

Open Data in Switzerland

Impact on Society, Economy, Science and Culture

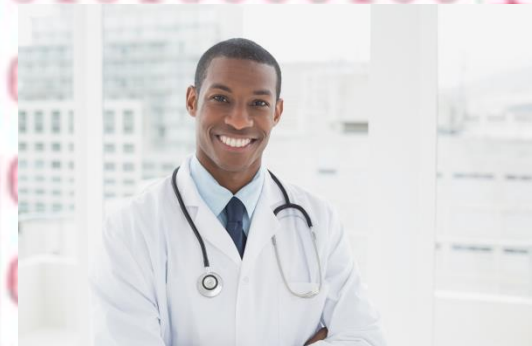
André Golliez
President Opendata.ch,
Swiss Chapter Open Knowledge

Taiwan Summer School 2016
University of Konstanz
24th August 2016

Agenda

- Introduction
- Opendata.ch
- Open Government Data
- Open Research Data
- Open Corporate Data
- Open Cultural Data
- My Data

Living in the Data Society...



... for over 5000 years



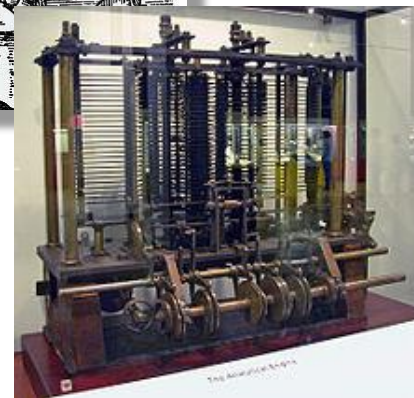
Leibniz



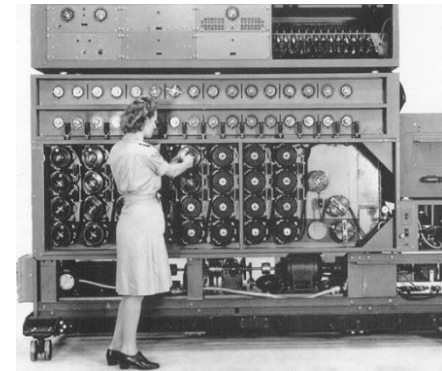
Hieroglyphen				Hieratisch				Demotisch			



in treuhalten
ber sich halte
ber vil



Babbage



Turing

Data and Metadata – Definitions

– Data

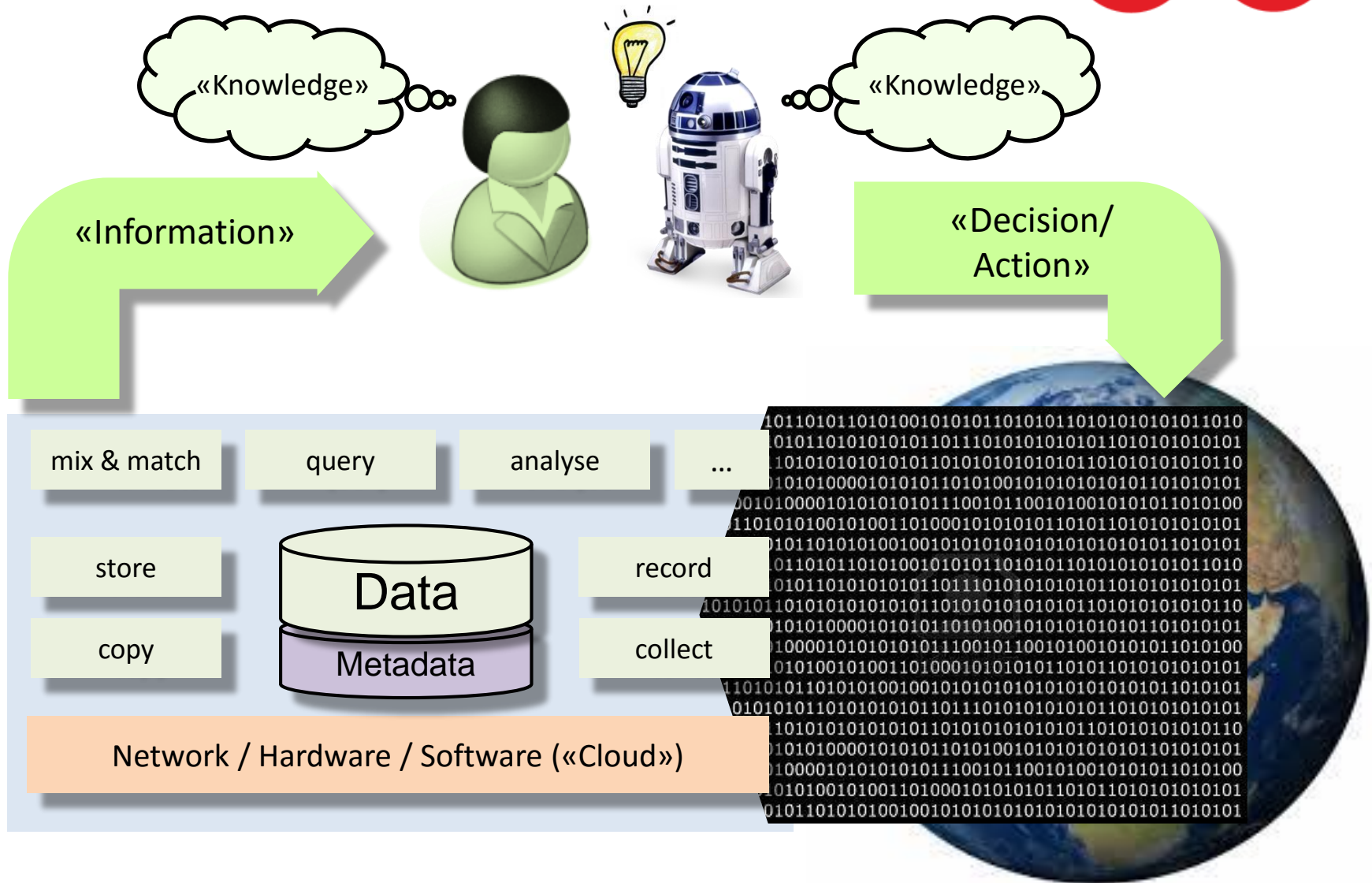
is a set of values of qualitative or quantitative variables; Data is measured, collected and reported, and analyzed, whereupon it can be visualized using graphs or images. Data as a general concept refers to the fact that some existing information or knowledge is represented or coded in some form suitable for better usage or processing.

– Metadata

are "data that provide information about other data". Two types of metadata exist: **structural metadata** and **descriptive metadata**. Structural metadata are data about the containers of data. Descriptive metadata use individual instances of application data or the data content

