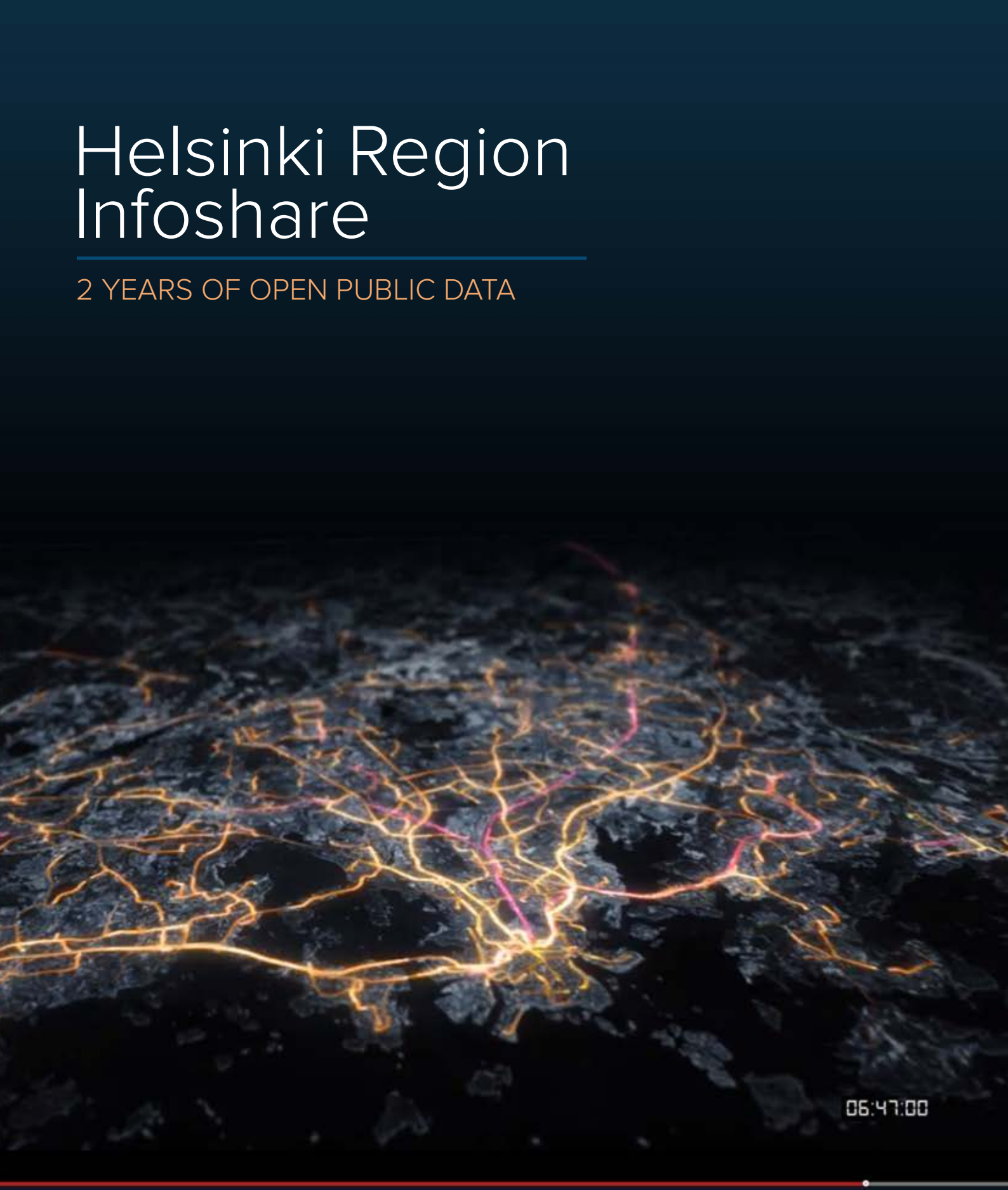
Helsinki Region Infoshare

2 YEARS OF OPEN PUBLIC DATA



PROVIDING
STIMULI FOR
UNLOCKING DATA

www.hri.fi/2years

HELSINKI REGION INFOSHARE

TO THE READER

There are many good reasons why we should open public data. Strong evidence indicates that just making data publicly available has produced significant results. The open data movement is young and international but is making rapid progress and inspires people to new achievements. Open data helps society develop towards a more open and international direction, increasing equality and involvement in all fields.

Opening public data, which also means releasing it free of charge, makes sense from the perspective of public finance. Opening up data can mobilise great creative reserves and user-oriented design. The new services and products designed in this way will also save production costs. In other words, open data will not only simplify your daily life but also create more options for consumers, contribute to the creation of new jobs and enable collaboration across borders. Helsinki, Espoo, Vantaa and Kauniainen will develop greatly as open cities.

Asta Manninen
Director, Helsinki Region Infoshare project
City of Helsinki Urban Facts

Opening public data is an undertaking with a vast number of positive effects. In the hands of active developers and enterprises, public data will be refined into new services and business.

For the ordinary citizen, solutions that make use of the new data reserves will mean increasingly uncomplicated daily routines and services. It also brings new business opportunities for the private sector and more tax revenues for public service. It is hard to think about another action which can bring about so many positive effects.

So far, a major disincentive for opening data has been the government agencies' concern about losing sales revenues. Solutions have now been found for this issue as well. The decision on central government spending limits not only gave whole-hearted political support but also allocated significant funding to the Open Knowledge Programme for 2014 through 2017. This finance plan can compensate the government agencies for the income lost by opening their data reserves to the public.

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Printed at
Lönnberg Print & Promo, Helsinki

www.hri.fi/2years
2013

The cover illustration is a screenshot of a video that transforms the open timetable data of the Helsinki public transport into a film. The stars of the film are the public transport vehicles which set off on their routes as the city awakens to a new morning. This visualisation designed by Lauri Vanhala won the Best Visualisation prize in the 2011 Apps4Finland competition.

Background

Applications

The HRI project has opened up more than 1,000 datasets available for all online. What are the possible uses for open data?

How to open up data

Why open up our data reserves?

The one-thousandth data set published on the Helsinki Region Infoshare web service was a set of high-resolution wartime aerial photos of Helsinki. The coastal defence ship Väinämöinen, moored outside Santahamina, and the anti-aircraft guns in Pasila are emblematic of the time of photography.

As soon as the maps were made public through HRI, application developers immediately built web applications allowing the user to compare the photos with an image of present-day Helsinki. The visualisations show how dramatically the city, its coastline, web of streets and building stock have been transformed in less than a century.

UNLOCKING THE DATA

Text Petja Partanen **Photo** Hannu Mäkäräinen, CC BY-SA 2.0-licence

In the course of just four years, the open data movement has progressed from idealism to practice.

September 2012. An auditorium full to the brim is giving standing applause – to a university professor. The star speaker on the stage is the data visualiser **Hans Rosling**. His one hour long lecture at the Open Knowledge Festival in Helsinki has convinced the audience that open data is the "thing". At least for those who seek to understand how the world works.

The Swedish professor Rosling uses numerical data to show that many of the ideas we have about the world simply do not hold true. With data visualisation tools and raw statistical data, this mythbuster demonstrates a breathtaking amount of evidence about the ways in which the world really works. He also finds some time to praise the success of the Finnish school system and the constitution of United States.

"It is a rather good constitution considering the openness of information. Data belongs to the people."

Cue back to 1989. The concept of open data did not yet exist. **Tim Berners-Lee**, then a researcher at CERN and the future inventor of the World Wide Web, wrote for the first time a web address beginning with the letters 'http'. Meanwhile in Finland, **Antti Rainio** at the National Land Survey wrote an article about the pricing of data in the journal Maankäyttö. Digital geodata should be cheap if not free, he argued. "If the data has been produced, we have to ensure all the possible benefits for the economy by using it."

Today, everyone is talking about open knowledge, the Web will soon celebrate its 25th anniversary, and Antti Rainio's wish has come true. If you log in to the National Land Survey's open data download service and type in, say, your summer house's address, the basic map and aerial photo of the area will soon appear in the shopping basket. Click on 'Order' and a 60-megabyte data file is downloaded onto your hard disk, free of charge. The resolution of the amazingly accurate aerial photo is around half metre.

You can make out the shape of the caravan that stood on the yard two years ago when the photo was taken.

An office tower in Helsinki's Pasila district holds the headquarters of the National Land Survey. Senior Advisor Antti Rainio is a content man these days. The National Land Survey opened its data resources to the public on 1 May 2012 as the first Finnish government office, and Rainio was voted as the most influential IT person of the year for his merits in opening public data resources.

Defying Google

For many years, Rainio and his colleagues watched helplessly as the free but rough-quality Google maps were used in different online map services instead of the National Land Survey's top class digital map resources. Now it finally seems the tables have turned. Since the government agency stopped charging users for their service, the use of digital geodata has increased over 50 times. 'Mr Open Data Finland' is optimistic about the future.

"The development will lead to a situation where all the major public data resources are accessible and used by all", says Rainio. "This will enable better decision-making, better civic services as well as better commercial applications", says Rainio.

Opening geodata free of cost for public use required some changes to the legislation. These changes met resistance from the keepers of the public coffers, since the fees paid by the data users provided revenues for the agency. The fate of the legislation change was perhaps decided by an EU Commission communication which estimated that opening public data could bring a total benefit of € 140 billion annually. According to a research by the Research Institute of the Finnish Economy ETLA, in countries which offer free geodata, the growth of companies using such data has been 15% higher than elsewhere.

"The fact that the USA is the world's leading provider of geodata software is because the 'fuel' – map data

1989 National Land Survey's **Antti Rainio** writes in the journal Maankäyttö: "Information should not be priced with a view to the clients who can pay the most, because the smaller marginal benefits will then be lost. "If the data has been produced, we have to ensure all the possible benefits for the economy by using it."

2001 "The Semantic Web", an article by **Tim Berners-Lee**, the inventor of the World Wide Web, is published in the Scientific American magazine.

2004 Publication of first Finnish version of Creative Commons, a licence suitable for open data licensing.

2006 The first verifiable mention of the term 'open data' in Finland is made during a lecture by **Matt Biddulph**.

June 2007 The British government publishes the report The Power of Information on the benefits of sharing information.

The world's largest open knowledge event gathered around 1,000 enthusiasts of open data and open governance to Helsinki in September 2012.

– has been freely available", says Antti Rainio.

The idea of opening public data has arrived to Finland from the United States and the UK. The breakthrough was made in 2009 when the US government's open data catalogue **data.gov** was opened. The UK government's **data.gov.uk** followed shortly afterwards. Among cities, Washington was the forerunner, and it had the idea of speeding up the use of open data by arranging a competition for applications. Inspired by that example, Finland's Apps for Democracy contest, later renamed Apps4Finland, saw the light of day in autumn 2009.

Try-and-learn culture in the municipal sector

Officials are often blamed for being slow to adopt new ideas, but when it comes to open knowledge, the region of Helsinki has been very much attuned to the times.

The Helsinki Region Infoshare project was launched on a rapid schedule. The working method was also new. **Petri Kola**, chairman of Open Knowledge Foundation Finland, talks about a "try-and-learn" culture. Kola has himself previously worked for the HRI project. "In public administration, you rarely see anything resembling the HRI project: we simply started trying different things and learned along the way."

One of the experiments was whether Helsinki's case management system Ahjo, a paperless office for 5,000 city officials and decision-makers, could be opened to the public. The Helsinki Region Infoshare team set off to work by arranging a meeting between officials from the city's Administration Centre and application developers, so the two groups could work together on the subject. In one year, the project progressed from a good idea into an open data interface.

The HRI team also travels around to meet officials of other cities and various departments, in search of data that could be published. They give guidance to the officials in making the data openly available online, and the data reserves are added to the Hri.fi data catalogue. Latest datasets are then advertised to the application developers.

The feedback from the users of the data is crucially important when discussing the possible benefits of opening knowledge. It is difficult to estimate in advance what kind of data the coders would find useful as the basis for new applications.

to be continued in the next spread

2008 Many open data advocates make first contact with each other in the Open Research Swarm channel on Jaiku, the predecessor of Twitter. The virtual research community experiments with new collaboration methods and the utilisation of social media in research.

April 2009 Peter Corbett visits Helsinki and tells his audience about the Apps for Democracy project organised in Washington DC.

May 2009 The US government's **data.gov** data catalogue is launched.

4 June 2009 The first Datanavaustalkoot open data workshop is posted as an event on Facebook. "Join us and share your know-how and contacts related to opening data."

June 2009 The vision for regional data ("Helsingin seudun seututietovisio 2020") proposes to launch the Helsinki Region Infoshare project to promote the openness of information.

Inventor of the World Wide Web, advocate of open data Tim Berners-Lee explained in a famous TED talk in February 2009 why opening data is the next giant step in the development of the World Wide Web. "Put your data on the web in a machine readable form." **http://bit.ly/v2L9bC**

continued from page 5

Many of those who have opened their data have been pleasantly surprised to see the data reserves end up in good use. One example is the public transport utility of the Helsinki Region, HRT. The online schedule service of Helsinki Region Transport, **reittiopas.fi**, is one of the most popular web services in Finland. Data on public transport routes and schedules has been publicly available since 2009. The cost of publishing them as open data was rather modest. The open data interface and its maintenance has cost 60 000 euro in three years, that is roughly one per cent of the total costs of the whole data system.

HRT drummed up some publicity for the interface with its Mobiilikisa ("Mobile Challenge") competition. The application challenge produced more than 60 mobile applications making use of the interface services. Today, many people use their mobile phone to find their way to the right bus.

"It is hard to imagine how we could have achieved such a wide offering of mobile services with the resources we had. Had we started to develop the mobile applications by ourselves, it could have easily cost 50,000 euro apiece", HRT project manager **Jari Honkonen** estimates.

Activists convene online

The discussion threads in the Finnish Open Data Ecosystem Facebook group have grown in length. More than a thousand members mull over the various aspects of open knowledge from many perspectives – from the EU's public sector information directive to open source programming tools.

When **Antti Poikola**, one of the pioneers of the Finnish open data movement, challenged the group members to think back about the early days, many mentioned the award ceremony of the Apps For Democracy contest in Tampere in 2009 as the moment that inspired them to become involved in open data. People interested in open data met there for the first time and the community started to grow. It was the enthusiasm of the pioneers, rather than official decisions, which spread the "gospel" of open data at the first stage. The award ceremony of 2011 Apps4Finland competition was already a major event. Corporate IT directors and public-sector officials were present at the occasion. Open knowledge had suddenly become fashionable.

Browsing through the Open Data Ecosystem member list these days, one finds that many journalists and entrepreneurs – as well as a bunch of officials interested in data reserves – have joined the ranks alongside the academic "hard core". One enthusiast from the official sector is Inspector General of the Finnish Tax Administration **Johanna Kotipelto**.

Johanna Kotipelto was in charge of licensing the first open data set published by the tax administration and adding that data to the public data catalogues. Now anyone can download the complete corporate tax data of Finland as one CSV file and see how much tax each corporation or association has paid in the previous year. This makes the job of journalists easier. When the newspaper Helsingin Sanomat, for instance, in September 2012 reported that major businesses pay only 5 per cent of profits in taxes, the reporter had to go to the tax office's public terminals to look for the data on corporate taxes. Today, reporting that news would be much easier. Today, reporting that news would be much easier.

Open data is an asset for Finland

It seems certain that public administration has joined the open data movement for good. The objective to open up public data resources for all to use has been recorded

1 October 2009 The first winner of the Apps4Finland competition is announced at the MindTrek conference. The Tax Tree visualisation draws deserved attention.

November 2009 A report by Finnish Business and Policy Forum EVA proposes the opening up of public sector data resources free of charge to the public.

November 2009 An interface to the data of the popular Helsinki region Journey Planner is opened to the public.

November 2009 Forum Virium Helsinki is assigned to prepare a project plan for Helsinki Region Infoshare.

January 2010 The data catalogue of the of the British government, **data.gov.uk**, is published.

Present at the first assembly of the association in November 2011 were the ‘hard core’ of Finland’s open knowledge activists.

in two successive government programmes. The state administration has just launched its own Open Knowledge Programme, which includes building a nationwide open data catalogue. Petri Kola hopes that the municipalities and the state administration will remember that the opening of data will only start bringing benefits when the data is put into use.

”It is worthwhile to seek contacts with the potential users of the data sets”. By listening to third party users your own organization may also learn a lot. ”At first it is useful to publish something simple, preferably data on map, which helps to understand the municipality spatially. The locations of municipal offices and service points, administrative districts, building sites, traffic accidents, noise pollution observations...”.

Why is this important then? Let us ask a philosopher. “It is beneficial for Finland; a competitive asset”, says **Ilkka Niiniluoto**, Chancellor of the University of Helsinki. “Open data helps society function better and enables the search for new solutions.”

