

Analysis of development opportunities for the performance  
management process

Case: Kela, The Social Insurance Institution of Finland

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## ABSTRACT

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<p>The main objective of this thesis is to study the development opportunities for improving the performance management process with the help of Business Intelligence tools and processes in the case organization. The research questions in this study concern the present challenges of the Business Intelligence usage in the case organization. This research aims to find an answer to the question of how Business Intelligence tools and processes should be integrated and aligned to support the new performance management framework in the case organization. The examination of the possibilities in the extended use of Business Intelligence aims at improving data usage in the decision-making. The case organization in this research is Kela, The Social Insurance Institution of Finland.</p> <p>This thesis research is designed as a single case study. The methods of data collection and analysis use multiple sources of empirical data ensuring reliability of the conclusions and findings. Research techniques were interviews, interviews conducted via email and document analysis.</p> <p>In this research, the theory-based analysis method is used in the analysis of the data. The analytical technique is pattern-matching where an empirically based pattern is compared with a theoretical framework from the case relevant literature.</p> <p>The results of this research recommend that case organization aim at establishing knowledge-based management culture by validating Business Intelligence as a central tool in the knowledge creation. This endeavour includes strong senior management support and implementation of the corporate Business Intelligence strategy. Furthermore, it could be feasible for the case organization to establish a unit of Business Intelligence know-how, the Business Intelligence Competence Centre. The aim of the Business Intelligence Competence Centre is to create Business Intelligence platform and processes which will meet the challenges of the future information needs throughout the organization.</p> <p>Chapters four, five and six in this research contain empirical information, which has been classified as confidential. Therefore, these chapters mentioned are not published in their full length in the library version.</p>	
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## FIGURES

**Figure 1.** Kela organization chart.

**Figure 2.** Main dimensions which create the concept of Knowledge based management in the framework of the Finnish public management.

**Figure 3.** BI is a knowledge enabler in the strategic Balanced Scorecard system logic. Public organization's perspective.

**Figure 4.** The Intelligent company model (EbM model).

**Figure 5.** Kela's strategy map for years 2014-2017.

**Figure 6.** Data warehousing process including conceptual layers in the BI.

**Figure 7.** A range of BI techniques to support the different information needs

**Figure 8.** Data Warehousing architecture at Kela.

**Figure 9.** Target EDW architecture at Kela.

**Figure 10.** Business value hierarchy related to the BI analysis spectrum in the value creation.

**Figure 11.** BICC embedded in business.

**Figure 12.** BICC as a function in Actuary and statistics department.

**Figure 13.** Virtual BICC by function.

## TABLES

**Table 1.** Reporting applications at Kela.

**Table 2.** Main components and subcomponents in the PMI assessment model.

**Table 3.** BICC services and functions within the organization.

## CONTENTS

ABSTRACT .....	1
CONTENTS .....	3
1 INTRODUCTION .....	7
1.1 Motivation and background .....	7
1.2 Case organization .....	10
1.2 Objectives of the research .....	13
1.4 Structure of the Thesis .....	16
2 RESEARCH DESIGN .....	17
2.1 Research questions .....	17
2.2 Research methodology .....	18
2.3 Research methods of data collection and analysis .....	19
3 CONCEPT OF PERFORMANCE MANAGEMENT IN THE PUBLIC SERVICES.....	22
3.1 Knowledge-based management in the public services.....	22
3.1.1 Performance based governance in Kela .....	22
3.1.2 The concept of the New Public Management .....	23
3.1.3 Concept of knowledge-based management.....	23
3.2 Strategy-based performance measurement .....	25
3.2.1 Management control systems in the knowledge creation and learning .....	26
3.2.2 Business alignment and collaboration.....	27
3.2.3 Performance management in the value creation .....	28
3.2.4 Cause-relation effect and hierarchical performance management logic .....	29
3.3 Business Intelligence as a performance management tool.....	30
3.3.1 Business Intelligence demand drivers.....	32
3.3.2 Competitive Intelligence in external environment monitoring .....	34
3.4 Management control using key performance indicators .....	34
4 PERFORMANCE MANAGEMENT FRAMEWORK IMPLEMENTATION IN THE CASE ORGANIZATION .....	38
5 BUSINESS INTELLIGENCE PRACTICES AND MANAGEMENT IN THE CASE ORGANIZATION .....	39

6 DEVELOPING BI AS A STRATEGIC TOOL IN THE CASE ORGANIZATION ..	40
7. DISCUSSION AND CONCLUSIONS.....	41
7.1 Discussion and conclusions from the empirical findings.....	41
7.2 Summary .....	46
7.3 Limitations of the Thesis and discussion of the future research .....	47
REFERENCES.....	48
APPENDICES .....	56
APPENDIX 1: (CONFIDENTIAL) PERFORMANCE MANAGEMENT FRAMEWORK IMPLEMENTATION IN THE CASE ORGANIZATION .....	56
4.1 Description of empirical data collection .....	56
4.2 Translating strategic objectives into measurable results .....	56
4.3 Strategy map as a value creation framework .....	56
4.4 Preparation and alignment of the performance agreement through the organization .....	56
APPENDIX 2: (CONFIDENTIAL) BUSINESS INTELLIGENCE PRACTICES AND MANAGEMENT IN THE CASE ORGANIZATION .....	57
5.1 Data Warehouse as a business information enabler .....	57
5.2 Data-to-knowledge process.....	57
5.3 Insight and knowledge creation using Business Intelligence.....	57
5.4 Analytical applications in the Business Intelligence.....	57
5.5 Success factors for the BI infrastructure .....	57
5.6 Enterprise reporting in the case organization.....	57
APPENDIX 3: (CONFIDENTIAL) 6 DEVELOPING BI AS A STRATEGIC TOOL IN THE CASE ORGANIZATION .....	58
6.1 Enterprise data warehouse objectives in the case organization .....	58
6.2 The key risks in existing projects.....	58
6.3 BI strategy as a barrier breaker .....	58
6.4 Target oriented BI program.....	58
6.5 Metrics to measure the success and value.....	58
6.6 Actions and politics to create a change .....	58
6.7 Organizational structure to accomplish the tasks related to the BI.....	58
6.8 Objectives and occupying BICC.....	58
6.7 Funding models of the BICC .....	58

APPENDIX 4: (CONFIDENTIAL) KELA -LEVEL BALANCED SCORECARD FOR YEAR 2014.....	59
APPENDIX 5: (CONFIDENTIAL) BALANCED SCORECARD, INSURANCE DISTRICT SOUTH FOR YEAR 2014.....	59
APPENDIX 6: (CONFIDENTIAL): INTERVIEW FORM, EXECUTIVES .....	59
APPENDIX 7: (CONFIDENTIAL): INTERVIEW FORM .....	59
APPENDIX 8: (CONFIDENTIAL): INTERVIEW MEMO, DIRECTOR .....	59
APPENDIX 9: (CONFIDENTIAL): INTERVIEW MEMO, HEAD OF ACTUARIAL AND STATISTICS DEPARTMENT.....	59
APPENDIX 10: (CONFIDENTIAL) INTERVIEW MEMO, DISTRICT MANAGER .....	59
APPENDIX 11: (CONFIDENTIAL): SUMMARY OF THE INTERVIEWS.....	59

## 1 INTRODUCTION

The motivation and background for this thesis research are discussed in this chapter. This chapter also presents the case organization as well as the objectives of this research.

### 1.1 Motivation and background

In the world which is surrounded by data and information, corporate performance management has been addressed as a key concept to improve decision making by extended utilization of the information. Improving interaction between business and information has been a growing interest among the organizational managers. Contemporary organizations do not just collect the data in large scale but they also emphasize the importance of building their competitive advantage on the insights which they gain from the performance information.

The increasing amount of data is a challenge for organizations. As information technology brings in extremely fast growing data volumes it has been realized that there can be more valuable data accessible than is utilized currently. At the same time, organizations struggle to have their existing performance management systems aligned with appropriate and meaningful performance indicators. While organizations are developing their performance management frameworks using Balanced Scorecards (hereinafter BSC), Key Performance Indicators (hereinafter KPI) and Business Intelligence (hereinafter BI) applications, they often fail to integrate the methods to each other and end up to mechanistic and number-focused results without significant performance improvements (Marr 2008, 22).

The ultimate goal of performance management is to improve performance. Assessing comparative performance is a result of specifically targeted goals. Holistic performance management process requires a collaborative approach across organization, and it is often achieved using standard concepts, techniques and best practices (Boyer & Frank & Green & Harris & Van De Vanter 2010, 15). As Marr (2010a, 17-20) suggests, the effective performance management begins with definition of strategic objectives using

strategy maps where the business logic is described using cause and effect relationships. The second principle is to define and collect essentially important KPI's, which link the organization behaviour directly to the strategic objectives. The third principle is to use effective data analysis to work out what the indicators mean. (Marr 2010a, 17-20.) The performance management thereby creates a loop which starts from information and knowledge-based target setting and ends up to an ability to take actions using information and knowledge, which were created over delivery. As a result of this action it is intended to achieve an organizational culture where performance management is a central part of the organization's control and management system (Aho 2012, 5).

