Open data in city strategies

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Abstract

The development initiatives of cities are prioritized by the city councils in the city strategies. This master’s thesis studies the occurrence of open data themes among city priorities. The theoretical background of the thesis is based on knowledge of open data literature and city strategies. It is studied how the cities promote open data in their city strategies: how are the themes of open data visible in the strategies.

Opening data is an active topic in cities. Among other drivers, legislation in national and European Union level is pushing proceeding. Opening datasets in new sectors meets also barriers. In this thesis, a review is done for the classifications of driving and hindering factors. A possible mandate and assignment from the highest municipal decision-making level to the open data promotion work provides a significant support when solving obstacles in the operational level.

For a municipal unit, composing a strategy is a duty based on the Finnish Local Government Act. It directs the strategy work only in a high level, though. It does not instruct the form or accurate contents of the strategy, but the cities determine the composition themselves. City strategies not only present the visions and strategic objectives, but they can also be seen as a part of the city management system.

In order to find out if the open data initiatives are among top priorities of cities, the research question for this thesis is formed: how the city strategies promote open data themes? The research studies if the open data themes are visible in strategies. If the city top decision-making sees open data themes as high priorities, open data promotion work has more tools to win barriers. This thesis aims at increasing the knowledge regarding the factors that have an effect on open data work.

In this thesis, city strategies are analysed through strategy documents from Finnish large cities. The data was collected from the city strategy documents, approved for council terms that started in 2013. Methodologically this study is a qualitative content analysis. The approach is data-driven; the analysis is based on document data from the city strategy.

According to the results of this study, cities see the themes that support open data work as high priorities, and city strategies express objectives that can be used as tools for open data promotion. Especially transparency and openness in decision-making as well as resident participation are widely supported themes. Direct expressions of opening datasets and business promotion with open data are also visible, but not as commonly.

Keywords
open data, public data, municipal sector, city strategy, qualitative content analysis

Supervisor
Dr. Jouni Markkula
Foreword

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1. Introduction

Open data has been an active topical theme of promotion and development in the past years. In public sector, open data has been raised on spotlight since governmental organizations and cities started opening their data resources at a growing pace. The main objectives with opening data have been promoting openness in decision-making and encouraging resident participation, and also enabling new digital business opportunities, thus encouraging new job creation in private sector. Opening public datasets has its origins in the United States of America and Great Britain. One significant incentive to activate the actions more widely among the member countries of European Union has been the EU directive on re-use of public sector information, together with the following legislation (European Parliament and the Council, 2003).

The city strategy is formed from the decisions and consistent guidance model, together with plans and knowingly decided direction of operations. One intention for composing the strategy is to be better prepared for the future and to add success potential in uncertain environment (Oulasvirta and Brännkärr, 2001). With the work of forming the strategy, the organization aims at composing organizational identity, frames for strategy and organizational routines, and thus forms a collective way of thinking, in order to proceed for the shared direction (Narayanan, Zane, and Kemmerer, 2011).

In Finland, every municipal unit must conduct a strategy of how to execute its operations (Finnish Local Government Act 2015). However, the contents or the form of a city strategy is not regulated, even though there are certain topics that must be covered. Cities plan and publish their strategic programs confirmed by municipal councils, which are elected for four years. The city council sets the strategic objectives and metering on the main focus areas in city development. The parts of city strategies may also be published as a city development programmes for future years.

City strategy is also a part of a city organization’s management system. Themes included in strategic guidance stand strong among all organization’s objectives. Thus, city strategy appears in the everyday decision-making and other operations. (Finnish Local Government Act, 2015; Oulasvirta and Brännkärr, 2001)

If promoting open data is seen as a strategic level objective in city development, it should be a topic that is to be found in city strategies. How open data is found in strategies, is worth exploring as the city strategy is the most upper level dictum of the city endeavour and goals. Appearance or absence in those declarations can be crucial to success of open data promotion and implementation work in a city organization.

It is studied in this thesis, if and how the open data promotion work has got its mandate from the highest level decision-making in the cities. The studying is done via research that consists of an analysis of the published city strategy documents. Those documents of the strategic aspirations represent the directions and visions of the city development initiatives, prioritized by the city top-level decision-making. In this thesis, several cities are studied through their strategy documents in order to add understanding of the municipal decision-making priorities in the top level, from the viewpoint of the open data. The goal of this thesis is to study how the open data initiatives are supported by the municipal strategies.
The main references of the study consist of literature review of city strategy and open data research. The author of this thesis works for the information management department in the city organization. In addition to the literature and the research material, the author has knowledge of open data work in practice, with the drivers and barriers it meets. This has come as a result of having participated in open data promotion in work group and steering group levels. The author has also been involved in municipal strategy preparation work.

The research consists of background study of city organizations and their strategy work and the hindering and promoting factors that have influence on open data initiative implementations in cities. The research takes over an analysis of city strategies, with qualitative content analysis, in the open data context. The expected analysis outcomes are descriptions of how initiatives to open data appear in municipal strategies. With a wider view about the subject it is possible to gain more understanding for the barriers and drivers of open data work. Broader insight may lead to a better conversation between people pursuing for open data and data owners in city service processes.
2. Cities and open data promotion

A view for the existing knowledge on open data drivers and barriers in cities is presented. Next, in order to understand the role of the strategy in city organizations, the background of cities as organizations is shortly described. That is done in a context of Finnish operational environment and legislation. The study material consists of the top directive guiding declarations of the city objectives, the city strategies that are approved and launched by municipal councils for their four-year electoral term, among large Finnish cities. Next, there is a look at strategy work in cities.

2.1 Objectives and drivers towards open data

The data that can be called as open public data, open government data or open public sector information, is formulated or gathered and then opened in machine-readable form by public sector entities, such as cities, regional administrations and governments. Usually in these occasions, the data is collected in order to set up, organize and run public services. As a data type, those are sub-terms of open data. Henninger’s (2013) comprehensive definition what can be considered as public sector information is as follows:

“information, including all information products in any format, and services, generated, created, collected, processed, preserved, maintained, disseminated, or funded by or for public entities (governments or public institutions) in all branches and at all levels be presumed to be in the public domain, unless another policy option (e.g. a legal right such as an IP right or personal privacy) is adopted and clearly documented, preventing it from being freely accessible to all.”

In the context of city environments, the definition open data is used when discussing about data that is generated, created, collected, processed, preserved, maintained and finally opened in machine-readable form and distributed to use by city organizations.

In a city organization, data opening processes may have started with different fundaments. Sometimes there are incentives that encourage pushing the opening work and on the other hand, the opening processes may meet obstacles of various origins. To be able to add understanding about these drivers and barriers that open public data initiatives meets in operational level, it is important to explore the conditions that organizations provide for the work in this domain.

The same common objectives and argumentations of promoting open data are recurring in open data related research papers and in declarations of various kind. Under the concepts of transparent administration and open democracy arise the principles of the freedom of information and the citizens’ right to know, that are supposed to actualize from the unrestricted availability of data. Those are categorized under administrative and political benefits. Other recurring objectives are the expectations of positive impact on economic and social value, that follow the new business opportunities and enhancing employment (Barry and Bannister, 2014; Bertot et al., 2010; Davies et al., 2013).

The European Union (EU) has been in a significant role in promoting open data among its member states. The EU enacted a directive on re-use of existing public sector
information (PSI) in 2003, and then revised it ten years later. According to the article three of the PSI directive, the opened data shall be available for both commercial and non-commercial purposes (European Parliament and the Council, 2003 and 2013).

