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# Performance Management in a Public Sector Organisation

Creating KPIs for a PSC Web Portal

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Metropolia University of Applied Sciences

Master of Business Administration

Master's Degree Programme in Business Informatics

Master's Thesis

27 May 2018

Author Title	Merja Puhakka Performance Management in a Public Sector Organisation: Creating KPIs for a PSC Web Portal
Number of Pages Date	99 pages + 3 appendices 27 May 2018
Degree	Master of Business Administration
Degree Programme	Business Informatics
Instructor	Dr James Collins, Principal Lecturer
<p>Digitalisation is revolutionising the way how organisations operate. The role of the data will be emphasised in the coming years: those organisations which view data as a strategic asset in their decision-making are the ones that will survive and thrive.</p> <p>Public sector faces tremendous external and internal pressure to improve its performance and the quality of provided services. Technology has boosted some of the processes as certain public services have been transferred online. Only eGovernment – inclusively digitalised services - is expected to revamp the way governments serve their citizens.</p> <p>The aim of this study was to improve the performance measurement practices of the revamped public sector organisation's web portal, suomi.fi/companies. Currently, the case organisation measures the web portal's performance with several metrics. Hence these metrics are not aligned with the strategic goals and, furthermore, fail to provide a holistic view on the performance of the services.</p> <p>The goal of the applied action research was to analyse the current state of the performance measurement and reporting to the steering Ministry and the EU; to evaluate the current limitations and furthermore, to co-create an improved performance management framework.</p> <p>The data collection of this study was performed in different stages. For the Current State Analysis, semi-structured interviews were conducted. Additionally, current reporting and web analytics practices were identified, defined and evaluated carefully. For building and validating the proposal, one-on-one discussions as well as workshops were carried out.</p> <p>The theoretical framework of this study is based on literature reviews, in the context of performance measurement. Additionally, the best practices were mapped from the other EU Member State Point of Single Contact (PSC) portals.</p> <p>The outcome of this study proposes a set of Key Performance Indicators (KPIs) and proposal for performance measurement practices to be applied in web portal development. With the developed performance measurements, the case organisation can rely on that the web service is performing to meet the set targets, and moreover, the organisation can focus on a systematic improvement of its services.</p>	
Keywords	Performance Management, Performance Measurement, Key Performance Indicators, Web Analytics, eGovernment

## Acknowledgment

This has been very challenging, yet interesting journey into the unknown – above all, it has been a great learning experience, and an opportunity to grown personally and professionally.

I would like to take this opportunity to thank the case organisation for offering this interesting topic for me as a subject of this Master's Thesis. My acknowledgement to all the stakeholders for your input for interviews, workshops, and one-on-one discussions. You were the source of the most valuable information in this research.

Furthermore, I would like to thank my instructor Senior Lecturer, Dr James Collins, for the patience and all of the support during the studies and this Master's Thesis project.

I would like to express my sincere appreciation to my Mentor, Marjariitta Mandell, who has been my saviour, a continuous source of inspiration: she has been pushing me forward and keeping me on track whenever I felt lost, or there has been hopeless days.

Finally, I want to thank my family members and friends who has been following me through this journey. Thank you for the support, believing that I can turn the impossible into the possible, and collect all the missing pieces to finalise this study. This accomplishment would not have been possible without you.

Merja Puhakka  
Helsinki  
27 May 2018

## Acronyms

BI	Business Intelligence
BI&A	Business Intelligence and Analytics
BSC	Balanced Scorecard
CSFs	Critical Success Factors
DSS	Decision Support System
GDPR	General Data Protection Regulation
KPIs	Key Performance Indicators
KRIs	Key Result Indicators
OYS	Oma Yritys-Suomi, My Enterprise Finland,
PIs	Performance Indicators
PMs	Performance measures
PSC	Point of Single Contact
V2C	Value-to-Customer
V2F	Value-to-Firm
V2S	Value-to-Society

## Organisations

ELY	Centre for Economic Development, Transport and the Environment
KEHA	KEHA-Centre, the development and administrative centre for the ELY Centres and TE Employment and Economic Development Offices
KaPA	National Architecture for Digital Services (Kansallinen Palveluarkkitehtuuri)
MEAE	Ministry of Economic Affairs and Employment
MF	Ministry of Finance
PRC	Population Register Centre
ST	State Treasury

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## 1 Introduction

“If you can't measure it, you can't manage it.” (Drucker, 2007)

Performance management can give additional value to organisations by supporting organisational processes and improving organisational performance. With the help of the highly developed ICT technologies, the organisations can improve the efficiency of their operations, as well as the quality of the services they are providing.

Measuring against the strategic baseline should be the very basis, when evaluating the progress towards the targets. Having a clear strategic approach also enables organisations putting the emphasis on the right processes and actions. (Chaffey, 2012)

The fast pace of digitalisation is bringing new challenges to public sector organisations, when they are urged to rethink their services to meet better the external requirements. Digitalisation is currently one of the Government's key projects in Finland, and the ultimate vision 2025, is to be among the most digitally oriented nations in the world. (Valtioneuvosto, 2017)

There is a vast amount of the data stored in the public sector organisations' data warehouses. In order to accelerate the digitalisation, the key question is, how to transform this data into knowledge and furthermore to utilise it in service development.

Business information management and use of Business Intelligence (BI) tools are more common among private sector companies than in the public sector. Hence, there are some textbook examples from Finland and from other countries, where the public sector authorities have gained additional value of using the performance management strategies and BI approach to support their operations.

The aspiration of the eGovernment is clear – to assist governments forsake analog, industrial-era models and to orient themselves in the landscape of digital transformation. Eggers (2016) emphasis that getting there is not just about the technology, but about changed mindset that puts customers and users before organisational interest, furthermore turns human-centred design into an organisation's core competency, and finally, improves the way governments serve their citizens.



This study focuses on the performance management improvement in the public sector organisation – starting from evaluating the current ways of working, and finding the best practices from existing knowledge, as well as from benchmarking private sector and public sector organisations. The output will be a proposal of the Key Performance Indicators (KPIs) and furthermore a comprehensive performance management framework for revamped Yritys-Suomi (Enterprise Finland) web portal.

The following sub-sections explain upon the overview of the current development of the eGovernment and the digitalisation of the public services, as well as the business challenge of this study. The case organisation and its most important stakeholders are introduced, following the roll out of the objectives and the scope of this study.

## 1.1 Overview

The world around us is changing radically, and each organisation is facing the same challenge and pressure – to evolve among the constantly changing operational environment. An aging population, budget shortfalls, and ballooning entitlement spending will significantly impact the way government delivers services in the coming decade. (Eggers, 2016)

The utilization of ICT to improve public sector services has started some 25 years ago with the change of automation of public services as well as business systems integration. These seek to foster public service transparency, civic participation, and cross-organisational collaboration. (Valtiovarainministeriö, 2017)

The technology was supposed to transform the governments already 15 years ago – and “era of electronic government” was poised to make government faster, smaller, digitalised and increasingly transparent. As Eggers (2016) emphasis, in practice, “the eGov revolution” has been exceedingly slow-moving one. Hence the technology has improved some processes, and scores of public services have moved online, the public sector itself and the hierarchal structures have hardly been transformed.

Public sector is not fully comparable to business sector, since it does not have traditional ways and needs to control the performance and the results. One of the distinctive differences is that public sector does not face the competition at all, which

means the inducement for improving the performance of the services is missing from that perspective. (Drucker, 2007)

Furthermore, because government operations are carried on at a great cost to its citizens, they want them to be conducted efficiently and effectively. Additionally, many of them are critical towards government services and what they perceive as wasteful purchases and practices, a lack of needed services, and a perversion of government by powerful interest groups. (Kotler & Lee, 2007)

In the recent years public services in Finland have been heavily criticized for a lack of customer centricity. Additionally, there has been a rather big debate in media about the amount of the money that has been used for these projects and renewing public services – during last 10 years some 200 million euros have been allowed into that development work. Yet there is no solid evidence that any of these projects have delivered the aimed cost savings. (Valtiontalouden tarkastusvirasto, 2016)

As the previous governmental studies show, one of the biggest problems related to public ICT projects, has been identified as the lack of communications and transferring tacit knowledge between the constantly changing project groups and gross-administration. One of the key challenges in the public sector is that the basis of the services and the service offering is largely based on a law about public services.

The law is one of issues that is still accelerating the old ways of working. Additionally, the hierarchical culture where organisations are working in silos, instead of sharing knowledge across the organisational boundaries, is typical for many public sector organisations. (Valtionkonttori, 2015; Valtiontalouden tarkastusvirasto, 2016)

### *Digitalisation, experimentation and deregulation*

There are five strategic priorities in the Government Programme, furthermore the strategic objectives are materialised in the form of 26 key projects. One of the five key strategic priorities is called *Digitalisation, experimentation and deregulation*, which has been furthermore split into key projects:

1. Digitalised public services
2. Growth environment for digital business operations
3. Streamlined legal provisions
4. A culture for experimenting
5. Better leadership and implementation

The Government's vision of 2025 is following:

Finland has made a productivity leap in public services and in the private sector by harnessing the potential offered by digitalisation, dismantling unnecessary regulation and cutting red tape. The flexible regeneration of Finnish society is supported by a management culture based on trust, interaction and experimenting. (Valtioneuvosto, 2017)

As stated in the Government Programme, one of the key objectives of the digitalisation of public services is that in the future, the public administration will ask people and businesses for the same information only once, which will streamline the process. Both legislative steps and process renewal will be needed to achieve this objective, which is presented in Figure 1. The Objectives for *Digitalisation, experimentation and deregulation* are originally presented in Finnish Government's Publication: *Finland, a land of solutions: Mid-term review Government Action Plan 2017–2019*.

#### GOVERNMENT-TERM OBJECTIVES FOR THE PRIORITY AREA

User-based, one-stop-shop digital public services that improve productivity and efficiency have been developed with the help of determined management.	Public decision-making is innovative and has created a favourable operating environment in Finland for digital services, Industrial Internet applications and new business models.
People's everyday lives, business operations, agriculture, investments, construction, healthy competition and voluntary activities have been markedly facilitated by deregulation, the reduction of the administrative burden and improvements to permit processes.	Bold steps have been taken to reform management and implementation by strengthening knowledge-based decision-making and openness and by making use of experiments and methods that encourage civic participation.

Figure 1. Objectives for Digitalisation, experimentation and deregulation

Furthermore, objectives include customer-responsiveness, an inter-administrative approach and higher productivity. Among other things, this package of measures will be needed to put into practice the digital ecosystems mentioned above in practice and to attain the target of saving EUR 1 billion in public finances. (Valtioneuvosto, 2017)

When examining Yritys-Suomi (Enterprise Finland) and web portal renewal project in this context, the aligned aim with the Government's vision 2025 would be proving user-based digitalised services, where the target is to improve the productivity and the efficiency. These two aspects should be also taken into consideration in this study, when setting the Key Performance Indicators for revamped web portal.

## 1.2 Business Challenge

"Today's amazing mix of cloud computing, ever-smarter mobile devices, and collaboration tools is changing the consumer landscape and bleeding into government as both an opportunity and a challenge. New expectations require a federal government to be ready to deliver and receive digital information and service anytime, anywhere, and on any device. It must do so safely, securely, and with fewer resources. "(Eggers 2016: White House' declaration 2015)

Generally speaking, the whole public sector is still trying to find its role and position in the middle of constantly evolving digital environment. The digitalisation can be easily seen in a negative light, instead of being a driver for an overall change. Hence, it enables the public sector organisations to rethink their service models, produce the services cost-efficiently and improve the customer experience. (Eggers, 2016)

Due the structural complexity of the organisation, ongoing re-organisation of the public sector, and the lack of structured performance management framework, the current situation is that on the decision-makers in the case organisation of this study do not have a holistic view on the performance of the digital services. Part of the problem is that Key Performance Indicators (KPIs) are not properly set for the current web portal.

Additional challenge is that case organisation's main web service, Yritys-Suomi (Enterprise Finland) web portal, will be revamped and implemented as a part of new suomi.fi web portal. Furthermore, it will be partially shifted under the steering of Ministry of Finance by the end of 2017. In the current model the Ministry of Economic Affairs and Employment (MEAE) is the owner of the web service, hence Ministry of Finance (MF) is governing the web portal renewal.

To support the coherent decision-making process, especially during this transition period, a comprehensive framework for performance management needs to be created. All the relevant data concerning the performance, as well as service quality of the web portal, should be identified, defined and evaluated carefully. Additionally, proper targets and metrics need to be set for the revamped Yritys-Suomi web portal.

### 1.3 Case Organisation Background

The KEHA-Centre is the development and administrative centre under the Ministry of Economic Affairs and Employment (MEAE), and it provides services for the ELY Centres and Employment and Economic Development Offices (TE-offices). Both ELY Centres and TE-offices are the part of a national, geographically dispersed network, and the KEHA-Centre is an agency that provides them currently with development and administrative services, as ICT and communications services. (KEHA-keskus, 2016)

#### *Yritys-Suomi web portal*

Yritys-Suomi (Enterprise Finland) is a service created as a joint effort by public business service organisations for companies and people interested in starting up their own company. The service is currently coordinated by the Ministry of Economic Affairs and Employment, and the maintenance and development of the service is partially funded by the European Social Fund. (Yritys-Suomi, 2017)

Yrityssuomi.fi (Enterprisefinland.fi) is an online, Point of Single Contact (PSC) service portal. It is available to its users free of charge, offering information and services for starting, growing and developing a company and advice and guidance on internationalisation. Additionally, it offers My Enterprise Finland (OYS) tools set for registered users. In each EU country, applications can be dealt with online through one single access point, the PSC, which makes possible for users to complete administrative procedures both for national situations and for cross-border situations.

Point of Single Contacts allow service providers to:

- Obtain all information about the procedures they need to complete to provide their services at home or in another EU country (e.g. company registration, business licences, recognition of professional qualifications);

- Deal with all formalities via one single contact point; and
  - Complete the necessary steps remotely by electronic means.
- (European Commission, 2015)

As Table 1. shows, there are over 1 000 service descriptions in the Yritys-Suomi service, 3 000 forms and electronic services. The number of the visitors to web portal is 1.2 million on yearly basis, and there are 19 000 registered users. It is an extensive network of partners, which includes approximately 500 organisations from the public sector administrative, service providers from municipalities and from the private sector.

Table 1. Yritys-Suomi web services in figures

ENTERPRISE FINLAND WEB SERVICES IN FIGURES	
Total number of visitors to Enterprisefinland.fi per year <b>1 200 000</b>	Total number of users of My Enterprise Finland service <b>19 000</b>
Total number of content pages <b>650</b>	ENTERPRISE FINLAND TELEPHONE SERVICE IN FIGURES
Descriptions of services provided for enterprises <b>1 000</b>	Number of calls per year <b>21 000</b>
Descriptions of permits and notifications required in order to engage in business activities <b>150</b>	Number of service request submitted on electronic forms <b>1 700</b>
Forms and electronic services <b>3 000</b>	ENTERPRISE FINLAND NETWORK IN FIGURES
External links <b>600</b>	National organisations <b>50</b>
Regional websites <b>69</b>	Regional organisations nationwide <b>450</b>

The current web service will be rebuilt and revamped under the new web portal platform with the suomi.fi web service. The new web portal, which is expected to be published by the end of 2017, will be guided by The Ministry of Finance (MF), and furthermore executed under Population Register Centre (PRC), which is currently leading The National Architecture for Digital Services project.

### *National Architecture for Digital Services*

The National Architecture for Digital Services (KaPA - Kansallinen Palveluarkkitehtuuri), led by Ministry of Finance, is one of the Government's key projects. It involves creating a national data exchange layer, the shared service views required by citizens, companies and authorities, a new national e-identification model and national solutions for the administration of roles and authorizations for organisations and individuals. (Ministry of Finance, 2015; eSuomi, 2017)

The outcome of the National Architecture for Digital Services, will be Suomi.fi service palette, which has been introduced more in detail in Figure 2. In a nutshell, suomi.fi Services help public and private sector organisations to create a common platform for digital services. Figure has been introduced originally in the project materials of KaPA-project, as well as in e.suomi.fi.

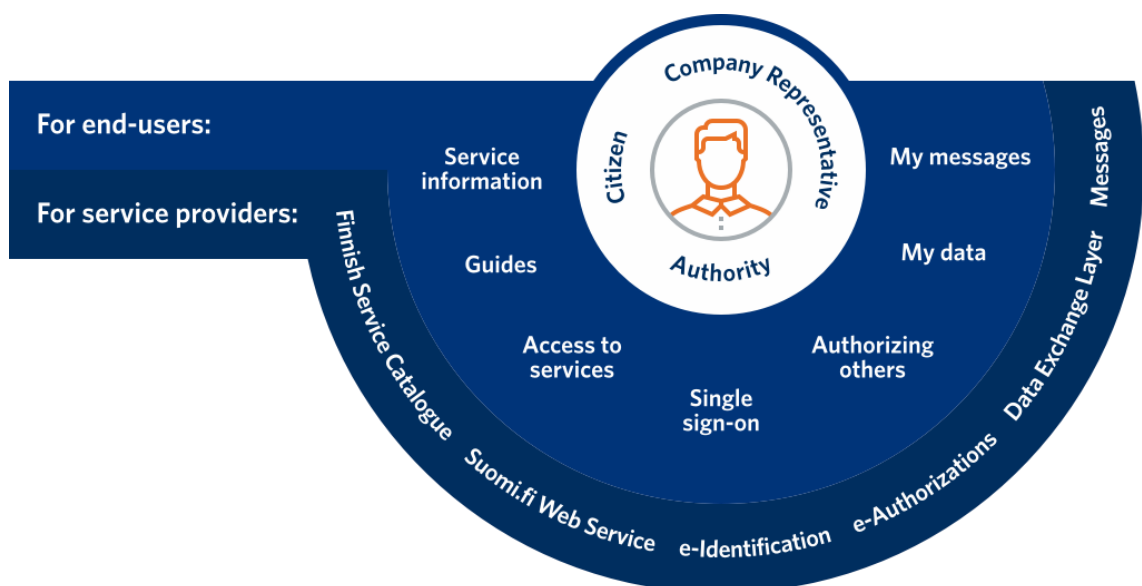


Figure 2. Suomi.fi service palette

The purpose and the aim of the KaPA programme is to:

- Simplify and facilitate transactions by citizens, companies and organisations with the authorities and to improve security;
- Promote openness in public administration and to improve the quality of public services
- Enable cost-efficiency in online services
- Improve shared use of information and the compatibility of information systems
- Promote corporate opportunities for leveraging public administration databases and services
- Support the national economy by making public administration more efficient and by creating new business opportunities in the private sector  
(Ministry of Finance, 2015)

The bullet points above are not only forming the strategic aim for the web portal, but additionally can be seen as cornerstones, when setting the targets and furthermore creating the metrics for the web portal. This thesis will lean into these viewpoints and take notice of the performance measurement also against these requirements.

#### 1.4 Objective and Scope of the Study

The main objective of this study is to define Key Performance Indicators (KPIs) for revamped web portal. This study ensures, that KPIs are aligned with the strategic targets and requirements, and are supporting the decision making in the case organisation.

The second objective of this study is to improve the performance measurement by defining the optimal process for measurement in the case organisation. This includes evaluating the current limitations of the data collecting and analysing practices, as well as evaluating reporting from the strategic targets setting perspective. Furthermore, this



means discovering a set of methodologies, processes, practices, possible Business Intelligence (BI) tools and technologies which help achieve these targets.

Finally, the third objective of the study is to develop a proposal for a holistic performance management framework, which can be used to evaluate the performance and the progress towards the set targets and facilitate management's decision making aligned to strategy execution.

The scope of this study is to analyse and evaluate what are the strengths and weaknesses in current data collecting and reporting processes, and how that is affecting on the performance management practices in the case organisation. Furthermore, service quality and data-driven approached in the case organisation are being examined and evaluated.

