



# Enabling Trust and Privacy on the Social Web

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# Trust ?



## How trustworthy is what we browse on the Web ?

- One should know if information on a webpage comes from someone that he should trust or not
- Consequently, it could reduce information overload

## A need for socially-aware applications

- *«The webpage you're browsing is written by a Flickr contact of one of your LinkedIn connection»*

# Privacy ?



## Sharing information with trusted and intended parties

- Should everyone: know that I'm attending a meeting when I tweet it ? Access to my holidays pictures ? Know my exact mobile geolocation ?
- How to efficiently deal with identity fragmentation ?

## A need for fine-grained access rights to social data and networks

- Ideally, generated and evolving automatically based on user behaviours

# Our approach



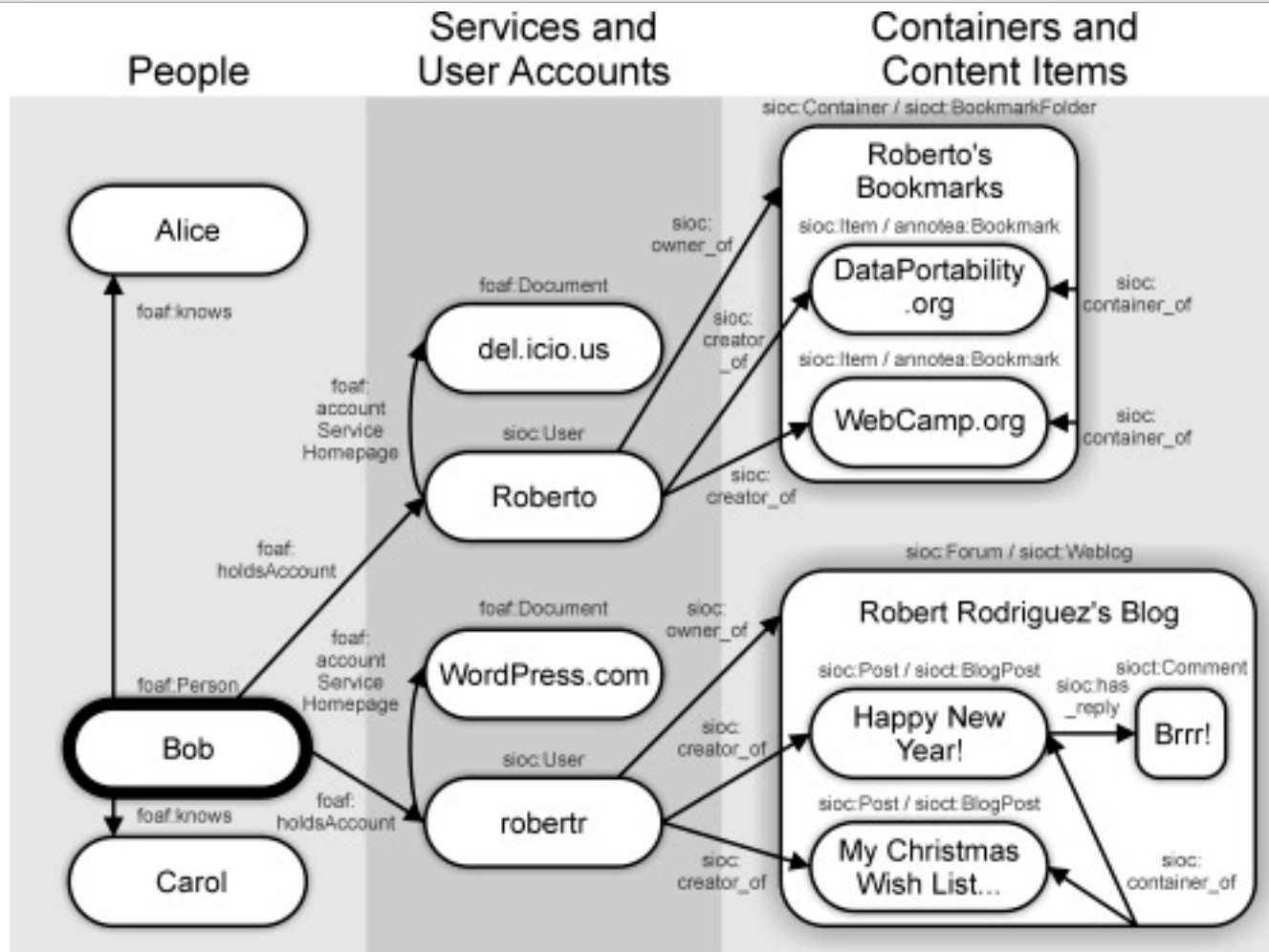
## Use existing Semantic Web technologies

