Data Sets as Facilitator for new Products and Services for Universities

29.11.2010 VOR-ICT Bijeenkomst, Utrecht, The Netherlands

Hendrik Drachsler
Centre for Learning Sciences and Technology
@ Open University of the Netherlands
Whoami

• Assistant Professor at the Learning Networks Program OUNL / CELSTEC

• Research topics: Learning Networks, Technology Enhanced Learning, Recommender Systems, Personalisation, Mash-Ups and widget technology, Health2.0
We live in a decade of industrial change
The biggest challenge businesses face today is unlearning what was successful in the industrial age and learning how to prosper in the network era.”

Jay Cross (2006)
GLOBALISATION

Graphic by Alex Guerten, 2008
GLOBALISATION

Graphic by Alex Guerten, 2008
LOCALISATION

Graphic by Alex Guerten, 2008

CONSUMERS

PRODUCERS
GLOBALISATION

Graphic by Alex Guerten, 2008

PROSUMERS
The Glocalisation / Prosumers world

Be Aware.

by Zohar Manor-Abel  http://flickr.com/photos/zoharma/97214235/sizes/l/
Example Networks
Welcome to HandOver toolbox in which you can find all kind of information and support to help you develop, design and deliver a training in handover or to maximize its impact. The toolbox is funded by the European FP7 project HandOver.

The toolbox is not just a box with static information on handover training. It is a dynamic, ever changing box because it is part of a ever growing learning network. In this network people can search for information, comment on available products, add product and discuss with others who are also interested in training of handover.

We truly believe that learning can make a difference for handovers and want to encourage you to register and share your knowledge on handover training with others, comment on products and contribute to ongoing discussions. If you share our believe, please do not hesitate and join us today!

**Latest activity**

1. Funny cartoon on how communication is also about interpretation
   - Maria Persona 9 minutes ago
2. How to communicate effectively – Lardner
   - Maria Persona 19 minutes ago
3. How to communicate effectively
   - Last updated 24 minutes ago by Maria Persona
4. Link to website on protocol HAND ME OVER THE ISOBAR
   - Dirk 3 days ago
5. Vignettes database
   - Last updated 3 days ago by Wendy Kidken
6. Guidelines on how to use the SBAR acronym during communication with physicians
   - Wendy Kidken 3 days ago
Example Networks
life symbiotic...
Data & Recommender Systems
Data emerge

Johnson, S. (2001)
Data emerge

Johnson, S. (2001)
Data emerge

Johnson, S. (2001)
Data emerge

Johnson, S. (2001)
Data emerge

Johnson, S. (2001)
Data emerge

Johnson, S. (2001)
Data emerge

“We are leaving the age of information and entering the age of recommendation”

Chris Anderson (2004)

Johnson, S. (2001)
Recommender Systems
Recommender Systems

People who bought the same product also bought product B or C …

More to Explore

You looked at

- Dynamics of Markets: Econophysics and...
  Hardcover by Joseph L. McCauley
  $77.92

- Patterns of Speculation: A Study in...
  Paperback by Bertrand M. Roehner
  $39.99 $35.99

- Origin of Wealth: Evolution...
  Paperback by Eric D. Beinhocker
  $16.00 $10.88

You might also consider

- Introduction to Econophysics...
  Paperback by Rosario N. Mantegna, H...
  $32.99

- The Volatility Surface: A...
  Hardcover by Jim Gatheral, Nassim...
  $60.00 $37.80
The Long Tail

- **Short Head**
  - Blockbusters
  - Top 40
  - Widely popular
  - Short-lived
  - Narrow scope

- **Long Tail**
  - Blockbusters in a niche
  - Narrowly popular
  - Popular in the past
  - Good, but not great content
  - D-list content

The Long Tail of Learning

TEL recommender are a bit like this...
TEL recommender are a bit like this...

We need to select for each application an appropriate recommender that fits its needs.
But...

“The performance results of different research efforts in recommender systems are hardly comparable.”

(Manouselis et al., 2010)
But...

