential participants, their personal world views, motivations, interests and perceived benefits for taking part in organisational foresight. 'Organisational characteristics' include any organisational practices, processes and organisational culture that can affect the implementation, organisation, reception and integration of foresight. All these three perspectives impact how participation is

enabled, organised, or individuals choose to participate; how participatory foresight succeeds and reaches its aims.

However, as the empirical part of this study focuses on the CFP-programme alumni's views, who have designed and implemented foresight systems in their organisations, the perspective of participating individuals' is only narrowly covered. This study's perspective limits to the experiences and observations the respondents have made when planning foresight systems and processes and organising foresight.

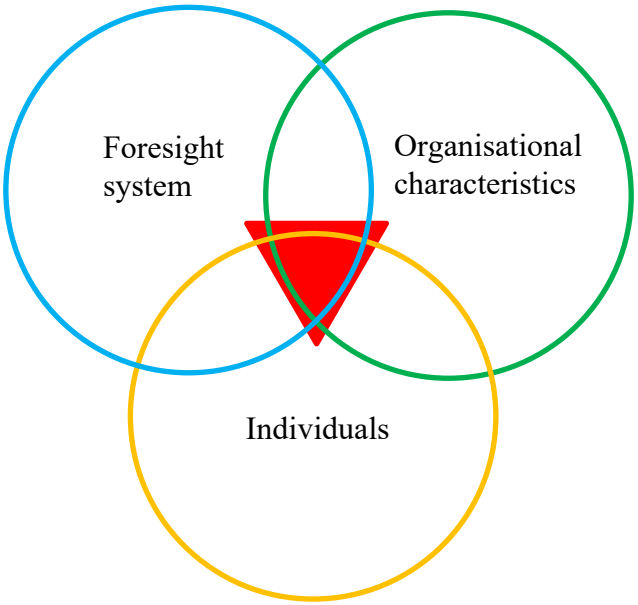

Figure 1 Foresight system, organisational characteristics and individuals all have an impact on organisation members' participation in organisational foresight.

3 RESEARCH APPROACH AND METODOLOGY

This section provides details on the research strategy, sample, data collection methods and data analysis methods.

This thesis's conceptual framework was developed early in the research process, and it provided a structure that guided through the material collection process (Fisher 2010, 137). The structured approach can save time as it helps collect data more focused and provides structure to build the study. However, having followed a grounded approach, the theory would not have restricted the observations and noticed unexpected discoveries, but the theory would have emerged from the material collected. However, if the research findings suggest changing the initial theory, it is possible also in the structured approach. (Fisher, 2010, 137-139.) In this study, the conceptual framework guided the data collection but allowed the data analysis to form categories as they emerged from the data.

The research strategy follows from determining the best approach to answer the research questions (Marshall & Rossmann 1989, 76). The selection of a strategy does not lead to a narrower set of data collection techniques available, yet Marshall and Rossman (1989, 77-78) propose that some techniques fit well under particular strategies. In addition to that, Saunders and Lewis (2012, 121) emphasise the possibility of combining multiple methods and research strategies within one study. This study has incorporated a mixed strategy.

The sample of this study consists of seven CFP-programme alumni. The respondents and their organisations are referred to by using codes to ensure their anonymity.

The first part of empirical data collection is based on a survey strategy and an online questionnaire, which was planned for receiving less detailed and easily comparative data from the whole population (Saunders and Lewis 2012, 117), the CFP-programme alumni since 2013. Additionally, this first part sought to connect with the potential informants and attract their interest in the research topic.

The second part of data collection moved towards in-depth qualitative data collection, and the selected method was a semi-structured interview. The strategy moved towards case study to find answers to the questions "why, what and how?" in specific contexts in particular cases (Saunders & Lewis 2012, 117). However, this is not a full-scale case study, as the information is gained by interviewing only one person per organisation. Hence, a comprehensive picture of a particular foresight system in a specific organisation will not be gained. The data was analysed by using a pragmatic iterative approach (Tracy, 2013, 183).

3.1 Data collection

A questionnaire and semi-structured interviews collected the empirical data for this study. The sampling frame for the questionnaire included all CFP -programme alumni on the mailing list of Turku School of Economics Executive Education and Development at the University of Turku (TSE Exe) office in September 2020; in a total of ca. 50 individuals. As the respondents were provided with the possibility answer to the questionnaire anonymously without providing their contact details, it was expected that there would be more answers than interest to be interviewed. Conversely, all seven respondents provided their contact details and, simultaneously, consent to be interviewed. Hence, there was no need for any sampling methods.

Sample: Certified Foresight Programme -alumni

This thesis's informants have all accomplished the Certified Foresight Professional (CFP) -programme, organised by Turku School of Economics Executive Education and Development at the University of Turku (TSE Exe). The programme is a seven-month updating education training targeted at anyone interested in developing their foresight capabilities or organisations' foresightfulness. A total of 70-80 students have enrolled in the training since 2013 (Söderlund 2019). The students have worked in public and private organisations and often hold positions in management or development (Söderlund, 2019). Since all the programme alumni have received equivalent information concerning foresight and created foresight system -plans for their home organisations as diploma work to pass the course, the alumni form a coherent group of informants for this thesis.

The programme is organised annually by TSE Exe in collaboration with Finland Futures Research Centre. The training consists of nine contact teaching days, online studying and preparing the individual foresight system -plans. The course's relatively high price, the academic year 2019-2020 course cost 5800 e (+ VAT), indicates that both the students and their home organisations find foresight expertise valuable.

Examination of the programme brochures helped the researcher build a picture of the concepts, methods, and approaches the informants have learned during the training. That, in turn, helped in designing the data collection and data analysis.

The themes of the contact teaching days in the course during the year 2019-2020 were titled as follows: 'Modern foresight paradigm' (two days), 'Visionary development', 'Change management and change innovations', 'Mining and utilisation of futures knowledge', 'Dynamic

foresight systems to support development' (two days) and participating in Futures conference. One of the teaching days to spar the individual foresight system projects was distance learning and tutoring. (Introduction material of CFP-programme 2019-2020.)

The course content included theoretical foundations of Futures Studies, research orientations in foresight and related fields (such as strategic foresight, visionary leadership, change management) and introduction in tools and methods (such as CLA, Delphi, scenarios, futures workshop). Some of the topics encourage developing personal futures thinking, understanding of the power of futures images and the value of holistic thinking. In contrast, some of the themes are very topical and practice-oriented, such as business disruptions and the future's operational environment. (Introduction material of CFP-programme 2019-2020.) The teaching material includes possible needs, benefits and impact of strategic and organisational foresight with examples drawn from the literature and past experiences within the programme (Söderlund 2019b).

As a diploma work to pass the course, the students build foresight system -plans for their home organisations. They work closely with the top management of their home organisations to create foresight systems that meet the organisations' strategic needs. (Söderlund, 2019.) The criteria that have guided the building and evaluation of the plans are discussed in detail as part of this study's theoretical framework, under the title 'Certified Foresight Professional -programme's Foresight system Framework'.

Furthermore, CFP-programme, TSE Exe and Finland Futures Research Centre have listed possible foresight outcomes to assist the students in envisioning what they could bring to their home organisations after accomplishing the training. Examples collected since the year 2017, the list includes: increased awareness of futures development traits, systematic scanning for weak signals, future-proof plans and decisions, and thought leadership. (Söderlund 2019b.)

Questionnaire

The questionnaire was designed by following a pre-coded approach that increases the answers' comparability, helps categorise the responses and helps respondents quickly choose between alternative options (Fisher 2010, 172, 181). The questionnaire aimed to generate a maximum volume of responses. Hence, it was short and included a structure that the respondents could effortlessly follow and begin with the most straightforward questions. (Fisher 2010, 210-211.) The questionnaire aimed at a convenient 5-10 minutes answering time to ensure that the length would not keep anyone from answering. Personal questions and contact details for interviewing

purposes were kept until last, as people are more willing to answer those types of questions after already investing time in completing the prior sections (Fisher 2010, 211).

Since the study's topic, organisation members' participation in organisational foresight, may be challenging to perceive at a conceptual level, the questionnaire aimed at mapping the respondents' foresight systems with three simple questions that cover participation and the overall presence of foresight in the organisations. Additionally, one question covered organisational context and one personal experiences of participatory foresight. The questions were formulated around the critical components related to participation in organisational foresight, identified in the literature review: aims of foresight, foresight activities/tools/methods, participants and cultural elements.

The questions' format was mainly a checklist, a variation of multiple response options questions, allowing respondents to tick the boxes and select as many options as they prefer (Fisher 20190, 212). The checklists had an open question at the end, so respondents could add an option they considered lacking. One question in the questionnaire included a rating scale that followed the structure of a Likert scale. The five-point scale allowed people to express their opinions on suggested statements in a scale 'strongly agree' – 'strongly disagree' with a possibility to select 'uncertain' in the middle of the scale (Fisher 2010,214). One question was an open question, intending to invite answers about personal experiences that the researcher could not anticipate (Fisher, 2010, 181).

The questionnaire is briefly outlined in English below. Original version in Finnish is attached in the appendices as Appendix 2.

1. What kind of foresight related activities there exists or has existed in your organisation? Select from the response options below.

The opening question provided 14 response options and one open field for “other”. The list of answering options in the first question was not comprehensive nor were the options exclusive. The answering options were selected the way they included commonly used methods, would be relevant to the organisations and would provide information on the formal and informal foresight related activities in the organisations.

2. Who participate in foresight in your organisation? Select from the response options below.

The second question attempted to map who participate in organisational foresight activities. The answering options consisted of 12 options to choose from and one open field, as the list could not have been conclusive. The answering options included participant groups identified in the literature from desired or expected to potential participants. Consequently, for example the option “every member of the organisation” was separated into two varying perspectives, into “every member has the possibility to participate” and “every member must participate” to provide information on whether broad participation is understood as an opportunity or obligation.

3. Which explicitly expressed aims your organisation has for organisational foresight? Select from the response options below

The question consisted of 13 answering options and one open field. The list of answering options was composed somewhat straightforward from the multiple definitions in the foresight literature on where organisational foresight could contribute.

4. Which of the following statements describe your organisation?

The fourth question was in the form of a Likert scale and provided a larger variation in answers than the previous questions. Likert scales can help ask about beliefs and stance (Fisher 2010, 214). As the question invited respondent to describe their home organisations, more complex answers than simple “yes” or “no” were expected and five-point Likert scale was selected. However, it can be argued if attitudes even can be measured or if the statements would be interpreted differently depending on the respondent, which can cause the answers to be unreliable (Fisher, 2010, 215). In this study, the six statements were excerpted from the research literature which broadly suggests, that organisational context and culture could affect how participatory foresight approaches succeed.

5. What is like your most memorable experience of participating in organisational foresight activity? You can describe, for example, a situation, atmosphere or benefit.

The question was posed to differentiate the respondents and possibly find emotional or motivational perspective on participation.

At the end of the questionnaire, background information was asked about with response options in the form of simple drop-down menus: year of attending CFP -training, a field of business according to Standard Industrial Classification (Statistics Finland 2008) and business size (Statistics Finland 2008).

Interviews

Interviews were conducted to gather more detailed and in-depth information. The semi-structured interviews combined elements from open and pre-coded interviews (Fisher 2010, 175). In semi-structured interviews, the interviewees can provide their perspectives and respond to the questions with their own words, yet the interviewer has a schedule and topics expected to be covered (Fisher 2010, 175). However, this approach may lose some of the possibilities of unstructured open interviews, such as the emergence of understanding or complex viewpoints (Tracy 2013, 139). Nevertheless, the respondents were allowed and even encouraged to continue their long or off-topic responses when they provided new information, to avoid losing exciting and relevant yet unexpected details.

All seven interviews took place in Zoom, an online videoconferencing tool that allows recording video and sound. Before the interviews, all interviewees received an email, which included information on practicalities and a list of topics the interview would cover and some background questions. That provided the informants with a possibility to familiarise themselves with the topics and activate their thinking. The delivery of a list of topics instead of detailed research questions allowed the discussions to flow more freely during the interviews and made it easy for the interviewer to track that all the themes were covered. However, as the informants are individuals and the time was limited, some answered more questions than others, and some more broadly but to fewer questions.

The interview guide served as a skeleton and checklist for the interviewer. The interview questions were grouped under nine topics, similar to those sent to the interviewees before the sessions. The list of the topics covered in the interviews was as follows:

- Rooting foresight in an organisation and about shared concepts
- A typical or characteristic foresight process in your organisation

- Examination of organisational foresight functions or features mentioned in the questionnaire, from the perspective of participation
- Discussion in your organisation related to participation and foe example choices of methods and tools
- Knowledge, skills and characteristics of the participants
- Benefits of participatory foresight for organisation and participant
- Increasing the knowledge capital of an organisation
- Ideas creation and sharing of insights and observations
- Foresight as an activity organised from top-down and bottom-up

The interviewees were promised a one-hour interview session, and the plan was that all topics would be somehow covered. However, some questions dropped due to time constraints, and the interview guide in the appendix only includes the questions at least some of the respondents answered, a total of 18 questions. The original interview guide with around 20 questions was constructed according to the following guidelines by Stewart and Cash (2006), Fisher (2010) and Tracy (2013):

Questions can be categorised as open or closed, primary and secondary, and neutral or leading (Stewart & Cash 2006, 47). Open questions can be more straightforward to answer, as respondents can speak more freely. The answers are broader and deeper and can reveal, for example, attitudes and emotions. However, answering may be time-consuming; answers may include irrelevant information and be challenging to analyse. (Stewart & Cash 2006, 48,51).

Closed questions may be too narrow to provide new information and ideas on an organisation's foresight system; however, they can be helpful when followed up by open-ended questions (Stewart & Cash 2006, 50). Having at least some pre-coded questions can save time in the analysis phase (Fisher 2010, 183).

Prioritising the questions can assist in staying on time, and when the time runs out, at least the most important topics have been considered (Fisher 2010, 183). Primary questions propose new topics and function independently regardless of the context (Stewart & Cash 2006, 51), whereas secondary question, or follow-up questions, are essential when the answer to the primary question is unclear or incomplete (Stewart & Cash,2006, 51).

In turn, Tracy (2013, 146) categorises the questions differently and provides one possible structure for an interview. The question types of the interview guide have been formulated according to Stewart & Cash (2006), Fisher (2010) and Tracy (2013), and the interview structure

loosely follows the example by Tracy (2013, 146). According to Tracy (2013, 146), the interview includes four parts: opening questions, generative questions, directive questions and closing questions

First, opening questions could include open-ended questions that would inspire the interviewee to reflect on an experience or tell a story. Another preferable question type to start with is asking about factual issues and avoid personal opinions at this stage of the interview. (Tracy 2013, 147.) Second, generative questions carry the interview and create a space where the interviewee does not feel threatened. Open-ended questions assist in that and provide broad answers. The generative questions -section can begin with questions that encourage describing past events in the form of a tour or timeline, providing detailed examples, and considering hypothetical situations. To continue from there, questions that ask about the ideal or pose contrasts or comparisons can help the interviewee consider the situation outside what really happened and thus reveal distinctive features of their organisations. Questions about motives, other peoples assumed motives and possible or preferred futures directions could provide valuable information. (Tracy 2013, 147-149.) Third, directive questions go straight to the point and can be complex, difficult to answer or even intimidate. The interviewer leads this section. At this point, closed-ended questions, typology questions and questions based on available data are introduced. Even the so-called devil's advocate -questions can be used cautiously to clarify unclear issues. (Tracy 2013, 149-150.) To conclude, the interview can be closed by asking questions that wrap up the discussions. Additionally, questions that leave the interviewees to feel confident and important for the study can be valuable. (Tracy 2013, 151.)

At the end of the interview, there was a summarising question, following the example of three characterising statements by Fisher (2010, 187). The interview guide is attached in the appendices, titled Appendix 3.

3.2 Data analysis

The questionnaire data and interviews were analysed separately. The questionnaire results were analysed to the level necessary to gain an overview of the organisations' foresight activities, participants and aims and building the interview guide with some personalised questions. That means that the questionnaire data was glanced through and analysed very modestly quantita-

tively to understand if something was commonplace or exceptional among the informants' organisations. The questionnaire results were also utilised for triangulation to compare if the interview answers corresponded with the questionnaire answers.

The coding and analysis of the interview material followed the pragmatic iterative approach by Tracy (2013, 183). The approach was selected for this study as it seemed to provide a practical process for analysing the empirical material collected. Tracy (2013,183) argues that if the researcher does not thoroughly understand the traditions and orientations of grounded theory, following an iterative approach can be more practical. In the iterative analysis, both the meanings that emerge from the data and the use of existing models and theories can be combined (Tracy 2013,183). The analysis method begins with organising and familiarising oneself with the data and is followed by several coding cycles (Tracy 2013,183,188). Fisher's (2010, 199-201) instructions for coding of qualitative data are somewhat similar to those of Tracy's, as they too include building the codes according to the content of the data and iteratively proceeding by testing and modifying the codes if necessary.

In the organisation and familiarisation phase, the data was prepared for the analysis and the interviews transcribed, as Fisher (2010, 199) suggests. The 1-1,5 hour interviews transcribed into ten or a few more pages of text each. The original video recordings were revisited to compare the content with the transcripts and to avoid misunderstandings.

The analysis began with primary-cycle coding, including several rounds of reading the content and adjusting the codes (Tracy 2013, 189). These codes are often first-level codes, which means that they are more descriptive than interpretative (Tracy 2013, 189). The transcribed texts were read through, and the content that answered the interview questions and otherwise sounded relevant to the research questions were highlighted. Sidenotes about possible categories were written, when necessary. In this phase, it was evident that the informants had provided insights that the researcher could not have prepared to ask for. Accordingly, some of the codes were very intuitive.

In this study, coding phase included drawing an empty table on a Word document, with multiple columns and rows, one table for each informant. The transcripts included highlighted phrases, which were then copied to separate slots in the table and coded according to the content. The interview data that directly answered specific questions were categorised and coded accordingly. For example, the answers to the question "how you define participatory foresight" were labelled as "definitions for participatory foresight". Conversely, some responses did not resonate with any code specifically, as they were not direct answers to any questions but more like associations to some other themes, answers to ad hoc follow-up questions posed by the

researcher or answers to multiple questions simultaneously. For those answers, new categories and codes were created.

Having copied all relevant or interesting phrases to the tables and having created codes as the new themes emerged, it was time to compare all the seven tables with their codes and related content. They mostly were commensurate, but not entirely. The codes were aligned by moving pieces of text under different codes or creating new codes. The codes started to form categories. Following the constant comparative method, the categories and codes changed during the process (Tracy 2013, 190). The number of categories and codes extended, and thus the tip based on experience by Tracy (2010, 191) was followed: more than 25 different codes are challenging to keep in mind through the process.

The first level codes are generated from the data, and during the secondary-cycle coding, the researcher starts to define more explanatory second-level codes and begins to interpret the data creatively and brings in the theoretical knowledge. The researcher should move from descriptive coding to a deeper understanding of the data and analyse whether it seems relevant to the research problems. This phase also includes grouping the codes into broader categories. (Trace 2013, 194, 195.) The codes and categories in the word document were rearranged when necessary, and some were merged. Simultaneously, the coding began to be more analytical, and interlinkages between data and literature were identified.

During the secondary-cycle coding, Tracy (2013, 197) suggests that the researcher revisit the research questions and consider how the codes potentially help answer them. The ideas of possible results and ways to organise them to answer the research questions can be utilised to create a loose analysis outline (Tracy 2013, 197). The outline was drafted in a notebook gradually, as the understanding of potentially relevant topics to answer the research questions advanced. Some of the conclusions appeared to be evident from multiple interviews, and the saturation point was achieved. Some of the interview answers were unique and did not match the codes relevant to all seven interviews. Consequently, the exciting and relevant individual comments were given their codes based on the content's analysed meaning.

