The Anticipation of long-term impact in innovation project preparation

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Laurea University of Applied Sciences Abstract
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This study strives to understand the best practices used in impact anticipation in project preparation settings, to identify possible challenges in the implementation of anticipation in project preparation, and to find elements to a framework that could enhance the appliance of long-term impact anticipation in (innovation) project preparation.

This thesis was developed from a need for knowledge observed in the professional world and a desire to find solutions to practical problems. Project-based, goal-oriented activity is becoming an increasingly common way to organise work and development in organisations. Projects aim to produce joint solutions for future needs. Alongside immediate results, the impact of projects, or their longer-term social added value, has gained increasing importance in measuring success.

Although the importance of long-term impact created through projects has been gaining a foothold as a source of added value, the monitoring of the impact creation lacks systematics. More so, there is often a lack of methodical processes to create feedback loops from the impact evaluations of these projects.

The study is conducted as mixed method research, with both quantitative and qualitative data from surveys and interviews as information sources. Thematic analyses and close reading have been used for analysing the data.

The process model for impact anticipation in project preparation, outlined based on the interview data in this study, supports effective project implementation by bringing potential need horizons to the centre of preparation through foresight. Better motivation of needs and participatory definition of impact goals during project preparation help refine planned project measures. Formulating impact objectives into project measures supports the creation of an impact evaluation criterion and aids in validating impact. Systematic impact assessment provides information on the success of targeting actions and the general success of foresight within the project framework.

The model of this thesis can be used in all organisations that prepare and implement projects. Due to the future-oriented mindset and diversity of foresight methods, the author believes it is suitable for all industries and actors who develop and innovate purposefully.

Keywords: impact, anticipation, foresight, project preparation

Contents

1 Introduction

This thesis study was sparked by a personal realization of the thesis conductor while working as a project manager: although the importance of long-term impact created through projects has, to a gratifying extent, been gaining a foothold as a project motivator and source of desirable added value, the monitoring of the impact creation lacks systematics. More so, there is often a lack of methodical processes to create feedback loops from the impact evaluations of these projects.

Innovation projects, in particular, present a fascinating case. They anchor both their actions and expected outcomes in the future, without historical data to support their planned interventions or predict their results at the planning stage. What is known, however, is the need for a solution that the project aims to address. Alongside this need, there is an accompanying expectation of impact.

In situations where there is no historical data to guide solution development, foresight methods could offer substantial benefits. Insights can emerge from Johari's window, as described by Badminton (2023, 80): experts from varied fields come together to co-create and envision future developments, analysing what is known and uncovering previously unseen perspectives.

This study begins by framing the topic, objectives, and research context, illuminating the motives behind knowledge production, defining key concepts, and outlining the scope and subjects. It also details the role and standpoint of the researcher.

Methodologically, this mixed method study employs a survey to validate the research topic and inform the formation of research questions. A series of interviews then acts as a primary information source, analysed to illuminate the research questions and support the development of a model for enhancing the anticipation of long-term impact in the preparation of innovation projects.

Before delving into the data, the foundational theoretical framework for futures studies is outlined. The sources of the survey and interview data are detailed, and the gradual path to the conclusions is depicted. The interviews not only serve as the primary data source but also as the wellspring of insights that address the initial research questions and, in doing so, strive to respond to the final question by presenting a model process.

The thesis concludes by offering reflections on the findings, and discussing the validity, relevance, transferability, and applicability of the results. Given the topic's recognition as

both pertinent and timely, the thesis concludes with suggestions for future research opportunities.

2 Research setting and goals

Projects are a practical way of implementing goal-oriented developmental cycles within both private-sector operations and public-sector functions. Projects are delimited by time and resource allocation, they have set objectives tight to a unique deliverable and add value expectations towards which the dedicated project organisation strives according to an implementation plan. As action entities can be framed as projects and get funded by the initiating or purchaser organisation, projects also seek external funding e.g., through partnering or by applying it from separate funding instruments.

If funding is sought from separate funding instruments, those usually express expectations and requirements regarding the results of the funded projects. These requirements apply both to the concrete deliverables or measurable results of the project, naturally depending on the defined project type, and usually also apply to more abstract results, such as the effects achieved through the project's interventions and the social impact in general. The long-term societal impact is especially sought after in public or public utility funding instruments as they decide on the reallocation of funds generated from the public and operate by definition for the common good (one example of this is EU funding instruments such as the Horizon Europe).

To be applicable for the funding generally a project motivation and implementation plan needs to be handed over. Moreover, if not set by the funding instrument an evaluation plan on how the project is going to record the progress achieved, evaluate the impact created, and what metrics are to be employed is usually a part of the funding application.

As the success of a project is tied to its verifiable and measurable results, be it for outcomes or impact, the evaluation focus oftentimes lies in the end phase of a project. A look is cast backwards on the project implementation, of interest is the correspondence of planned and materialised interventions to set objectives and their metrics.

To create a plan to record and assess the implemented project interventions as well as concrete outcomes is not unproblematic, but still a relatively straightforward activity. To verify if something has been carried out or not is basically a binary yes-no choice. To enter evaluation on the attributes of this adds complexity.

A different difficulty factor is reached when the assessment is targeted on the impact of the interventions. What are the variables related to this assessment and how can the impact be

verified (causality between intervention and its alleged impact) and better yet, how should this be measured (scale and comparison)?

Could it be made easier by placing long-term impact creation at the core of the project - and what would this require from the project preparation? This thesis uses innovation projects as a thought-inspired viewpoint to underline certain features related to the research topic but does not wish to limit the results to apply to innovation projects only.

2.1 Research questions

This study strives to understand the best practices used in impact anticipation in project preparation settings, to identify possible challenges in the implementation of anticipation in project preparation, and to find elements to a framework that could enhance the appliance of long-term impact anticipation in (innovation) project preparation.

This is phrased in research questions as follows:

1. What kind of best practices can be found for anticipating long-term impact in an innovation project preparation setting?

2. What challenges can be identified in the implementation of impact anticipation in a project setting?

3. What kind of easily adaptable and operational framework could enhance the appliance of long-term impact anticipation in innovation project preparation?

2.2 The motive for knowledge production

It can be argued that projects form a significant source of new knowledge: in projects, organisations gather and create information that together with projects' concrete deliverables and interventions aggregate insight and knowledge. This alone is impactful, although the motive for knowledge production might stem from organisations' own interests, and the emphasis might lie on benefits gained through the direct impact the project outcomes deliver.

Still, if the possible long-term impact of project interventions is programmatically mapped in advance, it might not only improve and fine down project planning in the preparation phase due to more solid insight, but increase the efficiency in achieving more and more focused

impact due to a better understanding of both the possibilities and the systemic add value relations being affected by the project activities.

The information and insight gathered through this thesis might hence shed light on the ways the anticipation of long-term impact in a project preparation setting could enhance the add-value generated through the projects and on the ways impact anticipation could be integrated into the already existing project preparation activities.

2.3 Key concepts

The topic of this thesis: The anticipation of long-term impact in innovation project preparation entails scoping that manifests through the concepts used and hence it is important to take a stand on and define the used terminology in this thesis's context. Defined concepts are project, innovation, anticipation, and long-term impact.

2.3.1 Project

The generally accepted definition of a project is as worded here by the Project Management Institute in their A Guide to the Project Management Body of Knowledge: "A temporary endeavor undertaken to create a unique product, service, or result. The temporary nature of projects indicates a beginning and an end to the project work or a phase of the project work. Projects can stand alone or be part of a program or portfolio." (PMBOK® Guide, 2021). Key aspects being **temporary**, with a defined beginning and end, defined scope and resources, **unique** as the product or service created by the project is different in some distinctive way from all similar products or services, endeavor as involving coordinated activities among a group of people gathered for the project's lifespan, **purpose**: the project has objectives that it is set to achieve. The Agile Manifesto (2001) from the agile development framework that does not serve as a project management process as such, but defines principles to guide the implementation, supplements the basic definition with add value expectations. Projects are bound to bring add-value to the project owners as defined and this can, according to the agile development principles, be supported through chosen practices within the project.

Projects can be grouped in different ways depending on the field of operation or focus of the study, but in this study context, a division into three different types of projects is seen as beneficial for understanding the study scope. The thesis uses innovation projects as a reference, and therefore it makes a distinction between research, development, and innovation projects. Here are the definitions formed with the use of Open AI:

A research project can be defined as an academic, scientific, or professional undertaking that uses systematic research methods to answer a research question. These projects usually are about understanding and examining, primarily concerned with generating knowledge.

Development projects on the other hand concentrate more on application and refinement, using research or existing knowledge to create or improve something with practical use. In development projects the pursued development builds on previous interventions and the change targeted can be more incremental by nature.

Innovation projects focus more on creating new and transformative products, services, and processes that are based on novel ideas, and aim for market impact or even market or industry disruption.

Naturally, these kinds of definitions are arbitrary, the types are due to overlap, and of the three types defined above e.g. development and innovation projects often entail in-scribed research objectives as well.

2.3.2 Innovation

The author Jeffrey Baumgartner makes an enlightening distinction between creativity and innovation. Baumgartner defines creativity as the function of generating ideas. He then refers to innovations as the "implementation of creative ideas in order to generate value, usually through reduced operational costs, increased income, or both" (Baumgartner 2009, 5).

The definition of OECD's so-called Oslo Manual, that was originally drawn in 1991 as a joint effort and framework to define indicators on how to conceptualise and measure business innovation, defines innovation as follows: "An **innovation** is a new or improved product or process (or a combination thereof) that differs significantly from the unit's previous products or processes and that has been made available to potential users (product) or brought into use by the unit (process)" (Oslo Manual 2018, 20).

The Manual has variations on this generic definition for business innovation and business process innovation, but as it is conceptualised here, it is commonly used e.g. in innovation project settings, and adopted into this particular thesis.

German sociologist Holger Braun-Thürmann critically notes that the OECD's widely accepted definition of innovation is confined to an industrial-technical product development framework, and therefore overlooks other types of innovations, such as social innovations, unless they can be described according to the product development process and ultimately generate business benefits (Braun-Thürmann 2015, 18). This viewpoint is valid, and if the thesis were to focus on mere innovations, it would need to be taken into account. However, it can also be argued that when examining the impact of innovation projects, the aspect of wider definition may well be covered by the systemic, societal long-term effects brought about by innovations within these projects.

2.3.3 Anticipation

In this study anticipation, also referred to as foresight is understood as defined by The Finnish Innovation Fund Sitra's Futures Dictionary on the web: "Foresight. Recognising factors that affect the future, charting alternative futures, and determining measures required to reach the desired future. Foresight supports decision-making on the future, which inherently includes uncertainty. Foresight does not aim to precisely predict the future." (SITRA 2023). This particular definition is also used in the thesis interviews.

Kamppinen, Kuusi, Söderlund give more elaborate definitions for both anticipation (ennakointi in Finnish): "When used synonymously with future studies, it refers to the management of a changing present towards the future, using knowledge about the past, present, and future. It also involves assessing the development trend over a certain period with some assumed degree of probability. Foresight is considered to encompass describing the future, creating, developing, and utilising analysis methods, and producing, acquiring, processing, modifying, analysing, and reporting future-related information. Often, the term foresight is also used specifically to refer to planning methods to distinguish these from actual future studies.

And on foresight (ennakointi in Finnish): "Foresight developed as a critique of traditional foresight thinking. The principle of foresight thinking is that the present and the future are inseparably linked to each other. Therefore, issues and phenomena related to society, technology, science, education, political practices, culture, and the economy and their futures are examined as interconnected and systemic wholes, where understanding and development also take into account the principles of values and transparency. Foresight thinking is often process-oriented activity, where technological development is aimed to be integrated with social decision-making, and where an effort is made to highlight new, often hidden opportunities by examining different perspectives and areas together." (Kamppinen, Kuusi, Söderlund eds. 2003, 890-891).

Here noteworthy is especially the notion of how anticipation is done, and how foresight thinking sees present and future as inseparably linked in a manner that when its phenomena is to be analysed their different areas, such as society, technology, culture, and their futures in plural need to be examined as interconnected and systemic wholes. This idea of nestedness and interconnectedness also characteristic of systems thinking, applies to project settings as well as the process of using foresight to anticipate the project's possible long-term impact.

2.3.4 Long-term impact

In this thesis, the SITRA definition for long-term impact is used: A far-reaching, long-term societal change. With the term "impact", we might also particularly refer to actions taken to

promote development and progress; in other words, actions that benefit society. An impact is typically made as the result of different actors and their efforts. Change may be quantifiable and measurable, as well as qualitative and phenomenological (SITRA 2023).

Bertelsmann Foundation has defined an impact creation model, the so-called iooi model (Riess 2010), that is widely referred to, also by SITRA. Below is SITRA´s adoption and translation from the model (2019). SITRA uses this model in their publication Vaikuttavuuden askelmerkit (Heliskoski, Humala, Kopola, Tonteri, Tykkyläinen 2018), which describes the method of defining the process to enhance impact creation in an organization.