The TEL recommender experiments lack transparency. They need to be repeatable to test:

• Validity
• Verification
• Compare results
How others compare their recommender systems

- Netflix
- Movielens: helping you find the right movies
- Bookcrossing.com
- Sandbox from Yahoo! Research
How others compare their recommender systems

Although the TEL domain stores plenty of data everyday in e-learning environments (LMS, PLEs) it typically lacks shareable and publicly available data sets.
Data Products & Science
Promises of Open Data
Promises of Open Data
Promises of Open Data

Unexploited potentials:
Promises of Open Data

Unexploited potentials:

• The evaluation of learning theories and learning technology
Promises of Open Data

Unexploited potentials:

• The evaluation of learning theories and learning technology

• More transparent, mutually comparable, trusted and repeatable experiments that lead to evidence-driven knowledge
Promises of Open Data

Unexploited potentials:

• The evaluation of learning theories and learning technology

• More transparent, mutually comparable, trusted and repeatable experiments that lead to evidence-driven knowledge

• Development of new educational data products that combine different data sources in data mashups
New Science Paradigms

• Thousand years ago science was **empirical** (*Describing natural phenomena*)

• Last few hundred years science: **theoretical** branch (*Using models, generalizations*)

• Last few decades: **computational** branch (*Simulating complex phenomena*)

• Nowadays: **data science** (*Unify theory, experiment, and simulation, data captured by instruments and processed by software*)
Data Products
Data Products

Open data example

Community generated
Explore flu trends around the world

We've found that certain search terms are good indicators of flu activity. Google Flu Trends uses aggregated Google search data to estimate flu activity. Learn more »
It's time to change the way we do research.

Mendeley is a free reference manager and academic social network that can help you organize your research, collaborate with others online, and discover the latest research.

- Automatically generate bibliographies
- Collaborate easily with other researchers online
- Easily import papers from other research software
- Find relevant papers based on what you're reading
- Access your papers from anywhere online
- Read papers on the go, with our new iPhone app

Create account

...or sign in with Facebook

Overview Features Discover Research iPhone / iPad

"Mendeley Throws Open the Doors to Academic Data."
Data Products

Educational Data Products

- Drop-out Analyzer
- Group Formation Recommender
- Question-Answering Tool
- Awareness Tools
Data Products

- Educational Data Products
  - Drop-out Analyzer
  - Group Formation Recommender
  - Question-Answering Tool
  - Awareness Tools

User Models for Adaptive...

Getting to Know Your User...

How Do People Learn at the...

Hybrid recommender system...

Toward the Next Generation

Evaluating collaborative

Identifying the Goal, Use...
Future Activities
OPEN DATA
Beyond the

THE HORIZON REPORT
2010 EDITION

OPEN DATA
Beyond the OPEN INNOVATION

Beyond the HORIZON REPORT
2010 EDITION

OPEN INNOVATION
Beyond the
VISUALIZATION OF DATA

THE HORIZON REPORT
2010 EDITION

THE NEW MEDIA CONSORTIUM
And EDUCAUSE Learning Initiative
An EDUCAUSE Program
Beyond the
THE HORIZON REPORT
2010 EDITION

MASHUP TECHNOLOGY
Beyond the

THE HORIZON REPORT

2010 EDITION

PROTECTION RIGHTS
Open Data
Open Data

An entity graph of people, places and things, built by a community that loves open data.

Freebase is joining Google! Learn more»
Open Data

Here About a Court Case?

Contact Information

By mail:
Public.Resource.Org
1005 Gravenstein Hwy. North
Sebastopol, CA 95472

By fax:
(707) 829-0104

By email:
carl@msdia.org

Supporting Public.Resource.Org

Public.Resource.Org is a registered 501(c)(3) nonprofit and your contributions are tax-deductible as allowed by law. Checks may be sent to the above address, or you may use our PayPal account for donations as well. Thank you for your support.

Donate

Our Supporting Paperwork

- Articles of Incorporation
- Bylaws
- IRS Determination

Donate
Open Data
Thank you for requesting Yahoo! Webscope data. Here are the steps to take to receive the data.

#1. Read the data sharing agreement below and if you agree, click "agree"

#2. You must also obtain your department chair approval to receive this data.

