



MOOMINVALLEY OF THE DATA ECONOMY

Final Report

TEAM

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Executive Summary

On the assignment given by the Finnish State Development Company (Vake) data economy and the use of public sector data in Finland was studied in this project. The goals of this project were to (i) [identify the strengths and weaknesses of the Finnish data economy](#), (ii) investigate [the necessity of a Finnish data strategy](#), (iii) [recognize issues that could potentially cause disputes during the strategy creation process](#), and (iv) propose [the process of possible strategy creation and implementation](#). A qualitative research, comprising of a comprehensive document analysis and eleven semi-structured interviews of mainly high-ranking officials and a few industry experts, was conducted to tackle these problems.

The European Union (EU) has its own strategy concerning data economy and the matter has attracted attention also in Finland in the recent years. In addition to the policy papers some legislative measures have already been taken both in the EU and national level in order to promote the functioning of the data economy. These previous measures will have to be observed when further actions are planned and implemented.

The interviewees seemed rather unanimous on most issues and especially regarding [the need to clarify Finland's vision on data economy](#). Similar themes such as the international nature of data, Finnish possibilities to act as a global example, the core values of human-centricity, fairness and ethics, inclusion of citizens in the dialogue as well as the importance of concrete examples were mentioned by several interviewees. Whereas the biggest differences seemed to arise regarding the participants in the preparation of the strategy – who should be included, how much and in which stages of the process. As the main advantages of Finland were often mentioned high level of education and know-how, good public basic registers and collaboration between public and private sector. The main disadvantages seemed to be fragmentation of data and legislation governing it, poor interoperability of the data and the systems as well as the Finnish 'silolike' society.

Based on the interviews and other research material it is evident that enhancing the use of data in the Finnish society is an extremely salient and crucial issue. Open discussion between different stakeholders to compose a shared vision for the Finnish data economy is needed. A bottom-up approach for strategy creation is proposed. This could be facilitated through [gamification](#). Organizations like Vake, Sitra, MyData Global, Technology Industries of Finland and Slush could act as facilitators. The game would educate people on data matters, help generate ideas, serve as a meeting place for different parties facilitating the creation of partnerships and ecosystems and serve as a channel for the application of funding for pilot projects. After the gamification, a strategy template would be created, and data activists and experts would be invited to edit it. Finally, a small core team of top experts from the most relevant stakeholders would be responsible for making the final version of the data strategy.

All in all, Finland could serve as a testbed for data economy schemes in the EU. As one of the experts has said, Finland could be the *"Moominvalley of the data economy"* - a safe and friendly place for all kinds of experimenting and development. By doing so Finland could also influence the direction of the EU data economy.



Introduction

This is the final report of a Capstone project that was conducted during Spring 2020 by four Master's students from the Aalto University School of Business. The aim of the Capstone project is to apply the skills that have been acquired during the Master's studies on a real-life case or problem.

Our case organization was the Finnish State Development Company (Vake). Vake introduced the wider theme for the project: data economy and the use of public sector data in Finland.

The importance of data has been acknowledged globally. Several initiatives regarding data have been proposed both in Finland and in the European Union (EU) and it has been recognized as an important political matter. These and other previous measures and initiatives have been described in more detail below in section "Analysis of the Prior Measures".

Problem Statement

The governments of Finland have highlighted the importance of data economy in recent years. On the other hand, EU has published a data strategy that needs to be implemented in member states. Finland seems to have many advantages in the creation of new ways of using data: comprehensive registers, technological know-how and informed citizens. However, there is lack of a shared vision for the Finnish data economy. Also the concrete steps to be taken are yet to be disclosed. A national data strategy could answer these needs.

Thus, the goals of this research project are:

- 1) To identify the strengths and weaknesses of the Finnish data economy
- 2) To investigate the necessity of a Finnish data strategy
- 3) To recognize issues that could potentially cause disputes during the strategy creation process
- 4) To propose the process of strategy creation and implementation

The recommendations given at the end of this report will concentrate on the last issue (4). We expect the creation of the strategy to be the most interesting and relevant topic for the readers of this report. The results of the other topics (1-3) are used for the formulation of the recommendations.

Project Team

The project team is comprised of four students of the Aalto University School of Business: Hanna Nortomaa, Maiju Welling, Henni Parviainen and Roosa Valtanen. A defining feature of the team is that every member of the team has at least one previous degree from higher education in different fields, including health care, law and theology. The resulting different strengths have been taken advantage of when dividing the tasks of the project within the team. As a coincidence, all team members were also Finnish, as well as the contact persons of Vake and the assigned tutoring teacher at Aalto. This enabled the team communications as well as the expert interviews to be held in Finnish, even though the reporting language was still English.