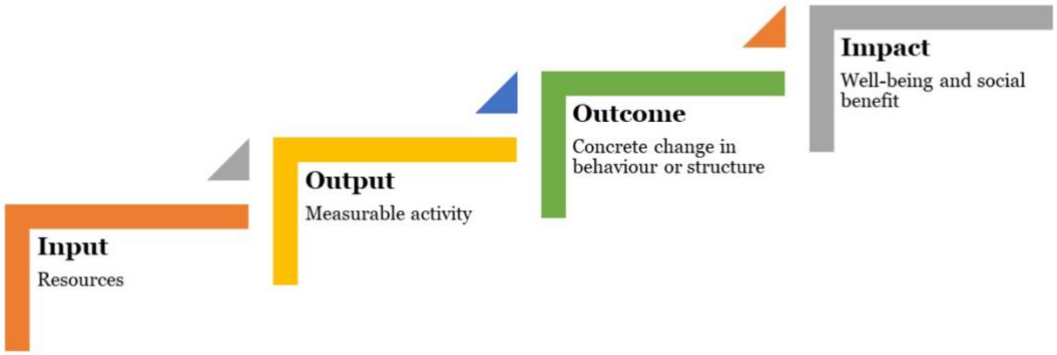


Image: SITRA (https://www.sitra.fi/en/articles/impact-co-creation-step-by-step/)

As visible in the iooi model (see above) it is important to make a distinction between short-term impact (Outcome) and long-term impact (Impact). In Finnish we use the term *vaikutus* for short-term impact and *vaikuttavuus* for long-term impact. To make this distinction clear, the term “long-term impact” is widely used in this thesis to refer to “impact” (vaikuttavuus).

As modeled in the iooi matrix, impact results from a line of preceding actions. The process begins with Input, referring to all resources (time, person, financial) tied to the planned activities. Through these, Output is realised, and activities and measures taken with the help of the resources available. Output generates Outcomes, direct or indirect measurable achievements. The last step on the ladder is Impact, which consists of the wider impact achieved through the concrete interventions and actions executed e.g., in a project. With impact, the time horizon is longer, as the impact is understood as societal, and hence systemic change that is amplified as a combined effect from both concrete project interventions and activities and their interaction with the operational, interdependent environment.

Projects are initiated to address a need or provide a solution, often with a specific deliverable aimed at achieving an **immediate impact**. In addition to creating immediate effect through actions and deliverables, projects also generate **indirect effects** that unfold over a broader temporal and stakeholder spectrum. While project outcomes and interventions are designed to meet defined goals and induce change, this change can surpass the initial objectives and influence stakeholders and future prospects in more significant ways. **Long-term impacts**, which may stem from systemic changes induced by project actions, are of particular interest to funders, who may guide projects toward desired impact areas. Measuring project success includes assessing both tangible deliverables and immediate results, but evidencing the wider, long-term effects of a project's actions is more challenging.

Hence, when talking about the anticipation of impact, some thought needs to be given to the ways of impact evaluation.

In the project context impact evaluation's objectives are usually partly dictated by the project funders' goal setting (funding instrument or project specific) and partly affected by the implementing organizations' own impact-related target setting. Still, the scope of impact-related objectives might not be as problematic as the actual measuring and validation dilemma related to impact.

The challenge related to proving causality between project interventions and the impact created through those is probably one of the most essential aspects. In the assessment of impact, the basic assumption is that intervention A leads to situation B. For this to be the case, i.e., to speak of causality, there must be sufficient regularity so that it can be said, "if A, then B". However, establishing causality is not quite this straightforward, and research literature has developed different approaches to this, such as variance-based or process-oriented approaches (Dahler-Larsen 2005, 11-12). Of these, the process-oriented and qualitative approach is suitable for the question posed in this thesis study, where impact is seen as a broad phenomenon brought about by systemic change. Determining causality and impact is a multifaceted issue overall, but as part of the solution, Peter Dahler-Larsen offers the concept of program theory. According to him, the basis of impact assessment is precise and clear conceptions of how an intervention affects. He calls these conceptions program theories. In the basic model of program theory, the Input - Process - Performance - Outcome matrix (Dahler-Larsen 2005, 34) examines context-dependent activity, whose attributes divide into both abstract and concrete. The single parts of the model may also have linkages, such as dependencies or cause-and-effect relationships with each other. The description and modeling of creating a program theory have to some extent conceptual similarities with the process of utilising foresight. This is interesting as it reinforces this study's hypothesis that anticipating impact can support not only the creation of impact but also the implementation

of impact assessment by providing a clearer understanding of the joint vision, specified motives, and goals, as well as corresponding intervention needs.

2.4 Study scope

The study concentrates on the **project preparation phase** or function dependent on the way of organising the project management cycle in an organisation.

PMI (Project Management Institute) has in its earlier publications defined a project management cycle that entailed five states: project initiation, planning, execution, monitoring and control, and project closure. In the newest version of their project management guide however different project management methods and frameworks are acknowledged, including agile, and therefore this distribution to five static phases that follow each other has been given less space. Although the first phase project initiation seems to indicate project development, it by closer reading refers to a more narrow, hands-on approach that precedes the planning and start of the implementation phase, a phase engaging internal and external stakeholders to ensure a joint vision of the project goals and success criteria so that a project has potential to meet the envisioned (business) needs.

In this context, we also come to the realisation that project management methods and frameworks traditionally focus strongly on project management itself. Project planning consists of designing the content of actions, timing, resourcing, risk assessment, and change management. The time horizon is relatively short and begins relatively near the planned implementation phase.

Value creation, especially in agile methods, has been made an integral part of the rationale for doing things, in PMI's newest guide it is even highlighted as a core function of a project. PMI acknowledges that value can be defined from the customer as well as the end user's point of view and that the value expectation might differ depending on the project's scope, being focused on the actual deliveries for the customer or even social benefit accomplished through the interventions in the project (PMBOK guide, 2021, 34.)

Still, long-term impact of the actions taken in a project is not given deeper thought in the frameworks of project management.

On the other hand, projects seeking external public funding are directed to consider programmatically the impact of their projects, in addition to the direct effects generated by the actions. Focusing on impact is natural considering the source of funding, but at the same time, projects must balance between the project's direct objectives, such as business benefits (like commercial solutions), and the impact arising from the project, such as equalising mobility, as these may not necessarily be achieved with the same investments.

For this reason, the focus of this study is set on project preparation, which defines the impact objectives of the project and creates a framework for project actions that either guide the creation of impact or affect its absence.

Within this study, the **innovation project setting** is seen as the original thought initiator, and it will take more of an indicative role as the study proceeds. Not all interviewees engaged in this study have worked especially with innovation projects, and hence the focus and add value expectation of this thesis reaches beyond the innovation project setting. Impact anticipation and employment of methods and frameworks related to that are relevant in all projects.

As the anticipation of impact usually builds on history data, for anticipation purposes there preferably is some experience-based or verifiable information on previous interventions and their impact on the operating environment and its actors on top of which trends, scenarios, and models can be constructed. With innovations, this previous information is non-existent, and hence the anticipation process might be more difficult, and at least it needs to build on something else, on different elements. This amplifies the role of foresight and project preparation in interaction with the impact evaluation cycle.

The chosen emphasis of this study on process also leads to the scoping choice not to concentrate on foresight methods and tools in this study. There are plenty of comprehensive methods, tool descriptions and libraries that are available for implementation as soon as the underlying process is in place.

2.5 Research objects

The first set of data consists of a survey implemented in a city-owned, non-profit innovation company of 60 employees situated in Helsinki, Finland. The survey was sent to almost the entire staff, gathering information on four different personnel groups: project managers, technical experts, project preparation, and administration. In this company, all of the four personnel groups were involved in the project preparation.

The second set of data comes together from the semi-structured interviews of a group of RDI and project experts at the University of Applied Sciences. The amount of interviewees is limited to 6 persons as the expectation is that this amount already saturates up the main points of the research topic. These interviewed experts do projects, develop project practices as well as pass on the knowledge aggregated in the projects to students in their field of study.

The interviewees of the University of Applied Sciences are in addition provided with a survey after their interview session. This anonymous survey gathers background information on the interviewees as a group.

All sources of data in this study are organisations that use public funding instruments, where long-term impact is highly valued, and that do not make commercial projects, although they might partner with companies with commercial objectives in the projects.

2.6 Research methods employed

This study approaches the research questions through qualitative research and mixed methods: the nature of the study is qualitative research, but it also utilises surveys which are traditionally understood as part of the quantitative method repertoire.

Firstly, the study problem needed to be confirmed. To verify the first, subjective, and experience-based notion on the possible lack of use of systematic impact anticipation in project preparation settings and to try to gain an understanding of the overall awareness of forecast as a method of impact anticipation. For this, the study employed a survey containing open-ended questions with the possibility of free-text answers.

Secondly, to gain a deeper understanding of the research problem, the interviews were used as a method to collect insights and experiences of chosen RDI and project management experts relevant to the study scope of long-term impact anticipation in the project preparation phase.

For theoretical background relevant research publications were used for preparation of the semi-structured interviews, tying the experience-based insights gathered through interviews to a theoretical framework and especially as a knowledge support in the formation of a framework enhancing the employment of impact anticipation in project preparation.

The primary research consists of the surveys and interviews conducted, the secondary research covers literature and additional relevant sources such as academic course content provided on the subject of project preparation in Laurea and forecasting-related toolsets openly accessible online.

The analysis methods chosen for the qualitative research data were thematic analyses and close reading. The method choice was considered the best suitable for data retrieved per an interview with a limited amount of respondents and with the content emphasis on professional, yet personal views, and experiences worded in multiple different ways and all interviewees approaching the reviewed phenomenon from their experiential perspective,

hence difficult to analyse without a strong contextual linkage to the single interview session and the interviewees' personal standpoint revealed during the interview.

2.7 Positioning

The study was conducted by a solo researcher with over 15 years of professional background in project management: mainly new-client projects, development projects, and innovation projects alike, both in the public and private sector, employing both waterfall style and agile project management frameworks. The role in which the thesis conductor has engaged with the projects has been project manager and product owner.

While employed in an innovation company, the thesis conductor approached colleagues in the project development unit with the research idea and landed on fruitful soil. Guided by the city's strategic goals, the unit had begun to prepare actions to develop the impact of project activities. There was a particular interest in ways to verify and monitor the impact of projects and to guide investments (input) based on this. The topic of impact anticipation for the thesis was seen as an intriguing opportunity in this context.

Although strongly inspired by the research environment provided by the company and prepared through strong interaction with the work community to address articulated needs for both information and concrete applicable solutions, it was a joint understanding that from the outset, the thesis work would not be tied to this specific innovation company alone. This was to ensure the wider applicability of the research findings and to allow the company to utilise the final results at its discretion, in a manner suitable for its workflow. The thesis conductor worked closely with the supervisor from the project preparation team appointed by the company, and meetings were held to provide context for the operating environment, dependencies affecting the work, and already identified needs related to impact. This greatly supported the preparation of the first part of the research, the survey.

At the time the first survey was implemented, the study conductor was employed in the innovation company from which the data was collected. During the data analyses, the study conductor was however no longer in work relation with the company.

The interviews in the second data retrieval were executed at the Laurea University of Applied Sciences, the same institution in which the study conductor furthers her studies. To ensure the autarky of the study objects, the interviewees have been selected from another unit.

3 Methodological solutions

In this study, a mixed methods approach has been applied, referring to a way of approaching knowledge that takes into account diverse perspectives and positions using both quantitative and qualitative research methods (Johnson, Onwuegbuzie, Turner 2007, 113).

Traditionally, research has been divided into quantitative and qualitative based among others on how research data is collected. However, this division does not always optimally serve research objectives, especially when the subject of study is complex and difficult to define. As early as 1959, Campbell and Fiske introduced the idea later known as triangulation (referenced in Johnson et al 2007), where multiple methods were used to validate research findings. This ensured that variations in research results were due to the characteristics of the phenomenon under study, not the chosen methodology. Johnson et al refer to researcher Norman Denzin, who was among the first to outline method triangulation, defining it as a method that combines different methodologies to study the same phenomenon. Denzin also identified the so-called between-methods triangulation, where both quantitative and qualitative methods are used in research (Johnson et al. 2007, 114). Since then, the benefits of this approach have been widely recognized, as Johnson et al highlight, including Todd Jick's (1979) observations on the advantages of using triangulation, that "(…) (b) [it] **stimulates the development of creative ways of collecting data**; (c) [it] can lead to thicker, richer data" (highlighting by thesis conductor, Johnson et al 2007, 115). Collins, Onwuegbuzie, and Sutton (2006) on their part identified the following rationales for employing mixed methods: **participant enrichment**, **instrument fidelity** (e.g., assessing the appropriateness and/or utility of existing instruments, creating new instruments, monitoring the performance of human instruments), **treatment integrity**, and **significance enhancement** (e.g., facilitating thickness and richness of data, augmenting interpretation and usefulness of findings) (highlighting by thesis conductor, Johnson et al 2007, 116).

Johnson, Onwuegbuzie, and Turner present in their paper their definition: "Mixed methods research is the type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches (e.g., use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the broad purposes of breadth and depth of understanding and corroboration." (Johnson et al 2007, 123). Moreover Johnson et al see mixed methods research as "an intellectual and practical synthesis based on qualitative and quantitative research; it is the third methodological or research paradigm (along with qualitative and quantitative research) (Johnson et al 2007, 129).

Researcher David L. Morgan also addresses paradigms in the mixed method context (Morgan 2022). According to Morgan, the discussion on paradigms has been strongly present from the

beginning in the Mixed method framework. Morgan highlights how researcher Thomas Kuhn viewed paradigms as helping researchers not only understand the central questions of their research area but also find the most suitable ways to address them (Morgan 2022, 97). Besides the debate in the research world about whether the mixed method approach should follow more closely the paradigms of quantitative or qualitative research, there has also been a discussion about its epistemological positioning (philosophy of knowledge). The idea here is that choosing a paradigm is less about the methods used to gather knowledge and more about the researcher's worldview and the philosophical assumptions it entails, to which all other choices in the research, such as the methods used, are subordinate. At an epistemological level, Morgan sees risks, for example, in the incompatibility between positivist and constructivist worldviews, but he also presents research evidence that mixed methods, by focusing specifically on the implementation of research, i.e., data collection and analysis, can successfully combine quantitative and qualitative research (Morgan 2022, 99-100). In his article, Morgan examines four potential paradigms for the mixed method approach: pragmatism, critical realism, transformative-emancipatory versions of paradigms, and dialectical paradigms (Morgan 2022, 101). As Morgan states, despite their differences, all four of these are united by an approach to choosing methods that are guided by the research question.

