

# Science 2.0, How to succeed your thesis in the era of social networks and distributed information

**Denis Gillet • Swiss Federal Institute of Technology (EPFL)**

**Digital Soft Skills for PhD Candidates**

**Geneva University, September 30, 2014 10:15 - 11:15**



# Agenda

- My profile
- Communities of practice
- From Research 1.0 to 2.0
- Shaping your online scientific identity



# React Research Focus

## Coordination

Adaptive Telescopes

**Sensor  
and actuator  
networks**

Remote Labs  
Insulin Pumps

**Cyber  
Physical  
Systems**

Intelligent Cars  
Unmanned Aerial Vehicles

## Human-Computer and Human-Device Interaction

Inquiry Learning  
in STEM for kids

**Internet  
of  
Things**

**Web of  
People**

**Focus on structures,  
algorithms, protocols,  
services and platforms**

## Interaction

Learning Environments

**Social  
Media  
platforms**

Personalization  
Responsiveness

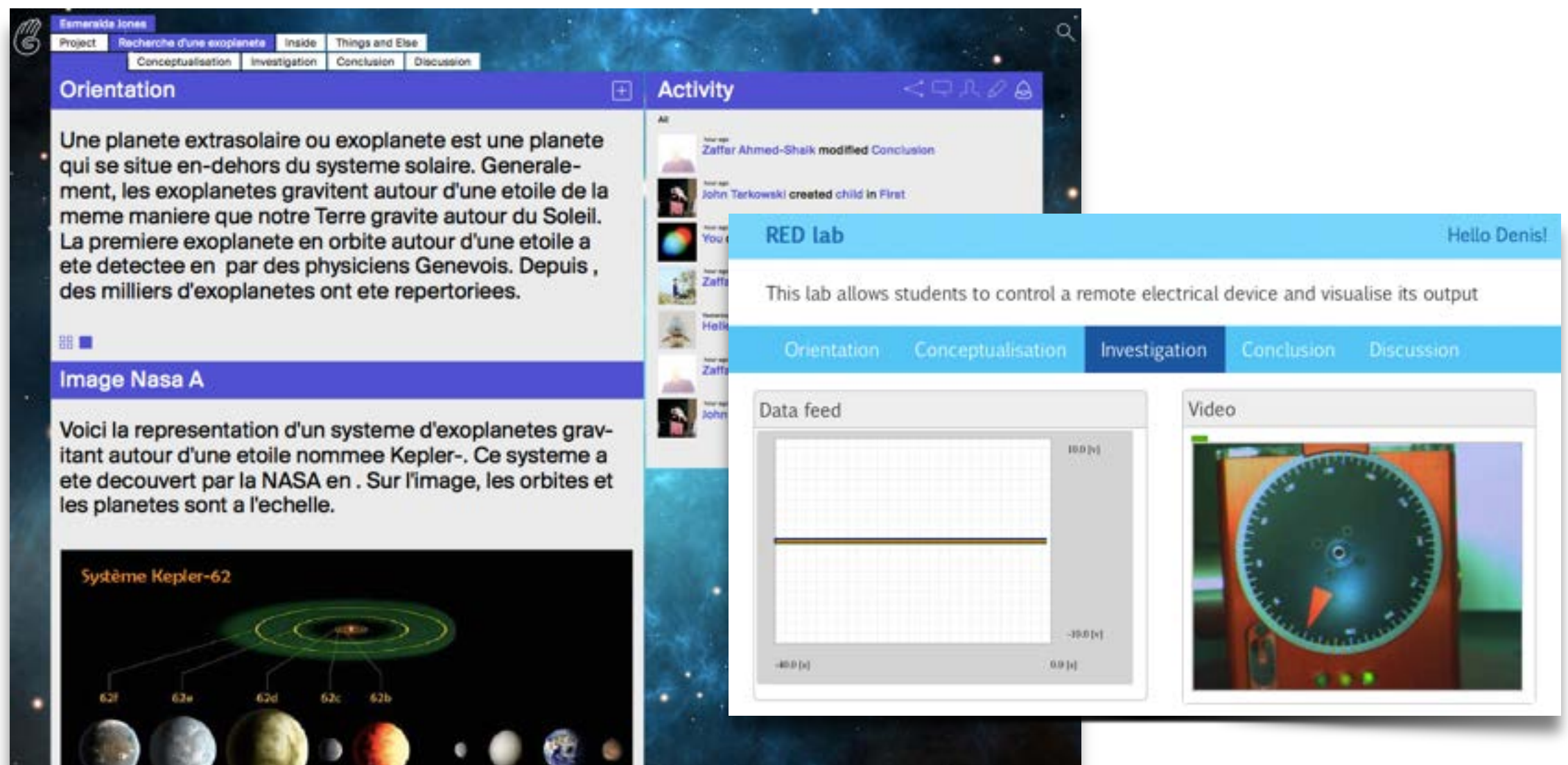
**Shared  
Digital  
Artifacts**

Knowledge Management  
Recommender Systems  
Learning Analytics

# React Current Research Projects

## Graasp: Next Generation Social Media Platform

- Contextual opportunistic interaction between people, content, services, objects and knowledge in the **cloud** or in the **field**



The screenshot displays the Graasp platform interface, which is designed for contextual opportunistic interaction. It features a project page on the left and a lab interface on the right.

**Project Page (Left):**

- Project:** Recherche d'une exoplanète
- Inside:** Things and Else
- Conceptualisation:** Investigation, Conclusion, Discussion
