Graduation Assignment
Thesis Report

Validating the Creation of Open Data Software for Brilliant Bastards

Name: Vivianne G.D Bloemen
Institution: Communication & Media
Degree: Bachelor International Communication
Student-ID: 304534
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Executive Summary

Communicating via the internet has become very popular, and we can easily get and give information. Resulting from this data is produced that then can be used by marketers for the benefit of their companies. One of the ways companies can get this data is through Open Data, which is made public by the governments and can be freely used, re-used and redistributed by anyone (Wauters, 2012). Open Data, also known as Public Sector Information (PSI), is the largest source of information in Europe (Public Sector Information, 2013). This Open Data is the main topic of this paper.

Brilliant Bastards, a small company in Groningen specialized in digital strategies, requested me to develop an in-depth research with the purpose of providing them with a strategic professional recommendation. Brilliant Bastards is currently evaluating the idea to develop Open Data software that could benefit the society at large. Moreover, Brilliant Bastards sees great opportunities for their clients and this potential software. Since no research had yet been conducted in this area, I was requested to further investigate the potential opportunities for the creation of such software. Initially, extensive discussions were carried on to determine the client’s expectations for this research. This subsequently led to the creation of the problem statement:

‘There was a lack of an applicable market research that could validate the necessity for Brilliant Bastards of developing Open Data software.’

Based on this statement, the research goal was defined as ‘validation for the creation of Open Data software for provinces’. This type of research, to obtain validation, can be compared to carrying out market research. This research would assist Brilliant Bastards in deciding whether or not to proceed with the development of Open Data software. Subsequently, a research design was developed with the purpose of strategically planning the steps for this research. Based on the purpose of this research, and of their current use of Open Data, the following provinces were selected as the target group: Provincie Groningen, Provincie Utrecht and Provincie Zuid-Holland. Furthermore, it was early in the process decided that extensive secondary data needed to first be evaluated to get a further understanding of this topic; followed by collection of primary data. In order to gain qualitative and quantitative data, two main collection methods were used: semi-structured interviews with representatives of the three selected provinces, and questionnaires with employees of these provinces that currently work with Open Data.
During the research, three specific focal areas were selected: *significance of open data, current use of open data and the government and open data*. Since these are closely interconnected with each other, the research design is very uncomplicated and straightforward. These three areas were initially evaluated through the semi-structured interviews which lead to the formation of the questions for the questionnaire. Moreover, all the selected areas of research and all questions were additionally based on the information gathered through the secondary data.

The results provided through the semi-structured interviews and the questionnaire, provided great insights about Open Data by the provinces of Groningen, Utrecht and Zuid-Holland. In terms of the benefits that Open Data delivers, the interviews provided rather different results that those gained through the questionnaire and the secondary data. Nevertheless, transparency reflected to be the most significant characteristic of Open Data. Furthermore, their current uses and expectation of Open Data differed. Nonetheless, they all expressed the great potential in the publishing and reusability of Open Data. The interviewees and participants of the questionnaire also expressed to not use currently any Open Data software that is not related to geo data. They further expressed their interest in Open Data software that could help them standardized published Open Data and easier reuse it. Nonetheless, based on the fact that Brilliant Bastards idea is not yet furthered elaborated, data about their interest in Brilliant Bastard’s software could not be collected.

Although the found results respond to the initial request of the client, it was still necessary to review further literature that could contribute to the development of a strategic recommendation for Brilliant Bastards. Given the fact that provinces in the Netherlands are currently not making use of any Open Data Software, but are interest in it, creating not only an Open Data Software but making it initially an Open Source Software will most likely increase their interest towards it, as well as their openness to adopt. In conclusion, it is highly advisable that Brilliant Bastards continues the market research of their software once their idea for this is further develop. Continuing with a sequential research could highly increase the potential success of their Open Data Software.
1. Introduction

People can communicate and connect easily with each other and practically anywhere in the world via the internet with the use of email or the use of social media. People have now got the capability to easily respond to the different information send by companies (Stappers, 1983). Because communicating via the internet has become so popular, and we can easily get and give information, this information has become data that marketers can use to the benefit of their company. One of the ways companies can get this data is through Open Data, information that is made public by the governments and that can be freely used, re-used and redistributed by anyone (Wauters, 2012).

Brilliant Bastards, a small company in Groningen, specializes in digital strategies developed for companies. Brilliant Bastards requested me to develop an in-depth research and to carry my graduation research assignment for them, with the purpose of providing them with a strategic professional recommendation. Hence Brilliant Bastards became the ‘client’ and will be referred as such in this paper.

Brilliant Bastards considers it of great benefit for their customers if Open Data software is created. Open Data, which is publically available, is data which can be redistributed without restrictions of copyright or patents and can be used for any purpose (Wauters, 2012). This Open Data software may serve several organizations in creating a foundation for policy making based on information won from it. The necessity for such software, in which the access and the use of Open Data is carried in a more efficient manner, is needed to further improve the communication of Brilliant Bastards’ clients. However, no research has currently been done on the extent of the importance of Open Data software for Brilliant Bastards clients.

Since no research had yet been done in this area, there was at the beginning of this project a gap in the basis of Brilliant Bastards to develop such software. Therefore, I carried on primary and secondary research attempting to fill this gap and to gain sufficient information that can be of great use for Brilliant Bastards.

This paper will first introduce further information about the client, Brilliant Bastards, as well as the definition of the problem and the theoretical context. Additionally detailed information about the research, results and recommendation will be presented.
2. The Project Context

In this section further information about the client organization, the definition of the problem and the theoretical framework will be given.

2.1 The Organization: Brilliant Bastards

Brilliant Bastards is a small digital agency in the city of Groningen in The Netherlands. They specialize in creating concepts and in developing, implementing and building digital strategies for companies such as hardloopcentrum.nl, Gemeente Groningen and Startup Weekend Groningen, among other national organizations. Furthermore, they provide companies of Groningen with new digital strategies and build campaigns for businesses. Brilliant Bastards is an internet business, founded in 2011 by two young entrepreneurs, who only work with business to business (B2B) companies (Brilliant Bastards, 2012).

Brilliant Bastards was founded in January 2011 by Patrick Loonstra and Geert Jan Schipper. Patrick Loonstra develops the identities for their clients and Geert Jan Schipper creates the digital strategies. Patrick Loonstra studied Grafisch Vormgeving at the Grafisch Lyceum in Zwolle, The Netherlands and has a background in Graphic design and specializes in designing and building identities for companies. Geert Jan Schipper studied sport marketing at the Hanze Hogeschool in Groningen, The Netherlands and is specialized in freelance marketing/ strategy building. Within Brilliant Bastards Geert Jan develops and implements the creative strategies for their clients. He is also responsible for research, writing articles about the digitization of society (Geert Jan Schipper, personal information, 6th of February 2012; LinkedIn, 2012).

Internal Analysis

Throughout the internal analysis, an examination of the strengths and weaknesses of Brilliant Bastards is elaborated. A deeper look into the problems they might face will be explained in the following sections, together with the opportunities and threats of the organization. Overall the SWOT analysis will give a good overview of the organization and its position in the market.

As mentioned before Brilliant Bastards is still a very new company, they have only entered the market since November 2011. This gives them a fresh perspective on how the market runs and operates. However, it not only gives the organization strengths, but also weaknesses.
Strengths

One of Brilliant Bastards strengths is that they are an adventurous company; they are willing to scrap conventional ideas and from there create a fresh perspective for businesses. They are also an innovative company, as they wish to create better and more effective strategies for their clients. They know what they stand for and know what they can do for their clients. Furthermore they are a dotcom company, a company which uses the internet to conduct business, often via a website with a .com domain, or in the case of Brilliant Bastards dot NL (.nl). Since the late 1990’s dotcom-companies, which are characterized by existing only in cyber-world, have been rising and have gained a strong positioning (History of Internet, 2012).

Weaknesses

With strengths come also several weaknesses. One of these weaknesses is that of funding, because Brilliant Bastards is in its startup year and have not created enough revenue, there is still little funding for operations to run smoothly. Therefore it creates the problem of not producing resources to maintain relation with and proceed with current clients or even future client. There is also the weakness of a high risk they have to take. In order for a business to succeed, companies have to take risk and need to put themselves out there, to do this they have to make some expenses in order to create awareness to build a name/image for themselves. For instance they have to invest in hiring paid interns to carry out field research. At the moment they still hire unpaid interns, but for the future they plan on changing this.

External Analysis

External analysis involves the examination of opportunities and threats that might exist or exists in the environment. Both opportunities and threats exist independently within an organization.

Opportunities

Open Data is the future, it can be used as an immense source of information, and Brilliant Bastards, can use this as their unique selling point (USP), to help their clients to create a better customer profile and generate the best data out of social media. The greater the understanding of these data collections, the greater Brilliant Bastards can create the best strategies for their own clients. The software they create will have a double strategic value, for Brilliant Bastards, it can create a communication tool and a strategic analysis of open data for their current but also their future customers. This software could become a unique selling point (USP) for Brilliant Bastards and for their customers a unique way to make the most of Open Data.
Threats

A threat for Brilliant Bastards can be dissatisfied clients. If clients are unsatisfied with the outcome of business, this could result into bad exposure for Brilliant Bastards, they rely on their clients to create good publicity for them. If a client is satisfied with the product, they will be keener to recommend Brilliant Bastards to others. After all word of mouth is still a valued promotion medium, which is free.

2.2 The Problem Definition

As previously stated, Brilliant Bastards consider it of strategic importance if Open Data software is created for their current and potential clients. Even though great thought has already been given into the creation of this program, Brilliant Bastards had not yet carried out any research into the importance of creating such software neither on the market research (Geert Jan Schipper, personal information, 6th of February 2012; LinkedIn, 2012). This lead towards the initial problem formation:

*There was a lack of an applicable market research that could validate the necessity for Brilliant Bastards of developing Open Data software.*

In order to adequately investigate this problem and to further develop a strategic recommendation that can solve this problem, research needed to be carried out. Therefore, it was of great importance to get a better understanding of Open Data, and even more importantly about the usage Open Data by preselected markets.

Hence, in order to further develop a greater understanding of Open Data and to show Brilliant Bastards how Open Data can be used to create better awareness amongst their clients, theoretical and commercial information was necessary. Therefore, it was agreed that I would collect not only primary but also secondary data about Open Data, its importance, its current use, and governments and Open Data.

For the purpose of this research, the following provinces; Provincie Zuid-Holland, Provincie Utrecht and Provincie Groningen; which are further ahead than the others on Open Data and have become innovative in the subject, have been selected as the main areas of focus. In alliance with the client these three provinces of the Netherlands have been chosen as a target group to help state the use of Open Data. These provinces are provinces which have in some form already dealt with a great amount of Open Data. Moreover, Brilliant Bastards has the goal of creating software that converts Open Data into usable information for
municipalities/counties. With this information governments can extract worthy information which can be used to create new policies.

Hence the problem statement and main area of research can be translated into:

<table>
<thead>
<tr>
<th>Problem Statement</th>
<th>Main research goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>'There is currently not any applicable market research that validates the necessity for Brilliant Bastards of developing Open Data software targeted at provinces in the Netherlands.'</td>
<td>To gather information on the importance and the necessity of developing Open Data software targeted at provinces in the Netherlands.</td>
</tr>
</tbody>
</table>

This problem statement and main research goal have been the basis in further developing sub-research goals and questions:

<table>
<thead>
<tr>
<th>Main Research Objective/Goal:</th>
<th>Main Research Question:</th>
</tr>
</thead>
<tbody>
<tr>
<td>To gather information on the importance and the necessity of developing Open Data software targeted at provinces in the Netherlands.</td>
<td>Why is it important for Brilliant Bastards to develop Open Data software targeted at provinces in the Netherlands?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sub-research objective/goal 1:</th>
<th>Sub-research Question 1:</th>
</tr>
</thead>
<tbody>
<tr>
<td>To find out the importance and value of Open Data.</td>
<td>Why is the use of Open Data relevant for provinces?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sub-research objective/goal 2:</th>
<th>Sub-research Question 2:</th>
</tr>
</thead>
<tbody>
<tr>
<td>To find out how Open Data is currently being used.</td>
<td>How is Open Data currently being used?</td>
</tr>
</tbody>
</table>
Sub-research objective/goal 3: To find out what use can Provinces in the Netherlands make of Open Data software.