Source: Wikipedia

The «Big Data» Cycle

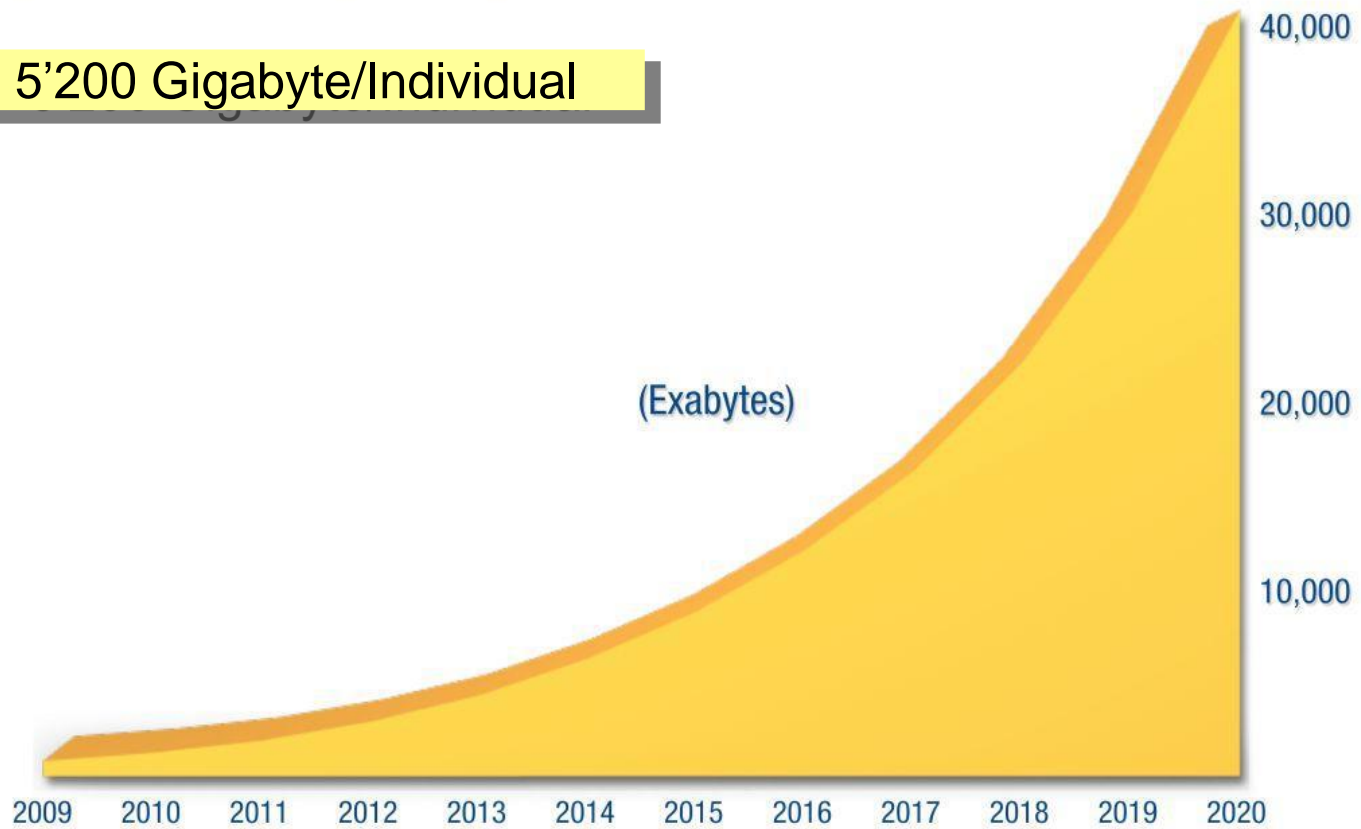


The Digital Universe



The Digital Universe: 50-fold Growth from the Beginning of 2010 to the End of 2020

2020: 5'200 Gigabyte/Individual



Source: IDC's Digital Universe Study, sponsored by EMC, December 2012



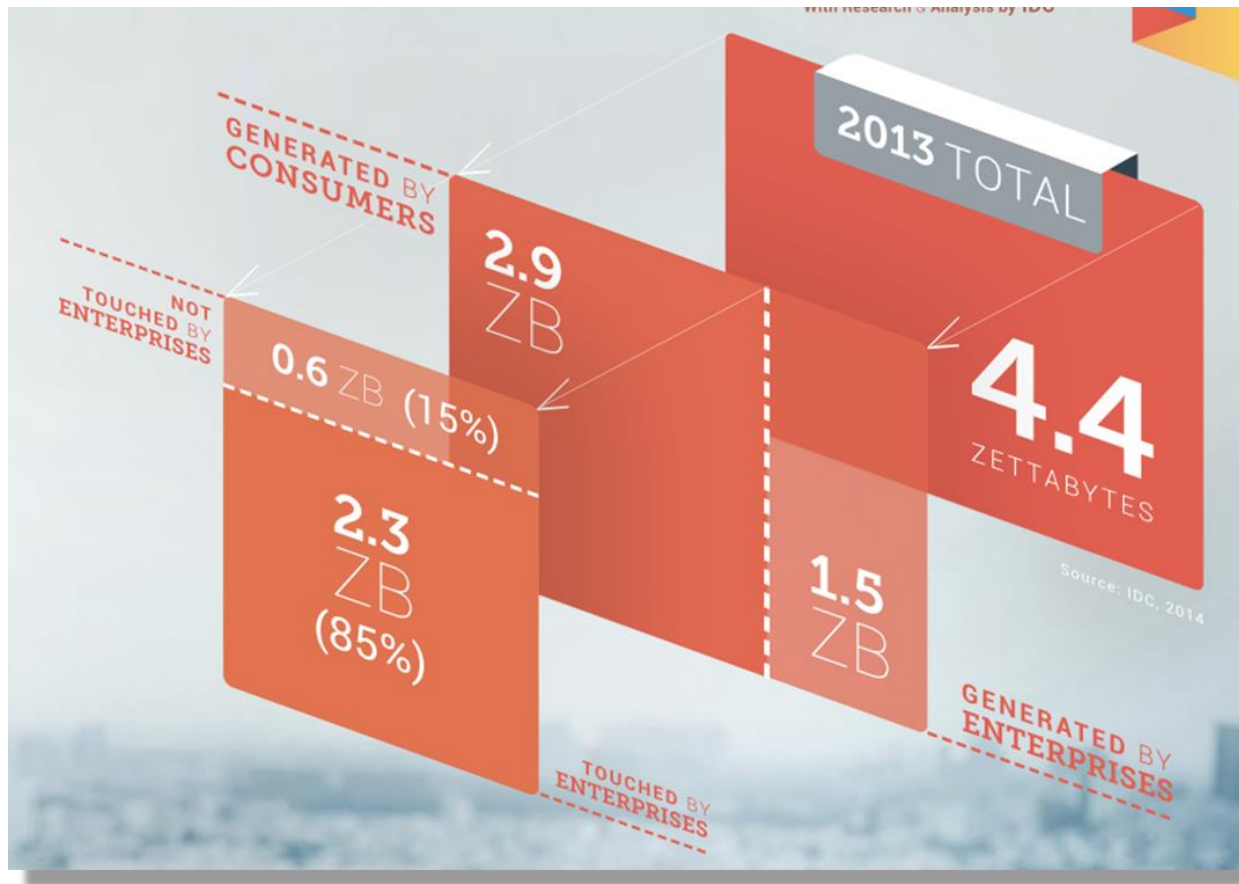
Names for «Big Data»

- Bit = 1 | 0
- Byte = 8 Bits
- Kilobyte (KB) = 1'000 Bytes
- Megabyte (MB) = 1'000 KB = 1'000'000 Bytes
- Gigabyte (GB) = 1'000 MB = 1'000'000'000 Bytes
- Terabyte (TB) = 1'000 GB = 1'000'000'000'000 Bytes
- Petabyte (PB) = 1'000 TB = 1'000'000'000'000'000 Bytes
- Exabyte (EB) = 1'000 PB = 1'000'000'000'000'000'000 Bytes
- **Zetabyte (ZB) = 1'000 EB = 1'000'000'000'000'000'000'000 Bytes**
- **Yotabyte (YB) = 1'000 ZB = 10²⁴ Bytes**
- **Brontobyte (BB) = 1'000 YB = 10²⁷ Bytes**
- **GeopByte = 1'000 BB = 10³⁰ Bytes**
- ...

1 Gogol* = 10¹⁰⁰

*) The term was coined in 1938^[1] by 9-year-old Milton Sirotta, nephew of American [mathematician Edward Kasner](#) (see <http://en.wikipedia.org/wiki/Googol>)

Who controls «Big Data»?



Source: IDC's Digital Universe Study, sponsored by EMC, December 2014

We Want Open Data!



«Openness» – a Civil Society Movement



OPEN KNOWLEDGE

OPEN DATA

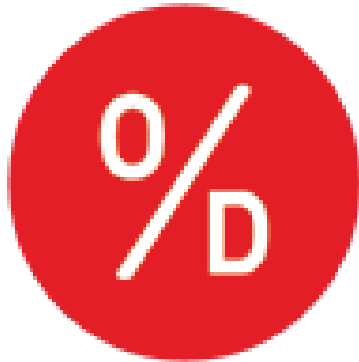
WIKIPE

The Free Encyclopedia

OpenStreetMap



Opendata.ch: The Swiss Open Data Association



Hackdays, Conferences and Working Groups:

- > 1'000 participants (Hackers, Designers, Journalists...)
- > 80 published projects (make.opendata.ch)
- subjects: public transport, culture, energy, health...

