OPEN DATA INITIATIVES IN FINLAND

Minna Karvonen

Nordic CIO conference at Hanken, Helsinki, 31.3.2017

Ministry of Education and Culture
Ministère de l’Éducation et de la culture
• Open Data: Legislation and the National Programme
• Open Science and Research Initiative
• Finnish Cultural Data: Finna service of the National Digital Library
Open Data – a Milestone in History towards Open Government in Finland

• The World’s First Freedom of Information Act in Sweden-Finland in 1766
  – Freedom of writing and the press
  – The abolishment of political censorship and the gaining of public access to government documents
  – The principle of publicity has since remained central in the Nordic countries
  – (the US Freedom of Information Act in 1966)

The Act on the Openness of Government Activities (The right to information on government activities) in 1999
  – The principle is transparency
  – The right of the person whose interest or right is in question is more extensive than that of any other party
  – Restrictions on access: to preparatory information, secrecy only on the basis of an Act
  – The authorities are obliged to inform the citizens of the activities by the government
The Constitution of Finland

...Documents and recordings in the possession of the authorities are public, unless their publication has for compelling reasons been specifically restricted by an Act. Everyone has the right of access to public documents and recordings.
Open Data Policy statements

• Government Resolution on improving the availability and promoting the re-use of public sector digital information resources 2011
• Governmental Programs since 2011
• Structural Policy Programme 2013
• The Directive on the Re-use of Public Sector Information, PSI Directive 2003, the Amendments 2013
• The Principles for Digitalisation 2016

“With the help of open data and the better use of data resources, favourable conditions will be provided for new business ideas.” (Finland, a land of solutions, Strategic Programme of Prime Minister Juha Sipilä’s Government 29 May 2015)
The Aim

to make all significant public data available to citizens, enterprises and society in machine-readable format, free of charge and under clear terms-of-use. (if there are no restrictions in the legislation)
Open Data Programme 2013-2015 and the results

Delivery – Opendata.fi
Service for Finnish open data and interoperability standards and guidelines
- Based on the Decree since 2017
- See more at: www.opendata.fi/en

Start for the service design
JulkICT Lab - an environment to design and experiment innovative services using open data/
- The current development http://suomidigi.fi/

Practices
Principles and criteria for budget process concerning OGD
Recommendation: CC 4.0 BY as the licence for OGD
Guidelines for how to release data (referring to Best Practices of Share PSI 2.0) in Opendta.fi
Research program conducted by the Prime Minister’s Office in 2016 concerning impact of open data and digitalisation – Impact assessment model as a target

Networks and collaboration
- Challenge, Training...
- Active partners in the public and private sector and developer communities
- Other programmes: OGP (Open Government Partnership), Open Science and Research Initiative, 6 cities strategy
Much data has been opened – the process goes on

- Environmental Information Resources have been available free of charge since 2008
- Topographic data made available on 1 May 2012: The National Land Survey (NLS) has made its topographic datasets available to the public and to companies to be used freely and free of charge.
- The weather and climate data by the Finnish Meteorological Institute since 2013
- Transport, culture, statistics, government budget, soil data, the Finnish legal databank Finlex and so on…
- Several Ministries and government agencies have supported and participated in hackathons and competitions
- 14 Helsinki Region cities and municipalities have an open data portal http://www.hri.fi/en/ , since 2011, 6Aika, six cities strategy – joint development projects: new business, know-how and jobs in Finland https://6aika.fi/in-english/ 
- Municipalities have started opening data, for example public procurement data (public procurement data by the state will be open in 2017)

Source: Anne Kauhanen-Simanainen, Ministry of Finance
An example: geodata

- After the National Land Survey had stopped charging the users for the service in 2012, the use of digital geodata multiplied over 50 times in three months, the first application was developed in a month
- Innovative applications
- Small companies have employed people to develop applications – new jobs
- Active developers and skilled companies – SLUSH spirit

Source: Anne Kauhanen-Simanainen, Ministry of Finance
Systematic Releasing of Data

Needs of the Customers and the Society
Data and Information Policy
Data and Information Resources, **Interoperability**, Information Architecture

Collaboration

Strategy

Legislation

Releasing Data

Practical Arrangements
Developing Skills
Research, Risk Analysis
Impact

Source: Anne Kauhanen-Simanainen, Ministry of Finance
Creating Value for Data and Information