At this stage in the analysis, Tracy (2013, 200) emphasises the importance of finding data and claims supporting a possible hypothesis and evaluating the contrasting evidence. That assists in aligning the arguments with the evidence (Tracy 2013, 200).

3.3 Limitations of the study

This study's limitations mainly relate to four aspects: the research approach and having only one representative from each organisation to provide their perspective; relatively low response rate in the questionnaire; the ambiguity of concepts related to human participation in organisational foresight; and heterogeneity of organisations in sizes and fields of business.

The data was obtained by questionnaire and interviews from one person per organisation. Hence, the responses represent only the respondents' perspectives and interpretations as the representatives of the organisations. All respondents have responsibilities regarding foresight, and it is understandable if they would promote their own or their function's achievements. However, they may not be aware of all possible challenges the participants face or pre-assumptions that keep potential participants from participating in foresight-related discussions or activities. As the respondents' organisations vastly vary in size and business fields, the results may not be comparable in practice. By utilising different data gathering methods, including observations or interviewing multiple members in one organisation, the results could be different.

The questionnaire was sent to ca. 50 CFP -programme alumni, and only seven responded. Therefore, many potential participants or possibly controversial answers were out of reach of this study. There are countless reasons why someone participates or does not participate in a study. It is plausible that the ones who responded have found the questionnaire's topic exciting or valuable in the context of research; experienced the questionnaire convenient to fill; wish to learn more about the topic, or consider they have valuable information on the topic to share. Hence, it is believable that there is a bias in some direction that leaves perfect foresight systems or, on the contrary, terrible foresight systems, beyond the reach of this study. Moreover, with the seven questionnaire responses' and interviews' empirical data, the results do not represent organisational foresight practices in general, but only the focal organisations.

As was discussed in the literature review, the concepts related to foresight systems and participation in foresight can be ambiguous and convey multiple meanings. Although all respondents had studied in the CFP -programme since 2013 and can be assumed to have at least to some extent similar educational background in foresight, there is also a possibility that they all interpret foresight systems and participatory foresight differently. Additionally, the concepts' vagueness may have disturbed the informants from connecting all relevant real-life events, procedures or examples with this study's research topic and questions at hand. Altogether, respondents may have a different understanding of the concepts and experience on the practices than the researcher. That can have caused misinterpretations.

The interview time was limited and targeted to be a compact one-hour session to increase the interview invitation appeal. However, longer interview sessions could have generated more in-depth answers. Additionally, the medium used to conduct the interviews, an online video conferencing tool Zoom, can have affected the researcher's and informant's interaction compared to face-to-face -sessions and caused some subtle signals to be missed. This technology-mediated meeting was chosen due to COVID-19 -pandemic meeting restrictions. However, the Zoom provided an opportunity to record the audio and video format session instead of only conventional audio recording. That may have helped in transcribing as there was also facial expressions to support the message.

The interpretation of qualitative data can vary depending on who is coding and interpreting. Thus, the results could be different if someone else would analyse the data. However, the reliability was tried to increase by following a pragmatic iterative approach by Tracy (2013, 183) to analyse the data.

The data was collected in Finnish, and some nuances can have got lost in translation.

4 EMPIRICAL INVESTIGATION

This chapter is divided into two subchapters: First, the respondents, the organisations they represent and elements relevant to participation in organisations' foresight systems are introduced. The questionnaire and interview data are combined to provide an overview of the contexts. Second, the empirical investigation results, mainly interviews, are presented under thematic categories derived from the interview guide. However, some themes were reframed according to the interview material, and entirely new categories emerged in the data analysis phase.

4.1 Introduction of the respondents and the organisations

This study has seven respondents. Three of the respondents had participated in CFP-training in the academic year 2017-2018, two in 2015-2016, one in 2018-2019 and one in 2016-2017. Hence, all respondents may have received slightly different teaching during the programme.

All respondents represent different organisations. The organisations' sizes varied from around 40 individuals located in Finland to over 15000 employees in Europe. The fields of businesses, listed according to Statistics Finland (2008), included construction (one respondent), finance and insurance (one respondent), public administration (one respondent), other service activities (three respondents), other (one respondent). The business fields were specified in the interviews and can be found in table 2.

The CFP-training is targeted at individuals who hold management or research positions in public and private organisations. However, in this sample, only one of the respondents worked in the public sector and one in an organisation partly owned by a city. The rest six worked in private organisations, of which one is a social enterprise. The job titles or positions of respondents represent typical CFP-programme alumni. None of the job titles included especially foresight related terminology.

Table 2 Background information on the respondents and their organisations

	Field of business	Organisation size (indiv.)	Organisation's history with foresight		Title	Informant's responsibilities in foresight	Year of CFP
Organisation 1 (O1)	Other service activities / A non-profit expert organisation	10-49 (35-40)	The CEO has been interested in foresight and encouraged the use of foresight methods in the organisation. More systematic foresight processes since 2016.	**Informant A (IA)**	CEO	Responsible for foresight (additionally, all member of the organisation participate in foresight)	2015-2016
Organisation 2 (O2)	Other service activities / Recycling (social enterprise, in intermediate labour market)	250-(450)	Official "foresight" since autumn 2017	**Informant B (IB)**	Advisor, Strategy and Development	Only individual with foresight mentioned in job description.	2018-2019
Organisation 3 (O3)	Public Administration	50-249 (140)	Foresight started around 2012, personnel involved since 2017	**Informant C (IC)**	Senior Science Counsel	"I'm the one who runs our foresight system"	2015-2016
Organisation 4 (O4)	Construction	250-(17 000 in Europe)	Over 10 years technology related forecasting and research, but not systematic foresight	**Informant D (ID)**	Development Director	1 of 5 individuals responsible for foresight, all 5 represent different functions	2017-2018
Organisation 5 (O5)	Other service activities / Financial management services and information systems	250-(2500-in total in 7 countries)	At least 7 years of foresight activities in certain parts of the organisation. More systematic foresight for whole corporation 2-3 years.	**Informant E (IE)**	Service Design Manager	Participates in strategy development and service development (includes foresight), builds trend reports	2017-2018
Organisation 6 (O6)	Other / An advocacy organisation for private companies in industry x	10-49 (30)	Has always had futures orientation, but the concept of foresight was taken into use 2017-2018	**Informant F (IF)**	Head of Marketing and Research	Responsible for foresight function	2017-2018
Organisation 7 (O7)	Finance and Insurance	250-(4000, yet foresight targeted at 500 individuals)	The tradition of forecasting related to risk management and mathematics. Foresight related to changes in operational environment for the past a little over 5 years.	**Informant G (IG)**	Information Specialist	Part of the strategy function, which is responsible for foresight. Has foresight in job description.	2016-2017

An overview of the organisations' foresight systems

The questionnaire results provide a brief overview of what kind of foresight activities exist in the organisations, who participate in foresight, the explicit aims of foresight, and the organisational characteristics that can impact participation.

The questionnaire responses show that, on average, organisations use versatile foresight activities, methods, and tools, that potentially include multiple participants or are accessible to organisation members. Answers to the question 'What kind of foresight related activities there exists or has existed in your organisation?' show that organisations use foresight methods such as scenario building (71,43%), internal workshops (85,71%), workshops that include, for example, stakeholders (57,14%), systematic scanning of the environment and collection of signals (environmental scanning) (57,14%) and surveys (57,14%). One organisation has conducted a Delphi study for stakeholders. 42,86% of organisations use online foresight support tools that enable all organisation members to participate in signals collection, and 42,86% have a messaging platform or application (for example, Slack or Teams) for everyone to share signals and insights. Additionally, organisations provide other possibilities for the members of the organisations to learn about foresight and stay connected with the topic: they organise foresight related lectures (57,14%), share foresight related reports and other end products for the whole organisation (42,86%), invite feedback from the organisation members during the foresight process (38, 57%) and distribute regular newsletter (one organisation). However, among organised foresight related activities, all organisations report that the organisation members have informal discussions related to foresight, for example, during coffee breaks. That indicates that there exists two different kinds of participation: the more systematic and centrally organised, that goes under foresight 'umbrella' and the less organised and out of the reach of 'official' foresight, but which could, as it is identified, be potentially turned into the benefit of the foresight processes.

According to the questionnaire results, only in one organisation, all organisation members are expected to participate in foresight. However, in 57% of the organisations, all members have the possibility to participate. In 71% of the organisations, the person in charge of foresight participates. In 57% of the organisations, the participants change according to the projects, yet in 86% of the organisations, they are often the same ones interested in foresight. Top management and middle management participate in 42,86% of the organisations, top management but not middle management in one organisation and middle management but not top management in one organisation. Additionally, stakeholders or outside consultants can participate in 29% of

organisations. In summary, the categories are not exclusive and thus, it possible that some participants have been categorised under several titles.

In most organisations, foresight aims to support the strategy work (85,71%). Additionally, 57,14% of respondents selected other explicitly expressed aims such as support to today's decision-making, risk management, understanding of change factors, organisational learning or increasing the intellectual capital. Less than half of the respondents (42,86%) aim with foresight at mapping new business opportunities, innovations, benefiting from being able to proactively react to changes before competitors, organisational development and challenging the existing mental models. Finally, two responses were given to options' detecting signals before they strengthen' and 'building a shared vision'. Only one respondent selected all the 13 options.

The organisational characteristics create a context for participatory foresight. According to the questionnaire answers, the respondents' organisations already have in place practices and culture that can support participation: it is acceptable to present disagreeing opinions (85,72% agree or strongly agree), learning and building intellectual capital are supported (85,72% agree or strongly agree), teams and departments interact with each other (71, 43% agree or strongly agree), organisation members' initiatives can grow into practical experiments or changes in operational models (71,43% agree or strongly agree). However, on encouraging creativity and ideas sharing, the organisations vary: 57, 14% of the respondents disagree, and 42,86% agree or highly agree. Additionally, 57,14% of the respondents agree or strongly agree that there is a shared understanding in their organisations that foresight has value.

In the interviews, the respondents were asked to describe their organisations' typical foresight processes. This question was posed to learn if organisations' typical foresight processes would include participatory elements by default. However, having a typical, detailed and recurring foresight process was rare. O1 and O2 did not have typical foresight processes. IC from O3 described one typical process: collecting signals and change factors, sharing them in an online foresight support tool and dealing with the findings in workshops. ID from O4 delineated their typical customer process as always different, as they get organised according to the customer and project needs.

Nevertheless, the processes often include futures workshops and multivariate analysis with the next couple of years' time frame. IE from O4 uses foresight processes as part of the service development process and has created a bottom-up foresight model that aims at taking collected signals into action collaboratively. IF from O6 emphasised the importance of including qualitative and quantitative approaches as the starting point for their foresight processes. O7 described a typical process as a workshop with a prior assignment or trends voting, combined with

assessing the long-term impacts of the trends for the focal organisation. To summarise, the answers reflected slightly different perspectives on typical elements, but what can be concluded from the descriptions is that collaborative methods and tools are used in organisation's foresight processes, and one organisation can use a variety of foresight processes.

4.2 Results

The organisations' foresight systems seem to be far from self-organising systems. Someone is needed to be responsible for continuously keeping foresight showing and running if organisational foresight aims at organisation members' active participation. Most of the systems' participants do not at the moment collect and make sense of the signals as independent agents, establish foresight related projects or systematically use foresight as an integral part of their work processes without the assistance or facilitation of the foresight unit. However, not all organisations even aim at that. The aims of participatory foresight are diverse and can range from seeking answers to the identified needs to catching the available opportunities.

In this study, the respondents provided several reasons for aiming at participation in foresight: a need for every member of the organisation to be aware of changes in the operational environment, which accordingly, can assist them to make better decisions and spot novel ideas; a possibility to create a shared vision; a possibility to scan the operational environment broader and additionally, by sharing the findings, have in total more, and more versatile, signals; and increase the general awareness of foresight, which could generate more interest in and utilisation of foresight.

All informants brought forth that implementation of a participatory foresight system is a process. The organisations had run more or less systematic and participatory foresight systems around five or fewer years. All of them had either work in progress with overcoming challenges they had faced or were continuously developing new ways of working. Hence, it is possible that the aims of participation, the understanding of the realistic potential of the personnel for anticipation, and tools and methods that assist in utilising that potential to the maximum, constantly change. Additionally, the COVID-19 -pandemic had forced some organisations to adjust their participatory methods to meet the remote work needs. The changes in working ways can, in the long run, change how participation, communication and creativity will be organised and facilitated in organisations in the future.

Similarly, the resources the organisations use to educate their personnel in foresight may have a cumulative effect. If individuals find foresight beneficial and have people around them who speak the same new futures-oriented language, the foresight culture may gradually emerge.

Apart from one respondent, all reported positive attitudes among the participants in foresight activities. Consequently, there are good chances that the attitude increases motivation, which increases learning and correspondingly willingness to accept new ways of thinking as daily routines or as personal knowledge capital. Likewise, the respondents' effort to communicate the foresight benefits may impact personnel's interests towards foresight. However, organisational characteristics, structures, and culture affect the speed and depth of assimilation of foresight thinking.

There was a vast variation in ways foresight was organised in the organisations and integrated with other systems, processes, and working ways. There were compelling examples of connecting foresight with tools and methods from other fields, such as service design and collaborative development. In two organisations, foresight had been integrated into service development processes as a module. Among the respondents' organisations appeared to be exciting mechanisms, which had been utilised for other than foresight purposes, but could be useful for foresight as well: For example, one organisation had created a system or platform for ideas collection, including feedback for every idea submitted. Another organisation had 'circular economy' as an approach that could be implemented in any project – the respondent pointed out that if there are perspectives in the organisation that are perceived as valuable, they can potentially be integrated with any project. One organisation, which operates in the intermediate labour market, had already mechanisms to support inclusion, and the organisation utilised those mechanisms for the foresight to gain insights from all the personnel for their strategy process.

Additionally, three strategies to set the criteria for who should or could participate were identified in the interviews: by position, by interest or every employee is expected to contribute to future-related issues. Selecting participants by projects was according to the questionnaire used in more than half of the organisations. Moreover, the respondents provided many practical examples for supporting organisation members' participation in organisational foresight. Although foresight projects and processes are custom-made, they are not limited to specific organisations but can potentially be applied to different kinds of organisations to support participation. Similarly, the respondents brought up challenges that can be considered possible barriers to broad participation and organisational foresight.

This results chapter is organised as follows: First, the concept of participatory foresight in an organisational context is framed. That includes decisions related to the implementation of a

foresight system in an organisation. Second, the focus is turned into the potential participants and their diverse interests and abilities to participate in foresight. Foresight benefits are clarified, as they can be assumed to impact both the employees' and management's interest in foresight. Third, the practices that support participation in foresight are discussed in detail: the tools, methods, and language use. Fourth, the organisational characteristics and internal communication are examined as a context for participatory foresight. Finally, the change drivers related to the future of work and ways of participation are shortly discussed.

4.2.1 Framing participatory foresight

The respondents of this study were asked to provide definitions of participatory foresight. These definitions are contextualised with practical examples from the organisations' especially participatory foresight activities, processes, and projects. Additionally, all respondents provided a list of three features that, in their opinion, support human participation in foresight in their organisations. These perspectives assisted the researcher, and hopefully will assist the reader, too, from the beginning to discover how similar the definitions are with each other, and at the same time, how different the practices and enablers for participation can be.

The translation of the concepts from English to Finnish and back may confuse. The established Finnish equivalent for 'participatory foresight' is 'osallistava ennakointi', which refers to top-down 'participative' instead of bottom-up 'participatory', and according to Google search matches, there is no widely used bottom-up approach definition for 'participatory foresight' in Finnish. One respondent of this study accentuated the difference of the concepts, and thus it is crucial to be aware of the possibility of multiple meanings of the Finnish concept.

How participatory foresight is defined

The respondents emphasised collaboration and variety in views as key ingredients of participatory foresight. However, the informants stressed the elements they found important with slightly different expressions. IA emphasised the aspect of everyone creating something together and underlined the concept of co-creation. IB argued that individuals' needs for assistance must be taken into consideration to ensure everyone's possibility to be part of the foresight system indeed. Additionally, IB underlined that participation could be considered as sufficient if, after the decision-making or strategy building process, the individuals are satisfied with their

possibilities to have been able to participate. For IC, the concept of participation includes organisation members' possibility of impacting what is being done in the organisation and contributing in it some way - have a role in the process. ID had recognised the challenging scope of participation in foresight: participation could vary from short, facilitated sessions to foresight culture where everyone is responsible for foresight. ID argued for foresight as organisational culture as an ideal stage. For IE, participation referred to different types of experts from different parts of the organisation gathering around and pondering a specific challenge. IF included the definition of willingness to share both one's expertise during an activity and the notes made in the event. According to IG, participatory foresight can collaboratively develop something among the representatives from various units and seek a shared vision across the organisation.

Recollect an especially participatory foresight activity, process or project that has taken place in your organisation

The heading was used as a question to find out concrete examples of what the respondents mean when they use the concept of participatory foresight. The informants were asked to recollect and describe an especially participatory foresight activity or process that had taken place in their organisations.

In O1, everyone was invited to participate in the yearly strategy revising process, where half of the process was related to foresight. In O1, the especially participatory foresight activities are related to yearly strategy revising process. Every autumn and in some years around, the personnel are given a task by IA, the CEO, to collect weak signals. IA tries to involve everyone in the foresight activities. Around half of the strategy process concerns foresight as IA finds foresight helpful in building a shared state of mind, that assists to line the concrete measures and actions that need to be taken.

In O2, a year-long strategy building process included multiple participatory methods and tools, everyone was welcome to participate at least in some part of the process and assistance was available for organisation members who needed it to be able to contribute to the process. In O2 the strategy building process was ongoing for a year. The process included online tools, Forms for a questionnaire and Viima-tool to sort insights and vote for the most important and interesting. The questionnaire was targeted to 'key individuals', interesting individuals suggested by anyone in the organisation. A special feature in the process was that

the changing members of the personnel, who did not possess a computer, were enabled to participate. They received assistance from 'work coaches', who are permanent organisation members and whose responsibilities include assisting others. In addition to suggesting and interviewing the 'key individuals', everyone could participate in voting and sorting the findings using Viima-tool. Additionally, there were Delphi-surveys to external stakeholders and workshops for members of the board.

In O3, everyone was encouraged to collect signals over a period of time, and both to learn how to scan the environment and share the findings the way it would benefit everyone in their work. The signals were supposed to be made sense of together in a series of workshops, but workshops were postponed due to the pandemic. In O3, informant C encourages all the personnel to collect signals when meeting with international, external experts. The signals collecting process is ongoing and systematic through the autumns, as the organisation receives applications to grant funding and needs to be especially aware of what is going on in the world and what will be relevant in the future. The signals are collected for a collaborative online foresight support tool and analysed together. At this stage of the foresight implementation process, the analysis mainly aims to learn about foresight and analyse the signals, whereas the long-term goal is to learn to make sense of the signals. The informant had planned a workshop series for the last spring, but due to the pandemic, the organisation still waits for an opportunity to go through the signals together.

Informant D from O4 did not provide an answer related to participation in foresight. However, the informant provided an example related to collaborative development and circular economy. The connection to foresight was that by a multidisciplinary approach, which is typical to foresight as well, the organisation had been able to build circular economy principles as a glue that ties together everything they do and enabled them systematically include an expert perspective on circular economy in every project.

In O5, foresight was integrated into every service design workshop held by the informant during the past year. IE from O5 presented a model for collaborative design, or futures conscious co-creation. That brings together methods and practices from service design and foresight. IE' main responsibility is service design and all service design workshops the informant hosted last year included foresight as a module. The foresight module in the workshops included pondering about signals and their impact on the services and possible success factors for the services in the future.

In O6, a large foresight project was outsourced and included workshops and scenario building. After the results were published, O6 as an advocacy organisation held workshops for their member organisations to help revisit the outcomes and make it easier to implement the results. The foresight project included scenario work and the possibility of participation for all member organisations. The end product was two scenarios. Both the scenarios and the tools and methods used during the process are still available online for everyone to utilise whenever needed. A special addition to the project was the implementation phase that included workshops, which considered already published results of the project and provided an opportunity to dig deeper into the content; the aim was that the project results would be easier to take into action.