Sub-research Question 3: How can provinces make use of Open Data?

These research questions and research objectives were constantly considered while carrying on the research for Brilliant Bastards. For further information about the connection between the research objectives and the problem, refer to ‘Appendix 2 – Structural relation between the research objectives and the problem statement’.

2.3 The Theoretical Framework

In order to successfully answer the research questions and to meet the research objectives, secondary data needs to be selected and carefully analyzed. As previously stated, the client has requested this thesis research with the purpose of obtaining ‘validation for the creation of Open Data software for provinces’. This type of research to obtain validation can be compared to carrying out market research. Hence, market research theories will be firstly discussed next followed by literature specifically referred to Open Data, the significance of Open Data, the current use of Open Data around the world and in the Netherlands.

Carrying out market research

Market research is typically carried out when a company decides to get a better understanding of their customers’ needs, establish communication with their customers, develop their branches, get feedback, and investigate the potential of a specific product within a specific market; basically inquiring what customers want (Enterprising-women, 2012; Hague, 2002). Furthermore, one can carry out market research “[to] prevent wasting money and time on developing a product your customers don’t actually want” (Enterprising women, 2012). This is the exact purpose why the client has requested this research, to validate the need for creating Open Data software, and therefore to avoid its unnecessary creation.
Market research consists of systematically conducting research that will serve a previously selected goal; “market research is structured and purposeful. It is the systematic and objective collection and interpretation of data to help reduce risk in marketing decision” (Hague, 2002). Hence, one needs to define the problem or opportunity, set objectives, develop a research design, collect relevant data, analyze the collected data and report the results (Enterprising-women, 2012). These steps have been carefully followed and executed throughout the entire research.

Market research can be carried out with four general purposes; to evaluate the current likeability of a specific product, to evaluate the possibility of selling new products to existing customers, to evaluate the possibility of selling existing products to new customers, and to evaluate the possibility of selling new products to new customers (Hague, 2002). This last purpose, ‘to evaluate the possibility of selling new products to new customers is what Brilliant Bastards wishes to further assess through this research. A clear visualization of these four market research purposes can be found on ‘Appendix 3 – Graphic of the four purposes of market research’.

Once data has been collected, based on the desire goals and objectives, the results need to be analyzed and converted so that relevant results can be obtained (Hague, 2002). Moreover, the results of the collected data should have an impact on decision that will then be taken by the company. For this particular case, the research carried out will assist Brilliant Bastards in deciding whether to proceed with the development of
Open Data software, or not. Thus the results are of major relevance for the creation of such a product. On the other hand, the decisions made by the client based on the market research will no guarantee a success, nor the desired outcomes (Hague, 2002). Market research at its most will “provide usable information needed to support management decisions [and] will provide a way for management to keep up a dialogue with customers and shareholders (Hague, 2002).

Additionally, Paul Hague (1998) provides a set of clauses that can be followed while conducting market research. The following clauses from the Market Research code of the Market Research Society (MRS) have also been guidance in the development of the research carried out for Brilliant Bastards (Hague, 2002):

- Information can only be collected from respondents by fair means.
- Information given by respondents is confidential.
- All results must be supported by adequate gathered data.

Different methodology is highly advised while carrying out market research (Enterprising-women, 2012; Hague, 2002; McDougall et al, n.d.). Hence a multi method approach has been selected while carrying out this research for Brilliant Bastards. Further information about the selected research methodology and the research design will further be discussed in Section 2.

**Open Data**

The Rijksoverheid of The Netherlands explains Open Data as data which consists of sources of raw government information that meets the following conditions (Rijksoverheid, 2012):

- The data are publicly available;
- There lies no copyright or other rights of third parties;
- The data are financed from public funds made available to carry out this task;
- The data correspond preferably to 'open standards' (no barriers to ICT use by users or by ICT providers);
- Open Data is preferably computer-readable.

There are no restrictions, such as privacy or security, applied to Open Data. Public or private parties often control the access to, and the reuse of this data. For Open Data, is mainly public government information collected in the context of a public task and with public funds (Rijksoverheid, 2012).
Governments are not required to collect information or to produce this with only reuse as its purpose. It is about making such information available, just like a public authority has in the framework of the public task in collecting or producing such information. This includes the operations needed for the execution of the public task.

In the Netherlands the Wet Openbaarheid van Bestuur (WOB) (the Open Government Act) determines what information is public. In order to make data available, they must be structured sufficiently to make automatic processing possible (Rijksoverheid, 2012). Additionally, the European Union estimates the economic value of Open Data 27 billion euros, as open data will create opportunities for civilians, governance and businesses to create new services, products, visualization and practices (IPO, 2011).

**Significance of Open Data**

The literature seems to agree on the point that Open Data can deliver many advantages of different characterizations. The main benefit of Open Data seems the possibility it offers to its user to take this data and reuse as best wished; since this ‘recycling’ from information opens several doors to diverse possibilities (Kronenburg et al, 2012; Logica Business Consulting, 2012; EL&I, 2012). These resulting advantages can be best classified into economical, political and social benefits.

According to Kronenburg et al (2012) the most important economic advantage gained from the re-use of Open Data is that businesses will have the possibilities to access information quicker, and these will help them in the further development of their products and services. Whereas Logica Business Consulting (2012) points out that as companies can make quicker and easier reuse of data, this saves money, increasing so a company’s efficiency. Moreover, HM Government (2011) explains that Open Data could save releasing costs; public bodies can share information saving so new gathering cost expenses, and by further developing this innovative field new skills will be necessary and so new working fields will be created.

Furthermore, the EU has estimated the value of Open Data as of 27 billion Euros per year (Kronenburg et al, 2012; IPO, 2011; HM Government, 2011). However, this economic valuation has not been further elaborated; and even though Kronenburg et al (2012) and Logica Business Consulting (2012) refer positively to the economic benefits of Open Data, these both seem to agree that Open Data can only bring any visible monetary benefits after being used and well implemented. In addition, Logica Business Consulting (2012)
expresses that Open Data can actually only bring economic benefits within the government by ‘reducing redundancy’.

Open Data and its reuse promote transparency, providing a great political benefit. As information becomes open and so available to the general public, citizens can get better insight into their governments work, and the international arena, being like this able to hold governments accountable for their decisions and actions (Kronenburg et al, 2012). HM Government (2011) refers to Open Data’s transparency as “[the] most powerful lever of the 21st century in public policy”. Transparency can show governments their work in a way that they would otherwise not have noticed; this stimulates a correction and improvement of decisions and action which leads to the increase of a government’s legitimacy and the increase of public trust (Logica Business Consulting, 2012; EL&I, 2012).

In addition, according to Donner (2011) “there is an increasing interest on the access and re-usability of government’s information. Citizens and businesses want to be able to access such information as this could benefit them. This as a result will enable a better relation between a government and its publics”. HM Government (2011) also refers to the necessity governments have in making their information public in order to improve and maintain a desirable public image. Moreover, the data that government possesses has typically being gathered through the people’s taxes, and therefore this information should get back to people (HM Government, 2011). As stated by Hesp (2008) “data gathered is financed with public money. Because of this, it is then very logical that this data also becomes available for the use of the general public”.

Although the literature strongly argues the economic and political benefits of Open Data, its social benefits seem to be the most valuable. The following example can best explain these (McDougall et al, n.d.):

“In emergency services and disaster management the value of accurate and relevant information such as address, vehicular access, location of services, property ownership, climate, and topography is crucial for directing and managing response efforts. However, rarely do all of these datasets reside within one organization or jurisdiction”.

The majority of the literature claims that Open Data has the possibility of not only improving the information that is given to the public, but even better how this information can directly benefit the public’s way of living (Kronenburg et al, 2012). Citizens will not need to approach their municipalities that often, to be able to get data that directly involves them (Kronenburg et al, 2012). In addition, HM Government (2011) states that Open Data can help citizens but giving them the information they need to make their everyday life decisions; “Open Data [is] about helping people find the right doctor for their
needs, or the best teacher for their child, or helping a victim of crime track whether justice is done”. Nevertheless, this type of data is hardly adequately available. This will be further discussed later below.

Lastly, HM Government (2011) states that the importance of Open Data is rapidly increasing as a result of the great opportunities and advantages that this provides. In shortly Open Data offers six main opportunities (HM Government, 2011):

- Accountability: it assists in creating transparency in the information provided by governments as these will be hold accounted for this.
- Choice: by using Open Data users are given several choices of sources and information, which is highly valued.
- Productivity: Open Data allows entities to evaluate their productivity and efficiency by providing comparable data.
- Quality and Outcomes: by making data open, the quality of this data will gradually improve as many are allowed to use it, change it, and improve it; increasing its quality.
- Social Growth: Open Data provides the opportunity for public debate, informing better the public, “reducing costs and improving quality”.
- Economic Growth: since Open Data is at the moment underdeveloped, by further expanding it and making use of it, new working opportunities and fields will be created and the economy will also improve.

Current uses of Data

Social media has become an immense part of our personal lives, giving example to Facebook and Twitter. With the rise of social media becoming more noticeable in today’s marketing world, also becoming a part of the working/business sector (Kaplan & Haenlein, 2009), the communication between consumers and businesses has become more conscious. Social data, derived from social media, which can also be called customer data, can be defined as data that is the collective information produced by millions of people as they actively participate in online social activities (Preston, 2011). Organisations are feeling more and more pressured to place oneself on internet 'highway’ in order to become more noticed by their clients (Solis, 2012). Their clients wish to interact more and have a more outspoken view on how companies should operate.
However, at the moment social data is still very much a myth, and there is little understanding of how it actually works (Kaplan & Haenlein, 2009). There are only a few who understand social media, its data, and what its impact really is. Not only is there a need for a valid understanding of the impact of social media, but also a need for understanding impact of data collected from social media (Verdegem, 2011).

Social data is often derived from social media platforms, such as Facebook, Twitter or Blogging sites. The information derived from platforms like these are often not fully accessible because of privacy issues. Open Data, on the other hand, is fully accessible to the public and can be freely used, re-used and redistributed by anyone (Wauters, 2012).

Open Data, also known as Public Sector Information (PSI), is the largest source of information in Europe. In 2003 the European Commission implemented a directive on the re-use of public sector information. As stated on the European Commission’s website “The Directive on the re-use of public sector information provides a common legislative framework to a previously unregulated European public sector information market” (Public Sector Information, 2013). More countries within Europe are starting to make Open Data, such as geographical data, statistics, meteorological data, data from publicly funded research projects, available to the public and since January 2013 they have launched the Open Data portal, which concerns all the information that public bodies in the European Union produce, collect or pay for (Wauters, 2012).

A study has been carried out to compare the different use of Open Data among different selected countries; namely the United States, The United Kingdom, Canada, and New Zealand (Logica Business Consulting 2012). Logica Business Consulting (2012) explains that the Open Data use in these countries does not varies as much as expected; actually the biggest different relates to how these countries began their use of Open Data. Whereas in the United States and New Zealand Open Data was largely promoted by their governments, in the UK and Canada it was the civil society what encouraged Open Data use (Logica Business Consulting, 2012). Nonetheless, the following motivated the use of Open Data in all of the above mentioned countries; “to increase transparency, to stimulate economic growth, to improve government services and responsiveness, to encourage reuse, to improve public relations and attitudes toward government, and to improve government data processes (Logica Business Consulting, 2012).

In the Netherlands the use of Open Data has rapidly increased. In 2007 the minister of International Affairs in collaboration with the twelve provinces in the Netherlands agreed upon making ‘geo-information’ available to everyone; allowing citizens to control and influence their provinces’ decisions as well as enabling business to reuse helpful information (IPO, 2011). In order to facilitate the gathering and use of this Open
Data, the OpenDataOverheid website was created (IPO, 2011). And even though this initiative was positively taken, data in the Netherlands is very carefully controlled before being qualified as Open Data by the WOB (Wet openbaarheid van bestuur) (Donner, 2011).