Matthew D. Sanscartier offers a valuable perspective on mixed methods research methodology by discussing researchers' need to navigate through two kinds of "mess": empirical and design-related mess. The first relates to situations where the quantitative and qualitative aspects of research yield conflicting results. The second concerns situations where researchers recursively modify the research design to align with the research context and obtain unexpected results.

Both types of messes emphasize the need for researchers to remain true to their research subjects and context, and to avoid oversimplifications related to empirical or research-design mess (Sanscartier 2020, 48).

In his article, Sanscartier introduces three dimensions to confront the mess: Episteme, Techne, and Phronesis. Episteme refers to scientific, context-independent knowledge, techne to context-dependent skill and pragmatic implementation ability, and phronesis to critical evaluation of the suitability and ethical sustainability of chosen actions (Sanscartier 2020, 51-53). Sanscartier also outlines the need for a 'craft attitude' in mixed methods research, a set of capabilities required from its practitioners, both individuals and communities:

“a disposition (not a paradigm, method, or design type) towards the mixed methods research process that (a) is comfortable with uncertainty, (b) favors non-linearity and recursiveness in

research design, and (c) treats research as an exercise in storytelling, about both the research object and our engagement with that object. (Sanscartier 2020, 53)”

The mixed-method approach offers this study an optimal means to first map the phenomenon and then define research questions tailored to the under-researched and vast thematic landscape. Initially, the survey provides basic knowledge and confirmation of the research topic. Subsequently, the interview serves as a tool to gather data on a phenomenon that, due to the ambiguity of terms and the variability of experience, requires real-time interaction — verbally, visually, and audibly — with the subjects. The combination of both quantitative and qualitative data collection methods, along with the use of primarily qualitative data analysis methods, has yielded data that is multifaceted and information-rich. This approach facilitates the recognition of the dynamic interplay between various individual and environmental factors (including personal and interpersonal contexts, such as background knowledge, philosophical assumptions, and study participants) and broader social/institutional contexts, as Sanscartier references researchers Plano Clark and Ivankova (Sanscartier 2020, 49).

3.1 Survey

The first data set was gathered through an anonymous survey sent to the entire staff, excluding three roles from a non-profit, city-owned innovation company. **The motive for information acquisition was to verify the potential of the initiated research question.**

The anonymous survey consisted of two parts: background information and topic-related questions. Amongst the questions were questions that provided quantitative data as well as questions that gave the respondents the possibility to elaborate on their thoughts with free-text answers. The same survey was sent separately to four (4) different staff groups engaging with project preparation in the company: The project development team (project preparation), management, technical experts, and project managers. The surveys asked each group member to reflect on their knowledge of the key concepts, their use and role in the project preparation function as well as respondents' own role in the project preparation. To segregate the responses of each subgroup from each other, the survey was sent to each respondent group separately. The answering time for the survey was set for approximately 1,5 months, but the survey remained open for 3 months and reminders were sent to give everyone willing to participate a chance to participate.

A survey was chosen as a method for data gathering, because there was a need to get comprehensive, cross-sectional, quantitative, and comparable information on the research topic’s main phenomena, awareness, and stance in the research object, here: innovation company as a whole and its expert role related personnel groups. The survey as a cross-

sectional study with a sample consisting of all members of the project preparation relevant staff members allowed the use of data as a gross group reflecting a company and its policies, but also the cross-comparison between different respondents groups.

The quantitative questions of the survey were performed also during the interviews of the second data set collection and asked once again in an anonymous survey sent to the interviewees after their interview session as a third data sample. This allowed the comparison between the two research objects on some of the research-specific variables.

The survey was executed by consent with Google Forms, according to the company's regulations and used platform. The raw data was collected and stored by the thesis conductor to a personal Google account and was not shared with the company. The collected data was used in the thesis as anonymised, and the survey structure is attached to the thesis. The data collected will be erased as the thesis is evaluated and permission for data deletion is given.

3.2 Interview

The second data set was collected via semi-structured interviews that were performed as remote Teams meetings that were recorded by consent and transcribed for research purposes. **The objective of the interviews was to offer a means to gather experience-based knowledge and insight on best practices and possible pain points on long-term impact anticipation in project preparation settings.**

The interviewees were RDI- and project experts from Laurea University of Applied Sciences with knowledgeable experience in project management. The main criteria for selection was the expertise of the interviewee on the topic of innovation and project management and their current role in the RDI Unit. Other criteria such as gender, nationality, education, or age group were not considered. However, education and age-related information was collected via an anonymous survey from the interviewees as group descriptive background information with the motivation to use this as a possible source of insight in the analysis phase if needed and as a means to assure research quality.

The planned and conducted amount of interviews was six (6) and the amount was set as the assumption of saturation in relevant differences in the answers and therefore a reliable sample of insights representing this group of experts. In case the assumption would have, based on the findings proven weak, the thesis conductor was set up for acquiring more interviewees. Even in this case, according to the plan, the number of interviewees would not have exceeded 10 people as this was considered a representative sample of the whole number.

As the aim of the second research data acquisition was to gain an understanding of the research phenomena as personal insights and shared experiences from a sample of experts on the topic, an interview was chosen as a method. In the research, interviews are considered best suitable in situations, where the researcher contemplates abstract phenomena, studies subjective insights or opinions, or handles study areas from which there is only scarce data or knowledge available (Kananen 2015, 143) and hence needs to be able to react on the interviewee's response both with question formulation as well as diverging from the pre-prepared script to serve the study objectives. To accomplish that, a semi-structured interview was chosen in this study to give more space for variation within and between the interview sessions. Still, to safeguard the comparability and reasonable level of commonality of the gathered data, a uniform thematic structure was followed throughout the interviews.

The recordings of the interview sessions were saved on Laurea's Microsoft 365 platform, in the thesis conductor's personal files (Cloud). The thesis conductor was the sole person to have access to the data: recordings and transcriptions. Names and email addresses were collected for contacting the interviewees. Emails were sent through Laurea's Outlook email service provided for both students and staff. Names of the interviewees were also recorded to the original session recordings as a feature to Teams. The collected data, namely interview content was used as anonymised in the thesis corpus. The thesis conductor followed Laurea's policy on data privacy and data lifecycle guidance, and the data will be destroyed accordingly as soon as the thesis processing and evaluation permits. The interview structure is attached to the thesis for evaluation purposes.

The third set of primary data was collected from the interviewees through an anonymous survey. This survey gathered background information on the interviewees as a group, and in addition, collected interviewees' final views on a study topic-related question.

This survey was implemented with Google Forms in the same manner as the study's first data set, and the data was collected, handled, and published anonymously. This data too is due to be erased together with the other research data in alignment with Laurea's data management protocol.

3.3 Methods of analysis of the data

As researcher Kari Kiviniemi states qualitative material does not reflect reality as it is, but offers an interpretive frame to it through the points of study and review chosen by the researcher that also affect the material gathering methods as well as the material itself cumulated this way (Raine Valli ed. 2018, 76). Furthermore the phenomenon itself studied might entail characteristics that require the study process to transform during the study along

the research subject (Raine Valli ed. 2018. 84). Qualitative research methods offer the flexibility needed, both in scope as well as sources of multifaceted material later to be combined into a conclusive synthesis.

The primary method of analysis for both survey and interview data involve close reading and thematic analysis. Brummett defines reading as an action that attempts “to understand the socially shared meanings that are supported by words, images, objects, actions, and messages” (Brummett 2019, 8). Reading entails also the attempt to find reasonable or plausible meanings in the message and it should be defensible afterward. Close reading as a technique is by Brummett the mindful, disciplined reading with a pursuit of deeper understanding. Close reading needs to consider context, both historical and textual as well as the audience perspective from which the reading occurs. (Brummett 2019, 27)

A theme is understood here as defined by Braun and Clark: “A theme captures something important about the data in relation to the research question and represents some level of patterned response or meaning within the data set” (Braun, Clarke 2006, 82).

The surveys provide quantitative data on the backgrounds of the study subjects, as well as their perspectives on and experiences with the study's key concepts. The survey also includes open-ended questions with free-text answers, where the close reading technique is applied to identify both recurring content, thereby reinforcing the study, and unpredictable or interesting content. The interview material has been analysed for its content, thematic emphasis, and comparison of the pre-structured themes of the interview script with the preceding survey data. As Paul Mihas emphasizes through the research literature, “The identified themes address the research question, even if not every participant addresses the theme per se” (Mihas 2023).

For analysing the interview data, both the recordings—video with image and sound—and the transcriptions of the interview sessions have been used. Following this open coding or first-round analysis, the datasets were evaluated and read against findings in the research literature. This integration and synthesis resulted in the parsing of the findings into a model.

Thematic analysis was chosen because it is a method not tied to any specific theoretical background. Furthermore, it is frequently used to analyse subjective viewpoints collected through interviews (Flick 2023, 450), as in this mixed-method study.

The focus of the material is on interview data, in which individuals with diverse experiential backgrounds and conceptual interpretations articulate a difficult-to-define subject area. In this context, close reading is also needed in analysing the data concerning the responses: what the interviewees say, what they possibly mean if there are indications of this visible in the overall data set through analysis. What the interviewee tells about themselves, how they

position themselves in relation to the interview topics, how they react to the questions, and the words and emphases they use to approach the questions. Against all this information, a coherent interpretation is sought. Semi-structured interviews bring a level of repetition and thus comparability to the data at a certain level, and this supports the making of interpretations both in the case of the individual and the group formed by the interviewees.

Given the scarcity of research on the chosen topic, the approach to data analysis is inductive thematic analysis. In other words, codes and themes are initially developed from the data, and the theoretical framework follows. Themes help cluster data into insights that transcend the original context and structure, serving the research topic more effectively.

4 Theoretical framework

Given the topic of the thesis, the study anchors and gets theoretical inspiration from multiple disciplines. The main focus is set on Futures Studies, an interdisciplinary field (Kamppinen, Malaska, Kuusi 2003, 25) that thrives to aggregate information on weak signals, to recognise and analyse trends to generate foresight on e.g. possible, probable, and preferable futures.

As the editorial board of the textbook, Tulevaisuudentutkimus tutuksi explains in the introduction of their work published in 2022, futurist Roy Amara defined three starting points for future studies in his 1981 article in The Futurist magazine, which still corresponds to the prevailing way of futures studies thinking today: 1) the future is not predictable, 2) the future is not predetermined, and 3) we can influence the future with our actions and choices. (Aalto, Heikkilä, Keski-Pukkila, Mäki, Pöllänen, eds. 2022, 11).

As the researcher Malaska points out, the roots of modern future studies are partly seen to lie in the Enlightenment era. At that time, literature shows references to moral and ethical emancipation, the ethos of progress, and the first appearances of the concepts of utopia and dystopia. Other starting points can be set, according to researcher Wendell Bell, as cited by Malaska, but they fall into a later period, the beginning of the 20th century. The first initiatives for incorporating future studies into university curricula date back to the 1930s in the United States of America. (Malaska et al. 2013, 16).

Malaska also describes in his text the development of terminology, especially when talking about future studies as a scientific activity. He delineates the difference between future studies, futurology, and foresight as follows: “Futurology is basic research in the field, philosophical studies on the basic hypotheses of futures research, and speculative research into the development of various real-world scenarios performed at least to some extent in compliance with the principles of [Ossip] Flechtheim’s methodology” (Malaska 2013, 18). Future studies, on the other hand, generally refer to scientific research in the subject area.

Foresight, as defined by Malaska, is applied to future studies, producing tools to support decision-making. It is a participatory method, where on the one hand, a shared long-term vision is created for a company or organisation, and on the other hand, readiness is developed to commit to short-term decisions necessary for realising this vision. (Malaska et al. 2013, 19).

The discussion on the focal points and schools of thought in academic future studies continues, and they are not central to the content of this thesis. This thesis specifically focuses on foresight as an activity and a mindset, also referred to as “anticipation”.

Futurist Elina Hiltunen describes in her work “Foresight and Innovation” (2013) an EU project carried out in 2002 and its research on 18 European companies, examining how these organisations use foresight as part of their operations. Two main motives for using foresight emerged: firstly, business requirements to examine the surrounding world in the long term; secondly, the desire to develop the capability for proactive innovation and thus improve chances in their competitive environment (Hiltunen 2013, 160). Further, Hiltunen describes, using Singapore as an example, how its government employs systematic, cross-administrative, and business-inclusive foresight in decision-making support and to form an understanding of the region's economic outlook, such as new potential business areas, new talents, threats, and opportunities. The impetus for using foresight, as highlighted by Hiltunen’s interviewee, is Singapore’s small size in a geopolitically challenging location. Foresight is used to expand expert networks and develop necessary capabilities based on observations. (Hiltunen 2013, 169).

Philosopher Ilkka Niiniluoto ponders in his article “Future Studies: a Science or Art” the then relatively new status of future studies as an academic discipline. He intriguingly suggests that the core of future studies may lie in the legacy of Herbert Simon’s defined “design sciences” or “sciences of the artificial”. Here, design or planning is seen in its broader sense as an activity where an acceptable outcome is achieved through the systematic application of optimal means for the purpose. The subject of design can be an object or other artifact, but equally a social organisation, a solution to a problem, or a decision. Thus, the future can also be seen as something/an artifact that humans design. (Niiniluoto et al. 2013, 25). Niiniluoto concludes his reflection: “[...] future studies when it combines the tasks of exploring probable and preferable futures, is a mixture of theoretical and empirical research, methodology, philosophy, and political action. But at its core, we find a design science which attempts to help the rational planning of our future” (Niiniluoto 2013, 26).