Opendata.ch: the Swiss Chapter of Open Knowledge



A screenshot of a web browser displaying the Open Knowledge International website. The browser's address bar shows 'https://okfn.org'. The website header includes the Open Knowledge International logo, navigation links for 'ABOUT', 'PROJECTS', 'WHAT IS OPEN?', and 'THE OPEN KNOWLEDGE NETWORK', and social media icons for Facebook, Twitter, and a 'Donate' button. The main content area features a large black banner with the text 'A WORLD WHERE KNOWLEDGE CREATE POWER TO THE MANY, NOT THE FEW. THIS IS THE WORLD WE CHOOSE.' To the right, there is a graphic of an open book with a green cover titled 'CHANGING WHAT COUNTS' and a white page with the text 'SENSE SEQUENCES OF POLLUTION THROUGH CITIZEN SENSING'. Below the book graphic, a dark box contains the text 'CHANGING WHAT COUNTS How Can Citizen-Generated and Civil Society Data Be Used as an Advocacy Tool to Change Official Data Collection?'. At the bottom of the browser window, the Windows taskbar is visible, showing various application icons and the system tray with the date '22.08.2016' and time '15:48'.

Lobbying for Open Data



Balthasar Glättli (GP)



Edith Graf-Litscher (SP)



Christian Wasserfallen (FDP)



Kathy Riklin (CVP)



Thomas Weibel (GLP)

MAKE Open Data! – Open Data Hackathons



The screenshot shows a web browser window with the URL 'make.opendata.ch'. The page features a blue header with the 'MAKE' logo (a blue circle with a white percentage sign and 'D') and the text 'Ideators, Designers and Developers work with open data – for transparency, innovation and efficiency!'. Below this, there is a navigation menu with links for 'News', 'About', 'Wiki', 'Forum', and 'School'. The main content area includes a section for 'Hack for Ageing Well 2016', which describes an event where participants work on start-up ideas, visualize demographics, and learn usability and design in a hands-on way. The event is held in St. Gallen, Switzerland on September 25 and 26. Projects will be recognized and showcased at the international AAL Forum. A link to '2016.aalhackathon.eu' is provided for sign-up.

Game of Genomes: x Limmatplatz, Zürich x Google Übersetzer x make.opendata.ch x

make.opendata.ch

Apps Facebook Recent - Google ZKB Onlinebank Startseite - Dropt Evernote Web Twitter Opendata.ch MIDATA Wiki - D http://opendatac Huble - My profil Seiten - Projekt

MAKE

Ideators, Designers and Developers work with open data – for transparency, innovation and efficiency!

News
About
Wiki
Forum
School

DE | FR | EN

Open Data .ch

Swiss Chapter of

Hack for Ageing Well 2016

Work on a start-up idea, visualise demographics, learn usability and design in a hands-on way: join us in St.Gallen, Switzerland on **September 25 and 26**. Projects will be recognized and showcased at the international AAL Forum. Go to 2016.aalhackathon.eu to sign up!

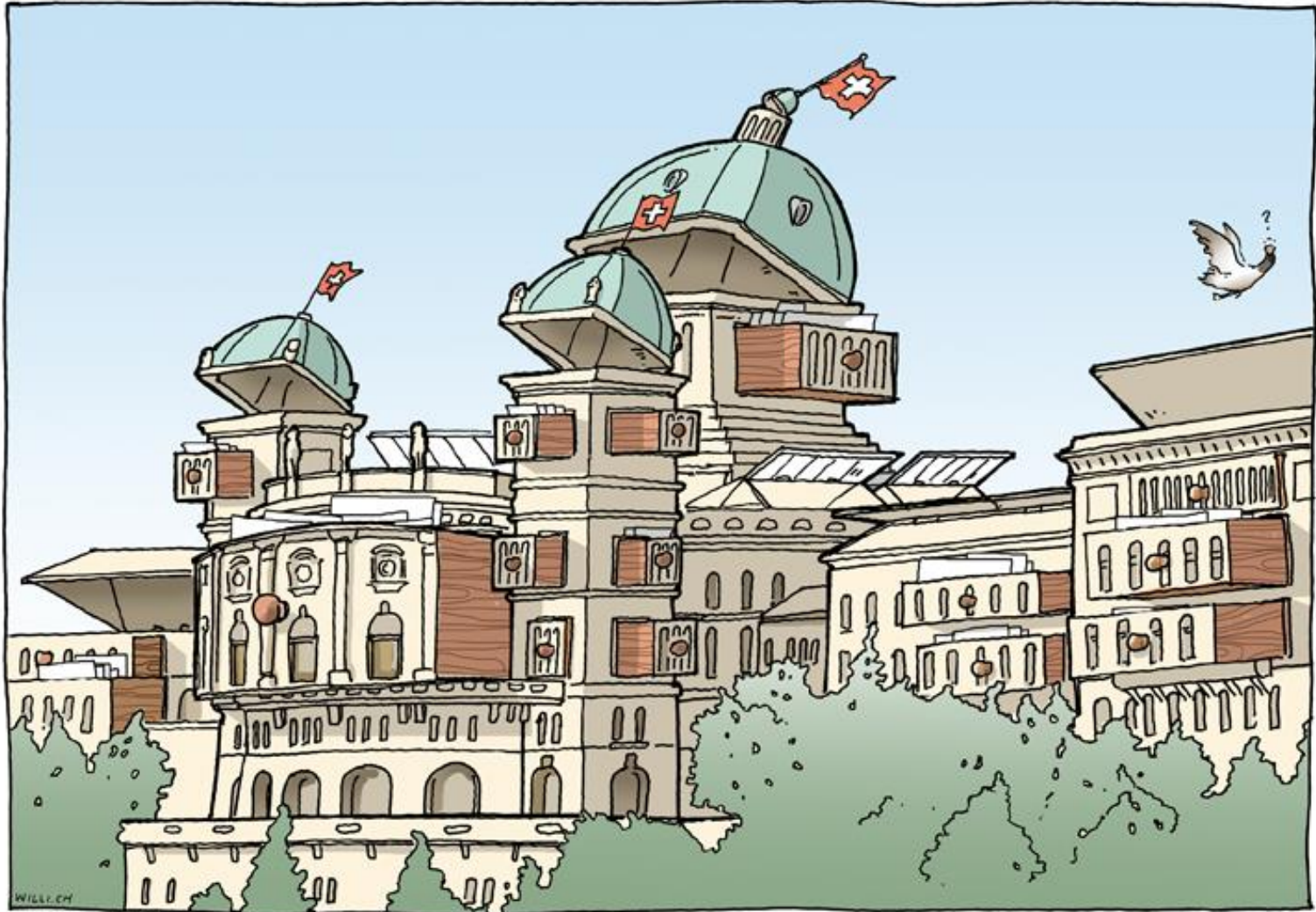
Windows taskbar: 15:53 22.08.2016 DEU

MAKE Open Data Showcase Schweiz #1: Public Transport API



A screenshot of a web browser displaying the transport.opendata.ch website. The browser's address bar shows 'transport.opendata.ch'. The page features a large red 'Transport' title, followed by the subtitle 'Swiss public transport API'. Below this is an 'Introduction' section with text explaining the API's purpose and providing links to 'www.fahrplanfelder.ch' and 'gtfs.geops.ch'. A 'Examples' section is also visible at the bottom of the page. The browser's taskbar at the bottom shows several open applications and the system tray with the date '24.11.2015' and time '21:49'.