The main goals of the PSI Directive are promoting the development of the European market for services that are based on public sector information, encouraging the cross-border use of PSI in business processes and supporting competition in the EU internal market, as well as unifying re-use regulations between EU member states. Economic growth as well as adding transparency in governance have been in EU’s priorities when promoting open data (EU Commission Communication, 2011). One underlying impetus for directing public sector re-use has been the demand for competitiveness with the United States in the information industry (Janssen, 2011). Barack Obama (2013) as the president of the United States of America released an executive order of “Making Open and Machine Readable the New Default for Government Information” and justified it with earlier experiences of economic growth, job creation and social good, generated by the freely available data.

In the EU member states the PSI directive made a clear impact for public data opening, but even before that many countries promoted for governmental openness with their national actions for freedom of information. Therefore, with these two types of regulation, it is obvious that the PSI directive has had a major impact on the success of open data, but the progression has been already ongoing in the name of freedom of information legislation (Janssen, 2011).

Another EU regulation that has made an effect on data opening, was aimed at establishing an Infrastructure for Spatial Information in the European Community (INSPIRE), enacted in 2007. INSPIRE directive aims at increasing the performance of spatial information usage, supporting collaboration between public authorities, as well as promoting the development of versatile public services (European Parliament and the Council, 2007). The spatial information consists of the spatial data, together with the meta-data and online services for them.

In addition to legislative and normative drivers, and reasons stated with the launch of the PSI directive, there are also other reasons why countries and cities have been working towards opening data. Cities may have goals that are communicated less clearly as other ones. One driving force to promote the city in its operational environment is the competition between other cities. The promotional objectives aim at positioning the city as a modern and leading business and ICT contributor. The proper reputation may result as success in national and international rivalry of investments, business locations and thus work places. Cities are ambitiously marketing and promoting themselves as modern and ICT-competent location for companies and employees. For example, challenges and competitions like Intelligent Community of the Year, are means of getting noticed as being a part of a network of modern development (The Intelligent Community Forum, 2017).

In Finland, open data promotion in public sector is steered and managed by Ministry of Finance. Opened public data resources have been from various sectors, most typically including geo-data, weather data, traffic data, financial and statistical data. The Ministry launched the Open Data Programme in 2013 in order to create the preconditions and remove hinders of the public data re-use (Ministry of Finance, 2017b). This programme launched national free-use portal named Opendata.fi in 2014 in order to provide one
address to public sector data access and re-use. The other target was to provide tools and guides for improving interoperability. Opendata.fi portal has been since built to be a web service for Finnish open data and interoperability standards and guidelines (Opendata.fi, 2017).

As a continuum to the Open data programme and to support the new objectives declared by the Finnish Government in its strategic programme’s digitalization themes, the Ministry of Finance launched the Open data policy for 2015–2020. Open data is seen as a raw material for the digital economy, public services and open decision-making and participation. Benefits brought by open science and research are also mentioned as goals. The actions covered by the policy are arranged in three theme areas: opening up information resources, improving the utilization of data and enhancing data and information skills. Open data is found as an absolute prerequisite for local and central government steering and operational transparency in the future (Valtioneuvoston kanslia, 2015; Ministry of Finance, 2017a).

The current tendency is towards open data in city organizations. Open data themes of promoting democracy with transparent decision-making, opening public services (e.g. route and traffic information) and supporting business opportunity creation are usually in line with cities’ digital strategies, where transparency, efficiency and cost reduction are targeted. The high volume of data collected meets the need for information, supported by the fast information broadcast capabilities. Technologies are available to implement solutions for data usage.

Further national development programmes have been launched in Finland in order to promote open data. The Six City Strategy is a programme for open and smart services development, the target being to create new know-how as well as business opportunities and jobs. The programme is carried out between 2014 and 2020 by the six largest Finnish cities: Helsinki, Espoo, Vantaa, Tampere, Oulu and Turku. Open data is one of three focus areas of this programme. In its sub-project Open data and interfaces, the six participating cities open up their data and develop operating models together. The business sector is invited in active cooperation to utilise the open data provided by cities. The participants can share their own data needs and have influence on the interface solutions and standards chosen (The Six City Strategy, 2017).

Another international competition giving cities an opportunity to weigh their innovation efforts is the European Satellite Navigation Competition, organized by the German innovation network in close cooperation with the German government (European Satellite Navigation Competition, 2017). For example, the city of Oulu has gained visibility via both competitions mentioned above.

2.2 Barriers in data opening process

Though there many reasons and driving forces that encourage cities in their aspirations towards opening their collected data, there are also factors that form barriers for promoting open data initiatives. These barriers create discontinuity factors for opening more datasets. The barriers have been an active topic for studying, in order to add understand which are the hindering factors the open data promotion work may encounter.

Janssen et al. (2012) have studied open data adoption with their explorative research. They discovered that in addition to the potential benefits of opening data, there are also a
number of barriers that have an effect on the opening. They classify the adoption barriers of opening data in six categories. They also found out that barrier categories can be associated either with provider’s or user’s perspective:

1. Institutional (provider’s perspective)
2. Task complexity (user’s)
3. Use and participation (user’s)
4. Legislation (both)
5. Information quality (both)
6. Technical (both) barriers

The barriers that are related to data providers lead to a lack of willingness for opening data. In cases where barriers are related to data users, the data is not easily usable. Interesting part here is especially the category of institutional barriers, that includes the organizational culture of avoiding risks, the lack of consistent data opening policy and scarce resources, among others (Janssen, Charalabidis & Zuiderwijk, 2012).

Zhang et al. (2005) have conducted a research on public information sharing in the context of different stakeholder groups on inter-organizational knowledge sharing. Their study raises up another barrier classification:

1. Technical
2. Organizational
3. Legal and policy barriers

For example, organizational resistance to change, as well as different organizational priorities are classified in the organizational barrier category. Legislation may add rigidity and set barriers but, on the other hand, it may also be an enabler or driver (Zhang, Dawes & Sarkis, 2005).

Zuiderwijk et al. (2012) took also the viewpoint of open data user as one perspective in their study. They researched socio-technical impediments hindering or blocking the open data process, based on literature and research interviews and workshops. Socio-technical impediments apply to both humans and technology. There are a great number of barriers, for example categorized under Data availability and access – impediments.

Another categorizing (Martin, Foulonneau, Turki & Ihadjadene, 2013) has categorized the obstacles to open data in seven risk groups: governance, economic issues, licenses and legal frameworks, data characteristics, metadata, access, and skills. Risks that are related to governance issues include barriers such as misunderstanding open data as a technical issue instead of a part of open governance promotion. Other governance issues include unwillingness of civil servants and inconsistency of public policies.

Especially barriers that are of organizational origins, such as hindering policies or based on reluctant civil servants, are ones that can be affected with strategy level, since city strategies work as part of organization policy and management system.

2.3 City as an organization

In Finland, the municipal election is held every four years. The previous time local councilors and their deputy members were elected was in October 2012 and their term
started at the beginning of 2013. Next municipal elections will be held in April 2017 and local councils’ term of office will begin in June (Vaalit.fi 2016).

The trusted persons, elected in the city council, choose the members for the other governmental bodies. They also choose the leading city organization officials. Likewise, the council chooses the members for the city board, which is responsible for preparation, execution and ensuring the legal validity of the decisions made by the city council. The city board must monitor the operational environment and watch for the city’s interests. The civil servants prepare and implement the decisions. The city personnel, typically organized in sectors like health and social services, educational services and urban services, produces the city services and administration (Oulasvirta 2001).