- Orientation:** Une planète extrasolaire ou exoplanète est une planète qui se situe en-dehors du système solaire. Généralement, les exoplanètes gravitent autour d'une étoile de la même manière que notre Terre gravite autour du Soleil. La première exoplanète en orbite autour d'une étoile a été détectée en 1992 par des physiciens Genevois. Depuis, des milliers d'exoplanètes ont été répertoriées.
- Image Nasa A:** Voici la représentation d'un système d'exoplanètes gravitant autour d'une étoile nommée Kepler-. Ce système a été découvert par la NASA en 1996. Sur l'image, les orbites et les planètes sont à l'échelle.
- Système Kepler-62:** Diagram showing the orbits and planets of the Kepler-62 system, labeled 62f, 62e, 62d, 62c, and 62b.

**Lab Interface (Right):**

- RED lab:** Hello Denis!
- Description:** This lab allows students to control a remote electrical device and visualise its output.
- Orientation:** Conceptualisation, Investigation, Conclusion, Discussion
- Data feed:** A graph showing a signal over time, with axes labeled from -40.0 [x] to 10.0 [y].
- Video:** A video feed showing a close-up of a red electrical device with a green dial and a red needle.



# **Communities of Practice in Technology Enhanced Learning**



# Community of Practice

- CoP are knowledge-oriented groups of people freely aggregated and operating as social entities (Wenger)
  - to share ideas or passions
  - deepen practical knowledge and expertise
  - solve problems in a given domain
  - develop relationships
- Members **learn from each** other by making their knowledge and practices explicit, sharing them with their peers, and reflecting on them (**trust, roles, places**)
- CoP operate, evolve, grow (and die) via a careful combination of face-to-face and mediated interaction