Hanna Nortomaa was chosen as the project manager. Her duties have included being responsible for keeping track of the project as a whole, as well as acting as the main contact person representing the team in communications with Vake, the teaching staff and the interviewees. The team has held regular weekly meetings within the team and another weekly meeting with the representatives from Vake throughout the entire project.

The project planning and initial interviews with key experts were conducted by the whole team. The main interviews were divided among the team members, each conducting 2-3 of them. Hanna Nortomaa and Roosa Valtanen were chosen to prepare the slides and deliver the oral presentation.

Writing tasks for this report were divided among the team members as follows:

- Maiju Welling wrote the Introduction, Problem statement, and Recommendations sections.
- Henni Parviainen wrote the Executive Summary, Analysis of the Prior Measures and Methods and Data Gathering chapters.
- Hanna Nortomaa wrote the Project Team and Project Plan chapters.
- Roosa Valtanen wrote the Findings chapter.
- Hanna Nortomaa conducted the proofreading and Henni Parviainen ensured that the technical and visual aspects of the report were functioning and submitted the report.



Project Plan

In this project, four main tasks were defined:

- 1) **Preparation phase:** Defining the topic, interviewing the experts, and planning the research.
- 2) **Research phase:** Familiarizing ourselves with the literature and other sources of information, conducting interviews with the representatives of the chosen organizations, and discussing the findings.
- 3) **Presentation phase:** preparing the presentation, attending the presentation sessions, and the presentation itself.
- 4) **Report phase:** preparing the final report.

The schedule and progress of the project can be seen on the updated gantt chart (Appendix 1). (Gido, J. & Clements, J., 2011)

The main risk for the project was the coronavirus and its implications on the society. This risk has been actualized in full, leading to all of the internal team meetings, sponsor meetings and external interviews to be conducted via a selection of video-meeting services such as Skype, Teams and Zoom. All work has been conducted remotely. All literature and other sources used in this project have also been in an electronic form, as the libraries have been closed.

However, contrary to the original risk analysis, the actualized ban on face-to-face meetings did not complicate or cause delays in the interviews conducted for the research phase. In fact, conducting the

interviews entirely remotely may have sped up this part of the process, as a remote interview requires less time and effort than a face-to-face meeting from all parties involved. The original concern for the availability of the high-ranking public officials for interviewees has also proven to be unfounded, so the original plan was implemented fully without adjustments in this regard. (Gido, J. & Clements, J., 2011)



Analysis of the Prior Measures

The development of public administration and data economy are closely intertwined. By making better use of the data produced in the public sector, it is possible to facilitate service development in both public and private sectors and to generate new businesses. (Paatero, 2019) This chapter will provide an overview of the data economy strategy of the European Union as well as the previous measures taken in Finland, and a short review of the academic and international contributions.

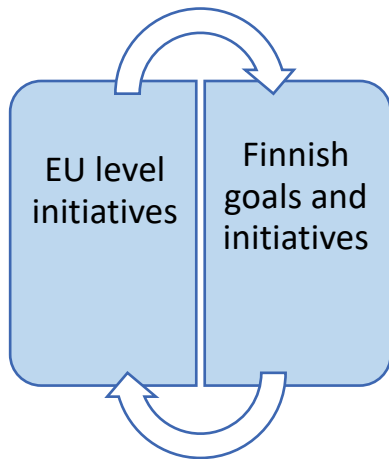
The strategy of the European Union

In the past decades the EU has had several policy and legislative initiatives to enable re-use of different types of data and to create a common European data space. First the focus was more on the re-use of public sector information, whereafter it has shifted towards the greater goal of creating a thriving data-driven economy. (European Commission, 2020) The development has culminated on the publishing of the

European Strategy for Data (COM(2020) 66) and the **White Paper on Artificial Intelligence** (COM(2020) 65) in February 2020.

The European Data Strategy strives to create a single market for data, which would enhance EU's global competitiveness and enable new innovations. This would require making more data available to be used in the economy, while simultaneously keeping the control with those who generate the data (i.e. the users), by giving them required rights, tools and skills. Respecting the European rules regarding privacy and data protection, to name a few, are considered central, and the rules to govern access and use of data should be fair, practical and clear. One of the main aims is to pool European data in key sectors such as agriculture, energy or health in EU-wide common and interoperable data spaces. Reaching the objectives needs considerable investments. The Commission is planning further measures to support the development goals and also member states have the possibility to contribute to the discussion. (COM(2020) 66)

In addition to the several strategy papers, EU has already enacted legislation that contributes to these goals, such as the *Directive (EU) 2019/1024 on open data and the re-use of public sector information* (i.e. the Open Data Directive) and the *Regulation (EU) 2016/679 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data* (i.e. the GDPR). This legislative work is about to continue, which can be seen for example from the European Data Strategy which proposes several new Acts to be advanced in the near future. The first proposals for new Acts are planned to be given by the end of 2020. (COM(2020) 66)



Previous measures in Finland


Several Finnish governments have regarded data matters as important. In 2015 the programme of Sipilä’s Government already pursued favorable conditions for new businesses with the help of open data and better use of data resources (Finnish Government, 2015). In 2016 Sipilä’s Government gave a resolution where it outlined measures to promote the use of data in business activities including personal data administration (MyData) measures (Ministry of Transport and Communications, 2016).