The Finnish Local Government Act (2015) covers themes of democracy and exerting influence with its second part. Section 14 states that in a municipal unit there must be a local council responsible for the municipality’s operations and finances, as well as exercising the municipality’s decision-making power. The municipal strategy is the first issue that this law determines for the council to be decided on. In its most parts, the act applies to the arrangement of administration and finances in cities. The law does not have strict regulation on how municipalities should organize their actions, it is based on the idea of autonomous governance.

Advancing resident participation belongs to the agendas of the cities as part of executing open and transparent democracy and open administration, and rises from the legislation. The objectives of the Finnish Act on Openness of Government Activities (1999) include promoting openness and good practice on information management in government. Also, the residents and companies are granted an opportunity to monitor the exercise of public authority and the use of public resources. One objective for the Finnish Local Government Act is to sustain the conditions for the residents to participate and exert an influence. It is even mentioned that the city may financially support the actions leading to that (Finnish Act 410/2015).

Promoting conditions for vital and successful business environment is a crucial function for any city. Favourable conditions for business operating environment is also a competitive factor among cities and regions. Spirited business life with active ecosystem networks strengthens employment, thus generating not only well-being but also tax revenues to execute the city development objects (Rannisto and Harisalo, 2016).

The rivalry between cities is not the whole picture. Finnish cities work together in many ways. Forms of collaboration vary from unofficial individual-level knowledge sharing, or adapting best practises from each another, to joint procurement in chosen areas. There are also formal cooperative programmes with mutual funding sources. For example, the network of six largest Finnish cities has formed a development programme called 6Aika, which aims at creating “smarter and more viable cities” (The Six City strategy, 2017). Another example of city cooperation programme, though backed up by Finnish government, is INKA Innovative Cities, which was launched and funded by Tekes, the Finnish Funding Agency for Innovation. The essential objective for INKA programme has been promoting the start of innovative clusters around selected theme areas (Tekes, 2017).
2.4 Strategy work in cities

To understand the role that a city strategy may have with development processes, such as implementing open data initiatives, a closer look at the fundamentals of municipal strategy foundations must be done. There are many incentives for executing the municipal strategy work. The imperative reason comes from the legislation. The state authority has set the policy that every municipality must conduct a strategy of its own. The strategy also works as a medium for the elected representatives to express the communally agreed council’s development priorities of the city to the residents (Finnish Local Government Act, 2015). For any organization, one incentive for the strategy work is that the organization can make changes in its direction in a way that would better help it meeting future challenges. In order to accomplish that, there must be both aspiration to look forward and ability to implement the strategy in practise (Kaplan and Norton, 2002).

The city strategy is aimed for various stakeholder groups in the city organization. It means both the leading civil servants and the field personnel. The values, objectives and vision represented in the strategy only can be implemented in every day actions through the work of the personnel. Especially the organization’s middle management works in a significant role in bringing the daily operational work to the directions that the city council has pointed in the city strategy (Pakarinen, 2009). When the conditions that the employees meet in their daily operations are taken into consideration during the strategy preparation, the results in the strategy implementation are most successful. Also, all city stakeholder groups’ commitment to the strategy decisions can be achieved by involving the groups in the strategy preparing process (Rannisto, 2005).

Also, the city’s surrounding operational environment, such as business environment with a number of companies, non-commercial organizations, and other interest groups and ecosystems, have interest in the directions that the city addresses with its strategy development initiatives. The implementation of the strategy may cause impacts on co-operational or business possibilities. Mintzberg (1994) has argued that it is important to notice the difference between articulation of strategies or visions that already exist, and strategic planning that should compose a vision of the direction that the operations should pursue. In this study, a strategic plan that describes the organization’s objectives during the time period represented in the plan, corresponds a strategy.

The city strategy is dialogical and negotiable by its nature. It can be described as ambiguous, meaning that its interpreted by its intended context of use and purposes. The context is mainly social and ideological circumstances. For different stakeholder groups, the strategy communicates different messages. (Sorsa, Pälli, Vaara & Peltola, 2010).

City councils, elected for four years, are responsible for ratifying and publishing city strategic programs, as directed in the Finnish Local Government Act (2015). The city council sets the strategic objectives and performance indicators on the main focus areas of city development for the coming years. The Act instructs certain topics that are to be covered:

1. Advancement of the well-being of the municipality’s residents
2. The arrangement and provision of services
3. The service objectives laid down in acts on the functions of municipalities
4. Ownership policy
5. Personnel policy
6. Opportunities for the residents of the municipality to participate and exert an influence
7. Development of the living environment and vitality of the area

The Act directs that the municipality’s current situation must be evaluated for the basis of the strategy and also the possible forthcoming changes in the operational environment must be assessed. The law also sets a requirement that the essential information on city activities must be published in the Internet. The minimum information content to be published is defined, and municipal strategy is on top of that list. It is also legislated that the city organization’s management must be in line with the strategy approved by the local council (The Finnish Local Government Act, 2015).

The analysis of operational environment during strategy work results in setting own organization and resources into the surrounding ecosystem and the world. The challenge is to keep clear sighted with the basic mission and not to aim at tasks that are of less priority. With the strategy work process, new sights can be found when dealing between the big picture and singular matters. The strategy work helps identify and connect challenges that may seem separate without bundling together as future objectives to win. The opportunities become visible and mutual commitment for the future decisions is easier to achieve. Unlike with corporate life, the strategy work in public non-profit organizations do not have the profit objective but should express its tasks and values (Lynch, 2009).

After the strategic analysis is done and the strategy has been developed by the elected representatives of the citizens and civil servants, it is verified by the city council and then published to be publicly available. The verified city strategy must be implemented as part of the organization’s management. The implementation of the strategy is not a one-time task, but a series of activities and especially Pettigrew and Whipp (1991) have seen strategy implementation as a continuous process (Lynch, 2009). In order to make individuals in different levels to commit to objectives and priorities communication and interaction is in vital role.

When thinking about the city strategy as the guiding line in the competition with the other municipal units, cities and regions, the learnings from the corporate life come into question. Porter (1980) has described the competitive strategy as a combination of goals what the organizations is reaching for, and means how to get to those objectives. Every organization must find their own goals and means.

2.5 City organizations and open data

As discussed earlier, a city organization performs not only its basic tasks, but also aspires to develop the services it offers to its residents and corporate life. It also aims at developing the processes of the organization itself. The city organization is usually organized in sectors and city operations are lead with using management guide, the main leading guide in highest level being the city strategy.

The central focus areas and development initiatives of the city are verified by the city council, usually in the beginning of their electoral term. These are the main objectives that are seen most important in council’s consensus – for the period of the election season or longer – and these themes are written in the city strategy document.
From the legislative demands arise needs of openness in decision making, in both sides of decision making: with elected representatives of the residents and with the civil servants. Those demands of open democracy and open administration support the presumption of transparency in decision-making. Transparency can be implemented in form of preparation, meeting agendas and decisions, e.g. in city council, city board, committees and public utilities. When decision-making is open and public, the citizens and other stakeholder groups have a better visibility for the reasons of decisions and for the forthcoming changes in operational environment.