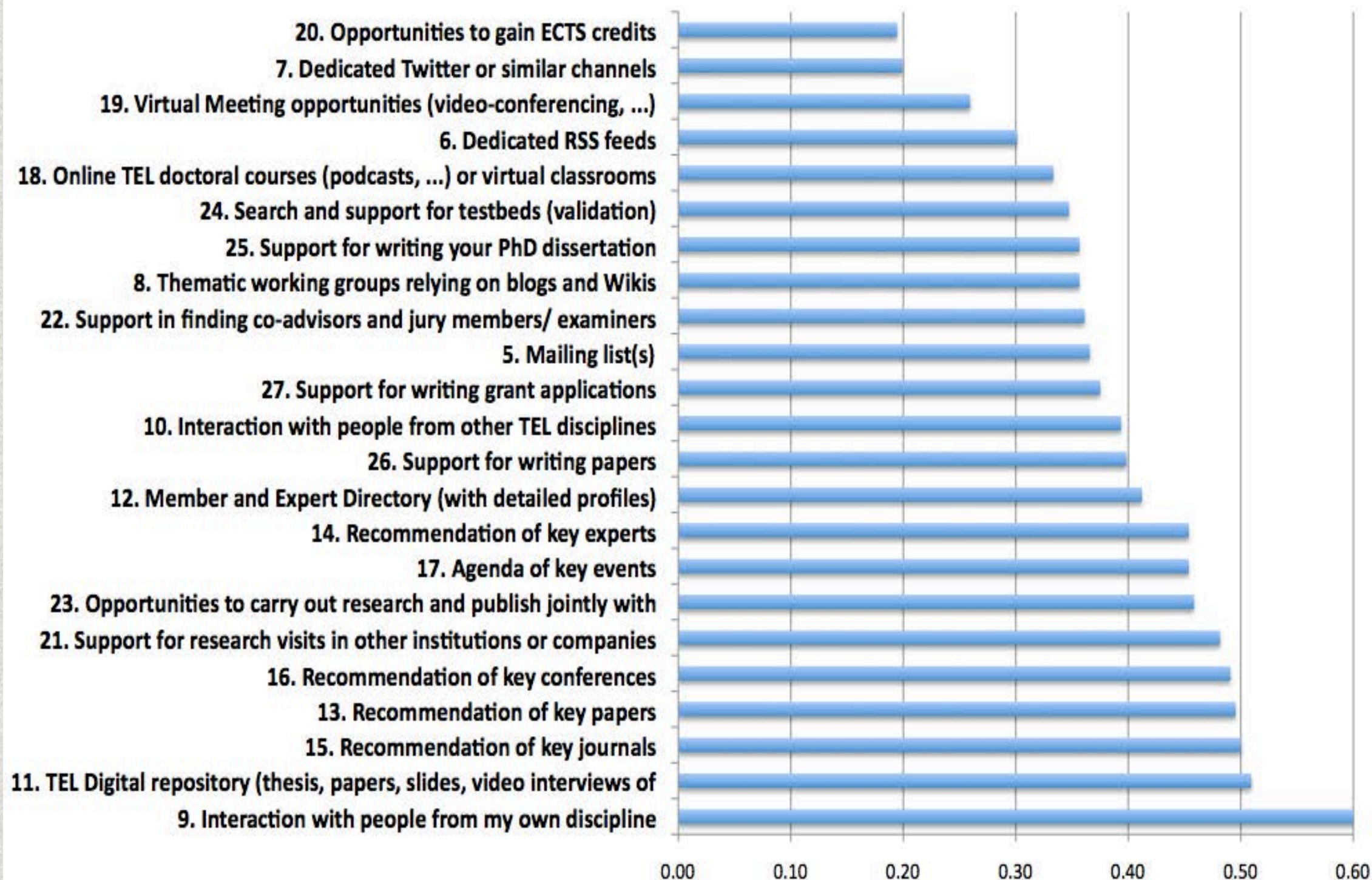
# The TEL Doctoral CoP

- PhD candidates, PhD advisors and experts in TEL share research practice and learn from each other
  - Reduce isolation, enable co-authoring
  - Establish broader discussion, co-coaching
  - Enable sharing of datasets and testbeds
  - ...
- Questionnaire sent to former TEL doctoral summer and winter schools participants, as well as doctoral consortia ones (EC-TEL Conference)
- 72 responses collected at the beginning of last year, 58% Technology-oriented PhD students, 42% Education- and psychology-oriented ones