Open Government Data in Switzerland



G8 Open Data Charter (Juni 2013): «Open Data by Default»



Principles:

- Open Data by Default
- Quality and Quantity
- Useable by All
- Releasing Data for Improved Governance
- Releasing Data for Innovation

Data Categories (alphabetical):

- Companies
- Crime and Justice
- Earth observation
- Education
- Energy and Environment
- Finance and contracts
- Geospatial
- Global Development
- Government Accountability and Democracy
- Health
- Science and Research
- Statistics
- Social mobility and welfare
- Transport and Infrastructure



City of Zurich: Open Government Data Pioneer since 2012



The screenshot shows the Open Data Zurich website. The browser address bar displays <https://data.stadt-zuerich.ch>. The website header includes the 'Stadt Zürich' logo and navigation links for 'Open Data Portal', 'Anwendungen', 'Werkstatt', 'Aktuell', 'Blog', and 'Seiten'. Below the header, there are tabs for 'Startseite', 'Datensätze', and 'Kategorien', along with a search bar labeled 'Datensätze suchen...'. The main content area features a 'Willkommen auf dem Open Data Katalog' section with a search bar and a description: 'Der Datenkatalog ist Ihr zentraler Einstiegspunkt zur Suche und Nutzung von offenen Daten der Stadt Zürich. Die hier veröffentlichten Daten stehen kostenlos und zur freien – auch kommerziellen – Weiterverwendung zur Verfügung.' Below this, there are sections for 'Beliebte Schlagwörter' (sachdaten, geodaten, vektordaten), 'Daten nutzen', and 'Anwendungen anschauen'. At the bottom, there is a section for 'Grösste Kategorien / Alle Kategorien' with icons for 'Bevölkerung', 'Bauen und Wohnen', 'Freizeit', 'Mobilität', 'Basiskarten', and 'Umwelt'. The Windows taskbar at the bottom shows the time as 16:40 on 22.08.2016.

Open Government Data in Switzerland: OGD Portal and OGD Strategy



The screenshot shows the opendata.swiss website. The main content area features the title "Open Government Data-Strategie Schweiz 2014 – 2018" and a section titled "Vom Bundesrat am ... verabschiedet". Below this, there is a "Versionen" section with three entries:

Version	Details
Version 0.1 (15.1.2014)	Version für die erste Lesung mit Fachausschuss (20.1.2014) und Projektausschuss des Projektes OGD Schweiz (22.1.2014)
Version 0.2 (31.1.2014)	Version für die Anhörung interessierter Kreise
Version 0.3 (TT.2.2014)	Version für Ämterkonsultation

On the right side of the page, there is a sidebar with the heading "Portal FAQ" and a large green box containing the number "744" and the text "Datensätze". A search bar is visible below the number. The footer of the page includes the "egovernment" logo and the text "Schweiz - Suisse - Svizzera".

Kategorien



OECD: «Data: a new infrastructure for innovation in the 21st century»



STI Policy Note

October 2015

Data-driven Innovation for Growth and Well-being

What Implications for Governments and Businesses?

More data are being generated every week than in the last millennia. With the accelerating digitalisation of social and economic activities, the flows of data – the equivalent of around 50 000 years of DVD-quality video every single day, a figure set to considerably rise as smart devices and the Internet of Things become pervasive – are such that the implications for the economy and society are colossal.

On the positive side, they hold the promise of significantly accelerating research and the development of new products, processes, organisational methods and markets – a phenomenon known as data-driven innovation (DDI). This will result in greater productivity across the economy, as available evidence suggests that firms using DDI have raised productivity faster than non-users by around 5-10%. DDI can and is already helping address social and global challenges, including climate change and natural disasters, health and ageing populations, water, food and energy security, urbanisation, and issues of public governance.

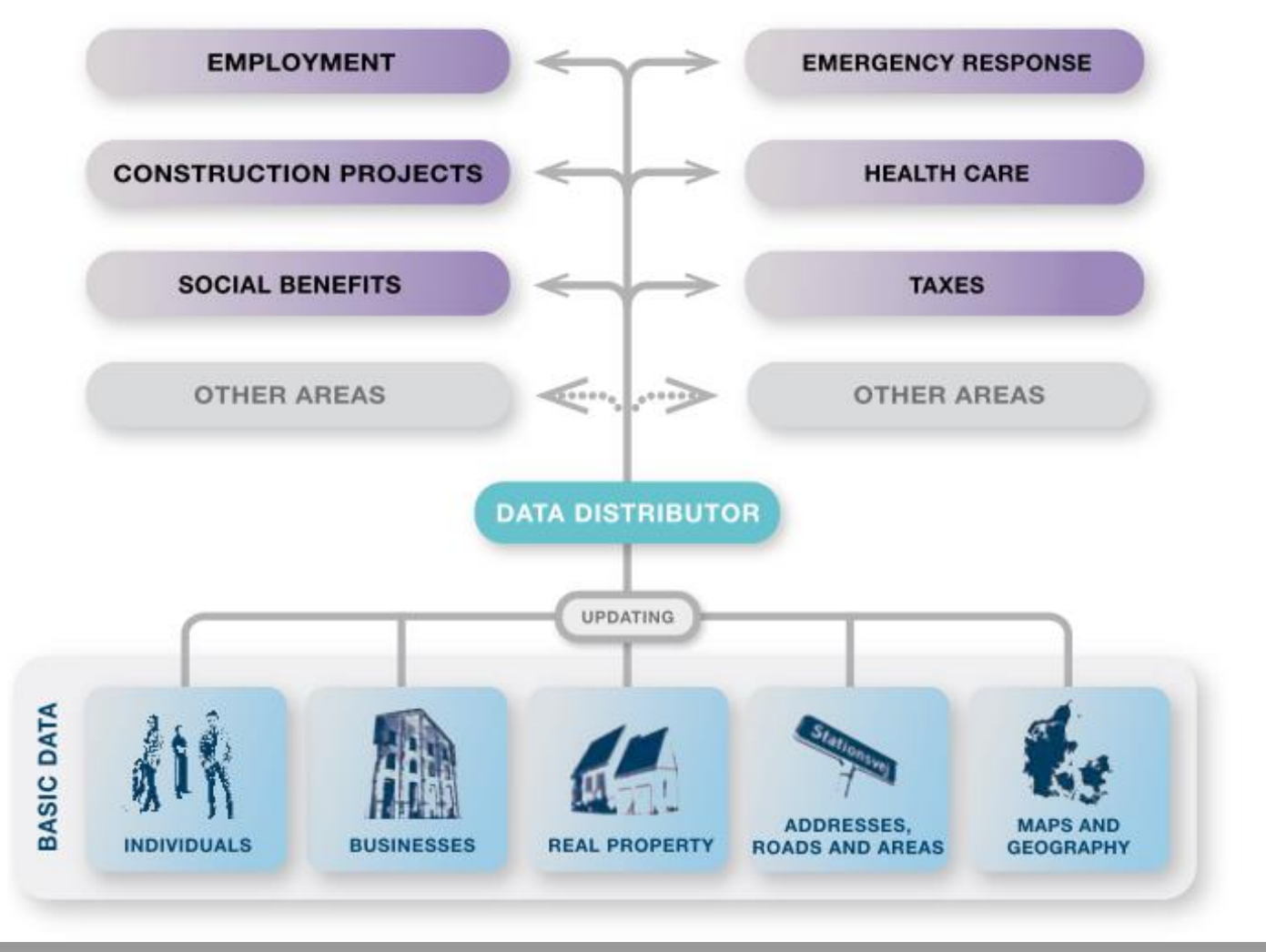
But considerable challenges are also ahead. The growing use of data will accentuate many of today's pressing issues, like questions of privacy and security, or the impact of technology on jobs. And new concerns will arise, for example around automated decision making, data-driven discrimination, and a likely shift in power derived from a new "data divide," based on who owns, collects and analyses the data.