Certain drivers support the opening of the datasets in cities. Besides legislation based reasons and willing to put open democracy and open administration into practice, there are also factors that are reasoned as making the city more competitive. The need to support business sector for creating new kinds of business possibilities arises from the competitive situation between the cities. The cities have traditionally promoted corporate life for example by addressing business locations or trying to educate and host skillful residents for companies’ employee needs. Opening data resources, preserved or collected by cities is now seen as one possible addition for means of supporting corporate life, in regional, national and global scale.

It has been noticed that deriving significant commercial value out of open data may have obstacles. In order to assist in commercial value creation, there have been formulated guidelines that public open data policies should pay attention to. One of those guidelines is that governments should support open data ecosystem ecosystems with the resources of open data, open Information Technology, internal IT, knowledge and governance. From these resources available, each company in the ecosystem builds the combination it needs. Governments should also manage dependencies between stakeholder groups; governments, businesses and citizens, in order to assist in gaining the needed resources. Lack of collaboration between governments and companies could lead to less commercial value creation in open data ecosystems. (Zuiderwijk et al., 2016)

In the city organization that is usually consisting of rather independent sectors and service units, one also meets barriers of various kinds when pursuing to open datasets from different sectors. For those, fulfilling their task of opening datasets, the work becomes easier if the support of the highest decision-making level can be expressed.

The city strategy document is not only the guiding book of the city visions and future objectives, but also a part of the organization management system. It has a significant meaning in justification the decisions and operations of civil servants and specialists in their work. If the themes promoting open data initiatives are written in the city strategy document, one can say that the open data promotion work is highly supported.
3. Research question and methodology

The goal for this research was set to study how the themes of open data initiatives are visible among city strategic objectives. The city strategies represent the central objectives of the top level decision-making and visioning, for the years of the strategy coverage.

Those themes that support open data initiatives are under investigation in this research, through the viewpoint of expressions in the city strategy documents. The motive is to add understanding on the possible drivers and barriers the highest-level decision-making may cause for the open data work.

In order to fulfill legislative, ethical and competitive demands, cities should promote the resident participation and open democracy, promote open administration, support new business opportunities, and appear as modern and progressive actor in municipal sector. On the other hand, it has been studied that by promoting open data initiatives makes it possible to have an impact on accomplishing objectives in all these areas. And, promoting open data initiatives can be seen officially commanded and mandated if open data themes and objectives are expressed in a city strategy document.

Derived from this goal and viewpoint, the research question was specified:

How are the cities promoting open data themes in their strategies?

In order to carry on open data work and promotion in city organizations with a success, it is necessary to add understanding whether the municipal decision-making is committing and promoting for open data actions in its top level. Without the support from the organization’s highest decision making, the successful proceeding with the work and gaining the whole organization’s commitment is challenging. If the support for the implementation of open data actions is visible in the strategy document level, it becomes a part of the strategy implementation.

This study analyzes the city strategies from the viewpoint if and how the open data themes are seen as strategic priorities in city aspirations and development objectives.

3.1 Methods

The answers concerning the city strategy contents are found in the city strategy documents. Those documents are publicly available in the internet sites of the city organizations. This means direct access to the primary source of the research data to anyone who has an interest in those.

The published strategy document is a part of the practices how the city communicates with its surrounding operational environment and stakeholder groups. When analyzing communication, whether this communication is textual, pictorial, verbal, symbolic or in any other form, content analysis provides an appropriate method. Content analysis is a method that may be used with either qualitative or quantitative data and the approach options for analysis can be theory-driven (deductive) or data-driven (inductive). This study uses qualitative content analysis in order to understand what this document data enables or prevents. In qualitative research, by exploring a single case sufficiently, it is possible to find what is significant and often recurring in the phenomena in general level.
The possibility for generalization increases when a theory can be confirmed in more than one organizations (Krippendorff 2004; Tuomi and Sarajärvi 2012).

Conducting theory-driven analysis means it is based on and guided by an existing theory or a model, which is tested in a new context. However, in this study, the approach chosen is data-driven. The units and categories for analysis arise from the observations of the research material, during analysis phase. With inductive approach like this, the focus moves from individual statements towards general categorizations (Tuomi and Sarajärvi, 2012.)

The expected analysis outcomes from data analysis in this research are descriptions of how initiatives to open data are visible in municipal strategies and interpretations of the goals for open data initiatives.

3.2 Content analysis process

The process of qualitative content analysis can be divided into separate components: reducing the data material from the non-essential content, clustering it to groups to find similarities or differences, and abstracting the study material when the information relevant to the research is turned into concepts and conclusions. Prior to analyzing, units of coding are defined by systematically distinguishing segments of text that are interesting. The study material properties and the research question have an effect on the units of coding to be chosen. Those units can be words, parts of a sentence, a sentence or several sentences, or even conceptual entities (Metsämuuronen, 2008; Tuomi and Sarajärvi, 2012; Syrjäläinen, 1994).

According to Krippendorff (2004), the process of content analysis can be divided into six different components:

1. Unitizing (systematic distinguishing of segments of text that are interesting)
2. Sampling (limiting observations to a manageable subset of units)
3. Recording/coding (description or classification of the recording units)
4. Reducing data to a more efficient representation
5. Abductively inferring contextual phenomena
6. Narrating the answer to the research question

In the introduction chapter, the common goals for opening datasets were presented. In order to study if these objectives are expressed in city strategies, we define the following terminology as a part of the phenomena “promoting open data themes” and consequently as units of coding in the unitizing phase of the content analysis process:

1. Opening data. This means the definitive and directly expressed will to open data, no matter what is the purpose of the data usage. The opening can be directed for the use of residents, business sector or any other stakeholder group.
2. Promoting open democracy. This means expressed ambition for transparent decision-making and/or open administration. This terminology indicates to both decision-making and governance, executed either by elected politicians or by city civil servants.
3. Creating new business opportunities with open data. This means expressed willingness to open data in order to support making digital business, based on the data.

These terms are derived from common open data terminology and from common goals for public open data initiatives, as described earlier when presenting the drivers towards open data. In this study, city strategies were examined to find phrases that are relevant to the phenomena under study.

Table 1. In this thesis, the analysis of the city strategies is applied this way.

<table>
<thead>
<tr>
<th>Analysis phase</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unitizing the units of coding</td>
<td>Searching for themes of the phenomena “open data promotion” from the city strategy documents:</td>
</tr>
<tr>
<td></td>
<td>- opening data OR</td>
</tr>
<tr>
<td></td>
<td>- promoting open democracy with transparent decision-making or open administration OR</td>
</tr>
<tr>
<td></td>
<td>- creating new business opportunities based on open data OR</td>
</tr>
<tr>
<td></td>
<td>- any other form of these phrases</td>
</tr>
<tr>
<td>Coding</td>
<td>Selecting original phrases containing analysis units from the city strategy documents</td>
</tr>
<tr>
<td>Reducing</td>
<td>Simplifying phrases from original expressions</td>
</tr>
<tr>
<td>Grouping</td>
<td>Contextually grouping reduced phrases and naming the groups in a descriptive manner</td>
</tr>
<tr>
<td>Abstracting until the combining category</td>
<td>From groups, creating categories with essential information, as many cycles as needed</td>
</tr>
<tr>
<td>Representing the findings for the research question</td>
<td>How are the cities promoting open data initiatives in their strategies?</td>
</tr>
</tbody>
</table>

When choosing the units of coding for the study, it is noted that in city strategies there may appear some terminology close to terms chosen here, but not approved as relating to open data unless explicitly mentioned so. Therefore this terminology was not accepted as units of coding. These terms are related to supporting business life generally, such as “supporting active business environment” (vs. creating new digital business opportunities based on open data). On the other hand, terms related to promoting citizen activity, such as “resident participation” were considered as a part of promoting open administration since.
3.3 Study material description

This research was conducted among five large cities in Finland. The cities are Espoo, Oulu, Tampere, Turku and Vantaa. The research material consists of the strategy documents of the five cities mentioned here. These cities are among the six biggest in Finland with 186,000-270,000 inhabitants, leaving out only the capital Helsinki which is notably larger city than those selected within research (Kuntaliitto, 2017).