Open Knowledge Foundation Finland

Founded in December 2012, the association Open Knowledge Foundation Finland gathers together the Finnish enthusiasts and experts of open data. OKF Finland is part of the world’s largest open data community, Open Knowledge Foundation.

http://fi.okfn.org/

Public data – introduction to opening data resources

The guidebook by Antti Poikola, Petri Kola and Kari A. Hintikka, completed in spring 2010, is for many the first point of contact with the world of public information.

http://www.julkinendata.fi

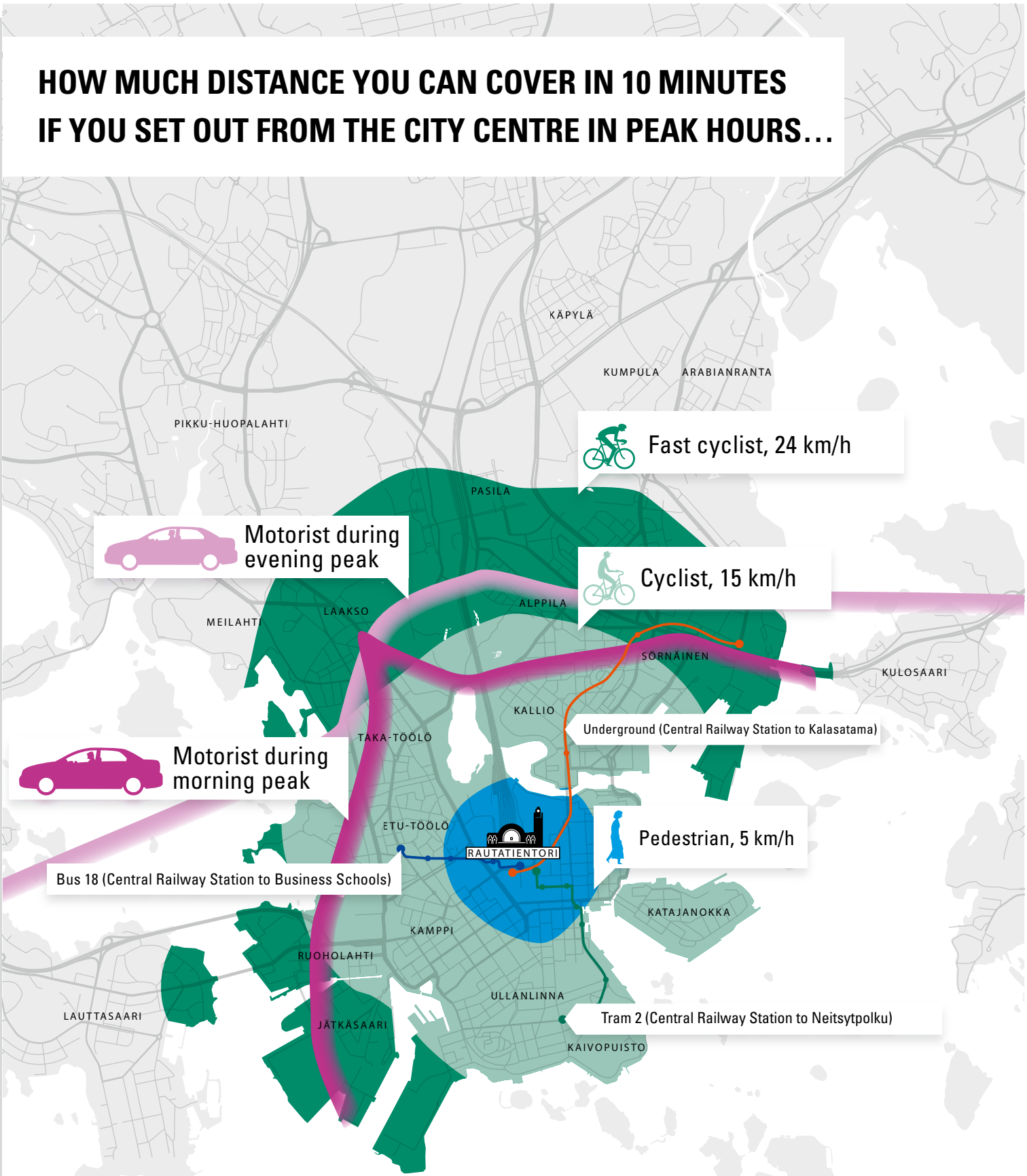
February 2010 Memo by ETLA (Research Institute of the Finnish Economy): “Data is a source of revenue for public administration. This is a barrier for opening up information.”

March 2010 Public Data – an introduction to opening information resources by **Antti Poikola, Petri Kola** and **Kari A. Hintikka** is published.

11 March 2010 Founder of Open Knowledge Foundation **Rufus Pollock** visits the Open Up the City event in Helsinki.
March 2010 A group of experts recommends better access to public data sets in a report to the Ministry of Education.
1 April 2010 The British Geological Survey opens its map data.

June 2010 The City Boards of the Helsinki Metropolitan Area approve the HRI project. **Ville Meloni** starts as Project Manager.

HOW MUCH DISTANCE YOU CAN COVER IN 10 MINUTES IF YOU SET OUT FROM THE CITY CENTRE IN PEAK HOURS…

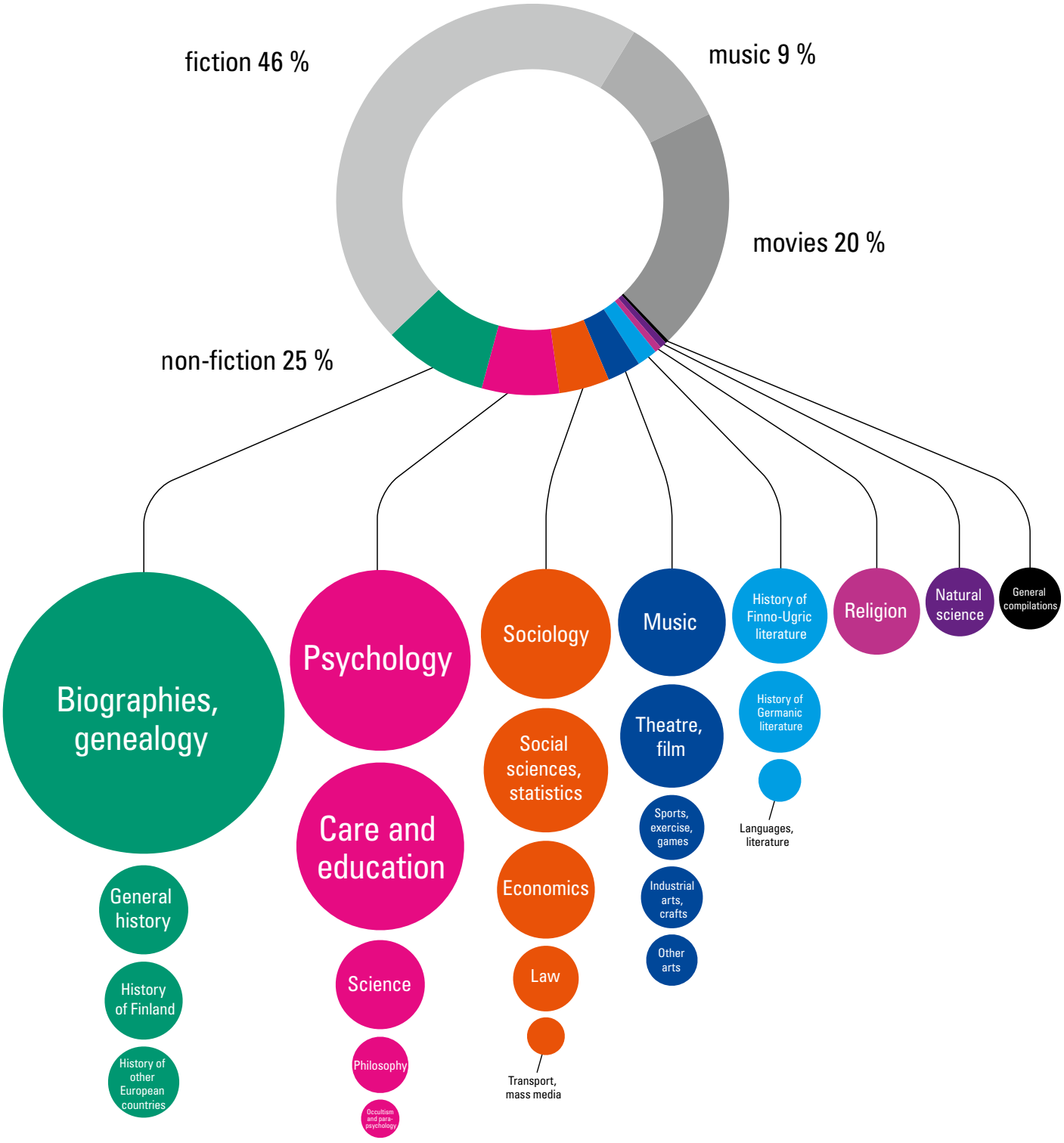


Public awareness about data visualisation was promoted with an outdoor poster campaign in 2012 when Helsinki was World Design Capital. The raw data used as the source in the visualisations were drawn from open public data reserves.

Sources: Jouney Planner; Liikenteen sujuvuus Helsingissä vuonna 2011 ("Efficiency of Traffic in Helsinki in 2011"), City Planning Department

WHAT IS THE CITY READING?

The graph shows the most popular non-fiction books broken down by topic in the HelMet library system – the public libraries of Espoo, Helsinki, Kauniainen and Vantaa – between 2 February 2007 and 23 May 2011. The popularity of a title is determined by adding together the number of copies in the library collections and the number of reservations made by the customers.



Source: Database "HelMet-kirjastojen halutuimmat teokset 2.2.2007–23.5.2011"

THE HELSINKI REGION INFOSHARE PROJECT

Opening the data reserves of the Helsinki Metropolitan Area

The three-member ‘strike force’ of the Helsinki Region Infoshare (HRI) project has a clear mission: to make the opening of data part of the daily work of municipal staff.

Hami Kekkonen‘s inbox is teeming with raw data, as usual. The latest message contains the income and expenditure data of the City of Espoo in 2011–2012. One can find the revenue and expenditure of the city’s departments, utilities and other units, according to the financial statements.

In no time, the financial data is shared over the web and available to anyone. The metadata of the new public data source is added to **www.hri.fi** catalogue’s database. The financial data of Espoo receives the number 1,008 in the data catalogue. Yet another fragment of information is taken from within the walls of a city department and put out into the open for all to see.

”The purpose is to make the opening of public data part of the daily activities in the cities of the Helsinki Metropolitan Area”, says Project Manager **Ville Meloni.**

“It is the most important goal of the year”, **Tanja Lahti** continues.

Ville Meloni asks Hami Kekkonen exchange a few words about an upcoming data release.

The 1,000th dataset to be published in the HRI service is a special one: a collection of high-resolution aerial photos of Second World War-era Helsinki.

“I took a look at the dataset. The file size is still slightly too big”, tells Kekkonen.

The historical aerial photo collection has been modified by geodata entrepreneur **Pekka Sarkola** as voluntary work in the spirit of open data.

This is the daily work of the HRI team. They search for public data sources around the metropolitan area and encourage the city departments and other offices to make their data treasures available for all over the web.

”It is nice to see how the public awareness of open data has

Helsinki Region Infoshare brings together producers and users of public data

Producing data	Unlocking data	Sharing data	Making use of data
› Producing original (raw) data › Maintaining their own data › Participating in unlocking the data › Providing metadata to clearinghouse	› Prioritise the data you want to open › Criteria and guidance › Supports information producers in opening data › Receives and evaluates data and approves it for distribution	› Responsible for maintenance of online service › Maintains metadata register › Receives user feedback on the data › Receives ideas for new data resources › Receives other user feedback	› Municipal staff › Enterprises › Research institutes › Approve the terms of use › Download and utilise data › Feedback and ideas about data

June 2010 As the first public European libraries, the libraries of the Helsinki Metropolitan area open up the metadata of 680 000 works, accessible to anyone in raw data form.

22 June 2010 Government Programme: “Government will make decisions which enable the opening and free availability of publicly owned data without compromising data security.”

July 2010 First data opening via HRI: 300 tables of the Statistical Yearbook of Helsinki 2009 are released as open data.

September 2010 Pekka Vuori starts as HRI Project Manager at the City of Helsinki Urban Facts.

14 September 2010 Ministry of Finance grants 205,000 euro from its inter-municipal cooperation funds to the HRI project.

grown", says Tanja Lahti. Lahti is especially pleased that there are already 1000 data sets available in the HRI web service."I majored in Regional Science so I love maps. It is fascinating to make them public."

Changing the Culture

In early 2009, there was not yet much discussion about open data in Finland, but **Asta Manninen**, Director of the City of Helsinki Urban Facts, was prescient. She had seen how the geodata and the population projections of the Helsinki Metropolitan Area lay scattered among dozens of data repositories. In her Vision for Regional Data she drafted a proposal for the Helsinki Region Infoshare (HRI) project which would gather all this data into one service where it would be accessible openly and free of charge for anyone who needs it.

Today, the HRI data catalogue has over 1,000 datasets. Nonetheless, the journey is only at the beginning. HRI's Project Manager Ville Meloni points out that the opening of public data brings about a significant cultural change. A big task for the HRI team is to convince the municipal officials that raw data is actually valuable.

"The expertise of Urban Facts consists primarily of the ability to refine mixed-bag original data into good-quality statistics that can be published. What HRI does now, together with Urban Facts, is tell people to also publish their raw data in a machine-readable form and let others to do their own analysis of the material", says Meloni.

"Helsinki alone has some thousand individual data systems", he reveals. In one of the workshops organized by HRI, the aim was to create a tool for people who are unlocking data – a common database of the data contained in the various data repositories in the Helsinki Metropolitan Area. "We seek to create a view to all the information the cities possess. This would be a great thing to have for all the officials and citizens to see."

Unlocking Vantaa's library data

Hami Kekkonen has spent the morning as a guest of the Vantaa City Library. There she had the opportunity to talk to a doctoral researcher from the University of Helsinki who had demonstrated the possible uses of library loan statistics as raw data.

"He had prepared a variety of visualisations. You could see, for instance, what sort of books are borrowed in different libraries around the metropolitan area and where the customers of a particular library come from", says Kekkonen.

The library staff had been very interested. "They felt the data should be opened. It is easy to obtain the lending data from the new lending system that the libraries will soon adopt".

Libraries have been the forerunners of open data. The collection data of the public libraries have already been accessible through an interface for some time.

Today, a mobile application using the interface allows you to borrow a library book directly from a friend without actually visiting the library. It remains to be seen what applications can be built on the lending data that will be unlocked in the future.

As the clock strikes four, Tanja Lahti heads home; Ville Meloni continues to finalise the preliminary material for the participants of an open data workshop; and Hami Kekkonen stays in to answer emails. She has helped the City of Vantaa to establish an open data catalogue in the city's web server, allowing the departments to share their datasets. One of the sets published in the catalogue consists of the city's population data since 1890.

Before they depart, the team discusses what kind of applications could be created from the aerial photos of the city. They agree that applications making use of data are the best incentive for those who possess data resources suitable for opening.

On the following week, Deputy Mayor of Helsinki **Pekka Sauri** tweets: "Here is another amazing data opening. #helsinki 1943. Wartime aerial photo material is now available via Helsinki's open data service."

After the release of the aerial photos, an independent developer has created a web application which can be used to compare the historical aerial photos to present-day Helsinki. The transformation of the city has been dramatic. The coastal line, for example, has radically changed its shape.

Helsinki Region Infoshare team

Ville Meloni
MSc Economics, Project Manager, Forum Virium Helsinki
Work history
Owner of training consultation firm Movire Oy, Previously employed by mobile service provider Starcut and Sonera Oyj

Tanja Lahti
MSc (Admin.), Project Manager
City of Helsinki Urban Facts
Work history
City of Helsinki, Uusimaa Regional Council, National Board of Education

Hami Kekkonen
MA, BSc, Coordinator,
City of Helsinki Urban Facts
Work history
Sibelius Academy,
Opera, MTV3 Internet

12 October 2010 DataSuomi, Parliament interface and LiveInfoBoard are the winners of the second Apps4Finland competition.

November 2010 Launch of the HRI project website.

4 December 2010 The International Open Data Hackathon event takes place in about sixty cities around the world, including Helsinki. **http://vimeo.com/17477945**

10 December 2010 The Helsinki region statistics (Aluesarjat) are exported to HRI.

30 December 2010 The alpha version of the HRI web service is published at data.hri.fi for internal development use.

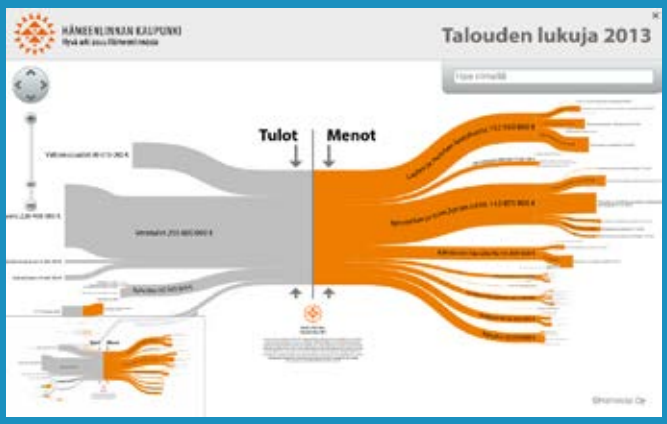
1 January 2011 The National Land Survey opens up its place names dataset and topographic with broad rights of use.

21 January 2011 The newspaper Helsingin Sanomat releases its first open data set on Finnish book publishers.

APPS4FINLAND REWARDS OPEN DATA DEVELOPERS

Text Terhi Upola **Photos** Olli-Pekka Orpo, Mobile World Congress 2013

The Apps4Finland contest awards prizes annually to the best mobile and computer applications which have been built using Finnish open data. Awards are also given for the most significant unlockings of data or simply for ideas which could make use of open data. There are separate categories for the best data visualisations and text- or video-based data guides that support the use of open data. The Apps4Finland contest has been held since 2009 and altogether 300 entries have participated. It was modelled after Washington DC's Apps for Democracy contest, which had been launched earlier in 2009.



Hämeenlinna is the first city to make use of the Tax Tree visualisation. The grey roots of the tree represent the revenue, and the orange branches show the money spent. The thicker the branch, the bigger the cash flow. **http://bit.ly/16OVPcQ**

Apps4Finland was inspired by the example of Washington DC

Visiting Helsinki in spring 2009, the Washington DC-based start-up entrepreneur **Peter Corbett** gave a talk about the Apps for Democracy contest held in his home city. In that contest, the 20 000 dollar prize had served as an incentive for programmers to build applications making use of data the city had recently unlocked.

"The one-month competition produced 47 applications, whose total value is estimated as 2.3 million dollars", said **Corbett**, the father of the idea.

"After his presentation, it was quite obvious that a similar competition should be organised in Finland as well", recalls **Pekka Koponen**, Development Director of Forum Virium Helsinki. The idea to set up a competition already had been previously discussed among the research team of the Finnish SOMUS project which studied the utilisation of social media in the interaction between citizens and governance. **Antti Poikola**, one of the SOMUS researchers, took the lead to organise the competition.