Although Open Data clearly has sufficient benefits to promote its use, many are strongly concerned about the threats it may pose toward privacy, misunderstanding and consequently misuse. According to Logica Business Consulting (2012) all data should be ‘scrubbed’ before made public so as to avoid any release of private or endangering information, even though this may not be sufficient to avoid the “mosaic effect” by which small linked pieces can reveal the entire picture. Scrubbing data is particularly necessary for locations characterized by having small populations, in which releasing a few details could give a clear indication of whom the data is referring to (Logica Business Consulting, 2012). Even though the literature supports the releasing of information by means of making it open, they do agree that all private information and data that may compromise national security should still be restricted, “transparency will not be extended at the cost of privacy” (HM Government, 2011; Logica Business Consulting, 2012).

Another reason that creates opposition to Open Data is based on its difficulty to understand. According to EL&I (2012) many cannot make an effective use of Open Data as this is difficult to find or unclear. Logica Business Consulting (2012) elaborates further by explaining that much of the Open Data is still “raw”, meaning that this has not been adapted to the public and it is therefore unusable; this again can lead towards the undesired released of private data and its misuse. Hence, HM Government (2011) believes that a certain amount of standards should be placed in order so as to improve the use of Open Data:

1. “There should be a presumption of high quality publication for all data that is created with public funds and government must be held to account for meeting that standard” (data.gov.uk, n.d).
2. Public services must show leadership in making itself as open as possible.
3. Public services should only collect and publish data that is meaningful and useful and stop collecting data that has no value.
4. Open Data should be stimulated by the government.

The Dutch government agrees with this first standard and it encourages entities to make their information open but also keeping certain standards that can help to its reuse (EL&I, 2012). Moreover, the UK believes that the potential misinterpretation and misuse of Open Data “should not be used as an excuse to avoid releasing data [as this] is seen as an acceptable risk compared to the benefits of publishing Open Data” (Logica Business Consulting, 2012).
3. Research Design

The research strategy and the research tools have been carefully selected based on the three main research focus areas: significance of open data, current use of open data and the government and open data. Since these are closely interconnected with each other, the research design is very uncomplicated and straightforward. This research design will be further explained in this section.

3.1 The Research Philosophy

The research philosophy structures the entire research methodology (Saunders, 2007). Since this entire project is based on the problem given by the client, Brilliant Bastards, their request is the foundations for the research methodology. Hence, the most suitable research philosophy is pragmatism. Pragmatism “holds that the most important determinant of the research philosophy adopted is the research question”, as stated by Saunders (2007, p.122). Moreover, pragmatism allows the researcher to combine epistemology and ontology philosophies, creating like this the possibility to apply different research methods.

3.2 The Research Purpose

The purpose of this research is to validate the client’s, Brilliant Bastards, software development. Therefore it is necessary to investigate the market into which this software will be launched by means of exploring it. Subsequently the purpose of this research can be defined as ‘exploratory studies’. Exploratory studies are characterized by searching the literature, carrying on interviews with experts and conducting focus group interviews (Saunders, 2007). However, conducting focus group interviews was not applicable to this research since the relevant sample is rather small. This sample will be further explained in section 4.5 ‘The Sample’.

3.3 The Research Strategy

As previously mentioned the purpose of this research is to answer the clients request by validating the need to create Open Data software. Since the client’s request is very specific and applicable only to their needs in a particular time frame, this research can be considered as unique. Therefore the research strategy can be
better defined as a ‘case study’. According to Saunders (2007, p. 139) a case study “involves an empirical investigation of a particular contemporary phenomenon within its real life context using multiple sources of evidence”. This type of strategy aims mainly to understand and explain a particular situation in a particular context (Saunders, 2007; Watson & Noble, 2007). Furthermore, this research can be deeper classified into a *single case study* as the research was conducted only for Brilliant Bastards and the topic has not previously been searched within Brilliant Bastards.

Even though it can be argued that the research carried on for Brilliant Bastards could be used later by another company of similar characteristics opposing like this its ‘case study’ characteristic; since this study concerns an online strategy, and keeping in mind that these evolve very quickly, it would be very unlikely that this research could be of use for any other entity.

### 3.4 The Research Methodology

The research carried on for Brilliant Bastards consists mainly on gathering relevant data among provinces that are currently making use of Open Data. Since in the Netherlands only four provinces, namely Provincie Zuid-Holland, Provincie Utrecht, Provincie Groningen, and Provincie Overijssel, are actively making use of this, the data collection can be gathered very straightforward. Nevertheless, it is very important that this research provides further information for the client beyond exclusively validating the development of Open Data software. Therefore, it is of major relevance that several data can be collected so that the research leads to a complete recommendation.

In order to assure triangulation and to avoid the method effect, a mixed-method research was employed (a graphic of triangulation can be found in ‘Appendix 4 – Graphic visualization of the research design’. By using different data techniques contradictory results can be avoid (Saunders, 2007). Thus the following quantitative and qualitative data collection methods were used:

* **Semi-structured interviews**

In order to get a better understanding of the current use of Open Data by provinces and to gain insights into their opinions and expectations about this, semi-structured interviews were conducted with communication representatives from the selected provinces. Semi-structured interviews consists qualitative research as these allow the interviewer to gain in-depth information by making flexible use of a list of topics,
enabling a discussion between the interviewer and the interviewee (Saunders, 2007; Watson & Noble, 2007). In this research the list of topics used during the semi-structured interviews was based on the three research focus areas.

**Questionnaires**

By making use of questionnaires, the information gathered through the semi-structured interviews can be corroborated. It is particularly important to authenticate data gathered by another method so that consistency is gained. Questionnaires are characterized by gathering questions into a document offering the respondent the possibility to give both closed and open answers; classifying questionnaires as quantitative and qualitative research method (Saunders, 2007). Questionnaires offer one great advantage “[they] eliminate interviewer bias, which is a major problem associated with [...] interviews”, reducing reliability issues (Watson & Noble, 2007). Validity and reliability issues will be furthered discussed in section 4.6 ‘The Research Limitations’.

The selected type of questionnaire was an ‘intranet mediated question’ sent to the respondents by e-mail and returned after completion (Saunders, 2007). Questionnaires were subsequently distributed among communication representatives of the provinces so as to confirm data initially gathered through the interviews and also to gain relevant quantitative results.

These primary data collection methods and secondary data were used in all of the three focus areas. These assisted in gaining clear and consistent results.

**3.5 The Sample**

The sample is the group of people that is contacted to gather primary data. In order to gather relevant primary data for this research, the sample selection can be characterized as ‘purposive sampling’. This type of sample selection consists of electing a sample based on one’s own judgment and knowledge of the research, “selecting cases that will best enable you to answer your research questions and to meet your objectives” (Saunders, 2007, p. 230). This type of sampling is a ‘non-probability sample technique’, meaning in this case that not the entire population of users of Open Data were equally considered for an interview, but only those that were judged to carry the most suitable information.
The sample group can be divided in two, the selected sample for the semi-structured interviews and the sample for the questionnaires.

1. The sample for the semi-structured interviews consist of one communication representative of each province that currently uses Open Data, making a total of three (3).

2. The sample for the questionnaires consists of the communication officers of the provinces that currently use Open Data, making a total of twenty-four (24).

### 3.6 The Research Limitations

The threats to the validity and reliability of the research have been carefully considered and evaluated in order to increase the possibility of getting consistent results and effectively achieving the research objectives.

**Threats to reliability**

Reliability deals with the connection between the selected research methods and the desired results (Saunders, 2007):

- By carefully selecting the location and the time in which the semi-structured interviews were conducted, the ‘participant error’ was reduced. The interviewees were able to select both the time and the place for the interviews.

- All of the participants were assured anonymity, in order to attempt to gain sincere answers. This helped reducing the ‘participant bias’ threat.

- The selected questions for the semi-structured interviews as well as for the questionnaires were carefully formulated so as to not lead the respondent, avoiding like this the ‘observer error’ threat.

**Threats to validity**

Validity is concerned with “whether the findings are really about what they appear to be about” or simply coincidental (Saunders, 2007, p. 150).

- Currently Open Data is gaining large popularity worldwide (Data.Gov.UK, 2011). This ‘context’ could have a positive effect on the results. Nevertheless, neither mayor positive nor negative
developments have occurred, hence it is very unlikely that the context have had a great effect on the results.

As previously mentioned, this research carried out for Brilliant Bastards can be considered as unique, and therefore pose threats to generalizability. Thus, based on the selected research strategy and sample, case study and purposive sampling correspondingly; this research reduces the chances for any potential generalizations.

These research limitations have been carefully analyzed while selecting and carrying on the research for Brilliant Bastards in order to reduce as many threats as possible.
4. Analyses of Results

In this section the analyses of the results of the primary data collection activities are presented. As mentioned on the previous section, semi-structured interviews and questionnaire were carried out to gather relevant information to validate the creation of Open Data software by Brilliant Bastards. These interviews and questionnaire were completed with members of the three selected provinces; namely Groningen, Utrecht and Zuid-Holland. First, the results of the semi-structured interviews will be discussed, and then the results of the open data questionnaire will be presented.

4.1 Semi-Structured Interviews

In order to gather relevant data to validate the creation of Open Data software by Brilliant Bastards, in-depth information was necessary. Therefore, it was decided to conduct semi-structured interviews that could provide qualitative data. Semi-structured interviews consist of preparing some general questions that can be adapted as the interview takes place, offering like this a great degree of flexibility for both the interviewer and the interviewee. This also helps the interviewee to relax and to provide answers more freely.

The selection of interviewees, as explained previously on section two, was based on the purpose of this research. As chosen by the client, Brilliant Bastards, the target group consists of the provinces in the Netherlands; of these three (3) provinces were selected based on their current uses of Open Data, namely the province of Groningen, Utrecht and Zuid-Holland. As a result, these provinces were contacted to gather the necessary information. Fortunately, all three (3) provinces were very keen on participating in this research and, thus, collaborated by taking part in the interviews and providing contact details for the Open Data Questionnaire that is discussed in the next sub-section.

All the general questions selected for the semi-structured interviews were based on the research objectives and research questions. Moreover, these were open-ended questions so that the interviewee could further elaborate on his/her answer. The interviews consisted of thirteen (13) general questions. The results discussed next will be ordered based on these thirteen (13) questions.
1. **What are the social benefits of Open Data?**

To this question, all three interviewees had different answers. Interviewee one (1) seemed to accept the notion that Open Data does deliver social benefits, however interviewee one (1) responded with lot of hesitation, expressing hopes for social benefits though lacking any possibility of providing an example. On the other hand, interviewee two (2) clearly specified the social benefit of transparency and openness that Open Data can bring. This answer is very consistent with what was found on the literature. Lastly, interviewee three (3) presented a very complex answer by referring as more important the technological and economic benefits of Open Data rather than its social benefits, which he referred to as secondary. In terms of the social benefits, interviewee three (3) mentioned that Open Data will enable citizens to get a better understanding of their governments being also able to react quicker, creating an opportunity for interaction. Moreover, interview three (3) also believes that the use of Open Data can reduce the workload of many of the government employees, by making a reuse of information rather than creating it themselves.

Even though the responses between interviewee two (2) and three (3) can be similar, their reaction to the question was very different. Interviewee two (2) seemed to immediately recognize the social value of Open Data, whereas interviewee three (3) estimated this as of lower importance.

2. **What are the economic benefits of Open Data?**

In this area, all three interviewees gave responses within the same direction. Interviewee one (1) was the one that elaborated the most in his/her answer by explaining how other governments make their data open so that this can be reused by other agencies that can add a value to this information and like this reflect an economic growth from the used Open Data. However, interviewee (1) also expressed that this is not currently taking place in the Netherlands as advanced as it is in the UK, where it is encouraged and protected by legislations. Interviewee two (2) and three (3) also recognized the reuse of Open Data as its greatest economic benefit.