In the textbook of Aalto et al (2022), the editorial team emphasises that currently designing the future, or as they call it “making of the future” manifests as different forms of co-creation, participation, and involvement. The viewpoint is not necessarily expert-driven but

thrives for an equal approach that stems from the needs and objectives of the community. (Aalto et al. 2022, 15).

In this study of interest is the pervasive idea in futures studies and its many schools of thought that by imagining the futures the parties involved also create and form the future (i.a. Badminton 2023, 12-13). In the literature futures studies has been characterised by their eclectic touch, taking influences, using theories, and combining methods from other fields of science. At the same time, an assemblage of characteristical methods has been developed within the futures studies to acquire information. Hence futures studies is in the thesis employed not only as a discipline but also as one possible framework of knowledge production.

Of theoretical and disciplinary value is also change theory, principles of systems thinking, and studies of organisational change. These however come in display foremost in the analysed literature and are if needed referenced within the direct context.

5 Description and analyses of the Data - Survey

The aim of the first data collection was a preliminary study regarding the awareness and perceptions of the expert groups within the personnel of a project organisation, the company functioning as the research environment, of long-term impact and anticipation, as well as the considered relationship of these concepts to project preparation.

The survey was conducted as a structured online questionnaire, and the response period was set from June 22 until August 9, 2022. Due to the summer season, the respondents were allowed to give their answers after the official period had expired to give everyone willing the chance to participate. The survey was sent via work email, and the process also included reminder communication via email and other means.

The survey was sent to expert groups who, according to their job description in the company being studied, were involved in project preparation. The survey was sent to the following expert groups within the company: project managers (sent 23 / responded 9, response rate: 39%), project preparation team (sent 4 / responded 3, response rate: 75%), technical experts (sent 13 / responded 8, response rate: 62%), and management, team leaders, and administration (sent 5 / responded 2, response rate: 40%). Excluded from the survey were certain roles from management and communications that do not partake in the project development work as of interest in this study.

The content of the survey was the same for all respondents, except for one section of the questionnaire, where respondents were asked to express their views on the phenomena

mapped as representatives of their own named expert reference group (the groups listed above).

The survey included mandatory questions with fixed answer options as well as questions with the possibility to give an open, free-text answer. The latter question type was not marked as mandatory in the survey form.

In the background information section of the survey, respondents' age range and education level were surveyed. The respondents were asked about their perception of relevant professional careers in years (also in other roles than the current one), as well as their perception of the experience in their current role in years.

The survey inquired (2.1) about the respondents' understanding of anticipation as a concept on a Likert scale from 1-5 (1= Not familiar at all, 5 = Very familiar with the concept). The concept was also described in the survey questionnaire. The respondents were asked to assess (2.2) in their own words (free-text field) what, in their opinion, anticipation could mean in project preparation settings.

The survey inquired (2.3) with a scale of 1-5 (1= Not familiar at all, 5= Very familiar with the concept) about the respondent's familiarity with the concept of long-term impact. The concept was also described in the survey questionnaire. The respondents were asked to assess (2.4) on a predefined scale to what extent they are involved in anticipation, production, or evaluation of impact in their current role.

The respondents were asked (2.6) on a scale of 1-10 (1= There might be a connection, but it is far-reaching, 10= absolutely there is a connection, and it should be enforced) if they saw a connection between anticipation and the creation of impact in project work.

The respondents were asked to provide a free text assessment (2.5) on whether they believed that anticipation in project preparation could contribute to the creation of impact, if at all. In the last question (wrongly numbered as 2.6, instead of 2.7) the respondents were asked to assess their own role (an expert role written out in the survey) in relation to anticipation work in project preparation.

The survey gave an interesting cross-sectional view into the studied groups' awareness and perceptions regarding anticipation and long-term impact in relation to project development or project preparation.

5.1 Analyses

Not surprisingly the project development team's respondents were familiar with both anticipation and long-term impact, they also phrased fundamental factors on the question of

what anticipation could mean in a project preparation setting, such as being able to recognise emerging signals and trends and the same time to be able to fit the applications into the existing framework of different level of the steering means such as strategies and on the other hand the funding instruments' various preferences. Also, the need to be in the know of new technologies and solutions was mentioned.

"Better recognition of the trends, signals and phenomenons that could bring add-on value to project development work (via innovation findings, new ideas etc) taking into consideration steering factors, like company strategies, owner control and supportive, financial programmes."(Respondent S1_14)

"In the project funding it means e.g. gathering information on upcoming EU legislation, pre-documents on the upcoming funding programmes, national legislation and high level strategies (e.g. on regional development) and pre-information on regional strategies such as the smart specialization strategy. (...) This then needs to be matched up with e.g. city strategies in order to be able to build relevant projects."(Respondent S1_12)

The clear emphasis on this group's activities regarding long-term impact was on the anticipatory side, in comparison to impact generation or even evaluation, although interest was shown also to participate in that phase more in the future. The respondents of the project development group also recognised a strong relationship between anticipation and generation of long-term impact in project preparation work.

"In many of the current funding programmes the project's long term impact needs to be visioned and described. (...) Therefore it is essential that in the project development process an anticipation work should be conducted, at least on some level. The anticipation work also supports the implementation of the project." (Respondent S1_12)

"Anticipation allows us to consider potential impact generation and consequently allows for maximising project's potential impact during its development." (Respondent S1_16)

When asked about the project development experts' role in anticipation work in project preparation, the need to be aware of the future affecting elements was acknowledged, but at the same time the role of the project managers as the substance experts were emphasised.

"(…) The substance experts need to have a deep enough understanding of the project that is being built and therefore [they carry] the main role in the anticipation work." (Respondent S1_12)

This was thought of as so important, that if this competence would for some reason not stem from within the current in-house pool of experts, it was suggested to be acquired from outside.

The management group's answer rate was quite low, so the answers given can't be outright seen as representative of the whole group. Still, in the free-text answers, some good viewpoints were presented.

On the question of anticipation serving for impact generation in the project development context, the value was recognised and the benefits of systematic anticipation were seen:

"Anticipation work would provide a way to define scenarios and use impact as an indicator to guide the most effective paths" (Respondent S1_01)

"Systematic foresight tools would increase the possibility of "hitting the nerve" thus making some ground-breaking innovation and being in the front line (...)." (Respondent S1_03)

On the role of the management especially concerning the role of the management in the anticipation work of project preparation two main features rose on the surface: enabling and support. The need to enable anticipation and foresight work within the project preparation and project management cycles by securing time for this was mentioned. Also, management's support was seen as important:

"Management needs to actively expose itself to global foresight studies and jointly brainstorm the findings with the teams." (Respondent S1_03)

Reviewing the answers of the substance experts, here both the project managers as well as the technical experts, there was a clear void of lore on both anticipation and long-term impact as concepts. This showed not only vast dispersion in the quantitative concept familiarity-related questions, but also became evident in the free text answers.

The amount of responses from the project managers was not high, only 39 % (total of 9 answers out of 23), whereas technical experts' response rate was over 62 % (8/13).

Within the group of project managers, although the concepts of anticipation and long-term impact were defined in the survey, long-term impact was mixed up with short-term project impact (related to project deliverables) and anticipation was bundled with traditional project management tasks, such as task/ schedule management or risk assessment. This suggests that the concepts, especially the concept of anticipation were somewhat new to the respondents.

The majority (67%) of project manager respondents assessed that in their current role they only sporadically engage with impact anticipation and that they only sporadically (78%) deal with impact evaluating. They still saw a strong connection between anticipation work in project preparation and long-term impact generation. On the question of how anticipation could benefit impact generation, add-value was seen in engaging anticipation in the project preparation process.

"All projects should aim for impact, either immediate or more indirect and long-term. Anticipation is an important tool in understanding what kind of activities are needed in order to reach desired outcomes and impacts." (Respondent S1_22)

"Foreseeing how the results of projects can accumulate to contribute to a larger scale impact either socially, environmentally, policy wise, regulatory and cross-sectional cooperation wise." (Respondent S1_23)

"I suppose both anticipation and impact generation happen in the same tense: future which means shifting the perspective from current problems more towards wanted outcomes." (Respondent S1_32)

When asked about the anticipation work in project development and how the project managers see their own role in the process, interestingly most of the respondents started their answers from the project management phase, i.e. they excluded the whole project preparation phase. In the free text answers it came also evident that many saw anticipation manifest as part of the project managerial task set:

"Doing anticipation, especially in the beginning of the project helps the team to orientate to the topic map out the current situation, and ponder what the future could look like and what kind of activities would be most fruitful in the long term. The project manager plays a key role in encouraging anticipation." (Respondent S1_04)

"The project manager does not necessarily need to do the actual foresight work themselves but needs to ensure that it is done by a qualified project partner. Then, the role of the project manager can be to ensure the suitable quality and scope of the anticipation work, as well as making sure it is incorporated in the project work packages and tasks." (respondent S1_06)

"The PM should care enough [of anticipation] to avoid failures in achieving the milestone by e.g., discussing any critical issues with the project experts or any accountable bodies in the project."(Respondent S1_23)

"My role is to ensure that the work carried delivers the expected outcomes, including impact generation (IF that is one of the project objectives)." (Respondent S1_42)

The second group of substance experts, namely the technical experts, engaged, based on the survey, more actively with both impact anticipation, generation, and evaluation than the project managers. They too saw a strong link between anticipation work and long-term impact generation.

On the question of what anticipation could mean in project development work, they highlighted e.g the following:

"In project development, the anticipation needs to be part of it from the start during the project proposal. During the proposal process, people working on it need to have a clear view of what is relevant in the future, because the starting moment of the project may be far in the future. (...)" (Respondent S1_62)

"Ideally, project development (development & preparation of new projects) should be aligned with the longer-term aims of the organisation. (…) Thus, I would say that anticipation should have a role in project development. This could potentially include: a) anticipation of future issues and needs in society, b) anticipation of changes in the operational environment, and c) anticipation of organisational aims in the future (this might also be called strategy work - perhaps the two are intertwined?)" (Respondent S1_84)

"High-quality project development requires being on top of every situation. Anticipating is at its best in identifying risks and possibilities as well as in the planning and definition phases of the project. This highlights all the way from the beginning of the project to the end of the project. The process of anticipating is attached to continuous development." (respondent S1_88)

On the benefits of anticipation in project preparation this group's respondents saw value in the capability to assess the planned interventions against the anticipated future needs:

"As the world moves forwards, so do the needs. And if the needs are anticipated well, those are relevant in the impact generation phase. (…)" (Respondent S1_62)

"Being aware of related trends and other initiatives pursuing similar goals as the project may help avoid wasting resources on approaches that do not answer the near future needs, or will be quickly superseded e.g. by well-funded and committed alternative approaches in development." (Respondent S1_86)

Of their own role in the process as technical experts, their skills and knowledge as supporting function was present in the answers:

"I should be able to help others to be aware of the trends and current needs of the society with the tools I am professional of. This helps others to aim their resources into projects that are relevant for the future." (Respondent S1_62)

"(…) Being able to anticipate also requires having an up-to-date skillset and some exposure to relevant trends and topics. This places demands on competence management and training,

and remaining up-to-date on the global development of one's substance area." (Respondent S1_84)

5.2 Conclusions

The survey shed light on the questions that acted as a starting point for the study. The results showed that from the personnel groups involved in the project preparation, the project development and management were aware of both long-term impact and anticipation, whereas the substance experts, project managers, and technical experts were not that familiar with the concepts. This indicates that the latter two groups' respondents have not been using anticipation in project preparation or they have not been involved in the project preparation in the first place. Moreover, the responses from all four groups suggest that although known concepts, anticipation might not be employed systematically in the project preparation phase to enhance long-term impact generation.

However, when asked, all groups saw a linkage between using anticipation in the project preparation phase and the long-term impact generated through the projects. In addition, in the free text answers, multifaceted add value in this perspective was seen in involving anticipation and implementing foresight techniques systematically in the project preparation phase.

This leads to the question of how to enhance the usage of anticipation and foresight in project preparation to affect the generation of long-term impact throughout the projects. What might be the pain points that hinder this development from taking place? Could the adoption benefit from a supporting element or frame easily adaptable in the existing project preparation and project management cycles?

6 Description and analyses of the data - Interviews

The research interviews were conducted in October and November 2023 as semi-structured, remote interviews via Microsoft Teams a video meeting application. The interviews were implemented in English, they were recorded and machine transcribed for study purposes. All interview transcriptions were anonymised. The interviewees were given the topic before the interview session together with practical information on the implementation, but no questions were delivered in advance. The interview structure consisted of three parts, in addition to the introductory part, and all interviewees were introduced to the interview's scope and used key concepts before entering into the actual interview. The interview, as conducted by studying Laurea University of Applied Sciences personnel, required a research permit including a research plan, detailed interview structure and content, data collection motivation, implementation, and data management plan, which was prepared according to

instructions. Consent for the recording for study purposes was collected straight after the interviewer and interviewee had opened their connection and introduced themselves and prior to the recording start. The interviews lasted from 45 to 50 minutes.

Interviewees were selected from Laurea University of Applied Sciences RDI (Sustainable Research, Development, and Innovation) Units' personnel, they all had prior project management backgrounds and were involved in Laurea's projects in due course of the interviews. Although the interviewees were chosen to participate in the interviews as RDI- and project experts and representatives of the Laurea University of Applied Sciences, the interviewer emphasised that the main objective was to get the interviewees to reflect on the asked questions from their professional, yet personal viewpoint. They were also encouraged to use their whole relevant professional experience as a source of insight and not to limit themselves solely to experiences from the current employer when only this was beneficial in answering the questions. In case Laurea's specific experience was asked, the interviewer framed the question accordingly.