Juha Sipilä’s Government also submitted a **Government report on information policy and artificial intelligence** to the Parliament. What was remarkable about the report is that through various networks about 200 people from different sectors were involved in working on the material. (Finnish Government, 2018) In the report information policy is studied from several perspectives including information management, conditions for the use of information, value basis, ethical principles and financial impacts. The report sets out specific measures regarding among others information security, data protection, gathering and combining of information, information disclosure and storage. Further, also ethical and regulatory issues are

covered. In Finland’s vision information and technology serve the people. The report states that based on a shared national vision Finland can make coherent contributions rooted in its own values and national objectives in the international forums. The report was said to provide such knowledge and a policy, upon which more concrete actions could be built in the future. (Ministry of Finance, 2020; Finnish Government, 2018)

The Programmes of Prime Minister Antti Rinne and Sanna Marin’s Governments have also recognized data as an important factor (Finnish Government, 2019). According to these Government Programmes Finland will contribute to the drafting of an ethically, economically and socially sustainable regulatory framework for data and AI policy (Finnish Government, 2019, p. 77). Examples of data related measures listed in the Government Programme are promoting opening up and utilising of public sector data by a strategy and action plan and promoting data sharing between companies and entrepreneurs within ecosystems (Finnish Government 2019, p. 115) as well as securing the individuals possibilities to manage personal information on themselves in accordance with the MyData principles (Finnish Government 2019, p. 116 and 122).

The Finnish ideas of fair data economy were made known and clearly visible during Finland’s Presidency of the Council of the European Union in later half of the year 2019, as data economy was one of the strategic focus areas of the presidency. (EU2019.fi) During Finland’s presidency the **principles for a human-centric, thriving and balanced data economy** were introduced to be taken into account in further work on data policy. According to this policy paper, the guiding principles for an ethical data-driven society are access,



share, act, trust, innovate and learn. Timely portability of data across services would enable connecting data from silos and ensure that those are usable. Further decentralized data solutions, where data is stored only once, should be developed. Re-usability of data should be supported by interoperability. (Data Principles, 2019)

Finland is in the process of contributing to the Commission's communications regarding the European Strategy for Data. Finland's approach and opinion has been presented in a memorandum of the Ministry of Transport and Communications (Ministry of Transport and Communications, 2020). Digitalisation and better utilization of data have been regarded important among others in increasing productivity, new sustainable growth, new services and businesses as well as improving public services (Ministry of Transport and Communications, 2020, p. 1). The availability, utilization and interoperability of data should be increased beyond sector boundaries (Ministry of Transport and Communications 2020, p. 3). Finland strives to actively influence the EU-level further measures (Ministry of Transport and Communications 2020, p. 4).


In order to coordinate the work of different administrative branches in promoting the data economy, in March 2020 the Ministry of Transport and Communications has set up a working group. The working group facilitates cooperation and exchange of information as well as exerts influence at the international and EU level. The working group continues promoting the principles of the data economy. (Ministry of Transport and Communications, 2020)

One great example of the currently ongoing projects in Finland is the RYTJ-project on information system for built environment, where the aim is to create a national

digital register and data platform for the built environment, which could be used in decision-making and other processes related to land use and building (Finnish Government, 2019). The register will provide an overall picture of the information concerning the built environment and it is created in cooperation between public and private actors. (Ministry of the Environment, 2020)



The Finnish Innovation Fund Sitra, commissioned to probing the future and promoting qualitative and quantitative economic growth, has been active in promoting the data economy. In its **IHAN[®] human-driven data economy project** Sitra has, for example, published a policy brief “A Roadmap for a Fair Data Economy” in collaboration with the Lisbon Council (Sitra, 2019a) and produced a Rulebook for Fair Data Economy, which guides how to establish a data network and to set out the terms and conditions for data sharing agreements (Sitra, 2019). Both of these documents are important not only in promoting the data economy in Finland but also within the whole EU as well as globally. In its prior Isaacus-project Sitra was innovating a Finnish model for the secure and effective use of social and health data (Sitra, 2018) and it played an important part in the creation of the new Act on the Secondary Use of Health and Social Data (552/2019) (Sitra, 2019b).