The Finnish competition was launched in May 2009 under the name Apps for Democracy. The aim was to develop cost-free services based on interfaces to open public data. "Considering that so little data existed at the time that could be used in the competition entries, the total of thirty entries was a positive surprise", says Koponen.

The most memorable part of the competition process was the award ceremony at the Mindtrek media festival in Tampere. "It was truly an inspirational occasion". Many open data enthusiasts would meet other like-minded people there for the first time. The community started to grow. "There was a buzz of excitement in the air. We felt, like, 'let's start a revolution and make this thing fly'", Koponen recalls.

http://www.mindtrek.org/2009/democracy_finland

3 March 2011 The Finnish Government takes a decision-in-principle concerning the accessibility of the digital data reserves of the public administration: "Data reserves should be openly available and reusable with coherent, clear and equal terms of use, and where possible, free of charge."

14 March 2011 The first Finnish data journalism workshop, HS Open, is organised by Helsingin Sanomat and is open to all. The material is public data, and the participants are journalists, graphic designers and coders.

18 March 2011 Web service **www.hri.fi** is opened and the HRI project officially launched at the City Hall. The event is hosted by Mayor **Jussi Pajunen**.

18 March 2011 HRI releases an extensive set of map data of the Helsinki Metropolitan Area. It allows the visualization of 20 different phenomena at different geographic levels.

2009 WINNER OF IDEAS CATEGORY

Tax Tree visualises public spending

Architect **Peter Tattersall** had the idea that the revenues and expenditure of public organisations could be visualised with a tree metaphor when he was working on participatory city planning. There the purpose is to create possibilities for people to have their say on how the city works. In the case of Tax Tree, this is applied to participatory budgeting.

The Tax Tree visualisation provides an overall picture on the spending of a municipality, a city or a state. Tax Tree helps citizens – or decision-makers – get a better grasp of the public sector economy. Perhaps the greatest practical significance of Tax Tree is that politicians in municipalities have started using it as a tool. The Tax Tree visualisation helps grasp the dimensions of public expenditure. This can save the politicians the trouble of arm-wrestling for hours on end over marginal spending items.

In practice, the customer – for instance, a municipality – produces the data that it wants to be visualised as a Tax Tree and sends it as an Excel file to Tattersall's firm Hahmota Ltd. Software created by the company then transforms the data into the visual form of a tree.

Not only municipalities use the application. The Ministry of Finance and the Evangelical Lutheran Church of Finland, among others, have also used it. Tattersall's ambition is to create a version of the software that would be financially affordable also for small municipalities.

http://www.hahmota.com/veropuu.html

2010 WINNER OF THE APPLICATIONS CATEGORY

DataSuomi searches open knowledge

The directory of semantic knowledge DataSuomi (DataFinland), developed by the Semantic Computing Research Group (SeCo) of the Aalto University, walked away with the main prize of the 2010 contest. DataSuomi publishes and offers the metadata of data reserves for other web services to utilise through an interface. A search engine can be used to seek for open data reserves published online by their semantic description such as content, publisher, language, format and licensing.

www.seco.tkk.fi

APPS4FINLAND 2010

30 entries, **3** categories: Best idea, Best implementation (Enterprises), Best implementation (Private actors)

http://apps4finland.fi/arkisto-2010/palkitut/

APPS4FINLAND 2011

140 entries, **4** categories: Best idea, Best application, Best visualisation and Best data opening. "The success of the competition is an indication of the progress of open data in Finland, not just among developers but also officials unlocking the data", said the chairman of the jury **Jyrki Kasvi** at the awards ceremony.

2011 was a breakthrough year. A record **140** entries, and a full house at the award ceremony in the Old Student House.

http://apps4finland.fi/tapahtumat/paatostilaisuus-2012/gaala-ja-voittajat-2011/

APPS4FINLAND 2012

120 entries, **5** categories: Best application, Best idea, Best data opening, Best visualization and Best data guide. The entries dealt with topics including the monitoring of energy consumption and air pollution, mobility in the city and in nature, and municipal elections. The absolute audience favourite was the "Karttapullautin" app, making maps for orienteering from National Land Survey's open map data.

"Open data is becoming part of the basic functions of the government agencies. We have made a U-turn in the sense that we no longer jealously guard our data but have adopted a new approach where public-sector data sets are actively offered for use by anyone. The Apps4Finland contest is doing an important pioneering work which will open many people's eyes to the benefits of open knowledge", said Minister of Housing and Communications Krista Kiuru at the award ceremony.

http://apps4finland.fi/kilpailutyot/kilpailutyot-2012/voittajat/

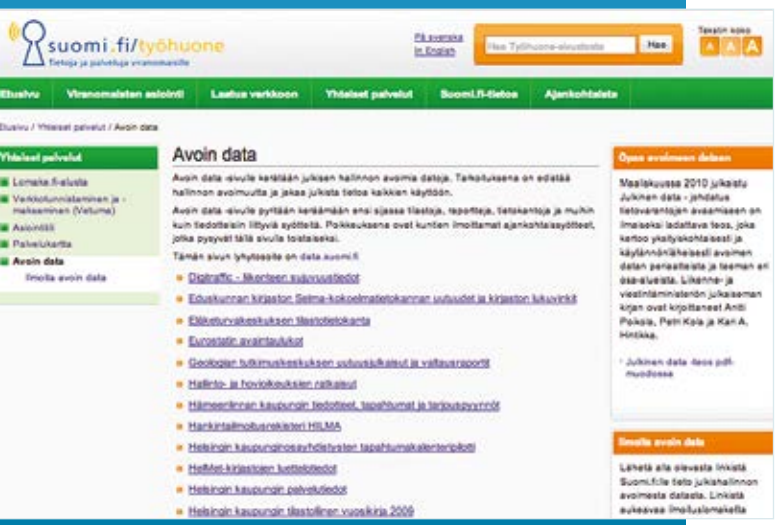
During 2012, the ideas of open data won more ground also within the state administration. "An astonishing amount of progress has taken place in one year. The Ministry of Finance says the government should unlock data; ministers talk about it; and the state administration is mapping the data reserves that could be opened", says HRI's Project Manager **Ville Meloni** in an interview by StadiTV.

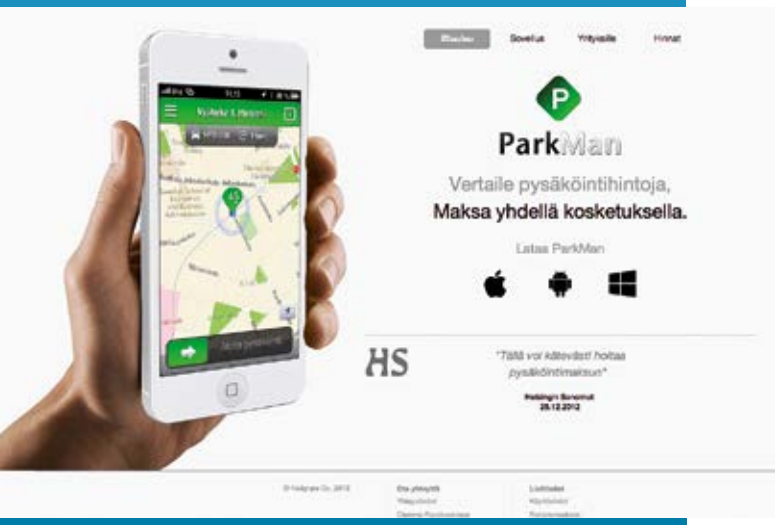
12 May 2011 The results of Helsinki Region Transport's (HRT) mobile apps contest are announced. The six winners have been chosen among a total of 60 competition entries.

16 May 2011 Public broadcaster Yle releases its first open data set as a Google Doc. This consists of the parliamentary candidates' responses on the Yle News voting advice application.

7 June 2011 The collection data containing more than 3,000,000 works in the Helsinki Metropolitan Area libraries is published in open interface.

17 June 2011 Nomen Est Omen, an application by FloApps analysing people's surnames from public databases wins second prize in the international Open Data Challenge. The challenge had four categories and received a total of 430 entries.





2011 WINNER OF THE APPLICATIONS CATEGORY

Parkman knows what your parking costs

Imagine you are at the hospital to visit your grandma. She is in a talkative mood and you have left your car on a paying parking lot. After a while you will have to either run outside to add coins to the meter or just risk getting a ticket. But if you were using the Parkman virtual parking meter app, you could top up the payment by just clicking on your phone.

The story above is a real-life situation and also the best feedback that the developer of Parkman, **Matias Lindroos**, has received. Parkman allows the user to pay for parking by clicking on an icon on the mobile phone. The application knows the price of the parking according to the location. In addition to GPS geodata, the application makes use of the different parking payment zones from the cities' parking map data. The traffic wardens can check the payment in real time on their portable terminals.

The application came into being a couple of years ago when Lindroos himself needed to pay for his parking but the text-message based mobile applications available at the time seemed to him somewhat clumsy. At the same time, smartphones with GPS locators were becoming increasingly common.

The application was at first in commission only in Helsinki but at present it is in use in 11 cities in Finland, Sweden and Denmark. Lindroos' company Neligrate with its partners is constantly mapping the possibilities of expanding into other countries and cities. The aim is to surpass 100,000 users by the end of 2013.

According to Lindroos' figures the Parkman application could save up to 2.5 million euro a year in Helsinki alone, mostly in maintenance costs of parking meters. The calculation is based on the assumption that, one day, all parking could be paid with mobile devices.
http://www.parkmanworld.com

1. The **Suomi.fi** – online service provides, for instance, the Euribor rates and currency exchange rates from the Bank of Finland in real-time data feed
2. The **Parkman** – app remembers where you parked your car and will guide you back to it.
3. The **Verokuitti.fi** – application tells you how the society spends your income tax.

22 June 2011 New Government Programme: "Data resources produced with public funds will be opened for the use of citizens and businesses."

30 June–1 July 2011 The prospect of founding Open Knowledge Foundation Finland is discussed for the first time at the Open Knowledge Conference 2011 Berlin. **http://2011.okcon.org**

30 June 2011 The Finnish State Railways VR makes an interface to the Junat kartalla (Trains on a Map) service, with near-real-time train traffic information, available for use by the Apps4Finland participants. They are encouraged to develop applications that would be useful for train passengers.

July 2011 Hami Kekkonen joins the HRI team as Project Coordinator.

16 August 2011 The financial statements of Finnish municipalities from 2008 to 2010 are published through HRI.

2011 WINNER OF THE HELSINGIN SANOMAT SPECIAL AWARD FOR DATAJOURNALISM

Verokuitti shows you where your tax money goes

> Everyone should receive a receipt, delivered to their home door, telling how the government is spending their tax payments.

Prior to the 2011 parliamentary election **Pär Österlund** and his friends begun to think during a lunch break how big an effect sentiments actually have on the way people vote.

The conclusion: ”Everyone should receive a receipt, delivered to their home door, telling how the government is spending their tax payments”.

Instead of a paper receipt, Österlund, **Kari Silvennoinen** and **Jon Haglund** developed a web application. As you type in your own salary, the application will let you know what proportion of your taxes are spent, for instance, on parliamentary expenses or military defence.

The open data utilised by the application is derived from the budgets published by

the Ministry of Finance and are updated into the application once a year. Additional information includes statistics from Statistics Finland and Eurostat to estimate the cost of living and savings, data from the National institute for Health and Welfare on alcohol consumption, as well as various data published by the Finnish Transport Safety Agency and Finnish Customs.

http://www.verokuitti.fi/

THE WINNER OF APPLICATION SERIES 2012

BlindSquare tells visually impaired users where the nearest restaurant is

Ilkka Pirttimaa developed his BlindSquare application in a reverse order. He did not have the end user in mind when started. Instead he was pondering what could be developed by putting together the existing open data reserves and the new features of smartphones.

Pirttimaa’s idea was to combine the geodata of Foursquare and Open Street Map with the possibilities offered by smartphones’ speech synthesis functions – and this was before he had met a single visually impaired person.

Pirttimaa then made himself familiar with the daily lives of the visually impaired by reading some blogs they kept. Currently, about twenty visually impaired persons around the world are testing the beta version of the application.

Thanks to its global data sources, the BlindSquare application can be used anywhere and it has users in over 50 countries. In Helsinki the application makes use of the city’s service map and Helsinki Region Tranport’s Information on Traffic Exceptions, in addition to Foursquare and Open Street Map. Through the service map, the application receives information on the accessibility of libraries, for example. Other cities are gradually starting to follow Helsinki’s example in using local public data.

Ilkka Pirttimaa’s BlindSquare application received a Global Mobile Award as the Best Health Product or Service at the Mobile World Congress in Barcelona in February 2013.

Pirttimaa has received so many of ideas from beta testers and other BlindSquare users for the development of the service that over 50 new features have been added to the service in six months, based on the feedback. The users also chose the name for the application.

The application has also helped the visually impaired, for instance, to find the right classroom on a campus or to spot the water slide they are looking for in a water park.

Perhaps the most impressive feedback Pirttimaa has received was from a Canadian user telling they can now go somewhere on their own for the first time in 64 years.

http://www.blindsquare.com

September 2011 The Open Data Kitchen and data cooking events are organised in Amsterdam. A master’s thesis is written about the HRI project (“Managing and developing innovation networks”).

26 September 2011 Forum Virium Helsinki and IBM organise an open workshop about data visualisation and city data as part of the Smarter Cities Challenge programme.

4 October 2011 First mobile app making use of VR’s real-time data is launched. The Ajoissa (“On Time”) application, developed by Geosaaga, allows you to monitor whether trains keep up with their schedules. **http://www.ajoissa.fi/**

1 November 2011 The seminar Avoin data, avain uuteen (“Open Data, Key to Renewal”) gathers top researchers from various fields of science to discuss the impact of the open availability of research data on their research.

APPLICATIONS OF OPEN DATA

Text Terhi Upola

The Helsinki Region Infoshare data catalogue already contains more than 1,000 datasets for innovative programmers to exploit. The application developers' favourite type of material are datasets related to mobility.

Reitti GPS was inspired by personal experiences

THE FIRST MOBILE JOURNEY PLANNER WAS AN AMATEUR PROJECT BUT THE APPLICATION CONTINUES TO DEVELOP.

When iPhone entered Finland in 2008, **Markus Halttunen** decided to realise his long-time dream: to combine GPS to the Helsinki Region Transport (HRT) Journey Planner. At first, the program operated without an official public interface but this made its development difficult. Everything became easier in the following year when HRT decided to make its interface open to all.

After the opening of the interface, the Journey Planner data has given birth to dozens of other applications. There were so many of them that the magazine MikroPC named HRT's open timetable information and its applications the 'phenomenon of the year' in 2011.

Halttunen has felt for a long time that his ReittiGPS application already has all the necessary features. But it occasionally happens that a large number of users give the same feedback or development idea. Halttunen may then consider adding a new feature.

"All the wishes cannot be automatically fulfilled, since the additional properties shouldn't complicate the basic use of the app."

The ReittiGPS is a hobby project for Halttunen, although the popularity of the application has exceeded his expectations.

Map data helped Finnish film makers

FAKE GRAPHICS CREATED A LANDSCAPE GENERATOR BASED ON THE GEODATA UNLOCKED BY THE NATIONAL LAND SURVEY.

Two years ago, the National Land Survey published data that was instantly put into use in a full-length Finnish film. Kaappari ("The Hijacker"), which premiered in early 2013, tells the story of Finland's only skyjacking case in 1978.

"We were just thinking how to execute the aerial photos in the film when we learned that the National Land Survey was going to unlock its data. We had been planning to purchase material from NASA but that would have been unreasonably expensive, and we had even thought about taking the photos by ourselves", says Creative Manager **Ville Vaajakallio** from Fake Graphics, the company that prepared the aerial photos for the production company Solar Films.

The National Land Survey's aerial photos, numerical land elevation data, and infrared images revealing the location of forest, fields and lakes, have been used for creating the aerial photos on a computer.

"Without this data, the images would have been less realistic or would have taken a much longer time to make", says Vaajakallio.

At the same time as it made the aerial photos for the film, Fake Graphics also produced a 'landscape generator' for more general purposes. This tool enables the firm to create landscape photos of any part of Finland for similar uses. Without the data of National Land Survey, every job of this type would have to be done separately by hand and would take weeks to make.

"Now we are developing the system to be more versatile", Vaajakallio reveals.

The company also plans to use data about the road network. The cost-free nature of the data had a great significance for the project because Finnish films are made mainly on small budgets. What is more, the makers of the aerial photos were not even sure beforehand whether it would be possible to use the data in making the photos.

"We had a few enthusiastic people with the ideas and the motivation to give it a try. The fact that the data was free made it worthwhile to examine whether this plan would work", says Vaajakallio.

3 November 2011 The National Land Survey proposes to cease to collect licence fees from the users of its Topographic Database. In order to make the data available free of cost, the decree on the NLS fees needs to be changed.

21 November 2011 The budget department of the Ministry of Finance rejects the proposal for the free sharing of NLS's topographic data.

22 November 2011 A record 140 entries are submitted to the 2011 Apps4Finland competition. The winner of the Visualisation category is "Public Transport Visualized" by **Lauri Vanhala** (featured on the cover of this publication).

31 November 2011 The first Open Knowledge Finland Meetup is organised for the open knowledge community and networks.

1 December 2011 The population data covering the entire Helsinki Metropolitan Area, building stock and land reserve data are published in 500 x 500 m squares.

13 December 2011 A communique by the EU commission calculates that the benefits of unlocking data could amount to 140 billion euro.

DATA JOURNALISM

Data journalism is journalistic work with the aim to produce news by combining extensive datasets and by analysing and visualising them. The source material is data that is either openly available over the Internet or can be obtained by request from public officials on the basis of the Freedom of Information Act.

Open data promotes democracy

THE NEWSPAPER HELSINGIN SANOMAT ESTABLISHED A DATA JOURNALISM GROUP TO HELP THE PAPER'S NEWS DESKS TO MAKE BETTER USE OF NUMERICAL DATA.