The objective to create the holistic performance management process includes several challenges. Challenges start from appropriate setting of the strategic goals and ending to challenge to measure what matters. When organization has defined how it can reach its objectives, it has to figure out which factors really measure relevant aspects of the implementation of the strategic goals. These performance metrics measures how well organization is reaching its objectives.

Every business looks for making optimal decisions to be able to gain the best possible performance. In the real world managers often struggle with the lack of coherent information to make right conclusions for making optimal decisions. When data and information exists fragmented in data systems, information access for the decision making in right time can be complex. Collecting and communicating performance information using fragmented information systems for reporting, such as separate Excel sheets have major disadvantages concerning on information transparency, scalability, collaboration and communication support as well as cross-functional analysis (Marr & Neely 2003, 30). In many cases, such as in the case organization of this study BSC is communicated using different tools which one of the most commonly used is Excel spreadsheets. In the fragmented data systems, someone has to collect the data from different sources to the data presentation.

This is time consuming from the point of view of data analysis and causes crucial delays since measures are often received too late to make effective corrective actions. When KPI's are collected into Excel or other presentation tool without connection to the



source data, only KPI is present without data relation. This disconnection disables the possibility to have further insight into the information such as drill down to the line items to determine causes about the undesired performance.

As Boyer et al. (2010, 11) discusses, the performance management principles includes three different questions, which are: “How are we doing? Why? What should we be doing?” When the information is disconnected from the data, it can impede learning and ability to make better-informed decisions by finding answers to the why questions. Fragmented systems also increase the temptation to monitor the activities of readily available measuring instruments, whose connection with the implementation of strategy is weak.

In the optimal scenarios, business information flows from the business operations and processes to business analytics, analytics to the operations, and improvements to business operations derives from analysis, and thereby changes in the operations and strategic targets (Loshin 2013, 3). BI is a concept which collects information from different sources and connects and aligns performance information to the strategic objectives. Business Intelligence includes processes, technologies and tools, which can turn data into information, and information into actionable knowledge. Using BI concepts important data such as KPI's can be grouped to have a strategic meaning. In the BI, data can be turned into information and insights when data is linked to context or by classification, counting, correcting or capsulation using Business Intelligence concepts. Contemporary BI tools include alignment and integration of an organization's data, including data analysis, insights using KPI's, dashboards, Balanced Scorecards and other tools to offer information available at the right time and improve decisions making.

The central research and development area of this thesis is to study the development opportunities for improving the performance management process with the help of BI tools and processes in the case organization. Examination of the possibilities in the utilization of BI concepts aims at improving data use in a more versatile and real-time in decision-making. Furthermore, this research elaborates on the concept of knowledge-based management in order to validate the case organization's approach to create,

retrieve, disseminate and exploit the information as its key concept in the management culture.

## 1.2 Case organization

The case organization for this thesis research is Kela, The Social Insurance Institution of Finland. Kela is a non-profit national institute in Finland, the mission of which is to secure basic social security of all Finnish inhabitants in different life situations. Social security benefits of Kela include subsidies for families with children, health insurance, rehabilitation, unemployment security, financial aid for students and basic pensions. Kela also provides disability benefits, conscripts' allowances and assistance for immigrant aid. Kela is also responsible for offering information for the public about benefits and services, carrying out research programs contributing to the development of social security, issuing statistical service, projections and estimates, which are necessary for planning and continuous monitoring of benefit schemes and other operations and also participating in improvements to the legislation governing social security. In addition, Kela is a responsible party in Finland for providing the National Archive of Health Information (KanTa services). KanTa services include a range of national health care information systems, including ePrescription, eArchive, i.e. a national pharmaceutical database), and health information portal for citizens. The KanTa services are intended for health care providers, pharmacies and citizens throughout Finland. (Kansaneläkelaitos 2013a, 6.)

The costs of Kela's social benefits are about 22% of Finland's total expenditure in social and health (Kansaneläkelaitos 2013a, 3). Kela's total annual expenditure in 2013 was EUR 13.6 billion whereof the Finnish government funds almost 70% per cent. The remaining 30 per cent of the expenditures were financed by wage earners, companies and municipalities. In 2013, the expenditure on social benefits by Kela was EUR 13.1 billion, which is more than EUR 2 400 per capita representing 6.7% of the Gross Domestic Product. The operational costs of Kela vary between 3.2 - 3.5 per cent of total expenditure (Kansaneläkelaitos 2013c, 7; Kansaneläkelaitos 2013a, 1). Kela's services are available throughout the country in more than 300 service points. The number of

customer service events in Kela reaches 12 million annually. Kela has a substantial impact on society, and it serves each Finnish citizen.

The tasks which Kela is obligated to carry out are prescribed by the Finnish legislations. Kela is an autonomous social institution under the supervision of the Finnish Parliament, with its own administration and the economy. Finnish Parliament controls Kela by appointed delegates. Delegates choose ten members to the Board of Directors. The executive team is formed by Director General Liisa Hyssälä, Director Helena Pesola and Director Mikael Forss. (Kela 2013a.) Kela organization is illustrated in the organization chart to follow:



**Figure 1.** Kela organization chart (Kansaneläkelaitos 2014a).

Kela has a vision to provide the best service, social welfare, and life force to Finnish society. The Board of Directors has set a strategy for Kela for the years 2013-2016 with three major intentions, which are customer orientation, responsibility for the economic, ecological and social sustainability by effective processes, and creation of prosperous, modern working environment. (Kela 2013b.)

The performance management model at Kela is based at BSC, which is designed at the corporation level. The most important key performance indicators which guide the decision making are budget and personnel number. Corporation budget is disaggregated to the profit and loss responsibility units such as to the departments and insurance regions and districts. Each profit and loss responsibility unit creates their individual performance agreements with the central administration hierarchically top-down within the organization structure. Planning and implementation is monitored using Balanced Scorecards. Each unit has its individual BSC's where parts of the key performance indicators are a heritage from the corporation BSC and some of the KPI's are unit specific.

Kela is undergoing major upgrades. The changes occur both in management approach, organization of the work as well as changes in the information processing systems. Kela is turning its management approach into process-centric management and at the same time moving into the two-tier model of governance. Conducting the major change requires a greater capability from the performance management process. Therefore, also performance management process is currently under reform in order to have better responded to today's challenges.

Kela is an early adopter of Information technology starting its own data processing department in 1968. Due to tradition of own software development, Kela is today one of the largest IT companies in Finland. Kela has also a long tradition in using information and knowledge in the decision making. Today Kela has heterogeneous IT system landscape, which includes many different types of data systems, databases, and business warehousing tools. Processing data for decision making from heterogeneous information system architecture for the decision-making is a challenge for the case

organization. From the BI system perspective, the challenges are not only associated with the data complexity, but in addition to a large number of events, to more than a text-based source of data, large number of users if the information is indented to provide operational customer service, and also to the systems acquisition and development costs. In addition, information should be provided to the key stakeholders on a self-service basis in order to manage processes increasingly quickly and effectively.

At the same time, with the performance management process also the BI architecture is under change. Kela has started the Enterprise Data Warehouse (hereinafter EDW) project in October 2013. The renewal in the BI is related both to the administrative reform, as well as modernization of the service production. The EDW project includes and involves further Business Intelligence sub projects creating insights, dashboards and management cockpits for different stakeholders. The strategic objectives of the Business Warehouse project are to improve business planning and management at all organization levels, improve customer-orientation and service as well as finding completely new opportunities using the information. With comprehensive Enterprise Data Warehouse, Kela can also enable improved Business Intelligence methods such as data mining, business analytics, forecasting and predictive analytics. (Laukka 2013b, 2-6.)

Even though modern information technology offers many possibilities using different techniques, the main challenge of developing Business Intelligence and knowledge strategies are increased data, complex nature of knowledge and understanding of the data selection (Skyrme 2013). Therefore, the risk in BI projects is to focus on building data quality instead of strategic and operative objectives for decision making. This may end up to a weak connection between strategy and Business Intelligence practices. (Aho 2011, 195.)

### 1.3. Objectives of the research

According to Skyrme (2013, 1), organizations use knowledge to secure their strategic advantage by generating value in three focus areas, which are knowledge in products, people and processes. There are two major strategic perspectives why businesses are

investing in knowledge creation: The first is to make better use of the knowledge which exists within the firm. One example of the key knowledge assets is the best practices. The second perspective is learning and innovation. Innovation is a creation of new knowledge and turning ideas into products and services and to improve efficiency and profitability. (Skyrme 2013, 1.) Du Plessis (2007, 4) defines the role knowledge in innovation as creating, building and maintaining a competitive advantage through utilization of knowledge and collaborative practices. Van der Heijden, Bradfield, Burt, Cairns and Wright (2002, 173) emphasize that organizational learning occurs when learning is performed collectively in an organization.

Improved decision making by learning will result in improved organizational performance also in the non-profit organizations. While government is pushing public organizations to improve their performance, the execution of performance management can be mechanistic and number focused, which may prevent organizations to renew their processes and gain true improvements in performance (Marr 2008b, 2). When organizations are trying to improve their performance using data collecting and reporting the outcome may lead to new administrative processes without improved insight, learning or performance improvement (Marr 2008, 2). In the field of health and social research Kela has already acquired strong understanding of the fact that the management and decision-making must be derived from scientific data and analysis. From the management point of view, this research aims to examine whether the same principle of using data and analysis can improve the decision making in the case organization.