In Finland the third sector has also been actively involved in the debate concerning data. Open Knowledge Finland ry has been actively contributing to the MyData discussion, for example by creating and updating the Nordic Model for human-centered personal data management and processing (Poikola et al., 2018). Finland has been one of the international pioneers in the MyData approach, which has been promoted in several administrative branches (Finnish Government, 2018).

Finland's national legislation regarding data regulation in different sectors has been internationally recognized. The Act on Transport Services (320/2017) and the Biobank Act (688/2012) could be mentioned as such enabling legislation. (Finnish Government, 2018) The disclosure of data by public authorities is governed by the Act on the Openness of Government Activities (621/1999) and some special laws. The starting point is that official documents shall be in public domain, unless specifically provided otherwise in the legislation. However, the Act on the Openness of Government Activities have been criticized for not encouraging to the re-use of data (NAOF, 2019). The Act on Information Management in Public Administration (906/2019), which aims to ensure implementation of the principle of openness and secure and efficient exploitation of the datasets of authorities as well as to promote interoperability of information systems and information pools, came into force in the beginning of 2020. Also this new act has been criticized for not taking into account the state's active role in promoting re-use of data (NAOF, 2019).

Academic and international contributions

The academia has contributed to the discussion highlighting among others the

importance of accessibility, reliability, up-to-dateness and clear origins of the data as well as the right business models for a thriving data economy (Custers & Bachlechner, 2017). It seems that business models of the data economy have been of special interest to writers (McCallum & Gleason, 2013). In Finland, data sharing between companies has also been researched from different perspectives (Huttunen et al., 2019; Seppälä et al., 2019).

A National data strategy is not a completely unknown phenomenon. In 2018, Denmark came out with its Big data strategy 2018-2020 (Statistics Denmark, 2018). It focuses on taking advantage of existing statistics and improving data partnerships. Germany launched a Data strategy of the Federal Government in 2019 (Die Bundesregierung, 2019). It aims to increase the provision and responsible use of data, to promote innovations and to prevent misuse of data. Estonia is well-known for its efforts in digitalization and use of data. Development plan of statistics Estonia 2018-2022 is the fifth development plan for the efficient coordination of data governance (Statistics Estonia, 2018). The United Kingdom, which left the EU, is currently preparing its own National Data Strategy, which aims to drive collective vision to support the UK in building a world-leading data economy (GOV.UK, 2020).

In literature, several benefits of good strategies have been listed including greater probability to reach one's goals, helping to map out the future, attracting funding and unifying the organizations. In creating a good strategy, it is essential to know what the big picture is and what the objectives and options are. In the strategy formation creating a vision and a plan to achieve it are central. In this process the identified options should be evaluated. Further, a clear

understanding of how to make the plan work is critical for success. The view of the stakeholders should not be forgotten either, as those will also participate in implementing the strategy. One critical, but difficult factor when it comes to strategy-making is timing. (Williams, 2009)

Methods and Data Gathering

We conducted *a qualitative research*, which comprised of eleven semi-structured interviews (Barribal & While, 1994; Adams, 2015) and comprehensive document analysis described above in section "Analysis of the Prior Measures" (Bowen, 2009). The semi-structured interview approach was chosen as our aim was to explore the perceptions and opinions of the knowledgeable interviewees regarding Finnish data strategy, which is a complex issue and the chosen method allowed us to make clarifying questions when needed (Barribal & While, 1994). In terms of the project, we also had the resources to conduct several in-depth interviews (Adams, 2015).

Further, many official documents have already been drafted as regards Finnish and European data strategy or policy (see section "Analysis of the Prior Measures" above), so it was important to dig also into the contents of those to understand the big picture. Many of the interviewees also referred to these documents either before or during the interview.

In the selection of the interviewees the aim was to cover such ministries and agencies in whose statutory work data is decisive and who process a lot of data. To get a broader picture of the topic, also a few experts from the private sector were interviewed. The interviewees were chosen based on recommendations given by Vake

and one of the experts interviewed in the beginning of the project. The interviewees were mostly high-ranking officials of ministries or other central government agencies. The selection of interviewees was further validated by asking the interviewees who should in their opinion be interviewed in this research given the topic and the questions posed. The fact that most of the interviewees were from the public sector is likely to have an effect on the findings.

The interview questions (see Appendix 2) were drafted in cooperation of the whole team and the interviewees were informed of those in advance. The interview questions covered themes of Finland's [assets and disadvantages in the data economy](#). Further, the [need for Finland's own data strategy](#), its main [goals](#), [participants](#) in the creation of the strategy as well as questions related to its [implementation](#) were covered.

The interviews were recorded, and each interviewer summarized the main points of the interview to the other team members.