Data-Driven Innovation

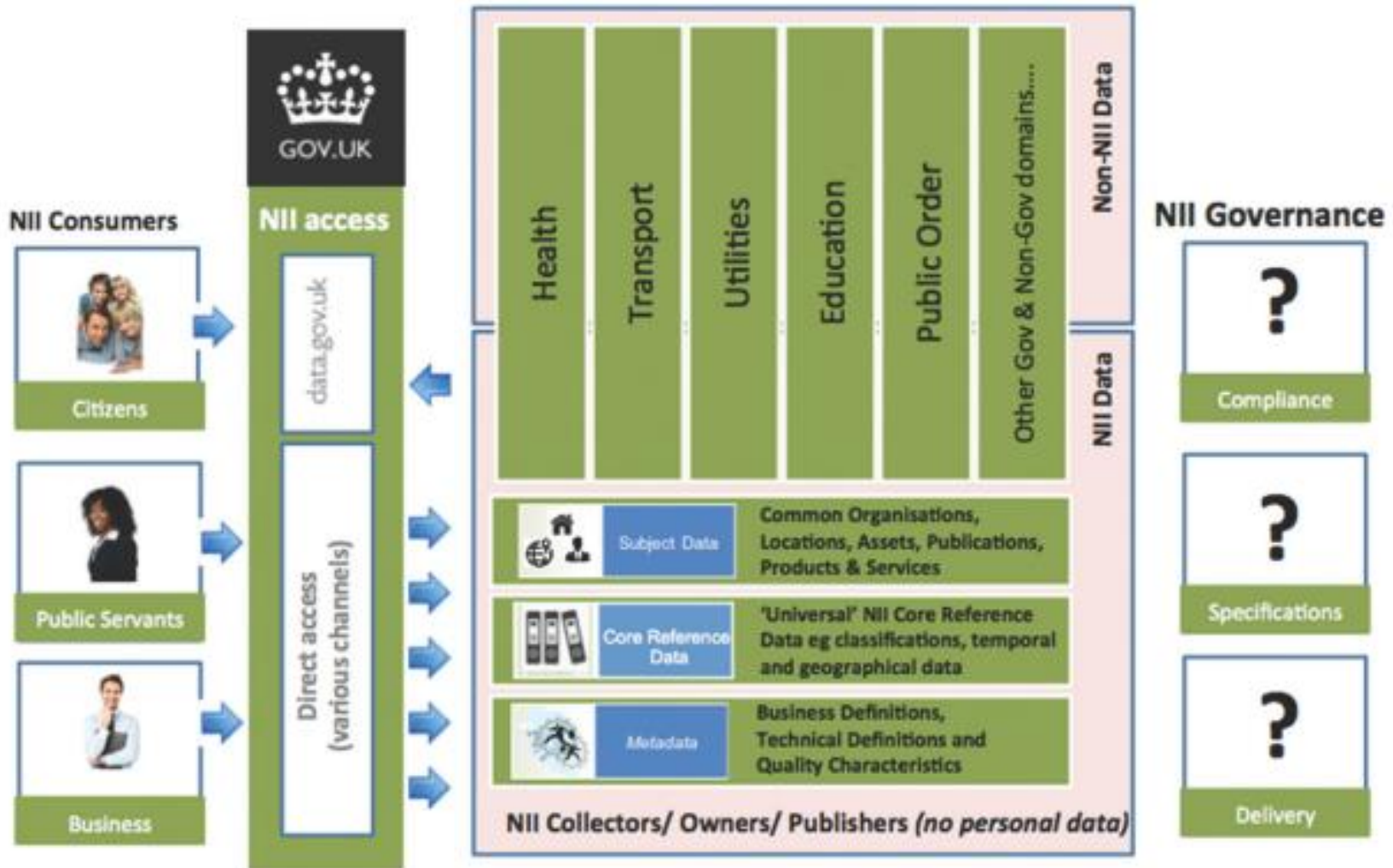
DATA FOR GROWTH AND WELL-BEING



Denmark: Good Basic Data For Everyone



UK: National Information Infrastructure (NII)



OGD Outlook: National Data Infrastructure for Switzerland



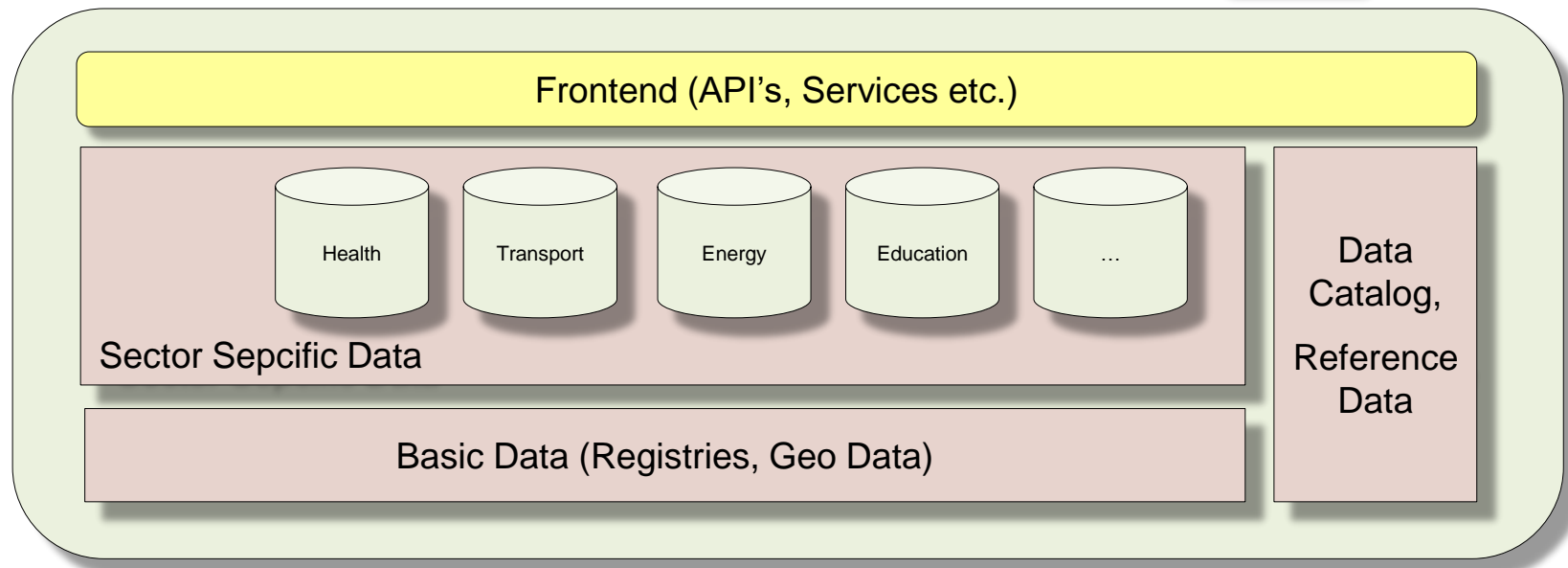
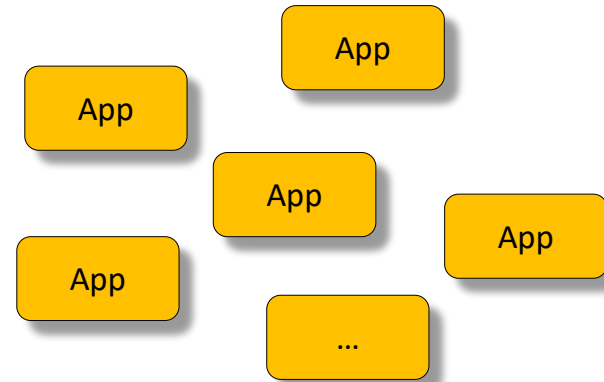
Citizen