In O7, individuals from all over the organisation took part in a process that aimed to create an understanding of driving forces that could impact the group strategy and to build a genuinely shared vision for the future. Participants in the process were from all over the organisation. The process aimed by broad participation at overcoming a challenge, which according to the informant is very common in organisations: there exist multiple visions for the future in the organisation, and creation of one shared vision requires finding the shared nominators to build on.

The most important features that support human participation in organisational foresight

The respondents were asked to provide three examples of elements that support human participation in foresight in their organisations. The answers reflect the organisations' specific characteristics and culture. However, some of the answers could be interpreted as more universal and transferable. What is interesting is that depending on the organisation, the supporting factors can be almost opposite to each other: very structured processes and tools were seen as enablers in a hierarchical organisation (IF), whereas, in a flat hierarchy organisation, curious personnel and the purpose of the organisation were among the key enablers (IB). To summarise, every organisation can benefit from identifying their enablers and possibly the barriers and building their participatory practices according to those.

Table 3 Three most important features that support human participation in organisational foresight, listed by the respondents in their own words.

Informant A	1. Low hierarchy: everyone's know-how and contribution are equally valued. 2. Need to continuously think about the future: we have to continuously create new future-oriented concepts, as we need to constantly apply for funding. 3. As a non-profit organisation, all additional funding has to be spent on development of the organisation. That keeps the development of new ideas consistently running.
Informant B	1. The purpose of the organisation and the field of business is to ensure there will be a future… 2. …which leads to that our personnel and individuals that seek to work in the organisation have a strong personal futures orientation. Our personnel is curious. 3. Our democratic organisational culture in general can be linked with participation: we have coaches and individuals, whose responsibility is to assist in participation, when needed.
Informant C	1. All are equally important and valued. 2. We have a tool, where everyone has access to. 3. Foresight is visible all the time and is being valued at the organisational level.
Informant D	1. Customer needs: If a customer has a need that requires foresight approach, then foresight can be involved. 2. Personal interests: individuals, that are interested in foresight, seek positions related to that. 3. Scope and scale of the projects: big cases can involve a lot of people, whereas small cases just a few.
Informant E	1. Need to renew strategic business activities. 2. Need to develop knowledge capital. 3. Need to respond to customer needs.
Informant F	1. Awareness, that future-oriented decisions need to and can be made today. 2. Research funding, which makes possible to purchase data. 3. Supportive attitude towards foresight: it is seen as valuable and thus encouraged and financed.
Informant G	1. Well defined structure and process for foresight. Similar process can be utilised with every project and participants can join clear cut process. Thus, the processes can be controlled in time and workload. 2. Tools: specific methods and for example online foresight support tool facilitate the process. The tool is part of the structure.

4.2.2 Implementation of foresight in an organisation

The methods and mechanisms to implement foresight in an organisation can be considered a relevant issue related to participation, as they can impact how prepared the organisation members are to participate, how familiar they are with the aims and principles of foresight and how the organisation members can learn the skills that encourage them to contribute.

The implementation theme was introduced to the informants by following an implementation approach by Voros (2003): education and introduction of foresight concepts come first and methodology through foresight exercises second. The approach is based on the thinking that by first developing a personal yet simultaneously shared foresight vocabulary, the organisation's members can fluently communicate about foresight-related issues also in informal encounters. That, little by little, makes talking about the future natural. (Voros 2003, 11-12.) Likewise, Slaughter (1996, 753-754) argues that organisational foresightedness can gradually be built by first educating individuals and developing a personal futures discourse proceeds using tools and methods. Consequently, the organisation members should be able to participate in foresight and utilise foresight thinking.

Additionally, implementation requires practices that help keep foresight alive between projects (Voros 2003, 12). Exposing organisation members continuously to foresight could assist them to become familiar with the topic. Voros (2003, 12) had edited a regular, foresight related newsletter to serve the purpose.

This chapter is organised as follows: first, the informants describe the foresight education in their organisations. Second, the processual nature of implementation is discussed. Finally, the strategies that assist the organisations to keep foresight alive between projects are presented.

Reflections on the need of and ways to organise the education phase

The informants had different understandings and experiences on how to organise the education phase and whether it is relevant at all. Some argued that separate education is unnecessary and foresight can be learned by practice. Most organisations did not have systematic processes to educate all potential participants, yet all respondents or the foresight functions had provided

some education, assistance, supporting material or answers to the emerging questions related to foresight.

O1 did not have separate foresight education. Their method was learning by doing. IA had repeatedly explained the methods and tools available and their usage during their annual strategy revising process. That had not been as efficient as it would be through a specific foresight education (IA). Consequently, IA had tried to frame the foresight tools and methodologies as beneficial for the experts in their daily work and when planning projects relevant for the future. However, IA was uncertain whether the organisation members could independently make foresight related decisions or choices, for example, regarding proceeding with some processes.

In O2, foresight had been introduced, especially for the executive board and expert officials. The organisation had provided education on foresight concepts and their operationalisation for the permanent personnel in workshops and meetings (IB). Nonetheless, IB sees that building a shared foresight culture and forward-looking attitude in the whole organisation would be essential (IB).

O3 had organised a pilot foresight project, which included multiple rounds of education within the pilot group and short educational events and workshops for the personnel about the nature and aims of foresight work. O3 had organised, for example, workshops on how to scan the environment. IC described that as efficient as those had assisted the participants to learn about the nature of foresight.

O4 has no specific education for foresight. The perspective of foresight can be covered by being systematic and asking questions (ID). Only a small share of the organisation members had assumably been exposed to foresight concepts or thinking; possibly, the ratio is one or two in ten (ID). Additionally, ID pointed out that the senior project managers can be assumed to automatically have an ability to see broader entities and understand future-related issues.

O5 has no separate foresight education. IE disagreed with Voros and argued that the agile way would be to start doing and simultaneously create a language and concepts that the organisation can share. Concepts in line with the terminology already in use in the organisation can be easier to assimilate than particular expert language (IE). Additionally, individuals who are not aware of foresight as a field can still scan and share future probing signals from their business fields (IE).

In O6, material that enables participants to prepare for workshops thoroughly serve as foresight education.

O7 had a systematic approach to implement a foresight system in the organisation. The foresight system, foundations of foresight and connections to strategy had been introduced to all

executive committees of the group in foresight workshops. Short presentations on foresight and related concepts, such as trend analysis and tools available for it, had been given for the personnel. All the study material was available for everyone online. In total, hundreds of members of O7 had been exposed to foresight. As foresight responsibilities were connected with positions, changing personnel was continuously re-educated to foresight. (IG.)

Implementation as a process

The processual nature of implementation is a theme that emerged in the interviews. Six of seven informants noted that implementing participatory foresight in an organisation was an ongoing process, and the scope of implementation or participation was not yet sufficient. However, the 'ideal' where they compared to or what they expected participation should or could be, was not further discussed but could be an exciting theme for further studies. IB emphasised that the sufficiency of participation could be approached from the participants' perspective: are they satisfied with their possibilities to have been able to participate in the decision-making or strategy building processes.

Implementing new practices and ways of thinking in an organisation can take time. IB argued that years of work could be required until foresight becomes embedded in organisational culture. In O2, it was still dependent on individuals' skills and interests in foresight whether they would or would not collect signals when in meetings with external stakeholders (IB). IC described O3 as being at a turning point in the implementation process: until now, the individuals had learned to scan the environment and utilised their findings to develop their working skills towards future work-life requirements. From now on, the organisation should be able to tie foresight tighter to the yearly planning cycle (IC). ID reported that O4 still lacks being systematic and organised related to foresight, and there was an ongoing debate in the organisation whether that is a problem.

IG provided two possible reasons for the processual nature of implementation: one, the changing personnel, which means that the level of capabilities is never stable but constantly evolving, and two, the relative unfamiliarity of many individuals with foresight thinking and concepts.

Keeping foresight alive between projects

The respondents were asked about their strategies for keeping foresight in mind of their organisation members between the foresight projects and activities. Where Voros (2003, 12) edited a regular, foresight related newsletter to keep foresight alive, the respondents of this study followed three different strategies: one, no active contacting to the members of the organisation in foresight related issues between projects: two, active stimulation of members of the organisation in foresight related issues; three, provision of a location on the intranet, where everyone can access foresight related content independently at any time. However, the practices to keep the organisation members systematically and continuously exposed to foresight were sparse.

The pursued strategy may depend on several reasons and may not always be thoroughly planned. For example, a small organisation where people interact may not need official foresight communication means, such as newsletters, to spread the message (IA). Organisations can have newsletters, but they do not include foresight related content (ID).

IC posts ‘teasers’ in the intranet every two or three weeks for all personnel to activate them to utilise foresight thinking. The teasers include a message, instructions on how to proceed with the signals the personnel collects, and an option to contact IC for assistance. IF:s organisation sends a weekly newsletter, where they, in addition to other content, refer to their published foresight reports. The newsletter also promotes the receivers the possibility to book IF for short lectures on foresight. Additionally, the newsletters can be perceived as a tool to keep up the hope for the future (IF). When the foresight function of O7 publishes anything foresight related, for example, reports, they always bring out something about it for the whole organisation to activate the discussion. They also invite comments and feedback (IG).

Organisations B, C, F and G have a place on the intranet, where foresight related material is available for all organisation members anytime. However, this strategy may need to be accompanied by activating practices to avoid the scenario IB described: no one else except those who have assigned foresight roles may ever visit the place.

4.2.3 Members of the organisation as foresighters

Every participant and potential participant is unique and their skills, interests, characteristics and pre-assumptions on foresight can affect their willingness and possibilities to participate. ID argued that if organisational foresight lacks on participants with multidisciplinary background, significant perspectives may remain unnoticed. Accordingly, the customisation of activities, creating opportunities to share conceptions about foresight and facilitation are important means to support organisation members the organisation wishes to include, to participate. However, organisations vary and for example organisation size, structure and culture can effect on the criteria for selecting participant and the possibilities to take part.

How to identify the individuals interested in contributing to organisational foresight

Active promotion of participation possibilities and foresight contents could be one way to attract and identify the individuals who are not sure, for example, about their foresight capabilities and need some encouragement to join in. However, none of the interviewed organisations had a systematic procedure to spot the individuals interested in participating in foresight but could not access it at the moment or would have exciting ideas and thinking the organisation could benefit. Some informants explained their practices: In O1, every member of the organisation is expected to contribute to ideas creation. In O7, on the contrary, foresight responsibilities are mainly related to the position instead of personal interests. In these cases, it would not be relevant to have specific procedures to map all personnel's interests. However, organisations do host foresight related internal networks, where anyone interested in actively contributing to foresight can join. For example, O2, O3 and O7 have networks of 'active individuals' around the core foresight team.

Who are included in organisational foresight?

Organisations have different approaches on who should or can participate, and it varies from 'everyone', 'by interest', 'by position' to 'by project or activity'. Although 'by expertise' was not explicitly expressed, the position or project needs can imply looking for certain expertise

types. ID points out the value of experts with executive power in some cases. Some organisations have a relatively stable structure of a core team and surrounding active individuals' network to share foresight related responsibilities to support the foresight system's functioning. However, they still have other participants in the foresight activities, as well.

In O1, everyone is responsible for participating in foresight and, for example, collecting signals. In the organisation's yearly strategy revision process, which includes foresight activities, every member of the organisation is included.

In O2, not all members of the organisation have participated in foresight. All employees may not receive foresight education but can provide signals and participate in some facilitated foresight activities. The foresight function includes IB, a group of 2-3 individuals responsible for foresight-related issues and a network of around 30 active individuals. In the network, the individuals change as they have other responsibilities as well. The network includes three types of participants: individuals, who are naturally interested in foresight; individuals, who have been invited to join; and individuals, who have been identified in the organisation as 'seems to be interested in foresight' (IB).

IC in O3 has built the foresight system based on the thinking that everyone participates. "Everyone, who is interested in foresight, can join, yet no one is forced to join" (IC). Already 120 of 140 organisation members have accessed their online collaborative foresight support tool. The foresight function includes the core team of IC and three other individuals and a network of 20-30 active individuals where anyone interested in foresight is welcome to join. However, IC points out that there is a lack of core team resources because individuals have other responsibilities to take care of or change positions. IC tries to recruit more members to the core team.

In O4, participation and access to foresight related projects or processes depend on the projects' needs and nature. O4 has three types of foresight related processes that include participation: internal and open for every member of the organisation, such as hackathons and competitions; internal and by invitation only, such as strategy building, where ID finds 3-4 critical experts with executive power sufficient; and a mix of experts and stakeholders, by-invitation-only and by interest. ID argued that in large projects having at least some of the participants invited serves as a guarantee that the outcome will be sufficient and at the expected level.

In O5, the Head of Strategy has the overall responsibility of foresight in the organisation. There are operational managers, as IE, who use foresight tools and methods as part of their work when finding them useful. In IE's work, foresight is connected with service design, and last year every service design workshop included a foresight module. Everyone related to the

focal product will participate in the process at some point, also the end-users. However, from the personnel of 2500, only around 200 had participated in foresight activities. Workshops are primarily by-invitation-only due to the need to optimise resources and guarantee that there will be needed expertise present. Nonetheless, O5 had experimented with 'open to everyone' workshops, but people did not have time to pop in. (IE.)

All member organisations of the advocacy organisation O6 can participate in the foresight processes when their thoughts and views related to the future are asked. IF conducts a major part of the foresight studies of O6. Additionally, they have foresight related workshops, where various stakeholders are included and a strategy team, including individuals from various positions in the member organisations.

In O7, foresight function is targeted mainly at experts and managers in the organisation, yet the knowledge produced is open to all organisation members. The strategy function is responsible for foresight and utilises its internal network of foresighters in various organisation units for foresight-related issues. In O7, foresight is attached to the position instead of personal preferences. For example, some managers and development manager are expected to participate in foresight work. The foresight function includes a core team of 10 people and an extended network of 50 individuals. Already a few hundred members of the organisation have participated in foresight activities. However, a large organisation has variety in how the units organise participation, for example, in service development: in units with lower hierarchy, more individuals can be included in development processes. In contrast, in units focused on services, the personnel' time is strictly allocated to tasks that need to be accomplished, and they may have less time to take part in development activities. (IG.)

Attitudes towards foresight

The theme of attitudes emerged in the interviews. The respondents reported they had observed mainly positive attitudes towards foresight in their organisations. IC, IE, IF and IG had noticed that the organisation members had perceived foresight itself and opportunities to ponder futures-related issues as interesting and motivating. Additionally, IG had observed the most positive attitudes among the individuals who work in development positions and have foresight included in their job. Positive attitudes could support participation in foresight and decrease the foresight team's pressure to 'sell' foresight to the organisation members. Conversely, the lack

of time for foresight was reported as a barrier to participating in foresight, indicating that positive attitudes may not always lead to active participation.

The positive attitudes towards foresight were described to be visible in various contexts. The personnel had been pleased to participate in the strategy process, and collaboratively build the strategy (IA). People who participated in a workshop on changes in the operational environment, seemed to be genuinely interested in the topic, had multiple ideas and appeared to be woken up to the foresight thinking (IC). In O5, where participatory foresight is included in service development processes, participants had found foresight inspiring and experienced pondering about alternative futures as interesting (IE). IE had interpreted that foresight activities as a possibility to consider multiple perspectives had increased individuals' interest in futures consciousness. When launching the participatory foresight activities, IF had heard comments such as "now this is good, we have the possibility to think about the future". People had been motivated to participate in foresight and perceived it as new and interesting (IF). IG from O7 had remarked, that instead of any need to motivate, the individuals had experienced foresight as beneficial and even longed after an opportunity to ponder future and issues related to changes in the operational environment more systematically.

IB was the only one who described other than positive attitudes. IB argued that more than the lack of time or the usability of foresight tools at hand, the willingness to understand the world in a new way and look for signals both in work and leisure time contexts defines who in reality actively participate in foresight. IB had got an impression, that over half of the personnel would be pleased if 'someone else' would do the anticipating. Consequently, the level of interest in integrating foresight thinking in work practices, varied (IB).

Individual organisation members perceive foresight differently

Knowing the organisation members, their skills and interests, and adjusting the foresight system accordingly could increase individuals' motivation or possibilities to participate in foresight. Additionally, IA argues that getting all organisation members assimilate similar mental map may not be an easy task in larger organisations. These aspects are relevant especially in projects and processes, where application of foresight is not a built-in feature but depends on individuals' preferences.

For example, in O4 utilisation of foresight is related to the team leaders' interest and capabilities in foresight (ID). Similarly in O7, when foresight is not part of every new project, choosing to include foresight when starting a new project is highly dependent if the leaders have a foresight perspective (IG). Straightforward and easily implementable foresight processes could solve the problem partly, but individuals' reluctance to conduct foresight can lead to superficial utilisation of the tools and methods. The underperformance in foresight may derive from several reasons.

Although all organisation members would be expected to participate, not all contribute with the same enthusiasm, expertise or time consumption (IA). Individuals are different and it seemed to be a widely shared experience among the respondents, that it can affect organisation members' capability or willingness to participate: some individuals are more interested in foresight or organisational development than others, and some are better in long-term thinking than others, be it due to their background, experience or something else. The respondents described that some organisation members are more into planning and design opposite to the ones who enjoy more practical or concrete tasks, and some individuals are more open and loud, in contrast to the quiet ones. Additionally, it was seen understandable that even the motivated ones can face challenges, as learning new habits is not always easy (IC).

Correspondingly, individuals' competences are not fixed. One's ability to scan the environment can be connected with the possibility of receiving education to learn the skill (IB). IC had noticed that the workshop-setting and facilitator's encouragement had helped some participants change their mental models. Additionally, by accepting the individual differences and distributing tasks accordingly could allow the individuals to enjoy and succeed in what they do (IA).

The respondents identified seven individuals' characteristics, pre-assumptions or perspectives, that can affect organisation members' contribution to organisational foresight:

- Some individuals see the future and uncertainties as frightening, whereas some always search for the new (IA, IB).
- Individuals find different details relevant. They differ in how they understand the value of foresight for their work and intellectual capital, and how they perceive and interpret signals. (IA, IC, IE)
- Individuals have different perceptions on what kind or whose future is most relevant: is it that of their own, the organisation's or humankind's. (IB)

- Individuals have different pre-assumptions on foresight: from one future to alternative futures, from hard evidence to acceptance of interpretations and on the value of ideas if kept hidden or shared with others, for example. (IC, IF, IG, IG)
- Practicalities and operations of today are easier to understand and value than the unknown future. (IB, IG)
- Individuals hope 'someone else' was responsible for foresight (IB, IC)
- Individuals need different formats for participation (IA, IC, ID, IE, IF)

4.2.4 How foresight is motivated in the organisation

Clearly articulated benefits of foresight can motivate individuals in various positions to participate in organised foresight activities and proactively proceed foresight thinking in their daily work. However, individuals may perceive the benefits differently depending on whether they consider their personal advantage or long-term success of the organisation.

Benefits of foresight for individuals and organisation

Benefits of foresight can be explicit and planned, or they can be more implicit and accumulative. In all organisations who participated in this study, one of the pursued foresight aims was strategic planning or provision of input in the planning process. Additionally, IA and IG argued that foresight has an important role in building a shared vision in the organisation. IB had understood that the top management saw the value in foresight as a method to develop new business models. In the foresight system plan by IE the goals of foresight were simultaneously organisational learning and business planning.

In addition to explicit foresight aims, foresight can benefit an organisation by creating a space for various perspectives to be brought together to build something bigger. IG argued that one reason to introduce the foresight theme in the organisation was to avoid compartmentalisation and increase knowledge sharing across the organisation's borders. IB had experienced foresight as an ice breaker for increasing collaboration across functions and described foresight activities that included collecting, sharing and bringing together signals from multiple fields and of various change trajectories, as efficient. Additionally, IF reported foresight having brought together perspectives from separate fields of business or silos and helped build a holistic understanding.