The first objective of this thesis research is to examine the present challenges of the information and BI processes in the case organization. This research aims at finding improvements of the present use of the BI in order to gain more from the business information as an integrated part of the performance management process. The goal of implementing corporate BI in wider scope assesses current practices of how performance information is currently processed in the case organization. By creating an organizational BI strategy, decision making can be improved when refined information, enriched presentation and faster availability are being used. The main challenge of developing Business Intelligence and knowledge strategies are increased data, complex

nature of knowledge and understanding of the data selection (Skyrme 2013, 1). At present, managers in public organizations have large amounts of data about their organization's performance, but the large data sets are useless in helping the organizations change and increase efficiency if the data is not turned at the knowledge and learning. Hence, BI as examined in this research is considered as a strategic management tool instead of the technical IT perspective. The aim of the BI strategy is to connect BI more effectively on case organizations performance management framework and key performance indicators.

The second objective of the study is to create a development plan using standard concepts in the performance management framework. The purpose of best practices solution is to develop an integration and alignment of BI concepts to support the new performance management framework in case organization.

This research is associated with performance management process renewal which Kela has initiated in 2014. The performance management project in the Kela includes IT system development to support the performance management process.

#### 1.4 Structure of the Thesis

Chapter two in this thesis discusses research questions, research methodology and techniques for the study. This chapter includes detailed description of how research data and information are collected, which research methods are used and how empirical data is processed and analyzed.

Chapter three builds with the overall theoretical framework of the performance management and Business Intelligence as a performance management tool. The relevant literature related to this study is reviewed and discussed from the non-profit organizations' perspective.

In chapter four, the empirical findings from the research are analyzed using performance management literature as a framework. Chapter five of the research deals with the current Business Intelligence practices within the case organization. The

empirical findings are analyzed using practical theories from the source literature. The chapters four and five aim at finding answers on how the Business Intelligence tools and processes are currently used in the performance management.

Chapter six discusses concrete development ideas of how Business Intelligence techniques can be used to enable more advanced information use in the decision making.

Chapter seven concludes the findings and discusses the recommended development findings of this research. The limitations of the study as well as suggestions for further research are discussed in this chapter.



## 2. RESEARCH DESIGN

The research questions are presented and discussed in this chapter. This chapter also discusses the research methodology which is selected in this thesis. At the end, the research methods of data collection and analysis are explained.

### 2.1 Research questions

This research aims at producing holistic view in the performance management in the case organization. A key challenge in the Kela is related to the changes in its management model. As a public organization Kela is adapting its management and administration approaches according to changes in the public service management concept where the information revolution has brought many new challenges and also new possibilities. The BI is selected to an essential concept to improve the use of the data in the performance management framework and enable the change in the organization culture according to the concept of the fact based decision making. Deriving from the general aim discussed the following research questions are defined:

Q1. What are the present challenges of the information and BI processes in the case organization?

This question aims to identify the main management requirements for the current performance management practices and BI use in it. Derived from empirical findings, the research aims to defining the main weaknesses in the current processes and pointing out where the problems arise. This analysis includes studying the current performance management framework and BI concepts are used in the performance management process.

Q2: How BI processes should be integrated and aligned to support the new performance management framework in Kela?

This research question examines the possibilities and benefits of more advanced exploitation of the BI in the case organization. The main focus is in the managerial

perspective of the BI. By studying existing BI practices, critical weaknesses in the current performance management and BI practices can be addressed using the combination of theoretical data from the literature analysis and practical data from the empirical findings. Derived from the finding's development plan is created by applying best practices from the literature analysis.

## 2.2 Research methodology

This thesis research is designed as a single case study. In business and management research case study is a commonly used method (Stokes 2011, 6; Yin 2009, 4; Gummerson 2000, 86-87). Case study research methodology creates a general frame of reference for the research, i.e. logic to study and understand the research and strategy for finding answers to the research questions. Case study methodology also guides this research both at the theoretical and practical levels (Stokes 2011, 40). In this empirical research methodology data and knowledge are built through the researcher's observations during the research process. Therefore, this empirical research does not include the presumption of hypothesis. Research method refers to the activities of how the research is designed to collect data from the research object.

As a typical structure of the case study research, this research includes introduction chapter which purpose is to motivate background and contemporary state of the research phenomena, analysis of the findings, and proposed solution (Stokes 2011, 16). As Ghauri (2004, 109) describes Case study research is "a choice of the object to be studied resulting in learning about the case as well as the outcome of the learning result" (Ghauri 2004, 109). Yin (2009, 2) describes the case study as an iterative process consisting of plan, design, prepare, collect, analyze and share phases. This research follows this pattern. In this thesis research questions are formed with "how" and "why" questions and thereby questions lead to explanatory answers. According to Gummerson (2000, 86-87) the case study research method is a good choice for creating a holistic understanding of the process or phenomena.

Yin (2009, 68) points out knowledge and experience of the researcher on the field of the substance since there might be a need to integrate theory into data collection events in parallel since the case study often focuses on real life and contemporary phenomena (Yin 2009, 1). Therefore, an experienced researcher might have opportunities to make valuable observations with the issues that were not even considered previously. Gummerson (2000, 83) emphasizes “pre-understanding and firsthand experience” as a prerequisite for a successful case study research. Ghauri (2004,109) also points out the flexibility as an advantage in the case study. In this study, the researcher has familiarized himself with the possibilities of the modern Business Intelligence tools and concepts in his work in his working career before the research. Previous experience of the substance had helped a researcher to understand the case organization more deep.

### 2.3 Methods of data collection and analysis

Yin (2009, 27) enumerates five important components in the case study research which are as follows: research questions, propositions (if any), analysis, the logic linking the data to the propositions and, the criteria for interpreting the findings. Yin (2009, 40-45) also points out four important principles that should be taken into account during the research. These principles are using multiple sources of evidence when collecting empirical data, ensuring internal validity in data analysis, ensuring external validity in the research design using single case study theories, and ensuring reliability of the conclusions and findings. In this thesis research, multiple sources of information were used to collect the empirical data. Sources of evidence of this research were interviews, email interviews and documentation analysis.

Contracting parties who participate in the performance planning were interviewed using semi-structured interview method. Interviewees in the research were general director and two directors of the Kela. At the other organizational levels interviewees were selected using sampling method. The interviewees were process owners representing the head of departments (6), directors of insurance districts and regions (7), and performance management team members (5). At each interview, two or three

interviewers were present. Each interviewer made their own independent notes from the interview. A holistic summary was made subsequently in a common meeting with the interviewers. Adding more interviewers and including the process of interpreting responses, the validity of the research was increased. Semi-structured email interview was made for main users of the current performance management IT system as a target group. The group consisted of eleven persons who were key users and department secretaries. Six persons responded to the email interviews. After the interviewing phase was finished, results were patterned according to the performance management process steps in a group meeting where all interviewers were present. Interviews were conducted in Finnish language, and the interview documentation is also made in Finnish. The interpretation in English is made in the basis of Finnish documentation. Documents that were used as empirical material in this study were administrative documents, project reports, literature and articles, system documentation, report templates and personal notes.

Hollensen (2011, 183) highlights the relevance of the correct perspective in the research. In business studies, the researcher might face challenging to translate the business problem into a research problem including researchable objectives with relevance. In order to secure coherent perspective in the data collection, the theoretical framework was studied from the relevant literature. The theoretical framework of this thesis research consists three main fields which were: Performance management, Management control systems and Business Intelligence. The interview questions were designed in conjunction with the interviewers. Interview questions relevance was first tested in the trial interview. Using the experiences from the first interview minor changes were made in the interview structure.

A case study database means practices of how evidence data is organized and documented. The case study database helps in investigating the reliability of the report. (Yin 2009, 121) Since this research includes different types of data sources, database in this research is implemented using the researcher's diary where the list of the research material is maintained with editing dates and notes. All materials were archived in one data folder in an electronic form as well as in the physical folder for printed materials.

A chain of evidence increases the reliability of the information in a case study. The chain of evidence proves that an external observer can track the steps from the research questions to the conclusions or visa versa. (Yin 2009, 122-123.) In this research, the chain of evidence is relying on the notes from the interviews. Furthermore, in the Case study database the source of evidence is documented more specifically including notes of collection events, datum and time as well as other important meta-information.

The most preferred strategy in the case study method is relying on theoretical propositions. (Yin 2009, 130.) Analyzing the case study observations consist of two major elements which are breaking the findings into components, and studying the relationships of the components in one logical and holistic picture (Ellet 2007, 19). In this research, the theory-based analysis method is used in the analysis of the data. The logical grouping of the findings is made using the performance management process as a framework. The results of the analysis encompass logical answers to “how” research questions of the study.