Interviewee one (1) further elaborated by referring to the economic benefits of Open Data as subsequent from a different direct benefit; by saving time which would result in saving money. This response, again, is very consistent with the information gathered through secondary data; where it was clearly stated that the economic benefits of Open Data cannot be directly estimated and can best be viewed in terms of its resulting social effects (Logica Business Consulting, 2012). On the other hand, interviewee (3) referred to
the possibilities Open Data create for the development of smart technologies, which would subsequently create a positive economic movement.

3. **What are the political benefits of Open Data?**

To this question, all three interviewees provided a very similar answer. They all agreed that Open Data increases transparency by which citizens can easier monitor what their governments are currently doing. This leads towards a reaction from the citizens. Hence, governments have to adapt their strategies, by working more honestly, which will help them to gain trust from their citizens. Nonetheless, according to interviewee one (1) this transparency scares governments, as they would have to be accountable for their actions. This could be a reason why in The Netherlands Open Data is not that strongly supported by the government as it is in other countries. Additionally, interviewee three (3) stated that trough Open Data citizens could also see where the taxes money goes to, which could create more satisfaction for citizens. Interviewee three (3) also points out that this is already taking place in the UK.

The answer provided here are also very similar to the information gathered through secondary data, where the accountability of the governments is pointed out as one of the main benefits of Open Data (HM Government, 2011).

4. **What are the effects of Open Data towards policy making?**

According to the three interviewees, through the transparency offered by Open Data, citizens can have a better appreciation of what their governments are doing and what policies they are creating. Hence, they can also interfere in this policy-making process motivating their governments to create policies that favor their citizens better. Nonetheless, interviewee three (3) explains that policies in The Netherlands are already Open Data. Though these are only made open once the policy has been already elaborated and accepted. Hence, the policy making process is not made open until the last stage, which results in cero (0) influence from the citizens, eliminating any possibility for a policy making benefit of Open Data.
5. What are the current trends regarding Open Data?

Similar to the responses to question one, the three interviewees had very different answers to this question. Interviewee one (1) explained that there are some new activities regarding Open Data that cannot yet be considered as trends due to their inconsistent repetitiveness. These were gatherings in which through Open Data applications were created with the purpose of seeing how citizens would reuse these to create something more advanced. Interviewee one (1) mainly referred to research and trials rather than planned activities nor trends. Interviewee two (2) on the other hand referred clearly to the gathering of Open Data in datasets and databases, like websites, which could increase their potential reuse. And finally, interviewee three (3) pointed out again technological developments based on Open Data resulting from the economic EU encouragement of releasing data. Interviewee three (3) refers to this EU and governmental economic encouragement as the Open Data trend.

6. What is the EU currently doing with Open Data?

To this question all of the three interviewees delivered a very similar answer. These referred to directives that the EU is creating to promote and encourage the publishing of information via Open Data. These directives, according to interviewee two (2) and to interviewee three (3) these directives are providing standards in the formats in which Open Data is published. This, as pointed out by the secondary literature is very important, since much of the limited reuse of Open Data has to do with its continuous availability and lack of standards (HM Government, 2011).

7. What are provinces currently doing with Open Data?

Interviewee one (1) and interviewee (2) had relatively similar answers to this question. They both expressed the current research carried out to further investigate the potential of Open Data. Interviewee one (1) explained that his/her province currently possesses large amount of Open Data that unfortunately is not in the right format to allow its easy reusability. Hence, they are currently researching how to best reformat this data to promote their reusability; though this is considered a difficult task as much data can be applicable to different fields. Interviewee one (1) also expressed that most of their current published Open Data is geo data (data that is connected to a place; such as roads or population information (IPO, 2011)).
Interviewee two (2) also elaborated further by explaining that last year many provinces decided to contest between each other to see which would have increased their Open Data activities. However this delivered very little results. On the other hand, it provided a prospect for future collaboration among provinces. This collaboration can be, according to interviewee three (3), reflected in the publication of geo data which was encouraged by the governments and followed by all provinces through the ‘Provincial Geo Register’.

On the other hand, interviewee three (3) expressed that there are still many reasons why not to make information open. This interviewee believes that most provinces are contributing with EU legislations and government initiatives by making some data open, but that until now there are still enough privacy issues why not to make other sets of data open. Hence, the type of information that is currently published allows very little possibility for its reusability.

8. How can Open Data be used in current and future marketing/communication activities of the province?

To this question, respondents provided very different answers again. Interviewee one (1) referred to the future use of Open Data in the field of tourism, as currently there are some marketing city campaigns. Hence, through Open Data tourist could be better informed. Whereas interviewee two (2) explained that provinces could increase their transparency and consequently their public image by making a regular use of Open Data. On the other extreme, interviewee three (3) mentioned a current use of Open Data, mainly of geo data, though does not express any desire and making any future further use of it.

9. What Open Data software are provinces currently using?

Here all interviewees had similar answers. They expressed to not directly make use of any Open Data software. Though for some types of information that they wish to reuse as well as to publish, they make use of ‘Provincial Geo Register’ as well as ‘OpenData.org’. To this question interviewee three (3), however, adds more information by explaining that he/she thinks that data should not be directly published by the province itself but through an agency, as the individual that wished to reuse the published information does not care about the source but more about the data. This is explained as the reason why other Open Data software is not currently being used in his/her province.
10. How does Open Data influence the information process towards the public?

To this question all three interviewees expressed the need for further development in this area. According to interviewee one (1) by providing more complete information to the public, the public is able to react to this information creating some interaction between the provinces and their public. This will change the current information process which largely comes from one side. Interviewee two (2) mentions an already existing change in the information process, as he/she believes that since some information has already being made open, publics do not have the need to request certain information that before they did. Hence, the information process seems to have become slightly more effective. Lastly, interviewee three (3) explains that by making more information open, the public will be able to manage their own information process. This will further create room for feedback as well.

11. How would Open Data software benefit the provinces?

By analyzing the responses to this question it becomes visible that all three interviewees had a different interpretation of this question. Interviewee one (1) clearly expresses that an Open Data software could only benefit the specific sector for which it is created; for example, if created for the financial sector it could benefit by facilitating economic charts from other departments, municipalities and provinces. Interviewee two (2) explains that Open Data software could benefit their provinces if it enables the publishing of data to follow a certain format and standard that can enable its quick reuse. Interviewee three (3) mentions that Open Data software can benefit a province by facilitating in general the publishing of Open Data which will have a promotional effect of the province creating a chance of an improved image.

Even though the answers to this question were rather different, the three interviewees expressed the potential of a benefit through Open Data software specially created for the government use.

12. What stages will provinces want to undertake in the near future to maximize their use of Open Data in relevancy to their policies making?

Since the three selected provinces are on different stages in their development of Open Data, their answer to this question also varied based on this difference. Interviewee one (1) explained that their current use of
Open Data is very much behind in comparison to other provinces and that therefore at the moment they need to create better awareness and knowledge of Open Data within their province, so that more departments can contribute towards this movements. It is mainly important that the different individuals within the province are willing to take part in Open Data as each department owes a different set of information. Interviewee two (2) expressed the wish to further expand their use and publication of Open Data and also to receive further collaboration of students that can backup this increase in usability with relevant research. Interviewee three (3) refers to the need of making information about the process of policy making open so that citizens in all levels can obtain this information and participate in the policy making process.

13. What are provinces expecting from Open Data software?

Similar to the previous question, based on their current use of Open Data, provinces’ expectations vary. Interviewee one (1) explains the desire to share Open Data information among the different public bodies so that these can be used quicker and more effectively. Interviewee two (2) on the other hand would like that Open Data software can help in creating an adequate format for all information made public so that this could be easier to reuse. Interviewee three (3) mentions the need for an easier access to diverse Open Data, as well as continuous and updated releasing of information. In line with the information gathered through the secondary data (Kronenburg et al, 2012), interviewee three (3) states that an impediment to use Open Data is its standards, inaccessibility, quality and incompleteness. Hence, Open Data software that can prevent these issues is highly desired.

Even though all these provinces are making current use of Open Data, the degree to which they use this varies. As a result the information gathered through these semi-structured interviews, in occasions, also varies. On other occasions they resemblance similarities to information already gathered from the literature. Furthermore, the representatives of the provinces that were interviewed seemed to be rather positive towards the further direct or indirect use of Open Data. These also recognized the need for further development and cooperation.

The results from these semi-structured interviews serve as basis for the development of the Open Data questionnaire that will be further discussed below. The entire transcription of the semi-structured interviews can be found in ‘Appendix 6 – Transcript of semi-structure interviews with representatives of the selected provinces’.
4.2 Open Data Questionnaire

The Open Data questionnaire was carefully designed based on the results of the semi-structured interviews carried out with representatives of the three selected provinces. Since the information given during the interviews was very general, due to the recent use of Open Data by provinces, the questionnaire was also formed by rather general questions that could back up information already gathered through the semi-structured interviews.

During the interview, the interviewees provided contact information of colleagues of them that are currently working directly or indirectly with Open Data. Based on their positions within the provinces and the purpose of this research, these colleagues were contacted. The interviewees provided a list of twenty-four (24) contacts in total, of which nineteen (19) responded the questionnaire. Unfortunately, of the nineteen (19) that responded the questionnaire, only seventeen (17) were fully completed, and thus eligible for analysis and comparison. Between the 8th and 20th of May, the questionnaire was uploaded online so that all participants could easily respond to this from the comfort of their homes or offices. Moreover, the questionnaire included a clear short introduction that explains the motives and process of this research. All participants were assured anonymity, and in fact no personal details were asked. Additionally, it is not possible to trace which province had the most respondents and which least, so as to avoid any possible reasons for a biased analysis. Hence, the collection of data through the questionnaires was elaborated as neutral as possible.

The questionnaire contained eight (8) questions and was meant to take less than five (5) to be completed. In order to assure that all questions were clear, a questionnaire pilot was conducted with two (2) volunteers. These volunteers provided their opinions and feedback and then the questionnaire was adapted. Moreover, close-ended questions that provided a possibility to gather further information were implemented with a sub- open ended question. In this manner, the chances of gathering reliable data were increased, as well as the possibility to gather qualitative and quantitative results, leading towards better triangulation and consistency. These questions can be found in ‘Appendix 7 – Blank open data questionnaire’.

| Very much | 5,9 |
| Much | 5,9 |
| Some | 52,9 |
| Little | 11,7 |
| Very little | 0,0 |

0,0 20,0 40,0 60,0
The first question referred to the amount that members of the provinces make use of Open Data. Here, the majority of the participants, namely 52.9% declared to make a regular use of Open Data by selecting ‘some’, being this one the middle amount. 11.7% declared to make ‘little’ use of Open Data and 5.9% for each category declared to make ‘much’ and ‘very much’ use of Open Data. Here a sub-question was included, requesting participant to further elaborate on their ‘very little’ or ‘little’ use of Open Data. To this follow up, open ended question, participants declared the inaccessibility of Open Data as their main reason to make reduces use of it. Only one respondent stated as reason to make ‘little’ use of Open Data due the fact that this lacks certain standards.

The next question referred to whether the members of the provinces perceive any benefits from Open Data on their daily workings tasks. This question is very subjective. Here the purpose was to identify if the members from the provinces perceive the use of Open Data generally as positive or negative. Hence, the question did not provide chance for an open answer or further elaboration; it just provided participant the possibility to choose from ‘yes’ or ‘no’. Surprisingly the large majority of the respondents selected ‘yes’ as their answer, namely 94.1 %. This result can provide an indication of the perception of the member of the provinces towards the use of Open Data.

The third question, formed in the same manner as the previous questions, was related to the perception members of the provinces have about the connection between Open Data and transparency. Here it was specifically asked if they thought that the use of Open Data increases the transparency of the information made public. Similarly to the responses of the previous question, here all the participants selected ‘yes’ as their answer, namely 100%. This result also reflects the positive attitude members of the provinces have about the use of Open Data. Furthermore, as observed in the literature, transparency appears to be the greatest benefit delivered by Open Data.