Findings

All in all, the interviewees seemed quite unanimous in their answers and no significantly conflicting opinions emerged (see Appendix 3 for the most cited themes). As one of the interviewees mentioned, “data strategy is a topic in which there are unusually few contradictions - everyone is uncommonly unanimous about what should be achieved”. While similar answers with repeating themes appeared in the interviews (see the boxes), we did, however, discover some differences in emphasis between the importance of different elements - especially when it comes to who should be included while planning the data strategy and how it should be implemented.

The strengths and weaknesses of Finnish data economy

As for the current situation, the interviewees recognized several strengths of Finnish data economy. The high education level and know-how were repeatedly mentioned, as was the culture that supports technical innovations. Several interviewees also pointed out the amount and quality of data as an asset - there is reliable data from a long period of time. There is also a strongly embedded connection and a lack of hierarchy between different operators, such as the academia, private sector and public sector.

However, Finland was also described as a “land of unused opportunities”. It was repeatedly mentioned that the data is scattered in different places in silos. Based on our findings, there seems to be four key reasons for this.

Firstly, organizations seem to have a culture of doing things by themselves, and

don't necessarily even want to share their data. For example, one interviewee stated that there isn't even a common will to create structures that multiple operators could utilize. Another interviewee pointed out that all administrative branches are independent, and organizations have a tradition of doing things independently.

Secondly, legislation can stand in the way of effective data sharing. One interviewee, for example, pointed out that ministries can't just tell municipalities to collect certain data, as municipalities have the authority to decide what data they collect.

Thirdly, different names are used for the same data. Organizations use different terms while referring to the same subject, which stands in the way of combining data from different sources. Other weaknesses, such as a lack of finance and scattered legislation, were also brought up.

Lastly, there is a lack of incentives for sharing data. According to one interviewee, organizations get funding if they keep doing things the way they have done before – but this isn't enough for creating innovations and keeping up with development.

Strengths and weaknesses that several interviewees mentioned

High level of education and know-how

Good public basic registers

Collaboration between public and private sector works well

Fragmentation of data and legislation governing it

Poor interoperability of the data and the systems

A 'silolike' society

The necessity of Finnish data strategy

Based on the interviews, there appeared to exist a common desire for actions when it comes to managing data in Finland. The interviewees seemed to agree about the need to clarify Finland's vision for data economy, but the concept of a specific "data strategy" and its necessity divided opinions.

There were no disagreements about the importance and possibilities of data, and the question seemed to be how to better make use of this valuable data. Data was described as a potential tool for improving services both in the public and private sectors, as well as creating innovations and competitive advantage in relation to other European countries.

The following quotations illustrate the interviewees' views of the Finnish vision for data economy:

"How to utilize and direct the substantial opportunities of data economy in a sustainable and fair way."

"We should make the information move better, but also in a way that is ethically sustainable."

The role EU has in guiding Finland's decisions and actions appeared repeatedly in the answers. As one of the interviewees pointed out, Finland should first pay attention to what is decided by the EU and then design national actions and needs based on that. There was also speculation whether Finland should aspire to take a more active role in EU and become a forerunner in data economy. Another interviewee also mentioned that without the "muscles" of EU, the decisions made in Finland may become meaningless, as the phenomena of data economy are global.

Moreover, a strategy based on European values was pointed out to be valuable in itself as a counteraction to Asian and American forces.

Potential issues regarding Finnish data strategy

Despite the opportunities with data, there were also repeating concerns regarding data strategy. A few of the interviewees mentioned a fear of the strategy merely becoming empty words without practical consequences. One interviewee also stated that we have passed the point in which Finland can focus on such an extensive strategy: data strategy has already become a "mainstream" subject, similarly to climate change. Instead, more specific field-specific strategies should be considered. Furthermore, another interviewee stated that a universal need of information doesn't exist - for example, there is no need to combine the data from early childhood education with the data from customs, as the need of data lies in the operations in which it is utilized.

Consequently, instead of an all-inclusive data strategy, it was suggested by a couple of the interviewees that individual fields of operations should consider their own data strategies. As the operations are different in nature, each of them should aspire to gain a better understanding of how to better utilize data. For example, two of the interviewees expressed a need to consider



the role of data economy specifically in the context of healthcare.

As is apparent by the answers described in this chapter, the role of ethics appeared repeatedly in the interviews. When it comes to the changes that the data strategy could achieve, the rights of the individuals were highlighted - at best, the data strategy could give people the opportunity to decide how their own data is used. For example, the individuals could utilize the information themselves and pass it on to different operators as desired. One of the interviewees pointed out that Finland is already ahead of other countries in ethics - Asia, for example, plays by very different "rules". However, another interviewee warned about the consequences of being overly ethical:

"I would hope that Finland would not be overly ethical in relation to other Europe, as the countries are indeed competing with one another. Finland should not be too much of a "boy scout" or "girl scout" or too proper - Finland should also consider its own interests."