Yin (2009, 136-160) suggests the following five different specific analytical techniques for empirical evidence: Pattern matching, Explanation building, Time series analysis, Logic models, and Cross case synthesis. In this research, the analytical technique is pattern-matching. According to Hak and Dul (2010) in the pattern matching two patterns are compared to determine to find if they are the same or if they differ. Pattern matching can be used as a core procedure of theory-testing at the case studies. It is important in the pattern matching to use precisely specified pattern before the matching takes place. Thus, in this technique empirically based pattern is compared with a theoretical framework from the case relevant literature. Using pattern comparison, the internal validity of the case study is obtained (Yin 2009, 136). Using a theoretical framework as criteria and comparing pattern findings to the theoretical framework of the research the objectives were achieved and are discussed in the conclusions chapter. In the empirical analysis chapters four, five and six, generic references to the interviewees, i.e. Interviewee1, Interviewee2, etc. are used. Anonymization of data is rendering research participants anonymous by publication and secondary use. (Thomson & Bzdel & Golden-Biddle & Reay & Estabrooks 2005, 3).

### 3 CONCEPT OF PERFORMANCE MANAGEMENT IN THE PUBLIC SERVICES

The evolution of how different management concepts have been developed over the years in the Finnish public services is discussed here. This chapter also discusses how the case organization is applying the management models and how the changes have impacted in its managerial objectives. In addition, the strategy-based performance management framework is discussed as a theoretical framework for this research. The main concepts related to the performance management are also defined.

#### 3.1 Knowledge-based management in the public services

Public administration has faced four major development cycles since the 1980's when the concept of New Public Management has changed management thinking in governance (Salminen 2004, 22). According to Virtanen and Wennberg (2005, 28-29), governance in the early 1980's was based on inputs where outputs, such as results were left in a minor role. In Kela, the bureau management model was based on decisions. As a bureau, the management decisions created the guidelines, and these guidelines were followed in actions. Performance management in the bureau model was based on historical information, such as financial budget. Results had a minor effect on the operations, and the information use in the decision making was in a minor role.

##### 3.1.1 Performance-based governance in Kela

The next evolution in public management was performance-based governance in the 1990's, where the performance was emphasized. When performance was monitored in the 1990's service quality primary was a common key performance indicator which measured the success of the operations. In Kela, service quality related performance indicators still play an important role. The public administration in the 2000's emphasizes process-centric management using economy, efficiency, and effectiveness as the main KPI's. (Virtanen & Wennberg 2005, 28-29; Salminen 2004, 113-114) In the management of the public services' concepts of economy, efficiency, and effectiveness are often linked into achievement of the objectives, performance improvements, improvements in the quality, accountability and economic responsibility (Salminen

2004, 114). As it was discussed previously, Kela is currently moving from performance-based management towards process-centric management. In the process-centric management, work and management practices and management control systems are developed paying attention to the existing needs. The process-centric management aim at creating sustainable public services and new service culture. (Virtanen & Wennberg 2005, 14; 42.) Managing processes also presupposes measuring of the results in order to control and manage the processes.

### 3.1.2 The concept of the New Public Management

The concept of the New Public Management contains key features such as additionally effective performance management, increased control of the performance, effective allocation of resources, outsourcing and co-operation with the private sector with the aim of improved performance and using management practices from the private enterprises. (Salminen 2004, 78-79.) The New Public Management can be concluded out as “more results with fewer resources” which involves management principles from the private companies, decentralized decision-making and progressive management role. Finnish municipalities have traditionally been monitoring implementation of financial planning, human capital management, and case management as their primary performance indicators. These KPI’s are in the main role also in the performance management in Kela.

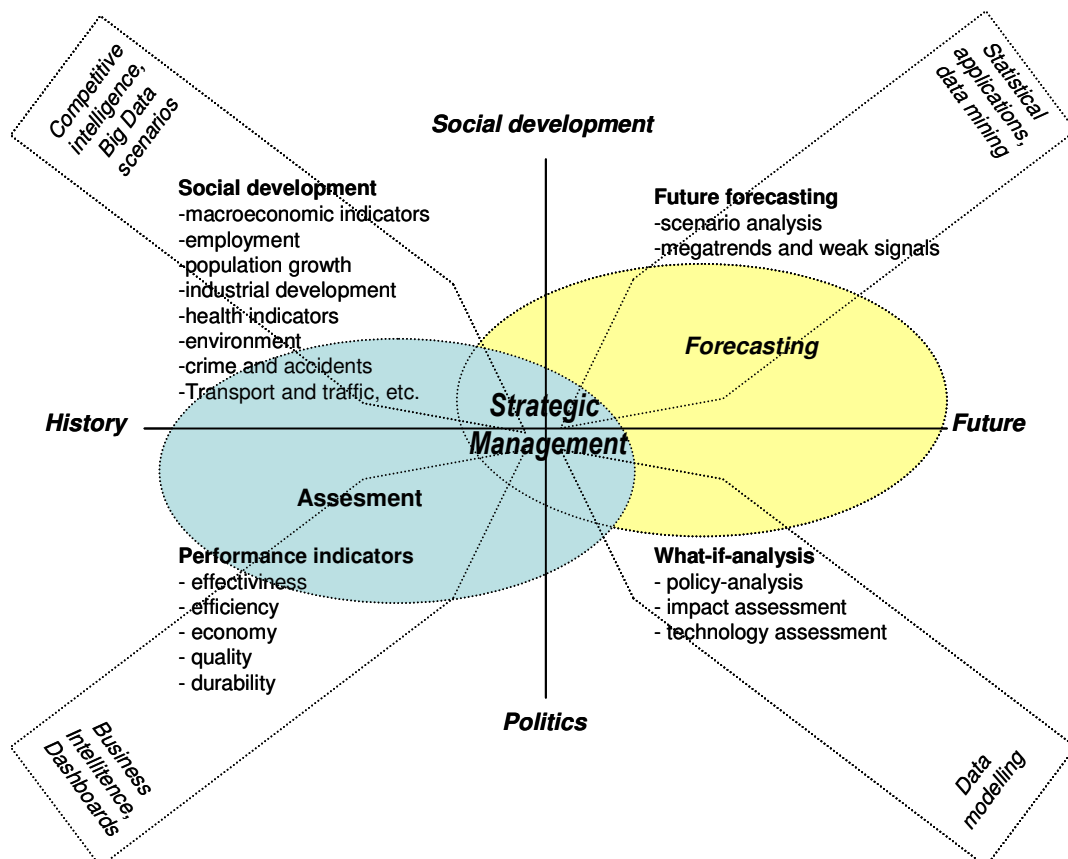
### 3.1.3 Concept of knowledge based management

Concerning the public service organizations, the importance of taking advantage of the data and information in the decision making has been emphasized in the past few years. Knowledge-based management (hereinafter KbM) is the Finnish concept of the public management which the governmental organizations in the 2010’s should relocate. The KbM emphasizes more effective use of data and information and emerging need to use BI tools and processes.

National Audit Office of Finland has defined concept of Knowledge based management for the Finnish public services as follows: “Knowledge based management concept

(hereinafter KbM) refers to the principles and techniques, processes, and practices of how information and knowledge creation, retrieval, dissemination and exploitation in the organization and its networks are organized” (Pöysti 2009, 7). KbM emphasizes holistic view which shall include (technical) information systems, knowledge management, learning, strategic and performance management, as well as administrative and law perspectives.

Figure 2 illustrates the concept of KbM which includes a broad concept of information and data exploiting approaches including Business Intelligence, knowledge management, information management, organizational learning and intangible assets. Furthermore, KbM refers to holistic utilization of the information in governance as well as sharing the publicly owned information further to the society.



**Figure 2.** Main dimensions which create the concept of Knowledge based management in the framework of the Finnish public management. (Pöysti 2009, 11).



In the KbM framework, data and information are addressed as a key raw material as well as commodity and advocacy tool in the public services to use in a greater extent. Managing information flows from the past present and future are conditions for the successful realization of the strategic decision making and creation of evidence based policies where different processes use assessment and forecasting information. Furthermore, information is also considered as a service where public organizations shall create and share information to the publicity. BI techniques and tools offer more wide and effective possibilities for manage and structure information.

### 3.2 Strategy-based performance measurement

Performance management is a process to integrate the strategy to the actions. In the performance management data is raw material in the knowledge creation. In turn, knowledge creation requires communication in order to gain learning. As a result of the performance management process organization shall have a positive culture of learning and improved decisions. As Aho (2011, 55) concludes out, performance management can be described as a holistic entity that which consists of different control systems.

Performance of the organization, therefore, is often complicated and relative question which occurs differently in different organizations (Neely 1999, 222). Performance management can be simplified as management based results monitoring which is based on the collected performance data. Neely, Franco-Santos, Kennerley, Michelli, Martinez, Mason, Marr and Gray (2007, 288) concluded out the term “performance management” has many interpretations, and there is no consensus of how it shall be described exactly. Neely (1998, 5-6) though, has described performance management as “the process of quantifying the efficiency and effectiveness of past actions through acquisition, collation, sorting, analysis, interpretation and dissemination of appropriate data”. Also, Hannula and Pirttimäki (2002, 46) define performance management concept as “systematic, analytical, and active management of the business activities for developing the organization performance”. Busi and Bititci (2006, 14) suggest that there has been revolution in the performance monitoring phenomena where the concept has transformed from performance measurement to performance management, from

individual to collaborative performance measurement, from lagging to leading performance management.