The theme of foresight as a method or tool to assist organisational learning in developing work emerged in the interviews. O7 had followed the current participatory development trend and was aspired to provide the even greater part of the personnel members possibilities to impact their own work and take part in the service development processes (IG). In organisational foresight the organisation had similar aims (IG). IE had noticed that the participants of foresight activities were energised by the possibility to ponder something beyond their daily routines, tune their own work and increase personal knowledge capital. IE argued that foresight could create space for moments of awakening: suddenly, one could find something new and unthinkable and come up with possible impacts of it for oneself, too.

Correspondingly, IB emphasised foresight as a way of thinking that increases awareness of changes and future needs. An individual and the organisation can simultaneously benefit from learning processes, as in O2: Foresight was used first as a tool to assist organisation members to identify their skills and development needs to strive in the work-life of the future (IB) and second, the findings served as an input in the organisation's new system for personnel's education needs mapping (IB). Following from there, the acquired knowledge and understanding is planned to be utilised to co-create a PESTE-table to collect personnel’s feelings about COVID-19 and its possible impact on the personnel's work in the near future (IB). As a result of these kind of activities, individuals could be more motivated to learn and assimilate foresight thinking as the benefits are explicitly expressed and the knowledge can be valuable for multiple separate processes.

How the members of the organisation are being motivated to participate in foresight

As presented earlier in the results section, the attitudes towards foresight had been identified as mainly positive. This could decrease the need for external motivational efforts. However, individuals still make decisions on how deeply they wish to engage and at which level to contribute to foresight, based on multiple factors and changing circumstances. Consequently, one way to support participation could be to turn the benefits and aims of foresight into motivational factors. The informants had identified features in foresight systems to support participation and some described how they had tried to engage the organisation members in foresight. Five approaches that could motivate organisation members to participate in foresight were recognised in the interviews:

- Support learning by providing feedback (IA, IC)
- Accentuate foresight as a possibility to share and co-create (IA, IB, IC, ID, IF)
- Provide well-reasoned benefits for participation (IC, IG)
- Make participation convenient, efficient and appealing (IC, IE, IF)
- Introduce foresight as a solution (IF)

4.2.5 Foresight practices that support participation: tools, methods and use of language

The accessibility of foresight materials such as data and reports, availability of foresight tools and methods, and inclusiveness of foresight activities can all support participation. However, it is not straightforward that specific foresight methods would guarantee high quality and participatory foresight. Moreover, the combination of methods and tools of futures studies, methods and tools from other fields, and practises that support learning and making sense of the futures perspective and insights could be a key to more participatory organisational foresight

Tools and methods that support participation

Foresight methods the focal organisations use are described briefly in the introduction of the organisations. Recalling from there, the responses to the pre-coded questionnaire indicate that workshop is the most widely used participatory foresight method in the organisations, as it was in use in 6 organisations. Scenario building, which in many instructions include participatory phases, was in use in five organisations. Surveys, that four organisations used can be included in participatory methods, although they may not include interaction or feedback. However, for example, environmental scanning (in use in four organisations) as a method is not explicitly participatory, yet it depends on how the task is dispersed.

Additionally, organisations can use digital tools and platforms to support participation. Online foresight support tool was in use in three organisations. It enabled organisation members to collect and share signals in a specific location, where everyone had access. Similarly, a messaging platform or application that included foresight related communication but was not specifically a foresight tool, was in use in three organisations.

The organisations benefit from different combinations of tools, methods and approaches to encourage and support organisation members to participate in foresight. However, it is challen-

ging to evaluate if it is a particular combination of tools, methods and organisational characteristics that eventually generates the benefits of participation. Moreover, it is possible that continuous exposure to foresight through other, more familiar topics, processes or practices, could increase the awareness of and interest in foresight. Overall, rooting foresight broadly and deeply in the organisation requires a broad toolbox from the foresight function. Accordingly, the methods, tools and practices organisations use, in addition to methods of futures studies, are listed below:

- Platform or a place on the intranet, where everyone can easily share their signals in (O1, O3)
- Instant or informal events that support individuals to upload the signals in the system (O3)
- Assistance and guidance for the ones that have challenges in taking part, be it due to lack of tools or challenges in thinking alternatives (O2, O5)
- Clear focus in a workshop so that individuals can understand the aim of the activity (O5, O7)
- Utilisation of other than foresight related methods, for example collaborative development or service design (O4, O5)
- Utilisation of tools, be they digital or tactile, for example Trello-platform or Megatrend cards by Sitra (O5, O6)
- A follow-up for a foresight report, for example by organising a workshop, publishing something about the report to activate discussion or contacting individuals in different business units to spread the message (IF, IG)
- Sharing of notes and inviting feedback after a workshop (IF)
- Integration of foresight as a module in development processes (O5, O7)
- Alignment of foresight methods through business units (O7)

Additionally, in the pre-coded questionnaire question related to foresight activities in organisations, the following options supporting participation were selected:

- Organising foresight related lectures (O2, O4, O5, O6)
- Sharing foresight material published by external operator, for the whole organisation (O2, O3, O6,O7)

- Sharing internal foresight related reports and other end products for the whole organisation (O4, O6, O7)
- Inviting feedback from the organisation members during the foresight process (O4, O6)
- Foresight content in a regularly distributed newsletter (O6)

Use of language

Respondents IA, IB, IE and IF brought up the connection between language and broad participation in organisational foresight. The use of common language or shared concepts instead of special foresight vocabulary was seen as an enabler for participation. The respondents saw the use of common language as a positive thing when discussing about future or facilitating foresight activities targeted at all personnel. Accordingly, it is possible that a shared language could generate foresight related discussions also in informal occasions or assist in bringing informal foresight related discussions in the organisations more systematically into the context of 'official' or actionable foresight.

The use of language emerged as a relevant topic in various contexts. In O1 individuals had discussed future related topics and shared ideas that include a long-term perspective, but without using the tools or terminology of futures studies (IA). IB from O2 favours the use of very concrete terms and questions, such as 'how the world would change?', 'what the organisation should be like?' 'in which kind of organisation you would like to work in?' in foresight projects that include all personnel. In IB's opinion, the participants invited to think about the future do not necessarily need to know they are 'practising foresight'. IC emphasised the use of language that everyone can understand especially in discussions with the customers. IC's method is to create a shared foresight vocabulary collaboratively with the organisation, 'our own language' and 'our own concepts'. When the new terminology is aligned with the organisation's existing terminology, it could be easier to adopt (IC). IF underlined, that the participants of foresight activities can be familiar with the concept of 'expert interviews', although the word Delphi would not be included in their vocabulary. The use of professional language that people don't understand, may even lead them to refuse listening (IF).

4.2.6 Communication in an organisation

Internal communication of an organisation seems to connect with participatory foresight, be it in the form of, for example, availability of information, how information flows among organisation members or how organisation members are used to sharing their insights. In other words, communication and foresight can be so intertwined that it is challenging to draw the line between organisational communication culture and especially foresight related communication. Consequently, if there are challenges with organisational communication, they will be visible also in foresight related communication.

ID described the challenges of unorganised communication for foresight: various communication channels and methods decrease the systematicity of data collection and transparency: the relevant foresight information can be dispersed in various locations instead of one shared place everyone could find it (ID). Consequently, ID argued that it weakens the essential multidisciplinarity of foresight if individuals can find only the information produced by their own 'silo' or department, instead of easy access to knowledge created in another' silo'.

If the organisation members are not used to share information and insights horizontally and vertically, top-down and bottom-up, it can not be expected they would instantly start doing so with foresight related issues. Moreover, the overall communication culture may impact how the foresight system succeeds in reaching the individuals potentially valuable for organisational foresight and utilising the information and knowledge already in the organisation. It can even harm the innovativeness if different kinds of people and contrasting perspectives do not meet.

The informants had identified three intersections of foresight system and communication culture that are relevant when considering organisation members' participation in foresight:

First, there are informal discussions. Every respondent selected informal discussions from the list in the questionnaire concerning foresight activities in their organisations. The topic was further discussed in the interviews. The informants described informal discussions as something that takes place over lunch or coffee, group chats in WhatsApp -instant messaging application or meetings with the customers and external experts. However, many of the respondents reported difficulties in utilising the information, signals or ideas emerging from these informal encounters, in foresight purposes. The difficulties include: individuals may not detect the relevant signals, individuals do not know where they could or should report on the signals (was there a place for these, who is responsible for reporting etc), the informal discussions take place on applications that do not directly communicate with the digital systems of the organisation (the content can not be stored by the organisation, only by participating individuals) and the

differences in ways the functions make notes, which makes information challenging for anyone else to interpret although the data was open.

In addition to the description of informal discussions above, some of the respondents mentioned informal foresight discussions in one-to-one settings. IB reported that individuals sometimes shared their findings personally with the informant. IE had noticed that some individuals found it more comfortable to share their insights with the facilitator only instead of the whole group. IE had also received emails from the participants of foresight activities concerning signals or foresight reports. IG has experienced that although O7 had an online community related to foresight, it was rare that the discussions would evolve very thorough there, but in one-to-one conversations instead. These examples suggest that the communication skills and personality of the organisational futurist or other individuals responsible for foresight function can play a significant role in activating the organisation members to contribute to foresight.

Second, the culture of ideating new things together and sharing insights on possible opportunities. The ideas creation and sharing culture will be discussed in detail in the next chapter (organisational characteristics), but its relation to communication is relevant. If individuals are used to sharing their insights and opinions across hierarchies and functions, and some official channels and opportunities support doing so, that potentially supports participation in foresight. For example, in the low-hierarchy and informal O1 where everyone is expected to participate in foresight, aims at openness, equality and Teams-application communication, everyone communicates 'by crossing all possible borders' (IA). In contrast to low-hierarchy O1, the foresight function of relatively high hierarchy O7 aims at active discussions with the business units about available foresight tools. This pro-active promotion of foresight had led, for example, to collaboration between the foresight unit and the human resources unit in the form of 'Month of Futures Skills', invented by the human resource unit (IG). Additionally, O4 hosts hackathons, although not explicitly marketed as foresight related, to gain innovations. The hackathons are promoted as open for any organisational member to join and provide their solutions.

Third, the openness and access of foresight content. In O1, O2, O3, O6 and O7 all foresight reports and summaries are available online for all the organisation members. Moreover, IG underlined that openness in sharing the end products of foresight work is at the core of the organisation's foresight system. O7 tries to immediately publish the reports and workshop conclusions, invite feedback, and spread the information both horizontally and vertically as widely as possible (IG). However, the challenges in this kind of information availability are that it may too easily turn into unidirectional communication, where the organisation members know the

information exists but not how to utilise it in their work. Consequently, it is essential to support multidirectional communication, both formal and informal.

Challenges: how to utilise informal discussions and systematically collect signals available

To utilise the informal discussions as input for foresight processes, the informants had made different interpretations on how to proceed. One answer could be to build a culture, which would enable all members of the organisation to use the future's perspective and educate both individuals and different functions to scan for the signals relevant to the organisation (IB). The importance of scanning for the signals when meeting with external experts can be underlined for the organisation members (IC). However, the observations are rarely shared across units unless there is a convenient process for that (IC). IC has aimed to solve the problem with an online collaborative foresight support tool as a place for everyone to contribute anytime. In O5, the collection of signals from customer appointments was not systematic enough, and the organisation did not have a proper platform for it, argued IE. ID revealed that they were piloting with a roles system, which should bring clarity into the responsibilities of writing down the interesting ideas discussed in coffee breaks and systematically report them forward inside the organisation.

4.2.7 Organisational characteristics related to participation in foresight

Equally as important as internal communication in how convenient the organisation members find contributing to foresight and sharing their vague and undefined observations can be the organisation's culture of ideas creation and ideas sharing. Other potentially impacting organisational characteristics, discussed in the interviews, were diversity of cultures in the organisation due to acquisitions, silos due to complex organisational structure, organisation's hierarchy, organisation size and task allocation.

Culture of ideas creation and sharing

The culture for ideas creation and sharing varies from organisation to organisation. For example, the foresight system in O7 bases on a structure instead of culture: it includes well-defined

processes, methods and tools, and participation in foresight is related to a position (IG). Individuals can participate and ideate, but it is not an inbuilt feature of the organisation that would be systematically proceeded (IG). In contrast, in O1 everyone is expected to participate in foresight, and there is a culture of continuously probing in the future as developing new concepts is the core of their business (IA).

Organisations have different needs for ideas and innovations, and they utilise various sources to find those. Essentially the utilisation of organisation members for insights generation and signal spotting can be seen as related to the understanding of whose ideas are seen as valuable: is it explicitly expressed that everyone's ideas are needed for the foresight (IA, IC) or are the foresight activities more interested in expert level participants (ID, IG). Moreover, there can exist an underlying belief or experience that the organisation members are able to provide surprising ideas that could create value (IB).

Correspondingly, organisations can have processes or mechanisms to invite ideas from organisation members and support their creativity, but the mechanisms do not always function as hoped or are only narrowly connected to foresight.

For example, O2 has a channel for insights or development ideas and everyone with the organisation's email address has access to it (IB). However, it is not much utilised (IB). O7 has a mechanism to invite organisational members' insights about specific topics, a 'Place for Ideas'. Nonetheless, the mechanism has not been used for foresight purposes yet (IG). O4 has active informal discussions in instant messaging applications, other applications and discussion groups formed around a specific technology or business fields. In the fast speed discussions, futures knowledge and multiple other perspectives are mixed. However, ID argued, if the multiple platforms and channels are not specially connected with foresight processes, the ideas may remain dispersed and never reach the ones who could benefit from the information outside the specific field, unit or project. Then again, O4 organises hackathons and competitions that serve as a format that invites all organisation members to solve problems and develop new services.

Ideas creation can face challenges if there are no possibilities to utilise the novel ideas or organisation members are overloaded with constantly introduced new projects. IB described the challenge of O2: they come up with too many ideas, almost endlessly, and members of the personnel continuously have overlapping projects. However, the constant innovation of new projects is yet only narrowly connected with foresight.

Although the culture of ideas creation and sharing would not be deeply embedded in the organisation, some methods can be used to support it: two of the informants mentioned facilitation. ID emphasised the value of facilitation methods in pursuing the individuals to share their

insights in a workshop setting. IF pointed out, that if the participants see each other as competitors and thus may not be willing to share their most valuable and novel ideas for example in workshops, the foresight activities can be facilitated the way they only concern issues or aspects the participants have mutual interest in.

Organisational characteristics

Organisational characteristics that possibly influence on participation in organisational foresight, are listed below. However, is not straightforward that some characteristics separately would support or hinder participation. As a foresight system is built in an existing organisation, it is relevant to consider if the changes could be achieved by adjusting the foresight system or should the change begin from organisational characteristics, which in turn would effect on organisation members perceptions on possibilities to participate in foresight.

Organisational characteristics identified to influence positively in participation in foresight:

- Low hierarchy and informal communication (IA)
- Everyone has a possibility to impact on their own work (IA)
- High hierarchy and responsibilities by position instead of personal interests (IG)
- If the personnel has time, enthusiasm and foresight is integrated in other work, the achievements of foresight can improve (IA)
- Board of directors understands the importance of motivating the personnel if something bigger is needed to achieve (IA)
- Top management participate in informal ideas creation discussions (IE)
- Members of the organisation have wide external networks (IC)

Organisational characteristics identified to possibly influence in participation in foresight:

- There are benefits and downsides in a decentralised organisation: small, self-organising teams can make independent decisions, on the other hand, there are also multiple different cultures and ways of working (ID)
- Interdisciplinary modules or perspectives, that can be integrated as part of any projects, if needed (ID)

- Good experiences in alliances in the field pave the way to development of new shared and collaborative processes (ID)
- The trend of collaborative development and service design have meant, that even greater part of the organisational members have possibilities to participate in development processes (IG)
- Commitment of fast changing employees in organisational foresight can be challenging (IB). On the other hand, if the members of the organisation change positions inside the organisation, they can spread the message of foresight (IG)
- The self-organising teams have different foresight needs (ID)
- Organisation size. It may require effort to get everyone the same page (IA)

Organisational characteristics identified to pose challenges to participation in foresight

- Lack of time to concentrate in foresight (IA, IB, IC, IE, IF, IG)
- Individuals face challenges and thus need support to be able to participate(IB)
- Compartmentalisation (IE)
- Innovation reactively according to consumers' needs instead of proactive future orientation (ID)
- Unclear responsibilities regarding participation in foresight (IB, ID)
- Foresight needs emerge ad hoc (IC). This can lead to improvised responses.

4.2.8 Participation and changes in operational environment

A new theme that emerged through the interviews was the connection of participation in organisational foresight with operational environment changes. More precisely, two aspects were covered: First, the ongoing COVID-19 -pandemic and the increased modes of remote work and second, new types of employment relationships in the future work-life. These findings can be relevant when considering the tools and methods for participation, innovativeness through informal discussions and temporary employees' motivations in organisational development in the future. All in all, for participation to meet the needs of the organisations', the ways to organise participation may need continuous adjusting and improvement.

First, IA, IB, IC, IE, IF, IG reported changes in participatory practices or organisation members' capacities to collect and share foresight related information during the COVID-19 -pandemic. The organisations had responded to the identified challenges differently and the changes made depended on the practices already in use.

The respondents saw digital practices and tools as enablers for participation in foresight in remote work mode. However, it is not straightforward that the current practices would easily convert to new routines. Before the pandemic, O7 already had an online collaborative foresight support tool in use. It quickly changed some foresight activities from physical workshops to online activities (IG). Nevertheless, O7 had to rethink the phasing, and they, for example, added pre-assignments to the remote workshops and went through the results in Teams-application. In O5, IE had noticed that online workshops needed to be one third shorter than face to face workshops to keep the participants' concentration. That had caused challenges in organising the workshops because they needed to produce results in two hours instead of three hours (IE). In O3, the planned workshop series turned into attempts to activate organisation members to collect signals in the online collaborative foresight support tool. O6 turned their company visits into a webinar. IA from O1 accentuated the organisation's need to find new communication methods that more robust than today would include digitalisation.

Remote work was seen as a challenge for gaining the maximum benefits of participation. When people are not at the office, spontaneous discussions related to sharing insights are scarce (IA, IB, IG). Part of the interaction is missing, compared to face-to-face meetings (IG). When people had needed to adapt to the changing work mode and new ways of working, they did not have the energy to collect insights or focus on foresight and other tasks (IC, IG). IC had pondered when and how they would be able to examine the insights collected independently collaboratively.

Second, there are incremental and ongoing changes in work-life that may cause a need to rethink in the near future how to motivate the temporary and gig workers to innovate and share signals for their changing employer organisations to thrive. As IB pointed out, individuals' values or life situations may cause them to prioritise their present or personal futures and put effort to proceed with other futures than the ones that would benefit the changing employers most. In the future, diverse strategies may be needed to reach, motivate and enable all employee groups to take part in organisational foresight activities.

5 DISCUSSION

Participatory organisational foresight is a vague concept if the concept as such even exists. Although organisational foresight should be participatory by nature (Rohrbeck et al. 2015, 2), the lack of a simple framework to evaluate the quality and sufficiency of participation makes it challenging to build a comprehensive picture of participation in organisations' foresight. It is not well articulated what are the roles of ordinary organisation members or middle management in organisational foresight (Sarpong et al. 2013, 615; Darkow 2015, 11). All the respondents of this study defined the concept 'participation' differently, yet the core was relatively similar: multiple individuals pondering future related issues together. This definition served as a starting point to inquire more.