The thesis conductor as the interviewer had not had personal contact with the interviewees in Laurea before conducting the research interviews to reserve the autarky of the interviewees and their answers in the research context.

The interview topic followed the thesis topic, and definitions for the concepts of anticipation/ foresight and long-term impact were read over at the beginning of each interview to ensure uniform understanding of these key concepts throughout the interviews. In the introductory part preceding the interview, the interviewer gave an overall view of the interview content and framing of the research motives: to map the overall stance of the interviewees to project preparation and anticipation of impact. Next to be followed by questions on possible best practices and pain points. The interviewer informed the participants that the insights and experiences collected through the interviews were to be used to form a suggestion on how to enhance the use of impact anticipation in project preparation settings.

Given the quite specific field of interest of the interviews, the interviewer was prepared to tweak the interview script on some parts according to the awareness and knowledge base of the interviewee on the topics at hand. This said the core questions were asked in every interview to assure data comparability and coverage. The goal was to preserve a conversational atmosphere throughout the interviews, and hence by giving the interviewees the space for proper thought development maximise the information flow.

6.1 Interview parts and themes

The interview structure consisted of four sections. The first section concentrated on the project experience of the interviewees. Firstly by asking for background information on the interviewee, such as project experience and experience in the different project management cycle's phases: preparation, implementation, and evaluation. Secondly by inquiring about the experience of the interviewee with innovation projects and thirdly, by asking about the interviewee's current relation to projects at Laurea. These questions were used to get an understanding of the overall stance of the interviewee to the context of the study, namely projects, and to map their experience with projects.

The second section studied the interviewees' relation and experience with the study's key concepts: anticipation and long-term impact. This was mapped by asking the interviewees to assess their familiarity with the concepts and to reflect on how often they in their current role address long-term impact, whether by anticipating it, implementing it, or evaluating it. In the second section, the interviewees were also asked to describe how project preparation manifested in their current work. This section also included two complementary questions on Laurea's way to organise project preparation and possible project management frameworks. These two questions were not prioritised if the interview time seemed to run tight.

In the third interview section interviewees were asked to reflect on how the generation of long-term impact had been taken into account in the projects they prepared or led and as a complementary question to give some examples of the long-term impact the interviewees' projects usually have thrived for. The interviewees were also asked about the methods of anticipation they had been using, and the use of this question depended on the answers given in the second section on the familiarity of the concept. The third section concluded with questions on how the interviewee found the anticipation of impact (difficult or easy) why, and how did the interviewee perceive the importance of long-term impact in (innovation) projects.

The final, fourth section approached the topic of how to enhance the use of anticipation in long-term impact context in project preparation settings. The interviewees were asked to give their opinion and share their insight on which elements, features, or circumstances in project preparation enhance or hinder long-term impact anticipation, and alternatively, if the previous answers had indicated in the direction, to think about long-term impact and how to anticipate it in projects, how to approach this challenge. The interviewees were also asked to reflect on, would a framework or guide enhance the adoption of long-term impact anticipation in project preparation, Moreover, in their opinion, what would be the main aspects of such a framework to ensure the best results. The fourth section was affected by

the answers given in the preceding sections and hence e.g. the last question was not asked with the exact formulation a single time.

6.2 Results

The overall insight gained through the interviews was that the RDI and project experts were very agile thinking and awakened on the topics of anticipation in general and long-term impact generation in project settings. However, the minority had used anticipation or foresight methods in the project setting and only a few of them had used them in the project preparation phase. The objectives related to long-term impact generation in projects were familiar to the interviewees, but the emphasis lay on the evaluation of impact. All interviewees saw value or possibilities in the application of foresight in the project preparation phase to enhance long-term impact generation, but they also shared sharp-sighted views on the pain points that might occur.

In the backgrounds of the interviewees, substantial project experience was on display, which came from both research projects as well as development and innovation projects. The interviewees often stated that projects, whether they were research or development, frequently included elements of innovation. Most of the interviewees had participated in all the project phases asked about, from project preparation through implementation to the evaluation phase. The role in the team might have varied from project to project, and not all phase experience necessarily accrued from every project.

Project preparation at Laurea is organised so that the person taking responsibility for preparing the project funding application typically assembles a group of colleagues to support the preparation or specifically involves necessary subject-matter experts from within the organisation, as well as from potential partner organisations and stakeholder groups, during the development of the project idea and the drafting of the corresponding project plan. Laurea also has dedicated specialists focused on the technical aspects of project preparation, such as the criteria for different funding instruments and knowledge of the application processes, from whom one can obtain support and assistance with application writing as needed. Laurea also offers project managers training to support high-quality project preparation and project management. According to the interviewees, after passing the formal training, project experts have relatively much freedom to organise project preparation and project management as they wish.

in reviewing the data against the research questions, on the questions on possible experience-based best practices or pain points in the application of anticipation of long-term impact in project preparation, certain densification of views by topic arises.

6.2.1 Best practices

The interviewees describe in the interviews their relation and expertise on anticipation and anticipation related to long-term impact, but at the same time, they use examples of their other topic-relevant expertise to support their thinking. In the thesis conductor’s view these best practices consist of features and ways of doing that could be deployable while designing a framework for the employment of foresight in a project preparation setting to support long-term impact generation in projects. Hence they are included in the study.

The most common theme that emerged in the interviews was the recommendation for extensive involvement of identified stakeholders from the very beginning of project preparation to support the formulation of the project's objectives. Another observation mentioned several times concerns proper project documentation, which includes describing the research question, development objectives, or innovation interest with motivation, detailing the project's goals and chosen methods or implementation approaches with rationales, precisely describing the actions taken during the project, and the careful documentation and storage of data accumulated and collected in the project. A third clear theme relates to the sharing and analysis of knowledge and lessons learned produced by the projects after their completion, to support learning not only for individuals but also for the organisation.

In the table below to see:

Topic - Observation heading as action field
Means - In the interview stated best practice
Benefit - In the interview given explanation of the best practice

Best practicies to support long-term impact generation (with or without the use of anticipation)		
Topic	**Means**	**Benefit**
Need definition	Stakeholder Involvement in project preparation phase	Through stakeholder engagement, a project's focus may win in focus or even change completely; stakeholder-driven need definition and project implementation help generate impact. Additionally, involving stakeholders commits them

		to the project's objectives, they participate better, and this too produces greater impact.
Documentation	Methodical and high-quality documentation during project preparation and implementation	High quality documentation enables the utilisation of the data produced in the project after the completion of an individual project to identify new project ideas through analysis (continuity) and to conduct impact assessments independent of the evaluation framework set for the individual project (systemic).
Feedback loop	Systematic processing and analysis of project learnings after the completion of projects and during their operation	Projects often generate more new knowledge than is monitored through the goals and metrics set for them. Project learnings develop project preparation at both individual and organizational levels and help organizations target project efforts more effectively.

6.2.2 Challenges

Perhaps somewhat surprisingly, the most critical challenge for anticipating impact, according to the interviewees, was that impact cannot be anticipated. This view was backed up with good consideration that will be addressed in the analyses part of this thesis. The following were perceived as other challenges for anticipating impact in project preparation, the order does not reflect emphasis.

In the table below to see:

Topic - Summary of stated pain point in interviews
Description - In the interview stated pain points that go under the topic
Challenge - Element and impact explanation of the given pain point as stated in the interviews

Challenges in long-term impact anticipation		
Topic	**Description**	**Challenge**
Project preparation begins on a per-application basis	Funding instruments open application windows that cannot always be reacted to with the desired level of preparation.	Information needed for the project application is sought and prepared for each application individually; limited time may not suffice for in-depth consideration of e.g. the impact sought by the project.
Lack of strategic direction	Impact-related goal setting does not rely on strategy but is siloed according to RDI activities.	Within the organisation, funding is sought from the same sources, at the same time, with similar application content, competing for the same resources with parallel applications, partly unknowingly.
The organisation of preparation	The individuals involved in preparation vary from one project to another; if a person is not allocated resources for preparation, they do not participate	Preparation expertise is not fully utilised at the organisational level; preparation may be concentrated among certain individuals or roles, so other future project team members with their expertise are not involved in the preparation; the preparation team may be different from the implementation team; preparation expertise and substance expertise may not meet; goals and rationales do not transfer from the preparation group to the implementation team, leading to a fragmented overall picture, especially in terms of impact objectives.
Focus on the success of project applications rather than on the desired impact	Project impact goals are formulated with the project application in mind.	Alongside setting impact goals that optimise the passage and success of project-specific applications, a broader examination of the impact goals set at the organisational level should be considered.

Projects as a funding channel	Projects serving more generally as a funding channel leads to the production of the maximum number of project applications.	Quantitative production may not achieve the qualitative goal and also burdens the organisation's experts involved in project preparation without always producing the desired result (successful applications relative to effort).
Definition and measurement of impact	There is no established definition of impact within the organisation; impact measurement focuses on quantitative criteria, and impact is examined mainly in the project context.	The discussion on impact requires a common, shared understanding of impact as a phenomenon. In the project, impact is measured against its set goals; besides quantitative measurement, qualitative evaluation should also be considered. Impact can occur outside the defined sphere of influence of the project, even after the project period, and methods and systematics are needed for its observation and measurement.

6.3 Analyses - A framework to enhance the appliance of long-term impact in project preparation

In the final research question, it is appropriate to return to the view that emerged in the interviews, which suggested that impact cannot actually be anticipated. This was based on the idea that the starting point for impact lies in the implementation, that is the project's implementation. The author of the study finds this view interesting, and it prefaces the framework that is proposed based on the thesis material as a model to promote the anticipation of impact in project preparation.

The researcher does not challenge the view that impact is generated through project activities; this can be taken as a starting point. Instead, we can look at how, in project preparation, the issues and interventions that are chosen to be implemented during the project to achieve impact are determined. The researcher believes that foresight can be used in project preparation to define and refine needs. As one interviewee stated: a correctly defined problem (i.e., need) more easily produces solutions in the right direction. Solutions that are correctly oriented and meet identified needs are, in turn, more likely to produce the desired impact.

The use of foresight methods also helps to better motivate and define project interventions, which assists in establishing an impact theory of change, that is, setting a criterion for impact, to support the assessment of impact towards the end of the project.

The model presented in the thesis takes into account the good practices and challenges mentioned by the interviewees and creates a link between the use of foresight in project preparation and the evaluation of the project's impact.

At this point, the study examines:

- Ways to integrate foresight into an organisation's project preparation,
- Foresight methods and implementation approaches within the organisation, and
- The connection of foresight to the entire project lifecycle management, from project preparation to project evaluation.

In literature, there is less material concerning the use of impact foresight in project preparation; instead, the use of foresight in the business world for innovations and generally achieving competitive advantage has been studied more. The lack of theoretical literature has directed the research analysis more towards an inductive case study approach, where the phenomenon is examined based on interview material, and the analysis is formulated based on case descriptions and literature. In addition to futures studies, literature on management studies and innovation management has also been utilised.

6.4 Framing

In this thesis study, the model presented is based on researcher René Rohrbeck's commendable "The Maturity Model of Corporate Foresight". In his model, Rohrbeck has, based on previous research, outlined a set of criteria which he has then refined through his own case study (Rohrbeck 2010, 71).

Rohrbeck has developed "The Maturity Model for Corporate Foresight" framework to describe the maturity of corporate foresight and as a criterion for examining the positioning and development of maturity.

Although the subject is a maturity model for foresight, its elements are well-suited as a starting point for an impact foresight model in the context of project preparation.

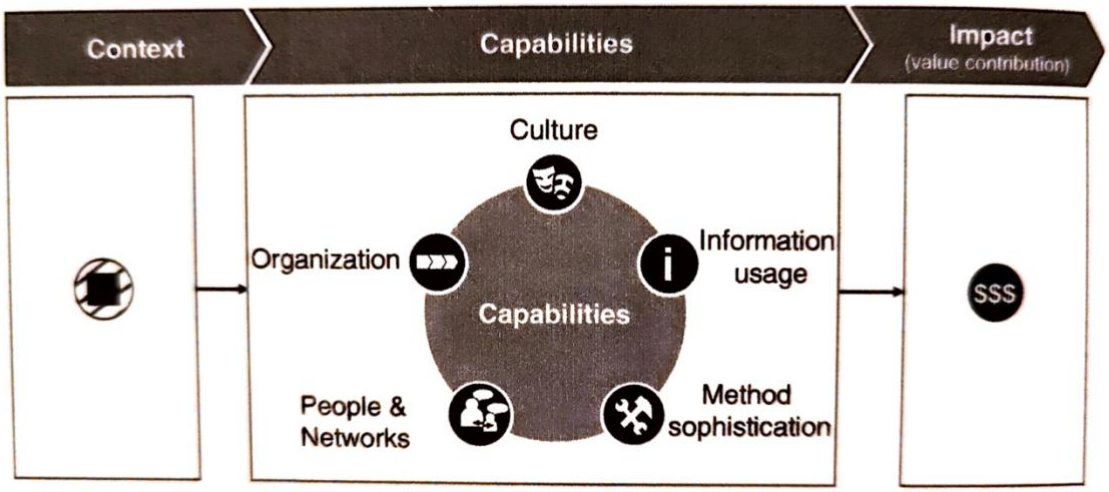


Image: Maturity model -framework, by Réne Rohrbeck, from Corporate Foresight 2010, 72

Rohrbeck categorises the factors affecting foresight maturity into three dimensions: context, capabilities, and impact.

Context is used to assess a company's need to apply foresight in its operations. In Rohrbeck's framework, this dimension is divided into six elements, restated as company size, chosen business strategy, corporate culture, competitive advantage, the complexity of the operational environment, and the speed of the production cycle/renewal (Rohrbeck 2010, 73).