Helsingin Sanomat is a forerunner in data journalism in Finland. According to **Esa Mäkinen**, the producer in charge of data journalism, Helsinki Region Infoshare has been the best channel for Helsingin Sanomat to obtain data. Esa Mäkinen praises the HRI web service, calling it a user-friendly and successful site even on a global scale.

According to Mäkinen, open data helps journalists to better carry out their basic task – to make new and interesting interpretations of the world and to influence the ways in which society works. This improved understanding benefits both citizens and public officials.

Of the data reserves published by HRI, Helsingin Sanomat has used, for example, data on traffic accidents and corporate tax as well as subdivision maps. The paper has created a map of the traffic accident data, indicating the spots with high frequencies of car accidents with pedestrians. The map can be used to influence the behaviour of people and as a tool in traffic planning.

Helsingin Sanomat established its two-person data journalism crew in summer 2012. It is made up of journalist Esa Mäkinen and programmer-cum-graphic designer **Jarmo Lundgren**. They help other news desks to utilise open public data.

Helsingin Sanomat has also organised six HS Open workshops, in which the participants have designed various applications and visualisations making use of open data. The workshops have been enormously popular among reporters, graphic designers and coders.

The latest HS Open was held in 2012.
Will there be yet another one?

"We have been looking for interesting datasets that could be used in the event. If we can find something suitable, we may set up another HS Open event in the next few months", Mäkinen says.
http://blogit.hs.fi/hsnext/

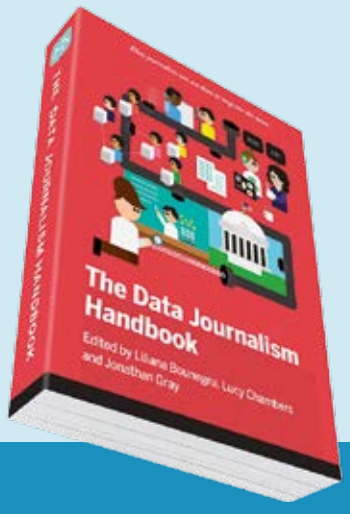
Datajournalismi.fi

The Finnish data journalism network has a website containing, among other things, tutorials and other self-study material for those aspiring to becoming data journalists. The site offers help using Excel and Google's data tools, for instance.
http://datajournalismi.fi

The Data Journalism Handbook

The 240-page data journalism handbook, written as pro bono work, includes examples of data journalism produced by BBC, The Washington Post, Helsingin Sanomat, The Guardian and many others. The book also reveals how the data journalists' reports and visualisations were created.
www.datajournalismhandbook.org

> "Data is power, and sharing it promotes democracy."



14 December 2011 HRI releases the 2000–2010 locations of traffic accidents in Helsinki and accident types as spatial data sets.

21 December 2011 The Cabinet Finance Committee allows the National Land Survey to release its base maps and aerial photos for free for citizens and businesses to use.

21 December 2011 The 2009 and 2010 financial statements of the City of Helsinki are released on HRI.

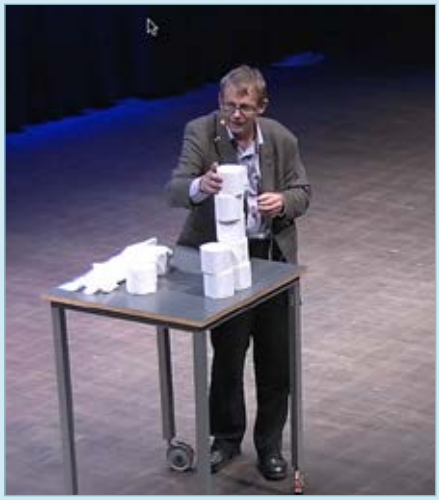
21 January 2012 The IBM Smarter Cities Challenge report gives recommendations for developing Helsinki with the help of open data.

25 January 2012 Statistics Finland grants a worldwide perpetual reuse licence to all data published in its cost-free statistical databases, both for commercial and non-commercial purposes.

VISUALISING DATA TELLS THE BIG PICTURE

Analysing multi-dimensional data is not easy. Particularly challenging for the ‘data processing system’ of the human brain is numerical data in a table format. When the material is visualised into a graphic presentation, it is easier to form an overall picture of the content.

HRI’s application gallery contains a long list of examples of visualisations making use of open data. Each of these pictures is certainly worth the proverbial ‘thousand words’. The Apps4Finland competition has also rewarded the best data visualisations of the year, ever since its first edition.



Visualisation blog

HRI’s visualisation blog is full of good examples of data visualisations as well as visualisation tools and methods.

http://www.hri.fi/fi/category/ajankohtaista/visualisointiblogi/

Hans Rosling

The lecture of Professor **Hans Rosling** was the most memorable event at the Open Knowledge Festival organised in Helsinki in September 2012. The Swedish data visualisation wizard used toilet rolls to demonstrate why the world’s population is still growing in the next decades although birth rate is slowing down.

http://vimeo.com/50044925

Air quality

Information technology has opened completely new opportunities to visualisers. The 2012 winner of the Apps4Finland competition in the Visualisation category enables you to see the real-time air quality index as the background colour of your mobile.
http://biomi.kapsi.fi/tools/airquality/wallpaper/

30 January 2012 A three-week outdoor advertisement campaign (“Ta-da! Data”) promotes public awareness about data visualisation.

31 January 2012 The European Commission chooses to use the same data catalogue technology (CKAN) as HRI.

4 February 2012 The Invisible City seminar and workshops at Korjaamo in Helsinki. Themes of the event are open knowledge, visual planning and smart city. The occasion is part of the World Design Capital Helsinki 2012 programme.

9 February 2012 A working group nominated by the Ministry of Finance proposes that standard electronic transfer of data between public authorities for official needs is henceforth cost-free.

9 March 2012 One of the themes of the annual Urban Research Days in Helsinki is “open data, open city”: the digital dimension of urban research.

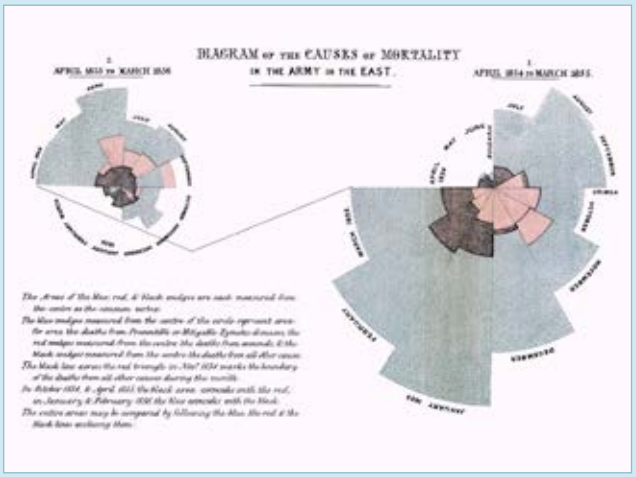
March 2012 Service Map of the Helsinki Metropolitan Area receives a new interface and its data content is expanded.

Florence Nightingale infographic from 1855

Information has been communicated in visual form since the days of cave paintings. A classic example of a good visualisation of numerical data is a diagram designed by **Florence Nightingale**, the pioneer of modern medical care, demonstrating the deceased troops in the Crimean War in 1855.

The graph underlined the importance of hygiene, and it manages to communicate a shocking observation: the soldiers were seven times more likely to die from diseases that spread in hospitals than from gunshot wounds.

http:// http://en.wikipedia.org/wiki/File:Nightingale-mortality.jpg



Helsinki Region Transport crowdsources public transport navigator

A PIONEER OF OPENING PUBLIC DATA IS EXPERIMENTING WITH IN-HOUSE SOFTWARE DEVELOPMENT THROUGH OPEN SOURCE.

Helsinki Region Transport (HRT) is one of the pioneers in opening data in the Helsinki Region. Now HRT has decided to experiment with developing some applications of its own. Application developer **Tuukka Hastrup**, an expert of the world of open source world, has been hired to help.

As HRT's partner coder, Tuukka Hastrup's most important development project is a new kind of navigator programme for users of public transport. The idea is to make the 'sat nav' application, which already helps millions of car drivers by giving turn-by-turn guidance, available also to public transport customers.

"The application tells you at which stop you should change buses and whether to head left or right when leaving the stop", says Hastrup.

The code of the public transport navigator will be published as open source for all to use, and those who make use of the HRT open timetable data are encouraged to join the development project.

"A project like this would include big risks and major financial costs if it was carried out through customary procurement procedures", says Hastrup.

Hastrup hopes that he can assist his employer also in other IT procurements. When you have the skills to develop programs, you are better equipped to avoid some of the expensive pitfalls.

Helsinki's Code4EU partner coders **Tuukka Hastrup** (left) and **Juha Yrjölä** decided to work on each other's projects one day a week, sitting around the same table. "A team of two is a whole lot better than a team of one", says Yrjölä.

Code for Europe

The partner programmers of the Code for Europe project develop electronic services for citizens in Helsinki and five other European cities – Amsterdam, Barcelona, Berlin, Manchester and Rome. **http://codeforeurope.net/**

13 March 2012 Awarded in the Apps4Finland competition, the Finnish company Neligrate also receives the prestigious business award granted by the Swedish Anders Wall Foundation.

22 March 2012 Government statement: "The Government will open up public data reserves systematically and without delay for the citizens and businesses to utilise. This is expected to generate a growth impulse for new business based on the strong expertise in the software industry, among other things."

20 March 2012 The metadata of the HRI web service is released.

23 March 2012 A long-time advocate of open data, **Antti Rainio** from the National Land Survey is named the most influential IT person of the year.

QUICK GUIDE TO OPENING DATA

THE VALUE OF PUBLIC DATA INCREASES WHEN IT IS IN USE. OPENING DATA RESERVES IS SURPRISINGLY EASY.

1 Choose the data you want to publish

Start with the data that you know is most in demand. In the best case, you will end up making your own work easier.

Is the database already in a format that can be published? Publish it first. Do you get requests for the same Excel sheet time after time? Publish the raw data of the table online and advise those who request it to compose their own statistics. You can also list your most important data reserves and ask the application developers what they feel is the most interesting one.
Alternative, you can follow the money: what is the most expensive information for you to collect and maintain? It is likely to be valuable for others as well. Only by giving it a trial run will you know what inspires the utilisers of data.

For instance the numerical data of Helsinki's traffic accidents published as open data on HRI's website ended up as impressive visualisations on the websites of national media such as Helsingin Sanomat, Suomen Kuvalehti and MTV3.

2 Get your licence sorted

In order for your data to be put to reuse, the user needs to have legal rights to use it. The broadest possible license encourages the use of the data.

Most public administration data is public on the grounds of the freedom of information legislation. You should still check whether property rights restrict redistribution of the data and whether releasing the data would violate information privacy. In the terms of use, you can choose the international Creative Commons licences or the model licence of the HRI project. Making the terms of use clear and conformant to standards means less work for both the publisher and the users of the data.

The Helsinki Region Environmental Services Authority HSY, for example, chose the HRI licence when it published information on land reserves as open data. To assure data protection, the data on the property level was anonymised to district level.

3 Publish online

Publish your data in machine-readable form. HTML and PDF files are easy for humans to read but computers appreciate XML.

For the users, the most important thing is that the data is available in an open format that computer software can process. There is no need to be fancy with your first data release: just save the content of your database in a comma-delimited file and upload it on your website together with the description of the content. You can later build more sophisticated interfaces on the basis of the user feedback. The collection data of the Helsinki Metropolitan Area libraries, for instance, was initially published as a two-gigabyte raw file. Later on, the publisher built an interface which enables one to make searches directly from the library database.

4 Gather feedback, discuss

Register your data release on the data catalogue managed by HRI. Follow the feedback given to your dataset on Facebook or Twitter. Gather feedback in user meetings or in application competitions such as Apps4Finland. With the help of the feedback, your next data release will be an even greater success.

For instance, Helsinki Region Transport organised a competition to speed up the unlocking of public transport data. The competition looked for the best mobile applications making use of the data. It achieved considerable popularity: more than 60 mobile applications were submitted.

16 April 2012 The Ahjo workshop gathers a few dozen officials and application developers to discuss opening up the data of Helsinki's case management system. All the data of the city's decision-making process are stored in Ahjo, item by item.

20 April 2012 The economic data of the City of Vantaa is published through the HRI service. These are Excel files with upwards of 100,000 rows, from acquisitions worth a few euro all the way to the 180-million-euro specialist health care service agreement.

27 April 2012 The Finnish Verokuitti ("Tax Receipt") application becomes a candidate for an international journalism award.

28 April 2012 The Data Journalism Handbook is launched online, free of cost

9 May 2012 The open data download service of the National Land Survey is opened.

10 May 2012 The City of Helsinki organizes an initial meeting with the application developers interested in the data reserves of the city.

Learn the stories of the pioneers

Project Manager **Jari Honkonen** at Helsinki Region Transport (HRT) is able to check the current location of each tram in Helsinki on his mobile phone. Independent application developers are to be thanked for the greatly improved digital information on public transport. Honkonen only needs to see to it that the programming interfaces to the HRT transport data are open for everyone to use.

Read how public data was opened for use by all

21 May 2012 As the first Finnish media to do so, the newspaper Helsingin Sanomat establishes a data journalism desk.

21 May 2012 Helsingin Sanomat begins to publish the background material of its polls as open data.

10 September 2012 Yle's investigative journalism programme MOT releases a comprehensive summary of government subsidies received by companies operating in Finland in 1997–2012. The data contains business support grants worth more than 5 billion euro.

15 September 2012 http://data-cuisine.net/
– real cooking with open data!

21 September 2012 The Datavaalit ("Data Election") project begins to collect a permanent database of elections held in Finland.

17–22 September 2012 The largest open knowledge event in the world, Open Knowledge Festival, gathers more than a thousand visitors from a hundred countries to Helsinki. **http://www.hri.fi/fi/ajankohtaista/hrin-open-knowledge-festival-tarpit/**

HELSINKI REGION'S PUBLIC TRANSPORT DATA

Text Petja Partanen

The unlocking of the Helsinki Metropolitan Area public transport data inspired developers to code dozens of mobile services that facilitate the life of public transport passengers.

The developers of the popular Reittiopas ("Journey Planner") service, launched in 2001, were lucky. The service already had open data interfaces created previously. It was easy to get started with the unlocking of data: one had to simply tell others about the interface, although it had been originally designed for internal use.

"I only needed the approval of my superior and enough funding so we could open the website developer.reittiopas.fi", Helsinki Region Transport's project manager **Jari Honkonen** recalls.

As a 'carrot' for application developers, he decided to organise a mobile apps competition, 'Mobiilikisa'. Apart from reputation, the competition offered a prize sum of 12,000 euro. In July 2011, the jury had a total of 63 competition entries making use of Helsinki Region Transport's (HRT) open public transport data.

"It is hard to imagine how we could have achieved such a wide offering of mobile services with the resources we had. Had we started to develop the mobile applications by ourselves, it could have easily cost 50,000 euro apiece", Jari Honkonen estimates.

HRT data interfaces

http://developer.reittiopas.fi/

Through Helsinki Region Transport's open interface one can make HTTP requests of the public transport routes and schedules to the Reittiopas.fi service. In 2014, the system will also reveal the real-time location of the public transport vehicles.

28 September 2012 HRI releases guidelines on legal issues for public bodies planning to release data.

October 2012 First open data pilot training is organised for the municipal staff of the Helsinki Metropolitan Area.

2 October 2012 HRI's finance data workshop offers tools for understanding the City of Vantaa open economic data.

20–21 October 2012 HRI's open data cooking stand attracts new audiences to open data at the Wärkfest Do-It-Yourself festival at Helsinki's Cable Factory.

11 October 2012 Helsinki wins the award for best e-governance in the Open City category of the World e-Governments Organization competition.

23 October 2012 City of Espoo opens up its solar and geoenergy maps.

31 October 2012 Finnish Funding Agency for Technology and Innovation (Tekes) organises an event to brainstorm new business implementations for open data.

Who made it happen?

Jari Honkonen
Project Manager, Helsinki Region Transport

What did it cost?

"The development and maintenance of the open interfaces have cost, in the past three years, about 60,000 euro for the Journey Planner and 40,000 euro for Omat lähdöt ("My Timetables"), Poikkeusinfo ("Information on Traffic Exceptions") and HSL Live, put together. The development of the entire Journey Planner service has cost around 5 million euro throughout its history, including licence fees."

Tips for those planning to open their data?

1. Start with something small: for instance, open some of your data as an Excel file and tell HRI where it is available. Try to make contact with the application developers from the get-go and listen to their feedback.
2. The next step is opening and updating an interface to your database. Contact a data system supplier and ask for a bid for the opening of your data.
3. Keep an eye on what others have done.

What was the most difficult part?

"The hardest thing may have been to convince others in our organisation that this was important – and even that was not very difficult. It was first frowned upon as an additional workload but now all my colleagues understand that this work has a significance."

Where is the data used?

ReittiGPS

An iPhone application for browsing the Journey Planner.

Andropas

The Journey Planner's Android application which shows the real-time location of trams and buses on the map.

Helsinki Public Transport Visualized

The visualisation displays from bird's eye-view how Helsinki's public transport wakes up to a new day.

HRT's list of the existing applications

http://www.hsl.fi/FI/aikataulutjareitit/avoimentiedonpalvelut/Sivut/default.aspx

This is how the data was opened

2001 Launch of the Journey Planner web service for the Helsinki Metropolitan Area public transport

2008 A bunch of application developers have discovered that an open interface had been built to the Journey Planner data system at the very beginning. The first version of the application ReittiGPS ("JourneyGPS"), making use of the interface, is published.

2009 The organisers of the first Apps4Finland contest send an enquiry to HRT about the open interfaces. The decision is taken to make the interface public and to document it.

2010 The Journey Planner is Finland's second most valued online brand. The open interface to its data is made public. The public transport data is used in several entries submitted to the second Apps4Finland contest. "From that point onwards, the registration of account no longer required that the user should send us an application."

2011 New search functions are added to the Journey Planner interface. HRT organises the Mobiilikisa contest to which participants submit 63 applications making use of the interface. In December 2011, the magazine MikroPC names HRT's open timetable data the phenomenon of the year.