### 3.2.1 Management control systems in the knowledge creation and learning

Performance measurement refers to those indicators that the performance is measured. Management control uses performance measurement targets to ensure that the strategic objectives of the organization are achieved. Management control systems are information-based concepts of how the management influences in the organization's practices. According to Merchant and Van der Stede (2007, 76) management control can include result controls, action controls, as well as personnel and cultural controls. Regardless of selected performance measurement indicators there are always three conditions that shall be ensured in the implementation. Firstly, employees must have information what are the expected results in the areas that shall be controlled. Secondly, employees who are responsible for acting according to the desired goals must have significant influence in the desired performance dimensions. Thirdly, managers must be enabled to measure these results effectively. (Merchant & Van der Stede 2007, 75-78.) As Otley (2003, 249-260) discusses, management control systems can include planning, performance measurement, performance assessment, incentives, organization structure, rules, regulations and culture. Performance measurement, therefore, is a part of performance management where planning, execution, and analysis follow each other (Otley 2003, 249).

The performance management process involves knowledge socialization using effective communication both top down and bottom up. Knowledge socialization process ends to learning that enables justified decisions. According to Hintsa (2011, 54) strategic management includes uncertainty and ambiguity, where uncertainty refers to the lack of knowledge and information and ambiguity refers to the complexity. Organizations are seeking to order by processing the information. Hintsa (2011, 54) describes strategic decision making “as a complex decision-making process resulting of the learning process, where learning is a result of information synthesis” In the strategic management objective of knowledge based management, therefore, is to reduce ambiguity and uncertainty and enable learning.

### 3.2.2 Business alignment and collaboration

Boyer et al. (2010, 8) emphasize the business alignment as a major issue to focus in the performance measurement process: "Organizations shall measure only what matters by defining the metrics that need to be measured, align them to corporate priorities, and understand who the users of this information are and how they intend to use it". According to Boyer et al. (2010, 13) alignment to the strategic objectives is too often avoided in the BI projects. Turkulainen and Ketokivi (2012, 451) also concluded out findings of weak linking between organizational activities and performance measurement.

Busi et al. (2006, 9-10) suggest that the performance management includes enterprise collaboration, operations and business process management/re-engineering, performance measurement, information and communication management as well as organizational behaviour and knowledge management. The authors argue that the performance management shall manage extended process approach beyond internal boundaries, managing the collaborative performance, deploying integrated ICT across organizations and creating and sharing knowledge (Busi et al. 2006, 11). Traditional strategic approach includes four phases starting from current situation analysis, strategy formulation, and tactical objectives setting. The last phase of the cycle is implementation and performance measurement. Today, this strategic cycle becomes shorter since environment changes fast.

Kaplan and Norton (2006, 13) discusses the alignment process as a step of sequences where the business units create their own long-term planning and key performance indicators to be consistent with the headquarters strategy and KPI's. This process helps business units to create synergy and balance towards organization objectives as a whole. At the last phase, supporting units such as human resources and finance, make their planning with the target to create maximal value and synergy to the business units and organization. (Kaplan & Norton 2006, 13.) By this order of implementation, it is ensured that the support units create value for the core business units and not the other way around.

### 3.2.3 Performance management in the value creation

According to Kaplan and Norton (2003, 27) strategy describes how an organization intends to deliver value to its stakeholders. Hollensen (2007, 166) discusses a value as “perceived stream of benefits that accrue from obtaining the product or service”. In the value chain, each activity shall increase the value to the output. Value creation involves three major elements, which are people, physical aspects such as location, and processes (Hollensen 2007, 116-117). Performance management, therefore, is a subject to the value stream and also to the related dimensions in it.

Traditional strategic tool is budgeting. Kaplan and Norton (2008, 186-187) points out several fatal weaknesses which are caused by traditional budget based planning and management. According to Kaplan and Norton (2008, 186-187) budget based planning and management often stifles innovation and motivates underachievement. Budgets also often become obsolete because of dynamic business environment. (Kaplan & Norton 2008, 186-187) Emphasizing financial result controls can cause managers to focus on short-term orientation or myopia in their decision making (Merchant & Van der Stede 2007, 470; Otley 2003, 253-254).

Puolamäki (2007, 35) also points out that the factual information, such as financial information is often emphasized in the decision making. Focusing on objective factual information may over-emphasize the past. Organization culture may also resist non-factual information, such as tacit knowledge and subjective judgments such as experience based thumb rules. According to (Hintsala 2011, 54) strategic information can be explicit and implicit, formal and non-formal, factual and intuition based, qualitative and quantitative as well as financial and non-financial. Management needs to handle this multi-dimensional information to do the right conclusions and decisions. A good strategy has focused logical structure that consists of three core elements. The core strategic elements are analysis, guiding policy, and coherent actions. These elements form a coherent set of activities that respond to a certain challenge of an organization. (Rumelt 2012, 7.) The core of strategic management is to move towards a certain direction. In the strategic management Nonaka and Takeuchi’s SECI model means that

the strategic process requires socialization and communication to create a common understanding of past, present and future. (Puolamäki 2007, 36-37)

#### 3.2.4 Cause-relation effect and hierarchical performance management logic

When the strategy can be transformed to performance indicators objectives and responsibilities, and different dimensions can be described in hierarchies the conditions to create performance management system can be created (Aho 2011, 54). Hierarchies in performance management include a strategic approach: If the performance indicators are strategically chosen there is a cause-and-effect relationship between actions and results. In cause-and-effect relationship organization's features and functions are connected to each other. Due to the causality improving one area or weakening in one aspect will affect elsewhere. When performance is not in the desired result, managers should clearly know where the errors are so they can address the factors affecting it. (Quinn & Faerman & Thompson & McGrath & St.Clair 2011, 149-150.) The cause-effect idea has been adapted in advanced performance management systems such as Performance pyramid, Performance prism, Total quality management and BSC.

As was discussed, performance measures are intended to provide the information if planning and operations are equivalent. At the beginning of 1990's the BSC introduced by Kaplan and Norton in 1992 became widely used at Scandinavian countries (Hannula & Lönnqvist 2002, 22). Also, public sector in Finland has adopted BSC (Virtanen et al. 2004, 48). Performance indicators in the BSC are used for management by objectives, and they have ability to describe company objectives, as well as measures characteristics in one. BSC is directing the company's profit-making in the long term safeguarding the most relevant success factors. At the Balanced Scorecard system performance management covers financial and internal processes, as well as external dimensions which are customer satisfaction, organizational learning, and innovation. (Kaplan & Norton 1996, 9). In the non-profit organizations, it is recommended using the fiduciary perspective instead of the financial perspective in the strategic hierarchy. Fiduciary perspective, which follows the internal processes perspectives, describes the objectives of the stakeholders who fund the organization (Kaplan & Norton 2006, 7-8.)

Strategy map is a visual presentation to extract more value from the BSC. Strategy map describes how intangible assets are generating improvements in the internal processes to ensure organization's value proposition to its stakeholders (Kaplan & Norton 2003, 25-36.) Kaplan and Norton (2004, 7) states that, the strategy map is very beneficial framework also for the public sector organizations. As the BSC includes both the results to achieve and the means by which they will be reached. When this resulting target hierarchy is interpreted in the other direction, there will be a causal map, also called a strategy map. Strategy map creates a cluster describing both strategy and vision in the company. In the strategy map, cause and effect logic is shown in the bottom-up. Lower the level of success is the reason and the higher-level success is the result. Objective-means hierarchy creates instrumentation that naturally contains outcome measures (lag indicators) and forward-looking indicators (lead indicators), since the implementation of the decision effects occurs with a delay. (Kaplan & Norton 1998, 145-149.)

BSC emphasizes the balance of the company indicators. Balance of which must be considered in terms of the following pairs of gauge are monetary versus non-monetary indicators, proactive versus consequential metrics, short- versus long-term goals, external indicators (owners and customers) versus internal metrics, and context versus change. However, indicators shall be chosen in basics of coherent and commitment to each other, so that they can mutually support each other. (Kaplan & Norton 1998, 21-30.) According to Kaplan and Norton (1996, 165-166) the scorecard should describe organization strategy by linking outcome and performance drivers together using cause-and effect relationships. This means that the objectives and indicators used are clearly and unambiguously describing where the organization's direction. Kaplan and Norton (1996, 165) emphasize that the collection of outcome measures does not constitute a strategy.