- Leverage existing Social Networks and related Data to the Semantic Web (with FOAF and SIOC) to provide cross-platform trust and privacy capabilities on the Social Web
- Build policies based on this Semantic Web layer

## And not reinvent the wheel

- But use existing W3C standards as well as other community efforts

# A Semantic Web approach to the Social Graph using FOAF and SIOC



# Modeling social data using Semantic Web technologies



## Benefits of Distributed and Open Social Network capabilities thanks to Semantic Web technologies

- Use FOAF and SIOC to model networks and user-generated content so that to provide interoperability between social networks
- *«Allow access to this blog post only to people that are fellows on Flickr and Twitter and that have a blog I commented at least twice during the last 10 days»*

# Combining with any Semantic Web data



## The Semantic Web is a reality

- Billions of RDF triples (DBpedia, Geonames, Freebase ...) and applications (SearchMonkey, Zemanta ...)

Social Data exposed to FOAF and SIOC can be combined with any RDF data for advanced privacy settings

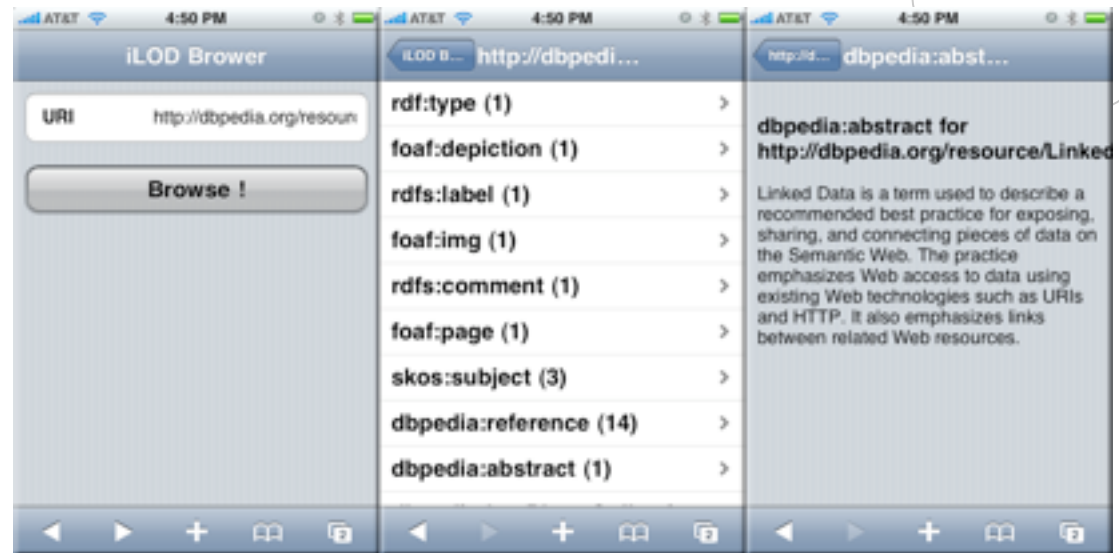
- *«Allow access to my resume only to people from companies defined as partners of mine in DBpedia»*

# The Semantic Web on the move



Semantic Web technologies can be used on any device

- iLOD - Linked Data Browser for iPhone
- IYOUIT - Mobile contextual information manager for Nokia Series 60