2012 The Journey Planner API has 600 registered users by May. "You need to register to use the Journey Planner API but you can freely use them as you like."

6 November 2012 Geodata association ProGIS grants HRI an honourable mention for developing the field of spatial data in Finland.

20 November 2012 HRI is awarded with the Mayor of Helsinki's Achievement of the Year 2012 prize.

4 December 2012 The winners of the Apps4Finland 2012 competition include BlindSquare and Datavaalit ("Data Election"). The open API for monitoring the energy consumption of private homes was awarded in the Best Idea category.

12 December 2012 The data catalogue of the city of Jyväskylä is opened at **data.jyvaskyla.fi.**

20 December 2012 The first data release of the Tax Administration, containing 300,000 rows of corporate tax data paid in 2011, is published via the HRI data catalogue.

21 December 2012 Open Knowledge Finland foundation is established. Founding members included 64 individuals and 17 organizations.

22 December 2012 The city of Tampere launches an open data website, **www.tampere.fi/avoindata**

HELSINKI METROPOLITAN AREA SERVICE MAP

Text Petja Partanen

The service map of the Helsinki Metropolitan Area, originally designed as an internal reporting tool to the directors of the Department of Social Services, became eventually an open data resource for all citizens. The information on the 10,000 customer service points are free to use and reuse.

From management database to civic open data

In 2007, the City of Helsinki Department of Social Services had a wish to collect information about all of its service points in one database in order to facilitate the reporting related to the management of the department.

The greatest challenge of the so-called service point register was to obtain up-to-date information for the database. The project manager, **Mirjam Heikkinen**, figured out that results should be demonstrated instantly. In co-operation with partners SITO and Affecto, a map service was built that displayed the information in the database instantly on the map.

”As I went from one department to the next, I showed them that such-and-such services are already on the map but your services seem to be absent.”

It was soon decided that the project would be expanded to include all the services in the City of Helsinki. In summer 2011, Espoo, Vantaa and Kauniainen had joined the service. The project management also came up with the idea that the service map could serve not only the city management but also all citizens online.

Inspired by this web service, the researchers of linked data at Aalto University became interested in categorised municipal service data and requested a permission to use it. This coincides with the launching of Helsinki Region Infoshare, and there was increasing enthusiasm within the City of Helsinki’s IT management to proceed with unlocking data. The first open interface to the service point data came into existence virtually through voluntary work, built by VTT Technical Research Centre of Finland and Affecto, tested by Aalto University.

”None of us knew if somebody else would be interested in using it”, says Heikkinen.

It was a surprise how many are in fact using it. In March 2012, over 300,000 searches of the service point register were made through the REST interface.

Not only the users but also the producer of the data has to benefit from the unlocking. For Mirjam Heikkinen, the greatest benefit has been the growing amount of feedback. Mistakes in the data are found quickly by the users, and the quality of the database is improving.

REST interface to the service map

The Service Point Register of the Helsinki Metropolitan Area has data of all the 10,000 public services of the area, from statues in the parks to bottle collection points; from tax offices to dog parks. Through the interface, anyone can use the constantly updated information of the Helsinki Metropolitan Area service point register in their web applications.

http://www.hel.fi/palvelukarttaws/rest/

19 February 2013 Helsinki’s new electronic feedback system contains an interface allowing the city to receive feedback and delegate it directly to the appropriate department. The first client to make use of the interface is the newspaper Metro with its “Pitäiskö fiksata” (“Time to Fix This?”) web service.

28 February 2013 The Finnish Meteorological Institute opens a beta version of its download service: **http://ilmatieteenlaitos.fi/avoin-data-beta.** Weather data was opened during summer 2013.

28 February 2013 1,000 data sets have been opened on the **www.hri.fi** web service.

18 March 2013 he case management system of the City of Helsinki, Ahjo, is equipped with an open interface. The decision-making documents now exist as open data, accessible to all.

29 April 2013

The 2-year birthday of the HRI web service is celebrated!

Who made it happen?

Mirjam Heikkinen
Project Manager, City of Helsinki, Economic and Planning Center, IT Division, Development Unit
Toteuttaja Affecto Finland Oy

Release date

9 June 2011

What did it cost?

”It cost 20,000 euro to open a REST interface. The whole data system of the service point register cost about 2 million euro.”

Tips for those planning to open their data?

1. ”Even if the information is not perfect somebody will certainly need it.”
2. ”The experts at Helsinki Region Infoshare give advice in practical matters.”
3. ”Don’t try to do everything at once. Excel files are a good starting point.”

Your favourite service that uses open data?

”Verokuitti. It would be even better if it also showed the revenue and spending of municipalities.”

Why is it important to unlock data?

> “Young application developers often have great ideas and solutions that the city could not put into practice on its own.”

Where is the data used?

Hätäopas

A mobile application which helps you to find the nearest doctor or health center, pharmacy or public toilet. It locates the user (or you can type in an address) and displays on the map the nearest service points and their contact information.

http://demo.seco.tkk.fi/hataopas/

BlindSquare

The award-winning application of augmented reality which helps the visually impaired to navigate in city surroundings through voice guidance. In the Helsinki Metropolitan Area, BlindSquare also makes use of the database of the service map.

http://blindsquare.com/

This is how the data was opened

2007 The largest service provider in the city, the Department of Social Services, has the idea to list the information about all its service points in a single data register.
2008 The central administration of the City of Helsinki takes interest in the project.
2009 In January, the database is completed and an online map showing all the social services of the city is produced. Project Manager **Mirjam Heikkinen** is tasked to extend the project to cover all the services of the city.
2010 In March, Mirjam Heikkinen talks about the service map to the mayors of the other cities in the Helsinki Metropolitan Area. The other cities join the project. Researchers of semantic web in the Aalto University request for an open interface to the service point database.
2011 In June, a REST interface is published as an answer to the researchers’ request.
2012 A second version of the REST interface is published. Around 300,000 queries are made monthly through the interface – approximately the same amount as in the city’s online service map.

OPEN GEODATA OF THE HELSINKI METROPOLITAN AREA

Text Petja Partanen

The Helsinki Region Environmental Services Authority (HSY) published the data of the metropolitan area's population and housing stock in a grid of 500 x 500 m squares, accessible to all.

HSY's geodata expert **Henna-Kaisa Räsänen** presents the analyses of the students of a recent practice course organised by the University of Helsinki. Geographers rummaged the data opened by HSY. The visualisations they produced answer many questions. What are the areas with crowded living conditions, and where is spacious housing located? Where are the unbuilt lots of the metropolitan area situated? In the hands of experts, the seemingly endless data masses are transformed into valuable information.

Suvi Uotila, a colleague of Räsänen, says that such data as this could only have been dreamt of ten years ago when she was a student of geography. "We had to come up with our own data with which we wrote our practice work. Open geodata did not exist."

Now it does – thanks to HSY's data releases. That agency maintains the geodata of the Helsinki Metropolitan Area. One of the datasets maintained by HSY is the SePe Regional Base Register. Updated every two weeks, the spatial dataset serves the planners and researchers of the region.

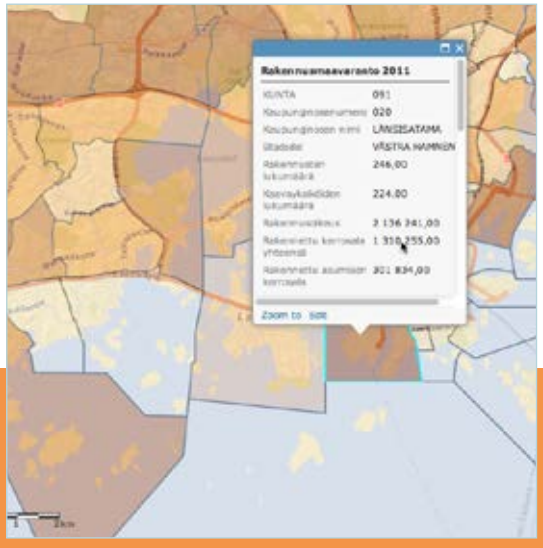
When the HRI project proposed opening the HSY data to the public, Räsänen and Uotila were eagerly engaged with the project. The first data release was carried out in December 2011. At first, the problem was that the data was too detailed; the register has information on every building in the metropolitan area. To secure data protection, the machine-readable data had to be anonymised.

HSY now waits to see what the data release will produce. The data has been already used as material for practice work on a university course as well as in visualisations of the results of last year's presidential election.

HSY open data

The open data published by the Helsinki Region Environmental Services Authority HSY contains three datasets, updated annually and covering the cities of the metropolitan area. These are the regional land reserve for buildings, the population data grid and the building data grid. The size of the squares in the maps is 500 x 500m. The spatial datasets can be downloaded free of charge in MapInfo (tab and mif/mid) and in Esri shape formats.

www.hsy.fi/avoindata



Who made it happen?

Suvi Uotila ja Henna-Kaisa Räsänen
HSY geodata experts
Supplier
HSY

What did it cost?

”70 working days”

Tips for followers

1. ”Start from small – don’t be too greedy.”

2. ”Try to map the wishes of data users in advance. Go to the meetings of application developers.”

3. ”Keep your eyes open in social media. Follow the feedback and conversation. I joined Twitter to follow the topics of open data. It is an even more active forum than Facebook. You can find a lot of discussions with the hashtag ‘open data’.”

What were your expectations from the data opening?

”We expect that this will help researchers to have easier access to any data they may need. We also believe that direct enqueries to us about specific datasets will decrease.”

What data do you wish to be unlocked?

The highly detailed basemaps that municipalities use as the basis of zoning. ”It would substantially benefit the whole society.”

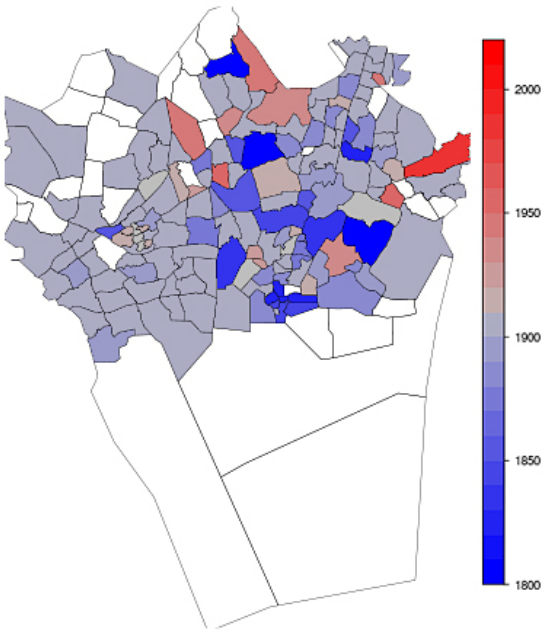
Why is it important to open data?

”It means new material for students and researchers, and it enables citizens to be better informed about their environment.”

Where is the data used?

‘Age of neighborhoods’ visualisation

The authors of the Louhos blog analysed the open data of HSY with a variety of data extraction and visualisation tools. For instance, the year of construction of the oldest building in a neighbourhood gives a rough idea of the age distribution of the area.



The age distribution of neighborhoods.
The year of construction of the oldest building.

Course assignments of geography students

A training course organised in 2012 by the geoinformatics programme of the University of Helsinki visualised and analysed the open data released by HSY.

This is how the data was opened

Autumn 2009	The idea was born to open HSY data.
2010	The HRI project is launched. HRI experts encourage HSY to open its data reserves.
Spring 2011	**Pekka Vuori** from the HRI project presents the idea in a regional working group on municipal registers. HSY begins to meet regularly with HRI’s experts.
Autumn 2011	The planning of the HSY data release proceeds to practical details.
December 2011	HSY publishes its first open dataset, including the 2010 data, population building stock and the land reserve for buildings.
Spring 2012	The time series from 1997 to 2011 are published as open data. A geodata course of the University of Helsinki uses the data as course material.

HELMET LIBRARIES' API

Text Petja Partanen

The libraries of the Helsinki Metropolitan Area have created an open data interface containing the data of more than 3 million books and other materials. The libraries hope that the interface will inspire new mobile services – and also speed up the development of libraries' own IT systems.

For a long time, libraries have been forerunners in utilising information technology, but their closed IT systems have kept the information hidden, for instance, from the users of search engine Google. Frustrated over the issue, frontman of the Labs.kirjastot.fi project **Antti Pakarinen** proposed as early as 2008 that library data should be unlocked. This way the small-time developer workshops, who make use of open source, could challenge the big suppliers of library IT systems.

In 2009, the Ministry of Education and Culture, enthusiastic about the issue, granted 120,000 euro for the project.

Now the library collection data of the cities of Helsinki, Espoo, Vantaa and Kauniainen has been unlocked as the first major European public library. What is more, the libraries themselves have programmed an iPhone application for browsing the collections, and independent developers have created an Android app with a barcode search.

According to Antti Pakarinen, the libraries had higher expectations from the unlocking of their data: more new applications had been anticipated. In retrospect, the original hope of having small and agile developers working alongside the present system suppliers seems slightly over-optimistic. For instance, public procurement regulations pose some obstacles to the acquisition of the IT systems from small-time programmers.

But there seems to be light at the end of the tunnel. The data opening of 2011 required quite a lot of programming since the present version of the library data system does not offer tools for unlocking data. In the future version of the database, the open interface should exist as a standard. Another cause for celebration is the National Digital Library of Finland, which will be built with open source tools.

"The world is changing for the better, little by little."

Library API interface

Through the HelMet programming interface, anyone can inquire and use the collection data of the Helsinki Metropolitan Area libraries. The user can choose for the search results to be shown in either a JSON or a MarcXMLformat.

http://data.kirjastot.fi/

Who made it happen?

Antti Pakarinen and Timo Tuominen
Designers in the **Labs.kirjastot.fi** project. Kirjastot.fi is the joint web service of public libraries, funded by the Ministry of Education and Culture.

What did it cost?

”Building the interface cost about 15 000 euro.”

Tips for those planning to open their data

1. ”Go ahead and publish. The data doesn’t have to be perfect. We have 670,000 records, and who cares if a few dozen of them contain typing errors.”

2. ”The data that you plan to open does not have to be something that someone needs. It can also be something that just makes the city more fun.”

Why is unlocking data important?

> “It may speed up the development of public IT systems.”

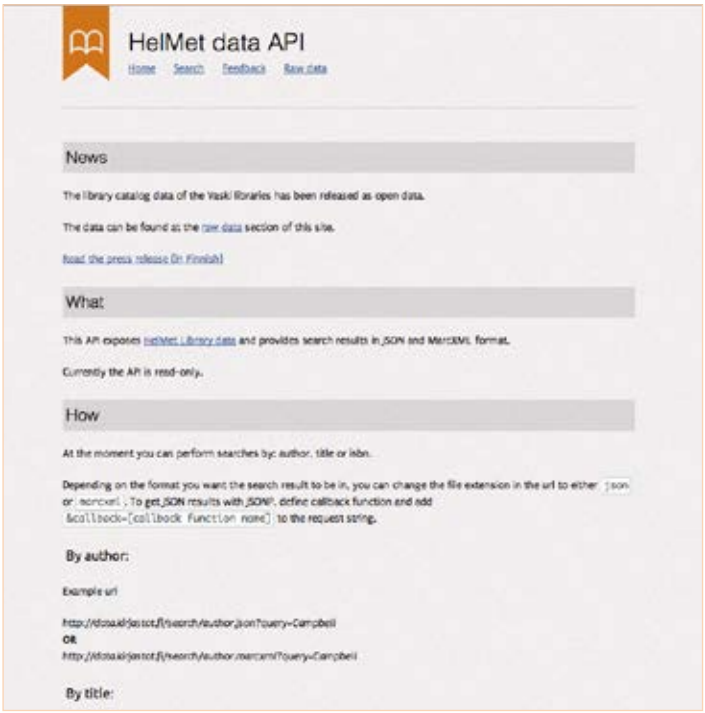
Where is the data used?

HelMet barcode scanner

An Android application with a barcode scanner that helps you to quickly identify the nearest library where a particular book is available.

HelMet pocket Library

A mobile service for iPhone and Android phones. It allows you to renew loans, reserve books and other works and search the HelMet libraries’ collection. The app also has a function that enables the user to borrow books and records directly from a friend, without visiting the library..



This is how the data was opened

2008 Antti Pakarinen, a project manager at the Helsinki City Library, becomes frustrated with the awkward information systems of the municipal libraries and suggests opening the library data for free use by open source developers.

Spring 2009 The Labs.kirjastot.fi project is launched. The project, funded by the Ministry of Education, seeks to build prototypes for new library services with agile development methods.

June 2010 The first data opening consists of the metadata of 680,000 works. “There had been a lot of talk about this previously, but we were the first major public library in Europe to open its data to the public.”

October 2010 The Helmet barcode scanner using the collection data received an award in the Apps4Finland contest. “It was a really important thing for us and it showed us what could be achieved through opening data.”

June 2011 An application programming interface to the library data is opened.

September 2011 The libraries of Southwest Finland open their collection data on the site data.kirjastot.fi.

January 2012 An outdoor poster campaign in Helsinki, designed to promote public awareness about open data and visualisation, uses library loan statistics to portray the popularity of the most borrowed books in the public libraries.

MAPS OF THE NATIONAL LAND SURVEY

Antti Rainio who has been an advocate of open GIS data from 1980s, was chosen as the IT opinion leader of Finland in 2011.

In 2011, aerial photos for the whole of Finland would have cost hundreds of thousands of euro. Now they cost nothing at all.

The National Land Survey was the first government agency to unlock its digital geodata sets for the citizens and enterprises to use cost-free. Lots of enthuastic users have discovered the aerial photos, elevation models and vector and raster maps that were made publicly available in May 2012. In the first nine months, more than a million map files were downloaded through the online service.

For many years, the personnel of the National Land Survey watched helplessly as the cost-free but inaccurate Google maps were used in various online map services instead of the National Land Survey's top class digital map resources, which had been produced with the taxpayers' money

"High quality material was replaced in use by lower quality material", says **Antti Rainio**.

The long-term work of Antti Rainio and other open data advocates begun to bear fruit in December 2011 when the fee regulations of the National Land Survey were changed so that the geodata were no longer subject to licence fees.