Cities this large typically have personnel and economic resources for answering for development initiatives. Especially the largest cities like to appear as progressive and technically advanced actor among peers. For example, all cities in this study have participated in Six City development programme that hosts development programmes in three focus areas: open innovation platforms, open data and interfaces, and open participation and customership. The expected programme outcome is to form a basis for innovation and cooperation framework of the city community (The Six City strategy, 2017).

Since these cities have not only external similarities, such as size category, but they also work in serious cooperation, it is interesting to study if there are similarities in their strategies, too. Especially this is interesting in the viewpoint of the study subject, open data themes.

It is assumed that cities selected in the study do have active operations on open data field. As mentioned earlier, open data and interfaces is one focus area and forms a project within the Six City strategy programmes. The Open data and interfaces project aims at making data opening as part of the normal city operations. The standardization and harmonisation of data and interfaces is seen as a way to persuade business sector involvement and the six participating cities with their organizations and residents offer a piloting environment and a market for new data-based services. It is noted, though, that most city strategies included in this study were confirmed already in 2013 (see table 2) after the newly elected city councils started their terms, and the three-year Six City strategy programme started in 2014 (The Six City strategy, 2017).

From the Finnish cities that are chosen to be study objects, the data is collected with qualitative content analysis from the city strategy documents. All cities publish their strategy documents in their internet sites, where they are available for the citizens and other stakeholder groups to explore. The document material for this research is gathered directly from their primary source, from the cities’ internet sites during 2016.

The documents studied in this research are limited to include the city strategy main documents. No other documents are included, such as appendices or strategic programme papers if they are published as separate documents. It is common that strategy objectives are implemented in development programmes and there can be several programmes ongoing in a large city, some long-lasting programmes or projects launched during an earlier council term. Sometimes it is stated in strategies that new development actions will be later planned and arranged in programmes. Usually development programmes are described in separate documents.

When considering the subject and research question in this thesis, the decision to restrict the study to cover the main strategy documents only, gives more weight to the results: if the open data initiatives are raised up into the narrowest form of the strategy manifesto –
i.e. the core document with main objectives - it has the most visibility among the stakeholders and should be considered as a very strong priority of city top level decision-making. Of course, any other theme represented in the city strategy has that same weight.

As stated earlier in the chapter Strategy work in cities, there is no common model or template for the city strategy, but the Finnish Local Government Act (2015) directs certain themes to be covered, such as wellness and participation of the citizens, arranging city services, and promoting vitality of the area. However, the strategies made by cities are not legislated to be made commensurate or to be measurable with similar standards. Table 2 presents information of the city strategy material used for the research.

Table 2. City strategies are different of sizes and presentation types.

<table>
<thead>
<tr>
<th>City</th>
<th>City strategy document title</th>
<th>Date confirmed by city council</th>
<th>Document main properties in printed format</th>
</tr>
</thead>
<tbody>
<tr>
<td>Espoo</td>
<td>The Espoo Story</td>
<td>10.6.2013</td>
<td>6 pages. In a compact form of a story from city history to future visions. No tables, no pictures.</td>
</tr>
<tr>
<td>Turku</td>
<td>Turku 2029</td>
<td>23.6.2014</td>
<td>7 pages. Photos take a significant part of content. No lists or tables. Available only in Finnish.</td>
</tr>
</tbody>
</table>

The city strategies are different on their forms and contents, some are made easy for quick read and some require deeper orientation in order to comprehend. Due to the simultaneous municipal council election dates and the habitual new councils’ goal setting shortly following the elections, the strategy confirm dates do not vary significantly. City strategies of three cities (Oulu, Turku and Vantaa) were only available in Finnish, thereby translations and interpretations of text and terminology by author.
3.4 Applying the research method

The selection of the appropriate research method was ensured by piloting first with the research material of one of the cities involved in study. After piloting it was evident that the chosen method was proper for the use, and it was determined to be used here.

In the first phase of the content analysis for the whole study material, the documents were read carefully, considering the expressions from the viewpoint if the words that are chosen units of coding, actually appear in the context of open data objectives. The material was read several times with underlinings done and observations written in the document margins. The original phrases were collected and documented. (Krippendorff, 2004; Kyngäs & Vanhanen, 1999; Tuomi & Sarajärvi, 2012).

In the next phase, reducing, was executed and the phrases were re-written, leaving the non-essential information out. For all city strategy documents involved in the study, the reduced expression list was composed. Next, the reduced phrases from all city strategies that had contextual similarities and were combined as groups.

In the abstracting phase, the groups were combined where applicable and combining categories were created. Those categories represent the essential information of the open data themes that became visible from the study material. Combining categories are the basis for the conclusions and shall answer the research question: How are the cities promoting open data initiatives in their strategies?

The processing of the research data is represented in tables: first, by each city are presented the original phrases and the reduced phrases, and then the grouping and abstracting phase of the study material.
4. Results

City strategy documents were studied with the methods of qualitative content analysis in order to find out how cities promote open data initiatives in their strategies. City strategies differ from each other with their visual appearance and extent, and also with their content. They all represent city values and visions for future years, but some strategy documents seem to be more like material intended to city residents, whereas some are in a form of an implementation plan for the city organization, with operational indicators and metering. There were open data themes identified in all studied city strategies.

4.1 City strategy of Espoo

The strategy of Espoo is called The Espoo Story (Espoo 2016). The city council has confirmed the strategy in June 2013, to be valid through the city council term until 2017. The vision and values of the city, as well as city operating principles are declared in the story-formed strategy document. Espoo city sectors and departments are told to formulate their own stories, conducted from the Espoo Story and the mutual city objectives.

The Espoo Story also lists by name several cross-administrative development programmes in response to the certain areas of city enhancement needs. However, the content of those programmes are not described in the document that is under studying.
Table 3. Original and reduced phrases from Espoo city strategy.

<table>
<thead>
<tr>
<th>Original phrases</th>
<th>Reduced phrases</th>
</tr>
</thead>
<tbody>
<tr>
<td>The political system of Espoo will be open, democratic and easily accessible.</td>
<td>transparent decision-making</td>
</tr>
<tr>
<td>All Espoo residents, young and old, can participate and have their say in the</td>
<td>participating residents</td>
</tr>
<tr>
<td>development of their home town.</td>
<td></td>
</tr>
<tr>
<td>Espoo will promote business operations by making collected operational information available to all those needing it. Publically produced information will also be made available to residents.</td>
<td>promoting business with opening data providing open information</td>
</tr>
<tr>
<td>(Values and operating principles) The active involvement of residents in the</td>
<td>participating residents</td>
</tr>
<tr>
<td>development of services and co-operation with partners ensures successful service</td>
<td></td>
</tr>
<tr>
<td>production meeting the needs of residents.</td>
<td></td>
</tr>
<tr>
<td>(Values and operating principles) Pioneering refers to broadmindedness and</td>
<td>openness in operations</td>
</tr>
<tr>
<td>creativity, openness, a desire to question the status quo and courage to do</td>
<td></td>
</tr>
<tr>
<td>things in a new way.</td>
<td></td>
</tr>
<tr>
<td>(Values and operating principles) We operate openly, justly, equally,</td>
<td>openness in operations</td>
</tr>
<tr>
<td>humanely and tolerantly.</td>
<td></td>
</tr>
</tbody>
</table>

Yet the strategy document of Espoo is compact and story-formed, it still announces several open data themes. Distinctly expressed willingness for opening datasets is promoted from the viewpoints of the business sector, city residents, and - to be clear – it is told to be for everybody:

“...making collected operational information available to all those needing it.”