The process of possible strategy creation

One of the key findings of our interviews was that the public sector, private sector and the citizens were seen to have quite different roles and responsibilities in data economy. As one of the interviewees put it, the individual should be at the center of data strategy making, and the goal should be to create better life. It was highlighted that an individual should have a right to their own data - while companies shouldn't be able to paint a too clear image of a single individual, this information could be useful to individuals themselves.

Many seemed to agree that companies carry the primary role of innovating and creating new services. The public sector, on the other hand, was seen to be responsible for creating common "rules of the game" for how companies can utilize data in their businesses. While all seemed to agree that it was important to create better operating preconditions for the companies, one interviewee also highlighted that the primary mission of the society hasn't changed: the development should be aimed to creating better lives and to giving a voice to those that don't necessarily otherwise get heard.

While all interviewees seemed to agree that all three - the public sector, private sector and people - should be heard in the decision making, there were differing opinions as to *how exactly* each should be taken into consideration. The Ministry of Finance was mentioned in many answers as an important player. However, one interviewee specifically stated that the Ministry of Finance should *not* be in charge of running the strategy-making process, as they are a political operator and don't sufficiently understand the subject.

Differences also appeared when it comes to which companies should be involved with the process. One interviewee stated that start ups, for example, could bring fresh new ideas to the table, while another pointed out that not just any companies should be included, but those that *actually use* data in their business. One interviewee also wondered how to treat the companies equally, as companies are different in their activity levels. Another interviewee, on the other hand, stated that large companies specifically should be heard.

In addition to companies and citizens, several other groups were also mentioned as parties that should be included. The

specific parties that were singled out three or more times were the Ministry of Finance, The Digital and Population Data Services Agency, municipalities and business life organizations. Parties that were mentioned twice included the Social Insurance Institution of Finland, operators in the academic world and Tax administration. Other institutions, such as the Finnish Defense Forces, banks and Finnish institute for health and welfare also were individually mentioned.

The process of possible strategy implementation

Moreover, there wasn't a clear consensus about how to implement the strategy. A few interviewees highlighted that implementing should be taken into consideration from the very beginning of strategy work. It was also mentioned more than once that clear areas of responsibilities should be defined, as to who is supposed to do what. One interviewee suggested the strategy to be implemented through pilots, while another suggested for there to be a "mock-up demo" where a person could actually test the new and improved, "half-utopian" data world. Another suggestion pointed out that data strategy should be a part of the next government programme and needs to be drawn before the government negotiations, with the goal of it gaining a high importance in the agenda. The role of communications was also brought up a couple of times: individuals should know how their specific tasks serve the greater strategy. As one of the interviewees put it:

"Communication, communication, communication - that's how it is implemented".

Our interviewees also recognized some barriers that could stand in the way

of implementing the strategy. In addition to the previously mentioned fear that the strategy would just become a piece of paper with no practical consequences, many interviewees also brought up the fact that for the strategy to succeed, the attitudes and will of people are crucial: the operators must *want* these changes to happen. On the other hand, many of the interviewees mentioned that the common interest does indeed exist. Now, as one of the interviewees described, *"we must make all the fish swim in the same direction"*, because despite the fact that the public and private sector may be driven by different incentives, they still share a common goal.

To summarize, Finland has a several strengths, such as the amount and quality of data, that provide strong preconditions for excelling in data economy. However, the data being scattered in silos seems to form a notable challenge.

As for the potential issues of data strategy, many seemed to fear that strategy would only lead to empty words with limited practical changes. In order to create a successful strategy, all three – the private, public and people – need to be included. However, there were differing opinions as to who should be included in the strategy creation process and in which stages. Based on these findings, we now represent our final recommendations.



Recommendations


Based on the interviews and other research material we conclude that enhancing the use of data in the Finnish society is an extremely salient and crucial issue. We want to highlight the need for open discussion between different stakeholders to compose a shared vision for the Finnish data economy. Whether it will be expressed in a form of a strategy paper or in some other way is less important. For simplicity, we use the term data strategy in this section.

Traditionally ministries lead the creation of public sector strategies. We propose that the data strategy is created through a **bottom-up approach**. At the beginning, all could be invited to envision how data could transform their lives. This could be facilitated through **gamification**. The game would serve as a platform for different people, companies and societies to bring up and test their ideas. We suggest that organizations like Vake, Sitra, MyData Global, Technology Industries of Finland and Slush, to name a few, could launch the game and invite people and organizations to participate. To address different people, the language and the terms of the game need to be informal and easy to understand. People need to understand how a more efficient use and sharing of data could benefit them individually.