### 3.3 Business Intelligence as a performance management tool

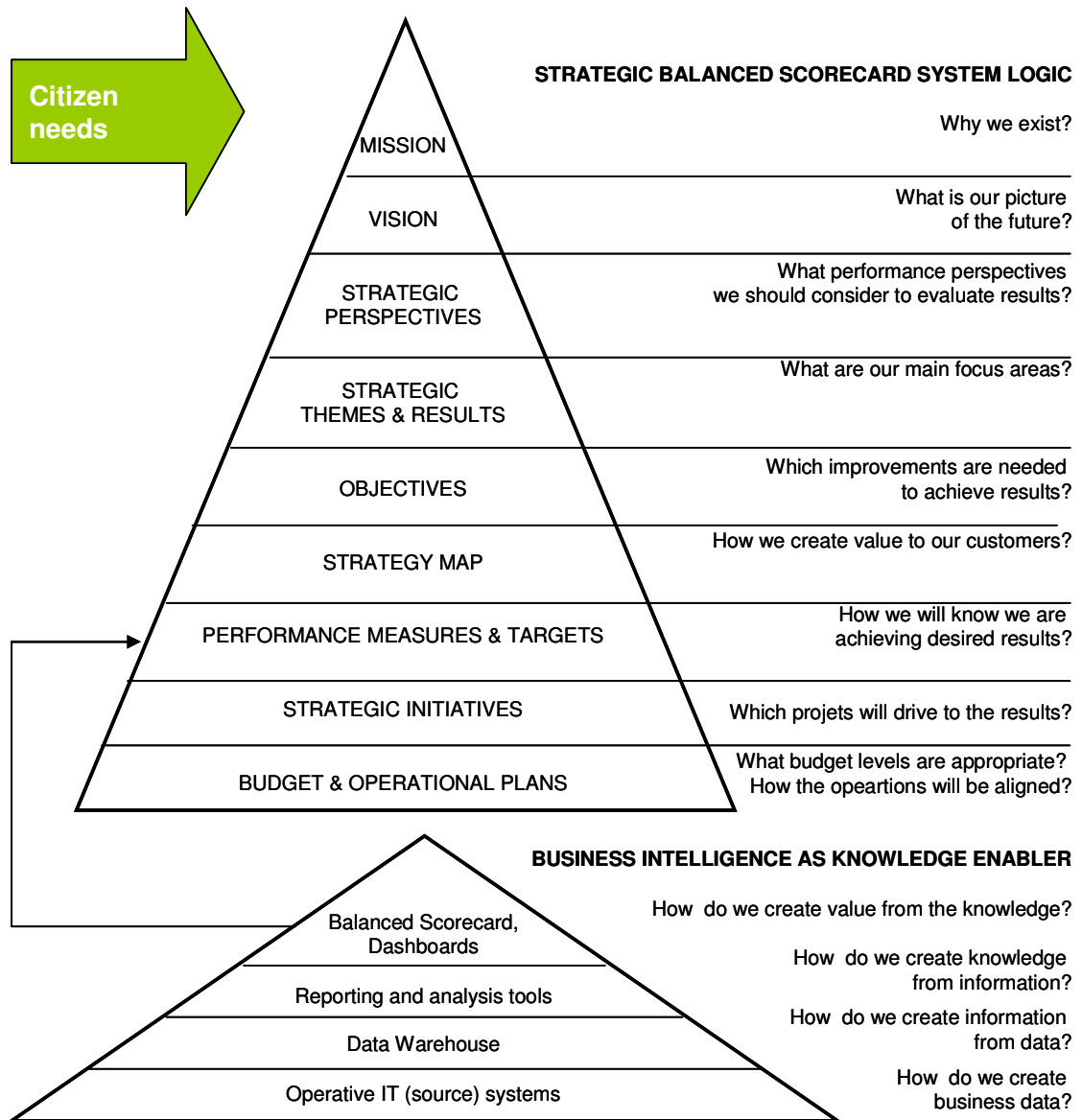
According to Vuori and Hannula (2009, 14), the aim of Business Intelligence should be holistic perspective, which is based on the decision-maker, or user and his information needs to create a fact based information from different information sources such as events, silent signals, insights and knowledge. The resulting knowledge from the BI can

further use in decision making to improve competitive advantage. The objectives of the BI increase understanding of the business and competitive environment, enable proactive actions, and create understanding making the right conclusions. In addition to preconfigured questions, Business Intelligence tool should enable helping to find answers to new relevant questions in intuitive basis. Therefore, Business Intelligence process includes preconfigured need-based information flow design which shall satisfy as well as context-sensitive and also ad-hoc information needs. (Vuori & Hannula 2009, 24-26.)

Sabherwal et al. (2011, 6) define Business Intelligence as a tool to provide information and knowledge for decision making from different sources that include structured and unstructured information. Structured data is explicit data from databases, such as Enterprise Resource Planning (ERP) systems. Structured data is stored in the certain format to enable automatically processing by computer. Typically structured data is stored in relational databases. Unstructured information can be text based data such as knowledge from text documents and the Internet sources as well as from digital content management systems. (Sabherwal et al. (2011, 33.) Business Intelligence can combine both information from the data sources as well as knowledge such as meta information from the unstructured sources.

Sabherwal and Becerra-Fernandez (2011, 26-43) also describe BI as a process which includes steps to identify the information needs, defining information (data) sources, data processing, analyzing, and information distribution. The output from the BI process is knowledge. Therefore, Business Intelligence is not only about collecting meaningful information from different sources and processing it with the computer, but also providing the enriched knowledge in the right time, with advanced distribution and communication for different information users.

Figure 3 to follow illustrates the Balanced Scorecard System logic included with Business Intelligence as a tool in strategic decision making.



**Figure 3.** BI is a knowledge enabler in the strategic Balanced Scorecard system logic. Public organization’s perspective. Modified from Rohm (2014, 2) and Aho (2013, 66).

### 3.3.1 Business intelligence demand drivers

There are four major factors which drive demand for improving Business Intelligence processes. First important factor is the increasing number of data. Information revolution has remarkably increased data creation, delivery and usage of the data in the



organizations. Due to computer-based business information systems organizations are more data driven than ever before. At the same time with increasing data volumes in the internal data systems the availability of organization's external data has burst out since the outside world of the organization is sharing ever-increasing amount of information online. A wide and varied extent of information accessible can improve the decision-making, but this is possible only when managers are able to make use of it (Sabherwal & Becerra-Fernandez 2011, 9).

Secondly, globalization of the businesses has created the need to identify the market changes in very short time basis and turn the understanding of both internal and external facts of the company for the right business decisions in a managerial context (Sabherwal & Becerra-Fernandez 2011, 9). At the age of global competition changes takes place considerably faster than before. Globalization reflects attempt to expand the business into foreign markets in a broad sense over the value chain including research and development, procurement, manufacturing, sales and distribution (Magal & Word 2009, 2). Globalization also applies to Finnish public sector organizations. Due to the integration in the European Union, Finnish legislation has had to adjust to common European rules. Also, migration has changed the Finnish society by bringing new minorities with different values, norms and attitudes which services need to pay attention.

Third factor is resulting from the complexity. Since the competitive environment is changing continuously organizations scope on knowledge creation is not limited only on the internal sources, but to process the data at much larger scale, e.g. customer behaviour, market trends, economic changes and so on to support management decisions. Increasing dimensions of information needs creates more complexity as well as data volumes that will continue to grow in the future. Many important information sources are available in reports, e-mails, multimedia and web sites and other unstructured documents. (Sabherwal & Becerra-Fernandez 2011, 9.)

The fourth important aspect is the development of technology. As the three previously discussed perspectives indicates, contemporary organizations are increasingly depend on the effective use of the information in their decision making. (Sabherwal & Becerra-

Fernandez 2011, 10.) People in modern organizations are not only depending to the information to do their work, but they are also accustomed to the information users and consumers due to trivialized use of information technology such as mobile devices, self-service systems on the Internet and Google. As a result of technological development BI software vendors create more effective BI tools to offer faster and more versatile solutions on the market to enable knowledge creation from both structured and unstructured sources (Sabherwal & Becerra-Fernandez 2011, 10).

### 3.3.2 Competitive Intelligence in external environment monitoring

Part of Business Intelligence is Competitive Intelligence (hereinafter CI). Competitive Intelligence considers of gathering actionable information about organization's external stakeholders, competitors and environment and applying the information to short and long-term strategic planning. (Peltoniemi & Vuori 2005, 2.) Albright (2004) discusses six major environmental uncertainties which companies shall monitor which are changes in the industry or market, technology, regulation, economic as well as social and political (Albright 2004, 41-42; Sabherwal & Becerra-Fernandez 2011, 86-87). In the case organization social and political environment have impacts on strategic decision making. Political environment at the same time emphasizes the cost-effectiveness and public sector downsizing, and, on the other hand, demands high service level at the same time. The changes occur in a social environment today faster than one year planning period. The closure of a major industrial company in a particular location may have immediate and significant impact on the service demand as well as social compensations.