The alteration initiated a project, unprecedented within the National Land Survey.

"The steering boards of our projects meet usually once every month. But during this project, it was discussed how many times a week should we meet to guide the work of the project", **Antti Kosonen** recalls the spring of 2012.

In four months the experts had to go through all of the 18 digital datasets covering the entire country, altogether more than 100 products.

"We had to alter the products, design a new licence that would allow the material to be handed over to users, build a new download service... Our 100-megabyte Internet connection was updated to a gigabyte connection so that the download service wouldn't collapse", says Antti Kosonen.

The new regulation made the map data cost-free on 1 May 2012. The first data transfer was made manually, but the file service was soon operational.

"The datasets were eventually also shared as torrent files. It eased the huge rush to our server", says Kosonen.

In February 2013, more than a million map files have been downloaded from the servers of the National Land Survey, that is, over 30 terabytes of data.

The fact that they are free of charge is a good selling point.

> "Once the download service was opened, more material was delivered in a few months than during all the years when digital map data have been available."

National Land Survey map data

The open datasets can be downloaded cost-free from the National Land Survey's download service. The user picks a product and specifies the desired format, coordinate system and area. After the selection, the service provides a web address from which the requested files can be downloaded.

http://www.maanmittauslaitos.fi/avoindata

17 September 1996 As the first official cartographic agency in the world, the National Land Survey opens MapSite, a web service offering maps of the entire country available for all to browse online.

January 2008 The National Land Survey begins to deliver its map resources free of charge to municipalities and researchers. By request of the Ministry of Finance, the agency returns to its former pricing policy.

Who made it happen?

Antti Rainio, Senior Expert,
National Land Survey
Antti Kosonen, Director, National Land Survey
Supplier National Land Survey

What did it cost?

Opening the data and building a download service took ”something like a few man-years”. ”We estimate the loss of sales revenue to be 1.5 million euro per year”, tells Antti Kosonen.

Tips for those planning to open their data

1. “Your own expertise will not disappear after unlocking data. On the contrary, it will be even more in demand”, says Antti Rainio.

2. Opening the data reveals the errors it may contain. ”That is a good thing since searching for them is very expensive otherwise”, states Antti Rainio.

3. Read the guidebook Public Data – an introduction to opening information resources. ”For me, it clarified the basic issues of open data”, Antti Kosonen tells.

What were your expectations from the data opening?

”New innovations will come into existence that are based on the innovative exploitation of different data sets” Rainio explains.

”Making better use of the data means getting better returns from our investments in producing the data reserves. Unlocking geodata might inspire people to enjoy nature in greater extent. One of the consequences may well be an improvement in national health”, says Antti Rainio ponders.

What concerns were there related to the opening?

”We were worried – unnecessarily, as it turned out – that no one would care about the licence restrictions. But when others shared our data as torrent files, they made it a point to clearly communicate the conditions related to the licence”, Antti Kosonen tells.

Another worry was that the customer service would be jammed up. ”The need for customer service has not grown, but the character of the job has changed. Before, it often involved compiling and sending datasets. Now the data can be obtained as self service, but the need for customer support is greater since the use of the data has increased 50 times”, defines Antti Kosonen who is responsible for the information services of the National Land Survey.

Where is the data used?

Karttapullautin

Karttapullautin (“Map Maker”) is a free-of-cost program which allows anyone to create orienteering maps suitable for practice use from the Auto Scanning Laser System (ALS) resources of the National Land Survey with just a couple clicks of the mouse. Survey with just a couple clicks of the mouse.
http://apps4finland.fi/2012/09/10/sovellus-karttapullautin/

The digital terrain model of the National Land Survey was used to create the terrain for the film dramatising the story of Aarno Lamminparta, who hijacked an airplane in 1978.

Creator of Karttapullautin Jarkko Ryyppö.

Licence CC BY 3.0. Photographer Olli-Pekka Orpo

This is how the data was opened

2010 USeveral working groups are making plans for the opening of public data reserves. The guide for opening public data is published. The HRI project is launched.

March 2011 The Government makes a decision to promote the opening of public information.

April 2011 The National Land Survey begins to study the possibility of opening its map data.

June 2011 The opening of public information is included as a goal in the national government programme.

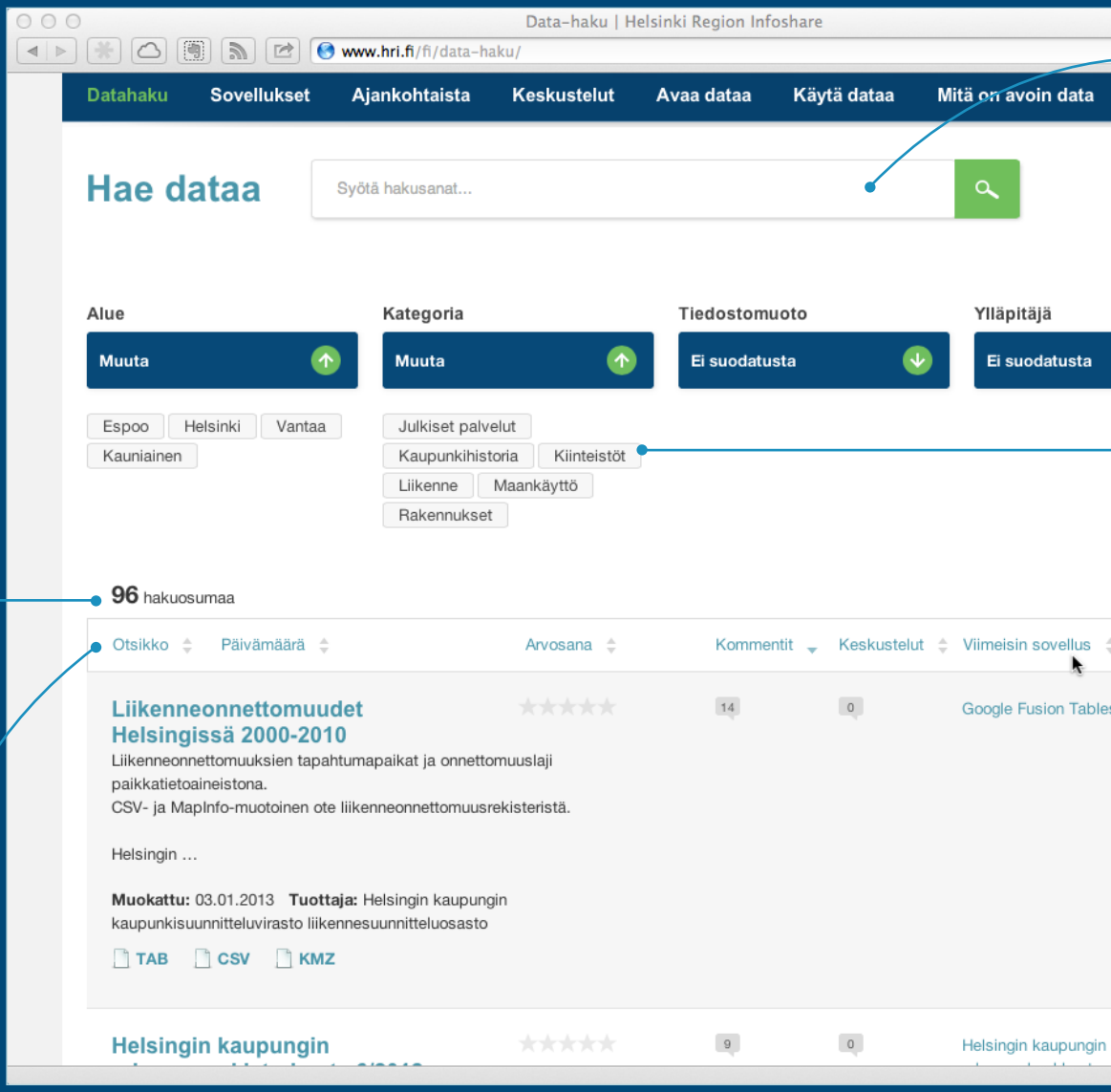
November 2011 The National Land Survey proposes a change to the decree on service charges. The Ministry of Finance budget department opposes the idea of distributing information free of charge.

December 2011 The Government approves the new decree despite the opposition.

January 2012 The National Land Survey launches its data-opening project.

1 May 2012 The map data is opened for free use by all.

HRI.FI - ANATOMY OF DATA CATALOG



Number of hits with selected filters

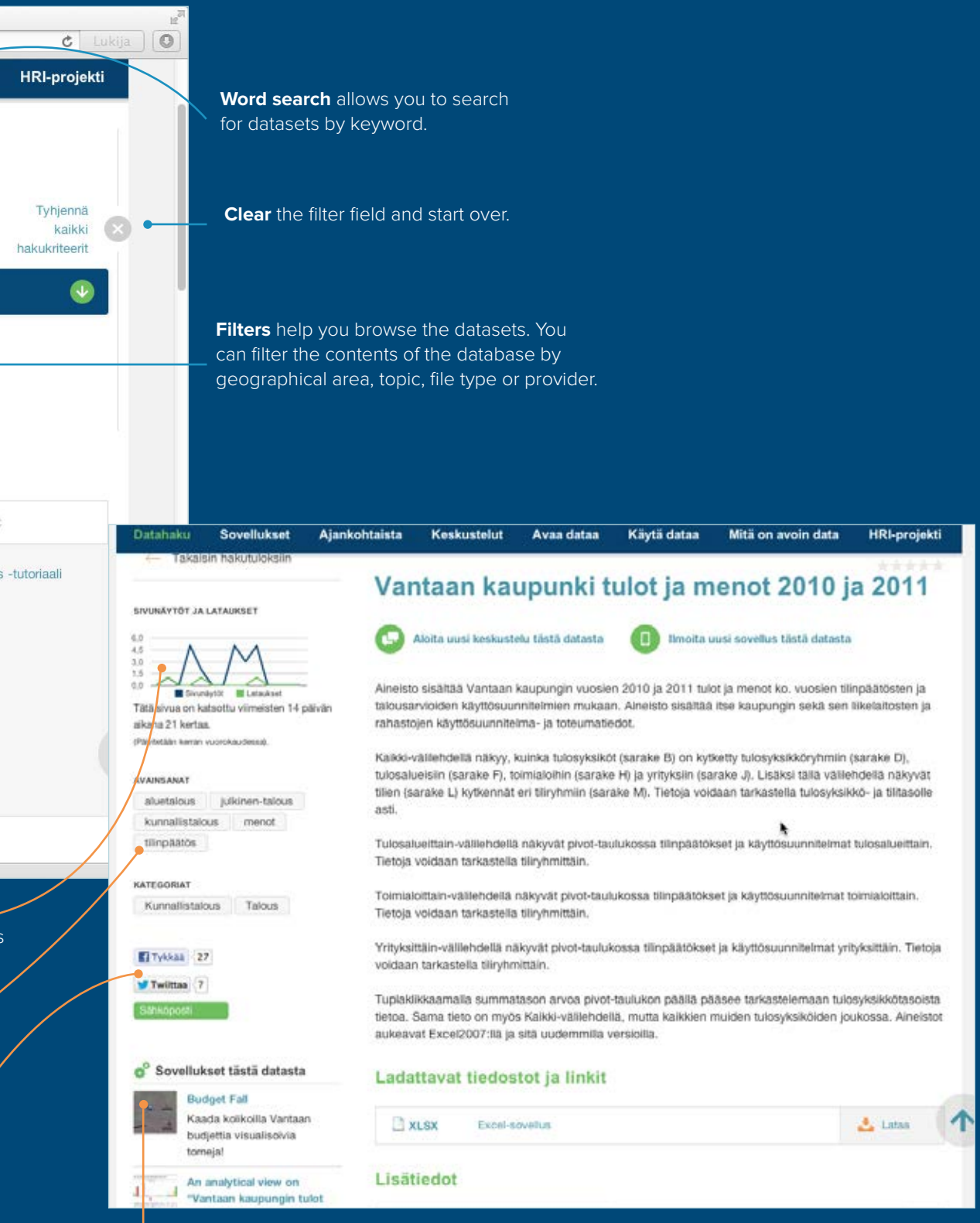
Search results can be sorted by clicking the titles to show them by alphabetical order, time or number of comments, or to see which datasets have inspired the latest applications.

Search results are listed at the bottom of the page.

Statistical data about viewings and downloads from the site.

Keywords can be clicked to search similar datasets.

HRI datasets can be easily shared via **Facebook and Twitter.**



Word search allows you to search for datasets by keyword.

Clear the filter field and start over.

Filters help you browse the datasets. You can filter the contents of the database by geographical area, topic, file type or provider.

The sidebar shows the applications based on the dataset.

The additional description reveals the source of the data, the frequency of updates and the terms of use. You can also comment or rate the datasets.

EU PRIZE HELPS TO CREATE TRANSPARENT CITY

Text Petja Partanen

The Helsinki region is paving the way for better interoperability between its open data reserves in the future.

Click-click. A new coffee roastery in the centre of Helsinki has been granted an environmental permit. Click-click. 2013 has been a good year financially for the City of Helsinki Wholesale Food Market. Click-click. The municipal tax rate for 2014 is 18.5 %.

All this, and tons of other information, can now be found through brand-new web services that search the open data interface to the City of Helsinki case management system. All it takes is a couple of mouse clicks.

In June 2013, the EU awarded Helsinki Region Infoshare (HRI) a European Prize for Innovation for its merits in opening up public data in the Helsinki region. Yet the 100,000 euro prize sum is not chiefly a recognition of past achievements but is intended to be spent on future development work, says Asta Manninen, Director of the City of Helsinki Urban Facts.

”With the help of the award money, we will work on improving the interoperability of our open data reserves. We want data users to be able to easily mash up the open data on HRI with other systems of open data. In the future, it will be possible to combine our open decision-making data with budget information, financial statements and geodata”, says Manninen.

The stage of openness that Helsinki has reached thus far is already exemplary even in a European context. The municipal administration is one of the most transparent in the world. The Act on the Openness of Public Documents has for a long time guaranteed the citizens’ right to browse nearly all public administration documents. Now the access to the documents has also been made extremely easy.

The document interface opened in spring 2013 allows anyone interested to get a clear picture of how issues move through the city decision-making process. You can follow the process just as easily as the Mayors or the City Council or City Board members. Several easy-to-use online services have already been designed using the interface. The decisions of the city can, for instance, be browsed on a map, together with various attached documents and plans.

City of Helsinki Urban Facts, the department responsible for the implementation of the Helsinki Region Infoshare project, is already planning the next steps together with the cities of Espoo, Vantaa and Kauniainen. Half of the 100,000 euro prize sum will be used to hire a programmer, says Project Manager Ville Meloni from Forum Virium Helsinki.

“We are thrilled to see how actively the cities of the Helsinki Metropolitan Area have opened up their data reserves, but currently the data is still not interoperable.”

The task of HRI’s new data expert is to make the open data resources to work together. The experiences and results of the development work will be shared with other cities as well.

Part of the prize money will be used for rewarding the best applications making use of open data reserves.

“We pose challenges to the programmer community: design a visualisation or application that utilises open public data”, says Meloni.

“We are thrilled to see how actively the cities of the Helsinki Metropolitan Area have opened up their data reserves, but currently the data is still not interoperable.”

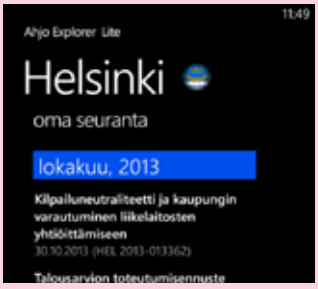
HRI takes home EU innovation prize

The open data service Helsinki Region Infoshare received the European Commission's prize for innovation in public administration. The prize sum is 100,000 euro.

The award money will be used to further develop the HRI service and to promote the citizens' access to information about the cities' decision-making. The innovation prize was announced at the Week of Innovative Regions (WIRE 2013) conference in Cork, Ireland, in June 2013.

Helsinki's governance documents are open to all

The open interface to the city's case management is exploited by several online and mobile services.



Open Ahjo

Open interface to the governance data of the Ahjo system

Open source project – head programmer is an open data expert hired by the city

Case management system Ahjo

City of Helsinki: 40,000 staff, 30 departments, 6 public utilities, 129 enterprises with city ownership.

All governance documents are stored in electronic from in the Ahjo system.

HELSINKI LOVES DEVELOPERS

HELSINKI HAS AMBITION TO BE APPLICATION DEVELOPERS' PARADISE

Text Petja Partanen

The benefits of open data reserves cannot be realised unless the data is put into use. Helsinki organises developer meetups with those making use of the Helsinki Region Infoshare data reserves and the city's open data interfaces. The city also gives practical support to programming work.

Software developer **Mikael Kopteff** has a daytime job in a successful software company – and at night he writes code for no money. He is one of the developers running the OpenHelsinki.net service which aims to open the decision-making processes of the City of Helsinki.

"We want to give the residents an opportunity to follow what is going on in their neighbourhood", said Kopteff while presenting the service in a developer workshop in June 2013.

Helsinki began to meet with application developers on a regular basis in spring 2012. Up to three workshops have been organised monthly. The topics include, for instance, devising possibilities for a more varied use of the travel cards that everyone carries in their pockets, or ways to exploit the city's open data interfaces for the benefit and joy of all citizens.

The website dev.hel.fi plays an important part in promoting the cooperation between the city and the application developer community. The site enables the community to take part in developing the specifications for the city's interfaces and testing them.

"The site also advertises upcoming developer meetups and contests targeted to developers", says **Jaakko Rajaniemi** from the City of Helsinki IT Division.

The website was set up by the IT Division and the city-owned development company Forum Virium Helsinki. The 'Helsinki Loves Developers' logo embodies the city's philosophy. "Working together as partners can make Helsinki the most developer-friendly urban community in the world", says **Hanna Niemi-Hugaerts** from Forum Virium Helsinki.

The developer portal presents the data interfaces that the city has already opened up. The interface to the Helsinki Metropolitan Area service map, for instance, has been put to active use by developers after the city opened it in summer 2011. During 2012, over 3.8 million queries were made through that interface.