The following question was related again to the benefits provided by the use of Open Data. During the collection of secondary data and the formation of the ‘Theoretical Framework’, one is able to find three specific areas in which Open Data delivers great benefits. These three areas are Economic, Political and
Social. In question four of the questionnaire the participants were asked about which of this areas is the most benefit by the use of Open Data. Nonetheless, in order to avoid leading on the answer of the respondents, these were given the possibility to select ‘none’ and then further elaborate on their answer. Nonetheless, the majority of the respondents agreed upon ‘social’ being the field that is mostly benefit by the use of Open Data; selected by 56.3%. The second area selected as the most benefit by Open Data was ‘economic’, chosen by 25%; and then ‘political’ was selected by another 18.8%. None of the respondents selected ‘none’ as their answer. Hence, no further elaboration was given on this question. Nevertheless, it is relevant to point out that most of the secondary data also called attention to the social benefits of Open Data, reflecting again a similarity between the information gathered through secondary and primary data.

The fifth question, equally designed as the second and third questions, provided the respondents to select one among two options with a possibility to further elaborate depending on their answer. This question was about the potential issues of copy rights and privacy that can arise from the use of Open Data. Here respondents expressed their disbelieve on the potential issues created by Open Data towards copy rights and privacy by selecting ‘no’ as their answer, which was selected by a majority of 94.1%. Only 5.9% selected ‘yes’ as their answer. Though, no further elaboration was given on this question. These responses are further consistent with the previous positively toned responses given to questions one, two and three.

Secondary data expresses the worries of many about the potential threats to privacy presented by the constant and/or neglected use of Open Data. These worries do not seem to be shared by the members of the provinces that are involved with the use of Open Data.

Question number six also provided respondent the possibility of selecting among ‘yes’ or ‘no’ only. Here the respondents were asked about the current use of any Open Data software by their provinces. The majority, 76.5% responded that their provinces where not making any current use of any Open Data software. While, 23.5% of the respondents expressed that their provinces were indeed making use of Open Data software. Here, respondents were also given the possibility to further elaborate on their answers. Those that selected
‘yes’ mentioned additionally the use of www.provinciaalgeoregister.nl and www.opendatanederland.org as the Open Data software used by their provinces. Even though the client has explained the type of Open Data software that his company would like to design, this is up until now just an idea but not yet a fixed plan. Hence, the answers to these questions are very important as this show what is currently being used. On the other hand, the fact that the majority of the provinces are not yet using any Open Data software could indicate that there is not yet an interest about it. This possibility will further be evaluated later in this section.

In question seven, the respondents were asked about their interest on a potential ‘look-a-like dashboard’ Open Data software. The initial invitation to fill in this questionnaire included a brief explanation of the client company and their desired to build Open Data software. Here, the idea of the software was previously introduced so that participants would understand the question in the questionnaire better. Even though this idea was just briefly explained in the e-mail, respondents seem to have reacted very positively to it, as the large majority expressed their interest. This question explicitly asked the respondents to indicate whether they think that such potential Open Data software could benefit their work in the province. To this, 88.2% responded yes, and 11.8 responded not. These responses directly relate to the purpose of this research and the validation for the creation of Open Data software by Brilliant Bastards.

Lastly, question eight was the only entirely open ended question. In this question participants were asked to express their opinions about the current use of Open Data in the Netherlands. Even though only a minority of the participants actually expressed their opinion in this question, the few responses are still very valuable for this research. The most remarkable are that the majority of the respondents indicated that the use of Open Data in the Netherlands could largely improve. Some further elaborated by explaining that the standards of Open Data could be enhanced in order to promote its easy reusability. Moreover, one indicated that raw Open Data could lead towards privacy and misuse issues. These responses reflect again large consistency with the information gathered through secondary data.
Although the entire questionnaire was carried out with the purpose of finding consistent information that could corroborate data previously gathered through the semi-structured interviews, the qualitative of the responses provide much more in-depth information than initially expected. Based on the responses to the questionnaire it can be concluded that the members of the provinces are currently working with Open Data and with some Open Data software, but would still like to see some developments in this field. Nonetheless, they seem to carry a very positive perception towards the use of Open Data and the benefits this can deliver. Furthermore, the information gathered through the questionnaire has been constantly consistent with the information gathered through the secondary data, which reflects the validity and reliability of this research. The entire completed questionnaires can be found on ‘Appendix 8 – Completed open data questionnaire’.

4.3 Comparison of Results

The results provided through the semi-structured interviews and the questionnaire, provided great insights about Open Data by the provinces of Groningen, Utrecht and Zuid-Holland. Even though the questionnaire was develop to gather quantitative further information of the use of Open Data by these provinces, and was thus not directly comparable to the results gathered from the primary data, there are areas that allow comparison and triangulation.

In terms of the benefits that Open Data delivers, the interviews provided rather different results that those gained through the questionnaire and the secondary data. During the interviews, one of the interviewees strongly expressed economic and technological effects as beings the most crucial benefits of Open Data; whereas the questionnaire and the literature refer to its social benefits as the most relevant. It has been pointed out that even though Open Data can deliver economic and political effects, the outcomes resulting from these effects will ultimately provide a social effect, pointing this as the most significant effect.

In line with Open Data providing social benefits, transparency seems to be the utmost important effect of Open Data. Both the primary data and the secondary data point transparency as the source by which governments would like to make their information open; since this will be able to let their public see what they are doing and whether they are doing it right. Based on this, the public will be able to make interference in their government’s decision making; which will lead to better decisions and so create a better democratic sphere and social environment.
In relation to the current usability of Open Data by the three selected provinces in The Netherlands there seems to be a general desire for further development and governmental encouragement. It was found in the secondary data first and then in the primary data that there is a current use and publishing of Open Data related to geographical information, better known as geo data. Further than this, it was very difficult to find other types of Open Data that are currently being used and/or published by the provinces. The interviewees expressed that currently legislations and policies are made open; however the policy making process is not, delivering like this very little benefits. Additionally, it was expressed through the interviews and the questionnaires that a limitation of the further use of Open Data is often its accessibility, format and lack of standards. There seems to be much data that is made open but that does not allow much reusability due to its current format. This was also pointed out by the secondary literature.

Although the secondary data seemed to point out issues regarding privacy and misuse of Open Data, this has not been brought up at all during the collection of primary data. This might had to do though with the little current use of Open Data in The Netherlands. Nevertheless, it has become very clear that the members of the provinces are interested in the further use of Open Data. These also agreed that further research and awareness need to first come in place so that an improvement can really take place.

The members of the provinces also expressed that currently no Open Data software that is not related to geo data is being used. Additionally, the results of the Open Data Questionnaire reflected a high interest in new Open Data software. It also became apparent that provinces would be interested in using specific Open Data software that could help them in the process of reusing Open Data and making their own information open. In connection to the current limitations in the use of Open Data, provinces would like to find Open Data software that can help transforming the current raw data into an adequate format and standard, so as to provide a potential reusability for this information.

Finally, it should be pointed out that during the interviews the members of the provinces expressed the importance of Open Data in connecting the government to the public. The fact that all of the interviewees expressed such a point of view provides an understanding of their political and social interest in further developing possibilities for Open Data.
5. Recommendations

In the beginning of this research the client, Brilliant Bastards, asked me to validate the idea they have to create Open Data Software. This software was just an idea that had not yet been further looked into. Hence, there was little information on what features it would have, how it would function and what it would look like. The client mentioned that the Open Data software would be targeted at provinces, as Open Data can be best used by the governments for the benefit of the general public, and that this software would be designed in a ‘dashboard’ style (Geert Jan Schipper, personal information, 6th of February 2012). Based on this request, extensive primary and secondary data was collected.

As mentioned on the previous section, the results of the primary data collection provided great insights into the current uses of Open Data in the Netherlands. The secondary data provided also information on the benefits and disadvantages of the uses of Open Data as well as its limitations. Based on the client's request, hence the purpose of this research it can be concluded that:

‘There is an opportunity in the market for Brilliant Bastards to create Open Data software targeted at provinces in the Netherlands.’

It also became clear from the research what type of software would best fit their needs. Based on the primary data it became clear that the researched provinces are making different uses of Open Data. Their development in the process of reusing Open Data and publishing Open Data still differs a lot. Nonetheless, from the semi-structured interviews and the questionnaires it became clear that there are some limitations that all these three provinces are experiencing.

These provinces referred to the type of format in which Open Data is published to be most of the time as impossible to reuse. As mentioned by the secondary data as well, Open Data lacks occasionally standardizations which limit its potential for reusability. It was additionally mentioned that much of data made open lack a frequency, which consequently prevents its usability and leads to misunderstandings and misuse of the information. Therefore, the interviewed provinces expressed their desire to be able to make use of adequate software that can facilitate the publishing of Open Data on the necessary standards. This software should also facilitate the location of Open Data that can be reused by the provinces; hence, that it is already within a certain format and that concerns the interests of the provinces.

Since Brilliant Bastards has at the moment only an idea of the type of Open Data software that they would like to create, it is very relevant to present all significant results that can have a direct influence on the design
of their Open Data software. In order to present a consistent strategic advice that can be of great use for Brilliant Bastards the following recommendations will be presented in terms of the obtained results; secondary data results and primary data results and recommendations, and further general recommendations for the Open Data Software.

5.1 Secondary and Primary Data Results and Recommendations

**Secondary Data**

The economic value of Open Data can be better seen in the resulting social benefits, and can only be reflected once it is continuously being reused and published.

Transparency can be considered as the greatest benefit delivered by Open Data.

Open Data creates the possibility of interaction between the government and businesses and the general public.

There are worries of the threats that Open Data can pose towards privacy.

The lack of standards and continuity of Open Data can lead towards its misuse.

**Primary Data**

The amount of time Open Data can save seems to be the most attractive benefit for the provinces.

Provinces recognized the value of transparency created through Open Data.

Open Data seems to not yet play an important role in the policy making process.

The most used typed of Open Data by the provinces is geo-data.

Provinces are still at a research phase. Privacy matters are not yet considered.

Even though there are EU policies promoting the use and publishing within certain standards of Open Data, at a national level these are still lacking.

**Strategic Recommendations**

Further awareness of the benefits of the use of Open Data, such as transparency and creating opportunities for interaction and feedback can be created through the promotion of the Open Data software.

Open Data can enhance the public’s trust by allowing their interference in the Policy making process. This can also be pointed out through the Open Data software.

The Open Data software should provide the provinces the possibility to standardize their Open Data. It should also help them locate Open Data that is of relevancy for their field of work.
5.2 General Recommendations for the Open Data Software

Based on the results gathered through the primary research, little information that could help to develop a strategic advice for the creation of Open Data Software by Brilliant Bastards was found. Although the found results respond to the initial request of the client, it was still necessary to review further literature that could contribute to the development of a strategic recommendation for Brilliant Bastards. As a result of this subsequent research, the important role of Open Source Software became noticeable. According to Comino and Manenti (2004) “[currently many] governments and municipalities around the world have adopted policies supporting open source software, usually aimed at helping software gain a sufficient installed base to stimulate the process of adoption”. Even though Open Source Software immediately represents little earnings of not at all, it provides a different sponsorship potential that can lead to an immense amount of networking which can subsequently lead to meeting potential clients (Comino and Manenti, 2004).

Although an Open Source Software may have no direct earnings, it does deliver a number of indirect benefits. According to Weiss (2013), Open Source Software can create a number of opportunities to “make money”. There are five main ways of creating revenue through Open Source Software (Weiss, 2013):

- One can carry on the installation of the Open Source Software by making a charge for it, as well as for any future support.
- One can create several enhancements required by the different ‘buyers’ which can add the value of the Open Source Software.
- A shop store can be placed within the Open Source software which can provide users the possibility to acquire other paid programs, or manuals, which can facilitate their work.
- A degree of advertisement can be added within the Open Source Software, which can create several earnings for the creator.
- After creating an Open Source Software one can sell its expertise as a consultant.