To limit the scope of the study, the information management, including the data collection, quality, and governance – all closely related to performance measurement and management in organisations, are intentionally left out of this study. Additionally, the technical specifications related to Data Warehouse and overall data architecture are not considered as a scope of this study.

## 1.5 Key terms and definitions

### *Performance management*

Process for improving both quality of information as well as the performance of organisation based on performance metrics. (Chaffey 2012; Kotler & Lee, 2007)

### *Performance measurement*

The process of collecting, analysing and reporting information regarding the performance of certain subject. Monitoring refers the measurements, and the evaluation is about measurement and reporting. (Chaffey, 2012; Kotler & Lee, 2007)

### *Performance measure*

An indicator used by management to measure, report, and improve performance. Performance measures are classed as key result indicators, result indicators, performance indicator, or key performance indicators. (Parmenter, 2010; Chaffey 2012)

### *Key Performance Indicators (KPIs)*

Key performance indicators (KPIs) are indicators that focus on the aspects of organisational performance, and are the most critical for the current and future success of the organisation. (Parmenter, 2010; Chaffey 2012)

### *Business Intelligence*

Internal information about the organisation, which helps the managers to review and furthermore improve the performance of the organisation. (Chaffey 2012)

### *Web analytics*

Web Analytics is the measurement, collection, analysis and reporting of Internet data for the purposes of understanding and optimizing Web usage. (Verhoef, 2016)

### *eGovernment*

The “era of electronic government” is poised to make government faster smaller, digitalised and increasingly transparent. (Eggers, 2016)

## 1.6 Structure of the study

This study paper is divided in seven sections. Section 1 addresses the business problem and provides with the background information, as well as discusses about the current limitations of the performance management in the case organisation. Additionally, the objectives, and scope of the study are described in the first section.

The research approach and research design are introduced in the section 2, followed by the data collection and data analysis methods applied in this study. The section two will provide also plan for the reliability and the validity of the research.

Section 3 concentrates on analysing the current state of reporting and performance measurement practices in the case organisation. Following the section 4, which presents the organisational performance management frameworks. Furthermore, this will form the Conceptual Framework (CF) for the study.

The initial proposal of KPIs towards the set targets is presented in section 5. Additionally, this section includes the initial proposal for improved performance

measurement process. Furthermore, following the proposal building, the section 6 concentrates on results and analysis of the study. It introduces the validation of the results, and presents the final proposal for KPIs as well as a framework of an improved performance management system.

Finally, Section 7 gives a summary with conclusions and thesis evaluation. Practical implications, as well as recommendations for the future studies are being discussed in the final section of this study.

## 2 Method

This section introduces the methods applied in this study. Firstly, it describes the research approach selected for this study. Secondly, it reviews the research design and furthermore introduces how the data are collected and analysed.

### 2.1 Research Approach

According to McNiff (2009), a research is done whenever we want to find out something that we did not already know. Furthermore, all research has three main purposes:

1. Creating new knowledge and making claims to knowledge;
2. Testing the validity of these knowledge claims; and
3. Generating new theory.

As this study strives to creating new knowledge, it is constructed according to qualitative action research principles. The “action” of the action research stands for improving the practices, and that was the one of the key reasons, why this method was selected over more traditional research methods. Additionally, there can be seen some similarities with agile development method (see sub-section 4.1.3), which is used in suomi.fi web portal renewal and development project, and in that sense these two approaches could at best support each other.

The definition of action research emphasis the team research process approach, since it involves improving practice through collaborative learning. The researcher is inside the situation, and will be influenced by the other practitioners. McNiff (2009) emphasis that this differs the action research from the traditional research, where the role of the researcher is usually conducted from the outsider perspective.

The action research combines ideas of taking the purposeful action, and creating the new knowledge about those actions. Action research in practice (adapted from McNiff and Whitehead, 2010) consists of seven steps, which become continuous cycle, which is presented in Figure 3.



Figure 3. Action research in practice

As Figure 3., originally adapted from McNiff and Whitehead, 2010, shows, the very first step of the action research is identifying a particular concern and selecting the focus. Following the identifying of the research question against the existing theories.

Collecting and analysing data are also in the central role in action research. Another crucial step in action research is exploring new understandings and learning with others. In the picture there are two nested circles of actions, which are describing the essence of action research, the continuous evaluation and improving. That is also the nature of this study in question – to create a framework that is based on continuous improvement. Moreover, therefore this study should be considered as the first cycle of continuum of cycles of improvement.

Most methods that can be used in research generally, are based on either qualitative or quantitative methodologies. In action research, qualitative as well as quantitative data can be as part of research. This study uses primarily qualitative research methods, due the character of the study and its objectives.

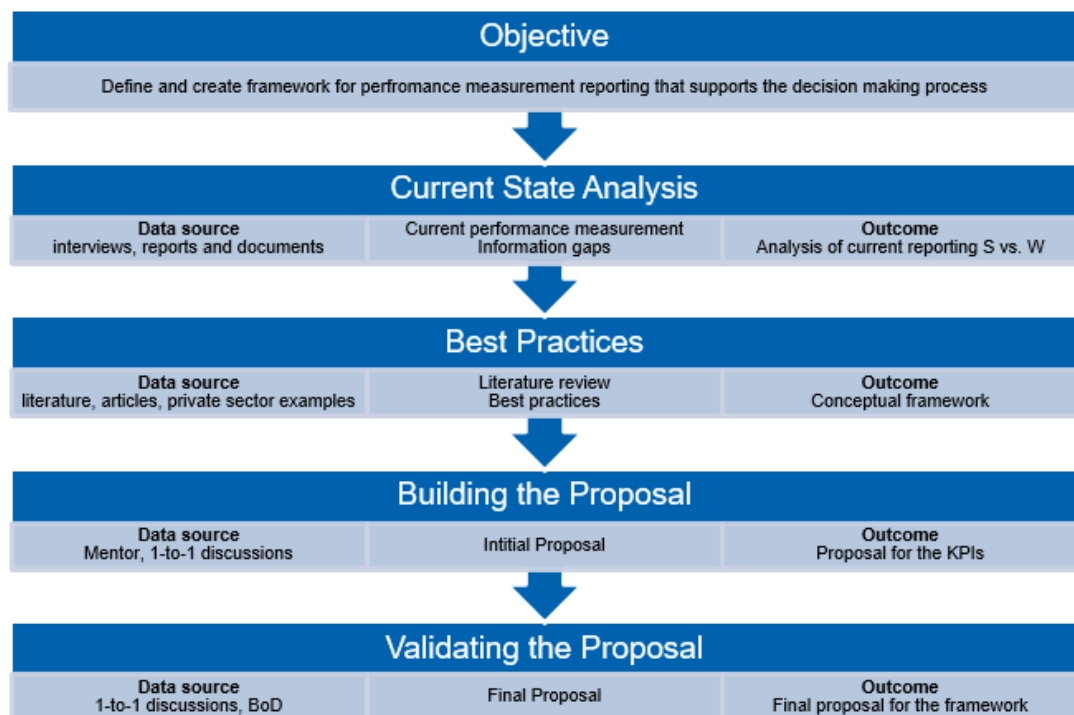
According to Silverman (2013) in qualitative research it is fundamental to understand other cultures. Most qualitative studies are based on asking respondents questions or making observations. The qualitative method concentrates on the kind of evidence what people tell you, and what they do – that enables a wider understanding of what is going on in the broader perspective.

## 2.2 Research Design

A research design is a framework or an overall plan for conducting the research project. A research design explains why and how the research should be conducted. Additionally, it specifies the details, the practical aspects, and the action steps through the process. (McNiff, 2009)

The research design of this study describes the phases of the data collection and analysis, and furthermore the development of building the proposal for the case organisation. The research design of this study is illustrated in Table 2. It describes each of the individual steps taken in this study.

Table 2. The Research Design of the study



As shown in Table 2, this study has five main steps, including setting the objective. Furthermore, it can be seen that this study draws from several types of data in order to respond to the research question.

First, it analyses the current state of performance measurement and reporting practices in the case organisation based on the existing data and knowledge. The current state

analysis is based on the data collected from interviews with key informants, as well as secondary data sources which include the existing studies about this subject.

Furthermore, to conduct solid current state analysis, all the collected data will be carefully analysed, and presented as a list of strengths and weaknesses of the current performance management practices.

The primary analysis in this study is the case organisation's performance measurement as well as reporting practices. However, this can be revised during the analysis in case new issues or discoveries arise from the data collection. This will keep the case open and flexible to possible new information, as well as discoveries during the data collection phase.

Secondly, this study reviews best practices found from the research literature. It is based mainly on the findings of current state analysis, and consequently is related to different aspects performance measurement as well as the overall performance management. The purpose is also find the best practices from other public sector organisations. The outcome of this is the Conceptual Framework (CF), which is based on the existing knowledge about different aspects of performance management.

The data collection and analysis of the existing knowledge is a basis for a first proposal of KPIs and the performance management framework being developed and furthermore piloted. To collect a wider range of opinions for the proposed framework, the key stakeholders and project group members will be engaged into second data collection. Internal workshops or another set of interviews may be conducted to verify and improve the framework.

Finally, an improved version of the performance management system is being developed for the case organisation. In this validation phase key stakeholders may still comment the proposal for further improvement.

As for the timetable of the research, there are no strict deadlines. The aim is to conduct the current state analysis as well as map the best practices phases during 2016. Due to nature of the KaPA project itself and the agile development method applied, this research will follow tightly the main project and its phases along the way.

To have a solid research design, the data collection practices for this study are presented in the next sub-section. Furthermore, the next sub-section discusses about the analysis of the data.

### 2.3 Data Collection and Analysis

The following sub-sections describes the data collection for this study. The approach with the interviews with key informants, as well as the analysis of the data is explained more in detail from this study perspective.

All research involves observation, monitoring practices and keeping records using specific data-gathering methods. McNff & Whitehead (12; 155-156) list some of the most commonly used techniques for action research data collection:

- logs and diaries;
- observation methods;
- questionnaires;
- interviews and surveys;
- case study;
- multimedia.

The data for this study was gathered from various sources: sets of semi-structured interviews, unofficial one-on-one discussions with key stakeholders of the organisation, observations by the researcher, existing studies and reporting, the best practices, as well as analysis of current reporting and data collecting practices of the case organisation. As a benchmark there are held two Point of Single Contact (PSC) examples, UK's Gov.uk and Estonia's X-road.

Data collection was conducted in different stage to be able to gain as holistic view as possible on the case organisation's current practices, and furthermore, to form a solid



knowledge base for the current state analysis. The data collection for this study was carried out in three rounds:

- First data collection for current state analysis;
- Second data collection for building initial proposal;
- Third data collection for solution validation.

Multiple data sources were used in order to ensure that the problem has been reviewed from different angles. The data was collected from the existing data-bases, and it consisted of documents, records, process descriptions as well as instructions and meeting minutes documented by the case organisation. Additionally, in the second and the third data collection phases the main focus was enriching the existing data with data sets related to KaPA project and suomi.fi web portal renewal.

The value of this kind of documentation as a source of evidence is great, because the data is stable, usually unobtrusive, and exact. Additionally, the documentation usually covers a long time span, lot of events, and many settings. (Yin, 2011)

The research data can be divided in the primary and secondary data sources, depending on whether it is collected first-hand for the study in question, or collected by some other than researcher. (McNiff, 2009; Silverman 2013)

Primary data sources, collected by the researcher for this study, included interviews and the documentation of the current processes in the case company. As a part of the building proposal one-on-one discussions, as well as the workshops with the key stakeholders were held. Furthermore, benchmarking the performance measurement frameworks from the other EU Point of Single Contact (PSC) portals helped to provide grounding for the conclusions of this study.

Additionally, to benchmark different performance management and decision support systems, some Business Intelligence and Analytics solution providers were interviewed for this study. As a secondary source of data, the existing studies and reports were used in this study.

### 2.3.1 Interviews

Most of the qualitative studies are based on asking respondents' questions or making observations in the field. According to Silverman (2013) the aim of the qualitative interviews is to get inside the heads of particular groups of people to share their point of view on things in question.

As described in the earlier sections, the interviews were used as a one method in data collection in the current state analysis phase, as well when building the proposal. The interviews for this study were partially recorded, and the data additionally collected to the researcher's notes. The interviews were used to discover possible reporting and performance management related shortages in the case organisation. Moreover, in the later phases of the study, in proposal building and validating, interviews were used to solidify the proposals.

Semi-structured interviews were used as a research technique to collect the empirical data in this study. According to Silverman (2013) qualitative interviews tend to be conducted with small numbers and rather informal patterns of questioning. Usually there is prepared set of question, which are used as a guide. Hence, the aim is to allow respondent to set the pace.

The first step with interviews was to identify the most important stakeholders, and create certain criteria for person(s) to be interviewed. Firstly, there was a need for a person who would be familiar with the decision-making processes in a public sector, and additionally would have experience being part of this decision-making process.

The second criteria for respondents was that they are expected to be somewhat familiar with data measurement, analysing and reporting concept. Preferably they would have an information about different analysing systems that currently are in use in public sector or in the case organisation.

Altogether this was planned to be 2–4 key informants, who could be interviewed either one-on-one or using focus group discussion method when collecting the data. Figure 4. introduces the initial proposal for the interviews conducted in this study.

As Figure 4. shows, the respondents of this data collection part were divided into two groups of key informants: Product owners (Group 1) and Benchmarks (Group 2.). Based on their position and role in the National Architecture for Digital Services (KaPA) project, the respondents in the Group 1 can be considered as most important source of information, whereas the Group 2 would be complementary information source for this study.

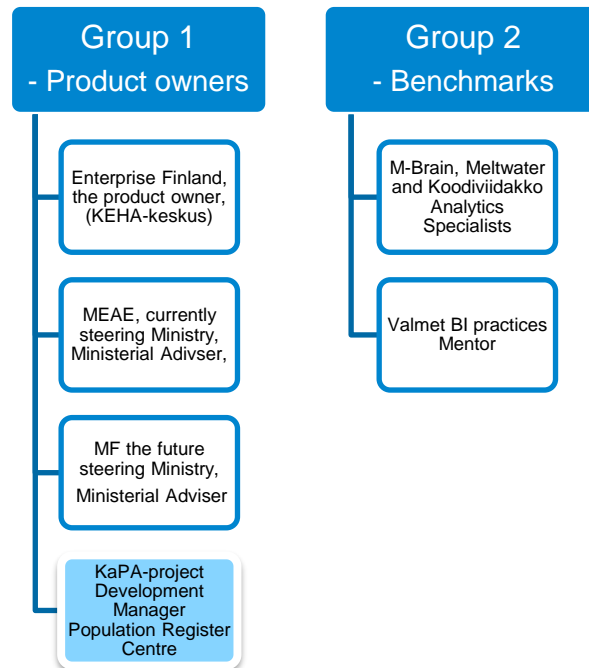


Figure 4. The initial proposal for the interviews

Group 2 consists mainly of the benchmarks from the media monitoring and consultancy companies as well as business intelligence service providers. Their role is to offer more broad perspective on performance measurement and reporting in generally.

Additionally, this second group included another external respondent, a researcher's mentor, an experienced adviser with a broad understanding on BI and Analytics. The role of the mentor throughout the study was remarkable from the researcher's point of view, since mentorship offered subjective support and professional backing. However, in a practical level, mentor's contribution to this study is of a minor importance.

### 2.3.2 Analysis of the Data

After the data is collected, an analysis of the data is conducted to turning it into evidence and finally to provide solution for the business problem. The analysis is done in three stages which include:

- Sorting the data and looking for possible meanings, and linking with other work;
- Making the descriptions problematic;
- Theorising. (McNiff, 2009)

First, a preliminary analysis is conducted after all data is collected. Hence, Silverman (2013) suggests, that the data analysis should not only happen when the all data is gathered, but along the way, systematically reviewing it in the light of the research question. In this study the data collection was done in various sets, during the years 2015–2017, and each data set was analysed after the collection was completed.

According to McNiff (2009) one aim of the action research is to read the literature and incorporate relevant insights from it into analyses. Additionally, taking a critical stance towards the outcomes is essential when offering the explanations. As the interviews does not provide all the necessary information in this study, also the analysis of relevant literature research on the subject will be used to reflect theoretical ideas into the practice. The concrete output of this will be Conceptual Framework (CF).

Finally, as a third phase of the analysis of the data, it is theorised. This means creating the own theory of practice, to support the explanations and meanings that can be found from the data. One of the key questions related to data, is turning those into piece of evidence, and showing the validity of the claims into knowledge. (McNiff, 2009)

The validity and reliability of a research are an important issue to be taking into a consideration. Especially in action research, the evidencing plays an important role. The next sub-section is introducing the validity and reliability plan for this study.

## 2.4 Validity and Reliability Plan

The quality of action research cannot be judged by means of criteria of traditional research, such as requirements of research findings to be generalisable and replicable. According to McNiff (2009) these criteria are inappropriate to action research, where the practitioner does not replicate their practice from day to day.

Instead, the validity in action research involves several processes;

- Personal validation – testing knowledge claim against researcher's own values
- Social validation – testing claims against the critical feedback from others
- Public legitimisation – ongoing aspect of social validation (McNiff, 2009)

Additionally, in action research the knowledge in question is knowledge in practice. As McNiff (2009) suggests, knowledge claims are proportional to researcher's actions to improve the practice.

Yin (2011) suggests that construct validity can be achieved when the data is collected from multiple sources, chain of evidence is established and having the research report draft reviewed by key informants. Triangulation is a process, in which data is looked at from a range of perspectives. It can be used as an evidence how data from different sources are supporting the particular explanation.

Deeper understanding on the issue in question can be achieved by involving multiple research methods: for instance, combining interviewing with observation. Besides, by having a cumulative view of data, it may improve the reliability of a single methods. Additionally, multiple data sources force the researcher to triangulate the problem from different perspectives, which is also increasing the validity to the study. (Silverman 2013; McNiff, 2009)

To increase the reliability and validity in this study, different data sources are used, as being explained more in detail in section 2.3. *Data collection and analysis*. Furthermore, the reviews and discussions with the key informants are held during the whole research process. Additionally, once the proposed framework is created, it will

be presented in the case organisation's key informants. Based on the discussions and comments from the informants, a finalised version of reporting and performance measurement framework can be developed.

This section has introduced the research approach, as well as the research design, and furthermore the data collection and analysis applied into this study. There was also discussion about validity and reliability related action research viewpoint. To proceed with the study, the next section describes the analysis of the current state of the case organisation.

### **3 Current State Analysis**

This section describes the Current State Analysis conducted for the case organisation and its performance measurement practices. The next sub-section gives an overview on the Current State Analysis.

#### **3.1 Overview of the Current State Analysis**

Current State Analysis (CSA) in this study consist of researching the current reporting and performance management practices. Furthermore, it is evaluating these topics and the possible information gaps, especially in reporting practices.

The first phase consists of current reporting for the steering Ministry and EU level. It reviews the metrics that are defined in the service agreement between the Ministry of Economic Affairs and Employment and the KEHA-Centre. Additionally, the Business model canvas for Yritys-Suomi (Enterprise Finland) portal and the targets related to portal are evaluated. Finally, the EU level performance indicators related to Point of Single Contact are probed more closely.

Second phase of the CSA consist of the evaluation of current data collection and reporting. The current data collection and reporting includes the metrics related to customer service and support, as well as web analytics and social media.

The third phase is based on interviews conducted with the key informants involved within this project. This part concentrates on mapping the current performance measurement and reporting practices in the case organisation. Finally, the fourth phase of CSA introduces the results of the Point of Single Contact study from 2015. Following the key findings of the Current State Analysis, which completes this section.

The CSA was originally carried out during the 2016. Some of the examples from the reporting tools, such as Piwik and social media metrics, were updated and supplemented with more current example figures during the 2017, due the fact that the research scope had slightly evolved on the way.

In the next sub-sections, the current reporting and data collection practices are introduced in more detail. Finally, the outcome of the current state analysis will be the list of strengths and weaknesses of the current reporting process and eventually the recommendations based on those findings.