Questions like who participate in organised activities, what kind are the organised foresight activities, and what kind of foresight tools and methods organisations use are relatively simple to answer. However, it is much more challenging to make sense of how the information flows in an organisation, how willing the organisation members are to assimilate new ways of thinking and integrate those in their work, how creativity is encouraged, or how organisation members take part in informal foresight related discussions in addition to organised foresight activities. There are endlessly potentially influencing factors, and it is impossible to map the mental models of all organisation members on how their understanding of foresight influences how they make sense of the world and take action. Hence, this study selected a narrower perspective, possible to be explored and analysed in a Master's thesis scale.

This study has examined empirical data, consisting of seven interviews and questionnaire responses, to find supportive or impeding elements for participation in organisational foresight. All the respondents' foresight systems include participation; however, the implicit and explicit participation forms differ and how participation is organised. If participation is defined as individuals having 'agency' in foresight systems and a possibility to initiate foresight activities (Dufva 2015, 48), almost anything foresight related conscious behaviour can be considered as participatory. The concept of participation in foresight in this study includes, for example, organisation member's orientation towards interpreting the environment through the concepts of foresight, practising forward-looking search, making sense of the findings and sharing the information, utilising foresight knowledge and skills in work-related contexts, participating in organised foresight activities and discussions, and taking part in informal future-oriented or foresight related discussions.

However, to succeed participation requires an enabling organisational context and systematic organisational foresight, systematic participatory processes. Nevertheless, not all potential participants find extensive and organised activities attractive but may prefer personal communication. According to the respondents, some organisation members look for one-to-one discussions with the organisational futurist. A wide variety of customisable participatory processes that meet the organisation and organisation members' needs and expectations could be essential in engaging organisation members in foresight.

All in all, this study is not a comprehensive overview of participation in organisational foresight. Instead, it is one approach to better understand the challenges or barriers participation can face, and on the contrary, identify the supporting elements in foresight systems or organisational contexts that can help when building and maintaining participation. Many of the findings and ponderings that first seemed to be distinctive for specific organisations or individuals soon started to appear as emerging themes concerning human participation in organisational foresight at large. Although every organisation is unique, the elements that recurred in the focal organisations as supportive or impeding of participation or were unique but highly influential are potentially something many organisational futurists trying to increase organisation members' participation in foresight will encounter.

This discussion chapter builds around four key themes that emerged from the results. First, the aims of participatory foresight and what can be considered as 'participation', are discussed. It seems relevant to clarify how far from centrally organised foresight activities can the concept of participation reach. Only having done that, investigation of the elements that impact different forms of participation as supportive or impeding makes sense. Second, the implementation and education processes are examined in detail. The core of the theme is how well equipped the organisation members are to participate in organised foresight and outside the organised activities. Third, the answers to research questions "Which elements in an organisational foresight system support or impede human participation in foresight?" and "Which organisational characteristics affect participation in organisational foresight?" are provided in compressed form and complemented with examples and discussion, when necessary. The supporting and impeding elements are compiled in the form of a framework. Fourth, the perspectives of customisation and potential changes in participatory practices in the near future are discussed. Finally, ethical considerations are covered.

5.1 Aims of participation: informants to foresight function or independent agents

Human participation in organisational foresight can aim at various benefits and have cumulative effects, such as utilising foresight thinking learned through foresight activities outside the context of foresight. Organisations with a clear understanding of what kind of participation they expect and need could be better in defining who should participate and how (Dufva 2015, 44-45).

The respondents saw organisations' aims and need as one of the key reasons to involve individuals in foresight (IA, IB, ID, IE). They identified two types of needs: First, there is a constant need for new ideas. The organisation needs to come up with as many novel and executable concepts that face the needs of the future as possible to receive funding (IA); the field of business has a responsibility to continuously provide and develop services that support sustainability (IB); the organisation needs to renew its strategic business activities (IE). Second, the ability to answer customer needs. If customers ask for a foresight approach, the organisation can respond to that (ID), or more directly, the need to respond to customer needs acts as a supporter to include members of the organisation in foresight (IE).

The connection of participation in foresight with the needs mentioned above of novel thinking and the ability to respond to customer needs could be that the organisations benefit from having the personnel think about alternative responses and solutions for existing problems and scanning the environment for opportunities or preparing for changes in the operational environment. However, here the organisations differed: some expected or had experienced that specific individuals are more relevant for the foresight than others, whereas some organisations emphasised as broad participation as possible to find the potentially interesting signals and ideas. Correspondingly, the supporters and barriers for participation can differ depending on whom the foresight system seeks to reach for and how.

The organisations interviewed for this study seemed to vary in how much they put effort into assisting the organisation members to learn, assimilate and independently utilise foresight thinking and tools, and value systematic education processes. Additionally, the explicit aims of organisational foresight in connection to other development processes, innovativeness or strategy building and the pressure to produce concrete results or input to other processes in a short time may influence the selection of the strategy concerning participation: Are the participants expected to act as informants for foresight function by scanning, interpreting and sharing the observed changes in the operational environment, or is the aim to educate what Dufva (2015,

29) would call as independent ‘agents’, who can produce and utilise foresight knowledge continuously when and wherever needed? The essence of this question is the implicit aims of participation: If an organisation expects its personnel to be able at some point to integrate foresight in different projects and ways of working independently and continuously scan the environment for the signals, the personnel need to learn the thinking and the skill. If an organisation aims at the highest level of maturity in foresight, it should have the capability that every employee can detect signals of change and foresight is also initiated from the bottom-up (Rohrbeck 2011, 98).

These two strategies, considering participants as informants for foresight function or as independent agents, are by no means exclusive: an organisation member can collect signals and share them in a platform, take part in a workshop and adjust one’s routines when meeting with stakeholders to collect information relevant for future development. However, the differences may become visible during a more extended period or when organisations seek fast innovativeness and agility: is the skill to foresee embedded in the organisation or is it not? In an ideal situation, the agents would continuously share the information across the functions (Rohrbeck 2011, 99), produce foresight-based input both for non-specific purposes (Dufva 2015, 47) and for specific organisational processes, and without asking assistance from centrally organised foresight function, utilise the knowledge locally where they create it. However, if the organisation members do not know what they should do, how to do it and how to utilise futures knowledge in their work, they may need continuous guidance. Without assistance, they may gradually leave the confusing and time-consuming foresight tasks behind. To motivate participants, for example, IA described that the foresight methods the organisation uses in facilitated foresight sessions are always marketed to the participants as something they can use in their expert work. At best, foresight exercises would create knowledge participants can use to guide present action (Dufva 2015, 12), which would benefit the organisation in different functions and processes.

The aims of participatory foresight and the participation itself connect to the theme of who are the most sought-after participants. If the organisation is small, all members may participate and receive foresight education. In larger organisations, that would require enormous resources. Consequently, the questions such as what would be the cost-return -ratio of broad participation, what kind of input can be expected, what kind of knowledge could be produced and how the knowledge could be utilised may emerge. In other words, it becomes a practical issue to consider who are the most relevant to bring in the information and who will take the knowledge into practice.

The question of who should participate was in the respondents' organisations, according to the interviews, approached by four differing criteria: everyone participates; everyone interested is welcome; the ones who possess positions where they could use foresight, participate; and the needs of a project or activity define who will be invited to participate (this could include required expertise as a criterion). ID added the value of participants, who are experts with executive power, and IE pointed out that having a pressure that an activity needs to concrete outputs, careful participant selection is essential. The mechanisms behind the criteria setting were not studied further. However, foresight literature does not provide solid criteria for identifying the best possible participants, which leaves many decisions for an organisational futurist or foresight function to make, possibly even for the top management who may have their perceptions on expertise and required skills for foresight.

Additionally, the following two perspectives can help evaluate the valuable participants: the quality of contribution to foresight, and the utilisation and dissemination of foresight related methods and thinking. First, the perspective contribution as input and insights: who have the best ideas? It can be explicitly expressed that everyone's ideas are needed for foresight (IA, IC) or, in contrast, that the foresight activities seek expert-level participants (ID, IG). One approach assumes that the ordinary organisation members can bring potentially surprising ideas in (IB). However, listening to individuals who think unconventionally, what Day and Schoemaker (2005, 138, 140) suggest for gaining insights about the periphery, was not mentioned in responses. Similarly, mapping of motivations and knowledge already in the organisation when considering the potential participants (Slaughter 2002, 2) was not systematically used in any of the organisations.

Second, the perspective of utilisation and dissemination: who can take the foresight thinking, methods and tools into practice, spread the message and integrate foresight into organisational practices and development processes? Individuals in management and development positions, who O7 mainly educates for foresight, can potentially use foresight in projects and processes that include several internal stakeholders and familiarise them effectively with foresight. Additionally, as their job descriptions include foresight, they are expected to include the foresight perspective in their work. Conversely, in O3 everyone can participate in foresight activities and, when learning the skill, potentially continuously utilise foresight in their expert work when making long-term decisions.

5.2 Practices of participation: from centrally organised activities to informal discussions

Informal discussions that include foresight related topics appeared in all seven organisations. That is natural, as many contemporary conversation topics include change factors, trends, and innovations that can be influential in the future. Spontaneous coffee table discussions can be inspiring and generate new ideas. Additionally, informal discussions with colleagues can help assimilate and transform futures knowledge (Pouru et al. 2019, 88). However, the central part of the organisational foresight that the respondents described was organised instead of informal.

Although Dufva (2015, 48) argues that foresight practice should support informal networking and enable the possibility to participate in discussion on desired futures, the responding organisations did not have systematic and continuous processes for it. Informal foresight-related activity could potentially create value for the organisation, if it could be tracked, analysed and fed into organisational development, strategy and innovation processes. The respondents had identified the potentially relevant informal discussions to occur in coffee breaks, meetings with external stakeholders and informal messaging platforms, which indicates there could be a possibility that organisations could at some point turn these discussions into systematic input to foresight or other organisational processes. So far, the lack of required skills or mental models has caused difficulties in spotting the signals, making sense of them and sharing them in an organised form.

Lack of a culture of doing so can hinder practising foresight as well. Likewise, as IE underlined, random signals and insights that are not categorised or made sense of but just dropped to a shared folder by active organisation members may require enormously work and time from organisational futurists to categorise and make sense of. However, IE implied that they are starting to experiment with some mechanisms to collect the informal insights and feed them in some processes to use them. Organisations could have a lot of foresight related information that is not articulated as foresight and it thus remains out of the radar of foresight function.

Additionally, organisational culture and other organisational characteristics can impact significantly how official foresight could reach this ‘unofficial foresight’ and benefit from it and in contrast, how fluently the foresight function’s publications, messages and invitations reach the organisation members, become utilised by the organisation members and eventually – serve as an input in informal discussions.

5.3 The implementation of foresight and education of the personnel

Emphasis on systematic implementation and education processes can be a way to support participation in foresight. If foresight and forward-thinking are considered human capabilities (Slaughter 1996, 753), continuous and broad possibilities for organisation members to join in foresight training and different skills levels' activities could support building foresight into an organisational capability. Foresight system frameworks (Rohrbeck 2011, Certified Foresight Professional -training 2016-2019, Dufva 2015) emphasise continuity as central to quality foresight systems. If people are continuously exposed to foresight related methods and content and invited to join in foresight activities to practise, the more individuals there are in an organisation aware of foresight thinking and equipped with tools to contribute to foresight.

However, the number of individuals exposed to foresight may not directly contribute to value creation. All individuals may not be interested in taking new ways of thinking into practice, have time to learn new practices, have equal power to make changes in the practices according to the signals they perceive, or start projects that aim to seize potential opportunities. Also, people's time on practising the new skills or tools can be significant, as employees who continuously used a foresight tool reportedly found it most beneficial (Boe-Lillegraven and Monterde 2015, 75). Therefore, explicit motivational factors can be needed to assure the participants that learning foresight could be valuable. Some responding organisations connected foresight and possibilities to develop ones' work. For example, in O3, foresight thinking was introduced to the organisation by assisting participants in identifying personal working skills development needs for the future. Hence, the participants could learn to use the new methods and tools for a small-scale task. Additionally, IE from O5 noticed that some foresight activities participants quickly recognised the personal benefits of adapting the foresight thinking, "what is in it for me".

Informants had varying opinions on the need for a separate education process to familiarise the organisation members with foresight. The practices varied from systematic education processes to 'learning by participating'. None of the organisations reported having a systematic education process, which would as a default include multiple rounds of practice and feedback, which would be essential for learning (Arnold and Randall 2010, 414). Regardless of the education's depth or breadth, the implementation phase requires time and resources from individuals responsible for foresight. The implementation can include repeating the foresight concepts and methods yearly during the strategy revising process (IA), educating the changing personnel

in development and management positions about practical foresight methods (IG) and introducing foresight concepts to new participants within every project (IE).

Six of seven respondents considered the implementation of foresight in an organisation as a process and the level of participation at the moment insufficient. The extent of foresight education can be narrower than needed, for example, due to lack of time (IA). Although all personnel would be expected to participate in foresight and have participated in organised activities, individuals may utilise foresight methods systematically independently (IA).

Consequently, the participants may need to practise. O3 has benefited the process nature of implementation in building foresight capacity from individual to organisational level. Their step-by-step approach included three steps: First, participants could discuss their prior assumptions on foresight, and the organisational foresighter corrected their presumptions and supported them to broaden their perspectives when necessary. Second, participants used foresight thinking to think about their personal futures and mapping personal learning needs. Third, the use of futures studies methods and tools was supported. Learning to analyse the signals could, in the long run, evolve into a skill of making sense of the signals (IC). At the moment, O3 is starting to utilise the foresight capacity for the participatory strategy building process.

The abovementioned process of O3 may require too much time or be challenging to execute in a large organisation or an organisation with changing personnel. However, it serves as an example of how a systematic educational process can gradually root foresight thinking and practices in an organisation, and additionally, how responding to the participants' concerns about foresight can help them internalise the new thinking.

Likewise, other promising approaches for education and implementation were in use in the organisations. O7 had strategically implemented foresight by introducing it first to all executive committees of the group. O7 aims not to educate every member of the organisation but all relevant individuals in management and development positions, which means already hundreds of individuals exposed to foresight education. In addition to that, they have all the study material and foresight reports published by the foresight function available for all members of the organisation online. With this transparency with foresight deliverables, they aim to make foresight more approachable.

The 'foresight module' by O5 and O7 as a way of implementation could be a relatively easy way to enable and support participation. IE from O5 included a 'foresight module' in every development project facilitated in the year 2019. That means that the participants of these projects have simultaneously received foresight training in a context. In O7, a 'foresight module'

covering, for example, the perspective of trends is part of examining developments of the operational environment from the perspective of an individual business unit. By scaling up this modular thinking to be part of every new project in an organisation, the organisation members would constantly face foresight, and foresight could become an integrated part of working and thinking. This idea somehow connects with the practice of O4 with the circular economy: any project can ask for and receive expert assistance on circular economy. By combining the practices of O5 in the context of development projects and O4 with sustainability, foresight could be either packed up as 'an easy-to-use on-demand module' or an integrated approach to any process or project. With a practice like this, members of the organisation would not need to participate in a separate foresight training or ponder whether they wish to adopt the new ways of thinking but do their job. IB described their method of making foresight activities more accessible similarly: "people can participate in foresight so conveniently, that they do not need to know they are especially practising foresight".

What remained outside the interviews' topics was the level of knowledge, skills, or competencies the organisations aim at with their implementation or education processes. What can a participant be expected to learn from 1, 2 or multiple workshops? With what skills level a member of the organisation can contribute to the foresight process? What a project leader needs to know about foresight to create value by embedding a foresight module?

These questions reflect the challenge of evaluating, for example, the sufficient level of participation. It can be different to take part in an activity or discussion than to learn thoroughly. Additionally, the systematic mapping of the skills and capabilities the organisation members already possess and their interests and development needs could target foresight education. For example, O4 emphasised that experts and senior project managers in the organisations can be assumed to understand large entities and future-related issues without specific foresight training. There is no value in teaching people what they already master, but foresight education could systematically target and accentuate various aspects relevant for different projects, functions and internal stakeholders.

5.4 Supporting and impeding elements for participation in foresight

When the informants were asked for the three most important features to support human participation in their organisations' organisational foresight, the answers reflected the organisations' characteristics beyond sole foresight. The organisational context and its characteristics

create a backdrop for all organisational foresight and affect how participatory foresight processes and implementation of foresight practices succeed.

If organisations find that participatory foresight can respond to their goals, needs and core values, participation is probably somehow supported. For example, a low hierarchy or organisation culture, where everyone is equally valued, supports participation (IA, IB and IC). Curious and future-oriented personnel can be seen as an essential feature that supports participation (IB). Individuals interested in foresight are likely to apply for positions related to it if that kind of positions is provided (ID). Instead of contrast to building the foresight system on individuals' willingness and interest to participate, participation can be supported by creating refined processes and specific methods that can be utilised in every foresight project (O7). According to this approach, a planned process can make it easy to organise participatory activities and participate in well-defined and tested processes.

Furthermore, supportive features can include the visibility of and appreciation for foresight (IC). If foresight wishes to attract potential participants, the organisation needs to have a shared understanding that foresight has value (Boe-Lillegraven and Monterde 2015, 69). However, sometimes organisational practicalities can flatten the novel aims of participatory foresight.

For example, lack of time for foresight is an organisational level challenge for foresight, as is the lack of transparent and organised communication. These challenges can be considered impeding elements if there is no push from the organisation side and the foresight system to change them systematically. Additionally, if management does not understand how foresight could be utilised or what resources participation requires, possibilities to participate or organise participatory activities can be reduced.

The culture of creativity and ideas sharing that already exists in the organisation is highly probable to influence how convenient organisation members are pondering alternative futures and sharing their insights across the organisation. However, if an organisation's innovation and development processes do not connect to the foresight function, collaborative innovation processes do not directly imply organisation would have participatory foresight.

Although the informants had identified the need for ideas creation as an important reason to include members of the organisation in the foresight activities and considered this need as a supporting feature for participation, in reality, the organisations may not always understand the value of creativity of the crowd. According to the questionnaire questions' answers on organisational characteristics, 57% of the respondents disagreed with the claim" creativity and ideas sharing are encouraged". To summarise, the culture of innovating and sharing ideas, when it exists, could support participation. Opposite culture could impede participation.

The framework below compiles the elements that in this study emerged as supporting or impeding for organisation members' participation in organisational foresight. As the foresight systems are custom built to match the focal organisations, some elements are challenging to classify to be specifically foresight or organisation related. Similarly, some elements, such as individuals' expectations and pre-assumptions on foresight, can either support or hinder participation depending on how they are considered when planning the system or responded to in implementing and running the system. This study suggests that the framework could be used as a checklist to find the elements already present in a foresight system and organisation that support participation in foresight and can be used as building blocks for a more robust, systematic and continuous participatory foresight system. Likewise, the framework could reveal potential barriers for participation that can then be further examined and exceeded.

Table 4 A framework to identify supporting and impeding elements

Elements in foresight system that support participation	**Organisational characteristics that support participation in foresight**
• Organisation members receive enough education to learn the required skills and build their foresight capability. • Group support is provided. For example, signals are made sense of together. • Language everyone understands is used. • Foresight is connected with or integrated into other organisational processes. • Foresight activities aim at solving an existing problem. • Some of the foresight processes are recurring, which makes them familiar to organisation members to join. • Foresight aims at building something the participants can benefit of. • The benefits of foresight are visible or clearly communicated. • Foresight related content and foresight outputs are shared across the organisation. • User-friendly mechanisms, activities and tools that meet the organisation members' needs, are designed and utilised. • A variety of participatory methods and tools, both from futures studies and other fields, are used. • A facilitator or organisational futurist personally encourages individuals to participate and share their insights. • Foresight system includes different kinds of participation opportunities. • Assistance to take part and follow-up for implementation are provided.	• Organisation members can impact on and adjust their work. • Organisational members are expected to generate creative ideas. • Organisation members' ideas and insights are valued. • Organisation members have possibilities to participate in development processes. • There exists a culture of informal discussions. • There exists a culture of creating things together. • There exists a culture of participation in the organisation. • Top management participates in informal ideas creation discussions. • The responsibilities regarding foresight are clear. • There exists transparent communication, data sharing and ideas flow. • There are good experiences on alliances and collaborative processes. • Assistance is available to enable everyone to participate.