Given the fact that provinces in the Netherlands are currently not making use of any Open Data Software, but are interest in it, creating not only an Open Data Software but making it initially an Open Source Software will most likely increase their interest towards it, as well as their openness to adopt. Furthermore, the opportunity to create an Open Source Software would fall within the line of interest of the client Brilliant Bastards, as they would like to create the entire Open Data Software to benefit the society at large (Geert Jan Schipper, personal information, 6th of February 2012)
Hence, the following model by Fogel (2013) is presented to Brilliant Bastards as a possible guideline in the creation of their Open Data Open Source Software:

<table>
<thead>
<tr>
<th>Getting Started</th>
<th>Choose a Good Name</th>
<th>Given some idea what the project does and is easy to remember</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Have a Clear Mission Statement</td>
<td>The mission statement should be concise, limiting, and above all, short</td>
</tr>
<tr>
<td></td>
<td>State That the Project is Free</td>
<td>The front page must make it unambiguously clear that the project is open source</td>
</tr>
<tr>
<td></td>
<td>Features and Requirements List</td>
<td>A brief list of the features the software supports</td>
</tr>
<tr>
<td></td>
<td>Development Status</td>
<td>Provide a development status page, listing the project’s near-term goals and needs</td>
</tr>
<tr>
<td></td>
<td>Downloads</td>
<td>The software should be downloadable as source code in standard formats</td>
</tr>
<tr>
<td></td>
<td>Version Control and Bug Tracker Access</td>
<td>The presence of automatically accessible version controlled sources is a sign, to both users and developers, that this project is making an effort to give people what they need to participate</td>
</tr>
<tr>
<td></td>
<td>Communications Channels</td>
<td>Provide the addresses of mailing lists, chat rooms, and IRC channels, and any other forums where others involved with the software can be reached</td>
</tr>
<tr>
<td></td>
<td>Developer Guidelines</td>
<td>Explain how the developers interact with each other and with the users, and ultimately how things get done</td>
</tr>
<tr>
<td></td>
<td>Documentation</td>
<td>The most important documentation for initial users is the basic: how to quickly set up the software, an overview of how it works, perhaps some guides to doing common tasks</td>
</tr>
<tr>
<td></td>
<td>Example Output and Screenshots</td>
<td>If the project involves a graphical user interface, or if it produces graphical or otherwise distinctive output, put some samples up on the project web site</td>
</tr>
<tr>
<td></td>
<td>Caused Hosting</td>
<td>Server that offers prepackaged, templated web pages with all the accompanying tools needed to run a free software project</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Choosing a License and Applying It</th>
<th>The “Do Anything” License</th>
<th>MIT-style licenses are the simplest of several minimal licenses that do little more than assert nominal copyright (without actually restricting copying), and specify that the code comes with no warranty</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The GPL</td>
<td>GPL, General Public License, is probably the most widely recognized free software license in the world today</td>
</tr>
<tr>
<td></td>
<td>How to Apply a License to Your Software</td>
<td>State the license clearly on the project’s front page, and give a geographical address from which to request a copy of the license. Another common method is to give a link to a web page containing the license</td>
</tr>
</tbody>
</table>

| Setting the Tone | Avoid Private Discussions | The guiding principle should always be: if there’s no room for it to be private, it should be public |
|------------------| Nip Rudeness in the Bud | Maintain a zero-tolerance policy toward rude or insulting behavior in its forums |
|                  | Practice Conspicuous Code Review | Code review serves several purposes simultaneously: It’s the most obvious example of peer review in the open source world, and disorderly helps to maintain software quality |
|                  | When Opening a Formerly Closed Project, be Sensitive to the Magnitude of the Change | If you’re opening up an existing project, one that already has active developer accustomed to working in a closed-source environment, make sure everyone understands that a big change is coming |

| Announcing |
It must be mentioned that even though it is suggested in this paper that Brilliant Bastards should proceed in the creation of an Open Data Open Source Software further research needs to be elaborated based on the further development of their software idea. While conducting primary data research the representatives of the provinces of Groningen, Utrecht and Zuid-Holland enthusiastically expressed their interest in Open Data Software. Though, they also expressed the need to get further information about the type and usability of such software. Hence, it is highly advisable that Brilliant Bastards continues the market research of their software once their idea for this is further develop. Continuing with a sequential research could highly increase the potential success of their Open Data Software.
6. Conclusions

The research carried out for Brilliant Bastards with the purpose of validating the creation of Open Data Software for provinces in The Netherlands can be considered as successful. Throughout semi-structured interviews and questionnaires with the provinces of Groningen, Utrecht and Zuid-Holland their interest in such software became evident. However, it also became evident that at the current moment there advances in regards to Open Data are very unequal and behind. Even though these three selected provinces are currently publishing and making use of Open Data, this is mainly limited towards geo-data, which is only referred to geographical information. As a result, the main economic, social and political benefits of Open Data are not yet fully appreciated by their use of Open Data. This can of course create a restraint in the introduction of a future Open Data Software.

Moreover, the provinces have expressed their current research in the field of Open Data. These feel that there is still a need in the creation of awareness and recognition of benefits to further proceed with the use and publishing of Open Data. Equally, as stated by the secondary data and representatives of the provinces, there are limitations in the effective use of Open Data due to lack in standards and formats. These can further lead towards the misuse of Open Data. Nonetheless, these limitations can also be considered as the biggest opportunity for Brilliant Bastards to create software that can respond to this current issue and facilitate the use of Open Data.

Based on the information gathered through primary and secondary data, Brilliant Bastards were advised to create an Open Data Open Source Software that would go in line with their goals, and that would create a numerous amounts of possibilities for further projects within their field of work. Even though this software would not bring them revenue directly, through a number of previously mentioned practices it could create great earnings. Nonetheless, as this research was developed based on the idea of an Open Data Software but not a developed plan, little feedback was gained on how accepted such software could be. Therefore, Brilliant Bastards have also been advised to developed first a clear Open Source Open Data Software plan and then to proceed with further market research to ensure its true potential. Needless to be mentioned, constant evaluation of their software within the market will ensure effective updates and future developments. Finally, the field of Open Data is still in development, and there are surely plenty of opportunities for Brilliant Bastards to develop their business within it.
References


Appendices

Appendix 1: Time Chronogram of Activities

<table>
<thead>
<tr>
<th>Week 15</th>
<th>Week 16</th>
<th>Week 17</th>
<th>Week 18</th>
<th>Week 19</th>
<th>Week 20</th>
<th>Week 21</th>
<th>Week 22</th>
</tr>
</thead>
<tbody>
<tr>
<td>08.04-14.04</td>
<td>15.04-21.04</td>
<td>22.04-28.04</td>
<td>29.04-05.05</td>
<td>06.05-12.05</td>
<td>13.05-19.05</td>
<td>20.05-26.05</td>
<td>27.05-02.06</td>
</tr>
</tbody>
</table>

Activities

- Thesis proposal approved
- Writing the first 4 thesis’ sections
- Gathering and analysis of secondary data
- Development of interview questions
- Developing a strategic advice
- Analyzing primary data results
- First semi-structured interview
- Second semi-structured interview
- Third semi-structured interview
- Launching questionnaire online

05.06.13
### Appendix 2: Structural Relation Between The Research Objectives and The Problem Statement

**Main Research Objective/Goal:**
To gather information on the importance and the necessity of developing Open Data software targeted at provinces in The Netherlands.

**Relation To Problem Statement:**
There is currently not any applicable market research that validates the necessity for Brilliant Bastards of developing Open Data software.

<table>
<thead>
<tr>
<th>Sub-research objective/goal 1:</th>
<th>This validates the significance of developing Open Data software.</th>
</tr>
</thead>
<tbody>
<tr>
<td>To find out the importance and value of Open Data.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sub-research objective/goal 2:</th>
<th>This will provide feasible information on how Open Data is currently being used in the USA, the EU and The Netherlands.</th>
</tr>
</thead>
<tbody>
<tr>
<td>To find out how Open Data is currently being used.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sub-research objective/goal 3:</th>
<th>This will provide a foundation for future targeting strategies.</th>
</tr>
</thead>
<tbody>
<tr>
<td>To find out what use can Provinces in The Netherlands make of Open Data software.</td>
<td></td>
</tr>
</tbody>
</table>
Appendix 3: Graphic of The Four Purposes Of Market Research

The four purposes of market research (Paul Hague, 1988)

<table>
<thead>
<tr>
<th>New product</th>
<th>Existing product</th>
<th>Existing markets</th>
<th>New markets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market research can show the likelihood of adoption of new products</td>
<td>Market research can measure customer satisfaction to find out how to maintain a competitive edge</td>
<td>Market research can find new territories for products or services</td>
<td>Market research can show un-met needs and provide an understanding of unfamiliar markets</td>
</tr>
</tbody>
</table>

The purpose of Brilliant Bastards’ market research in accordance to Paul Hague (1988)

<table>
<thead>
<tr>
<th>New products</th>
<th>Existing products</th>
<th>Existing markets</th>
<th>New markets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market research can show the likelihood of adoption of new products</td>
<td>Market research can measure customer satisfaction to find out how to maintain a competitive edge</td>
<td></td>
<td>Market research can show un-met needs and provide an understanding of unfamiliar markets</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Market research can find new territories for products or services</td>
<td></td>
</tr>
</tbody>
</table>
Appendix 4: Graphic Visualization of The Research Design

The following shows a graphic visualization of the research design which has been used during this thesis assignment and research carried out for Brilliant Bastards. This graphic is based on the model provided by McDougall et al (n.d.). Firstly a graphic designed to show what triangulation refers to is presented, and then a graphic that reflects how the elements of the research design and the combination of methods is shown.

1. **The purpose of triangulation**
2. The mixed method research design

**MIXED METHOD RESEARCH DESIGN**

**Stage 1**
Review and Framework Development

Research of secondary data based on designed research questions and objectives.

Development of the theoretical framework and development of the research design.

**CASE STUDY FRAMEWORK**

**Stage 2**
Developing means to collect primary data

Theories comparison and classification

Interviews and questionnaires design.

Mainly Equal

**Stage 3**
Collecting and analyzing primary data

Carrying on interviews, and questionnaire to collect primary data.

Analyses of results and factor identification.

**Stage 4**
Concluding the research

Drawing conclusions based on results. Evaluating the research process.
Appendix 5: List of Interview Questions Based on The Main Research Questions

Validating the Creation of Open Data Software for Brilliant Bastards

**Main Research Objective/Goal:**
*To gather information on the importance and the necessity of developing Open Data software targeted at provinces in The Netherlands.*

**Main Research Question:**
*Why is it important for Brilliant Bastards to develop Open Data software targeted at provinces in The Netherlands?*

<table>
<thead>
<tr>
<th>Sub-research Question 1: Why is the use of Open Data relevant?</th>
<th>1.1 What are the social benefits of Open Data?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.2 What are the economic benefits of Open Data?</td>
</tr>
<tr>
<td></td>
<td>1.3 What are the political benefits of Open Data?</td>
</tr>
<tr>
<td></td>
<td>1.4 What are the effects of Open Data towards policy making?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sub-research Question 2: How is Open Data currently being used?</th>
<th>2.1 What are the current trends regarding Open Data?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.2 What is the EU currently doing with Open Data?</td>
</tr>
<tr>
<td></td>
<td>2.3 What are provinces in The Netherlands currently doing with Open Data?</td>
</tr>
<tr>
<td></td>
<td>2.4 How can open data be used in current and future marketing-/communication activities of the provinces?</td>
</tr>
<tr>
<td></td>
<td>2.5 What Open Data software are provinces currently using?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sub-research Question 3: How can provinces make use of Open Data?</th>
<th>3.1 How does Open Data influence the information process towards the public?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3.2 How would Open Data software benefit the provinces?</td>
</tr>
<tr>
<td></td>
<td>3.3 What stages will provinces want to undertake in the near future to maximize their use of open data in relevant to their policies making?</td>
</tr>
<tr>
<td></td>
<td>3.4 What are provinces expecting from Open Data software?</td>
</tr>
</tbody>
</table>
Appendix 6: Transcripts of Semi-Structured Interviews with Representatives of The Selected Provinces

Transcript Interview 1

<table>
<thead>
<tr>
<th>Interviewee:</th>
<th>E-advisor at Provincie Groningen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date:</td>
<td>3rd of May 2013</td>
</tr>
<tr>
<td>Time:</td>
<td>2pm-3pm</td>
</tr>
</tbody>
</table>

1. What are the social benefits of Open Data?

There are mainly uh three big drivers for Open Data and one is economical, there is one regarding the quality of data, organizations and public bodies have to offer, I think you can improve the quality of your data by putting it open, open in the field, that it can be used by others, and I also think and hope that you can address social problems with Open Data. But I’m aware of the fact that the business case for that proposition isn’t really made up yet, so I’m looking for good examples, maybe like Brilliant Bastards, what they’re doing. That’s why is interesting to hear about this small group of entrepreneurs.