To get started, the game could introduce different datasets that exist in Finland. People could see what kinds of data is collected from them, and they could propose problems or challenges that they would like to solve with the data. Examples like the easiness for the revision of fiscal declarations and request of social benefits would generate more and more ideas. Schools, youth organizations, adult education centres etc. would be invited to participate. Companies could envision new business models. The game would serve as a meeting place for different parties and thus facilitate the creation of partnerships and ecosystems. Social media influencers, such as popular Youtube vloggers, could be used to market the game and to inform people about the principles of fair data economy. The game could also serve as a channel for the application of funding for pilot projects that use data in new ways. Encouraging examples and the best practices could be searched for and shared.

The next phase in the strategy process would be the **creation of a template** that would be edited by data activists and experts. That would be tested through the game for a defined time period, and then modified according to the feedback. Furthermore, the strategy would need to be revised from ethical and juridical perspectives. A small core team with the top





experts from the most relevant stakeholders (the Digital and Population Data Services Agency, municipalities, Tax administration and representative(s) of the private companies) would be responsible for the final version of the data strategy.

Data is international, it doesn't recognize geographical borders. Therefore the strategy needs to be aligned with the data strategy of EU. The interviewees pointed out that Finland could show the way as a fair, innovative and efficient data economy and seek examples for functional business models. We believe that Finland could serve as **a testbed for data economy schemes** in EU. By doing so, Finland could influence the direction of the EU. Asia and America have left Europe behind with their own data strategies. Europe can choose to simulate what has been done in other parts of the world, or it can create a data culture that matches the ethical principles and the worldview of the European people. The current corona pandemic illustrates how vital it is to have international regulation for data collection and publishing. It is essential that Finland will determine actions that promote the use of data in both public and private sectors of Finland, but are at the same time strongly connected to the data strategy of the EU.

This report has focused mainly on the use of public sector data. In order to facilitate new innovations and create maximum benefits, data needs to be shared between public and private sectors. Several interviewees of our research pointed out that there needs to be an agreement for the pricing of data. Private companies often desire to use public data, and they can also be charged for that in the limits set by the Open Data Directive. However, the flow of data should be two-way. Privately held data can well serve the public interest. It can direct decision making, enable

targeted interventions and lead to cost savings. EU has encouraged member states to create structures to support business-to-government (B2G) data sharing. Governments can, for example, enforce tax incentives or invest in funds that support the development of technical tools for data sharing (European Union, 2020). Once again, Finland can become a pioneer in this matter. The game could be used for proposing and testing different pricing models and technical tools.

As one of the experts has said, Finland could be the *"Moominvalley of the data economy"* - a safe and friendly place for all kinds of experimenting and development. It requires that we accept that some of the experiments will fail. We need more ambition to take us to the next level in the development of an efficient, human-centric and innovative data economy. At first we need to believe in our own capabilities and have a shared will. The time of working in silos needs to be ended. Now is a time for openness and collaboration between all sectors and all people. Finland can succeed in the global data scene only if we are united to work towards the same goal. As long as there is no consensus on the goal, there is no chance of going very far.



Key Points:

- Generally, a consensus on most of the matters existed among the interviewees, but the greatest disagreement emerged when it came to the participants - who should be included, how much and in which stages of the process. Consequently, special attention to the participants should be paid when initiating the process.
- Citizens, companies and the public sector ('the tripartite') should participate in the creation of the strategy, as all of these parties have different interests.
- There is a need to clarify what is Finland's vision and to outline where we are going in the data economy.
- The European Data Strategy and the sectoral data strategies should inform the Finnish strategy.
- The strategy creation process could be initiated with gamification, inviting everyone to participate. Thereafter a strategy template could be drafted for data activists and experts to comment. Finally, a core team of experts would be responsible for finalizing the strategy.
- Finland should be a pioneer in the data economy and act as a test bed for data initiatives in the EU.