<table>
<tr>
<td>

- Pre-assumptions on foresight and fears for change are discussed.
- Individuals are encouraged to scan the environment in encounters with stakeholders and share the identified signals.
- Networks for active individuals interested in foresight are sustained and promoted.
- Foresight includes building trust among participants.
- Foresight activities are so integrated and topics understandable that anyone without prior knowledge in foresight can take part.
- Futures discourse is positive: future can be influenced.

Motivational factors that can be embedded in the system:

- Learning is supported.
- The possibility to share and co-create is underlined.
- Benefits for participation are well-argued.
- Participation is made convenient.
- Foresight is introduced as a solution.

</td>
<td></td>
</tr>
<tr>
<td>

Elements in foresight system that impede participation

- Organisational foresight is not organised and conducted systematically.
- Responsibilities related to foresight are unclear. Individuals expect ‘someone else’ to do the job. Team leaders and project leads are not certain if or how they should include foresight in the projects.
- There exists no systematic and widely used processes for sharing insights. People are uncertain how to proceed with signals they have identified and ideas they have developed.
- Foresight is not embedded and seamlessly integrated with other organisational processes. The use of foresight in processes and projects heavily lays on team leaders’ and project leads’ interest and knowledgeability in foresight.

</td>
<td>

Organisational characteristics that impede participation in foresight

- Top management has no clear vision or does not agree on how foresight should be organised in the organisation. This reflects to, for example, resource allocation and interest in building integrated processes.
- Lack of time for foresight. Lack of time to organise education, participate in activities, practise the new skills or maintain the network of actives.
- Foresight needs emerge ad hoc. That leads to improvised activities instead of well-planned processes.
- There are too many organisational cultures and ways of working in one organisation
- The communication related to data collection and sharing is challenging. Information can be dispersed in various locations, which causes difficulties in finding relevant information and utilising it where needed. Informal information gets lost before it reaches the foresight function.
- Organisation is compartmentalised, and multidisciplinary collaboration is weak.
- Organisations ongoing innovation projects are only narrowly connected with foresight.
- Innovation is reactive instead of proactive and future-oriented.

</td>
</tr>
</table>

	• Constantly changing personnel, newcomers or the ones with short-term contracts are not provided foresight education.

Individuals' perceptions and needs to be addressed to support participation:

- Individuals can see future and uncertainties as frightening.
- Individuals find different details relevant.
- Individuals have different perceptions on whose future is most relevant.
- Individuals have different pre-assumptions on foresight.
- Practicalities of today can be easier to understand than the future.
- Individuals can hope 'someone else' was responsible for foresight.
- Individuals need different formats for participation.
- Individuals differ in how they take foresight thinking or instructions into action.
- Individuals' willingness to understand the world from a new perspective varies.

5.5 "Not everything for everyone, but something for everyone"

Organisation members' mindsets, interests and capabilities can turn into elements that support or impede participation, depending on how well the foresight system can respond to them. The respondents had encountered several individuals' characteristics when implementing participatory practices or communicating with foresight activities participants. First, all organisation members are individuals and decide how much effort they put into learning new practices and assimilating ways of thinking. Likewise, at the organisational level, many things can impact individuals' willingness to contribute to informal foresight-related discussion or volunteer as members of the actives' networks. External factors that affect individuals' perceptions of and interest to participate in foresight include how the organisation values foresight, what possibilities organisation members have to utilise the new knowledge, and how it is the culture of sharing incomplete ideas.

On a personal level, individuals vastly vary on how they perceive possibilities to influence their future, how they approach change, accept uncertainties as guidelines for actions and how they consider their capabilities to foresight or ability to learn new skills. People perceive the world around them and the future differently. People can even fear change. Additionally, people have different learning styles.

An ideal situation in an organisation could be that the organisational foresighter would know all the personnel and could be able to 95tilizati the foresight system accordingly. That is rarely

the case, and the larger the organisation, the more difficult it is to know all organisation members. Hence, IB argues that participatory processes could be designed to provide something for everyone, although they would not include everyone in every activity. There are potentially many general elements that impact individuals' behaviours and thinking related to participation in foresight. By considering those when trying to attract interest or engage individuals to learn, communicate and share foresight related content, the possible challenges can turn into supporting factors.

Adjusting the methods and tasks allocation could be one approach to target a variety of potential participants. IA from O1 suggests that by accepting the differences and distributing tasks accordingly, individuals could be provided with the possibility to enjoy and succeed in what they do. Some people are driven by the new and unknown (IA). IC's understanding notion that "learning new things is not easy" can support patience when considering the processual nature of implementation. Embedding the new foresight capacity takes time. By 96tilization the foresight related activities and processes, the foresight function can support individuals' experience that they know and can, hence finding participation and 96tilization of foresight rewarding.

However, individuals' potential resistance or inability to conduct foresight in their daily work after being exposed to foresight through organised activities or informal discussions can derive from organisational issues instead of personal interests or skills. For example, if individuals are under fear to lose their jobs, would they be interested in innovating for the employer? Although none of the respondents reported problems in the atmosphere, in theory, difficulties in group dynamics can cause people to find it difficult to collaborate in workshops with coworkers they do not get along with. Foresight could take an intermediator's role and create a space for the yet unknown future that organisation members can together discuss and create. The respondents described that they mainly encounter positive attitudes towards foresight among the personnel. That could be embraced at the organisation level to encourage more and more organisation members to ideate foresight activities they find interesting and valuable.

The motivational factors can be especially relevant when the potential participant considers if participation is worth the time and energy. Individuals value different things. There was no time to discuss incentives during the interviews. However, incentives such as acknowledgement from senior management and financial rewards can be valuable when aiming at a high foresight maturity level (Rohrbeck 2011, 98). To encourage continued use of a foresight tool, social and cognitive rewards overcome incentives (Boe-Lillegraven & Monterde 2015, 78, 80). The motivational factors that emerged in this study that could appeal to potential participants and embedded in a foresight system include support to learning, well-argued benefits for participation,

possibility to share and co-create, participation feels convenient, and foresight appears to provide solutions.

Additionally, top management themselves may appreciate different benefits for engaging in foresight than what they consider valuable when deciding if their subordinates can have time to participate in a foresight activity. Moreover, individuals interested in foresight but who do not have it as part of their job description or cannot allocate time for it may need different arguments to persuade their supervisors of participation benefits. Hence, to support broad participation foresight function could benefit from marketing foresight for internal stakeholders with various angles to reach all potentially interested individuals who could create value through foresight. If foresight was written in the job description, motivational factors and customisation would not have such a role, yet they could be valuable to increase enthusiasm and engagement.

Many of the respondents found the use of more informal language, or 'the organisation's language', as a positive factor related to participation. It is easier to participate in something new if the language is understandable. Moreover, focusing on the language as such does not require extra resources. However, there could be a downside in this strategy if the organisation members would not learn the core concepts of foresight but would need to communicate about foresight-related issues other than their home organisation's context, for example, with stakeholders in open foresight projects. At worst, it could create separate groups inside the organisation: the ones that use the 'academic language' and the ones that use' common language'. It can cause misunderstandings or impede the possibilities to seek foresight materials independently. Hence, customisation requires caution if foresight aims to be something shared.

5.6 Changes in work-life may lead to rethink participation

The world changes rapidly, and the participatory processes introduced today should be able to transform and evolve to meet both the organisations and participants' needs of the future. Derived from the interviews, the fast expanded remote work practices, due to the COVID-19 - pandemic, have changed the ways individuals interact and collaboratively create. Some informants reported that, for example, the futures workshops planned to take place in the year 2020, had been postponed. On the other hand, O7 used to work through online platforms, reported only minor changes in their participatory foresight processes. However, in O7 it had been visible that people were tired to take any extra duties (IG). In O2, informal discussions had decreased in number during the period of remote work (IB). If people don't meet in person, informal foresight related discussions may diminish, take another form or require new facilitative

tools and methods to occur. It is highly probable that new mechanisms to support people to collaborate and ideate, both spontaneously and systematically, will be introduced from the fields of technology and behavioral sciences. If the pace of changes is rapid, when would it be the right time to implement new foresight related methods, tools and practices and ask people to learn a little extra? Or even ask organisation members to keep their eyes open to spot weak signals and insert the findings in an online tool or share them in another form?

In addition to the remote work culture that is only taking shape and is a trend that can increase or decrease, the future of work includes other features that can affect the ways of taking part and motivations to participate. The topic of changing personnel occurred in the interviews, and it is not straightforward if the workforce of the future would be interested in building the capacity of their temporary employer, but to focus on building the capacity and transformative skills of their own, instead. If employees constantly change workplaces, who are responsible for education, and which employers are interested in educating them to become foresighters, if they will soon leave. Here, the bigger question of life-long learning emerges.

In the future, organisational foresight based on broad participation may need to tackle the challenge of keeping the organisation members engaged and committed to proceeding with the future preparedness of the whole organisation.

5.7 Ethical considerations

Validity of a study means the data collection methods measure what they are supposed to, and the findings are what they suggest to be about (Saunders and Lewis 2012, 127). This study covers seven organisational futurists' perspectives on participation from seven different organisations. The results reflect seven different interpretations on the topic. The researcher's thorough understanding of what the concept 'participation' could cover evolved throughout the research process, making it possible that some questions remained unasked or that all seven respondents interpreted the concept of participation differently. Validity is essential when choosing the concepts and terms used to describe the research material and what can be interpreted from the material (Fisher, 2010, 271). Participation is a commonly used term with the contemporary trend of collaborative development and strategy building and initiating changes bottom-up instead of top-down. All the informants seemed to have pondered participation as a relevant aspect in organisational foresight. Due to their interests or experiences or as a takeaway from the CFP-training, was not discussed. Nevertheless, there is still a possibility that some

other term or definition would have been more particular, but this study chose to use 'participation' for its familiarity and as it is as a concept not tied to a specific field. Similarly, the researcher may have interpreted something from the data to stand for participation, although the respondent would not have made a similar connection or given a similar meaning.

Additionally, it can be challenging to differentiate whether a respondent represents the organisation's point of view or personal preferences. Nevertheless, all organisations may not have widely shared explicit criteria or strategy for participatory foresight, which leads the organisational futurist to be the one that has the power to articulate and define participation, especially in the context of a foresight system. Using other methods or choosing a case study, participation in one organisation could have become more deeply examined from various perspectives. By interviewing multiple respondents in one organisation, the possibly idealistic aims of participatory foresight could have been questioned or critiqued, or on the other hand, impactful processes and activities appraised by organisational participants. Nevertheless, there are as many perspectives as people, and choosing some to listen always means excluding some voices. Sometimes the experts, in this case, the respondents who had built foresight systems for their organisations, can be the ones that have the right concepts to explain the issues and reflect their thinking in the context of foresight. To summarise, this study's respondents are valid to describe their experiences and perceptions on the elements that impact participation in foresight.

Chosen data collection methods, a questionnaire combined with approximately one hour of interview, allowed the researcher to gain information and clarify answers that remained unclear. Using different methods, a more extended period for observations or multiple interviews to examine longitudinal changes in participation, the supporting and impeding participation elements could be different. Moreover, the foresight methods and tools organisations use that first seem to attract the participants may lose their novelty over time or, in contrast, do not deliver what was expected, which causes the participatory methods and practices to evolve change over time. Organisational foresight could be considered as constantly changing by nature. As the respondents expressed, they found the level of participation yet insufficient, indicating that they may try some new approaches at some point or constantly. Similarly, changes in the operational environment, management, or new fluent workflows or mechanisms that support participation and ideas sharing could change participation practices. If this study was repeated in a year, the respondents could provide different answers.

If the respondents' selection criteria had been other than being CFP-alumni, they would probably have used a wider variety of different concepts to describe foresight systems and participation. That could have brought up different concepts or experiences, which could have

enriched the data or made it more challenging to interpret. Not the data present at least to a certain point the perspective of CFP-programme. For example, many of the respondents described their networks of active individuals in connection to foresight function. That led the researcher to wonder when analysing the data, if it was pure coincidence or if it was implicitly or explicitly something that CFP-training suggested, referring to CFP-programme's Foresight System framework's "foresight team and stakeholders, and networks" (Certified Foresight Professional -training 2016-2019). However, as none of the respondents had a foresight related term in their title, it would have been challenging to find some other sample of organisational foresighters with at least some emphasis on participatory practices.

External validity refers to the generalisability of the conclusions to other research settings and to what extent they can be claimed to be generalisable (Saunders and Lewis, 2012, 128). The respondents' organisations represent a variety of businesses for different fields and in different sizes, that although the sample of seven organisations is by no means representative, the findings may be relevant to organisations beyond this study. If different kinds of organisations have similar experiences or practices, they are not unique.

The reliability of research can be increased using measures that would produce the same results if used on other occasions or by other researchers and understanding the possibility of interviewee delivering misguiding information. Evaluation of the researcher's effect in conducting the study as an interviewer or interpreting the data is also essential in evaluating the reliability. (Saunders and Lewis 2012, 128.) As the interview was semi-structured, another researcher could use the same interview guide and possibly gain relatively similar results. However, the qualitative content analysis increases the chances of subjectivity, and it is probable, that to some extent, the results would be different if another researcher interpreted the data. However, the findings are broadly in line with findings in foresight literature and the perspective of focusing on supporting and impeding elements guides the researcher to look for a particular type of details. Nevertheless, due to the flexibility of the concept of participation, another researcher could exclude something this study includes and vice versa.

There is one confusing finding among the elements that impact participation. The reader should be aware of: This study found more foresight system -related factors among elements that support participation and, in contrast, more organisational characteristics -related factors among impeding elements. There can be at least three reasons to explain the difference. First, the respondents have experienced more difficulties related to organisational characteristics than the foresight system, as the respondents have designed the foresight systems themselves. Hence, problems may be perceived to emerge from the outside.

Second, the bias has built up in the data analysis phase. The researcher's analysis method has based on subjective evaluation, and thus a possibility of misunderstanding in some concepts and responses exists. Third, the challenges for participation in organisational foresight connect heavily with the organisational environment. If this were the case, it would require new organisational futurists' strategies to promote a more participatory environment, which Kaivo-oja (2017, 96) argues as an essential component in participatory foresight.

6 CONCLUSION

It is apparent from this study, that human participation is an important element in organisational foresight. However, implementation and organisation of more participatory practices currently tends to be highly dependent on the time and other resources available for the few individuals responsible for the foresight in an organisation, instead of being a systematic and planned procedure with clearly communicated aims and strong connection with other organisational processes. Consequently, as the implementation of foresight system takes time, it is possible that there are not enough resources to locally continuously and iteratively improve the foresight practices and train the members of the organisation, to achieve all the possible benefits of broad participation, which would be needed to justify to the top management the need to continue to run and develop these activities. For this reason, the benefits of participation in foresight for the organisation and the individual should be further studied, and by testing and developing participatory practices find ways of organising participation more efficiently. Therefore, a framework, a set of best practices or at least an inspiring collection of practical examples should be developed.

This study aims to contribute to this research gap combining elements from foresight system, organisation and individual participant perspective that can support or impede participation. In the form of a framework these elements can be examined when planning a participatory foresight system, aiming to increase participation or trying to find out what could cause lack of interest in the organisation to take part in foresight. In order to deepen the understanding of how these elements are connected with each other and how the elements can be influenced on, more research is needed.

This study suggests that more research on the following topics could be conducted: First, what are or could be the aims and benefits of human participation organisational foresight. What exactly broad participation can contribute to and who are needed to include (and educate) and how to achieve the potential benefits. When would participation be broad and deep enough to potentially enhance organisational learning, capacity building, radical innovation or changes in mental models that assist perceiving world from new perspectives. Additionally, who are excluded from the system or receive no foresight education, and why. Second, are the methodologies developed in futures studies and field of foresight sufficient, if foresight aims at collaborative development, change in mental models through learning and utilisation of signals detected by diverse individuals. Is there a need for new methodological approaches and tools in organisational foresight that would utilise the methods and approaches from the related fields,

such as of behavioural sciences, education, facilitation, design thinking and collaborative development. Third, more thoroughly understand common organisational characteristics and their effect on success or struggle of participatory foresight system. Although organisations are unique complex systems, that consist of individuals, they share similarities and face challenges, that can be at some level generalised: how to improve internal communication, how to proceed with ideas that emerge from informal interaction, how to facilitate learning and nourish the sense of a shared future of a diverse group of individuals. To summarise, this study suggests that human participation in organisational foresight should be examined as a separate approach.

Commitment to the organisation's values and aims, or learning and assimilating new ways of perceiving the world and one's capabilities do not just 'happen' as side products of occasional participation in foresight activities. They require a more systematic approach that is connected with, but not dependent on, the organisational traditions, the worldviews and experiences of top managers or organisational foresighters in what individuals can be considered to be capable of, and to which extent leadership should be distributed: Participatory foresight, from a systems perspective, could be framed as continuous possibilities for learning, integrated foresight practices, shared understandings on what participatory foresight can contribute to, and constant renegotiation on what the organisation should aim at and what would be the best imaginable future for all. Every member of an organisation has their own idea of future and that mental model affects their behaviour and thinking, whether it is collectively discussed or not. If foresight, by the definition, is participatory, there should be some assistance, both theoretical and practical, for the organisational futurists and foresight teams in organisations, on what is the value of participation in strategic foresight and how to take participatory organisational foresight as part of everyday life of the organisations.

7 REFERENCES

Amara R. (1981) The futures field: Searching for definitions and boundaries. *The Futurist*, Vol. 15(1), pp. 25 29.

Arnold, J. – Randall, R. (2010) Work psychology: understanding human behaviour in the workplace. Harlow: Pearson Education Limited.

Berkhout, A.J. – van der Duin, P. – Hartmann, D. – Ortt, R. – Libecape, G.D. (2007) Cyclic Nature of Innovation: Connecting Hard Sciences with Soft Values. Bingley: Emerald Publishing Limited.

Boe-Lillegraven, S. – Monterde, S. (2015) Exploring the cognitive value of technology foresight: The case of the Cisco Technology Radar. *Technological Forecasting & Social Change*, Vol. 101, pp. 62-82.

Bootz, J.P. (2010) Strategic foresight and organizational learning: A survey and critical analysis. *Technological Forecasting and Social Change*, Vol. 77(9), pp. 1588-1594.

Boxall, P. & Purcell, J. (2011) Strategy and Human Resource Management. London: Palgrave Macmillan.

"Certified Foresight Professional – Ennakoinnin ammattilaiseksi". TSE Exe. https://sites.utu.fi/exe/ohjelmat/ennakoinnin-ammattilaiseksi/ , retrieved: 15.12.2020

Certified Foresight Professional -training 2016-2019, Finland Futures Research Centre, Turku School of Economics, University of Turku.

Daheim, D. – Uerz, G. (2008) Corporate foresight in Europe: from trend based logics to open foresight. *Technology Analysis & Strategic Management*, Vol. 20(3), pp. 321-336,

Darkow, I-L. (2014) The involvement of middle management in strategy development – Development and implementation of a foresight-based approach. Technological Forecasting and Social Change, Vol. 101, pp. 10-24.

Day, G. – Schoemaker, P. (2005) Scanning the Periphery. *Harvard Business Review,* Vol. xx, pp. 135-148.

Doyle, M. (1996) Foreword to the First Edition. In: Kaner, S. 2014. Facilitator's Guide to Participatory Decision-Making. San Francisco: John Wiley & Sons.

Dufva, M. (2015). Knowledge creation in foresight: a practice- and systems-oriented view. Doctoral dissertation. Aalto University, Helsinki.

Durst,C. – Durst, M. – Kolonko,T. – Neef, A. – Greif, F. (2014) A holistic approach to strategic foresight: A foresight support system for the German Federal Armed Forces. *Technological Foresight and Social Change*, Vol. 97, pp. 91-104.

