Ανοικτά Δεδομένα Υγείας

Π. Μπαμίδης
Επίκ. Καθηγητής Πληροφορικής & Ιατρικής Εκπαίδευσης
Εργαστήριο Ιατρικής Φυσικής, Τμήμα Ιατρικής, Α.Π.Θ.
Ιδρυτικό Μέλος OKFN Ελλάδας,
Μέλος Advisory Board Κεντρικού ΟΚΦΝ

Twitter: @bamidis
Summary

• Open Data concepts
• Health Open Data
• Examples
  • Active and Healthy aging
  • Health Education
A note on openness ... from OKFN

- **Open means freely shared for anyone, anywhere, to use for any purpose** - see OpenDefinition.org

- “Here at Open Knowledge, we think the answer is clear: knowledge should be open not closed.

- **We** believe that our knowledge society must have at its heart collaboration not control, empowerment not exploitation and that everyone — citizens, scientists, entrepreneurs, activists — should have access to the information they need to understand and shape the world around them.”

https://okfn.org/about/vision-and-values/
## Principles on Open Data from Philippines

<table>
<thead>
<tr>
<th>DATA CATEGORY</th>
<th>EXAMPLE DATASETS</th>
</tr>
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<tbody>
<tr>
<td>Agriculture</td>
<td>Crops, fisheries</td>
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<tr>
<td>Earth observation</td>
<td>Weather, earthquakes, disaster management</td>
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<tr>
<td>Economy</td>
<td>Lead economic indicators, commodity prices, energy consumption</td>
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<td>Education</td>
<td>Number of students per school, school performance</td>
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<td>Environment</td>
<td>Pollution levels, greening programs</td>
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<tr>
<td>Geospatial</td>
<td>National and local maps, hazard maps, topography</td>
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<td><strong>Health</strong></td>
<td>Hospital location and services, medicines</td>
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<td>Infrastructure</td>
<td>National roads, tourist spots, broadband penetration</td>
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<td>Public finance</td>
<td>National budget, government payroll, awarded contracts, tax revenue</td>
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<td>Public safety</td>
<td>Crime statistics</td>
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<td>Research</td>
<td>Experiment results, social science surveys</td>
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<td>Social Welfare</td>
<td>Housing, conditional cash transfer programs</td>
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<td>Statistics</td>
<td>National statistics, census</td>
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HEALTH AND DATA: A LONG STORY

http://www.epsiplatform.eu/content/open-health-care-data
Maps of open data

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Bamidis Oct 2015
Heath care data

• exists in various forms with different added values:
  • Public spending and public policy on health care (very important for transparency and fight against recession...)
  • Performance indicators of individual health care providers (National Health System, Private Sector etc...)
  • General, anonymised information on population health statistics (e.g. data on occurrence of certain health conditions differentiated by age, income or location, morbidity, mortality etc...)
  • Specific information about individuals (e.g. patient records)

See more at: http://www.epsiplatform.eu/content/open-health-care-data#sthash.UjDbulj7.dpuf
Health Data type variations - an ecosystem

• combinations among big, government, and open data, all of which could fall in one of the three major categories below.

• big data (open or not) fall into:
  • personal or
  • proprietary data or
  • government secret data,

depending on the source of control.

Big Data

- Big data are datasets whose size is beyond the ability of typical database software tools to capture, store, manage, and analyse.
- “maximizing computation power and algorithmic accuracy to gather, analyze, link, and compare large data sets; it is also about “drawing on large data sets to identify patterns in order to make economic, social, technical, and legal claims.”

In truth, health data—like all data—exists on a continuum from open to closed. In this paper, we suggest three categories:

1. **Open Data**: Data that is freely available for use without any restrictions.
2. **Closed Data**: Data that is not available to the public due to privacy concerns.
3. **Restricted Data**: Data that is available under certain conditions.

The Camden Health Metrics Explorer, created by the Camden Coalition of Healthcare Providers (CCHP) (based in Camden, NJ, USA) and BlueLabs, is leveraging open datasets linked to health exchange information and claims data, providing actionable metrics in real time. They place a focus on “hotspotting”—the identification of patients who are heavy users of the healthcare system—providing targeted interventions to address their needs and change their utilization patterns. Based upon a metrics dashboard, the Coalition seeks to reach out to high risk patients to coordinate the critical period following discharge and the transition back to primary care. The Camden Coalition also works with community groups to provide preventive care and health education.  

and the original data files are not included in the release. An example of published data would be NHS patient satisfaction surveys.
Open data can help unlock $3 trillion to $5 trillion in economic value annually across seven sectors.

Potential value in open data, $ billion

- Education: 890–1,180
- Transportation: 720–920
- Consumer products: 520–1,470
- Electricity: 340–580
- Oil and gas: 240–510
- Health care: 300–450
- Consumer finance: 210–280

Total: 3,220–5,390

The values here are drawn from examples of open-data potential and are not a comprehensive sizing of potential value across the two sectors.

1Includes US values only.