### 3.2 Current reporting for the steering ministry

As described in the section 1.3. the case organisation is currently reporting its service performance for the Ministry of Economic Affairs and Employment (MEAE). In the following three sub-sections will present the main metrics and outlines, that the Ministry has set for the web portal.

Since there was no opportunity to interview anyone from the Ministry, the data collected for this section is based on the internal emails as well as memos, sent by the Ministerial Adviser of the steering Ministry (MEAE), in 2015. The information accuracy has been verified, and the Project Owner of Yritys-Suomi (Enterprise Finland), J.K. has confirmed that the following metrics are still valid.

#### 3.2.1 Metrics defined in the service agreement with KEHA Centre

In the service agreement with KEHA Centre there are altogether five metrics, which are periodically – twice a year – reported to the steering Ministry (MEAE). These metrics are Number of visitors; Number of hits; Usefulness; Usability; and Service (brand) image. In Table 3. all the current metrics are being listed and presented in exact format that they have been delivered in 2015 for the KaPA project group.

Table 3. Metrics reported to MEAE

Metric
Number of visitors
Number page views
Usefulness
Usability
Service image



However, there are no instructions on which level or detail these metrics should be reported, nor how the data should be collected and analysed. Furthermore, there was no information available, when these metrics has been revised. In the one-on-one discussions, the case organisation informant described the current practice as following:

“This is how we have been doing the reporting for years.”

As a conclusion, it can be said that there are some established ways of reporting to steering ministry. And what comes to data, if it has been collected this way for years, also figures in a long run should be comparable. Hence, the strategic viewpoint is vague, and the target setting could be also more transparent.

### 3.2.2 Business model canvas and the targets

As a part of the web portal performance management, the Yritys-Suomi (Enterprise Finland) portal canvas has been created in the steering Ministry. The Yritys-Suomi portal canvas is following the principles of traditional business model canvas template, and its main purpose is to describe the service’s value proposition, infrastructure, customers, and finances.

Figure 5. introduces the current Yritys-Suomi portal canvas. There are some indications of the possible metrics related to portal, however, these are mentioned in very general manner. There was no documentation available when the current canvas has been built, nor who has been involved with the refining it.

Based on the researcher’s own knowledge on web portal, it can be said, that Yritys-Suomi portal canvas seems to up to date. Hence, it will be another question, what are the key strategic targets in the future, when Yritys-Suomi web service will be revamped and relocated under the new web portal, as a part of suomi.fi.

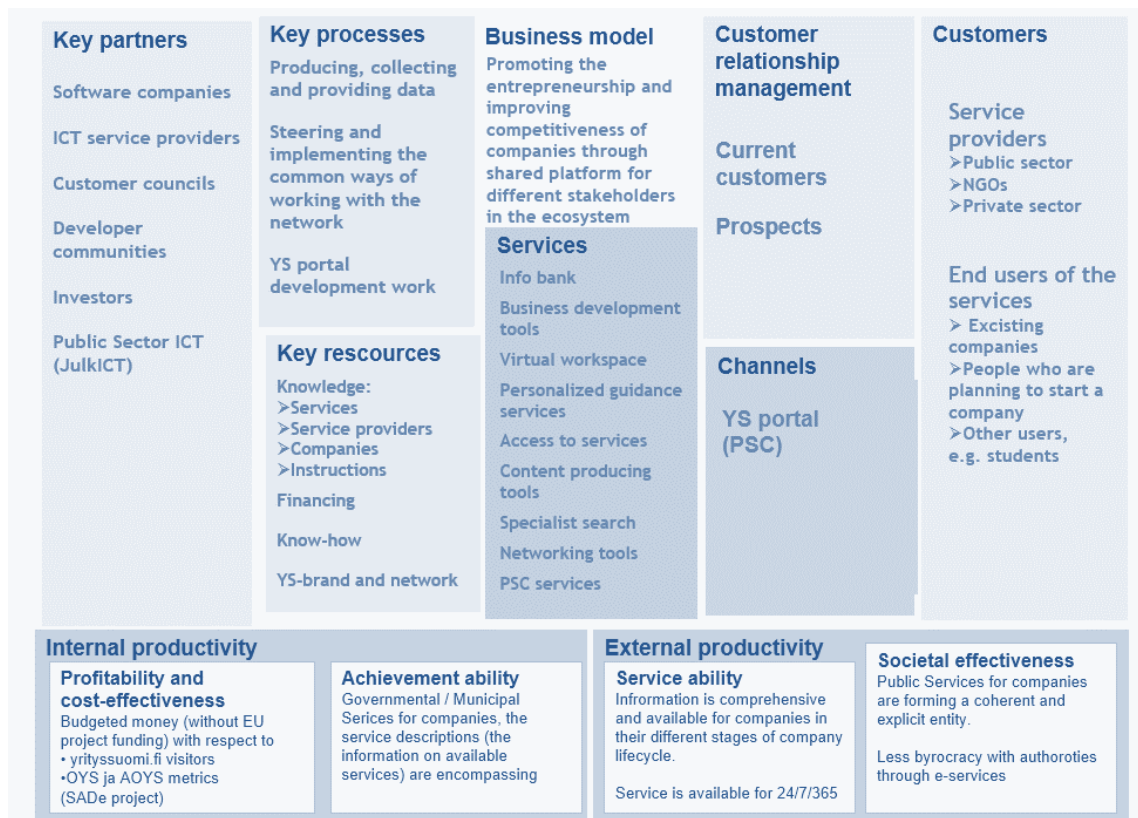


Figure 5. The Yritysuomi portal canvas

As Figure 5. demonstrates, some additional targets set to web portal can be found from the bottom of the canvas under Internal productivity and External productivity.

These targets internal are related to profitability and cost-effectiveness as well as achievement ability. From external point of view, service ability and societal effectiveness are important factors. These should be also considered carefully, when creating new KPIs for a web portal.

#### *Targets for the web portal*

Additionally, as loosely related to Yritysuomi canvas, a separate table for the targets of the Yritysuomi web portal was also included to the current reporting practices. Table 4. Introduces the target, further description and the related metric.

Table 4. Targets for web portal

Target	Description and metric
Strategic targets	<p>To increase the operational environment of the companies into competitive level in international perspective</p> <p>To increase the amount of the viable companies and the amount of open vacancies in Finland</p> <p>To minimise the administrative burden of the companies</p> <p>To enable holistic and explicit view of available public services from the customer viewpoint</p> <p>To increase the performance of the public sector administration with the help of the digitalisation</p>
Functional targets	<p>The workspaces of the web portal enable the personalised e-services in the national level</p> <p>The OYS service (as part of PSC) is in use of everyone planning to start a company, or those who are already entrepreneurs – both in national and international level (across the borders)</p> <p>Metric: Amount of the users</p>
Qualitative targets	<p>The information and the forms are available in all needed language versions, and those are taking into consideration the different need of the information of the companies in their different stages of lifecycle</p> <p>eServices and tools are easily deployed, and furthermore, these are useful and easy to use</p> <p>Metric: customer surveys and usability studies</p>
Financial targets	<p>The developed solutions are generating the cost savings for service providers, users and the customers</p>

As Table 4. shows, the targets are divided into four categories: Strategic targets; Functional targets; Qualitative targets; and Financial targets. There are long description texts on each target, hence the metrics are missing from most of the perspectives. Additionally, the few metrics listed in the table, are expressed in rather general level.

As with the other material received from the Ministry level, also this table of targets was originally delivered without any further explanation. Additionally, as all the other material presented in these sub-sections, provided by the steering Ministry (MEAE), the information related to the date the document revised is missing. Hence, this document should be also taken into consideration when building new KPIs.

### 3.2.3 EU level indicators and national indicators for web portal

EU Commission evaluates on a regular basis if the Public Services meet the service levels that are set in Service Directive for Points of Single Contact (PSCs) portals in each Member State.

The more detailed list of national and EU level indicators is available as Appendix 2. of this study. The main four indicators and requirements are:

1. Quality and availability of the information
  - How much relevant information is online?
  - Is it comprehensive, well-structured and readily intelligent?
2. Online completion of procedures
  - How many procedures are available online?
  - Can they completed online (e.g. downloading forms, completing webforms)?
  - Are there any online fee payment tools?
3. Accessibility for users from other countries
  - Can the site be used by businesses in other countries (especially regarding its technical aspects)?
  - Does the site accept e-signatures issued abroad (when those are needed to complete procedures)?
  - Can users in other countries readily understand the requirements they must meet?
  - Is the information available in languages other than that / those of the host country?

#### 4. Usability

- Are the processes user-friendly?
- Can users do what they want to do on the site?
- Is effective help available? (European Commission, 2015)

When going through the list of requirements set for the PSCs, it can be said as a conclusion, that the targets that are set for development work of Yritys-Suomi (Enterprise Finland) and My Enterprise Finland (OYS), are mostly in correspondence with EU level criteria set by European Commission.

### 3.3 Current data collection and reporting

The current data collection practices include the Web analytics, Social Media and the Customer service support tools, that are currently used in Yritys-Suomi (Enterprise Finland) web portal. The following sub-sections will take a look on each of these tools and data collection practices more into detail.

#### 3.3.1 Customer service and support

Zendesk is a cloud based customer service and support ticket software. The platform includes ticketing, self-service options, and customer support features. (Zendesk, 2016)

Figure 6. demonstrates the Zendesk monthly support report (Data source: Zendesk, 2017) which is available for all the web editors of the current Yritys-Suomi (Enterprise Finland) web portal. The ticketing system generates automatically monthly reports about tickets created, solved and responded, as well as the response time.

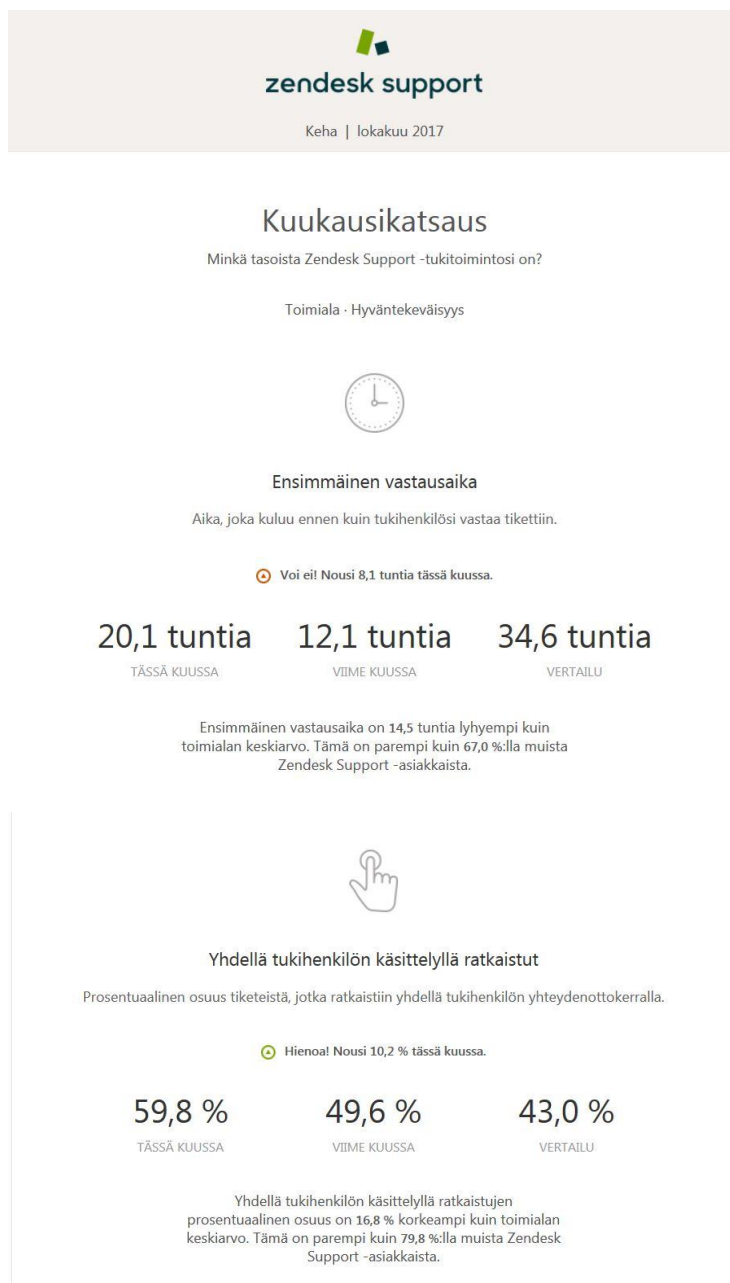


Figure 6. Zen Desk monthly reports

The only number reported to Ministry of Economic Affairs and Employment (MEAE) is the response time in customer service. Hence, in the unofficial one-on-one discussions with Yritys-Suomi web editors it turned out, that there is no real use of the report and the metrics. Additionally, in practice, these targets from the ministry are not guiding nor having any real impact on web editors' daily work.

### 3.3.2 Web Analytics

The case organisation is currently using Piwik for gathering and analysing information about the users visiting the web pages. However, there is no systematic plan for data analysis nor utilising the data to improve the web service.

Piwik (from January 2018, called as Matomo) is a free open-source analytics platform. It tracks online visits to website and displays reports on these visits for analysis. Piwik displays reports regarding the geographic location of visits, the source of visits, the technical capabilities of visitors, what the visitors did: pages they viewed, actions they took, how they left, the time of visits; and so on. (Piwik, 2016; 2017)

With these features it would be possible to track Key Performance Indicators (KPIs) such as visits, goal conversion rates, downloads, keywords and many more. In the Figure 7. can be seen the main performance measurements reports that Piwik platform is able delivering (Data source: Piwik, 2017).

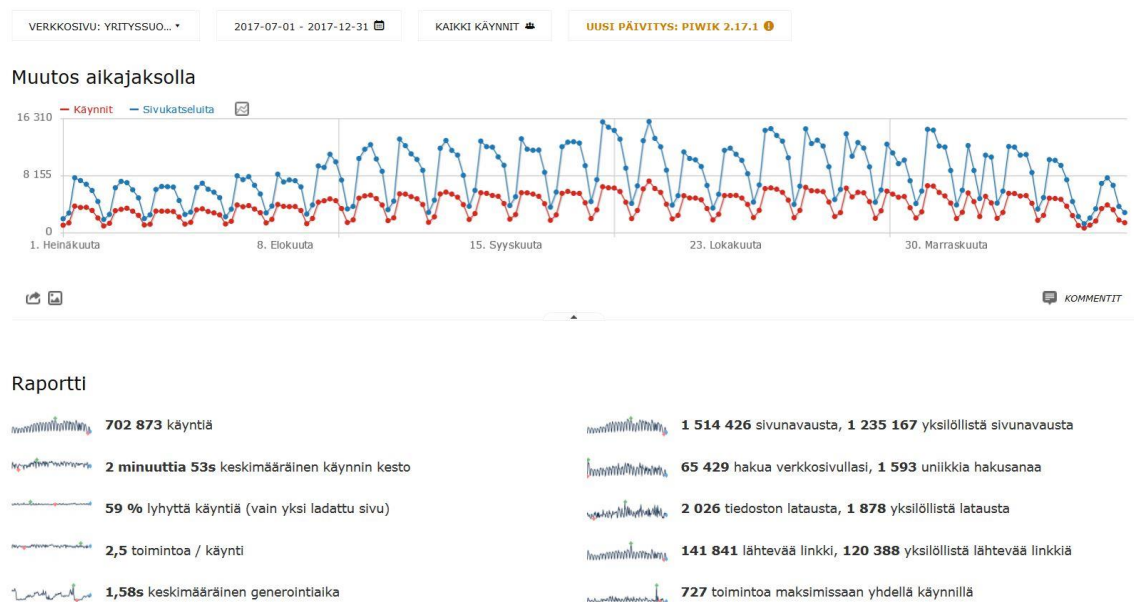


Figure 7. Piwik web analytics report Jan-Dec, 2017

The monthly report is being automatically sent to all local admins and editors of Yritys-Suomi (Enterprise Finland) web portal. Currently, only figures reported to Ministry of Economic Affairs and Employment from the Piwik platform are:

1. The number of actual visitors and visits
2. The number of the page views

The frequency of these metrics measurement and reporting is in every six months. Additionally, one-on-one discussion with web editors of Yritys-Suomi revealed, that there are from time to time also unofficial requests around the data. Usually these requests are related to special campaigns or marketing activities.

### 3.3.3 Social Media

Yritys-Suomi (Enterprise Finland) is also active in social media. Following figures are collected from organisation's social media accounts in December 2017, when more comprehensive research on Yritys-Suomi in different social media channels was conducted, as a part of KaPA project communications activities planning.

The amount of the followers in social media channels (December 2017):

- Facebook                      4,719 page likes  
4,622 followers
- Twitter                        4,340 followers
- Instagram                    541 followers
- YouTube                      194 subscribers

The most active of the social media channels is Facebook. As Figure 8. demonstrates, also most of the visitors in web pages from different social media channels, are from Facebook. (Data source: Piwik, December 2017)



Social media channel	Visitors	Actions	Bounce rate
 Facebook	875	1 724	67 %
 Twitter	51	89	69 %
 Vkontakte	22	109	55 %
 LinkedIn	5	11	80 %
 YouTube	3	4	67 %
 LiveJournal	1	1	100 %

Figure 8. Yritys-Suomi visitors from social media July-December 2017

Furthermore, as Figure 9. shows, all the social media post reach in Facebook is organic, since there are no paid posts in use. Therefore, also the average reach is as moderate as 1,2 k users / post. Additionally, followers are not that engaged - impression rates per day or post are rather low. (Data source: Organisation's Facebook account, December 2017).

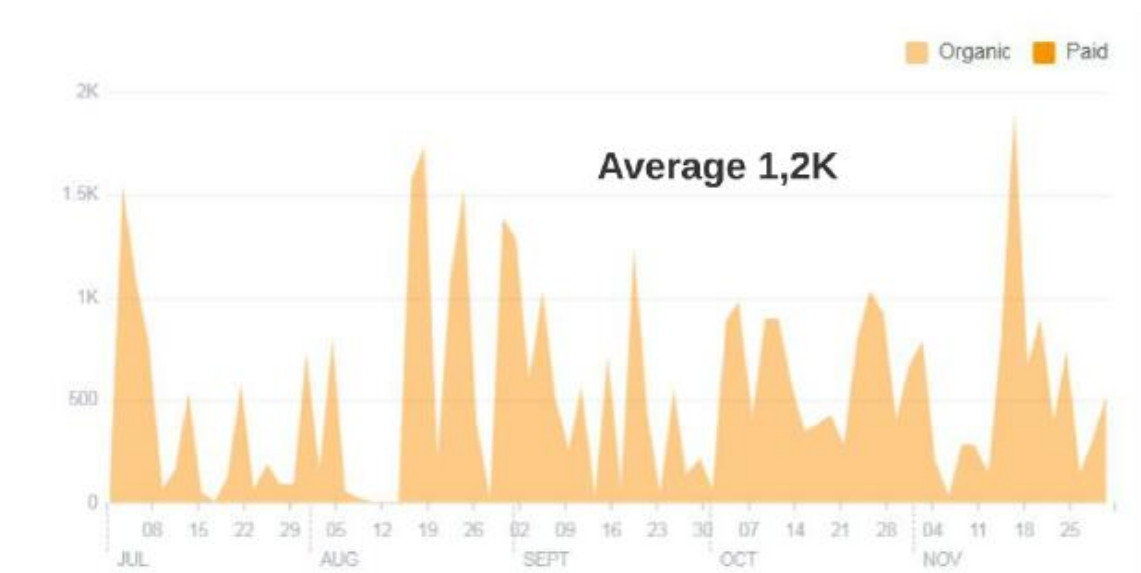


Figure 9. Yritys-Suomi Facebook post reach July- December 2017

There are no official reporting practices in place for social media activities. However, the team of Yrityys-Suomi web editors is following up internally all the channels on regular basis, by using each social media channels' tools to collect the data about:

- The number of followers;
- How many people posts have reached;
- Likes, comments and shares trends;
- How many visitors are coming from Social Media channels to web pages

These metrics listed above are evaluated internally in the monthly meetings and reflected to overall social media plan as action points. As the one-on-one discussions with web editors and social media specialists of Yrityys-Suomi confirms, there is a separate guideline for the social media activities of the Yrityys-Suomi web portal.