#3 Your department chair that you provided will receive an email and link to the data sharing agreement. They will need to agree to the data sharing agreement before we can provide the data. If you have any questions please contact us at research-data-requests@yahoo-inc.com

Agreement for Datasets:
R5. Yahoo! Delicious Popular URLs and Tags, version 1.0,
L9. Yahoo! Answers Question Types Sample of 1000, version 1.0

YAHOO! WEBSCOPE™ DATA LICENSE AGREEMENT
INTERNATIONAL

This data license agreement ("Agreement") is between you and Yahoo! Inc. ("Yahoo!") regarding your access to and use of the Yahoo! Webscope™ data that you wish to use and download from the Yahoo! website located at http://webscope.sandbox.yahoo.com ("Data"). Your access to and use of the Data is subject to the terms and conditions of this Agreement.

BY CLICKING THE "I AGREE" BUTTON, DOWNLOADING OR USING THE DATA, YOU AGREE THAT THAT YOU HAVE READ AND UNDERSTAND THE TERMS OF THIS AGREEMENT, AND THAT YOU AGREE TO BE BOUND AND TO ABIDE BY THIS AGREEMENT AND YAHOO!'S TERMS OF USE. IF YOU DO NOT UNDERSTAND THIS AGREEMENT, DO NOT DOWNLOAD, ACCESS OR USE THE DATA.

1. SCOPE OF AGREEMENT
1.1 The Data is valuable and confidential information of Yahoo!. You agree to use the Data only in accordance with this Agreement, and to hold the Data in strict confidence. You will not perform any analysis, reverse engineering or processing
Thank you for requesting Yahoo! Webscope data. Here are the steps to take to receive the data. 

#1. Read the data sharing agreement below and if you agree, click "agree"

#2. You must also obtain your department chair approval to receive this data.

#3 Your department chair that you provided will receive an email and link to the data sharing agreement. You must "agree" to the data sharing agreement before we can provide the data. If you have any questions, please contact data-requests@yahoo-inc.com

YAHOO! WEBSCOPE™ DATA LICENSE AGREEMENT
INTERNATIONAL

This data license agreement ("Agreement") is between you and Yahoo! Inc. ("Yahoo!") regarding your access to and use of the Yahoo! Webscope™ data that you wish to use and download from the Yahoo! website located at http://webscope.sandbox.yahoo.com ("Data"). Your access to and use of the Data is subject to the terms and conditions of this Agreement.

BY CLICKING THE "I AGREE" BUTTON, DOWNLOADING OR USING THE DATA, YOU AGREE THAT THAT YOU HAVE READ AND UNDERSTAND THE TERMS OF THIS AGREEMENT, AND THAT YOU AGREE TO BE BOUND AND TO ABIDE BY THIS AGREEMENT AND YAHOO!'S TERMS OF USE. IF YOU DO NOT UNDERSTAND THIS AGREEMENT, DO NOT DOWNLOAD, ACCESS OR USE THE DATA.

1. Scope of Agreement
1.1 The Data is valuable and confidential information of Yahoo!. You agree to use the Data only in accordance with this Agreement, and to hold the Data in strict confidence. You will not perform any analysis, reverse engineering, or processing...
Open Data

Next Steps:

- Yahoo! will review your request
- Your department chair will be contacted for their approval
- Upon approval of the data sharing agreement, Yahoo! will send an e-mail notification with
- For those datasets that are not available via download we will ship those to the mailing address
- Data must be destroyed after 2 years

YAHOO! WEBSCOPE™ DATA LICENSE AGREEMENT
INTERNATIONAL

This data license agreement ("Agreement") is between you and Yahoo! Inc. ("Yahoo!") regarding your access to and use of the Yahoo! Webscope™ data that you wish to use and download from the Yahoo! website located at http://webscope.sandbox.yahoo.com ("Data"). Your access to and use of the Data is subject to the terms and conditions of this Agreement.

BY CLICKING THE "I AGREE" BUTTON, DOWNLOADING OR USING THE DATA, YOU AGREE THAT YOU HAVE READ AND UNDERSTAND THE TERMS OF THIS AGREEMENT, AND THAT YOU AGREE TO BE BOUND AND TO ABIDE BY THIS AGREEMENT AND YAHOO!'S TERMS OF USE. IF YOU DO NOT UNDERSTAND THIS AGREEMENT, DO NOT DOWNLOAD, ACCESS OR USE THE DATA.