Rohrbeck refers to the context dimension as being guided by the contingency theory in organisational research, adapting the framework to the context that defines the evaluated activity (Rohrbeck 2010, 73). When examining the operational environment based on interviews, specifically the project preparation of an institution with public funding, factors influencing the context include research emphases, selected priorities in development activities, strategic positioning in the RDI field nationally and in relation to international counterparts, as well as the observed or targeted competitive advantage (research, educational, development-related) in their own field of operation. Additionally, the context includes the intentional strengthening of the connection between research and teaching, which in part corresponds to the original model's industry clock speed criterion. *This dimension also aligns with the need for strategic direction that emerged in the interviews.*

Regarding **capabilities**, the company's foresight system is assessed for its ability to identify, interpret, and respond to change. The criteria used here are 1) information usage, 2) method sophistication, 3) people and networks, 4) organisation, and 5) culture (Rohrbeck 2010, 75).

The Capabilities dimension of Rohrbeck's framework is particularly interesting for the impact foresight model. The criteria to be examined are the aforementioned five, which further divide into elements. *The Capabilities dimension corresponds to many best practices and challenges identified in the interviews, such as the valued sharing of information on one hand, and on the other, problems with information transfer due to processes, the integration of foresight into the project preparation process, and the systematic approach to data collection and interpretation.*

Here, these aspects are further detailed and applied to the context of project preparation:

1. Information usage refers to the ways of collecting information through dimensions such as reach, scope, temporal horizon, and source selections. (Rohrbeck 2010, 75) In the context of project preparation, this dimension is important for considering how information collection might be distributed among different functions of the organisation when implementing the model. Which group gathers and produces information about the current state, scans the operational environment more broadly, and identifies new or blind spots, and how comprehensively is information collected (e.g. project focus areas, technological development, societal development)? The time horizons utilised in foresight also need to be defined, and they can vary depending on the focus (e.g. individual project, project portfolio, RDI area). What datasets are used is another topic to be lined up, though not ultimately the central point of this dimension.

2. Method sophistication looks at the organisation's ability to systematically interpret collected information. This involves methods and tools of future studies and foresight, but Rohrbeck has distilled interesting elements from his material as criteria for tool suitability selection and assessment. These elements are A) Match with context, where tools are adapted to the chosen context; B) Match with problem, where tools are selected according to the problem at hand; C) Integration capacity, describing the method's usefulness in combining different information; and finally D) the suitability of the method portfolio for internal and external communication of insights. (Rohrbeck 2010, 77)

3. In Rohrbeck's model, People and Networks refer to the capabilities and characteristics of foresight experts and the organisation, which facilitate the identification and interpretation of relevant information through attitudes and knowledge capacity, as well as the flow of information within the organisation and between stakeholders in a way that supports the goals of foresight activities. (Rohrbeck 2010, 78)

4. The Organisation dimension addresses how foresight is organised. An element of interest for project preparation here is the Integration with other processes, referring

to how foresight activities are part of and connected to various functions at the organisational level. (Rohrbeck 2010, 80)

5. The final dimension is Culture, which examines organisational capabilities that enable foresight opportunities to be seen as value-adding activities. This involves organising activities so that the distribution of information supporting the success of foresight is enhanced and supports an open, experimental organisational culture that is important for foresight, one that is open to new information. (Rohrbeck 2010, 81).

The third dimension in Rohrbeck's model is **impact**, where a set of criteria is used to assess the added value that foresight activities bring to a company. Rohrbeck notes in the description of his framework that in corporate foresight research, the impact and value creation have received little attention (Rohrbeck 2010, 81). Rohrbeck identifies the following elements as describing the impact of his model: 1) the reduction of uncertainty, 2) triggering actions, 3) influencing others to act, and 4) secondary benefits (Rohrbeck 2010, 83). Of these factors identified through Rohrbeck's case study, those of interest for impact anticipation in project preparation are the reduction of uncertainty, initiating internal measures, and getting others (external parties to the organisation) to act. *This aligns with the need identified in the interviews of this study to better understand needs for finding better solutions and activating actors to become agents of their own future.*

6.5 The model

In the proposed model, foresight is part of project preparation, and the foresight activities carried out during project preparation provide detailed information for the impact evaluation conducted after project implementation. The model also considers the following key factors for successful implementation and adoption, drawn from literature and interviews.

One of the central challenges in integrating foresight into an organisation's processes is the **cyclical difference between organisational-level foresight and project-related foresight**. At the organisational level, foresight should be conducted in the context dimension, meaning it is motivated by the assessment of the operational environment and strategic guidance perspective. Review periods may vary from the annual level (administrative cycle) to five years (strategic cycle) and even up to ten years (foresight horizon). The context level guides the focus of foresight: its scope and boundaries.

Project cycle lengths vary from short implementations of a few months to multi-year program projects, and the applicable time horizon for their preparation is determined by the project

cycle. The project level should consider the organisational-level foresight perspective and selected emphases as part of its own project-specific foresight work.

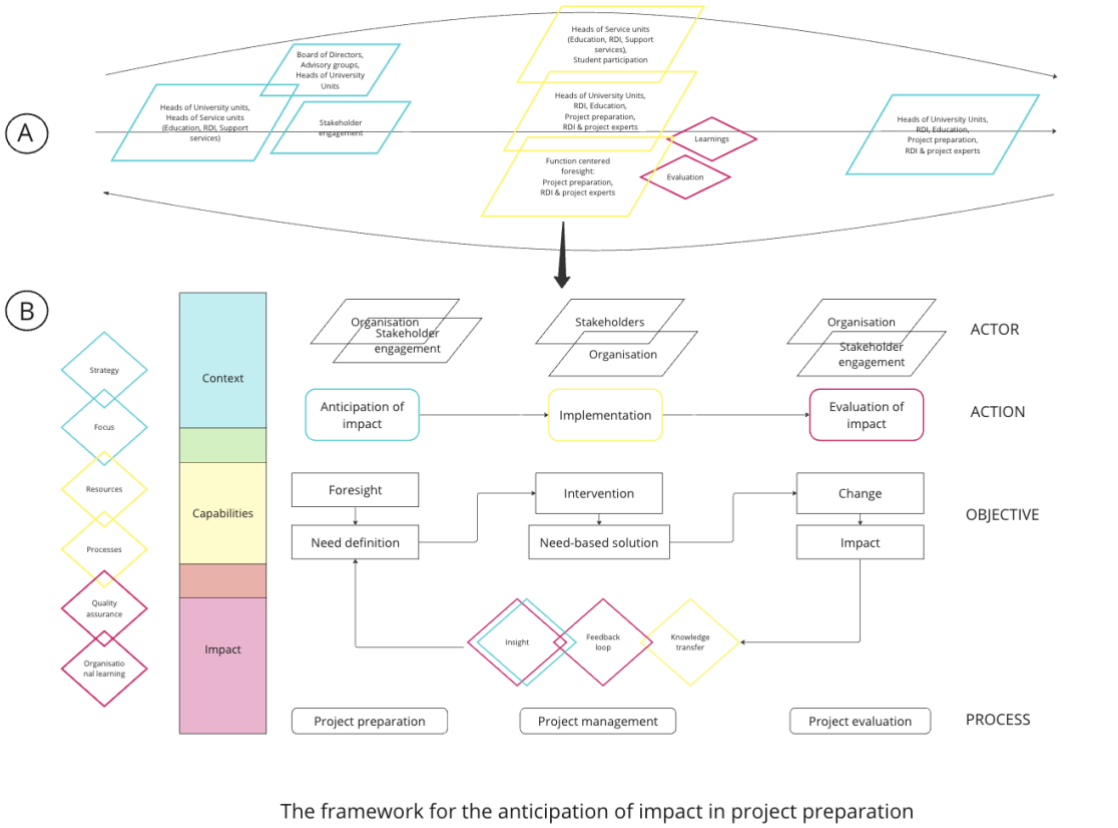
How should foresight functions be organised to maintain an overall view at the organisational level while allowing for project-specific responsiveness and goal-setting in line with the overall picture for an individual project or project portfolio?

Another important observation is the **need for regularity and systematicity in effective foresight activities**. Regular and systematic collection, analysis, and interpretation of information provide an opportunity not only for proactive action but also the means to track the impact of planning turned into action. Only from the accumulated, multidisciplinary information can changes, regularities, and deviations be detected. Besides the foresight function, the organisation also learns through the feedback loop generated by a project impact assessment, not only about the success of individual project execution but also about the accuracy of foresight in directing and supporting development.

How can the model assist in creating systematics?

The third challenge for effective implementation relates to resourcing: Roles involved in organisation-level foresight work are often a fixed resource of the organisation. We're talking about management, heads of units, and possibly matrix responsibility area-expert roles. Project preparation experts, who also participate in project preparation, are usually an established, cross-sectional resource of the organisation. They are mainly experts in funding instruments and their application contents and processes. Substantive experts involved in project preparation may also be a fixed resource of the organisation, but if they are allocated to projects, they may be beyond the reach of project preparation for the duration of their own project cycles. Some of the project's substantive experts are project workers, meaning their expertise is available for project preparation only to the extent of possible separate resourcing.

How to ensure continuous resourcing for foresight?



The framework for the anticipation of impact in project preparation

Image: Model for anticipation of impact in project preparation, Tuori, H.-K. 2023

The model takes as its starting point the significance of foresight in generating impact when it is a regular and systematically implemented part of project preparation, thus supporting need-based project execution, outcomes more aligned with needs, and consequently better impact.

A) In the model, foresight activities are integrated into the organisation's existing processes and make a regularly recurring function that involves different functions. The model includes an exemplary proposal for the cycle and the parties involved in its various phases.

B) The model outlines the application cycle and the functions participating in it with their roles. It describes the connection of foresight work in project preparation to organisational-level foresight work (strategy and focus), its influence on the implementation phase, and its connection to the evaluation

phase (quality control and organisational learning) along an action-objective-process continuum.

Organisation: Once every 24 months, the management produces facilitated insights into the operational context and future development trends affecting strategic positioning. Once every 12 months, the operational management level produces insights into action and orientation based on this foresight framework and their own analysis work. Once every 12 months, students are also involved in finding and interpreting information about the future for selected priorities. One function that utilises and produces foresight data is project preparation. Project preparation uses inputs from organisational-level foresight work as applicable and produces its own more focused analysis related to the project cycle, both at the portfolio level (overall or research direction-specific) and at the project level as necessary.

All data collected and produced for foresight activities, along with its analyses, is stored, and members from previous work phases are included in the different groups' foresight work. This broader foresight work supports the organisation's orientation and operational guidance through commonly constructed visions of the future.

An effective, iterative cycle produces context information for foresight and logically interlocks and complements the information production regarding scope, boundaries, and focus.

Systematicity: To ensure systematic foresight, attention must be paid to implementation methods. Popper, in his research, not only focuses on how foresight methods are chosen intuitively and impulsively but also urges moving away from method-centric thinking in foresight towards a knowledge-motive-driven selection (Popper 2008, 62). In the same article, Popper presents differences in methods with attributes of nature, determining whether they are qualitatively, quantitatively, or mixed-method in terms of information production, and capabilities, which form his method classification known as Foresight Diamond (Popper 2008, 66). Rohrbeck also addresses method selection in his maturity model by setting a scale of attributes for a method's match with context, problem, and suitability for processing different types of information.

The model focuses on the added value of foresight in project preparation and later in project implementation as an activity supporting the emergence of impact. The model creates a connection between strategic-level foresight and the derived operational research-development foresight, between project preparation and implementation, and between impact foresight, corresponding implementations, and impact evaluation. As the information flow becomes established, the feedback loop strengthens the motive to utilise foresight in preparation, as it refines project goals and measures, resulting in better impact. Through

feedback, the organisation and its individual functions learn to utilise the most suitable, participatory methods for each level of foresight. Success reinforces commitment to using foresight, and systematic information collection and production make it easier to ideate corrective actions.

In all systematic foresight work that permeates different functions of an organisation, we encounter a third challenge: how to resource the activity so that it is not only systematic but also regular and ongoing.

Resourcing: Successful resourcing is crucial to ensure that responsibility does not overburden individuals or strain processes beyond the anticipated benefit. Good practices mentioned include, for instance, the use of scouts (Rohrbeck 2010, 127), and designated individuals in all participating functions who collect foresight information within agreed boundaries and methods for their own and others' interpretation. Generally it is seen for both reach and quality as beneficial to engage a wider stakeholder pool in the foresight process. Part of the data is generated through the organisation's activities, such as project outcomes and lessons learned, provided that the documentation mentioned in this study is managed appropriately.

Both Rohrbeck and Popper note critically, through comprehensive case studies, a tendency to use expert-driven methods in foresight. In project preparation, this means, for example, that stakeholders, partners, those affected, or targets of intervention are scarcely involved in the preparation phase. This could be due to tight schedules, a lack of resources, but there are also encouraging examples in the literature (such as Lyden, Suoheimo, Leminen, Miettinen 2023) and from this study´s interviews, particularly as a support in need and goal definition, where increased understanding by involving key stakeholders has significantly improved the precision of project interventions.

7 Conclusions

It can be primarily stated that integrating foresight into project preparation does not deviate from the goals of quality project preparation: it encompasses environmental scanning, needs assessments, goal definitions, motivation for actions, and identifying the mechanism of impact creation.

What it brings as new to the equation is the inbuilt vision-anchored and strategy-enforced dimension that shares a wider time and actor horizon than an individual project usually would have.

Moreover, the model for impact anticipation in project preparation, outlined based on the interview data in this study, supports effective project implementation by bringing potential

need horizons to the center of preparation through foresight. The foresight work of the project preparation function is partly based on an organisational-level foresight system, which gives direction and helps focus resources in research and development in line with a shared vision and strategy (Strategic direction).