This social media guideline includes the basic social media metrics mentioned above, as well as a general target for increasing the amount of the followers. However, the guideline does not go into more detailed level with the target setting.

Since the profound social media analysis was out of the scope of this study, there is no need to go into results any deeper level. However, as a brief conclusion of the conducted social media analysis, it can be said, that the figures are rather moderate, yet quite average for public sector organisation.

As a comparison, another public sector organisation with rather similar profile, Finpro, has 4,243 likes and 4,227 Facebook followers, but 15,5K followers in Twitter, which is three times more than Yrityys-Suomi currently has. From that perspective, there would be still room for an improvement in current social media planning and activity.

### 3.4 Interviews with key informants

The initial plan for the interviews with key informants (introduced in section 2.3.1.), was to find 2–4 respondents for the primary source of information. Respondents were merely selected by their position and their role in the case organisation, as well as how

well they fulfilled the set criteria, related to understanding the current performance management and reporting approach.

For these reasons mentioned above, as well as due the on-going organisational restructuring in the steering Ministry of Economic Affairs and Employment (MEAE), there were not that many potential candidates available for interviews. Therefore, the original number of respondents was narrowed down, as the responsible people from the steering Ministries were left out from this stage of the research.

Instead of interviewing the representatives from the steering ministries, the current reporting prerequisites (presented in sub-section 3.2), stated by the former Ministerial Adviser from MEAE, were confirmed to be still valid. This information was originally based on the internal documentation and emails from 2015, and was confirmed in the interview with the Project Owner of Yritys-Suomi (Enterprise Finland).

Table 5. presents the respondents in the current state analysis phase of the study, which stands for the data collection 1 of this research. Most of the interviews were conducted during the spring 2016. The interviews conducted for this study were semi-structured, recorded and the data was additionally collected to the researcher's notes. The length of interviews varied from 45 minutes to two hours, as the average of the interview was 60 minutes.

Table 5. List of the informants participated in the interviews

Initials	Position	Role	Date
<b>N.W.</b>	Development Manager	Internal / KaPA Project	16.11.2016
<b>J.K.</b>	Project Owner	Internal / KEHA KaPa Project	24.2.2016
<b>M.M.</b>	Senior Analyst, BI	Mentor/ Benchmark	monthly basis in 2016
<b>M-Brain (MB), Meltwater (MW), Koodiviidakko (KV)</b>	Analytics Specialist and Analytics Managers	Benchmark	21.3.2016 20.4.2016 14.9.2016

In the responses, there is a clear indication that currently used metrics and data collecting practices were seen too dispersed. Additionally, there was seen no clear relation between the set metrics, strategic goals and the daily work.

“The metrics are currently related to this KaPA-programme and those are service specific, set and monitored by Ministry of Finance. - - Examples of the current metrics are the number of users (in service catalogue) or the amount of different registers that has joint in the platform. There are also some of the KPIs related to quality of the information.” N.W.

“We are in the situation where there are two steering Ministries currently, with slightly different approaches towards this web service..” J.K.

“Yes, I have seen some of those metrics set by ministry, and to be honest, there not much analytics related to those. We do not put that much effort on analysing the data. --- It is mainly about the matter or the know-how, and that is what we are currently missing in our organisation.” N.W.

The lack of holistic strategic point of view, as well as the missing responsible persons who would take an overall responsibility or governance of the current performance management, were seen as obvious failings.

“All this should be driven by the organisation’s strategy; however, it is not completely defined – yet. In the future I would like to see metrics as tool to developing the service and improving the customer experience.” J.K.

“The most important thing is start from the strategic point of view – to evaluate what do we want to focus improving right now. It is better not to have too many strategic KPIs at the same time.” M.M.

“One of the current challenges is that the responsibility is scattered around the organisation and there is no person who would be responsible for aligning processes or reporting practices.” N.W.

The current utilisation of the existing data was rather practical approach.

There were already clear routines built around the data collecting and analysing, as well as the usage of the results.

“I would say the data is being utilized already – at some extended – for internal decision-making and building the roadmaps for this project. - - -We are going through the certain numbers in our monthly meetings (internally), and partially based on this data, we are building the profit targets. Additionally, at Ministry level (MF) has taken into consideration metrics in their work – KaPA law is one of the examples of this, I believe.” N.W.

Future possibilities of the usage of the data were merely positive and anticipatory, especially there were huge expectations for the Big Data and the utilisation of the existing internal data.

“As far as I can see, the first step would be building and harmonizing the operative targets and metrics. Next step after that, if the project gets funding for 2018 onwards, would be then exploring more possibilities, especially around the big data. - - Obviously, it is good to keep in mind that we are talking about the tax payers’ money here, therefore nothing too expensive or complicated cannot be built. However, we do have, from the technical perspective, a possibility for that, too.” N.W.

“In addition to numeric or quantitative metrics there should be also qualitative ones.” J.K.

“I would say with metrics, it is quality over quantity! Even though sometimes to see the bigger picture, it is good to take different view-points.” M.M.

“It is rather rare to create a perfect model for the data on the first try. But it is possible to learn a lot about your data by exploring it from different angles.” M.M.

Finally, the amount of the available data was seen both negative and positive issue. One common issue that was worrying the respondents, was the lack of resources and particularly, the lack of data savvy people.

“There are rather many data sources available now – in other words, a lot of more data available, too. If only it would be utilised somehow” J.K.

“I see, that this is mainly a resources issue. Those people who should be defining the metrics, does not completely understand all the possibilities e.g. of data mining or data modelling – they are in a way fixated into old ways of working and Excel reporting. On the other hand, those who know something about these things, are too busy to help creating a proper metrics and KPIs.” N.W.

“Let’s take Product Owners as an example, there are huge differences among those people. There are certain people who has set some 100 metrics, and some who has not set any. And therefore, this next, testing phase, is rather important, since it will show in practice how these metrics are presented in the PaHa (Service Management), and what it means to have such many KPIs.” N.W.

Additionally, more informal discussions of the case were held with several other project personnel in the case organisation, as well as experts from the Business Intelligence (BI) companies, while benchmarking the best possible solutions for the reporting tool and dashboards. These secondary source group discussions were all documented in to researcher’s field notes.

“It is crucial, that the targets or even some metrics has been harmonized and are aligned within the organisation.” MW

“With analytics, it is important to remember this: when the metrics are being set, it is also essential to set the right kind of timeline - within the measurements should be monitored and possible improvements for targets are expected to be reached.” MB

“One of the benefits that data can offer, is better understanding for the customer journey, and improving the customer experience through the data. Furthermore, it is crucial to also understand the differences between different metrics, such as number of visit, unique visitors and non-bounce rate” MB

“As for the quality of the data, it should always follow the SMART principles:  
Specific  
Measurable  
Actionable  
Relevant  
Time-related” MW

“Media monitoring can – and should be used – not only a tool for communications but it should be strategic tool and utilized when developing also the business strategies for the organisation.” KV

“There are no “one size fits for all” -kind of solutions when for creating KPIs – every company and organisation is its own case. What is important to remember, that with every metric, there should be also a clear and strategic target behind to show how we have succeeded, also in a longer run and time-span.” MW

“Effective user experience and a great look and feel for dashboards and visualizations is one important part of making data into insights” KV

As a result of these discussions with BI companies’ representatives, the study enriched with some of good recommendations and advices related to metrics and performance measurement. All these comments will be considered, when building the proposal of KPIs and the framework for performance management.

### 3.5 Point of Single Contact Study

The Service Directive for Point of Single Contact portals requires that persons starting and running a business should be able to handle all the related procedures and formalities electronically via points of single contact throughout the EU area. In Finland, the point of single contact is the Yritys-Suomi (Enterprise Finland) web portal.

All the EU Member States and their service portals are evaluated against certain criteria on a regular basis. Latest PSC study that could be used in the current state analysis of this study, was conducted in 2015. In the study Finland was ranked ninth in an EU-wide assessment a total of 31 national online services for entrepreneurs. (European Commission, 2015)

The assessment project was carried out by Capgemini Consulting. Additionally, Finnish and foreign mystery shoppers evaluated the online services of Yritys-Suomi. Given this, the results of the PSC study can be considered as a secondary data for this study.

Online services for entrepreneurs were assessed based on five criteria:

1. Quality of information on the website;
2. Language versions available;
3. Transactionality of e-procedures;
4. Cross-border accessibility from other EU countries; and
5. Usability.

These criteria cover both the obligatory requirements regulated by the Services Directive, as well as voluntary commitments of the Member States perceived as essential to starting and running a business. The project also evaluated how effectively the online service provides information on sector-specific license requirements and other formalities related to starting a business. (European Commission, 2015)

#### *Performance evaluation and recommendations of PSC study*

Overall, the study results show that the quality of Finland's PSC is above the average. Several aspects are of good quality, hence there are some aspects that require further improvement. Areas of improvement are:

1. Focusing on increasing the opportunities for foreign users to access information and complete services online. It was seen lagging behind in all aspects, except multilingualism.

One the most important factors is ensuring the cross-border accessibility of e-services by foreign users. Addressing the technical barriers for e-completion was considered one of the factors impacting the usability of the service. As a recommended action point, focusing on improving this would vastly increase the efficiency of the PSC for Finland, and furthermore save costs in a long run.

2. Finland should maintain the apparent high user experience, by systematically monitoring this. Additionally, stronger scores in usability could be achieved by including new functionalities which facilitate users during their online journey.

Continuously collecting customer feedback could also be important for example when improving the usability of the web portal even further.

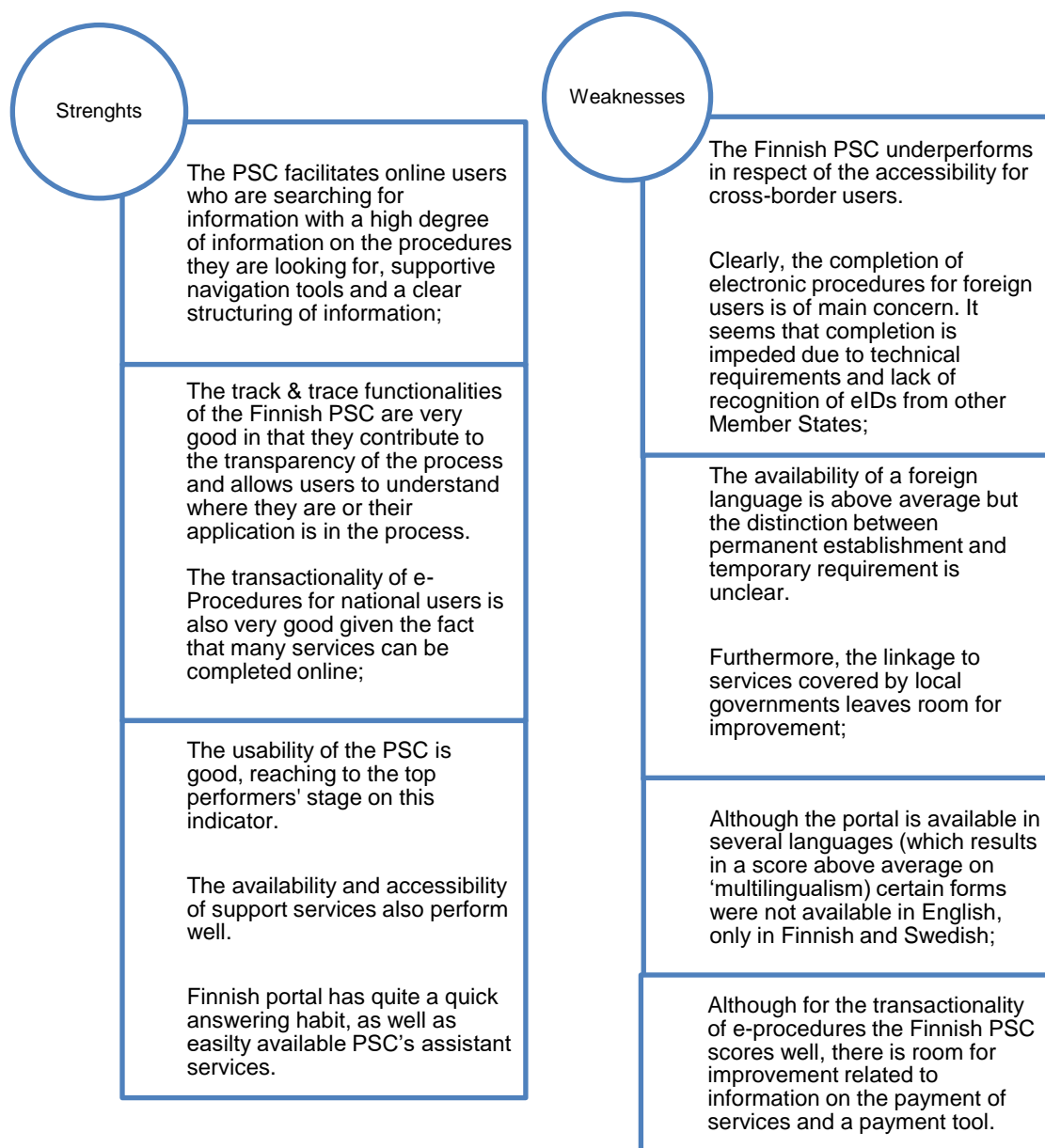
3. It is being recommended to make all forms available in English. Aligning with the responsible local authorities to improve these forms would be essential, to make sure that foreign users get the same service level as national users.

Table 6. summarises the strengths and the weaknesses of the PSC evaluation (2015). The usability and the structuring of the information from the end users' viewpoint can be considered as biggest strengths of the current web portal.

As Table 6. suggests, the biggest weakness of Finland's portal is the completion of the e-procedures for foreign users. It can be criticized for two main shortages – firstly some of the forms are not available in English. And secondly, the service is not currently supporting recognition of electronical identification from other Member States.



Table 6. Strengths and weaknesses of web platform



These following findings from the PSC study does not include direct performance measures applied to web portal. However, these can be considered from the usability and content perspective. Furthermore, all these recommendations should be taken into consideration, since these have at least indirect impact on the end users' satisfaction.

### 3.6 Key Findings of Current State Analysis

This sub-section is focusing on the main findings from the interviews, current reporting and measurement practices as well as analysis and the utilisation of the data. As defined in the research design, the key findings of the Current State Analysis were aimed to be presented in a list of strengths and weaknesses. Instead, in this section the key findings are explained more into detail from the whole SWOT (strengths-weaknesses-opportunities-threats) perspective, reinforced with additional data sources.

As a conclusion, based on the material collected from different data sources – through interviews, one-on-one discussions, as well as from the secondary sources, such as reports and previous studies, it can be said that the performance measurement practices in the case organisation are multifaceted, yet established. However, these fail to provide enough information to assess the overall performance management and target setting of the web services. Additionally, the collected data and its analysis is not currently supporting the predictive analytics.

#### *Strengths*

Starting with the strengths of the current practices, firstly, there is a clear strategic mission, as well as a vision set for the web portal. That is guiding the target setting in wider context. From the steering Ministry level, the Yritys-Suomi portal (business model) canvas, can be considered as one important guiding document.

Secondly, there are already several performance and service quality metrics in place. These are defined and set either by EU, or the Finnish constitutional law. In that respective, these kinds of metrics are given, as well as binding. This should be taken into consideration when renewing the current set of Performance Indicators.

Regarding the current web analytics, from the technical point of view, there are capabilities for comprehensive performance measurement practices. The software which is used for measuring the performance of the web portal, has potential for more professional and systematic use, than it has been currently exploited in improving the quality of the web services.

Social media analytics from each tool are also in use already. Those are partially guiding the daily work of the web editors of the case organisation. Hence, the results of these social media analyses could be used more systematically when setting the targets, and utilised in wider context.

### *Weaknesses*

As for the weaknesses of the current practices, one of the key findings of CSA is the lack of the strategic thinking in the case organisation itself, and in the practices how the performance is currently measured. Regardless of the strategic prerequisites, the practical implementation and the leadership of these practices does not materialise.

The issue with the lack of strategic approach can be seen at least partially as a question of resources. Additionally, in the case organisation in question, it is about the limitations on what comes to skill sets of the people who are in the crucial position, making strategic decisions upon the used metrics.

From the technical point of view, there have been put a lot of effort on planning and creating the upcoming data warehouse and the whole technical architecture for supporting the suomi.fi web portal. Hence, there are some limitations in the architectural level as well. Even though in a theory there is an ability to build additional Big Data applications for the current architectural layers, for example for social media monitoring use, in practice it will be too expensive to be implemented.

### *Opportunities and Threats*

When expanding the evaluation of the current performance measurement practices to possibilities and threats that are coming outside, the EU regulations and the Finnish law are one of the potential threats. For example, upcoming General Data Protection Regulation (GDPR), on data protection and privacy, is one of the things that will most likely have an impact on web services and customer journey. It is essential that the web portal can meet the set requirements, even in a fast-changing environment.

One important viewpoint from external operating environment, is the impact of the megatrends. Sitra (2017) defines megatrends as illustrating large, long-term

phenomena which change slowly. Sitra's megatrends highlight these phenomena, as well as related paths and discussions on the future which are important for Finland.

OECD's (2008) report *Future of e-government - AGENDA 2020*, suggests, that whereas current solutions have helped to deliver more modern services for citizens and businesses, the next generation of e-government will have to continue to improve public sector performance.

Future challenge for governments are the megatrends that should be considered in eGovernment development:

- From cost reduction to better government.
- From rationalisation to economic growth facilitation. From central to local.
- From government- to citizen- to client-centricity.

Also, the issue of how to ensure sufficient competencies and skills to further develop public service delivery was a growing concern in the report.

Based on the input of the Current State Analysis, the conclusion is that comprehensive process to measure and manage the performance does not exist currently in the case organisation, and it should be established. Secondly, in addition of having more strategic approach, holistic framework is needed to meet all the internal and external requirements set for the web portal.

To be able to build the solid solution: to define the revised KPIs, offering solution for performance measurement process, and creating the framework the performance management, there is a need for further understanding from the existing knowledge. The following section 4, Existing knowledge, introduces the literature review, and discusses also the best practices from the other member states' Point of Single Contact (PSC) solutions related to performance measurement and key metrics.

## 4 Existing knowledge

This study includes both research and development work, which are entwined closely together. To set up right set of Key Performance Indicators (KPIs), performance measurement process, and finally the performance management framework, the theoretical part of this study consists of literature review and utilises existing research done into the performance measurement and the exploitation of the data.

Moreover, a previously conducted research supports in creating an in-depth understanding of the topic. As a result of this section, the Conceptual Framework (CF) for this study is being introduced.

### 4.1 Organisational performance management

In literature as well as in practice can be found a lot of well-established systems providing guidelines for strategic performance measurement and management system development. Moreover, Striteska & Spickova (2012) emphasis that the gap between what are wanted to be measured and on the other hand what can be measured is one of the main reasons for performance measurement being such challenging for many organisations.

According to (Franceschini, 2007) the effective performance measures allow us to understand:

- How well we are doing (correct process representation);
- If we are meeting our goals (identification of the goals and the reference standards);
- If our customers are satisfied (control of the process development);
- If our processes are in control (control organisation effectiveness and efficiency parameters); and

- If and where process improvements are necessary (identification and correction of problems).

### *Balanced scorecard*

A traditional way of measuring the performance is using Balanced Scorecard (BSC). Kaplan and Norton's (1992) framework of Balanced Scorecard is a widely used management tool that can be used to measure performance more holistic way. (Striteska & Spickova, 2012)

The BSC links performance measures to company's strategy and furthermore dives those into four important perspectives of business: Financial; Internal Processes; Learning and Growth; and finally, Customer perspective (Kaplan and Norton 1992; in Parmenter, 2010).

Moreover, Parmenter (2010) recommends that there should be two more perspectives added into BSC approach to make the performance measurement more holistic. These two new perspectives, presented in Figure 10., are Employee Satisfaction, and Environment and Community perspective.