Opening up the city's information systems and supporting independent application developers are among the objectives set in Helsinki's City Strategy. For the time being, most participants in the open data workshops are IT enthusiasts and civic activists, but the city strives to encourage private enterprises to join in and use the open data reserves.

"Together with HRI, we will embark on a roadshow to visit the businesses of the region", Hanna Niemi-Hugaerts reveals.

"We want to give the residents an opportunity to follow what is going on in their neighbourhood."

Hanna Niemi-Hugaerts from Forum Virium Helsinki and Jaakko Rajaniemi from the City of Helsinki are transforming the city into a software developers' paradise.

Apps4Finland focusses on problem-solving

The open data application contest Apps4Finland, organised since 2009, returned for a fifth year in 2013 with a new format.

"The contest is being transformed into a problem-solving community which could support those seeking solutions even to major challenges", says Apps4Finland Coordinator Petri Kola.

The Apps4Finland Challenge Partners invite the participants to take part in solving the societal or business-related challenges that they have identified. The Challenge Partners include Helsinki Region Transport, the finance and insurance group OP-Pohjola and the Ministry of Justice. Many organising partners have recently opened their own data reserves for public use. These include the Finnish Meterological Institute as well as the Finnish Transport Agency which is responsible Finland's road network.

www.apps4finland.fi

Open Helsinki Hack@ Home supports indie coders

The Open Helsinki Hack at Home programme, launched in summer 2013, supports application developers who wish to build applications that answer the citizens' needs and uncomplicate their daily lives.

Hack at Home is an international concept that the City of Helsinki has adopted to support those striving to solve the challenges identified by the city.

Helsinki's Hack at Home programme seeks new software solutions for diverse fields such as tourism, local decision-making processes and the collection of citizen feedback. The data interfaces opened by the city are available. for the development of the solutions.

An aim of the programme is to bring together the needs of the city and the citizens' programming skills.
"We want to contribute to an open Helsinki, an enjoyable city for all", says programme coordinator Ville Meloni.

http://openhelsinki.hackathome.com/

4 PERSPECTIVES TO OPEN DATA

Text Petja Partanen

Pekka Sauri encourages officials to also share raw data, not only refined information. ”Somebody might refine the data to create something else.”

1 Open governance – better city

If you want to incite others to open up public data, set an example, says Pekka Sauri.

If you are interested in what is going on in the capital city, follow Deputy Mayor **Pekka Sauri** on Twitter. Just ask his followers – thousands of people who receive real-time updates on a variety of issues including disruptions of the public transport, movements of swans in the marina, street cleaning or power failures.

”Yes, I am active in social media, and it is in the interest of the city. I reply to people’s questions and forward whatever information I get, to others”, says Sauri.

Pekka Sauri believes that one’s own example is the best way to inspire public officials to open city data for all to use.

The departments in Sauri’s administrative sector are currently practising how to be more active in sharing information. For instance, Stara, the city’s infrastructure service company, communicates the location data of its snowploughing equipment through an interface to the production control system. The Public Works Department, on its part, receives citizen feedback through an electronic interface to the “Pitäiskö fiksata” (“Time to fix this?”) service on the newspaper Metro’s website.

”The citizens’ eyes are also the city’s eyes. The Public Works Department may not be aware that a road sign has fallen over if no one tells us about it.”

Sauri is concerned that the city organisation and the residents are too far removed from one another in a big city. Sharing information in open manner is a way to bring the citizens and governance back together to work on improving the city.

”All the data that this organisation produces should be available to everyone. Anyone can come up with ideas for what to do with it and utilise the information to the best of their abilities.”

The development has been obstructed by the vast number of different information systems and data formats used by the city – not the urge to hold back information”, states Pekka Sauri.

”Everyone knows that the Freedom of Information Act stipulates that information should be open. There are no good grounds for keeping public data resources closed.”

There is, however, one data reserve that the Deputy Mayor currently keeps hidden in his pocket. This is a 32-gigabyte dataset related to an international bridge design competition in which Sauri chairs the jury. The city has received a good amount of feedback from the citizens about the proposed bridge connection between the city centre and the eastern suburbs.

“I only have so much personal wisdom to evaluate a bridge design”, says Sauri.’

This is why he begins his work in the jury by reading the 500 citizen comments on the proposals.

”I try to incorporate the views of the experts in the jury to the opinions of the citizens.”

“All the data that Helsinki produces should be available to everyone.”

In spring 2012, Petri Kola contributed to the project of making Ahjo, the City of Helsinki's electronic case management system, open to all people. An open interface to the city's decision-making data was launched in March 2013.

2 Revise your working methods

If you also want some benefits to yourself when you open your data, you had better to rethink your working methods, says open data activist Petri Kola.

The first time in an open data workshop may be a culture shock to an experienced city official.

"It may seem slightly chaotic", admits **Petri Kola**, Chairman of Open Knowledge Foundation Finland.

The people taking part in the workshops are a mixed bunch of programmers, civic activists and other curious souls. One of such meetings, held in early 2012, led to the project to unlock the data of the case management system of the City of Helsinki, Ahjo. However chaotic it may have seemed, the workshop – organised by Petri Kola – was determined to get the ball rolling. Results are achieved by working together. Anyone could join in editing the documents of the workshop – the requirement specifications and the roadmap of the project – with web tools. Online participants were able to follow the meeting via video connection.

The project snowballed, leading to the launch of an open interface to Ahjo a year later. An online service titled Open Helsinki, allowing users to monitor the city's decision-making and related discussion in real time, is currently under construction. Open Helsinki uses the open interface and is built by enthusiastic volunteers.

"This is quite different from the conventional working methods of public administration," notes Petri Kola.

Kola's own interest in open knowledge was originally awakened during the research project SOMUS, launched in 2009, which examined the collaboration of citizens, governance and enterprises. Sharing data proved to be an efficient way of interacting.

"Sharing data is collaboration, and from the point of view of the administration, it doesn't tie up a lot of resources. You provide the data as self-service and then you just see what happens."

According to Kola, another impetus for opening governance was given – unwittingly – by former Prime Minister **Matti Vanhanen** who was strictly opposed to discussing political issues with the public while they were still under preparation.

"It was infuriating to see that decision-makers would simply ignore the huge amount of expertise that existed in the society outside the political system."

There is always a lot of wisdom outside your own organisation that you can tap into by sharing knowledge, Kola points out.

The fact that the Apps4Finland contests have attracted hundreds of participants is proof that the reserves of open data can inspire a great amount of talent. But if you are a public official planning to open your information, how should you approach those with the abilities to apply the data?

"Don't invite them to a meeting but share some of the information you have; for instance, open a dataset for them to comment", suggests Kola.

"An easy way of getting to know the open data community is to join the Finnish Open Data Ecosystem group on Facebook."

"There you get an insider's view to how the community functions."

The collective work method is a model worth considering in public administration as well. Kola believes that the working methods of many organisations are still optimised to the paper era.

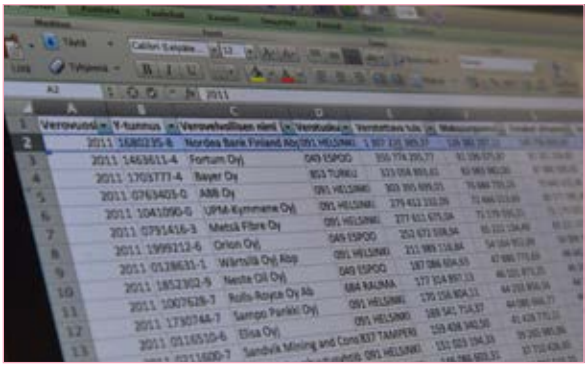
In the digital world, sharing knowledge and working collectively on digital products, lines of code, blueprints and visualisations may be more efficient than sitting in meetings.

"But doing things with new methods incurs a risk. And risk-taking is not necessarily awarded in public administration", says Kola.

> "There is a lot of wisdom outside your own organisation that you can tap into by sharing knowledge."

3 Efficient tax routines

The first open data release of the Tax Administration, the 2011 corporate tax data, has received a great number of downloads. In the future, the opening of data will increase efficiency in the Tax Administration, believes Senior Adviser Johanna Kotipelto.



The 300,000 rows of the first data release of the tax administration show how much tax Finnish enterprises and societies have paid during 2011.

Christmas was drawing near but Senior Adviser **Johanna Kotipelto** was unable to concentrate on making holiday preparations. ”Instead I was thinking to whom we should direct queries about the community tax data which we had just added to the HRI data catalogue”, she laughs.

The Tax Administration has not been in the forefront of the open data movement – for completely understandable reasons.

”Despite the general rules on the publicity of documents, tax data is classified information. It is specified in the law what part of tax information is public.”

A public debate on the attitudes of private companies towards paying taxes gave a new impetus to the Tax Administration to open its data reserves. Following the wish of Minister of Finance **Jutta Urpilainen**, the information on 2011 corporate taxes was released at rapid pace on the Tax Administration’s website as soon as the taxation was completed in November 2012.

“The download statistics show that the information has proved to be interesting”, says Kotipelto.

The corporate tax data has been downloaded thousands of times. In the process, Johanna Kotipelto has become rather active in the open data circles. In the autumn, she participated in the pilot class of unlocking data arranged by HRI, first of its kind in Finland.

”There I saw how data is opened in practice – all the way from SQL database extraction to a downloadable CSV file.”

She also started writing a blog about her experiences with unlocking the tax data. Now she is on the lookout for new material that would be useful if it were opened for all.

”This is an important task because it increases transparency, but at the same time it reduces our administrative burden.”

A major part of the Tax Administration’s information is classified, but, even so, each citizen is entitled to access all data concerning him- or herself.

Kotipelto has been involved in building the electronic customer services of the Tax Administration: the salary calculator Palkka.fi and the virtual tax deduction card service “Verokortti verkossa”. Still, a lot remains to be done in the field of electronic services.

”A lot of information exists, but to access it, the citizens are required to make phone calls, fill in forms or visit the tax office.”

Johanna Kotipelto hopes that the enthusiasm to open data reserves would gain more ground in all sectors of the state administration. When you put together various sources of data you can hit upon something interesting. The Trade Register is an example of a source with a lot of data that is interesting to journalists, but, for the time being, it is not cost-free.

“The financial statements delivered to the Trade Register tell a lot more about the companies’ financial accountability than an overview of the taxation”, says Kotipelto.

Johanna Kotipelto’s blog about her experiences in unlocking data:

http://avaadataa.blogspot.fi

> “The download statistics show that the information has proved to be interesting”

4 New businesses

Enterprises believe that opening up access to more data could create new business and even give birth to a significant new business sector in Finland.

A quick poll made to the IT directors of large companies revealed that companies expect the unlocking of data to create new business. If the Finns act quickly in opening data, the businesses in the field may gain a competitive advantage in the global market.

Markku Suvanto
City Account Management, Siemens

1. We use data quite a lot for general market researches, analyses and prognoses. We utilise, for instance, land use resources related to city planning and traffic control.

2. Yes; for example, data related to urban research. We believe it can be useful to the city for decision-making and planning; to developers in the form of applications; and to the general public as a source of information.

3. It could have a positive effect in terms of creating employment. Application developers could shape the data into different kinds of services and applications.

Tuija Aalto
Head of Strategy, Yle (Finnish Broadcasting Company)

1. Open sources of information are used as part of journalistic stories – for example, in news, current affairs programmes and documentaries. In the future, Yle expects that unlocking public information may help create possibilities for offering new services.

IBM produces tools for analysing information. When the waste transport statistics of the City of Helsinki Public Works Department is analysed together with demographic data, the results will reveal which factors affect the amount of waste.

2. Yle begins to open up its own contents, programming interfaces and online data. The aim is that, in 2015, Yle's application interfaces (API) will be accessible to its partners and developers in a diverse manner. The goal is to offer more value for taxpayers' money.

3. Citizens will have better and more diversified access to information about the issues that concern them and interest them. This entails that civic organisations and interest groups will also succeed to use open data in order to develop the impact of their communications efforts.

Antti Ritvos
CTO, Tieto Oyj

1. Public open data reserves are interesting to us with regard to the solutions and products we build for our customers. We want to participate in developing a society that operates more smoothly.

2. If our customers decide to unlock such data reserves that we currently manage for them, we will assist them in doing so. At the same time, opportunities may arise to put together the data of different customers in a meaningful way.

3. If all the data reserves of the public administration were available as open raw data, we would probably see the creation of new start-up companies in the IT sector in Finland. In the past, this has happened in the USA. If Finland took action faster than other European countries, this could result in a competitive advantage that enabled growth on an international scale.

Ville Peltola
Innovation Director, IBM

1. We do this globally all the time and will continue to do so in the future.

2. This is unlikely since we don't have any interesting data to unlock. Our clients, on their part, have it and we hope we can help them to open up their data reserves.

3. It would certainly accelerate innovation in the public sector as well as in the private sector.

Roope Takala
Head of Innovation Programs, Nokia

1. Yes, Nokia Map Service utilises a number of public data sources, including public transport route maps, timetables and traffic intensity measurements, as part of the overall service targeted at the end user.

2. Nokia already offers its own map resources openly for external developers. Part of the data is cost-free.

3. In the best case, open data can give birth to a new information innovation sector to the field of Finnish business.

Questions

1. Is your company going to use or is it currently using open public data resources in its activities?

2. Is your company going to unlock its own data resources in the future?

3. How would the world change if all the data reserves of the public administration were available to anyone as raw data?

UNLOCKING THE DATA RESERVES

OPEN DATA ROADMAP OF THE STATE

The Finnish Government launched an Open Knowledge Programme in April 2013. Open data from the state administration will be collected into a common data portal in accordance with the HRI example.

In April 2013 the Government gave green light to the opening of the state administration's data reserves in 2014 through 2017.

"The state can compensate the loss of revenues and the costs of building of technical interfaces to those ministries or agencies which have the readiness to do so", says **Timo Valli**, Director of Public Government ICT in the Ministry of Finance.

The goal of advancing the unlocking of public data has been part of two consecutive government programmes. Concrete action has often been stalled by the lack of money. For example, the National Board of Patents and Registration of Finland receives significant sales revenue from selling data. The unlocking of the National Land Survey map resources last year took away revenues worth approximately 1.5 million euro. But the usage of the free resources has increased vastly. "The revenues received by the agencies have been altogether around 30 million euro per year. Individual agencies may lose money but the economy gains from the unlocking of data", says Governmental Advisor **Anne Kauhanen-Simanainen**.

Many government agencies have made progress in unlocking information. The weather data of the Finnish Meterological Institute was opened in summer 2013.

"The unlocking of data resources will proceed. Statistical data, business data, traffic and communication data and airport observational data will be opened", states Timo Valli.

Building a nationwide data portal

Part of the funding will be used for implementing an Open Knowledge Programme starting in April 2013. The opening of data resources will be promoted, among other things, with a nationwide data portal.

"The aim is to build a nationwide data catalogue, in the same way that HRI has done in the Helsinki Metropolitan Area. We should certainly make use of the technology HRI is using", says Timo Valli.

The project will also develop open governance and the use of new tools. The ambition is to start a dialogue with the open data developer community.

"Online forums will be utilised in the development of the Open Knowledge Programme and the data portal, and the developer community will have the chance to comment on the plans", says Ministerial Adviser **Mikael Vakkari**.

JulkICT Lab, a test environment for public administration, is under planning. In the test environment, those dissatisfied with the electronic services of the administration can build their own proposals with open source tools.

"Businesses – or anyone – could try out new services", says Vakkari.

The JulkICT function has ambitious goals for opening data. The aim is that all the essential public data reserves will be available to citizens, businesses and anyone else by the end of this decade.

"The government has given the green light and we have the funding to do it", says Valli.

JulkICT -toiminto

Public Sector ICT Strategy emphasises open knowledge

The first ICT strategy for Finland's central and local government is looking for solutions to the public administration's IT-related challenges.
As suggested by the title of the strategy – "Making better use of information and services" – the aim is is that the citizens will have well-functioning electronic services at their use, and that they will not be strained with unnecessary bureaucracy. The blueprint also concretises a goal written in the government programme: "Public data resources will be brought openly available and for reuse in a machine-readable form."
According to the strategy, the essential data reserves of the public administration should be openly available online by the end of 2014, in machine-readable form. Government agencies should not charge each other for data releases, and preferably other clients should not be charged either. To speed up the implementation of the goal, an Open Knowledge Programme will be launched.

> Unlocking public data reserves is one of Government's spearhead projects in reinforcing sustainable economic growth, employment and competitiveness. By opening public data reserves for for further use, the Government aims to promote the functioning of the civic society and democracy and improve the productivity of public governance... The unlocking of the data reserves will be extended with statistical data, business data, traffic and communication data and with airport observational data". **-Decision on Central Government Spending Limits 2014-17.**

Transport and Communications Ministry takes action

The roadmap of the Ministry of Transport and Communications raises the expectations of the users of open data.

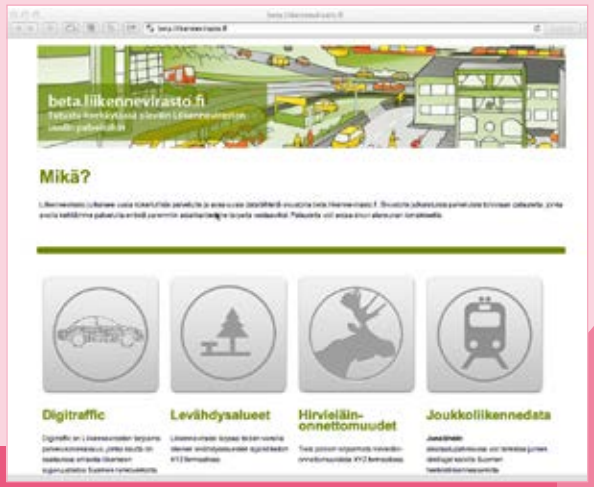
While planning the economy for the next few years, the Ministry of Finance asked all the government ministries in spring 2012 to give an account of which data resources they were going to unlock and in what time frame.