• Positive Economic Impact on the society as a whole: new business, more tax income, new innovative services
• Increasing Democracy and Promoting Transparency in the society
• Improving the Data Quality and the Efficiency of the Public Sector
• Versatile sources for Research and Education

Source: Anne Kauhanen-Simanainen, Ministry of Finance
More understanding on the data and the digitalisation process

- We need more research, analytics and monitoring concerning the use and impact of data, open governmental data and big data on the national and international level
- We need quantitative and qualitative analysis, but also experiments, the open data is a part of the digitalisation process, which will change the ways we live, work and communicate with each other
- The time perspective is very short and the research has just started

Source: Anne Kauhanen-Simanainen, Ministry of Finance
From Data to Knowledge – More Value for Data

New questions
New needs
New points of view

Services
Products
Applications

Combining
Analysis
Visualisations

Information
Value Chain

data

knowledge

Evaluation
Forsight
Problem-solving
Decision-making

Studying
Sharing
Learning

Source: Anne Kauhanen-Simanainen, Ministry of Finance
From fragments towards data and information policy framework…

covering
data, big data, open data, master data, personal data, my data, information, knowledge….
Areas of the information policy framework

01 Open data and information
02 Free flow of data
03 Data protection and mydata
04 Responsibility of the quality of data

More Value on Data

Source: Anne Kauhanen-Simanainen, Ministry of Finance
Finland – Overview

**Portal**
- [www.avoindata.fi/en](http://www.avoindata.fi/en) launched in 2014
- EU funded project 2014-2020: Six City Strategy

**Ranking**
- Open Data Barometer Rank: #11
- Open Data Index Rank: #5

**Transposition PSI Directive**
- Yes
  - Revised PSI Directive

**Open Data Policy**
- Open Data policy in place
- National 5 year strategy
- Four priority domains identified
- More than 3 events held annually
- X No pre-defined approach to ensure data sets are up-to-date
  - 79%

**Licensing Norms**
- Free of charge
- Open licensed
- Policy encourages to use CC BY 4.0 licence
  - 100%

**National coordination**
- National guidelines on publication
- Many regional data initiatives
- Few regional portals integrated
  - 77%

**Usability of portal**
- API accessible
- Possibility to give feedback
- Contribute to portal with login
- Search data sets
- Download data sets
  - ☺️

**Use & Reusability of Open Data**
- 6,700 (0.11% of inhabitants in Finland) unique visitors on average per month
- 1.5% of the visitors are foreign
- Unknown proportion of traffic generated by humans
- Typical profile of visitors is a bit of everything
- Most data sets are available in p5web format
- Unknown percentage of data sets machine readable
  - 1475 data sets available
  - 74%

**Score Finland**
- [Graph showing scores for different criteria]

**Top data set & domains**
- Most often downloaded dataset: registry of Finnish names
- Priority domains: geospatial, earth observation, transport and infrastructure

Top 5 most downloaded domains: Unknown
Finland – Impact and development

Impact

Political:
- Activities launched since 2015 to monitor impact
- Low impact efficiency
- High impact transparency

Social:
- Unknown impact environmental sustainability
- Medium impact inclusion of marginalized groups

Economic:
- One study market value
- Multiple studies better service delivery
- No other studies
- Marginal (Zero) Cost Model

Barriers

For further publication legal, technical and financial barriers exist.

- Legal barrier: Re-use and publication of public sector information is regulated by several laws and decrees.
- Technical barrier: Barrier exists for the publication of data sets with sensitive information. Actions will be planned to address this issue.
- Financial barrier: Barrier to publish base register data free of charge. Also, costs for the renewal of the old technical systems and their interfaces are barriers.

For further use little awareness is a barrier.

- Little awareness: It is necessary to ensure a continuous dialog with data users and data providers to stimulate the re-use of data.

Best practices

- Semantic Finlex: The Ministry of Justice has published the whole Finnish legislation in linked data format. Linked data format creates novel possibilities to utilise legislation in a digital context, creating political, social and economical benefits.
- Mills service: Mills service helps people to create healthier meals, for example people with a special diet. The service uses the Fineli database, the National Food Composition Database.