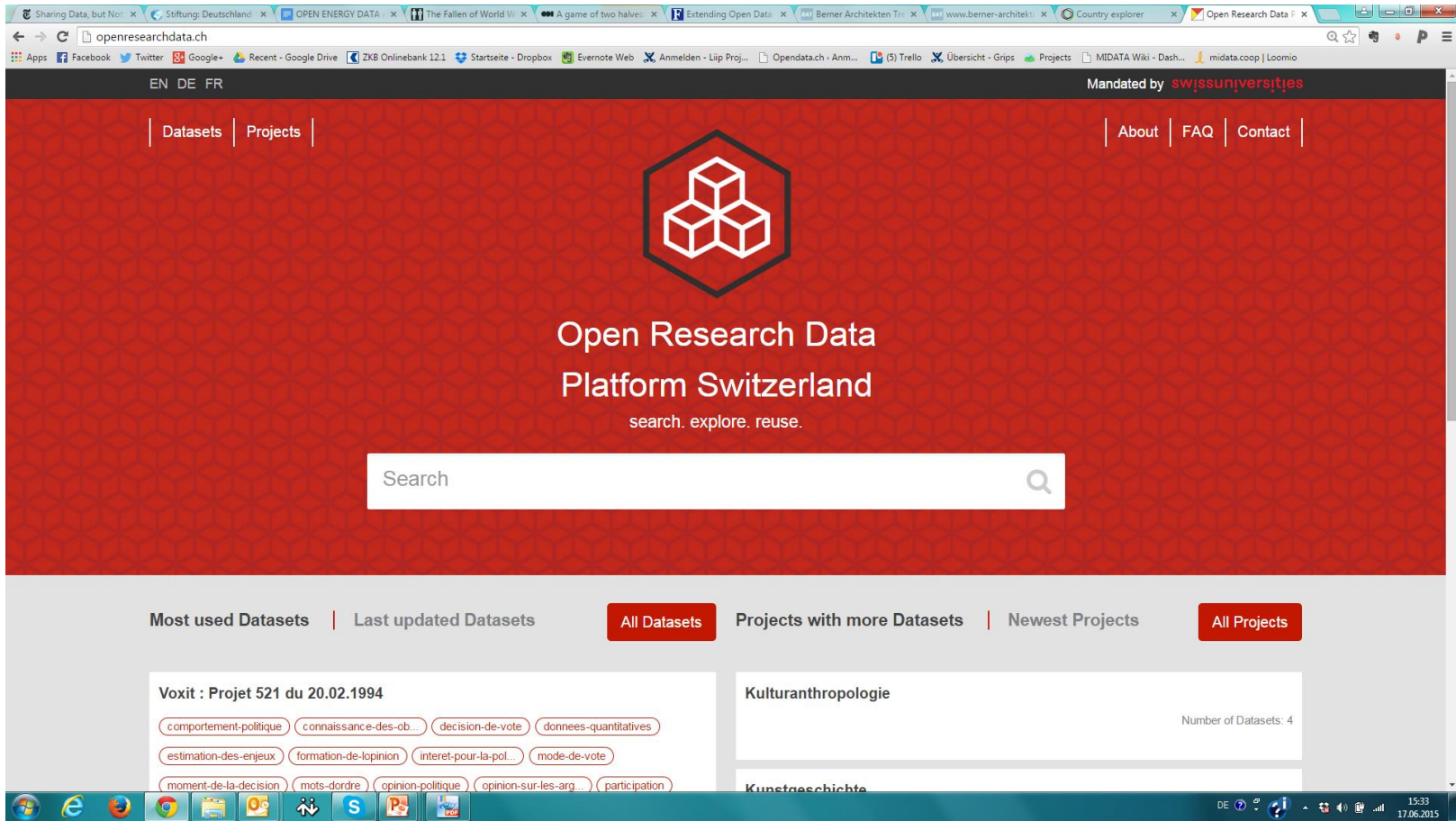
Corporation



Administration



Open Research Data in Switzerland: openresearchdata.ch (since June 2015)



swissuniversities

FORS

digital humanities lab

ETH zürich

Objectives of Open Research Data

- Promotion of secondary analysis of research data
- Facilitate Reproducibility - the ability to regenerate published results
- Performance indicator for publicly funded research programs.
- Promotion of interdisciplinary approaches in research and teaching.
- Access to publicly funded research data for the general public.
- Increased visibility of research teams and institutes.
- Simplified publication of data linked to publications.
- Progressive integration of additional databases to build an extensive metadata infrastructure for research data in Switzerland.

Horizon 2020: Open Data By Default (I)



CHALLENGE

Wider access to scientific facts and knowledge helps researchers, innovators and the public find and re-use data, and check research results:

offers better value for EU research funds



a public benefit

encourages research across scientific fields



essential for solving today's complex societal challenges

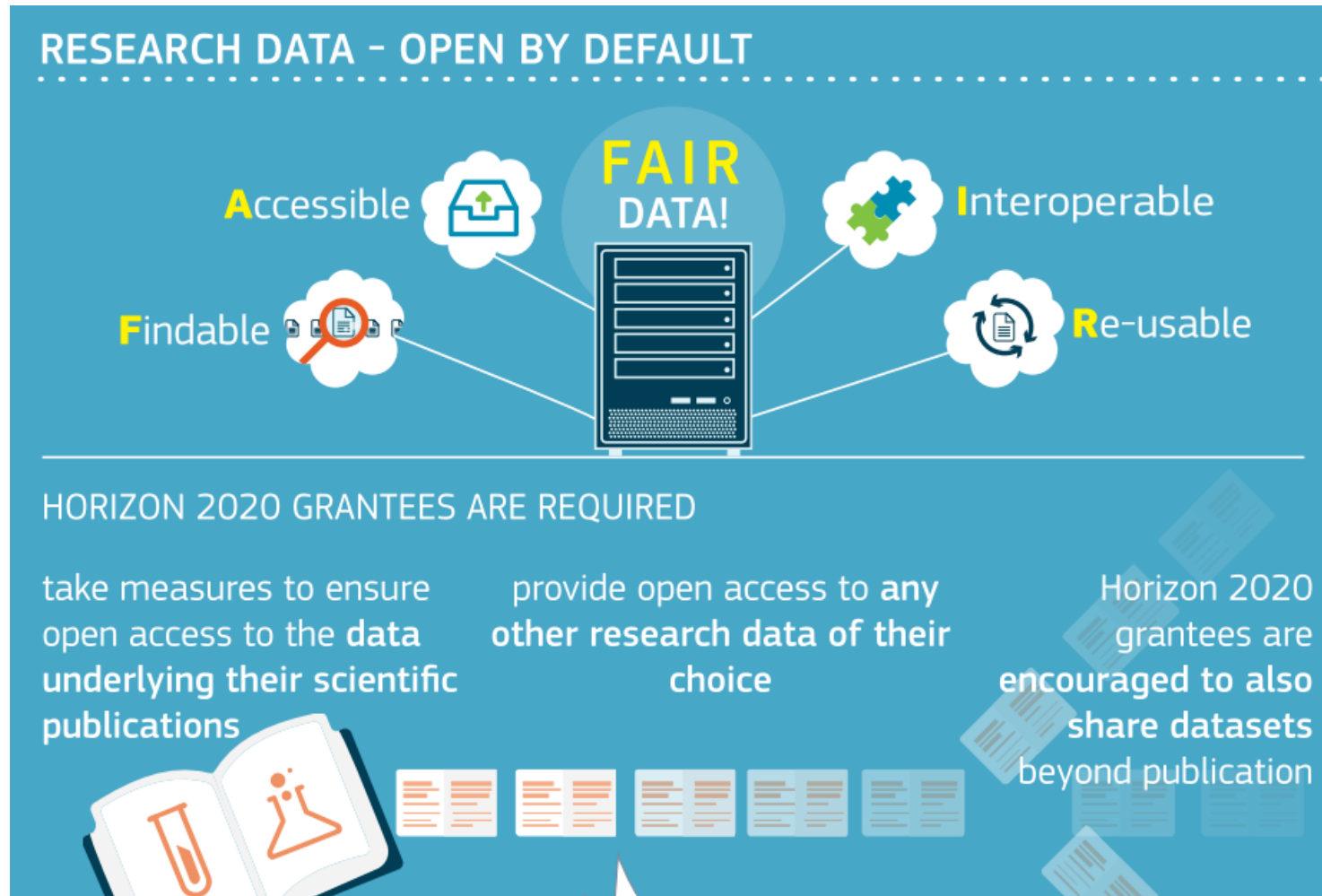
SOLUTION

Horizon 2020 already mandates open access to **all scientific publications**



From 2017,
research data is open by default,
with possibilities to **opt out**

Horizon 2020: Open Data by Default (II)



Horizon 2020: Open Data by Default (II)