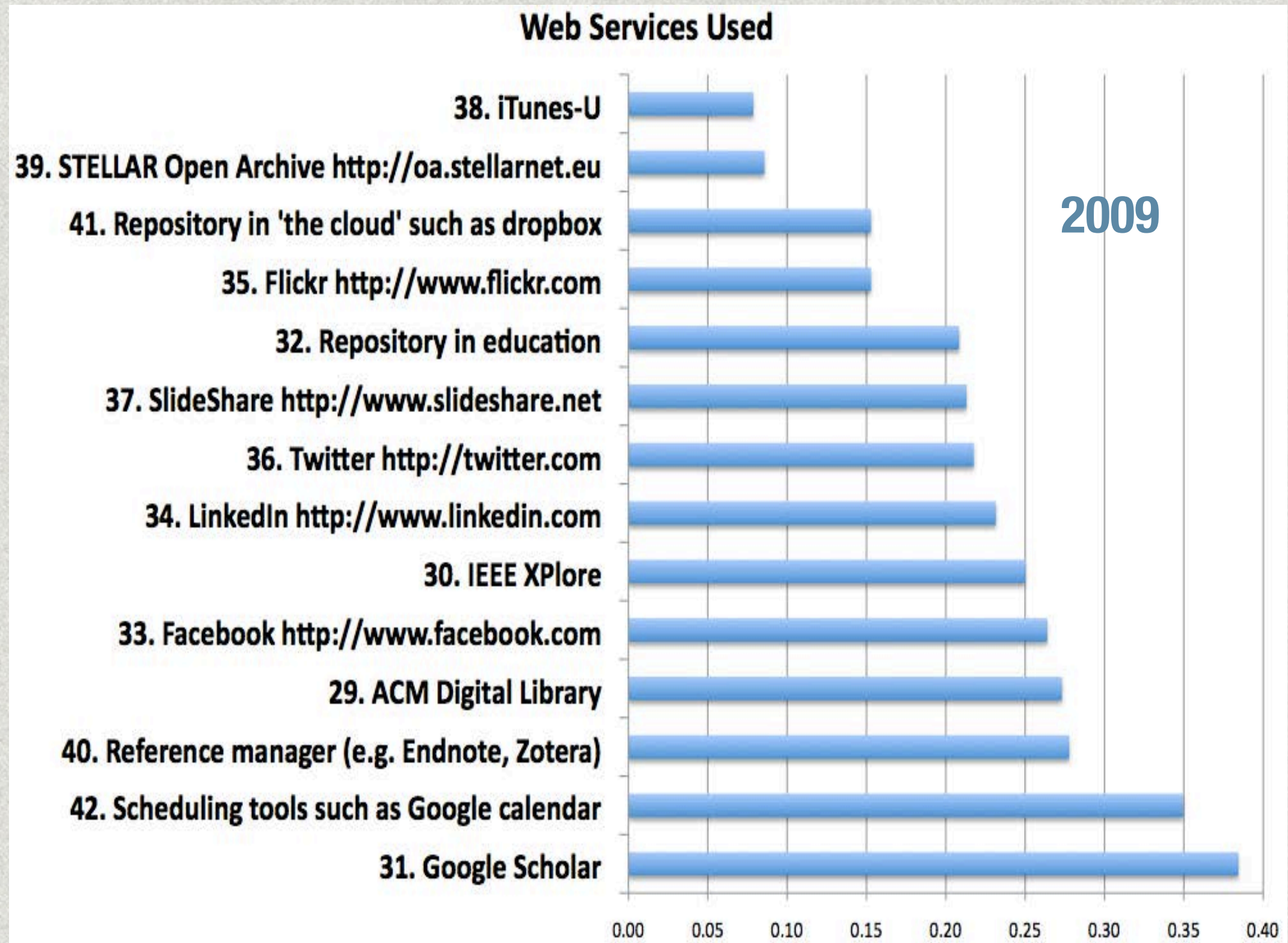
# DoCoP Questionnaire

## Importance of PhD Community Services





# DoCoP Questionnaire





# Science 2.0



# From Science 1.0 to 2.0

- *Understand Science 1.0 to shape Science 2.0*
- Science 1.0 is about contributing to
  - **common** understanding and formalization
  - **shared** knowledge and practices
  - **accepted** models and methodologies
  - innovative, disruptive or alternative solutions to **general** challenges and problems
  - ...



# From Science 1.0 to 2.0

- *Understand Science 1.0 to shape Science 2.0*
- Science 1.0 practices
  - Formalization, creation, investigation, validation
  - Generalization and reproducibility (universal)
  - Publication and presentation
  - Peer review and discussion in expert bodies and communities
  - Contribution to advances by constructing or relying on previous works and achievements
  - Citation-based recognition and promotion