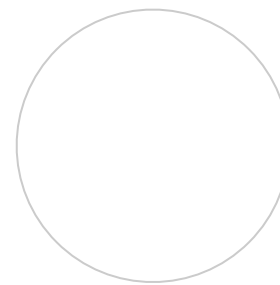
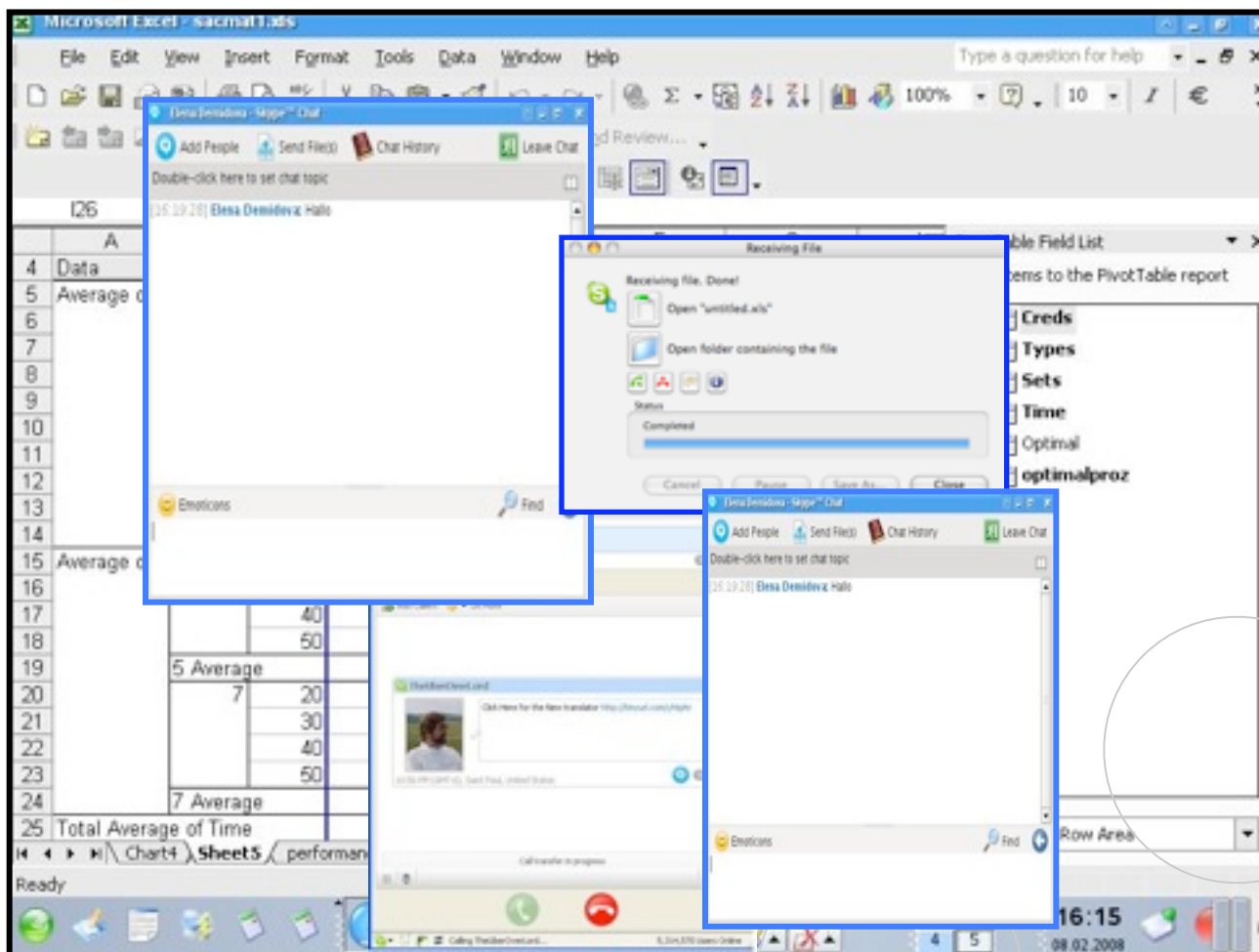
# Fine-grained policies and trust negotiation between services



## Build socially-aware policies using Semantic Web data and related technologies (SPARQL, RIF ...)

- Policies can be defined as evolving ones to take into account the evolving structure of your social network
- Combining Semantic Web technologies and OpenID / OAuth efforts
- *«Forward any Skype call during business hours to my mobile phone if the caller proves he's from my LinkedIn network»*

# Possible use-case



# Possible use-case



DERI members can only call me during business hours.