1. SCOPE OF AGREEMENT
1.1 The Data is valuable and confidential information of Yahoo!. You agree to use the Data only in accordance with this Agreement, and you will hold the Data in strict confidence. You will not perform any analysis, reverse engineer or process...
Data Visualization
Data Visualization

- Harry Potter and the Order of the Phoenix
- Rush Hour 3
- Evan Almighty
- Hairspray (2007)
- The Simpsons Movie
- American Gangster
- I Am Legend
- Juno
- Alvin and the Chipmunks
- Live Free or Die Hard
- Fantastic Four: Rise of the Silver Surfer
- Bee Movie
- Transformers
Data Visualization

World Health Chart 2001

Download from www.whc.ki.se the beta version of a free software showing World Health in motion towards Millennium Development Goals.

- Children surviving up to 5 years of age per 1000 live births = Health
- Gross Domestic Product per capita in US dollar purchasing power parity (log scale) = Money
- Size = Population in millions

Data from all 174 countries & territories with > 250,000 inhabitants.
Source: World Development Indicators 2002 and estimates in italic.
© Hans Rosling, hans.rosling@phs.ki.se
Division of International Health, Dept. of Public Health Sciences, Karolinska Institutet, SE-171 76, Stockholm, Sweden.
Open Innovation

Log in to your account.

Not registered? Register here
Username: (This is your email address)
Password:

Log in
Forgot your password?

User Home
Submit Your Innovation
Browse P&G Needs
Browse P&G Assets
FAQ

Also Visit:
P&G FutureWorks
P&G Academia Initiative—Russia

Connect + Develop

Open to ideas

P&G’s Connect + Develop open innovation strategy has established more than 1,000 active agreements with innovation partners. Connect + Develop enables us to share our R&D, commercialization and brand strength with partners worldwide, bringing great ideas to market—and into the lives of consumers—faster.

HOW SWIFFER DUSTERS GOT THEIR START

Could your INNOVATION be the next GAME-CHANGING DEAL?

Did you know that more than 50 percent of product initiatives at P&G/C&A involve significant collaboration with

Browse P&G Assets

Are you looking for opportunities to access and license P&G’s
Open Innovation

Open to ideas

R&D -> C&D

commercialization and brand strength with partners worldwide, bringing great ideas to market—and into the lives of consumers—faster.

HOW SWIFFER DUSTERS GOT THEIR START

Could your INNOVATION be the next GAME-CHANGING DEAL?

Did you know that more than 50 percent of product initiatives at Procter & Gamble involve significant collaboration with...
Open Innovation

Gulf of Mexico response

Response in numbers:
- 22,000 personnel deployed
- 1,100 vessels on site
- 2.5 million feet of boom deployed
- 243,000 barrels of oil-water mix recovered
- 17 staging areas set-up to protect shoreline
- 23,000 claims filed, 9,000 already paid

24 May 2010

GAME-CHANGING DEAL?

Did you know that more than 50 percent of product initiatives at Procter & Gamble involve significant collaboration with:

- Russia

Connect & Develop

Assets

Are you looking for opportunities to access and license P&G's...
Mashups and Widgets
SIRTEL 2007
Workshop on Social Information Retrieval for Technology-Enhanced Learning

In conjuction with
2nd European Conference on Technology Enhanced Learning (EC-TEL'07)

Crete, Greece, September 17-20, 2007

Full Day Workshop on
Social Information Retrieval for Technology-Enhanced Learning (SIRTEL 2007)

Took place on Tuesday, 18th of September 2007

Program included:

- 7 full paper presentations & 1 system demonstration
- 1 video keynote by Jim Shur (Chief Architect) & Rick Hangartner (Chief Scientist), MyStrands
- 1 open discussion session chaired by Erik Duval, Katholieke Universiteit Leuven & ARIADNE Foundation
Recommender Systems

SIRTEL 2007
Workshop on Social Information Retrieval for Technology-Enhanced Learning

2nd European Conference

Social Information Retrieval

Towards User Modelling and Adaptive Systems for All (TUMAS-A)

There is a growing interest in providing technology-mediated lifelong learning services (LLL) for ALL. Although an increasing number of the users interested in these services are adult learners and people with disabilities most available settings do not consider functional diversity requirements. Moreover, it is a hot research issue how to acquire, update and manage user models that consider the functional diversity of users so that their accessibility needs are met.