2. What are the economic benefits of Open Data?

At the moment we’re doing some small research by a group of students from the IDM department of the Hanze Hogeschool and I ask them: could you make a review or inventorisation of what companies are busy, what ICT minded companies, design companies and developers are busy developing applications or websites which are based on Open Data or could be improved with the help of Open Data, so we’re in a research state and I’ve seen some examples that offer some economic value, but they are not in Holland. There is a beautiful example in the UK, they are a lot further, compared to Holland in respect to open government and Open Data and I’ve seen an example about legislation and all legislation is public, like here, but public bodies have to publish all their legislation in Open Data form and there are companies who just take a part of their legislation and then add their own value, a description, their ways of how you can use it and they offer that to the public and to organizations and companies and they get paid for it, because they offer added value, but their main material is the Open Data from gov.uk.com. So that’s a beautiful example and in Holland everybody knows buienradar, it’s the most used example, of course they are making money with it, but it’s just a small one.

Maybe you have to see the economic value in ways of efficient cooperation between public bodies or between the companies and the public bodies, less hassle in exchange in information that is also an economic benefit. But these cases are not worked out yet; we are on the verge on discovering it. The UK may be five or ten years ahead and they started at national point of view, we don’t have legislation which tells us that as a local public body you have to open up your data. Their working on it and its almost there, but then we have to implement and there are still too many hassle that prevents it from fully transparent. The UK model is good. However I also think it’s not always working; maybe it is sometimes too open and you also create opposite force.
3. What are the political benefits of Open Data?

Politicians need to show off good things of their organization. At the moment for us a political benefit could be that our elder men could show Groningen is opening up and is using data for benefit of the public. I think most politician are afraid of the power of Open Data, because the organization that they are responsible for could get a lot of critics and that not very beneficial in the first place. But I think in the long run they can gain from it, because if municipalities and provinces get more in touch with the public regarding their processes, primary processes, the data they use, it also helps politicians to be more direct in addressing public issues.

4. What are the current trends regarding Open Data?

There are a couple of good examples that are being worked out right now. I don’t know if you can speak of trends, because that needs a broad participation to define a trend. One of the things you see happening is that at first we were all discovering and exploring, so we were organizing hackathons, small events in which we let developer create things, small apps, showing beautiful apps on the iPhone and nothing happens beyond that stage. So that was the first phase and now you see that we are aware of the fact that you need a kind of eco system around Open Data in which it is being used and they have a feedback loop to the organization who delivers the data and we can only build that kind of eco systems if there is a real clear purpose for the use of Open Data. So we are looking for it, what kind of social issues can you address and we are also looking for examples where you can get the economic reward and I think one of the sectors in which that is happening yet is the public transport sector. So there you see really the parties are going to work together to provide the real time data you can use to create apps that make sense. And maybe real time is a trend on itself, like Open Data can be static, but it can also be real time and that’s far more preferable.

5. What is the province currently doing with Open Data?

The research is the most important thing we are doing currently, because we have lots of data and we have lots of almost Open Data, that’s data we already have stored in data warehouses and we even put that data online, so it’s available for people to look at, but it is not in the actual data format, so it isn’t easy to reuse it. But for us it is a small step to make that possible. We are opening up a couple of mainly geo data sets, geographical data. But in order to find out a good strategy on what should we do first, because most data is hard to open, you have to convince data owners, you have to transform data to make it anonymous and that’s not free, it takes effort and money to do that. So we have to know where to start, what do people want from us? Hence the research.

6. How can Open Data be used in current and future marketing-/communication activities of the province?

Thinking about what kind of marketing we do and if you’re talking about marketing, it’s mostly city marketing and we can provide information about the city, where touristic things are, placed
or where events happen or that kind of information. But also geographical information about the

city, maps, like bicycling maps that could help to make apps for people who want to visit the city.

We don’t do a lot of marketing for the citizens of Groningen, we do a lot of communication but

that is mainly with regards to politics or with regard to public services.

7. What Open Data software is province currently using?

We are currently not using Open Data software, maybe the bigger municipalities, like Noord-

Holland, maybe for certain data sets. Because I think you are talking about; right you got your
data and you put it somewhere, in an API (Application Programming Interface) or something like

that to make connection to real time. Some systems offer such an API, also we have a lot of

software systems in our house and some of them offer this possibility, but not general for all

kinds of data we have to disclose and the Open Data portal of Binnenlandse Zaken (Internal

Affairs) opendata.org also should offer something like that, I don’t think they do it right now, but

I know their working on it and also within the UK there are some organization that are working

on this kind of standards, ckan.org has such standards. But there are commercial organizations

like Microsoft offers Windows Azure. The RDW, the Rijksdienst voor Wegverkeer, they also put

their data about cars and vehicles into an online database, which is accessible via an API and they

use Windows Azure for that. So those kinds of applications exist. But as a province we don’t

have such software. But for geo data we have something we could use, but that’s not suitable for

other kinds of data.

8. How does Open Data influence the information process towards the public?

We haven’t seen very much of it as of now, but I think it’s very powerful, I think you can show

more of what you’re doing, for example, the province does work on the governments of the

green infrastructure within the city. We come by every month to do the maintenance and it might

be interesting for the public to know when are they coming and did they do their job. If we could

get that information, like time schedules and quality levels, we could publish them, and then there

would be more control of the work we are doing by the public, because they are going to

complain if we didn’t do what we promised and right now all those things are behind our own

walls, so nobody knows what exactly what is happening. That is one example of getting feedback

from the citizens to the province to know if we are doing our job well. And that there will be

other interaction to know about our data sets and how to make them better. So there is co-

creation and interaction. And in regards to financing it is good to be transparent, to show what

we do with the money. We are transparent in that each year we do publish the city’s budget

forecast, a bookwork in which we explain where the money goes, but it is not very easy to read.

And if you make that kind of information available as Open Data, that the journalists, or

developers, those who like to make info graphics and if they use even a small part of the

presented forecast to make it more visible to the public, but visualizing that data you get different

insights and different reactions.

9. How would Open Data software benefit the province?

This would completely depend on what kind of data this is. Because if we’re talking about
demographic data for example, it depends on what do you do in your work with those data, so if you somebody who is concerned with financial stuff, then maybe you are interested in what other municipalities do and you would want a kind of view and interpretation on the data, visualization maybe, but how you configure that depends on what it is, so this question is to broad for me to give a good answer.

10. What stages will the province want to undertake in the near future to maximize their use of Open Data in relevancy to their policies making?

In our case this question comes a little early, because we are just trying to get something out of Open Data. In our organization there are working about 3000 people, and I think there maybe 20 who know what Open Data is, so people don’t know what it is, don’t know what the power of it is, so we have to tell the story and I think there are a lot of chances, for example about research reports, the provinces are doing lots of research about it, carried out by companies, consultancy companies and they are all collecting data from the field, keeping it all in their own data trunk and writing a nice report, presenting it, getting paid and the next people are getting the same data and writing a new report for the same price, so if you could reuse only the report or the data that is collected by the consultancy company that were hired, then you can make such an efficiency benefit from it. Eventually I would like to try out some projects, try some domains, the mobility of the social welfare domain and define a couple of project in which Open Data has a dominant role to show that it can work. So come back in about half a year and we’ll have some stuff to show that it can work.

11. What is the province expecting from Open Data software?

Well then it’s mainly about how can we use information of other public bodies for our processes, I don’t have a concrete answer on that; there are a lot of opportunities in this field. One of the researches were doing is in combination with the province and they are looking at the possibility to collaborate between municipalities and the province of Groningen. With respect to Open Data regarding bus stops and accessibility of them, so they are trying to make the information exchange between all the municipalities within the province and the province easier by standardization of the data and they are using Open Data as a tool for that, so that could be a case they could address with software.
<table>
<thead>
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<th>Project leader Open Data/Senior geo data-specialist at Provincie Zuid Holland</th>
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<td>8th of May 2013.</td>
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<tr>
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<td>12pm-12.30pm</td>
</tr>
</tbody>
</table>

1. **What are the social benefits of Open Data?**

   Transparency and openness: more clarity about what the government does and where it spends.

2. **What are the economic benefits of Open Data?**

   Recycling: expensive government data can be used free of charge by companies to be enriched and then marketed to other parties.

3. **What are the political benefits of Open Data?**

   Politics becomes more transparent and better monitored: are they fulfilling their promises? That forces politicians to do their best more to fulfill their promises.

4. **What are the effects of Open Data towards policy making?**

   More interaction with the users of the policy making: By using crowdsourcing to create policy documents that better suit the needs of society.

5. **What are the current trends regarding Open Data?**

   Linked Open Data is the latest trend: data files, like html, linked together creating a spider web of linked data arises.

6. **What is the EU currently doing with Open Data?**

   The EU has a policy of encouraging Open Data. Recently a new directive has been adopted. There is also, from Europe, the INSPIRE directive in which we as a government are obliged to offer files around our policy in a fixed format and to be available for the EU and its citizens.

7. **What are provinces in The Netherlands currently doing with Open Data?**

   There have been many initiatives last year for Open Data competitions including Brabant, Zuid-Holland, Noord-Holland, Flevoland and Utrecht. This has delivered relatively limited results, especially familiarity with Open Data in the organization and good will towards the citizens. At the moment we are in an exploratory phase with an educational institution to work more closely around the subject Open Data together.
8. How can Open Data be used in current and future marketing-/communication activities of the provinces?

Open Data offers the opportunity to increase transparency and to be closer to the citizen, making it more a democratic process coming into its own. Crowdsourcing and transparency, for example, are now carefully picked when creating the new structure of the province: interested parties are informed in advance about the plans and can contribute ideas during several sessions in the country.

9. What Open Data software are provinces currently using?

We do not use software specifically made for Open Data.

10. How does Open Data influence the information process towards the public?

We are increasingly making files available to the outside world, so there is more need of the data we open up to outside management. At present there are many spatial information made available through [www.provinciaalgeoregister.nl](http://www.provinciaalgeoregister.nl). This is a common website of all provinces. We notice that because of this website we get less direct request for information. Citizens and businesses get the data directly, or use the data service to get our data directly into their own systems to use, without first downloading.

11. How would Open Data software benefit the provinces?

When open file formats are supported better than the current software.

12. What stages will provinces want to undertake in the near future to maximize their use of Open Data in relevancy to their policies making?

Further expanding the range of Open Data with the help of fellow students.

13. What are provinces expecting from Open Data software?

Support of open formats.
1. What are the social benefits of Open Data?

Why do you restrict it to social benefits, is my reaction. Cause social benefit is just one dimension. The primary drive for us to get involved in Open Data is the economic benefits it brings. The province’s executive board sees an added value in providing Open Data as a stimulation of economy, innovation, new technology development, app development game development. As a spearhead in game development there are national programs for innovation incentive and we do gaming as one of the seven national top segments, and gaming and Open Data are linked. So economic issues are the first. In terms of the social benefits, communities can know more about what we do, so they can react better to our decision making, interfere quicker and interact better with us. They are more aware of what the government does so they can be better positioned in their interaction, participating of public processes of their interest. That can also be means to achieve our goals, our policy, for example we have an objective to stimulate the accessibility of cultural data in itself, and to publish it as Open Data. It can also help reducing the workload of the province, so by providing data to the market or communities they can take over certain roles or activities that we were until now doing alone.