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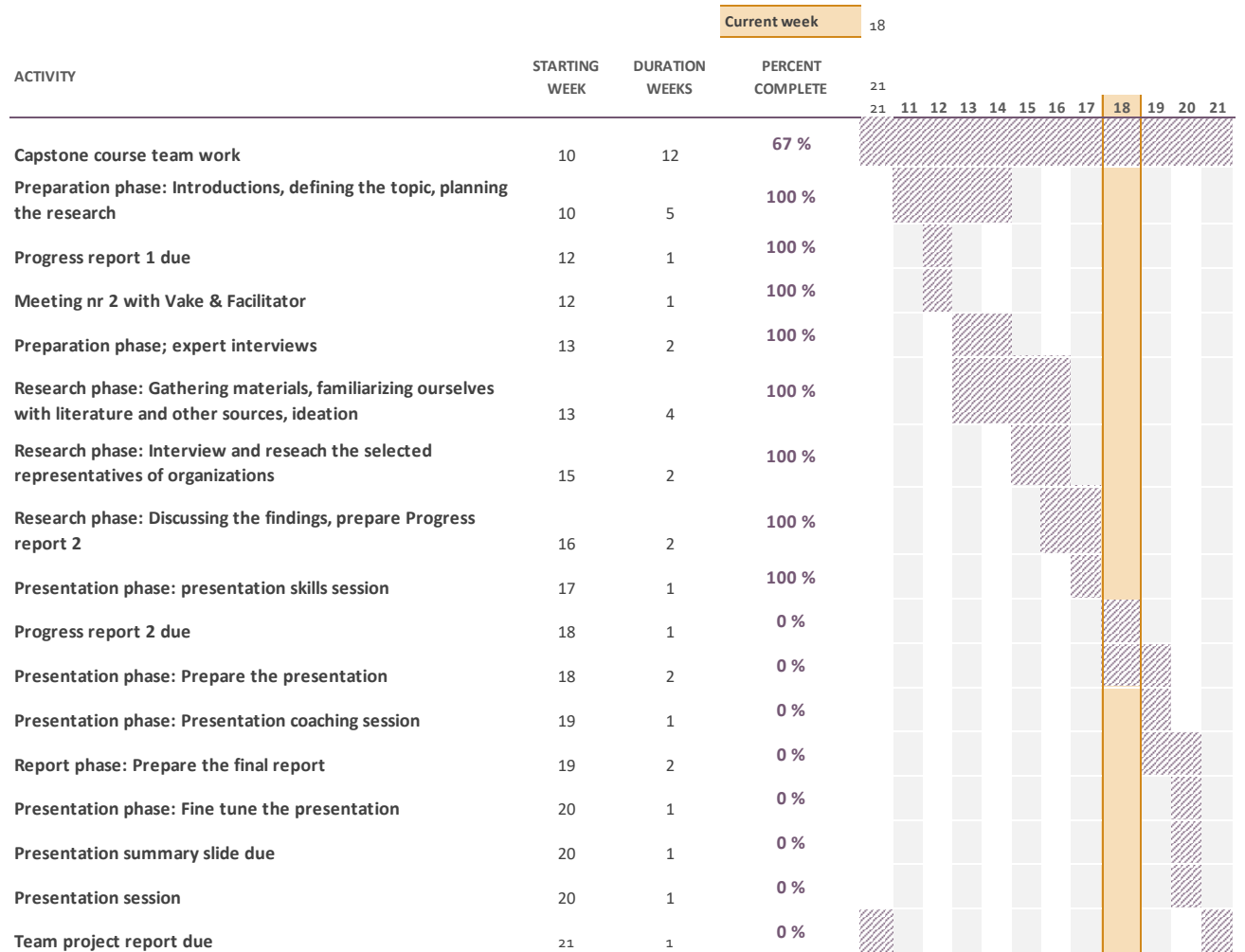
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Appendix 1, Updated Gantt Chart

Capstone 2020 Vake project





Appendix 2, Interview Questions

- Mikä on oma taustanne datatalouteen liittyen?

Suomi ja datatalous

- Mitkä ovat Suomen valtit datataloudessa? Entä heikkoudet?
- Millainen olisi Suomen visio datatalouteen liittyen? Miten tämän vision toteutuminen muuttaisi nykytilannetta?

Suomen datastrategia

- Onko Suomella tarvetta omalle datastrategialle?
- Mitkä olisivat Suomen datastrategian keskeisimmät tavoitteet? Mihin Suomen tulisi datastrategiassaan keskittyä?
- Minkä tahojen (julkisten tai yksityisten) tulisi osallistua Suomen datastrategian luomiseen? Mitkä tahot tulisi strategiassa huomioida?
- Minkä näkisitte olevan keskeisiä konkreettisia toimia Suomen datastrategian luomiseksi?
- Miten suomalaisen datastrategian jalkauttaminen ja toimeenpano kannattaisi mielestäsi tehdä?
- Minkä näette suurimmaksi esteeksi datastrategian toimeenpanemiselle?

Loppuun

- Keitä teidän mielestänne tulisi haastatella tässä tutkimuksessa?
- Mitä muuta haluatte sanoa aiheeseen liittyen?



Appendix 3, Themes Several Interviewees Mentioned

- *The international nature of data*
- *EU's role in the data economy counterbalancing the American and Asian forces*
- *Finland could act as a global example in the data economy*
- *The importance of understanding the value of data*
- *Human-centricity, fairness and ethics as core values*
- *Citizens' use of their own data and service experience should be improved*
- *The flow of data between different actors should be enhanced*
- *General skepticism towards strategies*
- *The report on information policy and AI of Sipilä's Government as a basis for the possible Finnish data strategy*
- *Instead of one general strategy, several sector specific data strategies could be considered*
- *The importance of concrete examples and draft measures*
- *Citizens should be included in the dialogue concerning the possible data strategy*
- *Businesses are the driving force in the data economy*