Better motivation of needs and participatory definition of impact goals during project preparation help refine planned project measures (Need definition). Motivating actions through impact also forces a more detailed description and justification of the desired change. Formulating impact objectives into project measures supports the creation of an impact evaluation criterion and aids in validating impact. Impact-motivated action enables long-term, non-project-application-based research and development.

At the same time, goal-oriented discussions about impact support the definition of the concept at organisational level (Definition and measurement of impact). Systematic impact assessment provides information on the success of targeting actions and the general success of foresight within the project framework (Feedback loop). Balancing and reinforcing feedback loops on their side are core elements of systemic change (Meadows 2009, 153-156), which also entails the promise of impact generation.

7.1 Relevance

This thesis was developed from a need for knowledge observed in the professional world and a desire to find solutions to practical problems. Project-based, goal-oriented activity is becoming an increasingly common way to organize work and development in organisations. Projects aim to produce joint solutions for future needs. Alongside immediate results, the impact of projects, or their longer-term social added value, has gained increasing importance in measuring success. This thesis identified that project preparation is a central part of the value creation chain, where traditionally the focus has been on project planning itself, i.e., planning actions and managing operations. Project preparation involves responding to the impact goals set for the project by planning project actions and impact metrics. If the impact of projects is to be increased, this thesis argues that it is done through project preparation. Already, organisations' project preparations pay attention to numerous factors of success. The proposal in this thesis brings systematic foresight into project preparation, integrates it firmly into the strategic operational framework of the entire organization, and enables the design of project content to more precisely meet future needs through foresight methods, thereby also better aligning the impact measurement framework with outcomes. The proposal creates a process connection between project preparation and project evaluation, thereby bringing more clearly the dimension of organisational learning into it.

When interviewees were asked as part of the final survey about their interest in participating if the organisation piloted the systematic use of foresight methods in project preparation,

five out of six responded affirmatively. Four respondents cited new learning to complement existing experience and skills as their main motivation for participating. Time was the major concern raised, and this was also evident in the research interviews. How to ensure the necessary resourcing and integrate foresight seamlessly into project preparation. The responses reflected the same ambition as in the interviews to use all means to achieve more impactful and better projects. Among these means, systematic utilisation of foresight in project preparation, as examined in this thesis, was seen.

7.2 Transferability

The model of this thesis can be used in all organisations that prepare and implement projects. Due to the future-oriented mindset and diversity of foresight methods, the author believes it is suitable for all industries and actors who develop and innovate purposefully. Besides projects that better meet needs, systematic application of foresight supports, in the long run, the direction of operations and enables a broader evaluation of activities through anticipated and timely realised analysis, beyond outcome area or function review. This aspect was touched upon in interviews, where responses expressed a desire for better and more sustainably justified coordination of project activities within the organisation.

Transferability is also supported by the fact that the use of foresight in project preparation moves certain actions, such as stakeholder engagement, to a time before the project implementation phase. The methods themselves are easily adaptable for project professionals, as they aim to meet the same needs (e.g., stakeholder engagement, vision formation, needs assessment) from similar starting points (user-centricity). This was also recognised by the interviewees in this study, who expressed a desire to learn methods that support their activities when applying foresight. At the same time, incorporating foresight into project preparation, management, and evaluation frameworks brings meaningfulness to the work field of project professionals. As mentioned in the interview responses, better starting points for project implementation are given when one has participated in the design of the vision and the actions aimed at its realisation before embarking on the implementation itself.

7.3 Usability

The study falls into the field of organisational development and impact generation where there isn't yet a wealth of scientific material. In the interviews, the topic was considered timely and interesting. This indicates that in project preparation, attention is increasingly paid not only to project outputs but also to the impact achieved through them.

Partly, this is surely due to our era, where science, development activities, and innovations aim to solve large, systemic so-called wicked problems such as climate change, and

biodiversity loss, or address sustainable development challenges through solutions in energy, mobility, and construction.

In this operating environment, foresight provides means to expose individuals and organisations to examine the present, guides thinking about alternative futures, both in terms of building them and finding necessary solutions for survival, and helps in noticing dependencies, connections, and new opportunities.

When producing new knowledge in projects, whether they are research, development, or innovation projects, the future literacy gained through foresight and its utilisation in planning more impactful actions is a key competitive advantage.

Benefits of foresight for organisations on the corporate side have been identified as including finding strategic emphases and research directions, expanding the temporal development horizon, increasing capability to respond to change pressures, regularised cooperation with stakeholders, and identification of new perspectives and innovation ideas as a result of foresight (Burhan, Cakir 2021, 65). All these also apply to the benefits gained from applying foresight in project preparation.

On a general level, the model presented in this study could be useful for organisations preparing projects, both private and public sector as well as authorities and actors assessing funding applications or even the funders as they set the objectives frames for impact and follow the accomplishment of set goals in funded projects on a larger scale.

The impact is one of Laurea's values. When bringing this thesis into Laurea's context, the model presented here is particularly timely, as it happens, that Laurea has been preparing a framework for impact assessment since spring 2023, and the first results of this internal development were published in November 2023 (Lamberg, Forma 2023). According to the published announcement, the starting point for the impact assessment development work has been the observation of the diversity of impact assessment practices and the desire to standardise the assessment process. This development work has also identified that, at best, project evaluation enables clearer project planning, learning, and quality implementation. The development project is expected to produce tools to support project evaluation, such as a general description of project evaluation, an evaluation timeline and checklist, and an evaluation plan template. Instead of creating an entirely new model, the aim is to apply existing methods to a functional whole. This development work would be supported by the approach outlined in this thesis study to bring foresight into project preparation. Purposefully in the same direction, this research encourages incorporating foresight firmly into preparatory activities and linking it to impact evaluation processes.

7.4 Reliability and validity

As a qualitative study, the assessment of the validity and reliability of this thesis begins with how the research was conducted. In the work "An Introduction to Qualitative Research," it is stated that the validity of the execution is partly built through procedural aspects (Flick 2023, 494). Following these criteria, this thesis has paid attention to the interview situation, where the researcher has a direct influence on the interviewee through their wording and interaction style, to ensure that the interviewee can respond to the questions in their way without the interviewer directing the content of the responses. The guidance has occurred within the framework of the interview script and when moving from one question to another, or as directed by the schedule. The accuracy of the notes has been ensured in the interviews not only through recording but also by transcribing the interviews. The data has been analysed and used as it was expressed in terms of content during the interview situation. The researcher has also paid attention to fidelity to the data when making conclusions based on the data. There are two types of data sources: anonymous survey data and interview data anonymized during processing, which have been collected and analysed side by side and against each other to identify different perspectives and, on the other hand, reinforce repetition.

When examining the reliability of the research, the focus is on documenting the research questions and the methods and contents of data collection, and presenting quotes from the data to demonstrate the basis for the analysis conducted.

Qualitative research inevitably includes an interpretative dimension, which means that slightly different conclusions can theoretically be drawn from the same data. However, if the research motive is explained, the research questions are formulated clearly, and data collection is carried out with unambiguous question formulations accordingly, the accumulated data guides the analysis and interpretations made from it in a consistent direction. The researcher's explicitly written positioning and criticality during the research about the results and conclusions drawn also support the reproducibility and credibility of the results of this study.

8 Opportunities for Further Research

Impact foresight is a broad topic, and while this study focused on project preparation, the process-oriented nature of foresight expanded the focus to the organisational level.

As the theme of anticipation and use of foresight together with the concept of impact is multifaceted and complex, the data collected for this study inevitably also reflects the various views as well as personal experience-based knowledge and hence attitudes of the

interviewees towards the study topic. Therefore it would be interesting to further develop the model and eventually test it as part of project preparation. Piloting would require coaching in organisational-level futures literacy and experimentally producing a context level for foresight as defined earlier in this study.

After the pilot a follow-up study would be executed to both assess the model's effect on the impact achieved in projects and the methods of impact evaluation, as well as to observe the potential causality between these two aspects. Of interest would also be to study the pilot's effects on the attitudes and views of the participants toward the use of foresight in project preparation.

Another research angle would be to study to what extent the use of foresight can be standardized in project-specific use, and if that is at length necessary, and in what extent the use of anticipation methods and application of futures thinking should apply to the project portfolio level in comparison to project level preparation.

9 References

Aalto, H., Heikkilä, K., Keski-Pukkila, P., Mäki, M. & Pöllänen, M. 2022. *Tulevaisuudentutkimus tutuksi: Perusteita ja menetelmiä*. Turku: Tulevaisuuden tutkimuskeskus.

Agile Manifesto 2001
(https://agilemanifesto.org/)
retrieved 15.10.2023

Amara, R. 1981. The Futures Field. Searching for Definitions and Boundaries. *The Futurist*, Vol. XV, 25–29.

Badminton, N. 2023. *Facing our futures: How foresight, futures design and strategy creates prosperity and growth*. London: Bloomsbury Publishing PLC.

Baumgartner, J. *The Corporate Innovation Machine - A model for implementing an idea management based innovation strategy in your firm*
https://www.creativejeffrey.com/innovation/innovationMachine.pdf
retrieved 13.11.2023

Braun-Thürrmann, H. 2015. *Innovation*. Bielefeld: transcript Verlag.

Braun, V., Clarke, V. Using thematic analysis on psychology
Qualitative Research in Psychology 2006: 3: 77-101

Brummett, B. 2019. On Noticing What You See and Hear. In: *Techniques of Close Reading*. Second edn, Thousand Oaks, CA: SAGE Publications, Inc. pp. 1-24 Available at: <https://doi.org/10.4135/9781071802595> retrieved 10/2023

Burhan, M. & Cakir, S. 2021. Impact assessment of Vision 2023 defense technology foresight. *Foresight (Cambridge), 23*(3): 367-383. doi:10.1108/FS-05-2020-0049

Dahler-Larsen, P. 2005. *Vaikuttavuuden arviointi*. Helsinki: Stakes.

EU funding programmes
https://commission.europa.eu/funding-tenders/find-funding/eu-funding-programmes_en,
retrieved 10.10.2023

Flick, U. 2023. *An introduction to qualitative research*. Seventh edition. London: SAGE.

Hankearvioinnin käytäntöjen kehittäminen etenee. Lamberg A-R., Forma L. 2023. http://urn.fi/URN:NBN:fi-fe20231120147725, retrieved 20.11.2023

Hiltunen, E. & Helenius, M. 2013. *Foresight and innovation: How companies are coping with the future*. New York: Palgrave.

Horizon Europe, program page https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe_en retrieved 10.10.2023

Johnson, R. B., Onwuegbuzie, A. J. & Turner, L. A. 2007. Toward a Definition of Mixed Methods Research. *Journal of mixed methods research, 1*(2): 112-133. doi:10.1177/1558689806298224

Kamppinen, M., Kuusi, O., Söderlund, S. (eds.) 2003. *Tulevaisuuden tutkimus. Perusteet ja sovellukset*. 2. painos. Suomalaisen Kirjallisuuden Seuran Toimituksia 896. Tammer-Paino Oy.

Kananen, J. 2015. *Opinnäytetyön kirjoittajan opas: Näin kirjoitan opinnäytetyön tai pro gradun alusta loppuun*. Jyväskylä: Jyväskylän ammattikorkeakoulu.

Lydén, H., Suoheimo, M., Leminen, A.,and Miettinen, S. 2023. Immigrant Integration through Codesign – A Journey Map of integration into working life, in De Sainz Molestina, D., Galluzzo, L., Rizzo, F., Spallazzo, D. (eds.), IASDR 2023: *Life-Changing Design*, 9-13 October, Milan, Italy. doi: 10.21606/iasdr.2023.294

Malaska, P. Futures Consciousness and the Knowledge of the Future-Focus on the Future in Heinonen, S., Kuusi, O. & Salminen H. (eds.) 2017. *How do we explore our futures?: Methods of futures research*. 1st edition in English. Helsinki: Tulevaisuuden tutkimuksen seura ry.

Meadows, D. H. & Wright, D. 2009. *Thinking in systems: A primer*. London: Earthscan.

Mihas, P. 2023. Qualitative, Multimethod, and Mixed Methods Research in Tierney, R., Rizvi, F., Ercikan, K. (eds.) *International Encyclopedia of Education*. 4th edition. Elsevier Science.

Morgan D.L. 2022. Paradigms in Mixed Methods Research in Hitchcock, J.H., & Onwuegbuzie, A.J. (Eds.). (2022). *The Routledge Handbook for Advancing Integration in Mixed Methods Research* (1st ed.). Routledge. https://doi.org/10.4324/9780429432828

Niiniluoto, I. Futures Studies: a Science or Art? in Heinonen, S., Kuusi, O. & Salminen, H. (eds.) 2017. *How do we explore our futures?: Methods of futures research*. 1st edition in English. Helsinki: Tulevaisuuden tutkimuksen seura ry.

Oslo Manual 2018 - Guidelines for Collecting, Reporting and Using Data on Innovation, 4th Edition
https://www.oecd.org/science/oslo-manual-2018-9789264304604-en.htm
retrieved 10/2023

Popper, R. 2008. How are foresight methods selected? *Foresight (Cambridge), 10*(6): 62-89. doi:10.1108/14636680810918586

Project Management Institute. 2021. *A Guide to the Project Management Body of Knowledge (PMBOK® Guide) – Seventh Edition and The Standard for Project Management (ENGLISH)*. Project Management Institute.

Riess, B. 2010. *Corporate Citizenship planen und messen mit der iooi-Methode. Ein Leitfaden für das gesellschaftliche Engagement von Unternehmen.* Bertelmann Stiftung (Hrsg.)
1. Auflage

Rohrbeck, R. 2010. *Corporate foresight: Towards a maturity model for the future orientation of a firm*. Berlin: Physica-Verlag.