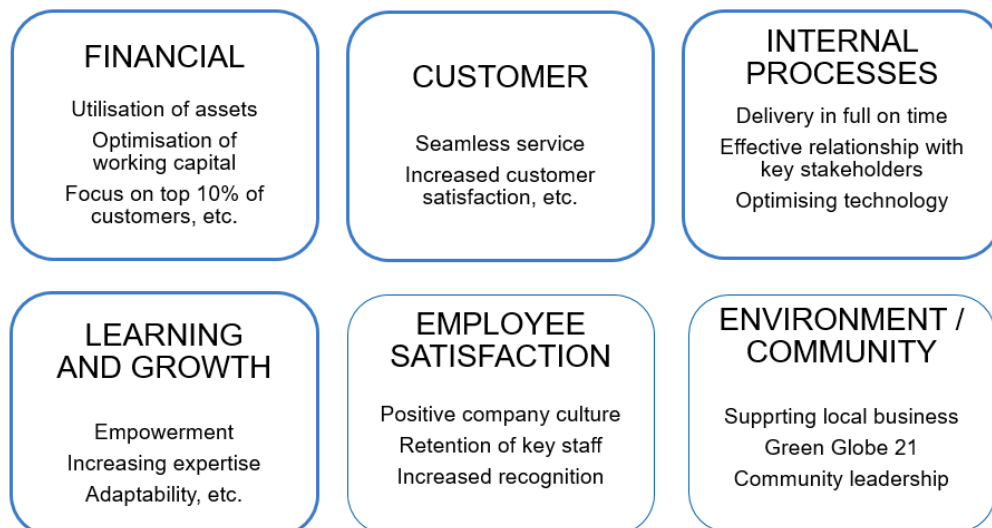


Figure 10. Balanced Scorecard perspectives

Parmenter (2010) suggests, that many balanced scorecards fail to deliver. The root cause is usually in the implementation rather than in the model itself. Additionally, Parmenter lists number weaknesses related to BSC model such as:

- a lack of definition of KPI;
- suggestion that success factors fit within the BSC;
- the unnecessary complexity of BSC:

Additionally, the studies on performance measurement also show, that despite the apparent match between the BSC and public sector performance management aims, the BSC has been heavily orientated towards the private sector. While the utilisation among the public sector companies is not that common. (Northcott & Tuivaiti, 2012)

#### *Performance Pyramid System*

The initial idea of Performance Pyramid System (PPS), is to combine the organisational structure and the functions, and furthermore highlight the linkages between operational performance in an organisation and the achievements of strategic goals. (Striteska & Spickova, 2012)

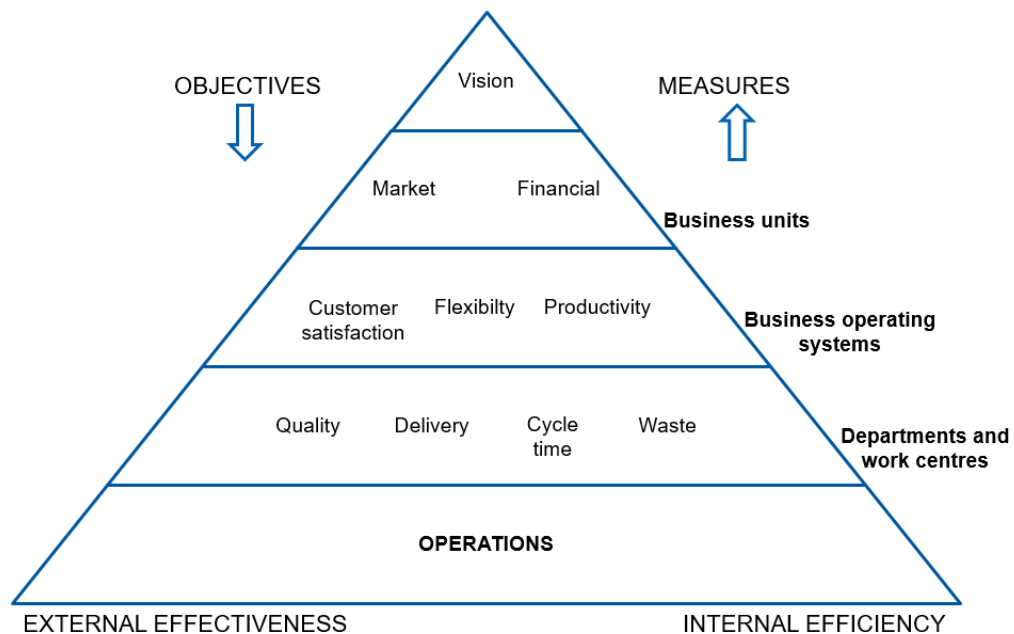


Figure 11. Performance Pyramid System

Figure 11. introduces the structure of performance pyramid. The aim is connecting through organisation's strategy with its operations, by translating objectives from the top down and furthermore measures from the bottom up.

When changing the view from up to bottom, the company vision is being translated into targets related to different business functions. Furthermore, that forms a basis of a strategy to meet the targets. Finally, the indicators are being formed for the targets at each level. These indicators are being used for monitoring the fulfilment of the set targets. (Striteska & Spickova, 2012)

Hence, the Performance Pyramid System has also been criticised for following shortages:

- Cannot give a truly balanced view of performance;
  - Consists of several different tools, complicated to understand and use;
  - Fails to provide an explicit process for developing the PM model
- (Striteska & Spickova, 2012)

#### 4.1.1 Creating value with Big Data

Value creation should be the ultimate objective of every day data strategy. Verhoef (2016) suggests that Big Data can also create value for both customer and firms. It can be used for improving customer satisfaction through the service experience; real-time targeting for customers' special needs; and offering end users solutions that improves their service experience.

Additionally, Verhoef (2016) emphasis that in value concept there should be considered also the value delivery for society (V2S). It be a driver for V2C, through the corporate reputation, or social responsibility, which both has an impact also on customer satisfaction.

Big Data can be also utilised in Customer journey analysis, which considers how customers interact with multiple touchpoints during their journey. Verhoef (2016)



emphasis that the research is interested in specifically in describing this journey, understanding the choices for each touchpoint, and furthermore to improve the service. Additionally, this customer journey analysis can be used as perquisite when personalising or customising the web services for certain user groups, or even unique end users.

#### 4.1.2 Improving the service quality

Nowadays, public organisations face the pressure to demonstrate that they have the capacity to improve their performance and achieve organisational goals and objectives. According to Marr (2017), there are many ways data can enhance the operations, but mainly they fall into two main categories:

1. Optimizing everyday operational business
2. Improving customer offering e.g. through new or enhanced services.

One of the key questions in OECD's (2008) eGovernance agenda 2020, was how to improve governments' understanding of users and their needs. Particularly there was need to improve service delivery to citizens, as well as to find ways better meet user expectations and needs.

Instead of designing services designed to meet customers' assumed needs in the modern ecosystem this is overturning this model. Eggers, 2017 emphasis that customers and citizens are engaged as co-creators throughout – products and services are created with customers, rather than for them.

Furthermore, collaborative involvement of users in service design and operation could allow them to build their own set of public services adapted to their personal needs at different stages of their lives.

Figure 12. presents the value creation sphere, the framework which is originally introduced by Grönroos and Voima (2012). The main idea of the framework is that the roles of the firm and customer may vary, depending on the value creation sphere currently being in question.

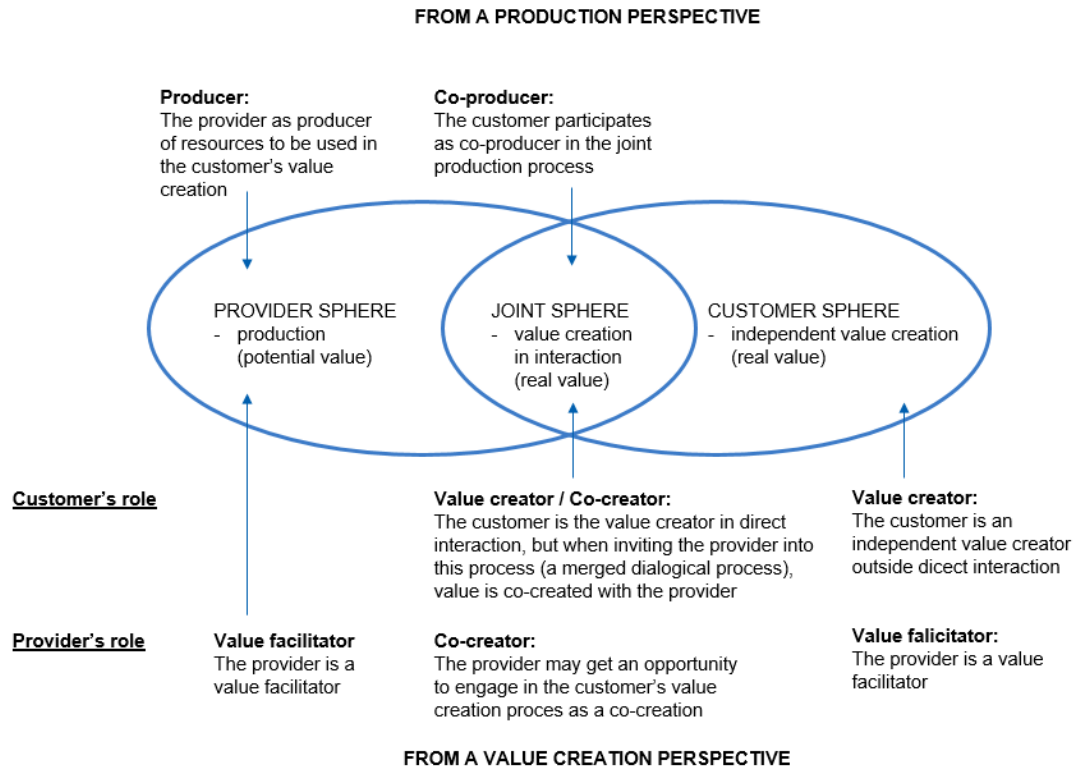


Figure 12. Value creation spheres

The real value creation happens in a joint sphere, together with the provider and the customer. In other words, that requires active interaction and the collaboration between these two actors.

One of the most accredited model in literature for quality service evaluations is the PZB model, which is presented in Table 7. The model identifies 10 key elements for the service quality, called “determinants”.

PZB model identifies possible gaps that could exist between customers' service quality expectations and an organisation's performance on service quality. Moreover, tool can be used as an instrument for assessing the reputation risk. (Franceschini, 2007)

Table 7. Determinants for the service quality, according to the PZB model

<b>Determinant</b>	<b>Description</b>
Reliability	It involves consistency of performance and dependability; it means that the firm performs the service right the first time; it also means that the firm honours its promises.
Responsiveness	It concerns the willingness or readiness of employees to provide service; it involves timeliness of service.
Competence	It means possession of the required skills and knowledge to perform the service.
Access	It involves approachability and use of contact.
Courtesy	It involves politeness, respect, consideration, and friendliness of contact personnel.
Communication	It means keeping customers informed in language they can understand and listening to them.
Credibility	It involves trustworthiness, credibility, and honesty; it involves having the customer's best interest at heart
Security	It is the freedom from danger, risk, or doubt.
Understanding/ Knowing the Customer	It involves making the effort to understand the customer's needs.
Tangibles	They include the physical evidence of the service.

When taking closer consider these 10 key elements, it can be remarked, that there is resemblance between the elements and the current metrics of Yritys-Suomi (Enterprise Finland) web portal. In fact, all the key metrics, set by the steering Ministry (listed in section 3.2.), can be found among the determinants of PZB model.

#### 4.1.3 Creating the data culture

In a data culture, the data is recognized as a key business asset and it is used – if possible – at every level of the business to make improvements. According to Marr (2017), it could mean better business decisions, a better understanding of customers or finally, more targeted marketing efforts.

Current policymaking among the public sector organisations is slow, inflexible and unnecessarily complicated. Moreover, it is adverse to technology, and afraid to change. Eggeres (2016) emphasis, that “being digital” is about far more than technology – it is a completely changed mindset. Digital transformation requires seeing old problems and old processes through new eyes.

### *Agile development*

According to several studies, agile projects are 350 percent more likely to be successful than waterfall development, and 600 percent more for very large projects. According to Eggers (2016) despite of that, agile is still irregularly used in government projects. The biggest obstacle for adoption of this user-centric technology development can be found from the organisational culture. Table 8. presents the agile approach and the core values.

Table 8. Agile approach

AGILE APPROACH CORE VALUES		
Individuals and interactions	over	Processes and tools
Working software	over	Comprehensive documentation
Customer collaboration	over	Contract negotiation
Responding to change	over	Following the plan

Agile’s focus on the user, rapid iteration, and frequent change represents a huge shift compared to old ways of working, and often encounters resistance. Additionally, the agile’s philosophy to accept the uncertainty and pushing ahead with something unfinished, as quickly as possible to gain rapid user feedback is hard to accept. As Eggers (2016) reminds, culture can be hard to change in large organisations.

## 4.2 Key Performance Indicators

Choosing the right indicators is a critical aspect in translating an organisation's mission or strategy into reality. Indicators and strategies are tightly and inevitably linked to each other. Franceschini (2007) suggests that indicators complete the fundamental activities of measuring in a three way: 1) evaluating how we are doing; 2) educating us – in how we intend to deliver value to our customers; and finally, 3) directing us by highlighting the gaps between the indicators and the target.

For a performance measure to become a Key Performance Indicator, it must be linked to one or more of the organisation's critical success factors (CSFs), more than one balances scorecard (BSC) perspective, and additionally, also the organisation's strategic objectives. (Parmenter, 2010)

Furthermore, according to Parmenter, the organisation will be more successful if it has spent time defining and conveying its vision, mission, and values. Additionally, it is important that an organisation has a well-considered and well-constructed strategy. These strategies need to link back to BSC perspectives.

The actions and decisions are greatly influenced by indicators nature, use, and time horizon. Indicators provide the following three basic functions:

- *Control.*  
Indicators enable managers and workers to evaluate and control the performance of the resources which they are responsible.
- *Communication.*  
Indicators communicate performance not only internally but also to external stakeholders for other purposes. Poorly developed or implemented indicators can lead to users feeling frustrated and confused.
- *Improvement.*  
Indicators identify gaps between performance and expectation, that ideally point the way for intervention and improvement. (Franceschini, 2007)

#### 4.2.1 Web analytics

Web analytics can be seen as a new Big Data application area, since it involves new, massive data sources. According to Verhoef (2016), one of the main benefits of using web analytics is to gain broader understanding about website visitors and use this knowledge to satisfy their needs, as well as improve the effectiveness of websites.

Web Analytics Association (2008) defines three different types of web metrics: counts, ratios, and KPIs. A count is the basic unit of measure, a single number, whereas ratio is typically a count divided by another count. Finally, KPI is a count or a ratio that is infused with business strategy, and it provides meaningful information.

To analyse user behaviour on websites, the clickstream data is usually in use. It can be defined as the electronic record of Internet usage, usually collected by web servers. Furthermore, clickstream data can be distinguished to two types:

- Site-centric data  
Detailed records of what visitors do when navigating and interacting with a specific site.
- User-centric data  
Detailed records of online behaviour tracking across sites.  
(originally Buckilin & Sismeriro, 2009)

Furthermore, according to Verhoef (2016), analysis of this clickstream data focuses on collecting metrics on the phases of different funnel. In this online funnel different steps are being made, and the aim is to improve the usability of the website as well as increase the performance on each these steps to end up with higher conversion rate.

Having gained an understanding of the funnel, the next step is to go on and solve possible issues. Verhoef suggests that this could be done for example by improving search engine optimization (SEO), or just simply improving the website. Verhoef (2016)

#### 4.2.2 Social media analytics

Social media listening in online communities or social media like Facebook and Twitter has become one of the most popular Big Analytic tools. According to Verhoef (2016) the characteristics for that kind of data is the accessibility by multiple parties. Usually the information is being used to reputation management, to understand how the customers view the organisations and brands.

As a result of these new feedback channels, companies can monitor and listen to people with knowledge of their products or services, and additionally have more personal conversations with the end users. Finally, this enables companies to take an action according to this feedback from the customers.

Some of the marketing research agencies have also specialised in text analysis, to understand opinions of customers. This refers to identifying the sentiment, affect, subjectivity and other emotional states in online texts. (Blanchard, 2011; Verhoef, 2016)

#### 4.3 Key Performance Indicators development frameworks

The most appropriate implementation of Key Performance Indicators (KPIs) is influenced by the size of the organisation, the diversity of the business units, the organisation's locations, and the in-house staff resources available for the project. As Parmenter (2010) suggests, each implementation is like a fingerprint, always unique to the organisation.

Parmenter also emphasises that in many cases the preparation phase is being bypassed too fast. It is crucial to establish a sound environment in which KPIs can operate and develop. Once the organisation understands the process involved and appreciates the purpose of introducing KPIs, the building phase can begin.

Data must always address a specific business need, help the organisation reach its strategic goals, or generate real value. According to Marr (2017), business questions relate to core areas of business and its goals.

One way to identify objectives and key business questions is to looking at four key areas:

1. Customers, markets and competition;
2. Finance;
3. Internal operations;
4. People. (Marr, 2017)

More comprehensive model is Parmenter's approach, which he calls as "Journey from a Mission and Vision to Performance Measures". The model is presented in figure 13.

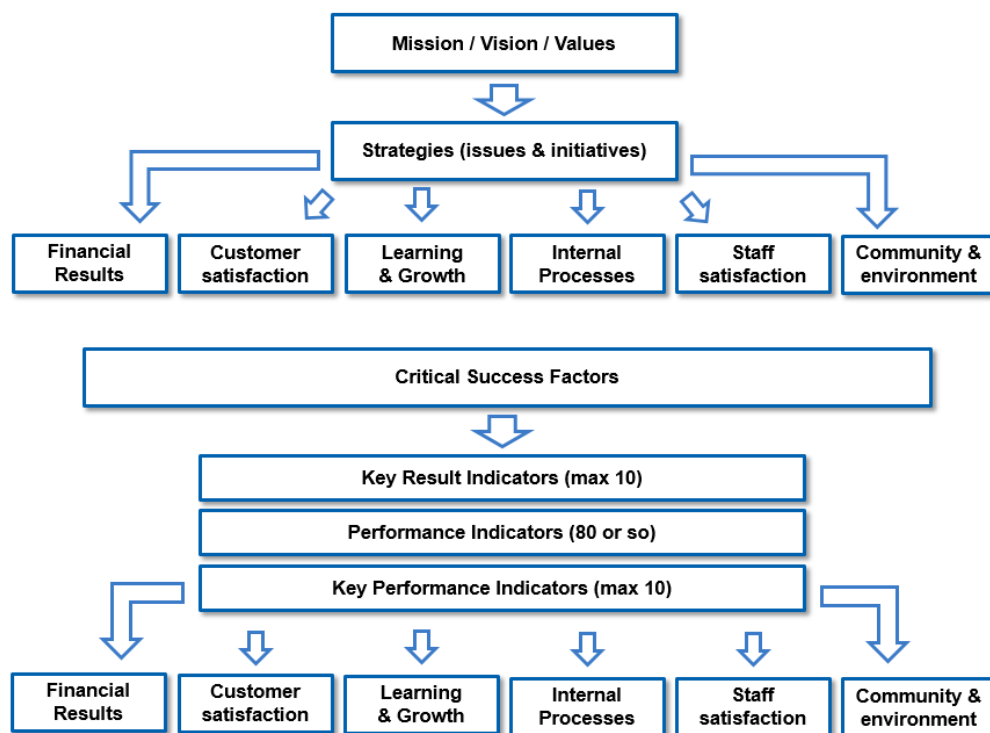


Figure 13. Journey from a Mission and Vision to Performance Measures

Figure 13. shows the crucial linkage between mission, strategies, critical success factors (CSFs) related to business objectives, balanced scorecard perspectives and performance measures. An organisation need to spent time defining and conveying its vision, mission, and values.