### 3.4 Management control using key performance indicators

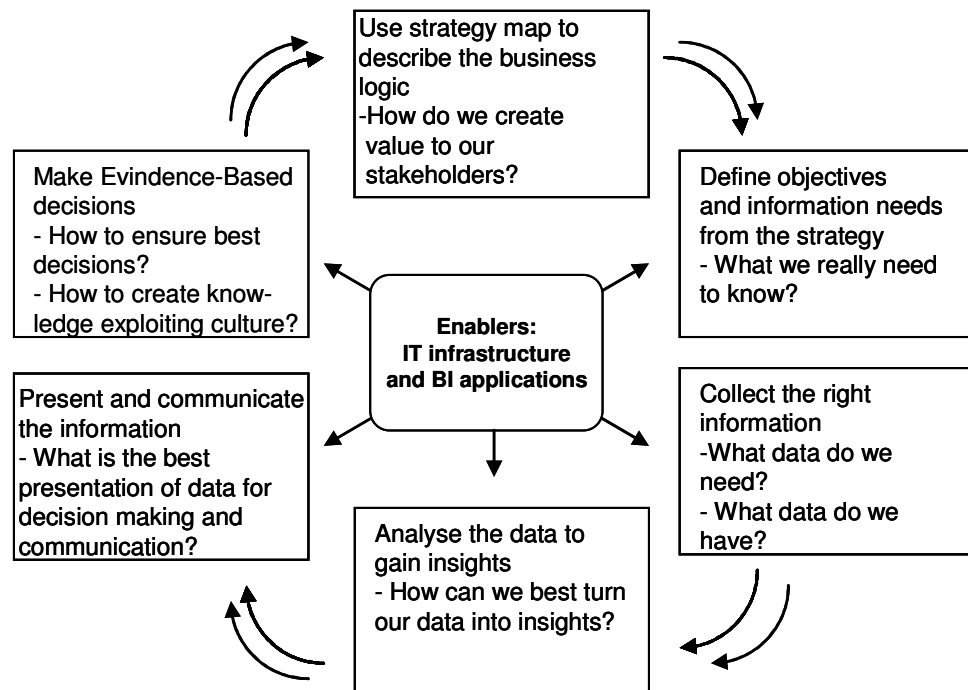
Key performance indicators provide objective information if the organization is performing according to its strategic objectives. The purpose of the KPI's is to decrease the complexity and gain relevant insights to help managing the organization and improving the performance. Therefore, organizations should pay attention for selecting the KPI's which matter the most. The quality should be carried out for keeping the number of the KPI's low and focusing on the quality on them. (Marr 2010b, 3.)

Selection can be implemented by raising the questions that expose the most essential on the performance monitoring. Marr (2010c, 4) emphasizes formulating right questions as an important part in the KPI design. The information can be turned into knowledge when it answers in to a certain question. Therefore, good design may allow for more efficient learning. (Marr 2010c, 4.) The KPI's which measure different objectives shall be both leading and lagging. Lagging indicators provide view to what has happened, and leading indicators measure performance drivers.

Marr's (2010a, 17-20) suggests considering five steps in the KPI planning. First step is the definition of correct questions that relate to the vision and strategy. Correct questions are such as: What we need to know? In which questions we need to find the answer to improving our performance and strategic alignment? Second step is to find the evidence from the best possible data which is available. Thirdly, data shall be combined with the context, use the data for the analysis, and turn the knowledge to insight. Next step is communicating the results to the management to enable evidence based decision making. (Marr 2010a, 17-20). Marr's focus is on evidence which is derived from the "best available data", such as KPI's which are factual information. The Marr's five steps to more intelligent decision making include: more intelligent strategies (by strategic priorities and trough argued information needs), more intelligent data (by qualitative information such as KPI's), more intelligent insights (by analyzed, robust and reliable data), more intelligent communication (by using well designed presentation such as dashboards), and more intelligent decision making (by establishing an evidence-based culture of turning information into "actionable knowledge and decisions"). (Marr 2010a, 17-20.)

Farris, van Aken, Letens, Chearksul, Pimsinee and Coleman (2011, 381) suggests that the performance indicators shall be reviewed in regular basis until the information users are satisfied with the indicator and information presentation such as in the dashboard. The benefit is not only improved information presentation, but also the actions that managers take to make decisions to improve the performance related to the particular key performance indicators. The consequence of the coordination can also lead to overall improvements in the business processes, such as in the customer service process.

Figure 4 illustrates the Marr's (2010a) Evidence based management model. In the Evidence based management model, strategy map describes the value creation logic as well as the causal effects between main perspectives. Using the logic from the strategy map Key performance questions help to define the best data and management information in the Balanced Scorecard creation. Key performance questions define objectives and information needs from the strategy and help creating meaningful and relevant key performance indicators. Insight creation can be enabled using Business Intelligence technologies to improve reporting, learning and communication.



**Figure 4.** The Intelligent company model (EbM model) modified from Marr (2010a, 14).

As the evidence based management model suggests, performance management is a closed loop which starts from the value creation modelling using strategy maps. Key performance indicators measure organization's actions towards its goals. The key performance indicators are presented in the Balanced Scorecard to create cause-effect logic for the decision makers. The BI is the enabler for collect, analyze, and present and communicate the information. In the contemporary organizations IT applications and tools are in central role to enable service to both customers and in the internal needs.

The challenge is to turn the data into information and knowledge in order to make best possible business decisions. The BI is a concept to create information and knowledge from the data.

In the chapter to follow the performance management framework implementation practises in the case organization are analyzed.

#### 4 PERFORMANCE MANAGEMENT FRAMEWORK IMPLEMENTATION IN THE CASE ORGANIZATION

The empirical findings from the case organization are discussed and analyzed using the theoretical framework which was discussed in the previous chapter as an analysis tool.

In compliance with the case company's instructions, performance management framework implementation in the case organization BI strategy is regarded as confidential information. Deriving from this requirement, the chapter four is written in Appendix 1 and it is not published through the Library databases of Lapland University of Applied Sciences.

## 5 BUSINESS INTELLIGENCE PRACTICES AND MANAGEMENT IN THE CASE ORGANIZATION

The current practices of the performance reporting in the case organization are analyzed in this chapter. Theoretical framework concerning Business Intelligence techniques is presented at the beginning of this chapter. After theoretical part, empirical findings from the case company are analyzed.

In compliance with the case company's instructions, Business Intelligence practices and management in the case organization is regarded as confidential information. Deriving from this requirement, the chapter five is written in Appendix 2 and it is not published through the Library databases of Lapland University of Applied Sciences.

## 6 DEVELOPING BI AS A STRATEGIC TOOL IN THE CASE ORGANIZATION

Concept of organizing BI as an effective enterprise asset is analyzed in this chapter. Recommendations how BI tools and processes should be integrated and aligned to support the new performance management framework in the case organization are also discussed.

In compliance with the case company's instructions, developing BI as a strategic tool in the case organization is regarded as confidential information. Deriving from this requirement, the chapter six is written in Appendix 3 and it is not published through the Library databases of Lapland University of Applied Sciences.



## 7 DISCUSSION AND CONCLUSIONS

The conclusions on the development opportunities for performance management process development opportunities in the case organization are discussed in this chapter. Furthermore, the limitations of the study are discussed. In this chapter also, suggestions for further research are proposed.

### 7.1 Discussion and conclusions from the empirical findings

This research was conducted as a single case study to examine real-life phenomena in the case organization. The first objective of this thesis research was to study development opportunities for improving the performance management process in the case organization with the help of Business Intelligence tools and processes. The research objective itself was a statement that contained the value proposition that BI can bring about more possibilities for the management concepts. Hence, the second objective of this study was to create a development plan using standard BI concepts of concepts to support the new performance management framework in case organization. This research was derived from a theoretical analysis of the performance management framework which consists of different concepts such as strategy maps, Balanced Scorecards, key performance indicators and Business Intelligence techniques.

The first research question is answered comprehensively in the chapters four and five. The analysis is based on pattern matching technique where theories from chapters three and five are used to analyze the theories and current practices in the case organization. The present modes of operations were researched using empirical evidence from interviews, email interviews and documentation.

The research results indicate that the present challenges in the case organization are related to functional silos, which are supported by silo-dependent data systems and reporting applications. The current performance management process is diversified in departments and insurance districts, which individually are working towards a common goal using different methods and ways of measuring the performance and strategic alignment. In the efforts towards process-based management, the alignment between the

business units and business processes are recommended to emphasize significantly compared to current practices. The performance management process in Kela can be improved by incremental changes. The main goal should be the overall process development, employee engagement and alignment. The change can be achieved by involving the department managers and insurance districts in the strategic planning. The strategic planning includes also consensus for the key performance indicators. Currently, there is a temptation in the partial optimization because the alignment between the organizational parts is not most effective due to differences of opinions and the degree of freedom in the planning. Furthermore, the standalone analysis and reporting practises may hinder organizational learning.

The rapid change of the world has led to the fact that the work in many cases has become continuous learning. Therefore, the management of Kela shall do its best to create a sustainable environment for the learning to be able to reach its vision to be a top place to work. In a positive learning culture, collaborative learning and actions based on the learning are in the main role. For this reason, a collective performance management IT platform can create more value from information than local Excel sheet based reporting. Despite the fact that the new IT platform is under development, the technical solution can only offer a partial solution to improving the performance management process in Kela. Collecting all performance managements related information in one location can improve the operational part, but it can be called into question whether this will change the decision making culture.

In the performance management creating culture, the main focus shall be in the organizational learning. There is a major difference in the mirror looking decision making culture and the positive learning culture. In a positive learning culture, the focus is not on the past, but in the future and where the bad performance is not used as a tool for judgement. The positive learning culture emphasizes the future orientation and decisions which enable the organization to be successful down the line (Marr 2014, 56).