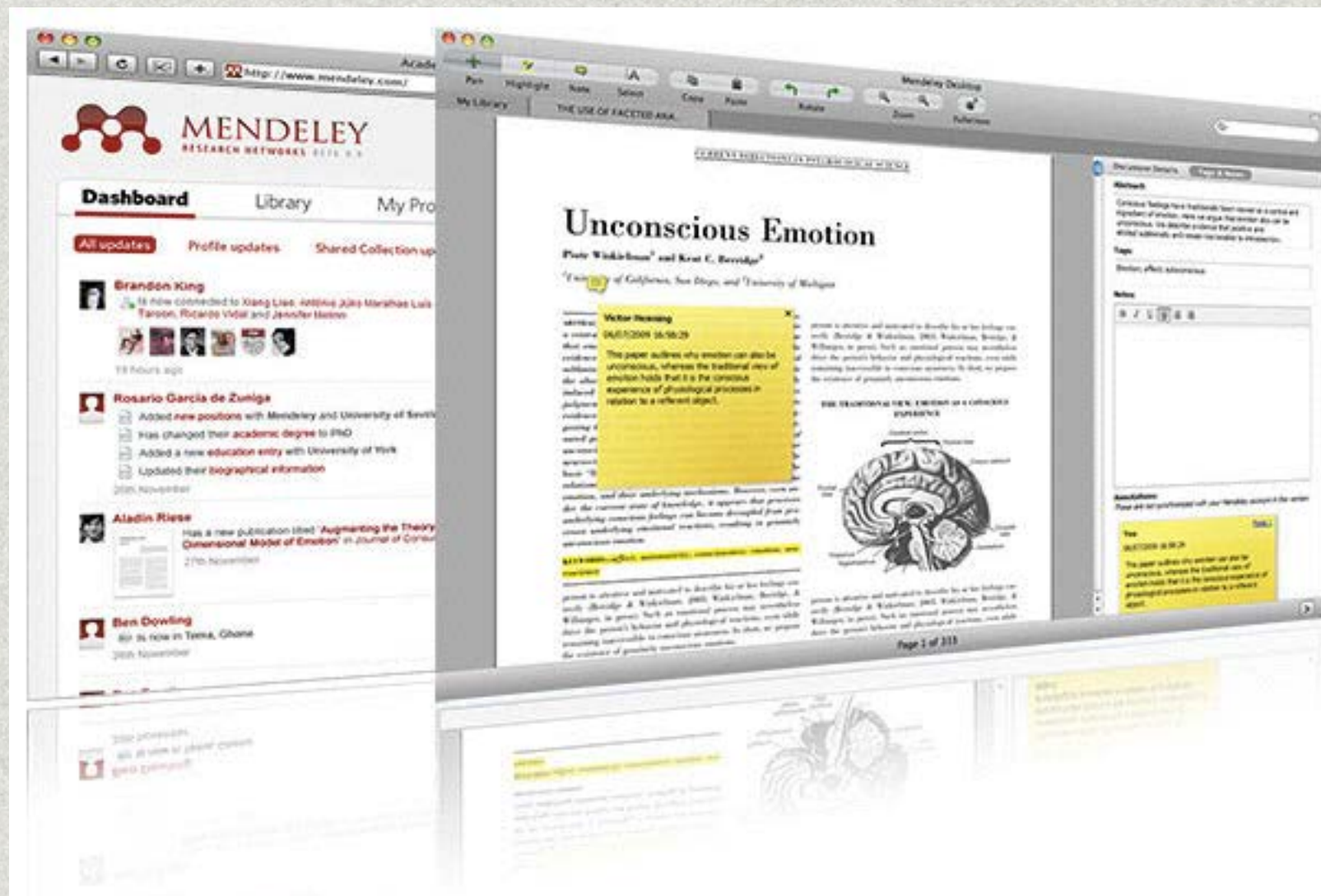
# From Science 1.0 to 2.0

Science 1.0 issues	Science 2.0 solutions
Disconnected discussions in closed communities (castes) of experts	Targeted discussions in large and open communities (blog, wiki, twitter, ...)
Overload of scientific production and relevant conferences	Search & recommendation for experts & results (google scholar, repositories, ...)
Slow and biased reviews, late publication, no possible revisions	Immediate reactions, comments and revision in interest groups (LinkedIn, ...)
Slow social network construction and personal recognition in silos	Smooth integration in various communities with quick ways to get influential roles
Sharing artifacts limited to papers (difficult access to data)	Sharing datasets, analysis methods and grids, visualization solutions
Research carried out individually or in small teams	Collaborative distributed works with more co-authoring opportunities
<b>Selective, publisher dictatorship, anachronistic, ...</b>	<b>Open, democratic, timely, ... Academic practice resilience !</b>