There are also clear expressions of support for openness of the city as well as resident participation. As the city of Espoo has defined the objective of data opening for business promotion and also mentions the data availability to citizen usage, the goal is in line with the other open data themed objectives visible in the city strategy: transparent decision-making and resident participation.

4.2 City strategy of Oulu

The strategy document *City Strategy Oulu 2020* was confirmed in 2013 (Oulu, 2016). As the title implies, it covers the target status in 2020 as well as strategic focus areas detailing
the targets. The strategy also covers city values and strategic priorities together with
success indicators and their present state and target results for both 2016 and 2020.

The large strategy document of 17 pages forms the city strategic steering system for the
whole consolidated city corporation. There is a chart of precise strategic objectives on
five separate operational areas with indicators and metering.

**Table 4. Original and reduced phrases from Oulu city strategy.**

<table>
<thead>
<tr>
<th>Original phrases</th>
<th>Reduced phrases</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Values)</td>
<td>operating openly</td>
</tr>
</tbody>
</table>
| Fairness: We act openly and take each other in
  consideration and appreciate moderateness and
  humanity.                                            |
| (Strategic focus areas)                               | participating residents|
| Residents participate, exercise and promote sustainable lifestyle |

Resident participation was mentioned as having been a part of the current strategy
composing. As a part of the strategy work, scenario planning was conducted. One
viewpoint in scenarios is “people participation and well-being” and there is described a
purpose to raise conversation about “new forms of resident participation”. As a final
result, the actions were written for preparing for different scenarios. Also, inevitable
actions that are independent from scenarios were registered.

Textual form on the term *participation* seems to mean activeness in wellness areas
(oneself and inner circle) and not in purposes relating city decision-making or open
democracy promotion, besides the part of the strategy composing phase. Therefore, theme
of resident participation as being a part of promoting open administration or open
governance, is not as much visible in the Oulu city strategy as it could be interpreted
without careful pondering.

All in all, from the viewpoint of open data themes, there are not many expressions.
Opening data as such is not mentioned in the strategy document. The document refers to
several city strategy implementation and operational programmes. The documents of
those programmes were not in the scope of this study.

**4.3 City strategy of Tampere**

The Tampere City Strategy 2025 adds to its title a slogan “Tampere, Working Together
for a Bright Future” (Tampere, 2016). In the strategy document, the city council has
declared the essential emphasis areas and objectives for the development and
management of the city.
Table 5. Original and reduced phrases from Tampere city strategy.

<table>
<thead>
<tr>
<th>Original phrases</th>
<th>Reduced phrases</th>
</tr>
</thead>
<tbody>
<tr>
<td>(future challenges of change) Calls for openness and better opportunities for citizens to participate in decision-making and service development challenge the current ways of operating</td>
<td>openness in operations</td>
</tr>
<tr>
<td></td>
<td>participating residents</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>(strategy implementation approaches) We invite all to contribute to our city’s development.</td>
<td>participating residents</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>(strategy implementation approaches) We make the changes possible by consistent and open decision-making and leadership.</td>
<td>transparent decision-making</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>(objective/indicator) Opportunities for service users, service providers and other stakeholders to participate in service development and decision-making have been improved. / Participation of service users in developing the services.</td>
<td>participating residents</td>
</tr>
<tr>
<td></td>
<td>participating service providers</td>
</tr>
<tr>
<td></td>
<td>open decision making</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>(objective/indicator) The information produced by the city is open. / Volume of the data made available by the city.</td>
<td>providing open information</td>
</tr>
<tr>
<td></td>
<td>measuring the volume of the opened data</td>
</tr>
</tbody>
</table>

Tampere has listed some future challenges of change to be won: openness and residents’ possibility to participate in decision making. Openness is seen as a demand coming from the needs of the citizen participation and the city intends to answer for that demand.

These are objectives that the common open data initiatives aim at having an influence. One of Tampere’s strategic priorities for the future is that “The information provided by the city is open and it facilitates spontaneous, citizen-led activities” meaning a direct support for opening data.

A clear objective for the years 2014-2017 states that “the information produced by the city is open” and there is even an indicator for that, the volume of the opened data. That is an undeniably clear dictum from the city council to proceed with open data promotion.

4.4 City strategy of Turku

The city strategy of the oldest city in Finland is called Turku 2029. Turku has chosen the scope of the strategic priorities and objectives to be in the year of celebrating its 800-year anniversary in 2029.
Table 6. Original and reduced phrases from Turku city strategy.

<table>
<thead>
<tr>
<th>Original phrases</th>
<th>Reduced phrases</th>
</tr>
</thead>
<tbody>
<tr>
<td>The city invests heavily on developing digital services and related cooperation networks, and contributes generating new business and openness by opening databases to citizens and companies.</td>
<td>promoting business with opening data providing open information</td>
</tr>
<tr>
<td>Resident participation is seen as vital part of city basic operations, preparations and decision-making</td>
<td>participating residents</td>
</tr>
<tr>
<td>Decision-making shall be transparent and consistent.</td>
<td>transparent decision-making</td>
</tr>
<tr>
<td>For increasing transparency, open data brings new possibilities, and Turku aims at national top in utilizing them. (operating promises)</td>
<td>utilizing open data for transparency transparent decision-making</td>
</tr>
<tr>
<td>We make decisions based on best available knowledge and our decision-making is consistent and transparent. (operating promises)</td>
<td>openness in operations</td>
</tr>
<tr>
<td>Our cooperation is based in appreciation, openness and trust.</td>
<td></td>
</tr>
</tbody>
</table>

Transparency and openness are well represented themes in the strategy. The contribution for new business opportunities based on open data is also mentioned among city objectives. With the phrase “opening databases to citizens and companies” Turku city strategy takes a strong direction with open data promotion.

4.5 City strategy of Vantaa

The strategy of Vantaa is named pragmatically as “City Council Term 2013-2017 Strategy”. It was initially confirmed in 2013 and mid-term assessment was made in 2015. It holds also values and verbal vision of Vantaa for 2025.

In the strategy document, taking care of strict financial situation is highly emphasized, and efforts especially on the city vitality, employment and urban environment planning are seen as key development areas. Transparency in operations is emphasized and there are mentions of promoting resident participation.
Table 7. Original and reduced phrases from Vantaa city strategy.