Progress on barriers

- Actions have been undertaken to overcome all three barriers to increase further publication. For example evaluation of the legislation related to public sector information management has started and an Open Data Guide has been developed.
- Several events are organised to increase awareness of Open Data in Finland.
Finland – Rankings

Open Data Readiness
- Presence Open Data policy
- Transposition revised PSI Directive
- Licensing norms
- National coordination

Open Data Usability
- Usability
- Spread of data across domains
- Re-usability of data
- Use of data

Open Data Impact
- Political
- Economic
- Social

Major changes 2016
- Impact of Open Data slightly increased due to the activities that have been undertaken since previous landscaping, to monitor impact.
- Use of Open Data slightly increased since it is now possible due track the number of foreign visitors on the portal and because the percentage of data sets that is machine readable is now known.

Score comparison 2016/2015
- Presence Open Data Policy
- Impact of Open Data
- Use of Open Data

Open Data Barometer
Figure 3 - EU28+ Open Data Maturity clusters
Open Science and Research vision in Finland

*Higher quality, more impact, more effective and more international science community*

Openness in not an end but a means to an end

**Vision 2017**
Open research leads to surprising discoveries and creative insights

- Reinforcing the intrinsic nature of science and research
- Strengthening openness-related expertise
- Ensuring a stable foundation for the research process
- Increasing the social impact of research

Ministry of Education and Culture
Ministère de l’Éducation et de la culture
## Objectives of the Roadmap 2014-2017

<table>
<thead>
<tr>
<th>Objective</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reinforcing the intrinsic nature of science and research</td>
<td>Openness and reproducibility increase the reliability and quality of science and research</td>
</tr>
<tr>
<td>Strengthening openness-related expertise</td>
<td>Those working within the Finnish research system know how to harness the opportunities afforded by openness to boost Finland’s competitive edge</td>
</tr>
<tr>
<td>Ensuring a stable foundation for the research process</td>
<td>Good and clear basic structures and services enable new opportunities of openness to be harnessed in a timely manner and ensure a stable basis for research</td>
</tr>
<tr>
<td>Increasing the social impact of research</td>
<td>Open science and research creates new opportunities for researchers, decision-makers, business, public bodies and citizens</td>
</tr>
</tbody>
</table>
Open science and research – science accelerator

Availability and easy uptake of publications, methods and ideas

Meta-searches and combination of results pose new hypotheses

Active scientific debate

Faster validation and verification of results

Publications advance research activities

New research idea

New research plan

Open evaluation of research data, re-use

New research possible by combining produced data sets

Collaborative research
Research Performing Organisations (response rate 87 %)

All major Finnish research performing organisations 14 universities
• 24 universities of applied sciences
• 5 university hospitals
• 12 research institutions

Research Funding Organisations (response rate 100 %)
Three Finnish research funding organisations
• Academy of Finland
• Tekes
• Kone Foundation
And

• Danish National Research Foundation
• FWF (Austrian Science Fund)
• Horizon 2020
• Interreg Baltic Sea Region
• NordForsk
• The Research Council of Norway
• The Swedish Research Council
• Vinnova (Sweden)
The indicators for research funding organisations were:
- Strategic Steering and Principles for Openness
- Openness in Research Funding
- Supporting and Promoting Openness

The indicators for research performing organisations were:
- Strategic Steering
- Policies and Principles
- Indicators and Scoring Principles
- Competence Development
Finna.fi

Record-breaking Amount of Finnish Cultural Data

Image: Olympia-kuva Oy / Helsinki City Museum https://www.finna.fi/Record/hkm.HKMS000005%3Akm0000mriw
## Finna in a nutshell

<table>
<thead>
<tr>
<th>Finna.fi</th>
<th>Platform as service</th>
</tr>
</thead>
<tbody>
<tr>
<td>• A service <strong>combining</strong> the materials of archives, libraries and museums.</td>
<td>• Finna offers <strong>tools</strong> to build and maintain library´s, archive´s or museum´s own user interface.</td>
</tr>
<tr>
<td>• The <strong>user interface</strong> of the Finnish National Digital Library.</td>
<td>•</td>
</tr>
<tr>
<td></td>
<td>• <strong>Entity of</strong> local Finna user <strong>interfaces</strong>: hkm.finna.fi, luc.finna.fi...</td>
</tr>
<tr>
<td>• <strong>Shared service</strong> funded by the <strong>Ministry of Education and Culture.</strong></td>
<td>•</td>
</tr>
<tr>
<td>• Finna 1.0 published in <strong>2013.</strong></td>
<td>•</td>
</tr>
<tr>
<td>• The <strong>National Library of Finland</strong> maintains and develops Finna in <strong>co-operation</strong> with archives, libraries, museums and other partners.</td>
<td>•</td>
</tr>
<tr>
<td>• Finna is developed in close collaboration with the <strong>Open Science and Research Initiative.</strong></td>
<td>•</td>
</tr>
</tbody>
</table>
Finna.fi – a national view of Finna