AS OPEN AS POSSIBLE, AS CLOSED AS NECESSARY

Grantees have the right to **opt-out**, but need to say **why**



Top three reasons for opt-out:

privacy

intellectual
property rights

might jeopardise
project's main
objective

The approach has been tested during a Horizon 2020 pilot action

Open Data in the Corporate World: opencorporates.com



Game of Genomes: x Limmatplatz, Zürich x Google Übersetzer x OpenCorporates :: TI x

https://opencorporates.com

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Sign in / Register About Principles API Products Blog OpenGazettes OpenLEIs Open Company Data Index

opencorporates

The largest open database of companies in the world

Search 107,332,140 companies All jurisdictions

[Browse all jurisdictions](#) [Search officers](#)

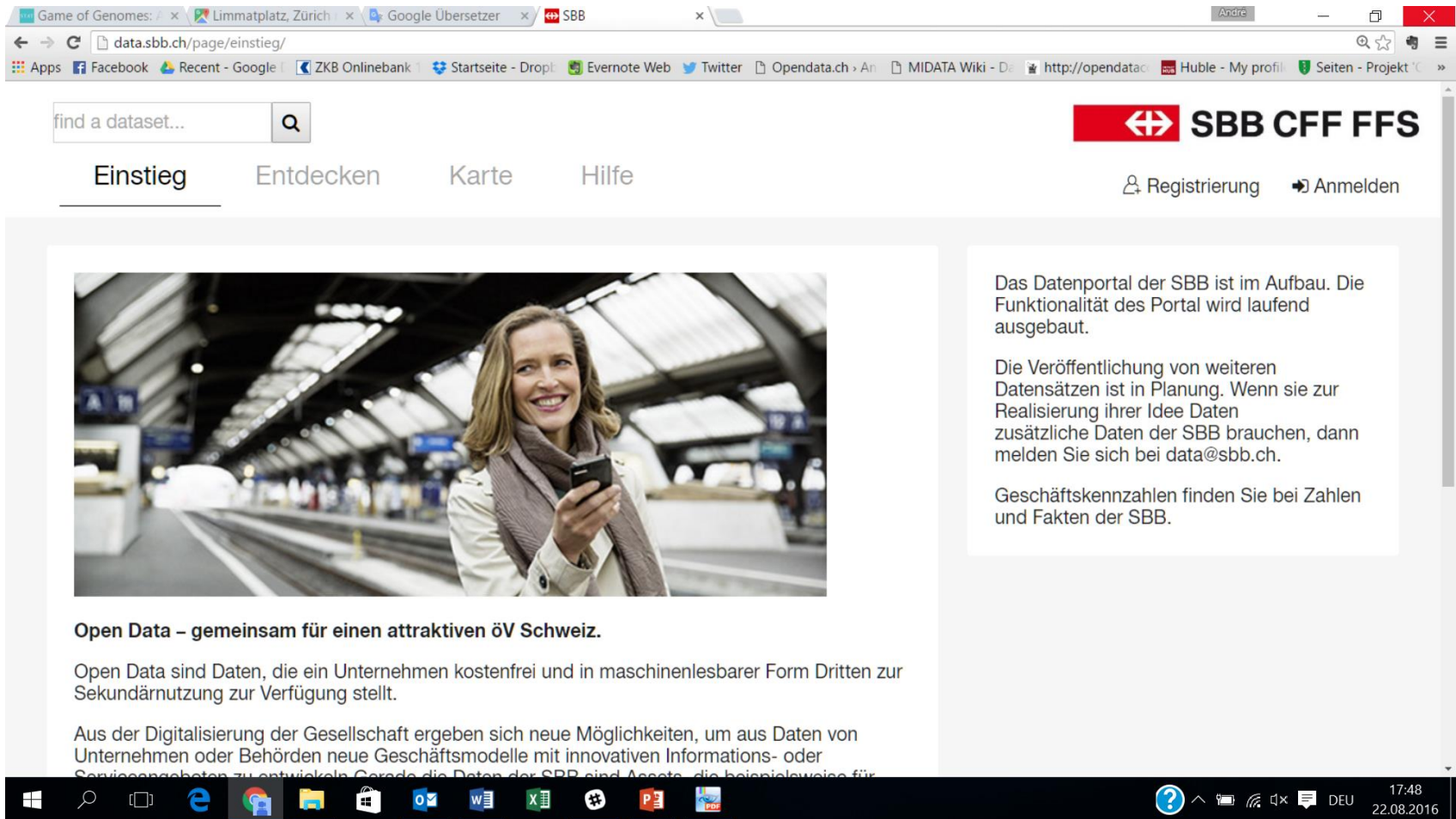
"This is the kind of resource the (digital) single market needs"

Neelie Kroes, VP European Commission

As seen in Our data is used by

17:46 22.08.2016

Open Corporate Data in Switzerland: Swiss Federal Railways (data.sbb.ch)

A screenshot of a web browser displaying the data.sbb.ch website. The browser's address bar shows 'data.sbb.ch/page/einstieg/'. The website has a search bar with the text 'find a dataset...' and a magnifying glass icon. Below the search bar are navigation links: 'Einstieg', 'Entdecken', 'Karte', and 'Hilfe'. On the right side, there are links for 'Registrierung' and 'Anmelden'. The main content area features a large image of a smiling woman in a white coat and scarf looking at her smartphone at a train station. To the right of the image is a text box with the following content:

Das Datenportal der SBB ist im Aufbau. Die Funktionalität des Portal wird laufend ausgebaut.

Die Veröffentlichung von weiteren Datensätzen ist in Planung. Wenn sie zur Realisierung ihrer Idee Daten zusätzliche Daten der SBB brauchen, dann melden Sie sich bei data@sbb.ch.

Geschäftskennzahlen finden Sie bei Zahlen und Fakten der SBB.

Open Data – gemeinsam für einen attraktiven öV Schweiz.

Open Data sind Daten, die ein Unternehmen kostenfrei und in maschinenlesbarer Form Dritten zur Sekundärnutzung zur Verfügung stellt.

Aus der Digitalisierung der Gesellschaft ergeben sich neue Möglichkeiten, um aus Daten von Unternehmen oder Behörden neue Geschäftsmodelle mit innovativen Informations- oder Serviceangeboten zu entwickeln. Gerade die Daten der SBB sind Assets, die beispielsweise für

Open Data in Switzerland: Open Food Data (openfood.ch), coming soon



Game of Genomes: x Limmatplatz, Zürich x Google Übersetzer x OpenFood | Sign in x Andre

https://www.openfood.ch/sign_in?locale=en

Apps Facebook Recent - Google ZKB Onlinebank Startseite - Dropt Evernote Web Twitter Opendata.ch MIDATA Wiki - D http://opendatac Huble - My profil Seiten - Projekt

OpenFood EN LOG IN

You need to sign in or sign up before continuing.

Coming soon

SIGN IN

Email

Password

Windows taskbar: 17:50 22.08.2016

Open Cultural Data in Switzerland

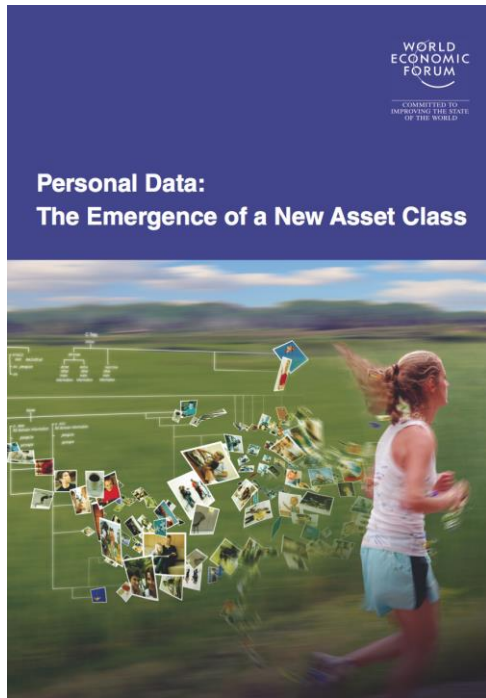


A screenshot of a web browser displaying the '2nd Swiss Open Cultural Data Hackathon' page. The browser's address bar shows 'make.opendata.ch/wiki/event:2016-07'. The page features a navigation menu on the left with links for 'Data', 'Events', 'Projects', and 'Forum'. The main content area includes a header for 'Open Cultural Data Hackathon 2016' with sub-links for 'Program', 'Get involved', 'Swiss Cultural Data', and 'Cultural Data Worldwide'. The title '2nd Swiss Open Cultural Data Hackathon' is prominently displayed. Below the title, the text states: 'The second Swiss Open Cultural Data Hackathon took place on 1-2 July 2016 at the Basel University Library.' It then provides social media links for Facebook and Twitter, and information about the next hackathon in 2017. A photograph at the bottom shows a large, modern library interior with people working at tables. The browser's taskbar at the bottom shows various application icons and the system clock indicating 18:08 on 22.08.2016.