Furthermore, those need to be defined in a way that staff can intrusively work with them in a daily basis. Additionally, the strategies need to link back to Balanced Scorecard (BSC) perspectives.

#### 4.4 Performance Management in Public Sector

According to Franceschini (2007) performance measures have been widely promoted by governments for more than 30 years, for the purpose of increasing management's focus on achieving results.

A quite recent study of Ahyaruddin & Akbar (2016) suggests, that the influence of management commitment will have an impact on the accountability and furthermore the performance of public sector organisations. Additionally, the evidence about the relationship between the use of a performance measurement system, and the organisational factors of accountability and organisational performance was proven in their study.

eGovernment has become a unique and powerful tool for governments. OECD's report (2008) suggests, that it has contributed to making public administration significantly more efficient and effective. It has forced governments into rethinking organisations, responsibilities, business processes, and collaborative and co-operative arrangements within and across levels of government.

Performance measurement practices should to be evaluated not just from an economic perspective, but also from a social, behavioural and managerial perspective, within an overall organisational context. Openness is at the very core of today's digital mindset, and it is also pushing and prodding governments to open more. (Eggers, 2016)

##### 4.4.1 Key challenges with the efficiency

There are many challenges and demands faced by governmental agencies to increase efficiencies and effectiveness. To improve performance, some organisations go to the other extreme and measure everything that can possibly be measured. Having too

much information, or the wrong information, can be as harmful as having none, because it wastes precious time and resources. (Marr, 2017; Kotler & Lee, 2007)

What comes to digital development and eGovernment service, the main issue lies in organisations and their existentialist crisis. It is preventing and remarkably slowing down the change, when the public sector organisations are clinging to old ways of working.

Currently there are several challenges related to a role of the public organisations and their role between the requirements from the digitisation as well as the binding law and practicalities. Figure 14 illustrates the main challenges and the contradictions listed in report. The public sector needs to take these into consideration in their culture, leadership and ways of working. (Valtioneuvosto, 2017)

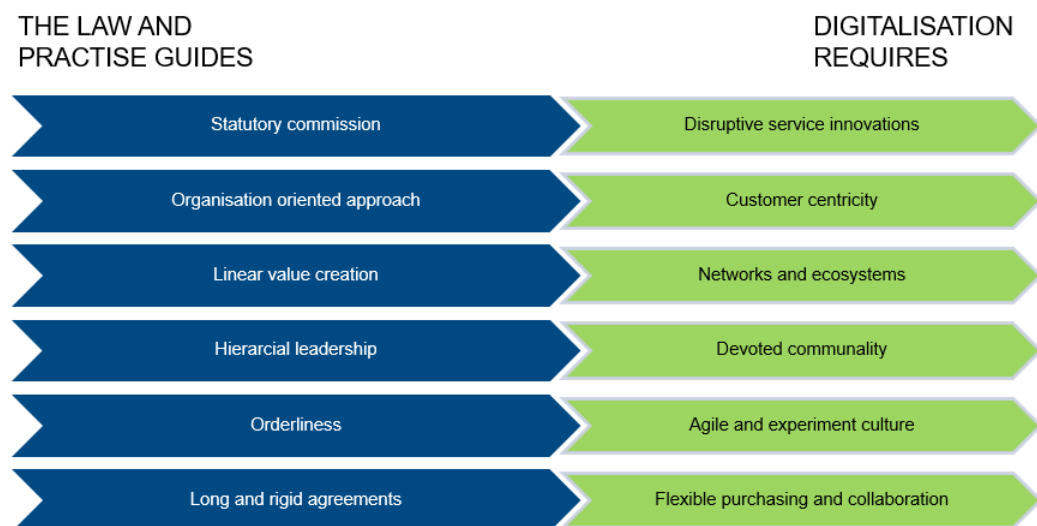


Figure 14. The current challenges of digitalisation

All the six contradictions are shortly introduced, and the ones that has most impact on this study, are elaborated more in detail.

#### 1. *Statutory commission vs. Disruptive service innovations*

Public sector's organisational structure is based on old ways of serving people

in personally in the physical encounters. The real digitalisation oriented approach would require breaking out the silos and rethinking of the whole organisational structure.

## *2. Organisation oriented approach vs. Customer centricity*

Public sector development in digitalisation is often suffering from problems that are related to organisations and their self-determination. Additionally, the constitutional law is accelerating the culture of working in silos, which is usually inherited for e-services development work.

The customer experience should be taken into consideration, especially when the customer journey is crossing the organisational boundaries. Additionally, the customer centricity should be already by default in ideation and planning phases, not only when testing nearly ready-made solutions. Finally, the customer experience of the provided service should be continuously measured and developed further.

## *3. Linear value creation vs. Networks and ecosystems*

Due to linear value creation practices, each organisation is looking their customers tightly from their own perspective, and fail to see the value the other actors in the ecosystem are delivering to customer. In some situations, it might be even substitutive value.

One of the issues is the current legislation, which is not planned for governing the ecosystem approach. KaPA project (National Architecture for Digital Services) is mentioned as a text book example of practices that is taking steps into right direction.

The project enables the real interaction and creates value in collaborative network. Hence, it is good to remember, that removing the technical barriers is not enough, but it also requires the changes in organisational culture.

#### 4. *Hierarchical leadership vs. Devoted communality*

To succeed in dynamic operational environment, it requires from the organisation an ability to be agile, self-guiding and willingness to experiment. The traditional decision-making model where the situation is first analysed, decision made on based on analysis, and furthermore, developed based, is outdated.

In a hierarchical top-down culture, where the organisation is taking orders from the leaders is deep in the public sector organisations. And this is preventing the organisations changing and developing themselves further.

Instead, there is a need for implementing the experiment culture, where learning, developing and renewing is based on fast and agile experimentation. It requires new ways of working, but also a new mindset, where also failing is allowed. Furthermore, through that also strategic work can be adjusted to meet better the dynamic and constantly changing operational environment.

#### 5. *Orderliness vs. Agile and experiment cultures*

As for the digital development work in the public sector, there is a strong culture of using the waterfall model. However, more agile approach should be implemented in the way of working. Instead on long term planning, there should be taken more flexible approach, to be able to react the changes and foresee the changes in currently evolving operational environment.

#### 6. *Long and rigid agreements vs. Flexible purchasing and collaboration*

Another issue that is currently limiting the renewal public sector organisations in the practical level, is the aim to deliver digital solutions that are ready-made once for all. Splitting the development work into smaller sub-projects would bring a solution for this issue.

However, the digitalisation is going forward, and it is also changing the needs and expectations of the end customers. Additionally, new ways of working and technological innovations are constantly changing the digital environment.

One of the challenges related to this are the long, binding agreements with one or a few key service providers. That might not only hinder the development, but also limiting the possibilities to change the current development approach or the ways of working.

To tackle the challenges listed above, the best practises from the other Point of Single Contact (PSC) portals are presented in the following sub-section.

#### 4.4.2 Best practices from other PSC portals

As a part of mapping the existing knowledge, some of the best practices from other EU Member State Point of Single Contact portals will be introduced. These are UK's Gov.uk, from its performance measurement viewpoint, and Estonia's e-Estonia, as an example of the holistic e-services ecosystem.

##### *Gov.uk – a one-stop shop for government services*

A simplicity is one of the cornerstone of digital mindset. A good example is the UK's Gov.uk, which some years ago replaced 750 government websites delivering similar services and information.

The outlook of the web site is different, compared to almost any other website, and there is a good example of how far the simplicity has been taken. The site looks a bit like a wireframe, with a simple text and layout. Eggers (2016) emphasis, that site has designed to do one thing well: get citizens to the service, transaction, or information they need in the fastest, most painless way possible.

As for the measuring the performance of the portal, Gov.uk is a textbook example. There are comprehensive instructions available on the web portal for service providers, which are lowering the barriers of getting started with their performance data.

The instructions cover the whole topic, how to use data to improve service: measuring, reporting, analytics tools and techniques.

### 1) Collect performance data

Using tools for analysis that collect performance data. Furthermore, using this data to analyse the success of the service and to translate this into features and tasks for the next phase of development.

Collecting performance data means one can continuously improve service by:

- Learning its strengths and weaknesses;
- Using the data to support improvements you make

### 2) Identify performance indicators

Identifying performance indicators for the service, including the 4 mandatory key performance indicators (KPIs) defined in the manual. Establishing a benchmark for each metric and planning to enable improvements.

### 3) Report performance data on the Performance Platform

The Performance Platform collects service's data and presents it in a consistent, structured and easily digestible format - this helps to:

- Make quick, data-driven decisions about how to improve service;
- Compare data across multiple government services;
- Be open and transparent to the public about service's performance

There are four key performance indicators (KPIs) that are pre-set, and all the data collected should be reflected and analysed from the perspective, how service is performing against these four key metrics:

- *Cost per transaction* - how much it costs the government each time someone completes the task the service provides.

- *User satisfaction* - what percentage of users are satisfied with their experience of using service.
- *Completion rate* - what percentage of transactions users successfully complete.
- *Digital take-up* - what percentage of users choose digital service to complete their task over non-digital channels.

The relevance behind each of these KPIs is also carefully explained in the Gov.uk. service manual. More detailed example of the “Measuring Success” manual is available on Appendix 3.

#### *Estonia - standard for digital transformation among central governments*

Estonia might currently have the world's most digitalised government – it was the first European country to adopt a flat tax and the first country to enable online voting. Currently 99% of public services are available to citizens as e-services. It has been also calculated, that five workdays saved by every Estonian thanks to digital signing.

Citizens can access and use all kinds of local and central government services online in a matter of minutes. As Eggers (2016) gives an example of that registering a new company online takes less time than finishing a cup of coffee.

As Points of Single Contact (PSC) study also suggests, in Overall performance, Estonia, among a couple other countries, is close to being classified as best performers. Every citizen of Estonia has a unique online identity, and therefore citizens never have to fill the same information twice when transacting with government. That has been noticed also in PSC study, where in Online procedures, Estonia was one and only country rated as very good. (Estonia.ee, 2017; European Commission, 2015)

X-Road, the backbone of the Estonia's e-solution environment, allows the nation's various public and private sector e-Service databases to link up. Since each of these services has own databases, the X-Road ensures secure transactions between information systems. It has been calculated that the solution saves over 800 years of working time for Estonia every year. (e-estonia.ee)

#### 4.4.3 Act on public employment and business service

The basis of the services offering is written in a law about public services. The Electronic Transactions Act (so-called KaPA Act), came in force on 15 July 2016. It lays down provisions on the production of services and their use. The obligation to use the services is in the following organisations:

- Government's administrative authorities and agencies;
  - Institutions; corporations owned by state or municipalities;
  - Municipal authorities when dealing with the duties prescribed by the law;
  - Courts of law and other organs for the administration of justice.
- (eSuomi, 2017)

As the final report KaPA shows, the law has significantly strengthened the importance and deployment of the services produced in the programme. Even though the Act has certainly accelerated deployment, organisations had hoped that deployment and services would be even more customer oriented. (Valtioneuvosto, 2018)

The law obligates all the Public Sector administrative operating in the Public Sector, to implement the new service model by the end of 2017, and defines the roles of the administrative more into detail. Currently available only in Finnish and Swedish. There are 5 main targets – not that specifically deified - listed in the KaPa law, that the service portal should fulfil:

1. Performance;
2. Reliability;
3. Supporting the security aspects;
4. User-friendly;
5. Accessibility



These can be seen as a backbone of the service portal, since the targets are aligned also with the Point of Single Contact (PSC) requirements. These requirements are listed in the sub-section 3.2. more in detail.

#### 4.5 The Conceptual Framework for the study

The Conceptual Framework links the ideas found from the existing knowledge, it also refers to ideas and concepts that inform and permeate the research. (McNiff). Figure 15. Introduces the conceptual framework of this study.

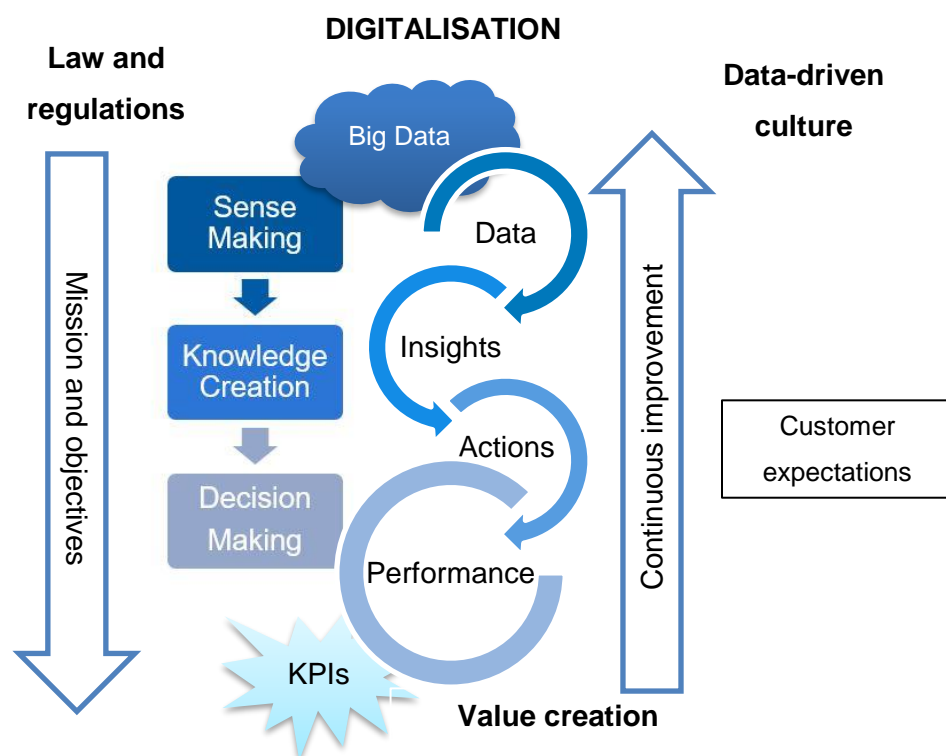


Figure 15. Theoretical framework

As seen in the Figure 15. The Conceptual framework includes several themes that are intertwined together. In the heart of the picture are two parallel processes: decision-making and performance measurement processes.

These two processes are overlapping in that sense that they are complementing each other on each step, where the data is turned into knowledge and furthermore into considered actions. It is important to understand, that these processes are going ahead step by step – decision-making requires first a solid knowledge base, as well as doing actions requires first insights.

Strategic objectives and mission of the organisation are guiding these processes along the way towards the set KPIs. On the other hand, continuous improvement is keeping the process astir, and making sure that the organisation is evolving.

Digitalisation, and among it the Big Data can be seen as one key accelerators of these two organisational processes. Additionally, from the external environment both laws and regulations, as well as on the other end the data-driven culture are affecting heavily into organisation. Between these two contradictory concepts, the organisation needs to balance to meet the expectations from the both aspects.

Additionally, from the data-driven culture perspective, also the customers and their needs are in significant role. Customer expectations here include also the expected service quality and attributes related to that. The goal with the customer-centric approach, is to create a value together with them and the organisation.

## 5 Building the proposal

This section discusses the results of the study and analyses how the previously presented frameworks from the literature could be used to develop further the performance measurement practices for the case organisation. The outcome links together section 3, Current State Analysis, and the findings from section 4, the best practices from literature.

First, the overview of the Proposal Building is being introduced, following with a brief recap of the current challenges. An initial proposal for an improved performance measurement framework, as well as revised Key Performance indicators (KPIs) are provided in the results section of this study.

### 5.1 Overview of the Proposal Building

The proposal built in this study is based on the findings from the Current State Analysis, which are moreover reflected in the light of existing knowledge from literature. Furthermore, to build a solid proposal, the Data 2 is complementing these findings.

The Data set 2, for the proposal building, was collected mainly in the unofficial one-on-one discussions with the informants from the case organisation. The informants were familiar both with the current Yritys-Suomi (Enterprise Finland) web portal, as well as part of the development team of new suomi.fi/companies portal. Additionally, altogether three workshops were held with these informants.

These workshops can be considered as a secondary source of the data for this study, since these were not originally planned as a part of the research scope. However, the topics in each of these workshops were closely related to this study in question, and therefore can be included as a part of the research.

The list of the workshops held for Data 2 are listed in Table 9. All the workshops were conducted by the external facilitator, and these were held during spring 2016 and autumn 2017. The participants of the workshops were the current Yritys-Suomi, as well as the new suomi.fi/companies, web editors and developers.

Table 9. Workshops for Data 2

Workshop agenda	Participants	Date	Facilitator
Forming the strategic vision for revamped suomi.fi/companies	Yritys-Suomi web editors and developers	12.4.2016	External partner
Search Engine Optimisation and analytic tools	Yritys-Suomi web editors and suomi.fi web editors / developers	12.9.2017	External consultant
Analytics and customer journey mapping	Yritys-Suomi web editors and suomi.fi web editors / developers	14.11.2017	External consultant

Data 2 reveals that these informants in the case organisation have already some kind of hunch of what should be measured, and what kind of targets should be set for the revamped web portal. The discussions with the informants were straightforward, and the nature of the discussions was more informal compared to semi-structured interviews used in Data 1 collection.

The initial framework for performance management is presented in sub-section 5.4. of this study. The framework is based on the findings from the literature, as well as the needs of the case organisation. As for building the comprehensive performance measurement processes, the proposal is introduced in the sub-section 5.5. of this study paper.

Finally, the main framework used in building the new Key Performance Indicators (KPIs) in this study, is Parmenter's (2010) model, which consists of the whole journey from a mission and vision of the organisation to performance measures (introduced in sub-section 4.3.). The initial proposal for KPIs are introduced in sub-section 5.6. of this study paper.

The proposal building started with the key findings from the Current State Analysis (presented in section 3.5), which included Data 1. After the CSA, the current performance measurement and reporting practices, as well as the existing information was combined, to be able to solve the business objective. This was followed by the

proposal building, by involving the other informants and the stakeholders from the case organisation (Data 2).

## 5.2 Current challenges with performance management

This section discusses about the challenges of the current performance management practices. As described earlier, the proposal building started on top of the findings from the Current State Analysis and the literature review.

One of the key issues recognised, was the lack of the strategic thinking in the case organisation itself, as well and in the practices how the performance has been measured. Additionally, the performance measurement practices in the case organisation are fairly multifaceted. Yet those fail to provide all the relevant information about the real performance for the managerial purposes.

Secondly, issues within the organisation are mainly related to the understanding the data, and what the numbers behind the KPIs really mean. This issue is also related in more broader context to trustworthiness of the data and reporting – it is rather easy to fix the numbers so that those are seen in more positive light.

Finally, lack of the proper performance management can be seen as a question of the resources. The current steering and governing system in use, is unclear and disorganised. The model where two Ministries are steering the web portal, is not optimal. There is collective responsibility for managing the performance, hence in practice this means that no one is taking a real responsibility of it.

## 5.3 Crystallising the vision of suomi.fi/companies

As mentioned in the data collecting phase, as part of this proposal building, some one-on-one discussions with external consultants were also held. In one of these discussions the concept of the whole web portal, was evaluated, and it was seen rather vague.

The suggestion from consultant was, that the vision would be needed to be crystallized first. The literature review also supported this approach.

As a recommendation, there was suggested four questions set for making the vision more concrete:

- 1) From the user point of view, what problem this new service platform tackles?
- 2) How is it differentiating from the existing platforms or services?
- 3) What kind of measurable we can come up with this service?
- 4) What new it could bring for the users?

As a part of re-building the project concept with a more comprehensive level, a workshop among the core team of web portal editors and designers was held in April 2016. The four issues mentioned above were crystallised and the unique value proposition for the upcoming suomi.fi/companies web service was made, both for the end users as well as the service providers.

However, since For Companies is only one of the three service views of the suomi.fi portal, it was rather soon merged with the whole web portal vision set by the KaPA project management group. (introduced in the Figure 16).