The report “Open Data in Transport and Communications” (Avoin tieto liikenteessä ja viestinnässä) presents a clear roadmap for the administrative sector of transport and communications.

At the moment there are only a few open data sets but unlocking of the data is underway in all agencies, states the report of the Ministry of Transport and Communications. The plan is that, by 2017, free open data will include, among other things, nautical charts. The Finnish Meteorological Institute, on its part, has offered meteorological observations and forecasts as open data from summer 2013 onwards.

The nationwide public transport route and timetable data was unlocked in autumn 2012 as a result of the Apps4Finland contest. The Ministry of Transport and Communications is planning to make the participation of developer communities in open data competitions a permanent practice within the administrative sector.

Another new thing is the “beta” operations model where datasets are handed over to the developer community already at an early stage, despite the fact that the data may not yet be in its final form.



The Finnish Transport Agency publishes new experimental services and opens new data sources at **beta.liikennevirasto.fi**

EU Directives

2003

European Union PSI Directive (2003/98/EC)

Facilitates reuse of public sector information

2007

European Union INSPIRE Directive (2007/2/EC)
Geodata must be made available in a harmonised form in all Member States

2013

New PSI Directive
Basic principle: all public information is reusable for commercial and non-commercial purposes.

National decisions

2011

March

Government decision-in-principle

The Government issues a decision-in-principle on the availability of public sector digital data reserves.

Data must be openly available and reusable with harmonised terms of use that are clear and equal to all. The resources must be free of charge where possible.

2011

June

Government Programme
The opening up of data reserves is made into one of the top priorities of the new Government.
http://valtioneuvosto.fi/hallitus/hallitusohjelma

Implementation

2012

February

Principles and practices of public sector information disclosures

Final report by a Working Group

Proposal for a licence model for public sector open data

Proposal for the principles concerning fees for information disclosures

2012

November

Public sector ICT strategy
Proposal for a public sector ICT strategy

2013

February

”21 Paths to a Frictionless Finland”
Report by ICT2015 working group

2013

April

Open Knowledge Programme

A plan of action concerning the measures to be taken in the next three years to increase openness of public data reserves

2013

April

Open Government Partnership

Finland joins an open government partnership project.

UNLOCKING THE DATA RESERVES

OPEN DATA ROADMAP OF THE HELSINKI METROPOLITAN AREA

Text Petja Partanen **Photo** Pertti Nisonen

"The documents of the city are public, but accessibility of the information has been a problem", says Jussi Pajunen

Designed as a catalyst for unlocking public data, the Helsinki Region Infoshare (HRI) project has brought the cities of the Helsinki Metropolitan Area to the world's forefront in unlocking city data. The vision is that anyone could follow and take part in decision-making from the beginning of preparatory process.

The word 'democracy' brings to mind a marketplace in Ancient Greece where the residents of a city convened to decide on common issues. The administration of the 1.3 million inhabitants of the Helsinki Metropolitan Area has moved a long way from this ideal. Four cities, dozens of city departments, public utilities and corporations, tens of thousands of employees – a rather complicated system, one might say.

Even so, today's information technology provides us an opportunity to return to the roots of democracy, says Mayor of Helsinki **Jussi Pajunen**. One of the achievements of the HRI project is the creation of an interface to the electronic case management system of Helsinki. Since March 2013, all the meeting documents of the city are available to everyone through the interface. But Pajunen has set his sights even higher.

"My vision is that all the data on decision-making will be available to all."

The documents are already public, of course, but 'public' does not always mean accessible. Decisions taken by the city are published on Helsinki's website, but it is much more difficult for citizens to enter a discussion on issues yet under preparation. Paper copies of the documents are, in practice, available from the registry of the city but an average citizen may not have a comprehensive picture of all the issues under preparation within the city organisation. A simple Google search could reveal a lot – if only the information were available as open data.

"Technology will make this a success. By the end of the year, as large a share as possible of all the data of Helsinki will be available to the citizens", Pajunen promises.

Pajunen wishes that the data of the cities would also come alive outside the city administration. "When all data is available, the whole community can contribute to building a better city.

The aim of the HRI project is that the unlocking of the data reserves will soon be part of the everyday activities of the officials of Helsinki, Espoo, Vantaa and Kauniainen. This will not happen in an instant. According to Mayor Pajunen, there are many hindrances to the sharing of information. Some of these are simple psychology.

"Knowledge is power", says Pajunen. Publishing our data in an open format may feel like relinquishing power. What is more, the process of opening data often means an increasing workload. Pajunen believes that the step is, nonetheless, worth taking.

"When you are inside an organisation, you become accustomed to a certain way of doing things. Open data makes it possible for outsiders to observe our methods of working and they may justifiably ask the question of whether our methods are the best or suggest something else instead."

The fact that the open data reserves give an increasing number of citizens an opportunity to peek inside the walls of the city administration, as it were, can serve as an impulse to develop the city's working methods.

Pajunen offers an example: the language of official documents, sometimes critically labelled as 'officialese'.

"In the old times, it was enough that the proposals presented to the city's decision-

"My vision is that all the data on decision-making will be available to all."

All open data of the Helsinki Metropolitan Area in one web service

"Congratulations, you are the pioneers in the world", praised the Mayor of Helsinki Jussi Pajunen in rewarding Helsinki Region Infoshare project.

makers were correct from a legal standpoint."

Since today the readers also include people unaccustomed to the decision-making jargon, the text must be understandable.

"In the future, any official writing a proposal on a council motion, for instance, must be aware that they are also communicating to the citizens about the activities of the city.

Besides the open data reserves, new communication tools also serve to increase openness. Facebook and Twitter, among others, are effective means of communication between the citizens and decision-makers.

"In five years' time, the city as a public-sector actor will be far more public than today."

Mayor Pajunen extends his thanks to the dynamos of the HRI project.

"I am delighted to see that HRI's open knowledge philosophy is gaining ground also in the state administration and in other cities."

But even the forerunner cities are only at the beginning of the journey. Jussi Pajunen leads the way in openness. Any mayor's job involves making a lot of decisions affecting the residents' lives. Through Helsinki's Open Ahjo interface, anyone can monitor the decisions as open data stream.

"The Mayor's decisions will be available before the summer."

Helsinki opens public interface to its case management system

The electronic case management system Ahjo, adopted by the City of Helsinki in summer 2011, introduced a paperless office to the use of 5,000 officials and decision-makers within the city organisation. Today, all of these public documents are available to anyone interested.

"The public interface makes the data available around the clock. There is no need to call anyone or visit the registry at the City Hall", says **Katja Räisänen**, senior expert of the Ahjo system.

In the first stage, the Open Ahjo interface provides access to the agendas and minutes of the City Council, City Government and the Committees. Most of this information is already available as HTML documents on the websites of each decision-making body. Through the new interface, the information is provided at one address, in machine-readable form, and with all attachments.

The transparency of the governance will soon take another leap forward. More decision-making data will be released as open data when the decisions of the mayors and other officials become available.

Soon after the launch of the Open Ahjo interface, a group of developers started a new project titled Open Helsinki.
Open AHJO -xml-interface www.hri.fi/fi/data/helsingin-kaupungin-asianhallintajarjestelma-ahjon-rajapinta/
Open Helsinki -project www.openhelsinki.net

The cities of the Helsinki Metropolitan Area created in 2010 the Helsinki Region Infoshare project, with the aim of gathering all the public data reserves from each city and publishing them for free use by all.

The data catalogue on HRI.fi was opened in March 2011. In November 2012, the project received the Mayor's Achievement of the Year Award from Mayor Jussi Pajunen.

HELSINKI REGION INFOSHARE

UNLOCKING THE DATA RESERVES

COLLECTIVE CAN-DO SPIRIT

Text Terhi Upola

The Central Library will be an open meeting place next to the Parliament House, Helsinki Music Center, the Finlandia Hall and Kiasma Museum of Contemporary Art.

The pictures show some of the finalists of the architectural competition. Citizens were allowed to vote their favourite design among the six finalists in spring 2013. The favourite design of the popular vote was “Diagonal Agora”.

Ritva Viljanen, the deputy mayor responsible for education and culture, is convinced that opening up data resources and the future development of the library system will both help to foster a new kind of can-do spirit.

”A great conceptual leap is needed in order to make the massive data reserves of the city accessible to citizens, service developers and journalists”, says **Ritva Viljanen**, Deputy Mayor for Education, Culture and Personnel Affairs of the City of Helsinki.

”We have a strong old tradition of keeping all the sources of information closed. From now on, we should consider all information to be public, in principle, unless there is good reason to keep it classified, as in the case of personal data”, Viljanen says.

This necessitates that the city administration learn to understand what open data is and what kind of possibilities it holds.

For example, the collection database of the Helsinki Metropolitan Area libraries is already in open use. The database has been used to code a mobile applicaton: the HelMet Pocket Library. Although the library has designed and commissioned the mobile application on its own, it would not have been possible to build it without opening the database. The service was launched in October 2012, and today it has some 8,000 users.

According to Viljanen, unlocking data will, at its best, create a new collective can-do culture. The public library of the future shares the same vision. The harbinger of the new library culture in the Helsinki Metropolitan Area will be the new central library, due to be completed in 2018.

In the vision of Ritva Viljanen, the role of the library will change from a place of borrowing books into an epicentre of urban culture, a citizens’ living-room which fosters participation and creativity.

Instead of just popping in a library, you can spend time, work and participate in events: reading groups, children’s nights or debates.

In today’s libraries you can borrow music records or films. In the library of the future, you can make them.

“I hope to see the library becoming increasingly a place where each visit not only meets but exceeds the expectations of the user. Ideally the library would inspire new ideas and give the visitors an opportunity to use their creativity”, Viljanen envisions.

In some libraries, the users can already arrange their own events free of cost, but in the future it will be an increasingly common form of activity. The audiovisual library, “Library 10”, in the centre of Helsinki, for instance, hosts annually 200 events, and nine out of ten are organized by citizens themselves. A possible idea for an event to be held in libraries is open data training.

According to Ritva Viljanen, library staff are also able to help the citizens to locate sources of open data.

The demand for information services is growing – not least because an increasing number of people need help with computers and social media. ”Elderly people, for instance, may buy a laptop, bring it to the library and ask how to install software. Help will be available to them”, says Viljanen. sanoo.

> “Opening up data resources will help to foster a collective can-do spirit.”


Personal Office Area
Library Collection
Main Lobby
Café
Restaurant

OPENNESS IS THE FOUNDATION OF SCIENCE

Text Petja Partanen **Photo** Veikko Somerpuro

”Science can only make progress if knowledge is public”, says Ilkka Niiniluoto, Chancellor of the University of Helsinki.

The important basic principle of the scientific method is openness. However, the policies of the scientific world are in need of an update.

”The tradition is, in many fields of science, that the results are published as articles but the research data is kept concealed”, says Chancellor **Ilkka Niiniluoto**.

The publicity of science should not only concern the conclusions but also the research data. A working group on the utilisation of research data, chaired by Niiniluoto, made the recommendation that opening up research data for all should form a criterion in research funding decisions.

”Possessively guarding your own data isn’t really a modern way of doing things.”

Professor **Markku Kulmala** from the University of Helsinki is one of those who have set a good example in terms of openness. This director of a top research unit studying the consistency of the atmosphere created a new field of research into the university: aerosol research. The Finnish network of measuring stations, built under the supervision of Kulmala, shares its observations with a worldwide community of researchers.

Open sharing of the observation data has brought visibility and increased the international importance of Kulmala’s research unit.

“That has made him the world’s most cited researcher in his field”, says Niiniluoto.

Kulmala has emphasised on a number of occasions that sharing open data is a precondition for climate change research. The global problem is impossible to research without international cooperation and the sharing of research data.

Niiniluoto’s working group has also recommended that publicly funded data sets should be made available to everyone in digital form. Niiniluoto says that university researchers often have to pay for the raw data they need in their research – even when that data has actually been produced with public tax money. This way of thinking is bound to change. The trend is towards open public data.

”The HRI project of the cities in the Helsinki Metropolitan Area deserves a lot of praise.”

There has also been heated discussion at the university about its own information policy. Research data is created in vast quantities, but there is no shared set of rules regarding its storage or publication. The gigantic data sets generated at weather observation stations or in CERN’s particle accelerator, for instance, may later turn out to be valuable in completely new and unexpected fields of research.

”We don’t know where and when the data will be needed but it may prove to be important for solving some problem in the future”, says Niiniluoto.

Should all the raw data of all research be openly available?

”That would be a good principle, provided that the researchers take notion of data security concerning the research subjects. In medicine and human sciences, in particular, we need rules for storaging the original data of the research.”

The advocates of open knowledge often criticise commercial scientific publishers, who publish most of the scientific knowledge produced in the world.

“Possessively guarding your own data isn’t really a modern way of doing things.”

Ilkka Niiniluoto's ideal of decision-making is based on scientific evidence.

"Research data should be utilised more in the preparation of decisions and legislation."

The Open Access movement is critical of the model in which a university funds a research project, the researchers write articles free of charge for the scientific journals, and their colleagues who peer-review the texts also receive no monetary compensation from the publishers.

"In other words, the publishers receive everything free of cost and sell the information back to the universities", Niiniluoto sums up.

Universities purchase the access to the publishers' electronic archives for their researchers. The man in the street has no access to the latest scientific data in digital form, although the printed editions of the journals can at least be browsed at the university libraries.

For researchers seeking to gain an audience outside the academic world, the publishers offer the chance to 'buy' their own articles in an open access format, that is, to be freely shared online. But this comes at a high price.

"The publishing house Elsevier, for instance, charges 3,000 dollars per article", reveals Niiniluoto.

Niiniluoto proposes a solution to the problem: parallel publishing. This means that the researchers would publish their work in the conventional way, but in addition the universities would have open research databases of their own. These would store the publications for everyone to access.

"The University of Helsinki is in favour of this way of thinking." But the implementation of the idea is held back by publishing agreements, because the major scientific publishers are understandably not too keen about the new model.

HOW WILL THE WORLD CHANGE WHEN ALL PUBLIC DATA RESOURCES ARE OPENED UP?

“Just the fact that information is not kept hidden makes the city a more cohesive community. But the impact really depends on the ideas of resourceful innovators. Someone may come up with a brilliant idea that we would have never thought of”

Pekka Sauri
Deputy Mayor of Helsinki

“In the best case, open data can give birth to a new information innovation sector to the field of Finnish business.”

Roope Takala
Head of Innovation Programs, Nokia

“The need for manual work will be reduced, both for officials and the users of data. The Tax Administration receives a great deal of enquiries from the media and invididual citizens. If all our information could be retrieved automatically when our clients inquire for it, this would make our work a lot faster.”

Johanna Kotipelto
Senior Adviser, Finnish Tax Administration

“With all the information openly available, it will be much harder to repeat vague and unsubstantiated arguments in public debate.”

Petri Kola
Chairpersona, Open Knowledge Foundation Finland

“You could say it changes everything. When all information is publicly available, the whole community can take part in building a better city.”

Jussi Pajunen
Mayor of Helsinki

“Open availability of information makes it possible for anyone to combine the information into new service concepts. Openness may increase the possibilities of citizens to be informed about issues that concern them and interest them. “

Tuija Aalto
Head of Strategy, YLE

“Our perception of information will change and diversify. Data literacy and source criticism will improve.”

Anne Kauhanen-Simanainen
Governmental Advisor, Ministry of Finance

“An important effect of open data is that the residents’ and customers’ perspective will be increasingly central for the city as it plans and develops its service provision.

Jukka Mäkelä
Mayor of Espoo

“Ten years from now, openness of data will be part of the standard prodecure. Many aspects in our daily lives will be made easier. There will be time to do much more. Consumers will have more choice. Application developers will have vast amounts of open data from diverse sources at their disposal. The open data movement will have grown into a strong global network.”

Asta Manninen
Director, City of Helsinki Urban Facts

“The transparency of administration will improve. Private persons will be more capable to handle information than today and better inform themselves about issues in society. It would be excellent if each citizen, ten years from now, would have their own e-services account providing access to the most common official services from taxation to voting.”

Mikael Vakkari
Governmental Advisor, Ministry of Finance

“When all the major public data resources are freely accessible and used by all, we are likely to see better decision-making, better civic services as well as better commercial applications. With all the data sets available free of charge, the threshold for trying out new things in R&D will be significantly lower.”

Antti Rainio
Senior Expert, National Land Survey

“If all the data reserves of the public administration were available as open raw data, we would probably see the creation of new start-up companies in the IT sector in Finland. In the past, this has happened in the USA. If Finland took action faster than other European countries, this could result in a competitive advantage that enabled growth on an international scale.”

Antti Ritvos
CTO, Tieto Oyj

“It will enhance a culture of collaborative creation and make the city a more fun and functional place to live in. The more developers we have, the more energy, enthusiasm and ideas for devising new services.”

Ritva Viljanen
Deputy Mayor of Helsinki

“The internal processes of society will become more efficient. The investments made into developing data resources will be better spent.”

Antti Kosonen
Director, National Land Survey

“There will be more demand and use for scientific, peer-reviewed knowledge, but source criticism and general knowledge will be necessary for managing and processing the vast quantities of information.”

Ilkka Niiniluoto
Chancellor Emeritus, University of Helsinki

The Public Sector ICT operational unit is responsible for the overall development of public administration information management, e-Government and corporate data, for information management governance in central government and for the coordination of joint development projects. Public sector ICT promotes information management cooperation between central and local government, formulates joint functional and technical solutions and methods and is in charge of overall development of information security in public administration as well as data security governance in central government.

The Helsinki Region Infoshare project opens up public and cost-free information on the Helsinki Region for use by all. Unlocking public data resources will increase citizens' awareness and understanding about the development of their region, thus improving the conditions of civic participation. The availability of open knowledge can also create new services and business in the region as well as advance research and development. HRI is a joint open data project established by the cities of Helsinki, Espoo, Vantaa and Kauniainen, co-funded by the Finnish Innovation Fund Sitra and the Ministry of Finance. Forum Virium Helsinki has played a key role in the implementation of the project.

HELSINKI REGION INFOSHARE

2013

www.hri.fi/2years