Source: McKinsey Global Institute analysis

HTTP://WWW.MCKINSEY.COM/INSIGHTS/BUSINESS_TECHNOLOGY/OPEN_DATA_UNLOCKING_INNOVATION_AND_PERFORMANCE_WITH LIQUID_INFORMATION
Help patients find a hospital

HTTP://WWW.SCOPESANTE.FR/##/

Mateo Brunatti, ePSI platform
Google Fit

Source: Mateo Brunatti, ePSI platform
Examples from Active and Healthy Aging - Mobile Health
Different Modalities

Brain Activity (EEG)
Breathing (Respiration Rate)
Blood Volume Pulse (BVP)
Skin Conductance (GSR)

Acoustics and Voice
Heart Rate (ECG)
Muscle Tension (EMG)
Temperature

A notion of the ‘quantified - self’
Sensor Platforms - Cameras
What is USEFIL trying to do?

ICT Ecosystem

• We are not inventing new devices
• We are just trying to exploit the ICT Ecosystem for the benefit of the Elderly people.
• Our objective: Elderly people living independently for a longer time, feeling safe and socially connected.
Thessaloniki Active & Healthy Ageing Living Lab (AHA LL)

Entrance Scenery View

Kitchen View

Living Room Scenery

Unobtrusive set up

© USEFIL Consortium 2011-2014; EU-ICT Collaborative Project
USEFIL Pilots Video on YouTube

https://www.youtube.com/watch?v=wxcvuY2zBHs

https://www.youtube.com/watch?v=4B7hggKdfEM&feature=youtu.be
Can we leverage “Big Data” on Active and Health Aging?

- Big data are datasets whose size is beyond the ability of typical database software tools to capture, store, manage, and analyse.
- “maximizing computation power and algorithmic accuracy to gather, analyze, link, and compare large data sets; it is also about “drawing on large data sets to identify patterns in order to make economic, social, technical, and legal claims.”


If we make proper tools to exploit the richness of collected healthy aging data… we will assist diagnoses and treatments
The vision: an ecosystem of Open Elderly Care.

Open, Silver Economy.
The UNCAP project on Active & Healthy Aging

- UNCAP: Ubiquitous iNteroperable Care for Ageing People
- UNCAP delivers an interoperable platform based on open industrial standards
- ...leveraging on existing technologies for biosensing, indoor/outdoor localisation and home-automation.
- Result: an open source, scalable and privacy-savvy ecosystem compatible with existing Personal Health Record systems, that can deliver novel services that can help aging people (incl. those with cognitive impairments) live independently and with dignity.
Welcome to SmokeFreeBrain

Lead partner:
Aristotle University of Thessaloniki
Lab of Medical Physics
http://medphys.auth.gr
Co-ordinator: Panos Bamidis

To be activated soon..

Get In Touch

Feel free to contact us if you have any questions.

- Medical physics Laboratory
  Department of Medicine
  Aristotle University of Thessaloniki

iPrognosis for Parkinson’s Disease
Examples from Medical Education

Towards Open Learning

Let us Opening up Learning, Education and Training for ALL!

Open Research and Open Education – The hidden treasures

Christian M. Stracke (eLC / ICORE / University of Duisburg-Essen, Germany)
Ignasi Labastida (OEC / CC / University of Barcelona, Spain)
mEducator central idea

- discover, retrieve, use, rate, re-use and **re-purpose** educational content *irrespective* of any **Learning Management System** use

- **Target 1**: providers and users of such content:
  - expert instructors (academics / health professionals)
  - students / learners

- **Target 2**: technical providers of educational (health care) solutions
The main product/service

1. mEducator 2.0: loosely coupled LCMSs via mashup technologies (Web2.0)
2. mEducator 3.0: LCMSs linked via (semantic) linked services (Web3.0)

www.meducator2.net
www.meducator3.net
mEducator Video

http://www.youtube.com/watch?v=HK5psY48kaQ
CAMEI
Coordination Actions in the scientific era of Medical Education Informatics for fostering IT skills for healthcare workforce in the EU and USA

17 & 18 June 2015
Thessaloniki, Greece

CAMEI Summer School

http://www.camei-project.eu/
Medical Learning Analytics (MLA)

- a completely new field, under-researched…
- encompasses the leverage of Learning Analytics technologies for boosting medical educational practices
- …and establishing best practices in obtaining student interaction quality
- …by optimising learning in medicine and health sciences and fostering those activities that achieve clinical competency.
Info:

- **mEducator:**
  - YouTube mEducator project channel
  - The project final video is in YouTube: http://www.youtube.com/watch?v=HK5psY48kaQ
  - Follow us in Facebook and twitter (meducator, @meducator)

- **LLM and LLMcare**
  - www.longlastingmemories.eu
  - www.llmcare.gr

- **USEFIL**
  - www.usefil.eu

- **ePBLnet**
  - www.epblnet.eu

- **CAMEI**
  - http://www.camei-project.eu/

- **UNCAP**
  - http://www.uncap.eu/

- **SmokeFreeBrain**
  - http://smokefreebrain.org/

- **pdbamidis@gmail.com** Follow me @bamidis

- http://mei2015.camei-project.eu/content/camei-summer-school