I Want My Data!



WEF Report (2011) «Personal Data – The New Asset Class»



WEF_IITC_PersonalDataNewAsset_Report_2011.pdf

The competition for personal data:

- Google, Amazon, Facebook, Twitter, Migros, Coop,....
- Large commercial interests in personal data
- 1 trillion Euro market (BCG 2012)
- Personal data are valuable and sensitive

EU General Data Protection Regulation 2016

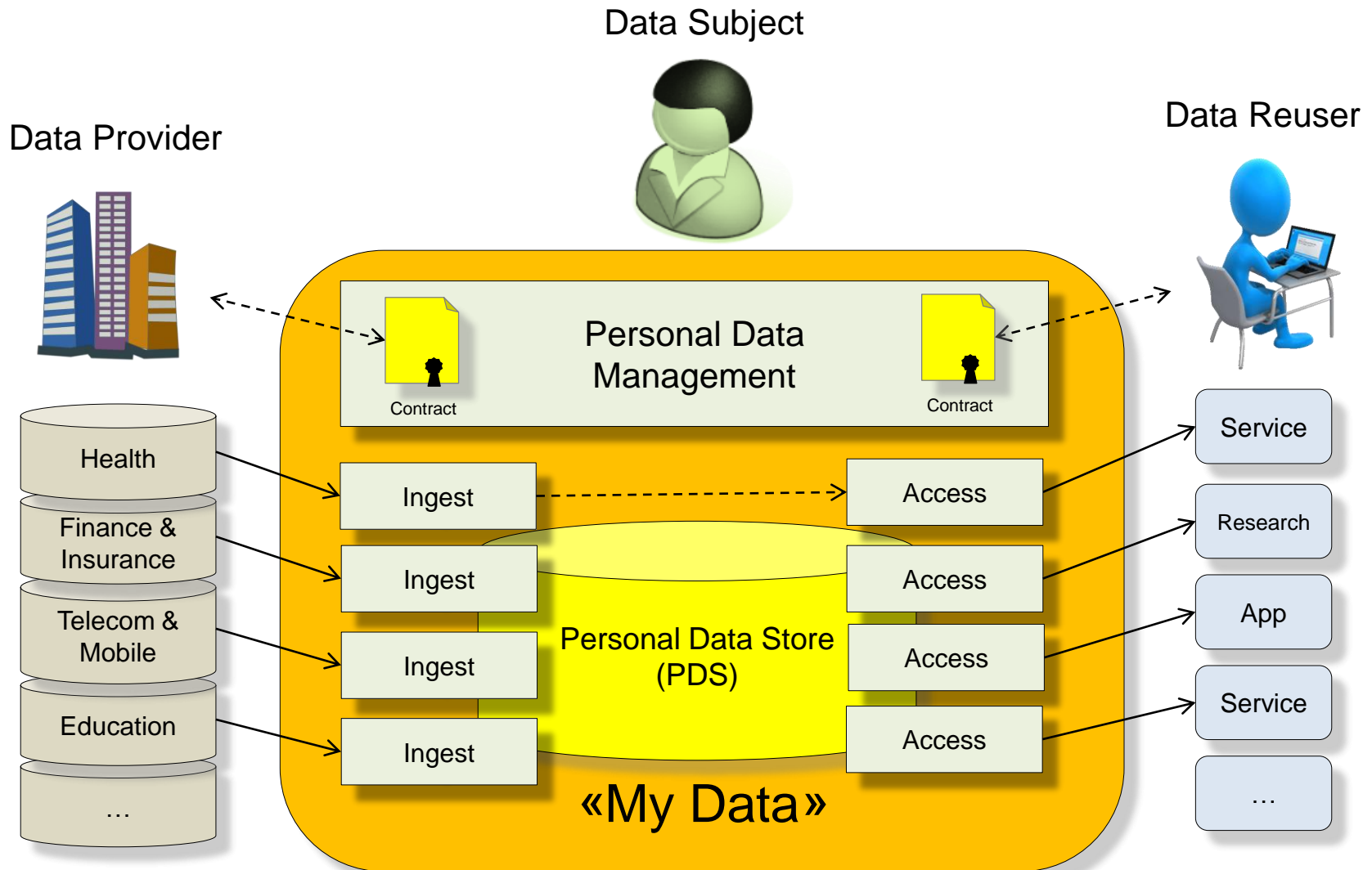
Right to Data Portability (Art. 18)



«The data subject shall have the right to receive the personal data concerning him or her, which he or she has provided to a controller, in a structured, commonly used and machine-readable format and have the right to transmit those data to another controller without hindrance from the controller to which the personal data have been provided, ...»

Source: REGULATION (EU) 2016/679 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 April 2016

The «My Data» Vision



My Data Showcase #1: gocompare.com (UK)



The screenshot shows the website www.gocompare.com/money/midata/. The page title is "Midata - making comparison better". The main content area includes a sub-header "Midata - making comparison better" and a paragraph: "Midata empowers personal finance comparison choices by giving consumers easier access to their data and helping them use it to choose the right deal." Below this is a banner image with the text "MIDATA MAKING COMPARISON BETTER" and stacks of coins. A sidebar on the right titled "Useful links" contains links for "Current accounts", "Credit cards", and "Credit reports". At the bottom, a cookie policy notice states: "By using the Gocompare.com website you agree to our use of cookies as described in our cookie policy." with "OK" and "Learn more" buttons.

My Data in Switzerland: Data Cooperative MIDATA.coop



The screenshot shows the MIDATA.coop website with a navigation menu (Home, About, Projects, People, Publications, Contact) and a large blue banner with the text "MIDATA.coop MY DATA - OUR HEALTH". Below the banner is a diagram illustrating the data flow process:

- SOURCES**: Three blue squares on the left represent data sources.
- MIDATA**: A central box containing a grid of 24 human icons, each with a small lock icon, representing individual data points.
- YOU DECIDE**: A vertical line with a small circle at the top, indicating user control over data sharing.
- RESEARCH**: A large white circle representing the research phase.
- NEW TREATMENTS**: A black rectangle representing the outcome of the research.
- OUR HEALTH**: A label at the top right of the diagram, connected to the "NEW TREATMENTS" box.

The diagram is set against a light blue background with a white border. The website's taskbar at the bottom shows various application icons and system information (DE, 10:52, 23.02.2016).

The First My Data Conference in Europe (August 31st – September 2nd in Helsinki)



Game of Genomes: x Limmatplatz, Zürich x Google Übersetzer x MyData 2016 x Andre

mydata2016.org

Apps Facebook Recent - Google ZKB Onlinebank Startseite - Dropt Evernote Web Twitter Opendata.ch MIDATA Wiki - D http://opendatac Huble - My profil Seiten - Projekt »

MyData₂₀₁₆
31.8. - 2.9.

REGISTER ABOUT PROGRAMME HACK PRACTICAL INFO BLOG CONTACT | Q

MyData 2016

Advancing human centric personal data

31ST AUGUST - 2ND SEPTEMBER
HELSINKI, FINLAND

REGISTER ONLINE

SUBSCRIBE OUR NEWSLETTER

17:56 22.08.2016

Questions?



Thank You For Your Attention!



OPEN KNOWLEDGE