Figure 16. The vision of suomi.fi

Nevertheless, there was a need for a more concrete and comprehensive model, to communicate how the users, and especially the service providers of suomi.fi web portal would benefit using the portal. Altogether five different aspects are reflecting the unique value that users are gaining from suomi.fi/companies. (eSuomi, 2017) Figure 17. introduces these aspects more in detail.

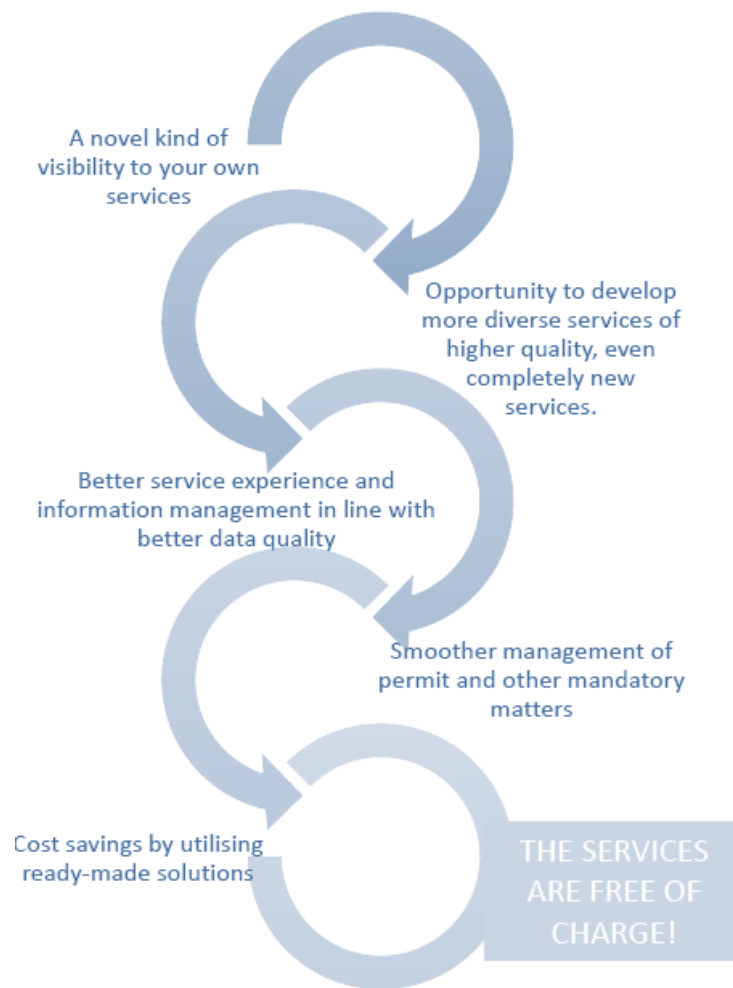


Figure 17. How companies benefit from suomi.fi

It is good to keep in mind, that these five aspects are only relating to the value created with the companies and organisation using the suomi.fi/companies. As defined in the Yritys-Suomi portal canvas (presented in sub-section 3.2.2), the users of the services are not only the end users, but also the service providers. The following benefits are listed from their point of view.

*A novel kind of visibility to own services*

- Your own service portfolio as part of the service provision of every Finn and Finland's resident.

*Opportunity to develop more diverse services of higher quality, and even completely new services.*

- Information available from countless registers.
- Better service for the end user.

*Better service experience and information management in line with better data quality*

- Up-to-date information about customers in real time and in a standard format.
- Improvement of data as it becomes visible and easier available.

*Smoother management of permit and other mandatory matters*

- Automation.
  - Acting as a delegate on behalf of others.
- (eSuomi, 2017)

Furthermore, it is important to recognise that these listed benefits are mainly based on the new features and technical solutions provided by the web portal. Once again, a broader service thinking approach has been left slightly aside here, as well as the viewpoint of the end users (citizen) of the web portal.

#### 5.4 Initial proposal for performance management framework

The objective of this study was to develop a performance management framework the case organisation. Initial proposal will be presented in this sub-section. As stated in the



research literary review, a comprehensive performance management system is a prerequisite for any improvements. One of the benefits of gaining deeper understanding is that the organisations are able to make much smarter decisions that are rooted in data, rather than in gut feelings or assumptions. (Marr, 2017)

According to Chaffey (2012), the significance of performance management has increased greatly over the past decade. He suggests, that one of the reasons for that is clearly the management trend to improving the control, visibility and profitability in organisations, through different frameworks. Additionally, the increased availability of performance data has accelerated the implementation of performance management systems.

In the literature review, two different frameworks – Balanced Scorecard and Performance Pyramid System were presented and evaluated from different viewpoints. However, neither of these frameworks did not fully served the needs of the case organisation by their complexity. Therefore, in this proposal building phase, completely new framework for performance management is being introduced in Figure 18.

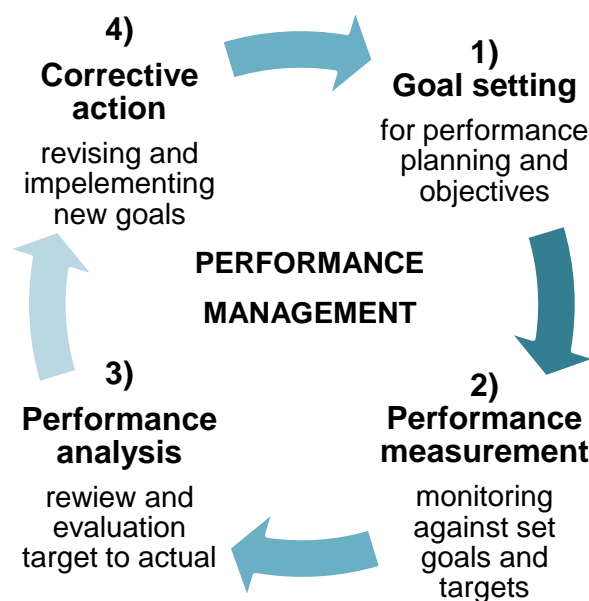


Figure 18. Framework for performance management

As Figure 18. introduces, performance management is a continuous cycle, where the main focus can be seen in the constantly corrective actions. This framework is based on Chaffey's (2012) model, and it is information-centred. It is showing how capturing,

storing, analysing, interpreting, disseminating and furthermore acting on it, is essential for organisation.

As performance management is closely related to performance measurement, also the process for performance measurement should be levelled with management approach. The initial proposal for performance measurement is introduced in the next sub-section.

### 5.5 Initial proposal for performance measurement process

Using data strategically is about finding the best data for company's purposes. Furthermore, from a data strategy point of view this means that the ideal data sets need to be identified and described, to help the company to achieve the strategic objectives. (Marr, 2017)

With performance measurements collected from the strategic plan, Franceschini (2007) suggest, that the quality of information and current use of existing indicators should be determined. The objective is to find out which indicators are maintained and monitored, and who are the owner(s) and data customer(s).

Additionally, Franceschini has listed five questions, that should provide enough information for this step. And furthermore, these five questions will be used as a baseline, when creating the framework for the performance measurement for the case organisation:

- What information is being reported?
- Who is responsible for collecting and reporting performance information?
- When and how often is the performance measure reported?
- How is the information reported?
- To whom is the performance measure reported to? (Franceschini (2007)

Before a new performance measurement process can be implemented, the case organisation need to select and implement additional metrics alongside with the current ones in use. These are needed to provide more accurate and precise information on the service quality as well as the performance of the current web portal.

## 5.6 Proposal for revised Key Performance Indicators

This sub-section discusses about the initial proposal for revised Key Performance Indicators. Proposal has been divided into three different set of metrics, which are all introduced more closely in the following sub-sections.

A good indicator set directs and regulates the activities in support of strategic objectives, and it provides real-time feedback, predictive data, and insights into opportunities for improvement. Additionally, Franceschini (2007) suggests, that indicators need to be flexible in recognising and responding to changing demands from internal and external environments.

In the literature review Parmenter's model for creating the winning KPIs was seen the most applicable for this case organisation in question. Furthermore, the key tasks for selecting organisational winning KPIs are being listed in a very comprehensive way:

1. Ensuring that KRIs, RIs, PIs and KPIs are balanced.
2. Limiting KPIs to no more than 10.
3. Permitting the KRIs, RIs, PIs and KPIs to evolve.
4. Ensuring that all KPIs have characteristics.
5. Testing all the KPIs in a pilot. (Parmenter, 2010)

Due to fact, that case organisation's web service is a part of the Point of Single Contact (PSC) portals, there are certain targets that are already coming from the EU level. That is affecting obviously to the first key task, since some of the set targets are binding ones in principle. However, on more positive note, it also can be ensured that KRIs, RIs, PIs and KPIs are carefully considered and furthermore balanced with the BSC set by the EU.

Additionally, the bound to PSC has an impact to the amount of KPIs as well. There are already five targets together from the EU level and from the national law, which means, that the amount of other KPIs is even more limited. It leaves also a little bit less room for evolving the KPIs further on.

As for the characteristics of the KPIs, Parmenter suggests a separate checklist. However, the most important ones to be looked over are the following ones: measure frequency; measure responsibilities, which in other words means that the staff understands the measures and what actions is required from them; those KPIs that have significant impact for example for more than one BSC perspective; and finally, that KPIs are tested from the perspective of having positive impact on performance.

#### 5.6.1 Metrics related to strategic targets

As described in the earlier phases of this study, there are recognised some targets related to law or EU directives. These targets and at some level also the metrics led from the targets are binding ones. Meaning of, that these cannot be bypassed when creating a set of new Key Performance Indicators (KPIs).

These targets are:

1. Performance
2. Reliability
3. Supporting the security aspects
4. User-friendliness
5. Accessibility

As a part of the building the initial proposal, more material from the existing internal data sources was explored. The following strategic targets in the Table 10. were found in late 2017 from the material archive of the National Architecture for Digital Services

(KaPA) project. As the one-on-one discussions with key informants confirm, these are based on the recommendations of the external consultants, and being creating together with KaPA project management.

Table 10. Strategic targets

Perspective	Targets and metrics	Data source
<b>Usability</b>	Aiming to efficient use of the services	User tests Customer feedback X-Road feedback
<b>Reliability</b>	Service available during normal office hours	Automated reports of service breaks (planned / unplanned), data source TBC
<b>Security</b>	Continuous testing	Continuous scanning, source TBC Weekly reporting, source TBC
<b>Performance</b>	Amount of the visitors	-

As Table 10. suggests, the main targets and metrics planned to be implemented to web portal are closely related to the requirements that come from the KaPA law. Hence, these targets are mainly related to technical performance of a web portal.

Moreover, in the planning phase of these strategic targets, there was no discussion with the Yritys-Suomi (Enterprise Finland) Project Owner, J.K., hence two other service views (For Citizen and For Authorities) were taken along with the planning. The proof of concept (POC) of improving the data collection and the reporting was then approved without the comments from the third service view (For Companies).

Nevertheless, in one-on-one discussions with the Development Manager N.W. it was confirmed, that the following strategic targets, will be set in the first phase of performance measurement implementation for the whole web portal, including the suomi.fi/companies service view. However, it is good to keep in mind that these strategic targets are created for the whole web portal, including all service views (For Citizen, For Companies, For Authorities).

From that respective, the final output of this study can then consist of these given KPIs, presented in Table 10., which are common for whole suomi.fi web portal. Moreover, it can be complemented with a suggestion of additional set of strategically important KPIs or PIs. These will be presented in following sub-sections.

### 5.6.2 Metrics related to customer journey

The purpose of the benchmarking the other Point of Single Contact (PSC) portals was to find the best practices and possible solutions for the Yritys-Suomi (Enterprise Finland) web portal metrics. From the very profound example from Gov.uk, the following metrics related to customer journey could be implemented:

- *Completion rate* - what percentage of transactions users successfully complete
- *Digital take-up* - what percentage of users choose digital service to complete their task over non-digital channels

However, there was no clear web metric related to measuring the customer journey in the web service, which could be used in improving the service. Neither there was any metric related to possible conversions, except from the efficiency point of view, which could be seen as key driver in both of the Gov.uk's KPIs listed above. Therefore, it should be also taken into consideration, if one KPI related to that perspective could be also added into set of revised KPIs for the case organisation.

#### *Utilisation of the web analytics tools*

To boost the exploitation of web analytics among the web editors and designers, two workshops were held in autumn 2017. Both workshops were conducted by the external consultant. First one, held in 09/2017, was concentrating more in search engine optimisation, which was indeed mentioned also in the literature review as one of the means of improving the customer experience.

The second of the workshops, held in 11/2017, was originally planned to focus on defining the web metrics for portal. However, the focus of the day was more on the training point of view. However, in the course of the workshop, there was also a good evaluation related to importance of measuring micro and macro conversions. These could be benefit in the future, when improving the web services, especially from the end user perspective.

Because of these workshops, there is nothing concrete to add into initial Proposal. However, the value of the workshops can be seen more as in mindset level. It can be interpreted as an indication of the data-driven way of thinking spreading among the project, as well as understanding the importance of the web analytics as a part of the service development in the future.

### 5.6.3 Metrics related to brand image

One of the most important metrics in the original setup for Yritys-Suomi (Enterprise Finland), defined the Ministry of Economic Affairs and Employment (MEAE), was the brand perspective. However, as is one-on-one discussions with the Development Manager N.W., in the beginning of 2017, it came clear that there were no plans whatsoever, to start measuring the brand related metrics in the new web portal.

However, as the interviews and one-on-one discussions with the Development Manager N.W. in the Current State Analysis phase of this study (in November 2016) suggests, there was originally some interest in adding social media related KPI into the current range of performance metrics. Additionally, the brand value of the suomi.fi web portal was planned to follow with the regular questionnaires by the project communications. Also from that point of view, there would be a clear need for brand related metric(s).

One of the challenges related is that when the KPI related needs had originally been mapped in 2015 from the Project Owners of each Service View, there was no indication that social media related metrics was needed. Hence, for that debriefing had been delivered the current metrics, as well as the Yritys-Suomi canvas, by the Ministry (MEAE). According to Development Manager N.W. those perspectives had considered when planning the initial KPIs for the web portal.

Furthermore, due to fact that in the mapping phase there was no clear need indicated for social media KPI, it was also left out from the technical planning of the Data Warehouse architecture. However, as Development Manager N.W. described in the interview (in November 2016), there is still a possibility to add some Big Data analytics component for the unstructured data from the social media channels.

### *Utilisation of the social media monitoring tools*

As a part of mapping the best practices for the reporting and creating the dashboards, a benchmarking among social media monitoring tools was conducted. This part was eventually left out from the final scope of this study, however, since it is closely related to measuring the brand value, it deserves to be mentioned here.

In a practice what was done, the three different news and social media monitoring tools from competing service providers were demonstrated with an actual data. Each of the demonstration periods was from 4–6 weeks long, and these were conducted during different time periods in summer 2016 and in summer 2017.

Alongside with testing these tools and comparing the dashboard solutions, the real value was in demonstrating media monitoring. The total amount of the media mentions, especially in the 2017 test period, was remarkably high.

Nevertheless, the whole suomi.fi project was gaining more and more publicity due the new KaPA law as well as due ongoing branding actions, such as marketing campaigns. Also, these findings support the need for either build-in solution or third-party social media monitoring tool to measure brand related value of the web portal. As a conclusion, it can be said, that there is a clear necessity to create a new Key Performance Indicator (KPI) also around social media perspective.

These sections have been described in detail how the proposal building phase has been conducted, and what kind of data has been used to create a solid proposal. Next section will introduce the Validation of the Proposal.



## 6 Validation of the Proposal

The main purpose of this study was to create a framework for a performance management practices as well as performance measurement process. And finally, to set the KPIs for the revamped web portal. Additionally, the aim was that solution would as its best encourage the case organisation becoming more data-driven.

In the following sub-sections, the Validation of the Proposal is being introduced. The first sub-section introduces the overview of the Validation process. Following the final proposal for this study, revised KPIs and the performance management framework as well as streamlined process for performance measurement. Finally, the implementation plan is introduced.

### 6.1 Overview of the Validation

The initial plan was to test proposed set of Key Performance Indicators (KPIs) in the real environment, with actual data collected from the different data streams. However, since the Service Management (PaHa) solution implementation was postponed, and eventually late almost by 12 months, it also affected the piloting phase of this study.

As a result of that, the piloting of the KPIs in the real environment was prevented. Therefore, the evaluation of proposal and its functionality is mainly depended on the accuracy of the used frameworks from the existing knowledge, as well as the proficiency of the researcher and the people accepting, and furthermore approving the final proposal.

Furthermore, the aim of validation phase was to present the tested proposal to a steering group consisting of representatives from two Ministries. This was selected by criteria, who would be able to give feedback and furthermore to validate the final proposal for performance measurement framework.

However, due the continuing re-organisation and additionally with the lack of the clear roles and responsibilities, this was decided to be postponed. Another factor impacting the decision was the lack of the piloting with the actual data. As the interviews

conducted for Current State Analysis, and as the literature suggests, usually there would be a need for several rounds of testing before finding the optimised set of KPIs.

Instead of testing validity of KPIs according to initial plan, the final proposal was presented in December 2017 to a Development Manager, M.P. who has just recently started in his job in the project. This one-on-one discussion represents the Data 3 of this study, among the secondary data set: project memos and meeting minutes of the project, found from the project material archive.

As a result of this one-on-one discussion (Skype meeting 12.12.2017), it was agreed, that the final output of this study could be delivered later to the development group of the project for further actions, once the funding for the follow-up project of the KaPa project would be confirmed for 2018 onwards. At this point of study, in mid-December 2017, the final development group was not set up, and the roles and responsibilities were still unclear.

A conclusion of the one-on-one discussion was, that the presented proposal for KPIs is feasible for case organisation although some further developing will be needed before the implementing of KPIs into practice. Additionally, the discussion with the Development Manager, M.P., also confirmed the findings from the research, and the conclusion that performance measurement in the case organisation is currently badly disorganised, and there is still a need for improvement and the results of this study.

As for the process for performance measurement and the framework for managing the performance, these were not seen in that significant role, especially since the basic processes 2018 onwards were not in place. Hence, it was admitted, that these kinds of processes would have helped at that stage, when the work with performance measurement specifications was initially started in 2015.

## 6.2 Proposal for Key Performance Indicators

As Parmenter (2010) suggests, the amount of the Key Performance Indicators (KPIs) should be limited in maximum 10. Furthermore, for a performance measure to become a Key Performance Indicator, it has to be linked to one or more of the organisation's

critical success factors (CSFs), more than one balances scorecard (BSC) perspective, and additionally, also the organisation's strategic objectives.

When presenting the initial idea of the KPIs for the new Development Manager, M.P. from Population Register Centre, it turned out that some adjustments needed to put in place. The proposal for Key Performance Indicators is being introduced in Table 11.

The main improvements compared to previous versions and the initial proposal, are related to managerial practices and taking the ownership of the metric in question. The accountable person has been added into table as one additional column. Hence, in practice at this point of the project, there was no clear understanding of the resources allocated to further development of suomi.fi web portal.

Table 11. Proposal for Key Performance Indicators

Perspective	Targets	Metrics	Data source	KPI
<b>Usability</b>	Aiming to efficient use of the services	Percentage of users satisfied with their experience of using service	User tests Customer feedback	-
<b>Reliability</b>	Service available during normal office hours	The amount of the maintenance break	Automated reports	-
<b>Security</b>	Service is safe to use	Total initial vulnerabilities	Continuous scanning	-
<b>Performance</b>	Service is available for users	Amount of the visitors	Automated report / Web Analytics	Uptime % / CPU
<b>Completion rate</b>	Time spent to complete task	Percentage of transactions users successfully complete	Web Analytics tool	Conversion rate
<b>Digital take-up</b>	Digital services over other service channels	Percentage of users choose digital service over non-digital channels	Web Analytics tool	Conversion rate
<b>Brand value</b>	Mentions in social media	The sentiment of brand	Social Media monitoring tool	Positive tone of voice

Perspective	Measurement frequency	Person accountable	Reported to whom
Usability	Continuously	TBC	Ministry / EU
Reliability	Continuously	TBC	Ministry / EU
Security	Continuous testing	TBC	Ministry / EU
Performance	Continuously	TBC	Ministry / EU
Completion rate	Bi-weekly	TBC	Ministry
Digital take-up	Bi-weekly	TBC	Ministry
Brand value	Monthly basis	TBC	Ministry

Additionally, the KPIs proposed initially, and introduced only in written format in the previous phase of this study, are now added into table as well. Some of the KPIs in the table, mainly related to binding targets, were left as a blanc, since there were information available on what kind of measurement the following targets were pointing at. For example, the security KPI could be measured from the cost per incident, time to resolve these incidences or from the viewpoint of fulfilling the regulatory requirements. However, the outline of the final proposal is based rather tightly with the factors that were presented in Building the proposal phase.