# Science 2.0 Platforms

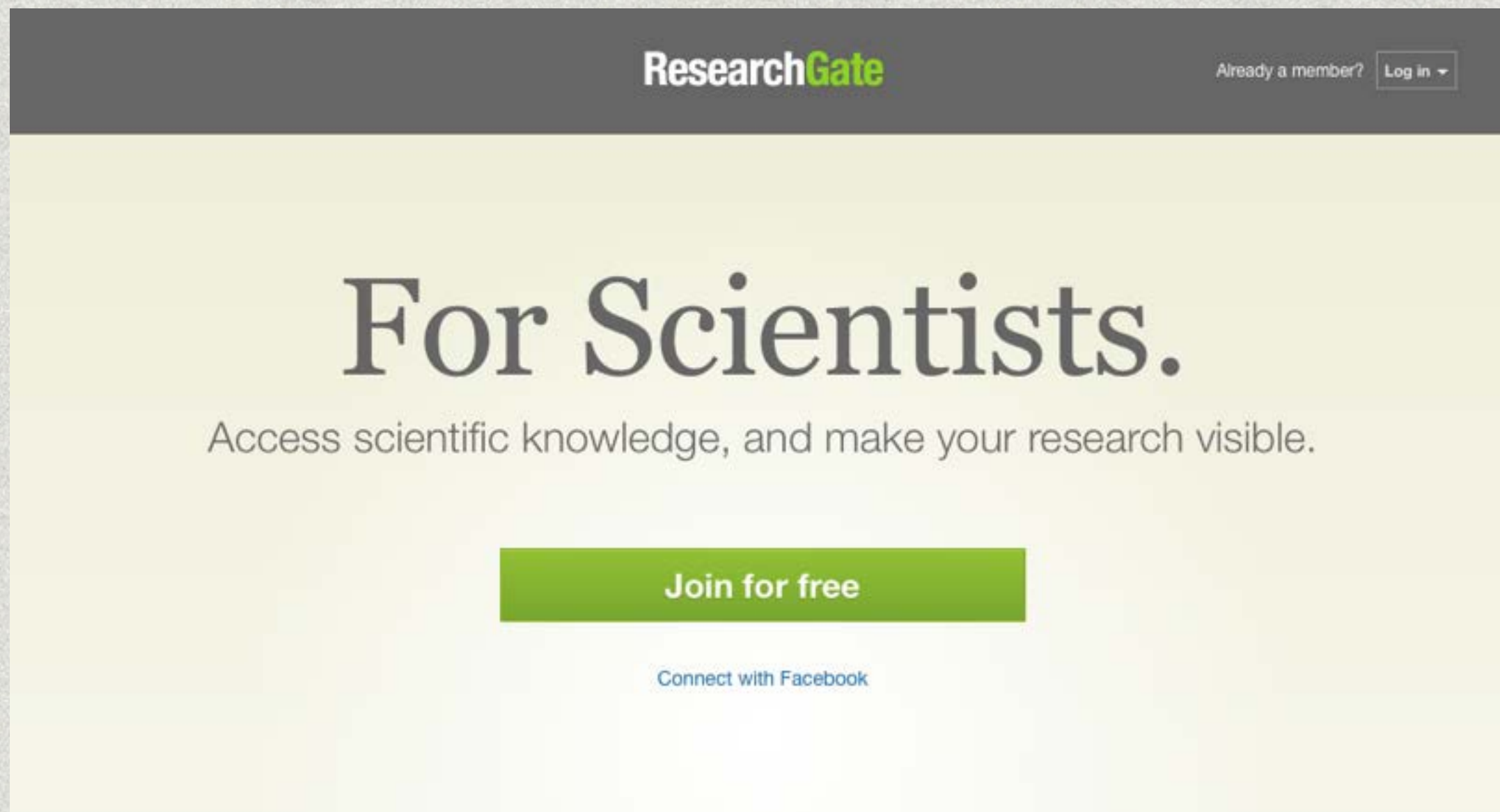
- **Mendeley:** Academic reference management software for researchers ([www.mendeley.com](http://www.mendeley.com))
- Most read versus most cited paper approach ;-)





# Science 2.0 Platforms

- **ResearchGate:** Automatic and social aggregation of papers (<http://www.researchgate.net>)






# Science 2.0 Platforms

- **GoogleScholar:** (<http://scholar.google.com>)

[Web](#) [Images](#) [More...](#) denis.gillet@epfl.ch



**Denis Gillet**

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Enhanced Learning, Transportation Systems  
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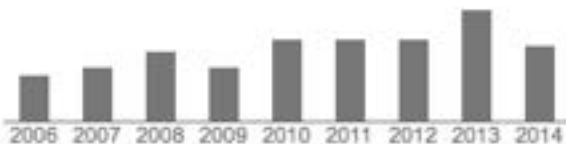
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☐ Title   1-20 Cited by Year

<input type="checkbox"/>	<a href="#">Collaborative web-based experimentation in flexible engineering education</a> D Gillet, AVN Ngoc, Y Rekik Education, IEEE Transactions on 48 (4), 696-704	157	2005
<input type="checkbox"/>	<a href="#">Information technology enhanced learning in distance and conventional education</a> HA Latchman, C Salzmann, D Gillet, H Bouzekri Education, IEEE Transactions on 42 (4), 247-254	155	1999
<input type="checkbox"/>	<a href="#">Introduction to real-time control using LabVIEW<sup>TM</sup> with an application to distance learning</a> C Salzmann, D Gillet, P Huguenin Int. J. Engng Ed 16 (5), 372-384	104	2000
<input type="checkbox"/>	<a href="#">Hands-On Laboratory Experiments in Flexible and Distance Learning</a> D Gillet, HA Latchman, C Salzmann, OD Crisalle Journal of Engineering Education 90 (2), 187-191	95	2001