On the one hand, user modelling is supposed to provide the appropriate content transformations and adapted resources to users' needs when available. On the other hand, contents are supposed to follow Web Content Accessibility Guidelines (WCAG 1.0), which version 2.0 of these guidelines is near completion. Moreover, users access contents and services with a variety of devices and with different interaction modes that should consider personal characteristics (including disabilities) and the context of usage.

In addition, to make this framework interoperable, flexible and extensible, contents, user models and device descriptions should be standardized. In this respect, available specifications, such as IMS AccessForAll Specifications are currently being adopted within an ISO standard under development in that organisation's committee known as JTC1 SC34. There has also been work towards profiling the AccessForAll metadata to the IEEE LOM - Learning Object Metadata standard and the Dublin Core (DCMI) metadata set.
Recommender Systems

Organised jointly by
4th ACM Conference on Recommender Systems (RecSys 2010)
5th European Conference on Technology Enhanced Learning (EC-TEL 2010)

Barcelona, Spain, 29-30 September 2010

Notifications to authors already sent.
Camera-ready versions have to be received by August 15, 2010

Submission for DataTEL challenge: August 31st, 2010 ***EXTENDED***

1st Workshop on Recommender Systems for Technology Enhanced Learning (RecSysTEL 2010)

In conjunction with

4th ACM Conference on Recommender Systems (RecSys 2010)
5th European Conference on Technology Enhanced Learning (EC-TEL 2010)

Barcelona, Spain, 29-30 September 2010

Keynote Speakers:

Joseph Konstan, GroupLens Research, University of Minnesota (USA)
Protection Rights

PLEASE ROB ME

Listing all those empty homes out there

Also follow our twitter feed @pleaserobme.

Filter

Location

Twitter username

Show everything  Go!

More Info

Home
Why
About

Made Possible By

Foursquare
Twitter
@boyvanamstel
Protection Rights

Recent Empty Homes

@wgirarde left home and checked in less than a minute ago:

@TennesseeTimHill left home and checked in less than a minute ago:
Feeding my addiction (@ Starbucks’s) http://4sq.com/72m9vj
Protection Rights

Oversharing

Recent Empty Homes

@wgirarde left home and checked in less than a minute ago: Aplicativo para iPhone adiciona fotos e vídeos aos check-ins do Foursquare. >>> http://bit.ly/dzIrN3 | #4sq

@TennesseeTimHill left home and checked in less than a minute ago: Feeding my addiction (@ Starbucks's) http://4sq.com/72m9vj
3 Take away messages
Plan(t)ing for the future
Plan(t)ing for the future

1. Use digital ecosystem services for student projects (Google API, Yahoo pipes, Twitter, Reuters Open Calais ... )
Plan(t)ing for the future

1. Use digital ecosystem services for student projects (Google API, Yahoo pipes, Twitter, Reuters Open Calais ...)

2. Apply and create open data for research (Become part of the ecosystem, open innovation, science2.0 -> pre-processing, privacy protection)
## Plan(t)ing for the future

1. **Use digital ecosystem services** for student projects (Google API, Yahoo pipes, Twitter, Reuters Open Calais ...)

2. **Apply and create open data** for research (Become part of the ecosystem, open innovation, science2.0 -> pre-processing, privacy protection)

3. **Empower your users** to adjust and remix your contributions to the web (Open API’s, protocols, standards -> interoperability)
Questions and ideas now or later...

This slide is available at:
http://www.slideshare.com/Drachsler

Email: hendrik.drachsler@ou.nl

Skype: celstec-hendrik.drachsler

Blogging at: http://www.drachsler.de

Twittering at: http://twitter.com/HDrachsler
Computer Science Education Research Conference (CSERC '11)
7 - 8 April 2011
Heerlen, the Netherlands

Over the years, it has become clear that there is a need for more fundamental knowledge about and input into computer science education. To contribute to this, an international scientific conference will be organised, creating a platform for researchers in the field of computer science education. The conference is organised in cooperation with ACM SIGCSE. Contributions at the scientific conference will be solicited from all over the world. Submissions will be peer-reviewed. The proceedings will be published in the ACM Digital library.