2. What are the economic benefits of Open Data?

Answered in 1.1

3. What are the political benefits of Open Data?

By being open you get a transparent government, which might lead to a higher trust from citizens towards the government and politics. And in the political landscape, nowadays, citizens have little trust in the government. Here Open Data could help; for example, if the government would put all its expenditures on the internet people could see where “their” money is going to. In England that’s happening right now, they publish everything they spend. Then the citizens can see where the money goes, and then you have a sort of mechanism to see that there is no money going to things that are not very correct. A good example is; http://wheredoesmymoneygo.org/. We don’t do this, thought this brings political benefits. Another would be that it is a means to involve groups of people in doing things that you want them to do. Open Data can provide communities or businesses with tools to make them do what you want them to do. For example we publish a lot of environmental Open Data and that could create an environmental platform. A NGO could use that information to start its cause or to claim certain things, to interact with the public.

4. What are the effects of Open Data towards policy making?

Policies are at the moment already Open Data; all of the Dutch government publishes all the
policies, in a sort of Open Data way that has had a limited effect. It is easier to find then the process of policy making and also of interaction. Citizens are more aware nowadays, better informed; Open Data plays a role in that process. However, Open Data is not yet that influential in policymaking; though it is in political factors but to a limited extent. In general the government is looking for corrections but Open Data is not very important in that sense, because we don't publish our process. In between documents, for example, the pre-policies are not published because you cannot give transparency into your discussion, you can try to organize your discussion with a sort of debate, but that is not an Open Data at issue.

5. What are the current trends regarding Open Data?

I think economic is predominant but the current driver is not political or social but economic and that is very much from within the EU who is driving that. The European Commissioner for Digital Agenda the Dutch Neelie Kroes is stimulating that very much. And also technological developments drive that very much because of trends like apps and platforms. This gives Open Data new youth; for example, if we know publish our data with our swim water quality as Open Data, there are vendors that could use that to make an app, and that's new. There would be no sense in making a map out of that on paper, but now we can provide people with technology that uses our Open Data.

6. What is the EU currently doing with Open Data?

The new directive is close to being published. Neelie Kroes is publishing a new directive and they're going to increase the demands on publishing, so it's going to be more normal to publish data in a machine, mass way. Though, they are augmenting the domains to which this applies; for example, cultural data sets.

7. What are provinces in The Netherlands currently doing with Open Data?

Well it's actually a bit of an issue. So most provinces have somebody who is involved in this, the trend is to want to comply, so most provinces are trying to go to compliance so they're trying to reuse data that is already published, and they have people working on that issue. However, that is also counter power; there are always reasons not to do it. We are not very big in this issue so the datasets of Utrecht are very limited, compared to other cities. On the other hand what we do have a lot of is a sort of background Open Data, background information Open Data. A lot of provinces are putting them on the web as Open Data now. And there is also some legislation driving us to publish data in an Open Data form. Just like the law of disclosure and the fact that you have to publish certain things, like your law legislations but then in an Open Data format. There are the INSPIRE directive from Europe, and the Aarhus directive, which lead to certain standards in the publication of Open Data; the last says that you have to publish certain environmental data. And nationally, for example there is the RIVM (Netherlands National Institute for Public Health and the Environment) they do that for the ministry. There are certain national trends that drive us in doing things, WRO (wet ruimtelijke ordening), planning law, ruimtelijkeplannen.nl. We have published our plans, our policies that are kind of a directive towards other governments in terms of what they do and can do in certain regions. So, we are
making some information open. If you look at what provinces have, they have a lot of background information. We have 400 datasets published in a geographical style that shows they are map related. We have 400 different types of data published as Open Data which is actually geo data. We do this together with the other provinces at the Provinciaal GeoRegister. We are front runner. Utrecht is a leader in this. We have 400 sets and the others have 300 sets altogether, that is where we publish everything, but they are quite limited datasets. For example, the quality of the air or how many people live in a region, all sorts of boundaries, the knowledge about water in the underground, those sorts of things. Not something you can drive a primary business out of, that it could help you. But that is also a priority of ours. We have some typical domains of which there are separate sets; for example, we have our own roads where the province has its own road network, provinciale wegen, that means we have traffic lights giving us information about traffic coming through, and we're in the process of publishing this as Open Data. Companies could use this, for example, add this to their own data of traffic so they could do a better estimate of congestion, they give also an estimated travel time between certain parts of the roads, but that's not real time. We don't provide this data with the objective to help these companies, but more to stimulate this.

8. How can Open Data be used in current and future marketing-/communication activities of the provinces?

In communication we do provide and use Open Data, but to what extent do we have to promote it? And to what extent do we want to express its added value? That’s an issue.

9. What Open Data software are provinces currently using?

We use the Provinciaal GeoRegister and they provide for an xml on their platform, and to the rest we try to limit to our own publications. But in general, we should not be doing the publishing, but more like an outside channel to which you could publish. Because the parties that are looking for data, are not interested in you as a party, their more interested in all the data in the segment from one point.

10. How does Open Data influence the information process towards the public?

It's quite limited still, but it's very fundamental. It’s driving us to retreat; it’s helping the government to retreat to its core business. Rather than doing things out there, like making your own apps or have your own communication channel, we’re retreating and having Open Data to fill in the gaps and help other parties to do the thing that has to be done. It has a more facilitating role.

11. How would Open Data software benefit the provinces?

As a government, you want to promote yourself, so by publishing all of your Open Data, it would be sort of a promotion, but more importantly it could facilitate communication, to give a platform. Like the VVV (the Dutch visitor information center) and be a platform to give information on city information, But we would prefer if somebody else does that.
12. What stages will provinces want to undertake in the near future to maximize their use of Open Data in relevancy to their policies making?

We use Open Data to develop policies. We are looking at portals that combine different data sets, into one easy to access format for our people and we provide that too. We have such a platform for ourselves. We are looking at a commercial party platform to take in information from CBS (Central Agency for Statistics), Open Data, UWV (Institute for Employee Insurance), they offer a lot of data streams and we have our platform for that we have a platform to publish our data sets, but it also takes in the data sets of other governments. So we have a sort of universal machine that can pick up geographical data sets from any party, that uses the right format and that we present to the outer world in all kinds of viewings, but also towards our own people. This is all available to all interested parties. We use this to help municipalities, to test their plans against our insights, so they can view it against our plans and against our Open Data sets. So they get an impression, how the province will look at their plans before they ask us to react to it. It’s a combination with their own shielded environment, so nobody else can see their plans before they’re published. And I expect that in the next step we could do this with citizens. So that citizens will be able to place plans from other governments in our environment so that they can learn from that or see where the options lie, or where the options could be made, and in the end the citizens would make their own plans in their mind. Its terms of plans, that communities will start making their own plans, and all this within a time span of five years.

13. What are provinces expecting from Open Data software?

The main issues with Open Data is, is has to be easy to find. From a demand perspective. And to have good insight in blind spots, omissions, quality, actuality, completeness of sets. Are there data sets, what are they, what is the quality of them, are they complete, local or nationwide, cause that can guide you into your business opportunity. You want to have data platforms that allow people to make solutions based on Open Data that they know that these sets are complete, they are continued in time, and the quality of sets is known, that’s what you have to provide for.
Appendix 7: Blank Open Data Questionnaire

The following is a sample of the questionnaire which was uploaded online to provide participants the flexibility to complete the questionnaire in their own time availability. This questionnaire was send to members of the communication departments of the three relevant provinces: Province of Groningen, Province of Utrecht and Province of Rotterdam.

Introductions

Thank you for collaborating on this research.
The following questionnaire will not take longer than 3 minutes to be completed.
The following questions are all related to work data. 
In order to get sufficient information, please answer each question as specific as possible.
They are about the question in work.
The questionnaire will be complete once all questions have been answered.

1. Do you think the use of Open Data delivers benefits for your work in the province?
   - Yes
   - No

2. Do you think that Open Data enables more transparency on information made public?
   - Yes
   - No

3. Which of the following do you think is the most important benefit of Open Data?
   - Social
   - Economic
   - Political
   - None of the above mentioned
   - Other (Please Specify):

4. Do you think that the use of Open Data poses issues towards copy rights?
   - Yes
   - No

5. Does your province currently makes use of any Open Data software?
   - Yes
   - No
   - If yes, which one?

6. Do you think that an Open Data dashboard style software would facilitate your work in the province?
   - Yes
   - No

7. Do you have any comments regarding the use of Open Data by provinces in The Netherlands?
Open Data Questionnaire

Introduction

- Thank you for collaborating on this research.
- The following questionnaire will not take longer than 3 minutes to be completed.
- The following questions are all related to open data.
- In order to get sufficient information, please answer each question as specific as possible.
- Only one answer per question is valid.
- The questionnaire will be complete once all questions have been answered.

1. How much do you make use of Open Data?
   - Very little
   - Little
   - Some
   - Much
   - Very much
   If ‘very little’ or ‘little’, what prevents you from making further use of Open Data?

2. Do you think the use of Open Data delivers benefits for your work in the province?
   - Yes
   - No

3. Do you think that Open Data enables more transparency on information made public?
   - Yes
   - No
4. Which of the following do you think is the most important benefit of Open Data?
   - Social
   - Economic
   - Political
   - None of the above mentioned
   - Other (please specify):

5. Do you think that the use of Open Data posses issues towards copyright and privacy?
   - Yes
   - No
   - If Yes, which one?

6. Does your province currently make use of any Open Data software?
   - Yes
   - No
   - If Yes, which one?

7. Do you think that Open Data 'dashboard style' software would benefit your work?
   - Yes
   - No

8. Do you have any comments regarding the use of Open Data by provinces in The Netherlands?
Appendix 8: Completed Open Data Questionnaire

The following are the results of the Open Data Questionnaire. This questionnaire was sent to 24 representatives of the three selected provinces. Of these 24 representatives, 19 questionnaires were filled in, of which only 17 were entirely completed and could be used for the analysis of results. Bellow, the results are presented as given in percentages. For the analysis of the results refer to ‘Section 3 – Analyses of Results’.

Open Data Questionnaire

1. How much do you make use of Open Data?

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<thead>
<tr>
<th>Response</th>
<th>Percentage</th>
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<tr>
<td>Very much</td>
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<tr>
<td>Much</td>
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<tr>
<td>Some</td>
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<td>11,7</td>
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<td>Very little</td>
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If ‘very little’ or ‘little’, what prevents you from making further use of Open Data?

- Mostly it is not clear enough, and therefore I cannot reuse it.
- Doesn’t fit within our daily tasks
- Government standards
- It is not really accessible
2. Do you think the use of Open Data delivers benefits for your work in the province?

3. Do you think that Open Data enables more transparency on information made public?

4. Which of the following do you think is the most important benefit of Open Data?
5. Do you think that the use of Open Data possess issues towards copy rights and privacy?

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6. Does your province currently make use of any Open Data software?

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<th>No</th>
<th>Yes</th>
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<td></td>
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</table>

If yes, which one?

- http://www.provinciaalgeoregister.nl/georegister/
- http://opendatanederland.org/
7. Do you think that Open Data 'dashboard style' software would benefit your work?

![Bar chart showing the responses]

- Yes: 88.2%
- No: 11.8%

8. Do you have any comments regarding the use of Open Data by provinces in The Netherlands?

- If open data was to follow some standards then I could use it better.
- I think that if all provinces in The Netherlands make more use of open data communication channels would improve.
- I think that open data can create disadvantages for privacy since peoples details could become of public domain.
- I believe that once it becomes further promoted, it will become huge!
- I think that open data in The Netherlands is not that far yet.
- Even though its use is increasing, I think that municipalities could do a lot more with open data.