Since the suggested amount of KPIs was rather limited – according to Parmenter' model, maximum 10, the final amount of the KPIs is now seven. There would have been still room for additional KPIs, and Gov.uk's cost per transaction and user satisfaction could have also been added into list. Now the first four ones presented in a table 11 are more oriented into technical perspective and improvement of the web portal only from technical point of view.

Additionally, other performance indicators (PIs) could have been added, as according to Parmenter's model, there could be altogether as many as 80 indicators. As interview in CSA phase revealed, other service views (For Citizen and For Authorities) had indeed recognised several performance indicators. Moreover, this pool of PIs could be used when deciding upon the final KPIs. It could be useful especially in case there are several testing rounds for finding the optimal set of KPIs.

### 6.3 Performance management framework

One objectives of this study was to create a comprehensive framework for the performance management in the case organisation, and additionally to use it as tool to implement and accelerating the data-driven culture.

In the one-on-one discussion with Development Manager M.P. (held in December 2017) it was confirmed, that there was still need for harmonising the different service views (For Citizen, For Companies and For Authorities) and their performance measurement practices.

The initial proposal, the performance management framework (introduced in section 5.4.) was considered straightforward model, and suitable for case organisation's needs. Hence, an additional framework for defining the key elements of the framework was needed, since the clear strategic approach was missing from the chain model.

Table 12. Introduces the strategic plan element and performance measurement attributes, which can be used together with the performance management framework. These elements are originally introduced by Franceschini (2007).

Table 12. Strategic plan element and performance measurement attributes

<b>Strategic plan elements</b>	<b>Performance measurement attributes</b>
Strategic Goal	Articulates the enduring mission or "end state" desired.
Objective	Describes the strategic activities that are required to accomplish the goal.
Strategy	Defines strategic (long-term) requirements that link to objectives. Typically contain dates, basis of measurement, and performance aspirations (targets).
Tactical Plans	Identifies the short-term requirements that link to strategy. Typically contain cost, time, milestone, quality, or safety attributes as well as performance targets.

The strategic plan elements are Strategic Goal; Objective; Strategy; and Tactical Plans. Together with initial performance management framework proposal, these form the final proposal for the performance management framework.

As for the performance measurement process, which was also one of the objectives of this study, there was no need to introduce any separate model or framework. Instead, the Parmenter's model for creating the winning KPIs, which was also applied in this study to create the proposition for KPIs, could be adapted in the future.

#### 6.4 Implementation Plan

Creating a robust strategy is one thing, but it must also be properly executed across the organisation. According to Marr (2017), it requires understanding the importance of putting data in the heart of decision making and business operations. Moreover, the business leaders should be looking to create a strong data culture across the company, and with data being recognized as a key business asset.

##### *Setting clear objectives*

Since the case organisation is in the middle of the change process, the first thing to do after project phase has ended, is to get the story straight. Only after that phase the revised objectives should be set for the revamped web portal. In practice this means, that when the governance of the whole performance management is changing from steering Ministry to another, and furthermore, the new web portal will combine two previously independent web services, there need to be done some adjustments.

Furthermore, from the strategic point of view, this means that the strategic approach should be streamlined within the whole web portal and different service views (For Customer, For Companies, For Authorities). Here would be recommended to utilise the framework of strategic plan element and performance measurement attributes, which was introduced in the sub-section 6.3. of this study.

##### *Getting data in the centre of decision-making*

One of the additional aims of this study was to find also the means to promote and accelerate the data-driven culture in the case organisation. In the project phase, as it

has been seen in the course this study, creating such a culture has been rather difficult, or almost impossible due the various reasons.

From the technical point of view, there is already a good basis to become more data-driven, and to implement that also into daily work. With one-on-one discussions it was confirmed, that the revamped web portal (suomi.fi) will continue using the web analytics tool Piwik, which was already in use in the old Yritys-Suomi (Enterprise Finland) web portal. In the documentation memos of the project, there was also mentioned a rough timespan for implementing Piwik during Q2 (or later) in 2018. However, there was no project manager appointed for that position in December 2017, when the actual development programme was ending.

From that perspective, it would be rather crucial to get the organisation in place as soon as possible, and furthermore, to make sure that the organisation had reserved resources also to support the data-driven approach. It is good to have a processes, frameworks and guidelines in place, hence, if there are no resources in the organisation, nor persons applying those into practise, the basis created to the data-driven decision-making is next to nothing.

## 7 Discussion and Conclusions

This section summarises the results of the study. First it gives summary of this study, following the evaluation of Thesis. Finally, it proposes some further development ideas and recommendations for future study.

### 7.1 Summary

The main objective of this study was to define the Key Performance Indicators (KPIs) for revamped suomi.fi/companies web portal. The aim was that KPIs would be aligned with the strategic targets and requirements, and support the decision making as well as continuous improvement of the digital services.

Additionally, the aim was improving and streamline the performance management by defining the optimal process for measurement in the case organisation. Finally, the third objective of the study, was to develop a proposal for a holistic measurement framework, which could be used to evaluate the performance and the progress towards the set targets.

Furthermore, the scope of this study was to analyse and evaluate what are the strengths and weaknesses in current data collecting and reporting processes, and how that is affecting on the performance measurement practices in the case organisation. Issue with the current metrics was that they were not aligned with the strategic goals and, furthermore, failed to provide a holistic view on the performance of the services.

The business challenge was to find a mean to support the coherent decision-making processes in the case organisation, especially in this transition period, where two existing web portals were revamped and merged into one. Furthermore, service quality and data-driven development approaches in the case organisation were taken into consideration.

This study used the action research as a study methodology and qualitative data as a source. In the course of this study, the researcher had the opportunity familiarise herself with the performance management processes of the case organisation and furthermore of the whole National Architecture for Digital Services (KaPA) project.



The data collection of this study was performed in different stages. The interviews conducted for this study were semi-structured, recorded and the data was additionally collected to the researcher's notes. Additionally, current reporting and web analytics practices were identified, defined and evaluated carefully.

The existing reports and studies around the subject were utilised as a secondary data source. Additionally, best practices and existing frameworks were reviewed from the research literature in context of performance measurement. As a result, a Conceptual Framework was made for the study.

In the Proposal Building and the Validation phase of this study a set of Key Performance Indicators (KPIs) was proposed, as well as proposal for performance measurement practices web services development was suggested. For building and validating the proposal, one-on-one discussions as well as workshops were carried out.

Finally, the outcome of the study was the set of KPIs, and the comprehensive framework for the performance management. Additionally, with the developed performance measurements, the case organisation can rely on that the web portal is performing to meet the set targets, and moreover, the organisation can focus on a systematic improvement of its services.

As a conclusion, based on the results of this study, several recommendations can be made to improve the current performance measurement practices, and moreover, to improve the performance of the web services provided by the case organisation. A comprehensive measurement system that provides fact-based data about the performance of the web portal can facilitate decision making. Hence, without properly allocated resources, it will be difficult to implement the needed changes throughout the case organisation.

## 7.2 Evaluation of the Thesis

This sub-section discusses the reliability and validity of this study. This is evaluated critically from the viewpoint of the objective versus output, and furthermore by listing the limitations of this study.

This study had three main objectives – firstly, to define Key Performance Indicators (KPIs) for revamped web portal; secondly to improve the performance measurement by defining the optimal process for measurement; and finally, to create comprehensive performance management framework to support the decision-making in the case organisation.

In generally, it can be said, that this study was conducted in a manner that the output met the set objectives. Hence, the respective importance and value of the objectives for the case organisation evolved along the research. According to Silverman (2013), in most qualitative research, sticking with original research may be rather a sign of inadequate data analysis than consistency.

The research design (presented in sub-section 2.2.) was following the outline of the original plan. In this study the data was collected from different sources, using different techniques and the results were furthermore circulated between the different stakeholders to form a solid base for the proposal.

Originally interviews were considered as one important method to collect data for this study. However, due the various reasons, the role of the interviews was rather small in the final Current State Analysis. Instead, more casual one-on-one discussions were supporting the building phase of proposal, as well as when validating the final proposal.

This study can be used as a basis for the case organisation to start measuring their Key Performance Indicators, against set strategic targets. However, as performance measurement itself is an ongoing process, which is aiming continuous improvement, also these KPIs should be revised in a frequent basis. Additionally, there were some limitations of the study, that should be taken into consideration as well.

#### 7.2.1 Limitations of the study

One of the challenges regarding this research, was setting a right scope for the study. From time to time, it felt that the scope was rather a moving target, which was constantly evolving among the agile development cycles of the main project, National Architecture for Digital Services (KaPA), as well as changing project managers.

Due to the fact that the KaPA project also consisted of several sub-projects, which were more or less intertwined together, the sub-projects were highly dependable of each other also in a respect of technical matters. In other words, if the development of one sub-project failed to meet the set deadlines, that had an impact also to the other projects. This notion was also highlighted in the final report of the KaPA project (Valtioneuvosto, 2018).

When the implementation of the Service Management (sub-project) was postponed further and further, it also affected the piloting phase of this study. Hence there was a profound literature review as well as findings from the Current State Analysis, the biggest limitation is related to piloting the proposal of KPIs.

Due to fact that Service Management implementation was postponed by 12 months, there was no time left for testing the KPIs in practice with a real data. Nevertheless, the root cause for this was not related to this research in question, it undermines the value of this research.

Second challenge related to KaPa project itself was related to the resourcing and the amount of the consultants used in the project. Additionally, the employers did not stay in the same position for a long time. Furthermore, resources allocation for the project itself has been undersized – instead of paid staff, the amount of the external consultants has been relatively high. And with the constantly changing consultants, there is a risk of losing the tacit knowledge.

This was also related to communicational challenge of the project from two perspectives: a tacit knowledge was hardly documented anywhere, and in most of the cases vanished with the consultants. Secondly, poor communications between the sub-projects accelerated the culture of working in silos. This complicated also the research made for this study.

In addition to that, there was no real commitment from the case organisation to support this research. This was partially due the unclear roles and responsibilities, as well the dynamics between people inside the project group. However, the outcome of this study was originally valued and considered rather remarkable.

### 7.2.2 Validity of the study

Validity refers to the credibility of researcher's interpretations. Additionally, according to McNiff (2009), validation process not only helps researchers to test the validity of their claims, but also enables people to become more reflective, and contributing to organisational learning and development.

As mentioned in the Validation and Reliability Plan (sub-section 2.4. of this study), the quality of action research cannot be judged by means of criteria of traditional research. However, trustworthiness can be achieved by setting clear research question, collecting the data systematically, and ensuring that the data is correctly analysed. From that point of view, as all the steps are applied in this study, it can be considered rather trustworthy.

To ensure the reliability of this study, all the phases of the applied research are visible throughout the study. The data collection tables add transparency on showing how and when the data was collected, and in which phase of the study each data was used.

In action research the subjectivity of the researcher can be both an advantage and a limitation. McNiff (2009) emphasis, that it can be a limitation because the researcher may come to biased conclusions towards what he/she is doing. As mentioned earlier, due the course of the study, researcher got rather familiar with the performance management processes in the case organisation. Additionally, due the other responsibilities in National Architecture for Digital Services (KaPA) project, it is good to point out, that the researcher was making observations from very insider viewpoint.

Yin (2011) suggests that construct validity can be achieved when the data is collected from multiple sources, as well as reviewed by several peers. Consequently, to ensure the logic of this study, the data was collected carefully from several different sources, which all contribute to the topic. Additionally, the literature selected for the Conceptual Framework was exploited to build the solid proposal. Finally, the initial proposals were reviewed by one the key stakeholders of this study and the whole KaPA project.

### 7.3 Recommendations for future studies

Since the KaPA project itself has ended in December 2017, the following development and administration phase has been taken place from the beginning of 2018. The current steering Ministry for all service views, including the suomi.fi/companies, is Ministry of Finance (MF). From that respective also the Key Performance Indicators (KPIs) should be revisited, and furthermore harmonized with other service views (For Citizen and For Authorities) of the suomi.fi web portal.

Additionally, in the Governments roadmap for key project Digitalised public services, there are key milestones, which will have an impact for the web portal development work in the future:

- A new information management act will be drafted. The government proposal is due to be adopted in spring 2018, and the act due to enter into force on 1 January 2019.
- A new model for steering investments and coordinating central government digital projects will be introduced.
- The key project will proceed in close cooperation with the central government reform and the key project on better leadership and implementation.  
(Valtionneuvosto, 2017. 57-61)

These upcoming changes should also then be taken into consideration, and moreover, to explore the possibilities that lies in these changes.

Additionally, the role of The EU General Data Protection Regulation (GDPR), should be taken into consideration. GDPR is designed to harmonize data privacy laws across Europe, to protect and empower all EU citizens data privacy and to reshape the way organisations across the region approach data privacy. (<https://www.eugdpr.org/>)

Enforcement date is on 25 May 2018 - at which time those organisations in non-compliance may face heavy fines. It is already known, that the public sector is subject to some exceptions from the regulation. For example, the right to be forgotten does not

apply to the public sector if it impedes the performance of a task carried out in the public interest of health or safety.

Public sector organisations need to challenge themselves to identify what the data they hold is for, as well as how it will be processed. Alongside increased data streams come the need for more robust systems to cope with volume and ensure secure data protection. From that viewpoint, GDPR could bring not only new challenges, but also opportunities to improve the current practices further.

### *Putting data in the core of the decision-making*

One of the key notions from this study has been the public sector organisations' contradictory position on digitalisation. To get the data-driven insight implemented into daily work and decision-making in the public sector, there is a lot of room for improvement, and moreover, a fruitful ground for future studies. For example, information management was also left out of the scope of this study, even though it is closely related to the subject of this study.

As the literature review also showed, one important factor is the organisation itself and the culture – in the public sector generally speaking, but also specifically within the case organisation. One of the biggest challenges the case organisation will face, is managing the change and the mindset on a staff.

Moreover, the visualisation of the data in the respect of the reporting, was left out from the final scope of the study, even if it can its best support the decision making. Hence, as a part of the KaPA project, there was external consultant assignment, to enhance and improve the current reporting practices.

Since the results of this reporting assignment were not available for this study, and furthermore, in the light of the revised KPIs, as well as the streamlined performance measurement practices, it could be recommended to redo the reporting assignment, to get also reporting practices aligned with the new, improved performance setup.

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## **Appendix 1. Orientation questions for semi-structured interviews**

How the information related to business is being monitored currently?

How the information has been utilized in strategic decision-making?

What kind of reporting practices are in place?

What are the biggest strengths / weaknesses in the current reporting and metrics?

And what kind of possibilities / threats can be recognized?

What kind of technical solutions or tools / software are in use?

## **Appendix 2. Point of Single Contact Requirements**

### **1. Quality and availability of the information**

- How much relevant information is online?
- Is it comprehensive, well-structured and readily intelligent?
- The information is comprehensive and it takes into consideration of the needs of information of companies in every stage of their lifecycle.
- The information is well-structured, up to date and it can be addressed to different user groups. There are search functionalities, which help users to find the correct information fast and easily.
- PSC offers inclusive and comprehensible description of needed actions in order to take care of pressing matters, as well as easily understandable description of the applicable requirements for the industry in question.
- The information meets the requirements of companies in their different stages of life cycle.

### **2. Online completion of procedures**

- How many procedures are available online?
- Can they have completed online (e.g. downloading forms, completing webforms)?
- Are there any online fee payment tools?
- All the needed procedures are available online at PSC, regardless of the actual location of the Permissions or Authorities in question.
- PSC offers supportive services to improve the customer experience of online services. For example, service such for follow-up of your transactions / processing when running errands online.
- Running the errands can be fully completed online, without delay (including the payments)

### 3. Accessibility for users from other countries

- Can the site be used by businesses in other countries (especially regarding its technical aspects)?
  - Does the site accept e-signatures issued abroad (when those are needed to complete procedures)?
  - Can users in other countries readily understand the requirements they must meet?
  - Is the information available in languages other than that / those of the host country?
- 
- PSC offers clear distinctions for administrative requirements for starting the company and services that are provided users from other countries.
  - Service providers from other countries (than Finland) can run the errands online by using the e-signature issued in abroad, so that administrative practicalities can be run online abroad (site can be used from other countries)
  - PSC offers detailed information at least in one commonly used EU language (incl. support tools).
  - All the steps of the administrative processes are clearly communicated, and the end user does not need any basic information regarding the legislation or the administrative processes in the country in question.

### 4. Usability

- Are the processes user-friendly?
  - Can users do what they want to do on the site?
  - Is effective help available?
- 
- There are versatile and high-quality guidance services (e.g. help desk, chat, FAQ), also available for users from other countries (than from Finland).
  - All the needed administrative acts can be run fluently and within a reasonable time.

### **Appendix 3. Gov.uk guide: Using data to improve your service**

Collecting data about your service allows you to measure its performance. You can use data to make sure:

- the service is meeting user needs
- the service allows users to easily complete the task it provides
- there are enough people using the service to make it cost-efficient
- people know about the service and are choosing to use it
- Meeting the Digital Service Standard

You must continuously measure and report on how your service is performing to meet the following points:

- point 15 (collect performance data)
- point 16 (identify performance indicators)
- point 17 (report performance data)

You'll have to demonstrate how your service meets these points to pass your service assessments.

- What to measure

You must collect data that shows how your service is performing against these 4 metrics:

- cost per transaction - how much it costs the government each time someone completes the task your service provides
- user satisfaction - what percentage of users are satisfied with their experience of using your service
- completion rate - what percentage of transactions users successfully complete
- digital take-up - what percentage of users choose your digital service to complete their task over non-digital channels

These metrics are called the 4 key performance indicators (KPIs).

You'll also need to choose other KPIs to measure. These will vary depending on your service. Use the work you've done to set performance metrics for your service as the basis for any decisions you make to measure service performance.

- Metrics and measurements

Metrics are measurements that tell you how well something is performing. Typically, they're expressed as a percentage.

For example, if 2000 people tried to complete your service, that's a 'measurement' of total attempts. If 1000 of them successfully completed your service, that's a 'measurement' of completions. Combine the two and you get a 'metric' for how often people using the service manage to complete it. In this example the completion rate is 50%.

- Measuring from the start

You must consider how you'll measure your service from the start of your project.

In discovery and early alpha, you need to:

- have an analyst as part of your team (or available to your team) so that you can start asking the right questions about how you're going to measure service performance
- start to set performance metrics for your service - outline your service's objectives and explain what data your team should gather to meet them
- estimate the number of people you expect to use the service - be aware that large numbers may mean you need powerful analytics tools
- find out the analytics tools your organisation already has and whether they're suitable for the type and volume of data you're expecting
- find out where all your existing data is kept and how you're going to access it, aggregate it and make it usable so that you can measure your service's KPIs
- start thinking about the different ways users will interact with your service so you can plan how you'll gather data
- start talking to the Performance Platform team so that you're ready to start sharing data with them in beta

- Share your data

You must share performance data on the Performance Platform.

- How to use your data

It's important to use the data you've collected to find ways to improve your service and prioritise them.

For example, your completion rate data can help you identify the stages in your user journeys when users are dropping out. Work with your user researcher and plan a round of user research to try to understand why.

You can also segment your user data based on the characteristics of groups of users. For example, you could check if users who are a certain age find the service harder to complete than other users.

If this is the case, you could then work with your user researcher to plan a round of user research with those users.