Sanscartier, M. D. 2020. The Craft Attitude: Navigating Mess in Mixed Methods Research. *Journal of mixed methods research,* 14(1): 47-62. doi:10.1177/1558689818816248

SITRA tulevaisuussanasto
https://www.sitra.fi/en/dictionary/impact/
retrieved 10/2023

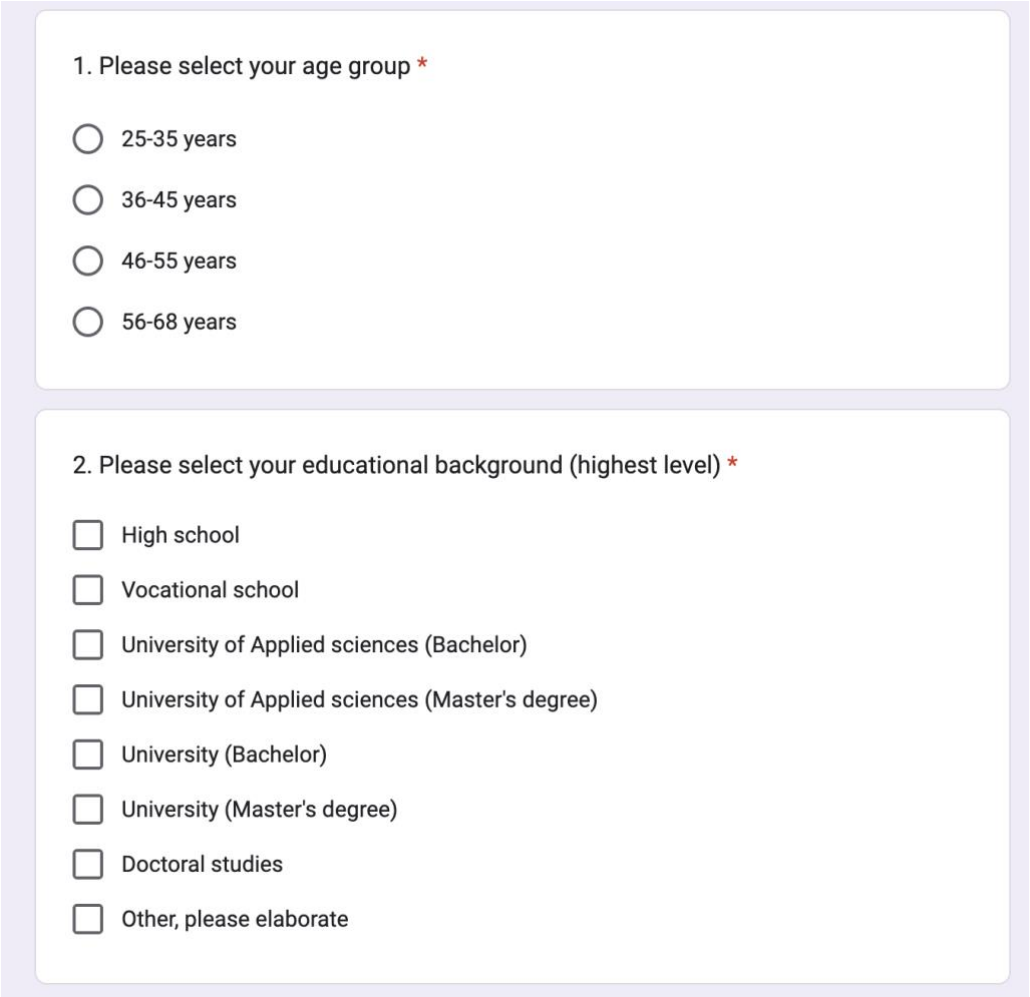
Vaikuttavuuden askelmerkit. Työkaluja ja esimerkkejä palveluntuottajille. Heliskoski, J., Humala, H., Kopola, R., Tonteri, A., Tykkyläinen, S. Sitran selvityksiä 130, 2018.
ISBN 978-952-347-040-8 (PDF) www.sitra.fi, ISSN 1796-7112 (PDF) www.sitra.fi

Valli, R. & Aaltola, J. 2015. *Ikkunoita tutkimusmetodeihin: 1, Metodin valinta ja aineistonkeruu : virikkeitä aloittelevalle tutkijalle*. 4. uud. ja täyd. p. Jyväskylä: PS-kustannus.

What are systems and what is systems change? School of System Change
https://youtu.be/_02X3O2klUU?feature=shared
visited 2.10.2023

10 Appendix 1. Survey 1

Survey questions excluding the intro page and last page (includes organizational information).



1. Please select your age group *

- ○ 25-35 years
- ○ 36-45 years
- ○ 46-55 years
- ○ 56-68 years

2. Please select your educational background (highest level) *

- ☐ High school
- ☐ Vocational school
- ☐ University of Applied sciences (Bachelor)
- ☐ University of Applied sciences (Master's degree)
- ☐ University (Bachelor)
- ☐ University (Master's degree)
- ☐ Doctoral studies
- ☐ Other, please elaborate

Other educational background:

Oma vastauksesi

4. Own perception of the length of relevant professional career (incl. also other roles than the current one) *

- [ ] >5 years
- [ ] 6-12 years
- [ ] 13-22 years
- [ ] 23-32 years
- [ ] 33 years <

3. Overall experience in project development expert role *

- [ ] 1-3 years
- [ ] 4-8 years
- [ ] 9-15 years
- [ ] 16 and more

Seuraava Sivu 1 / 3 Tyhjennä lomake

Anticipation as part of project development

Kuvaus (valinnainen)

Otsikko

In this section you are asked to reflect on concepts of Anticipation and Impact in project development work.

2.1. How familiar are you with the concept Anticipation (ennakointi in Finnish)? *

	1	2	3	4	5	
Not familiar at all	○	○	○	○	○	Very familiar

Term definition of anticipation

Also referred to as Foresight: Recognising factors that affect the future, charting alternative futures and determining measures required to reach the desired future. Foresight supports decision-making on the future, which inherently includes uncertainty. Foresight does not aim to precisely predict the future. Source: SITRA

2.2 In your understanding: What could "anticipation" mean in project development context? *

Pitkä vastausteksti

2.3 How familiar are you with the concept of Long-term impact (vaikuttavuus in Finnish)? *

	1	2	3	4	5	
Not familiar at all	○	○	○	○	○	Very familiar

Term definition of (long term) impact

A far-reaching, long-term societal change. With the term “impact”, we might also particularly refer to actions taken to promote development and progress; in other words, actions that benefit society. An impact is typically made as the result of different actors and their efforts. Change may be quantifiable and measurable, as well as qualitative and phenomenological. Source: SITRA

2.4. How often in your current role do you deal with impact (anticipating impact, generating impact, evaluating impact)? *

	Not at all	Sporadically	Routinely	It is key part of...	Not yet, but wo...
Anticipating of ...	○	○	○	○	○
Generating lon...	○	○	○	○	○
Evaluating gen...	○	○	○	○	○

2.6. Do you think, there is a connection between anticipation work and (long-term) impact generation in project work? *

	1	2	3	4	5	6	7	8	9	10	
There might be a connection, but far reached	○	○	○	○	○	○	○	○	○	○	Absolutely there is a connection, and it should be enforced

2.5 In your opinion, how could anticipation work benefit impact generation in project development context, if at all? Please reason your answer *

Pitkä vastausteksti

2.6. If thinking about anticipation work in project development, how do you see your role as project development expert in the process? Please elaborate *

Pitkä vastausteksti

11 Appendix 2. Interview questions in the semi-structured interview

Personal work relation to projects:

1. **Could you tell** me shortly about your project experience: does it include project management, project preparation, project evaluation? Or how would you describe it

   Innovation projects are considered projects that create new, or significantly improved products, processes or solutions, and **in development projects** the pursued development builds on previous interventions and the change targeted can be more incremental by nature (the majority of projects)

2. **Have you worked** with innovation projects or would you describe your work as more focusing on development projects?

3. **At the moment**, at Laurea, are you actively working with projects?

Familiarity with the core concepts:

4. **How familiar** are you with the concept of Anticipation (ennakointi in Finnish)? In your own words or with a scale from 1-5, the 5 being very familiar, 1, not at all.

5. **How familiar** are you with the concept of long-term impact (vaikuttavuus in Finnish)?

6. **How often** in your current role do you address long-term impact: anticipating it, generating it, and/or evaluating it?

   Now about the project preparation phase (hankevalmistelu) as part of the project initiation & management cycle, usually including the preparation of project funding application, where you set the wider goals (also impact related) for the project:

7. **Can you tell** me how project preparation manifests in your own work (or does it)? Follow-up: does Laurea have separate resources for the project preparations, persons dedicated to engage with that part?
8. **In your current work** at Laurea, do you have a joint project management framework to follow, (or do you choose the framework by project)? Could you tell a little about that)

Long-term impact in project setting:

9. **In your experience**, how has the generation of long-term impact been taken into account in the projects you prepare or lead?
10. **What kind of** long-term impact do you usually try to achieve in projects, could give some examples?
11. **What methods** for anticipation of long-term impact do you employ in a project management setting?
12. **Do** you find the anticipation of long-term impact easy or difficult, why?
13. **How** do you perceive the importance of long-term impact in (innovation*) projects?

What would enhance the anticipation of long-term impact:

14. **In your opinion, which elements**, features, or circumstances in project preparation enhance or hinder long-term impact anticipation?
    Optional, if phenomenon not familiar: If you think about long-term impact and how to anticipate it in projects, how would you approach the challenge?
15. **In your opinion, would a straightforward framework or guide enhance** the adoption of long-term impact anticipation in project preparation? And what would help you to use it in your everyday life?
16. **In your opinion, what would be the main aspects/parts of such a framework**, to ensure the best results?

12 Appendix 3. Survey 2 Background information on interviewees as a group

Survey questions excluding the intro page

1) Please select your age group *

- 25-35
- 36-45
- 46-55
- 56-68

2) Please select your educational background (highest level) *

- High school
- Vocational school
- University of Applied Sciences (Bachelor)
- University of Applied Sciences (Master's degree)
- University (Bachelor)
- University (Master's Degree)
- Doctoral studies
- Other, please elaborate

Other educational background:

Lyhyt vastausteksti

3) Own perception of relevant professional career *

- [ ] >5 years
- [ ] 6-12 years
- [ ] 13-22 years
- [ ] 23-32 years
- [ ] 33 years <

4) Overall experience in project related roles (e.g. project manager, project specialist, project planner) *

- [ ] 1-3 years
- [ ] 4-8 years
- [ ] 9-15 years
- [ ] 16 and more

5) If your organisation were to pilot the systematic use of foresight in project preparation, would you be interested in participating? *

- ○ Yes
- ○ No

6) What would be your most important motivation to partake in the pilot? What would be your biggest concerns?

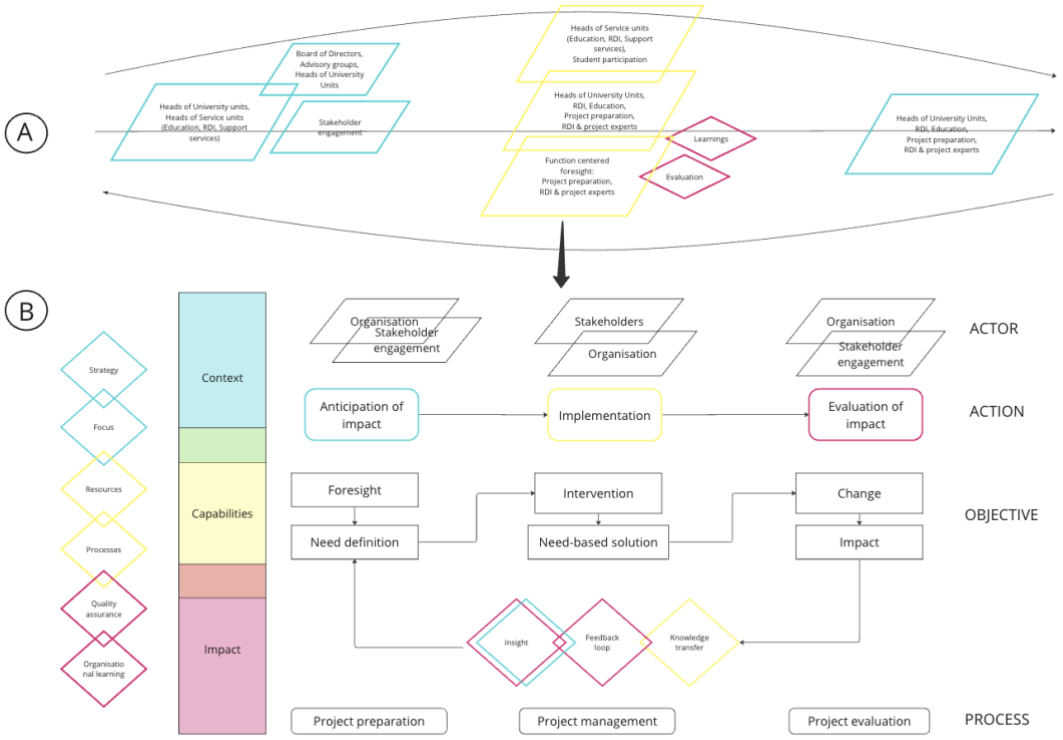
Pitkä vastausteksti

You have now reached the end of this survey - thank you!

I would like to thank you for partaking in my thesis study by letting me interview you and taking the time to answer this complementary survey as well.

Best regards,
Helmi-Kanerva Tuori

13 Appendix 4. Model for applying long-term impact anticipation in project preparation



The framework for the anticipation of impact in project preparation