In contemporary organizations, it demands a sustained effort to focus on the strategic development in order to improve and achieve a competitive advantage. Due to rapid changes in the operating environment, performance management process has changed

from a series of planning, monitoring and analyzing stages to the simultaneous activities. The new management concepts such as BI have introduced new possibilities to change thinking and create value, but these new concepts often conflict with the old management practices. In addition to the technical tools there have to be the necessary skills and knowledge to make knowledge actionable.

The core value promise of the BI is knowledge. Using the knowledge, a person can take up activities, which create organization performance. The process centric organization is occupied with intelligent people, and goal-oriented operations. The process centric organization controls and uses knowledge. Knowledge-based management approach outlines this point of view as a catalyst for change.

Answer to the second research question is answered in chapter six. The possibilities to exploit BI concepts in the case organization were studied by extensive literature review in this chapter. The main focus in this research was the managerial perspective of the BI. The development suggestions were addressed using the combination of theoretical data from the literature analysis and practical data from the empirical findings.

## 7.2 Summary

By analyzing the empirical findings from this case study using case relevant literature, it can be concluded that there is strong evidence that creating a goal-oriented BI program will benefit Kela to improve its performance management framework and decision making culture. Furthermore, the BI program will help to get the best out of the investments. The core concepts of the BI development program in Kela were found from the concepts of the BI strategy and Business Intelligence Competency Centre.

The BI strategy is a goal-oriented approach which translates the set of BI activities into an organized execution plan. The BI strategy will guide the organization to implement multiple activities to the successful outcomes using goal setting, maturity assessment and centralized resource as main concepts. Using the BI strategy framework, the BI project team can adopt different concepts into a detailed program plan. However, as was discussed the senior management has a key role in the success. As the concept of the

knowledge-based management points out, there is a strong direction from the state that the use of data shall be improved. The improved use of the data shall also concern the decision making. Concept of the KbM emphasizes the change in the management culture. According to this intention, BI is a central tool for the management of Kela. However, the benefits from the BI do not come automatically with the technical BI solutions.

The Business Intelligence Competency Centre is an organizational unit which has a critical mass to act as a core development unit to exploit BI throughout organization. Business Intelligence Competency Centre helps to reduce the total cost of ownership by reducing duplication of efforts and utilizing the best practises rollout.

To conclude out, it is suggested that Kela aim at establishing knowledge-based management culture by validating BI as a main concept in the knowledge creation. This endeavour includes strong senior management support for implementing the corporate BI strategy and by concentrating the resources which are needed to create a central unit of BI know-how, the BI Competence Centre. The aim of the BICC is to help creating a BI platform and processes which will meet the challenges of the future information needs throughout the organization. Thereby, BICC creates a collaborative business unit whose task is to ensure alignment with strategic objectives by creating a bridge between an IT and business and driving the change towards performance-based management.

The BI impact on the decision making culture can make a difference. The improved organizational performance is a result of a coherent performance management process which applies the most effective way by using the best practices. The best-practice performance loop starts from a clearly described and articulated goal setting, which involves the business knowledge from the operational level. As the literature reviewed shows, creating a strategy map summarising the value creation will enable the organization to communicate its strategic objectives in one page at any organization. The key performance indicators which measure the strategic objectives help management to find cause-relation effects on the performance. However, in the Balanced Scorecard, value creation logic emphasizes the relevance of indicators. This process of creating strategic goals can be revised in the Kela for committing different

stakeholders towards the common objectives and gaining the best out of the organization. This process includes alignment of the strategic planning throughout business units.

Furthermore, the emphasis on the performance information is analyzing. The value of the information is related on how the data has been refined for the insight. While the complexity and volume of the data increase the time frame for benefiting from the information decreases. Using the BI the data can be turned into the knowledge within a reasonable time and cost if the BI activities are organized and aligned using the industry's best practices. Without relevance to the strategic objectives, the information has no value. As this research recommends, the knowledge in Kela shall lead to an action plan, which is based on analysis, and learning from the information shall create a feedback loop which impacts on strategic objectives and the positive learning culture.

In Kela, the functional silos and individual departments have solved their own business analytics needs individually with the help of different IT systems and tools such as Excel. Therefore, centralizing the analytics and reporting activities using the best practices of the BI concepts can create a substantial change.

Based on the interviews a conclusion can be drawn that the interviewees are aware of performance management concepts. However, the BI is difficult phenomena to cover. BI techniques are complex and the rapid pace of technological offers a variety of new opportunities. However, the managers in the Kela are aware of the possibilities of BI and the idea of its value. The reason why BI strategy has not been implemented in Kela can be found from the management approach. As a non-profit organization, the knowledge-based management has not been emphasized. Furthermore, interviews give the impression that the value of the BI may not be fully agreed on. Since the management does not completely have consensus concerning the return of the investment, the senior management sponsorship for the BI program may be lacking. The problem may also arise from the complexity of the data system architecture. Since the resources are limited, each part of the organization is doing its best with the existing tools with the incremental development steps with the help of the IT department. The EDW project, however, shows that the value of the BI has been addressed. The main

risk in the EDW project in the Kela is that the investment is seen as “another IT project” with low strategic pursuit and value for the decision making.

However, the needs to decrease costs and improve efficiency in the public sector drive demand for applying new management concepts also in Kela. Furthermore, the investments in the BI platform and tools will also create expectations and, therefore gain benefits from the data, information and knowledge. This quest requires management's strong support for the BI program in order to create success.

### 7.3 Limitations of the Thesis and discussion of the future research

There are some limitations concerning this Thesis. Firstly, the researcher of this Thesis is an external person from the case organization. Because of the restrictions of availability of time, deep induction and studying of the organizational practices and culture have been limited. Due to these restrictions, the researcher might have interpreted some data differently because of the misunderstanding regarding the research material and data limitations.

Secondly, there are secondary data sources, which are used as empirical evidence in this research. However, ensuring internal validity in the data analysis was sought to ensure by collaborating with the performance management preliminary research team in order to maintain a common understanding with the interpretation of the findings. Furthermore, discussions with thesis supervisors were found beneficial. However, using multiple sources of evidence, such as official documents from Kela, helped view the research phenomena from different angles. Juxtaposition added trust on the secondary sources.

Thirdly, this research at this point cannot prove if the development proposals and their impact on the implementation have been beneficial for the case company as expected. This thesis research highlights action recommendations, but their implementation remains to the discretion of the case organization.

Lastly, the chapters four, five and six in this research contain empirical information, which has been classified as confidential. Therefore, these chapters mentioned are not published in their full length in the library version.

In order to help the case organization to further implement the optimal BI concept, the future research could aim at building understanding of how Business Intelligence and analytics platform can help the case organization to acquire and implement BI tools and methods. The subject of the suggested future research can be discussed from the technical IT perspective, or from the IT management perspective. Furthermore, the future research can also concern the strategic decision making process from the non-profit governmental organization perspective.

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## APPENDICES

### APPENDIX 1: (CONFIDENTIAL) PERFORMANCE MANAGEMENT FRAMEWORK IMPLEMENTATION IN THE CASE ORGANIZATION

4.1 Description of empirical data collection

4.2 Translating strategic objectives into measurable results

4.3 Strategy map as a value creation framework

4.4 Preparation and alignment of the performance agreement through the organization



APPENDIX 2: (CONFIDENTIAL) BUSINESS INTELLIGENCE PRACTICES AND  
MANAGEMENT IN THE CASE ORGANIZATION

5.1 Data Warehouse as a business information enabler

5.2 Data-to-knowledge process

5.3 Insight and knowledge creation using Business Intelligence

5.4 Analytical applications in the Business Intelligence

5.5 Success factors for the BI infrastructure

5.6 Enterprise reporting in the case organization

APPENDIX 3: (CONFIDENTIAL) DEVELOPING BI AS A STRATEGIC TOOL  
IN THE CASE ORGANIZATION

- 6.1 Enterprise data warehouse objectives in the case organization
- 6.2 The key risks in existing projects
- 6.3 BI strategy as a barrier breaker
- 6.4 Target oriented BI program
- 6.5 Metrics to measure the success and value
- 6.6 Actions and politics to create a change
- 6.7 Organizational structure to accomplish the tasks related to the BI
- 6.8 Objectives and occupying BICC
- 6.7 Funding models of the BICC

APPENDIX 4: (CONFIDENTIAL) KELA -LEVEL BALANCED SCORECARD FOR YEAR 2014

APPENDIX 5: (CONFIDENTIAL) BALANCED SCORECARD, INSURANCE DISTRICT SOUTH FOR YEAR 2014

APPENDIX 6: (CONFIDENTIAL): INTERVIEW FORM, EXECUTIVES

APPENDIX 7: (CONFIDENTIAL): INTERVIEW FORM

APPENDIX 8: (CONFIDENTIAL): INTERVIEW MEMO, DIRECTOR

APPENDIX 9: (CONFIDENTIAL): INTERVIEW MEMO, HEAD OF ACTUARIAL AND STATISTICS DEPARTMENT

APPENDIX 10: (CONFIDENTIAL) INTERVIEW MEMO, DISTRICT MANAGER

APPENDIX 11: (CONFIDENTIAL): SUMMARY OF THE INTERVIEWS