European Foresight Platform (EFP). What is Foresight? <http://www.foresight-platform.eu/community/forlearn/what-is-foresight/ >, retrieved 18.2.2020.

Fisher, C. (2010) Researching and writing a dissertation: an essential guide for business students. Harlow: Pearson Education Limited.

Havas, A. (2005) Terminology and methodology for benchmarking foresight programmes. Available at SSRN http://dx.doi.org/10.2139/ssrn.1735023, retrieved 12.1.2020.

Heger, T. – Boman, M. (2015) Networked foresight –The case of EIT ICT Labs. *Technological Forecasting & Social Change*, Vol. 101, pp. 147-164.

Hines, A. (2002) A practitioner's view of the future of futures studies. *Futures*, Vol. 34 , pp. 337- 347.

Hines, A. – Gold, J. (2015) An organizational futurist role for integrating foresight into corporations. *Technological Forecasting & Social Change*, Vol. 101, pp. 99-111.

Hutzschenreuter, T. – Kleindienst, I. (2006) Strategy-process research: What have we learned and what is still to be explored. *Journal of Management*, Vol. 32 (5), pp. 673-720.

Iden, J. – Methlie, L.B. – Christensen, G.E. (2016) The nature of strategic foresight research: A systematic literature review. *Technological Foresight and Social Change*, Vol. 116, pp.

87-97.

Kaivo-oja, J. (2017) Towards better participatory processes in technology foresight: How to link participatory foresight research to the methodological machinery of qualitative research and phenomenology? *Futures*, Vol. 86, pp. 94-106.

Kamppinen, M. – Kuusi, O. – Söderlund, S. (eds) (2003) Tulevaisuudentutkimus. Perusteet ja sovelluksia. Suomalaisen Kirjallisuuden Seuran Toimituksia 896. Helsinki: Suomalaisen Kirjallisuuden Seura.

Kettunen, A. (2015) Aika-, yksilö- ja yhteiskuntakäsitykset suomalaisessa tulevaisuuspolitiikassa. Doctoral dissertation. University of Jyväskylä.

Kuosa, T. (2012) The Evolution of Strategic Foresight. Farnham: Gower Publishing Limited.

Malaska, P. (2017) Futures consciousness and knowledge of the future. In*: Pentti Malaska. Visionary and Forerunner*, ed. By. Pouru, L . – Wilenius, M. – Holstius, K. – Heinonen, S., 55-67. The Finnish Society for Futures Studies.

Popper, R. (2008) How are foresight methods selected? *Foresight*, Vol. 10(6), pp. 62-89.

Pouru, L. (2016) Strategic foresight and utilization of future-oriented information in Finnish SMEs – Reframing the intermediary role of Tekes. Pro Gradu -thesis, Turku School of Economics.

Pouru, L. – Dufva, M. – Niinisalo, T. (2019) Creating organisational futures knowledge in Finnish companies. *Technological Forecasting and Social Change*, Vol. 140, pp. 84-91.

Rohrbeck, S. – Mahdjour, S. – Knab, S. – Frese, T. (2008) Benchmarking Report: Strategic Foresight in Multinational Companies, European Corporate Foresight Group.

Rohrbeck, R. (2011) Corporate Foresight. Towards a Maturity Model for the Future Orientation of a Firm. Berlin: Springer.

Rohrbeck, R. (2012) Exploring value creation from corporate-foresight activities. *Futures*, Vol. 44, pp. 440-452.

Rohrbeck, R. and Schwarz., J. O. (2013) The Value Contribution of Strategic Foresight: Insights From an Empirical Study on Large European Companies. *Technological Forecasting and Social Change,* Vol. 80 (8), pp. 1593-1606.

Rohrbeck, R. – Battistella, C. – Huizingh, E. (2015) Corporate foresight: An emrging field with a rich tradition. *Technological Forecasting and social change*, Vol. 101, pp. 1-9.

Rohrbeck, R. – Kum, M.E. (2018) Corporate foresight and its impact on firm performance: A longitudinal analysis. Technological Forecasting & Social Change, Vol. 129, pp. 105-116.

Römgens, B. (2016) Roadmapping. In: Foresight in Organizations, ed. Van der Duin, P., 145-144-168. New York: Routledge.

Sarpong, D. – Maclean, M – Davies, C. (2013) A matter of foresight: How practices enable (or impede) organizational foresightfulness. *European Management Journal*, Vol. 31(6), pp. 613-625.

Scharmer, O & Kaeufer, K. (2013) Leading from the Emerging Future: From Ego-System to Eco-System Economies. Oakland: Berrett- Koehler Publishers.

Senge, P. M. et al. (1994) The Fifth Discipline Fieldbook. Strategies and Tools for building a Learning Organisation. New York: Currency Doubleday.

Slaughter, R.A. (1996) Futures Studies: from individual to social capacity. *Futures*, Vol. 28 (8), pp. 751-762.

Slaughter, R.A. (2002) Developing and Applying Strategic Foresight. (Earlier version published in ABN Report, Vol 5 No 10, 1997, Sydney, Prospect). *https://pdfs.semanticscholar.org/b5f9/80009dcb5ba0e3f6920ff947c9878d164d3b.pdf*, retrieved: 19.9.2019

Standard Industrial Classification TOL 2008. Statistics Finland. <https://www.stat.fi/en/luokitukset/toimiala/ >, retrieved 20.1.2020.

Söderlund, S. (2019) Interview for background information 21.5.2019.

Söderlund, S. (2019b) Introduction material of CFP-programme 2019-2020. Received 15.5.2019.

Tracy, S. J. (2013) Qualitative research methods. Collecting evidence, crafting analysis, communicating impact. West Sussex: Wiley-Blackwell

Vecchiato, R. – Roveda, C. (2010) Strategic foresight in corporate organizations: Handling the effect and response uncertainty of technology and social drivers of change. *Technological Forecasting and Social Change*, Vol. 77, pp. 1527-1539.

Vecchiato, R. (2015) Strategic planning and organizational flexibility in turbulent environments. *Foresight*, Vol. 17(3), pp.257-273.

Voros, J. (2003) A generic foresight process framework. *Foresight*, Vol. 5 (3), pp.10-21.
Wiener, M. – Gattringer, R. – Strehl, F. (2018) Participation in inter-organisational collaborative open foresight. A matter of culture. *Technology Analysis & Strategic Management*, Vol. 30 (6), pp. 684-700.

8 APPENDIX 1: QUESTIONNAIRE INVITATION LETTER

Hei CFP-alumni!

Oletko kiinnostunut kehittämään organisaatioiden ennakointia ja saamaan käyttöösi uutta tutkittua tietoa ennakoinnista?

Olen Turun kauppakorkeakoulun Tulevaisuudentutkimuksen maisteriohjelman opiskelija ja etsin graduani varten Certified Foresight Professional -ohjelman suorittaneita ennakoinnin osaajia kertomaan organisaatioidensa ennakoinnista ja etenkin sen osallistavuudesta.

Laaja-alaisella osallistumisella on tutkimuskirjallisuuden mukaan positiivisia vaikutuksia esimerkiksi ennakoinnin laatuun ja vaikuttavuuteen. Tutkielman tavoitteena on selvittää, miten osallistuminen käytännössä näkyy organisaatioiden ennakoinnissa ja millä keinoilla yksilöiden osallistumiseen voidaan vaikuttaa. Kaikki tutkimukseen osallistuneet saavat linkin, jonka kautta pääsee tutustumaan tutkielmaan sen valmistuttua.

Gradun aineisto kerätään sekä lyhyellä nettikyselyllä että syventävillä haastatteluilla. Voit vastata liitteenä olevan avoimen nettilinkin kautta Webropolilla toteutettuun kyselyyn anonyymisti. Linkki on avoinna 13.10.2020 asti. Mikäli olet käytettävissä noin tunnin kestävään haastatteluun, jossa sinulla on mahdollisuus jakaa asiantuntemustasi ennakointitoiminnan kehittämiseksi, jätä yhteystietosi kyselyn viimeiseltä sivulta löytyvällä yhteystietolomakkeella. Haastattelut toteutetaan mahdollisuuksien mukaan lokakuun aikana Turussa ja/tai verkon välityksellä. Vastaukset anonymisoidaan eivätkä vastaajat tai organisaatiot ole tunnistettavissa valmiissa tutkielmassa.

Viidelle ensimmäiselle haastateltavaksi ilmoittautuneelle on luvassa kirjapalkinto!

Linkki kyselyyn (arvioitu vastausaika 5-10 min)

https://link.webropolsurveys.com/S/6A2AC696860FBBC4

Ystävällisin terveisin

Maria Halkilahti

maria.a.halkilahti@utu.fi

9 APPENDIX 3: QUESTIONNAIRE RESULTS

Questionnaire data about the foresight systems

Q1: Millaista ennakointiin liittyvää toimintaa organisaatiossasi on ollut tai on tällä hetkellä? Voit valita useita vaihtoehtoja. (What types of foresight activities there have been or exist at the moment, in your organisation? You can select multiple options.)	**N=7**	**Percentage**
Skenaariotyöskentelyä (Scenario work)	5	71,43%
Työpajoja (organisaation sisäisiä) (Workshops, internal)	6	85,71%
Työpajoja (myös organisaation ulkopuolisia osallistujia, esim. sidosryhmiä) (Workshops, include external stakeholders)	4	57,14%
Systemaattista toimintaympäristön muutokseen liittyvien signaalien keräämistä (esim. Environmental scanning) (Systematic collecting of signals of the changes in the operational environment, for example environmental scanning)	4	57,14%
Digitaalinen ennakointityökalu tai muu järjestelmä, joka mahdollistaa kaikkien osallistumisen signaalien keräämiseen (A digital foresight tool, that enables all personnel to participate in collecting the signals)	3	42,86%
Viestikanava (esim Slackissa, Teamsissa tms), jossa kaikki voivat jakaa signaaleihin liittyviä havaintojaan ja ajatuksiaan (A communication channel or group, e.g. in Teams or Slack, where everyone can share their findings and thoughts related to the signals)	3	42,86%
Ennakointiin liittyviä luentoja (Lectures related to foresight)	4	57,14%
Ulkopuolisten tahojen tuottamien ennakointisisältöjen jakamista kaikkien luettavaksi (Distributing externally produced foresight material for all personnel)	4	57,14%
Kyselytutkimus (Survey) organisaation tulevaisuuteen liittyvistä aiheista (Survey on topics relevant to organisation's future)	4	57,14%
Asiantuntijapaneeli (Expert panel) organisaation tulevaisuuteen liittyvistä aiheista (Expert panel on topics relevant to organisation's future)	1	14,29%
Säännöllisesti ilmestyvä uutiskirje, jossa käsitellään myös ennakointiin liittyviä aiheita (Regular newsletter including foresight related topics)	1	14,29%
Ennakointiin liittyvistä aiheista tai signaaleista käydään epämuodollisia keskusteluja (esim. kahvitauolla) (Informal discussions (e.g. in coffee breaks) related to foresight topics or signals)	7	100%
Organisaation ennakointityöhön liittyviä raportteja tai lopputuotteita (esim. roadmapit) jaetaan koko organisaatiolle (Organisation's foresight reports or deliverables (e.g. roadmaps) are distributed to all organisation)	3	42,86%
Organisaation jäsenet voivat antaa palautetta ennakointiprosessin aikana (Organisation members can provide feedback during a foresight process)	2	28,57%

Muuta, mitä? (Something else?) **delfoi kysely sidosryhmille, voisiko sitä kutsua asiantuntijapaneeliksi – ja vähemmän systemaattista toimintaympäristön muutosten seurantaa (Futures Platform ja Meltwarin kautta ennakointiaiheiden seurantaa) – ennakointiryhmä** (Delphi or expert panel for stakeholders, less systematic scanning of changes in the operational environment with Futures Platform and Meltwater, foresight group)	1	14,29%

Q2: Ketkä organisatiossasi osallistuvat ennakointiin? Voit valita useita vaihtoehtoja. (Who participate in foresight in your organisation? You can select multiple options.)	**N=7**	**Percentage**
Ylin johto (Top management)	4	57%
Keskijohto (Middle management)	4	57%
Kaikki työntekijät saavat osallistua (All members of the organisation can participate)	4	57%
Kaikkien työntekijöiden on osallistuttava (All members of the organisation must participate)	1	14%
Osallistujat vaihtuvat ennakointiprojektien mukaan (Participants change according to the projects)	4	57%
Ennakointiin osallistuminen kuuluu tiettyihin tehtävänimikkeisiin (Participation in foresight is connected with positions/titles)	1	14%
Ennakointi kuuluu tiettyjen osastojen ja tiimien tehtäviin (esim. R&D) (Foresight is included certain teams' and functions' responsibilities, e.g. R&D)	-	-
Ennakointiin osallistuvat usein samat, aiheesta kiinnostuneet henkilöt (The same, enthusiastic individuals often participate in foresight)	6	86%
Osallistujat valitaan asiantuntemuksen mukaan (Participants are selected by expertise)	2	29%
Organisaation ulkopuoliset tahot, esimerkiksi sidosryhmät tai konsultit **(**External stakeholders or consultants)	2	29%
Ennakointiin osallistuvat kaikki, jotka ennakoinnin tuloksia käyttävät (All users of foresight participate)	1	14%
Ennakoinnin vastuuhenkilö (The individual responsible for foresight function)	5	71%
Muita? Kerro tarkemmin (hallitus) (Someone else? Describe. (board of directors))	1	14%

Q3: Mitä selkeästi ilmaistuja tavoitteita organisaatiollasi on ennakoinnille? Voit valita useita vaihtoehtoja. (Which explicitly expressed aims your organisation has on foresight? You can select multiple options.)	**n**	**Prosentti**

Strategiatyöskentelyn tukeminen (To support strategy work)	6	85,71%
Nykyhetken päätöksenteon tukeminen (Support today's decision-making)	4	57,14%
Uusien markkinoiden, tuotteiden tai palveluiden kartoittaminen (Exploring new markets, products or services)	3	42,86%
Innovaatioiden luominen, arvioiminen tai johtaminen (Innovation creation, evaluation and management)	3	42,86%
Signaalien havaitseminen ennen niiden vahvistumista (Detecting signal before they strengthen)	2	28,57%
Mahdollisuus saavuttaa etulyöntiasema reagoimalla muutoksiin ennen kilpailijoita (A possibility to gain competive advantage by reacting the chages before competitors)	3	42,86%
Riskienhallinta (Risk management)	4	57,14%
Organisaation kehittäminen (Organisational development)	3	42,86%
Vallitsevien ajattelumallien haastaminen (Challenging dominant mental models)	3	42,86%
Yhteisen vision luominen (Building a shared vision)	2	28,57%
Muutostekijöiden ymmärtäminen (Understanding of change factors)	4	57,14%
Organisaation oppimisen tukeminen (Support organisational learning)	4	57,14%
Organisaation osaamispääoman kasvattaminen (Building up organisation's knowledge capital)	4	57,14%

Q4: Mitkä seuraavista luonnehdinnoista kuvaavat organisaatiotasi? Voit valita useita vaihtoehtoja.
(Which of the following descriptions would you choose to define your organisation? You can select multiple options.)

Vastausvaihtoehdot Likert-asteikolla: Täysin eri mieltä – jokseenkin eri mieltä – en osaa sanoa – jokseenkin samaa mieltä – Täysin samaa mieltä (response options on 5-point Likert scale: strongly disagree – disagree – neutral – agree – strongly agree)

- **Eri tiimien / osaston välillä on vuorovaikutusta** (Teams / departments communicate with each other)

- **Organisaation jäsenten tekemät aloitteet voivat kasvaa käytännön kokeiluiksi tai toimintamallien muutoksiksi** (Initiatives by organisation members can grow into experiments or changes in practices)

- **Luovuuteen ja ideoiden jakamiseen kannustetaan** (Creativity and ideas' sharing are encouraged)
- **Eriävien mielipiteiden esittäminen on hyväksyttyä** (Expressing disagreeing opinions is accepted)
- **Oppimista ja osaamispääoman kasvattamista tuetaan** (Learning and building up knowledge capital are supported)
- **Organisaatiossa vallitsee yhteisymmärrys siitä, että ennakoinnilla on** arvoa (There prevails concensus in the organisation that foresight has value)

	Täysin eri mieltä	Jokseenkin eri mieltä	En osaa sanoa	Jokseenkin samaa mieltä	Täysin samaa mieltä	Keskiarvo	Mediaani
Eri tiimien/osastojen välillä on vuorovaikutusta	0,0%	28,6%	0,0%	57,1%	14,3%	3,6	4,0
Luovuuteen ja ideoiden jakamiseen kannustetaan	0,0%	57,1%	0,0%	14,3%	28,6%	3,1	2,0
Organisaation jäsenten tekemät aloitteet voivat kasvaa käytännön kokeiluiksi tai toimintamallien muutoksiksi	0,0%	14,3%	14,3%	14,3%	57,1%	4,1	5,0
Eriävien mielipiteiden esittäminen on hyväksyttyä	0,0%	0,0%	14,3%	71,4%	14,3%	4,0	4,0
Oppimista ja osaamispääoman kasvattamista tuetaan	0,0%	0,0%	14,3%	57,1%	28,6%	4,1	4,0
Organisaatiossa vallitsee yhteisymmärrys siitä, että ennakoinnilla on arvoa	0,0%	28,5%	14,3%	28,6%	28,6%	3,6	4,0
Muita huomioita?	0,0%	0,0%	100,0%	0,0%	0,0%	3,0	3,0

10 APPENDIX 4: INTERVIEW GUIDE

INTERVIEW GUIDE

TAUSTAKYSYMYKSET (BACKGROUND INFORMATION)

1. **Miten ennakointi näkyy työssäsi?**
   (How is foresight visible in your work?)

2. **Kenen vastuulla ennakointi on organisaatiossasi?**
(Who in your organisation is responsible for foresight?)

3. **Montako vuotta organisaatiossasi on ollut ennakointitoimintaa?**
   (How many years has your organisation had foresight activities?)

OSALLISTAVA ENNAKOINTI (PARTICIPATORY FORESIGHT)

4. **Muistelutehtävä. Kerro jokin esimerkki organisaatiosi ennakointitoiminnasta, joka oli osallistava. Millainen tilanne/projekti/toimintamalli oli kyseessä?**
   (Try to recall: Provide an example of your organisation's participatory foresight activity. What was the situation/project/ practice about?)

   →**Keitä siihen osallistui? (**Who were involved?)

5. **Miten määrittelet osallistavan ennakoinnin?** (How do you define participatory foresight?)

ENNAKOINNIN JUURRUTTAMINEN ORGANISAATIOON
(IMPLEMENTING AND ROOTING FORESIGHT IN THE ORGANISATION)

6. **Voros (2003) esitteli kaksivaiheisen metodin "ensin koulutus, sitten metodologia" (education first, metodology second) ennakoinnin juurruttamiseksi organisaatioon: eli kun käsitteet ovat kaikille tuttuja, osallistuminen helpottuu. Miten organisaation jäsenet on perehdytetty tai koulutettu ennakoinnin käsitteisiin?**
   (Voros (2003) introduced a two-phased method "education first, methodology second" to implement foresight in an organisation. The idea is that when the organisation members are familiar with the concepts, they find it easier to participate. How have members of your organisation been educated with the foresight concepts?)

7. **Voroksella (2003) tähän perehdytykseen ja juurruttamiseen kuului myös ennakoinnin esillä pitäminen organisaation arjessa ja esimerkiksi uutiskirjeiden lähettäminen. Millä tavoin ennakointia pidetään esillä organisaatiossasi esimerkiksi projektien välillä?**
(Voros (2003) included in this education and implementation phase keeping foresight on display and alive in organisation's daily life, for example in the form of sending newsletters. How is foresight kept alive and visible in your organisation for example in between projects?)