<table>
<thead>
<tr>
<th>Original phrases</th>
<th>Reduced phrases</th>
</tr>
</thead>
<tbody>
<tr>
<td>In all city operations and management, transparency is emphasized.</td>
<td>openness in operations</td>
</tr>
<tr>
<td>(Values) Transparency is emphasized in Vantaa activities.</td>
<td>openness in operations</td>
</tr>
<tr>
<td>Resident participation in service development</td>
<td>participating residents</td>
</tr>
<tr>
<td>The city services’ work with grassroots democracy and participation is carried out in city level, passing through the whole organization</td>
<td>participating residents in operations</td>
</tr>
<tr>
<td>(Strategic indicator) Participation model ja the amount of participating processes</td>
<td>participating residents</td>
</tr>
</tbody>
</table>

In light of the strategy document, attitude towards resident participation seems quite traditional:

“Resident participation is further strengthened with open communication and active reacting for residents’ and clients’ views and received feedback.”

Opening datasets is not mentioned in the city strategy. The extensive Vantaa strategy document lists 15 programmes with short summaries for the council term 2013-2017, including for example information management programme. Also, the city participation model is one of the programmes. That aims at developing the methods for “opening the governance-related processes in order to enable participation”. Opening data as such is not mentioned in those short programme descriptions. The programme documents, i.e. the actual contents of those programmes, were not in the scope of this study.

4.6 Summary of city strategies

The first observation when studying and comparing the city strategies, was the visually appealing form in Tampere and Turku strategies. The appearance of these strategy documents give the impression that these city strategies are truly aimed at residents to read.

During the research process, the heterogeneity of the strategy document contents was noticeable. This is due to freely determinable format of city strategies: the Finnish Local Government Act (2015) only orders the minimum content that is to be taken into account, but not the depth or format of that content. Besides the loose form requirements by the legislation, neither have the cities decided together to make the city strategies in a common format or with a common table of contents.
There are clear similarities with the themes that support open data initiatives in city strategy documents: resident participation, openness in decision-making and open democracy were the open data themes that are found in all strategy documents. The outcome is more varying, when it comes to direct endorsement of opening datasets or promoting business opportunities with open data.

In many city strategy documents there are listed or mentioned strategic programmes or other development programmes. Not all did but most likely though, all cities of this size implement that kind of actions. Other documents but the main city strategy documents were not in the scope of this study.

### 4.7 Grouping and abstracting the study material

In the next phase the material was grouped by searching similarities and differences from the reduced expressions. The expressions that belong to the same category, were combined in the same group and the group was named accordingly (Krippendorff, 2004; Tuomi & Sarajärvi, 2012).

**Table 8.** Grouping from all city strategies shows the similarities and differences with open data themes in city strategies.

<table>
<thead>
<tr>
<th>Reduced phrases</th>
<th>Espoo</th>
<th>Oulu</th>
<th>Tampere</th>
<th>Turku</th>
<th>Vantaa</th>
<th>Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>transparent decision-making</td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>Open democracy</td>
</tr>
<tr>
<td>participating residents</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>utilizing open data for transparency</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>openness in operations</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>Openness in operations</td>
</tr>
<tr>
<td>participating service providers</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>participating residents in operations</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>providing open information</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td>Open information (as such)</td>
</tr>
<tr>
<td>measuring the volume of the opened data</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>promoting business with opening data</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td>New business on open data</td>
</tr>
</tbody>
</table>

As the table shows, all city strategies express objectives, values or actions related to one or more open data themes.

In the next phase, following the grouping of the study material, the abstracting was done. The combining categories were formed on the basis of the groups that were combined into same categories where necessary and possible. Open administration and open
democracy were combined in this phase into same combining category. The combining categories represent the open data main themes that become visible from the study material.

Table 9. Combined categories were formed by abstracting groups.

<table>
<thead>
<tr>
<th>Combined categories</th>
<th>Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct commitment to opening data</td>
<td>Open information (as such)</td>
</tr>
<tr>
<td>Promoting open democracy and administrative openness with open data</td>
<td>Open democracy</td>
</tr>
<tr>
<td>Promoting open data based business opportunities</td>
<td>Openness in operations</td>
</tr>
<tr>
<td>Promoting open data based business opportunities</td>
<td>Business on open data</td>
</tr>
</tbody>
</table>

Direct commitment to promote open information was brought out in the form of opening information, databases or datasets. The purposes were either creating new business possibilities for companies, or opening the data just in the name of open democracy.

Themes of openness, whether in representative decision-making or in city administration by civil servants, are problematic to separate. Also, in strategy documents the terminology and themes of openness, transparency and resident participation, as well as the possible actor being elected or civil servant, are used in a way that can be interpreted often meaning same issues. Groups named Open democracy and Openness in operations were merged into one category: Promoting openness in democracy and administration.

Supporting business life on creating new business on open data, was a clear theme of its own. For the theme of business promotion, a third category was formed.

The open data themes that were raised from the city strategies, were organized in combined categories describing the city values and future objectives:

1. Direct commitment to open data initiatives in city strategy
2. Promoting open democracy and administrative openness with open data in city strategy
3. Promoting open data based business opportunities in city strategy

These three open data themes are next studied closer.

4.8 Direct commitment to opening data

The most clear and supportive direction into open data, is openly communicated target to start or continue opening the datasets produced or gathered by the city. In study material there occurred direct objectives towards opening data.
In the Espoo strategy document, the city represents a vision where the energetic city attracts competent people and companies to settle down in the city. As one expression to implement actions for this vision, Espoo promotes business environment with open data:

“Espoo supports business life by opening its information collected from its operations, to everybody who needs it. Information collected publicly is open to citizens, too.”

The city further defines the objective of data opening, that it is not only aimed at companies located in Espoo but anyone in demand may use it. A mention of data availability to citizen usage is in line with other city objectives, transparent decision-making and resident participation.

City of Tampere, in its strategy, sets as one of its strategic objectives:

“The information produced by the city is open.”

Expression in that form does not emphasize any group as the data utiliser. Tampere also sets an indicator for the data opening:

“Volume of the data made available by the city”.

These statements highlight the clear expressed willingness to implement open data actions, but also to arrange the monitoring and reporting for the progress.

The strategy document of Turku represents the data opening going side-by-side with city digital development, but highlights the importance for new business creation:

“The city invests heavily on developing digital services and related cooperation networks, and contributes generating new business and openness by opening datasets to citizens and companies.”

Thereby Espoo, Tampere and Turku very clearly and directly promote in their strategy documents towards proceeding with open data initiatives. In Oulu and Vantaa city strategies, there are no directly expressed objectives to open datasets.

4.9 Promoting governmental openness and open democracy with open data

Openness in decision-making and open democracy by encouraging the citizen participation were topics that were well represented in city strategies. All cities express the desire of openness and the citizen participation.

“political system...will be open, democratic and easily accessible” and “publically produced information will also be made available to residents” (Espoo)

“we act openly...” (Oulu)

“open decision-making and leadership” and “citizen participation in decision making” (Tampere)

“our decision-making is consistent and transparent” (Turku)
Promoting openness in democracy is one of the key objectives with open data initiatives. The openness in decision-making and democracy can be supported with the means of open data.

4.10 Promoting open data based business opportunities

Another central objective with the open data promoting, is to create data based business opportunities for companies. City of Espoo expressed a direct commitment to open data as a part of the strategy:

“Espoo will promote business operations by making collected operational information available to all those needing it.”

Also, Turku expresses business support with open data very clearly:

“The city ... contributes generating new business and openness by opening datasets to citizens and companies.”

Viewed through their city strategy documents, these cities see providing collected information in a form of open data, as one resource with which they can promote and support business life. In Oulu, Tampere and Vantaa strategy documents, there are no expressions of supporting new business possibilities with open data.