## Google Scholar

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Year	Citations
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2007	150
2008	200
2009	180
2010	250
2011	280
2012	250
2013	350
2014	250

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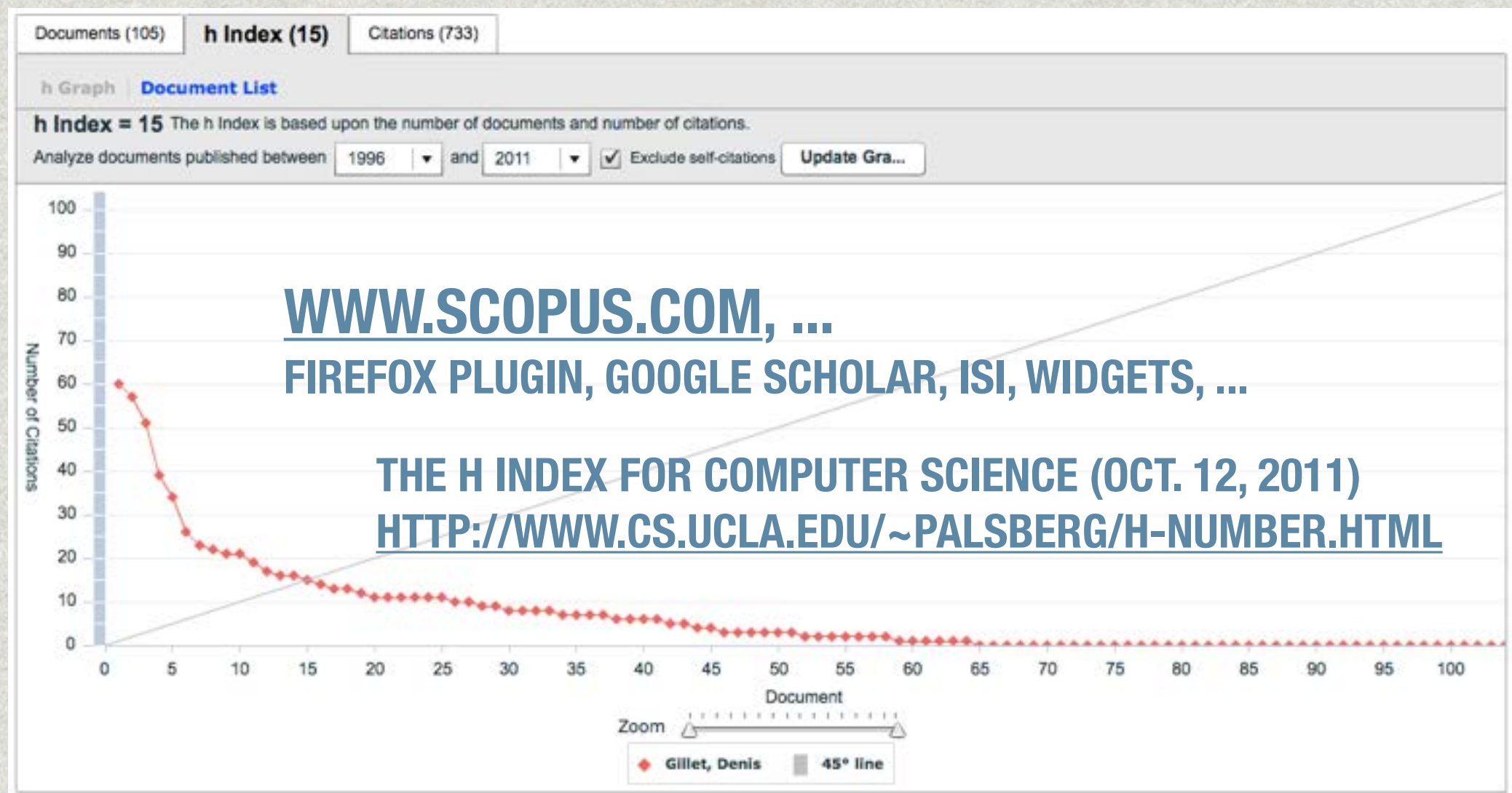


# **Shaping your online scientific identity**



# h-index


- A scientist has index  $h$  if  $h$  of his/her  $N_p$  papers have at least  $h$  citations each, and the other  $(N_p - h)$  papers have no more than  $h$  citations each