TYYPILLINEN ENNAKOINTIPROSESSI (AVERAGE FORESIGHT PROCESS)

8. **Millainen on organisaatiollesi tyypillinen ennakointiprosessi**? (Describe your orga-nisation's average foresight process)

ORGANISAATION ENNAKOINTITOIMINTA, MUODOLLINEN-EPÄMUODOLLINEN (ORGANISATIONAL FORESIGHT ACTIVITY, FORMAL – INFORMAL)

(Kyselystä saan taustatietoja organisaation ennakointitoiminnasta) (Questionnaire data can be used for background information on organisation's foresight activity)

9. **EPÄMUODOLLISET KESKUSTELUT →Kyselyn mukaan kaikilla vastanneilla organisaatioilla oli epämuodollista keskustelua ennakointiin liittyen. Kuvaile millaista tämä on.**
(INFORMAL DISCUSSIONS → According to the questionnaire, all responding organisations had informal foresight related discussions. Describe these.)

   → onko muuta epämuodollista toimintaa, joka liittyy ennakointiin?
   (do you have any other informal foresight related activity?)

   →Millaiset tekijät organisaatiossasi tukevat tällaista epämuodollista ennakointitoimintaa?
   (What are the supporting factors for informal foresight activity in your organisation?)

   → Miten nämä keskustelut hyödyttävät muodollista ennakointia?
   (How do these informal discussions benefit formal/organised foresight?)

KESKUSTELU OSALLISTAVUUDESTA (DISCUSSION ON PARTICIPATION)

10. **Millainen on organisaatiokulttuurinne – kuuluuko siihen osallistavuus? Kuvaile.**
(What is your organisation's culture like? Does it include human participation? Describe.)

→ **Mietitäänkö menetelmiä valittaessa niiden osallistavuutta?**
(When selecting methods, does the organisation in general consider if the methods support participation or not?)

→ **Mietitäänkö jo ennakointiprojekteja suunniteltaessa, kuka voisi tulla mukaan ja missä vaiheessa?**
(Do you consider you could participate and when, already when planningthe projects?)

→ **Pystyisitkö sä esimerkiksi tarvittaessa vaikka heti nimeämään tietyt yksilöt (organisaatiossa, sidosryhmissä), jotka mielestäsi pitäisi saada ennakointiprojektiin mukaan?**
(Could you describe, if needed, individual internal or external stakeholders, who on your opinion should be invited to foresight projects?)

→ **Oletko joutunut joskus vakuuttelemaan jollekulle, että laaja osallistuminen olisi hyödyllistä?**
(Have you ended up convincing someone on the benefits of broad participation?)

→ **Onko organisaatiosi ennakointi mielestäsi riittävän osallistavaa?**
(Do you find your organisation's foresight is participatory enough?)

ENNAKOIJAN YKSILÖLLISET OMINAISUUDET JA MOTIIVIT
(FORESIGHTER'S INDIVIDUAL QUALITIES AND MOTIVATIONS)

11. **Onko esim HR:llä tai kehityskeskusteluissa jotain mallia, jonka kautta kartoitetaan osaamista/ ominaisuuksia tai kysytään kiinnostusta ennakointiin, esim kehityskeskustelujen yhteydessä tms?**
(Do you have a model, for example, in human resources function or development discussions, that assists in mapping capabilities/ qualities or interest in foresight?)

→ **Miten organisaatiossasi viestitään, että jopa huonojen ideoiden esille tuominen tai väärässä oleminen on hyväksyttyä ja hyödyllistä? (luottamus)**
(How it is communicated in your organisation, that bringing even the weak ideas on the table or being wrong, are accepted and valuable? Issue of trust))

12. **Miten organisaation jäseniä motivoidaan osallistumaan ennakointiin?**
(How organisation members are been motivated to participate in foresight?)

→ **Kyselyssä useilla ennakointiin osallistuvat usein samat, aiheesta kiinnostuneet henkilöt. Onko positiivista vai negatiivista – vaikuttaako innokkaiden osallistuminen muiden osallistumiseen?**
(The questionnaire results indicate, that in many organisations the participants are often the same individuals intherestedin foresight. Is that a positive or negative issue – does the participation of the enthusiasts affect other's interest in participation?)

→ Jotain yhdistäviä taitoja tai ominaisuuksia, jotka yhdistävät innokkaita ennakoijia organisaatiossasi?
(Do the enthusiastic foresighters share similarities?)

→Millaisia keinoja tai palkintoja organisaatiossasi on tarjolla/olemassa ennakointiin osallistamiseksi?
(What aims/incentives/rewards does your organisation have to motivate individuals to participate?)

→ Saako ennakointiin osallistumisesta jonkinlaista palautetta?
(Is feedback provided for individuals who participate in foresight?)

→ Onko jollain tietyllä osastolla erityisesti ennakointiin osallistuvia? Liittyykö alaan, tiimiin tai vaikka johtamiseen, mitä luulet?
(Are there in a particular department especially foresight-enthusiastic people? On your opinion, is the interest in foresight or participation connected with the field, team or management?)

OPPIMINEN ENNAKOINNIN TAVOITTEENA
(LEARNING AS AN AIM FOR FORESIGHT)

13. Yhtenä ennakoinnin tavoitteena voi olla myös organisaation oppimisen tukeminen ja osaamispääoman kasvattaminen. Miten organisaatiosi ennakointitoiminta tukee organisaation oppimista ja auttaa kasvattamaan osaamispääomaa?
(Support of organisational learning ja increasing the knowledge capital can be considered as aims of foresight. How does foresight in your organisation helps reaching these aims?)

→ Oletko huomannut, että organisaatiossasi jokin esimerkiksi ihmisten ajattelussa tai toiminnassa olisi muuttunut ennakointiin osallistumisen seurauksena?
(Have you noticed that organisation members' participation in foresight would have caused changes in mental models or practices?)

→ Millaisia käytäntöjä organisaatiossasi ylipäätään on osaamisen ja oppimispääoman kasvattamisen tueksi? (vai onko niitä? esim mahdollisuus osallistua kursseille, saada apurahaa, käyttää työaikaa uusien aiheiden opiskeluun tms)
(Generally, which kind of practices does your organisation have to support skills/capabilities and increasing the knowledge capital?)

IDEOINTI, IDEOIDEN JA HUOMIOIDEN JAKAMINEN
(IDEATION, SHARING OF IDEAS AND INSIGHTS)

14. Miten ideointia ja ideoiden jakamista edistetään organisaatiossasi?
(How is ideation and ideas sharing proceeded in your organisation?)

→ Onko systemaattista heikkojen signaalien tai trendien skannaamista ja jakamista?
(Do you have systematic scanning and sharing of weak signals and trends?)

→Entä jos jollakin jäsenellä on aloite (kehitysehdotus) käytännön kokeiluksi tai toimintamallien muutokseksi, millaisia toimintamalleja organisaatiossasi on asian edistämiseksi?
(What if an organisation member would have an initiative to experiment in practice, or to change practices, what kind of practices your organisation has to proceed this?)

→ Jos jollakin organisaation jäsenellä on kiinnostava idea tai signaali, josta hän ei tiedä onko se organisaation kannalta merkittävä, onko teillä jonkinlainen toimintamalli tai järjestelmä tällaisia tilanteita varten?
(If an organisation member has an interesting idea or insight, which potentially conveys meaning relevant for the organisation, do you have a procedure or system to examine the idea/insight more thoroughly?)

ORGANISAATION SISÄINEN VIESTINTÄ
(ORGANISATION'S INTERNAL COMMUNICATION)

15. Kommunikaatiolla on tärkeä rooli ennakointijärjestelmän toiminnassa. Kuvaile organisaatiosi sisäistä viestimistä.
(Communication plays an important role in functioning foresight system. Describe your organisation's internal communication practices.)

→ Miten tieto kulkee organisaatiossasi vaakasuunnassa (esim osastojen välillä)?
(How does information flow in your organisation horizontally, e.g. between departments?)

→ Miten tieto kulkee organisaatiossasi ylhäältä alaspäin ja alhaalta ylöspäin?
(How does information flow vertically top-down and bottom-up?)

→ Onko ennakointiin liittyvää yhteistyötä?
(Do you have collaboration related to foresight?)

16. Oletko huomannut, vaikuttaako organisaation koko ennakointitoiminnan organisoimiseen?
(Have you noticed if organisation size impacts on the organisation of foresight?)

17. Miten kuvailisit organisaatiosi toimintakulttuuria yleisesti?
(Generally, describe your organisation's culture.)

”KOLME KUVAAVAA TOTEAMUSTA”
(“THREE DESCRIPTIVE DETAILS”)

18. Jos mietit ennakointitoimintaanne osallistumisen näkökulmasta, niin mitkä kolme tekijää organisaatiossasi erityisesti tukevat osallistumista ennakointiin?
(If thinking of foresight activities in your organisation from the perspective of participation, which three features/factors especially support organisation member's participation in foresight?)

Tuleeko mieleen vielä jotain, mitä en ole huomannut kysyä?
(Anything relevant I have not yet asked?)

11 APPENDIX 5: INTERVIEW RESPONSES

In some cases, the answers to the interview questions were longer than covered in the results section. Hence, the original (translated) citations or detailed answers for some themes or questions, to increase transparency in the interview material, are listed below.

Interview question (question 5 in the interview guide): How do you define participatory foresight?

Informant A	"Participatory is something that is done together. We are all involved, we ponder and act together. Participative, instead, refers to top-down -approach, where members of the organisation are invited to participate if it feels like it. Co-creation is more contemporary definition."
Informant B	"It is participatory or participative, when individuals have genuine opportunity to participate. Yet, that doesn't make anyone a participant, but provides only a possibility to take part. Participatory could mean, that an individual is accompanied at the participation. On my opinion, a possibility to participate doesn't necessary equal participatory; it would require added activity to enable the individual's participation and involvement. " "Sufficient participation in foresight includes, that when a decision is made or strategy built following the foresight activity, individuals can find that they have been able to participate. Satisfaction on the level of participation and involvement is the measure of sufficiency. If some members of the organisation experience, that they could not say anything, participation was not sufficiently organised."
Informant C:	"On my opinion, participatory means precisely that individuals can take part. That you can impact on it, collect signals and evaluate the signals whether they would form into trends or drivers of change, which we should take into consideration. It is participatory, when I get members of the organisation to join."
Informant D:	"At its smallest it can mean a facilitated half an hour session, where the focus is for example in some specific weak signal and its impacts. The signal can be made sense of by hoovering the information and ideas of possible outcomes from the participants. The ideal stage would be foresight as organisational culture, where everyone would be responsible for foresight and the tools would be widely used.
Informant E	"Different types of experts from different parts of the organisation pondering together the effects of various driving forces in the work-life or customer's life or specific service. "
Informant F:	"It is dependent on how prepared the participants are and how willing they are to share their expertise, that they are not afraid of losing valuable information by sharing it. It has to include various views. I would add to those the importance of sharing the notes from a foresight activity to all the participants. It is a process where something is going on all the time."
Informant G	"Participatory stands for multiple representatives from various units and organisations co-developing. Seek for joint vision across the organisations instead of inside one unit or organisation."

Answers to the interview theme ”Foresighter’s individual qualities and motives”. In the results section, the answers were examined under the title “Which presumptions or characteristics of organisation members the informants had perceived to affect the willingness or abilities to participate in foresight?”

- *Some individuals see the future and uncertainties as frightening*

    - "For some individuals, staying in their comfort zone is necessary, and uncertainties that are part of foresight are inconvenient to handle. In contrast, for some individuals, search for always something new is 'the thing'. "(IA.) Majority of the personnel has accepted the demand for new ways of thinking (IA).
    - "Some individuals may think, that the state of the art of their field of business is the desirable stage, whereas future, with the possibility that the business may or will change, can be considered as frightening" (IB).

- *Individuals find different details relevant*

    - "Everyone can be assigned to contribute to the weak signals collection and ideas creation. However, the time individuals spend on it, what they emphasise and how high level of seriousness they take up, can vary a lot" (IA).
    - "People perceive the signals and their interpretations differently, depending on if they are more analytical or creative by nature" (IC).
    - "Some individuals understand relatively fast the benefits of foresight for their work and development of their know-how" (IE).

- *Individuals have different perceptions on whose future is most relevant*

    - What is considered as relevant for the future can vary. O2 functions in the field of sustainable development. Hence, according to IB, it can attract employees, whose main interest is not the organisation's future, but the survival of the human species. Simultaneously, some employees who enter O2, which operates in the intermediate labour market, are challenging to get engaged in thinking about the

organisation's future, as they have enough to think about in their own life situations (IB).

- *Individuals have different pre-assumptions on foresight*

    - "It required effort to get from the search of 'the one future' to shared understanding, that foresight includes a search for multiple possible alternatives" (IC).
    - "People with a background in science and research can find challenging to share personal observations, that can not be verified. This can require effort to change the mind-set how the signals collected can be valuable and worth sharing, although there is no hard evidence" (IC).
    - "Some people may fear losing their ideas by sharing them" (IF).
    - "The foresight thinking and concepts are not widely known (IG)"
    - "Some find foresight as less important than for example developing the operational environment (IG)".

- *Practicalities of today are easier to understand than the future*

    - "For most of the people it is more meaningful to work with concrete, practical issues, that improve and take things forward, instead of collecting vague signals and ponder their meaning" (IB).
    - "Customer behaviour and the service journey of today are easier to understand than the need for and creation of entirely new types of services" (IB).
    - "For example, operational managers can question the benefits of foresight, as it does not fast generate value that could be measured" (IG).

- *Individuals hope 'someone else' was responsible for foresight*

    - "Majority of the personnel seems to wish, that there were a few individuals responsible for the foresight, who would collect the information, scan the environment and deliver understandable reports for the rest of the personnel" (IB).
    - "When the foresight was introduced to the organisation, there were voices that demanded, that signals collection and interpretation need to be allocated according to the areas of responsibility" (IC).

- *Individuals need different formats for participation*

    - "When working in teams, some are more visible, and some remain silent" (IA).
    - "Some individuals are used to keep their ideas on their own or only talk to their nearest colleague. In contrast, there are active people, who talk whenever there is a possibility for discussion" (IC).
    - "Although some individuals may find the atmosphere open for sharing and discussions, some may have interpreted it quite the opposite. Hence, it is easier for some individuals to share their insights into the familiar group instead of sharing them with the whole organisation" (IC).
    - "For example, hackathons provide different forms of participation for individuals. In the votings on the best ideas, by a rule of thumb, there is one person who shares the idea, 10 individuals who push the like-button and 100 individuals who only take a look at what others have done" (ID)
    - "From a group that consists of both introverts and extroverts, ideas can be excerpted by using different facilitation and crowdsourcing methods" (ID).
    - "In the workshop setting, the determined ones, who express they 'know the future', may flatten the quiet ones, unless the situation is well facilitated" (IF).
    - "People have different ways of communicating, and some could be able to share their insights more fluently by writing them down or sharing them in an online platform. Some people are more comfortable in one to one -situation and share their insights with the facilitator only after the workshop" (IE).

How are organisation members been motivated to participate in foresight ? (In interview guide, question 12).

"How to motivate organisation members to participate in foresight?"

- *Support learning*

    - Provide feedback (IA)
    - Provide positive feedback and encourage the participants when they start to challenge their own thinking and preconceptions (IC)

- *Underline a possibility to share and co-create*

    - In every occasion, try to inspire people with the possibility to share their insights (IC)
    - Support everyone to think about the new and upcoming and to share their ideas. Never turn down any ideas at first glance (IA)
    - Everyone wants to be part of an organisation, where their ideas are appreciated (ID)
    - Everyone has the possibility to have their voice heard in the strategy-building process. The strategy creates a context for everyone's work in the organisation. (IB)
    - Try to build an atmosphere of trust: we are building a shared future (IF)
    - Share positive messages about foresight: publish on the intranet a photo combined with the phrase 'Good drive, nice people, check the signals collected' (IC)

- *Provide well-reasoned benefits for participation*

    - To decrease the need for separate motivation efforts, connect foresight activities and workshops with existing processes and problems, that need to be solved (IG)
    - Frame foresight as a possibility to impact the development of one's own work and build one's skills for the future of work. Do not promise instant benefits, but try to justify participation in foresight as beneficial for the participant and organisation. (IG)
    - Participation in signals collection allows the participant impact on the organisation's responses to changes (IC)
    - Explain the purpose of an individual's efforts: The collection of signals has a purpose, and by being aware of the changes, our work could have an even greater impact in the field of science (IC)

- *Make participation convenient*

- Participation is organised to be as easy and efficient as possible: for example in the form of short morning coffee sessions, that are open to everyone and the signals are written down together (IC)
- Many find a possibility to participate in workshops motivating itself, as that provides them with a possibility to loosen their everyday practices (IE)
- If you serve a snack, individuals will join the workshops for free (IF)

- *Introduce foresight as a solution*

    - Give hope for the future. The message we spread is that we can impact on the future. That attracts interest in foresight (IF)
    - Everyone finds their jobs are under threat to disappear, which makes them interested in the future (IF)

This was not a clear question in the interview guide, but the theme emerged through interviews, as the respondents described the practices of their organisations.

Tools and methods that support participation

In the questionnaire, the respondents had selected from the options, that they organise foresight related lectures (57,14%), share foresight related reports and other end products for the whole organisation (42,86%), invite feedback from the organisation members during the foresight process (38, 57%) and distribute regular newsletter (one organisation

Platform or place on the intranet, where everyone can share their signals in	O1: strategy related folder, where all save signals they have collected O3: collaborative online foresight support tool, where everyone can deliver signals for and see signals collected by others. As fluent path as possible, only one click needed.
Instant of informal events that support uploading ones signals in the system	O3: Instant morning coffees, where the organisation has been informed of and anyone can join, to provide peer support and guidance on how to upload one's signals
Assistance and guidance for the ones that	O2: Some ways of participation for everyone. There are members of the personnel, who may face challenges in participating, due to the lack of personal computer or language

have challenges in taking part	barrier. Therefore the organisation has employees, whose role is to assist individuals to participate and can for example help in filling forms. O5: Ready-made scenarios to begin with, to assist individuals' thinking of alternative futures and their possible impacts
Clear focus in a foresight activity	O5: service development -workshops, where foresight is included, are formed so narrow and clear, that individuals can easily understand the aims of the workshop O7: Foresight is more beneficial, if there is a specific angle in it. A clear focus in a workshop, what is the problem that should be found a solution for, what is the aim of the workshop. This can also serve as a motivational factor.
Utilisation of other than foresight related methods	O4: utilisation of collaborative development -methods O5: foresight as a module in service design processes. Use of service design -methods O5: workshop structure follows Agile principles, they are as organised as development sprints.
Utilisation of other tools	O5: Megatrend cards by Sitra. Rapid Foresight -canvas. O6: participants of the workshops were tuned to foresight thinking beforehand by providing them content in Trello -platform
A follow-up for the foresight report or workshop	IF: After a report was published, the recipients were provided a possibility to participate in a workshop to learn more and deal with the content in more detail. IG: The summaries of the foresight projects are delivered to the business unit, that was part of the process. The foresight function does not have resources for the follow-up. Thus they expect, that there would be a contact person, who would be responsible for updating and continuous utilization of the material in the unit's processes. IG: Openness is a principle for foresight work. Foresight reports as well as new foresight knowledge is shared are as soon as they are finished, with the whole organisation so, that everyone could benefit from those. When the foresight function puplish something, that is also used as an attempt to to activate the recipients into discussion.
Feedback	IF: facilitator makes were freely flowing notes on discussions and ideas during the workshop and shares them with the participants after the workshop, if that would activate them thinking forward and want to add something.
Foresight as a module	O5: foresight as a module in service design processes. O7: when the development of operational environment of an individual business unit is under examination, a foresight module is included in the process. It can include for example the perspective of trends.
Alignment of methods	O7: One focus in our strategy work is, that every business units would use similar foresight methods. The strategy function takes a similar strategy tour, which includes foresight, with all business units.