4.11 Key findings

The results of the research show that the themes that promote open data initiatives are well visible in the city strategies. Particularly, the themes of transparency and openness in decision-making and promotion of resident participation are widely introduced. All cities expressed those objectives, usually repeating them several times in their document in various contexts.

There is variation between city strategies, how cities directly promote opening data. As there occur direct expressions to open data to individuals and business life, some of these strategies do not express that kind of objectives at all.

Theme of supporting new business opportunities with open data was expressed too, but only in two strategy documents. That is regardless of many objectives originating in national and the European Union level that emphasize the creation of business opportunities on open data: for example, the EU’s primary argument for promoting and legislating open data, the Finnish Government’s strategic programme and the Ministry of Finance’s open data programmes. It must be mentioned though, that the missing occurrence of certain theme in the main strategy document does not mean that city is inactive on that area, since most cities implement strategic objectives in development programmes.

The argument for proceeding with opening data in cities is clear. In addition to drivers that are external to cities and mentioned above, all cities in their strategies promoted themes that can be advanced with opening data. The operating units and personnel in cities, that are working for opening datasets or databases with the data that is collected or
created by the city, can apply to the document that is confirmed on the highest level in the organization and expresses the top priorities of the city, the city strategy.
5. Discussion

This research intended at adding understanding of how cities promote open data themes in their strategies. In case cities see open data themes as high priorities, they should be visible in the strategy documents. By approaching the research problem with qualitative content analysis methodology, the city strategies were studied in a systematic manner.

For the council terms that were started in 2013, cities have endorsed open data themes in their strategies. Especially transparency in decision-making and resident participation are emphasized in city strategies. All cities involved in the research highlighted the meaning of participation. Furthermore, if the strategy document contains the main objectives of open data work; open democracy and open administration and creating new business opportunities based on data collected by the city, the city personnel working with the open data promotion have the support from the city council. And, if the actions of open data as its distinct term is raised in the main strategy document, one can say without interpretations that open data promotion has gained a full support from the highest-level decision-making body of the city.

Institutional barriers, for example based on organizational policies or non-supportive approach of civil servants, can be affected with the city strategy. City strategies are one component in the city management system. The objectives expressed by the city top level also shape the policies and norms in the organization.

It is worth pondering, what could it mean that promoting business life with open data is less expressed in strategies. Perhaps the city decision-makers do not yet see the data reserves of a city as a resource or raw material for supporting active business life. Even though it could be assimilated with more traditional services for companies, such as providing coaching for start-ups or premises for business purposes.

Although not all city strategies in this study contain either the expressions of promoting data opening itself or promoting business opportunities with open data, that does not mean there is no open data work done in those cities. The work may be ongoing, and even with a support from high level. It only indicates that the city council has not seen it as a top priority that should be expressed in the main strategy document. Those topics still may be a part of the strategic development programmes or they may be implemented as part of operational routines. As for the cities that were objects in this research, it is known that they all take part in the Six City Strategy programme where open data and interfaces is one of the focus areas (The Six City Strategy, 2017).

It is common that cities arrange their improvement activities in development programmes, often to be executed in a time span of several years. In some strategy documents, there were mentions of numerous programmes or projects that are set up to implement the strategic objects. Sometimes these programmes were notated to be founded later than the strategy verification, and sometimes programmes were already on-going having started during earlier city council terms. The separate documents of programme descriptions were not under investigation area of this thesis, but the focus was in the main strategy document at its concise form. That gives more weight for the results: if it is there, its importance is significant.
5.1 Limitations

The source material of the research consisted of original documentation, collected from their original publishers, the cities.

The research was limited mostly by the decision to exclude from the study other documents than the main strategy document of the city. The view might have been wider and the number of positive results of open data theme occurrences might have been larger, if strategic programmes of the cities were included. It would have given a deeper picture of the open data promotion in strategic level, but on the other hand it would not have brought any additional information as part of the open data promotion work that is done as part of the operational work in cities.

The research was executed in the context of Finnish large cities. The reason for this was the knowledge of the operational environment and the possibility to access. It is known that large cities host and participate several development programmes.

Terminology has been problematic to some extent. For example, participation is a problematic term, it may mean different things depending on the context. When “residents participate in gaining city wellness objectives by exercising” participation means something else than open data theme-related participation. In this thesis, the context was ensured by reading carefully texts in strategy document. Also, the difference between open democracy and open administration is sometimes hard to separate as terminology, and also as objectives in the study material. Nevertheless, they both are interpreted as themes that can be promoted with open data.

Errors in coding or misinterpretations are always possible with data-driven qualitative content analysis. Also, the researcher’s educational and professional background effects the results; there is no absolute truth.
6. Conclusion

The purpose of this thesis was to study how the city strategies are promoting open data themes. The research was done with the qualitative content analysis methodology based on the city strategy documents. Following the methodology guidelines, the strategy texts were analyzed in a systematic manner.

The city strategies do promote the objectives of open data. Even though the strategy documents are very different with their appearances and proportions, in their open data themed contents they had many similarities. Most clearly that can be seen in the themes of transparent decision-making, openness in operations and resident participation. Commitment to support business on open data or direct willingness for opening datasets was expressed in some strategies, but not in all.

Two main conclusions can be emphasized from the study results:

On the whole, the open data promotion work has a strong support from the top decision-making level, since opening data has a strong connection with promotion of open democracy and administration, as well as resident participation. Open data promotion work has a solid backing it may lean on, in case the work meets obstacles of institutional level.

The other conclusion is, that even though the open data promotion incentives from national and European Union legislation, programmes and other official influences emphasize the meaning of creating new business opportunities with open data, it is not as commonly seen as high strategic priority in city strategies, as are the themes of participation and openness.

6.1 Future research

The study process and results of this thesis offer ideas for further studying the basis and influence behind the open data promotion in cities.

One interesting perspective is the actual effect of the expressions of open data themes in the city strategy. Has the appearance of open data initiatives in city strategies resulted in significantly increased data opening? Are the cities with strong commitment to open data themes in their city strategy, actually more ahead in opening data, in comparison to those whose open data promotion is not that visible in the highest city priorities. This question relates to more general themes where the pondering is around themes like: is the strategy attached to the real life and are the strategy objectives concrete enough to be fulfilled. On the other hand, it can be asked if the objective expressed in the city strategy, generally work as guidance for the middle management. Does the management interpret the subjects in the strategy, in the way that those subjects are taken into operational activities?

Another interesting matter concerning city strategies and open data initiatives is the origins of the initiative. The subjects for the strategy come from various sources: political parties with their city council members and other elected representatives are in the key role. Civil servants take charge of the preparing phase of the strategy and also propose subjects. Additionally, both these groups perhaps tend to keep continuity with the previous objectives or operations. Also, in many cities other stakeholder groups like
residents and corporate life have an opportunity to attend in preparing the strategy. The final result is a consensus. Are there patterns that show which stakeholder groups raise the idea of supporting open data initiatives of different kinds? Whether the emphasis is on open data initiatives or city strategies, these themes provide interesting topics for future research.
References


Appendix 1: Research material

City strategy document of Espoo

City strategy document of Oulu (in Finnish only)
http://www.ouka.fi/c/document_library/get_file?uuid=3cd43780-be77-4bd9-9f09-96d93811cd9a&groupId=52058

City strategy document of Tampere
http://www.tampere.fi/tiedostot/k/P1IFwM6Al/Tampere_City_Strategy.pdf

City strategy document of Turku (in Finnish only)

City strategy document of Vantaa (in Finnish only)

All links verified 28 January 2017.