# ACM Digital Library


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Publication years	2002-2011
Publication count	19
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**2011**

1 [Trust-aware privacy control for social media](#)

 [Na Li, Maryam Najafian Razavi, Denis Gillet](#)  
May 2011 **CHI EA '11: Proceedings of the 2011 annual conference extended abstracts on Human factors in computing systems**  
**Publisher:** ACM  
Full text available:  [PDF](#) (422.94 KB)

**Bibliometrics:** Downloads (6 Weeks): 18, Downloads (12 Months): 85, Citation Count: 0

Due to the huge exposure of personal information in social media, a challenge now is to design effective privacy mechanisms that protect against unauthorized access to social data. In this paper, a trust model for social media is first presented. Based ...

**Keywords:** privacy, social media, trust, web 2.0


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# The Web 2.0 blog stars

- Bring traffic to your Science 1.0 channels

**ERIK DUVAL'S WEBLOG**  
Learning Objects, Metadata, Interoperability and ... me!

Home About

Type text to search here...

---

**Connected, open and always on...**

7 November 2011 erikduval 1 comment

Doing a talk on innovation at [Agfa](#) on Wednesday...

Think I will structure it along three themes:

- connected (social media, linked open data, ...),
- open (data, learning, science, publishing, ...) and
- always on (ubiquitous, mobile, ...).

Suggestions? Examples?

(Will share back... Duh!)

Uncategorized

---

**Believing in data**

2 November 2011 erikduval 4 comments

Wolfgang Greller made some [interesting comments](#) on his blog about an [interview with me on Learning Analytics](#).

I'm a bit puzzled by his remark that

“ Duval being a computer scientist strongly believes in the power of data and the revelations it holds.

---

**RSS feed**

**Tweeting...**

- Beetje later aangekomen in Utrecht voor [#owd11](#) Hoop dat ik dadelijk nog binnen mag op het [#edubloggersdiner](#) ... - 4 hours ago
- Straf: veel collega's hebben [#owd11](#) presentatie al klaar. Nog niet zeker hoe ik het aan zal pakken. Eerst nog een dag 'gewoon werk'... - 14 hours ago
- Connected, open and always on... <http://t.co/KI33DE0B> - 1 day ago
- @WWWayne Good luck with the talk - not that you'll need it... Doing one myself on learning analytics on Tues and one on innovation on Wed... - 1 day ago
- Things I notice during a walk: older woman eating half a french fry and feeding the other half to her dog. With mayonnaise. - 1 day ago

---

**Recent Comments**

carpetbomberz on [Believing in data](#)



# Slideshare and others

- Bring traffic to your Science 1.0 channels

The screenshot shows a Slideshare interface for a presentation by Denis Gillet. The main slide has a brown background and features logos for 'GO-LAB', 'ROLE', and 'EPFL ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE'. The title is 'Personal Learning Environments as Enablers for Connectivist MOOCs'. Below the title, it says 'Denis Gillet' and 'Information Technology Based Higher Education and Training, ITHET 2013 14:30-14:50, Friday, October 11, Antalya, Turkey'. At the bottom of the slide, there is a paper link: 'Paper: <http://infoscience.epfl.ch/record/188534?ln=en>'. To the right of the slide, there are buttons for 'Like', 'Share', and 'Save'. Below the slide, there is a navigation bar with arrows and a progress indicator showing '1 / 16'. On the right side of the interface, there is a sidebar with a list of presentations, including 'MOOCs', 'Personal Learning Environments as Enablers for Connectivist MOOCs', and 'Webinar SIG FLE'. At the bottom of the sidebar, there are counts for 'Documents' (0), 'Infographics' (0), and 'Videos' (0). At the bottom of the main interface, there is a blue bar with the text 'Personal Learning Environments as Enablers for Connectivist MOOCs' and '8467 views'. A red circle is drawn around the '8467 views' text.

Denis Gillet

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Presentations 16

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**Personal Learning Environments as Enablers for Connectivist MOOCs**

Denis Gillet

Information Technology Based Higher Education and Training, ITHET 2013  
14:30-14:50, Friday, October 11, Antalya, Turkey

Paper: <http://infoscience.epfl.ch/record/188534?ln=en>

1 / 16

Documents 0

Infographics 0

Videos 0

Personal Learning Environments as Enablers for Connectivist MOOCs 8467 views



# Discussion



# Contact & Links

- [denis.gillet@epfl.ch](mailto:denis.gillet@epfl.ch)
- <http://interaction.epfl.ch>
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- <http://www.role-project.eu>