• +12 million descriptive metadata entries.
• +1,6 million records available online.
• Material provided by +200 libraries, archives and museums. Number of organizations is expected to grow up to 400.

• Discovery
  – Single search combines the materials of libraries, archives and museums.

• Delivery
  – Library service functions.
  – Underway: archive and museum service functions.
+50 organizations have published their local Finna user interfaces.
Finna: Aspects of Openness

- Easy Access and (Re)use
  - Open source code
    - [https://github.com/NatLibFi/](https://github.com/NatLibFi/)
- Open metadata
- Open content
api.finna.fi

• Provides descriptive metadata of over 12 Million entries from Finna.fi.
  – Both normalized and original metadata.
  – JSON/JSONP Format
  – Supports Finna.fi search functions.

• License of metadata: CC0
• API makes it possible to reuse
  – the metadata of Finna.fi
  – the content of Finna.fi as linked resources if the content is under open licences.
Open content

• The search in Finna.fi can be targeted to objects (images) according to their permitted (re)use - such as those available for commercial use.

• 500 000 images under CC-licences.
• Baltic Finnic Language Atlas I Creative Commons Attribution 4.0
• Dictionary of Karelian I Creative Commons Attribution 4.0
• Kettunen’s Dialect Atlas I Creative Commons Attribution 4.0
• Dialect Corpus of the Finnish Syntax Archive in cooperation with the Finnish Syntax Archive at the University of Turku I Creative Commons Attribution-NoDerivatives 4.0
• Vocabulary of Modern Finnish I, Creative Commons Attribution-NoDerivatives 3.0
• Atlas of Place Names I Creative Commons Attribution 4.0
• Place Name Database I Creative Commons Attribution 4.0
• Samples of Finnish (SKN) – AV corpus I CLARIN PUB, Creative Commons Attribution 4.0
• Distribution Maps of the Dictionary of Finnish Dialects I Creative Commons Attribution 4.0
• New Year’s Speeches of the President of the Republic I EUPL
• Swedish Place Names in Finland I Creative Commons Attribution 4.0
• Corpus of Old Literary Finnish I CLARIN PUB, EUPL v. 1.1

• The material and corpora is available through various services: http://www.kotus.fi/en/corpora_and_other_material/about_the_corpora_and_other_material/open_data_and_licensing
Examples of reuse: Finto-integration
FINTO

- Finto is a Finnish thesaurus and ontology service maintained by the National Library.
- The service enables both the publication and browsing of vocabularies.
- The service also offers interfaces for integrating the thesauri and ontologies into other applications and systems.

http://finto.fi/en/
http://api.finto.fi/
Open data / National Framework

- anne.kauhanen-simanainen@vm.fi

Open Science and Research Initiative

- Information on Open Science and Research Initiative (ATT)
  - [http://openscience.fi](http://openscience.fi)
- Open Science and Research Initiative roadmap
- Open Science and Research Initiative contacts: Juha.Haataja@minedu.fi, Eeva.Kaunismaa@minedu.fi, Sami.Niimimaki@minedu.fi, Pirjo-Leena.Forsstrom@csc.fi

Finna and the National Digital Library

- National Digital Library: [http://www.kdk.fi/en](http://www.kdk.fi/en), minna.karvonen@minedu.fi
- Finna: [https://www.finna.fi/](https://www.finna.fi/), kristiina.hormia@helsinki.fi, maria.virtanen@helsinki.fi
Suurta on voittaa
Suurempaa jalo kilpa
Belle est la victoire
Plus belle la noble lutte
Great is to triumph
Greater far noble combat
Stort är att segra störst
Den systersa kampen

Image: Helsinki City Museum, Olympia-Kuva Oy
https://www.finna.fi/Record/hkm.HKMS000005%3Akm0000mrnx