The screenshot shows a Windows desktop environment. In the background, there is an Excel spreadsheet with a PivotTable. Overlaid on the spreadsheet is a chat window titled 'Elections' with a search bar and a list of participants. A 'Receiving File' dialog box is open in the foreground, showing a progress bar and options to open a file or folder. The system tray at the bottom shows the time as 16:15 on 08.02.2008.



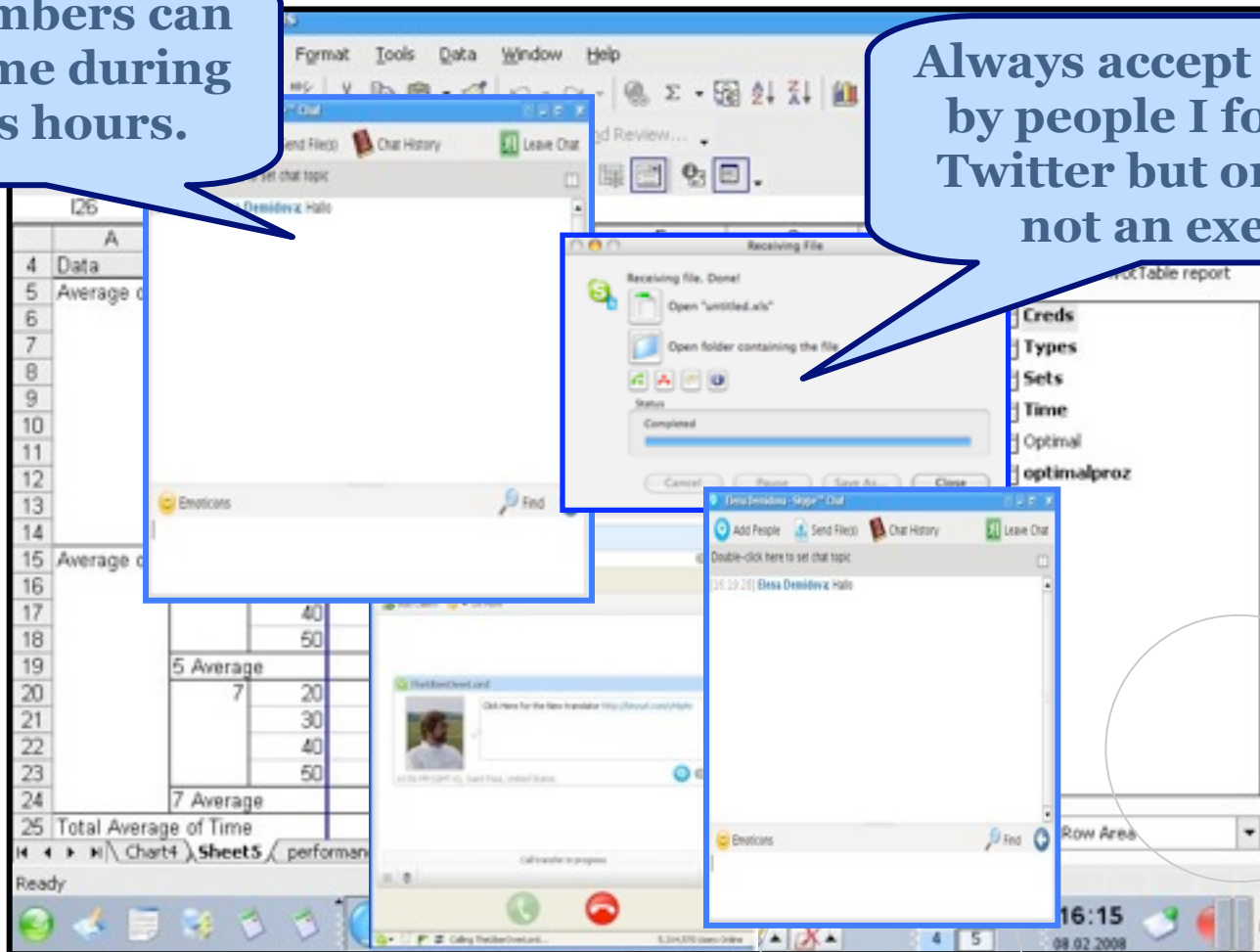
Enabling **networked** knowledge.

# Possible use-case



DERI members can only call me during business hours.

Always accept files sent by people I follow on Twitter but only if it's not an exe file.



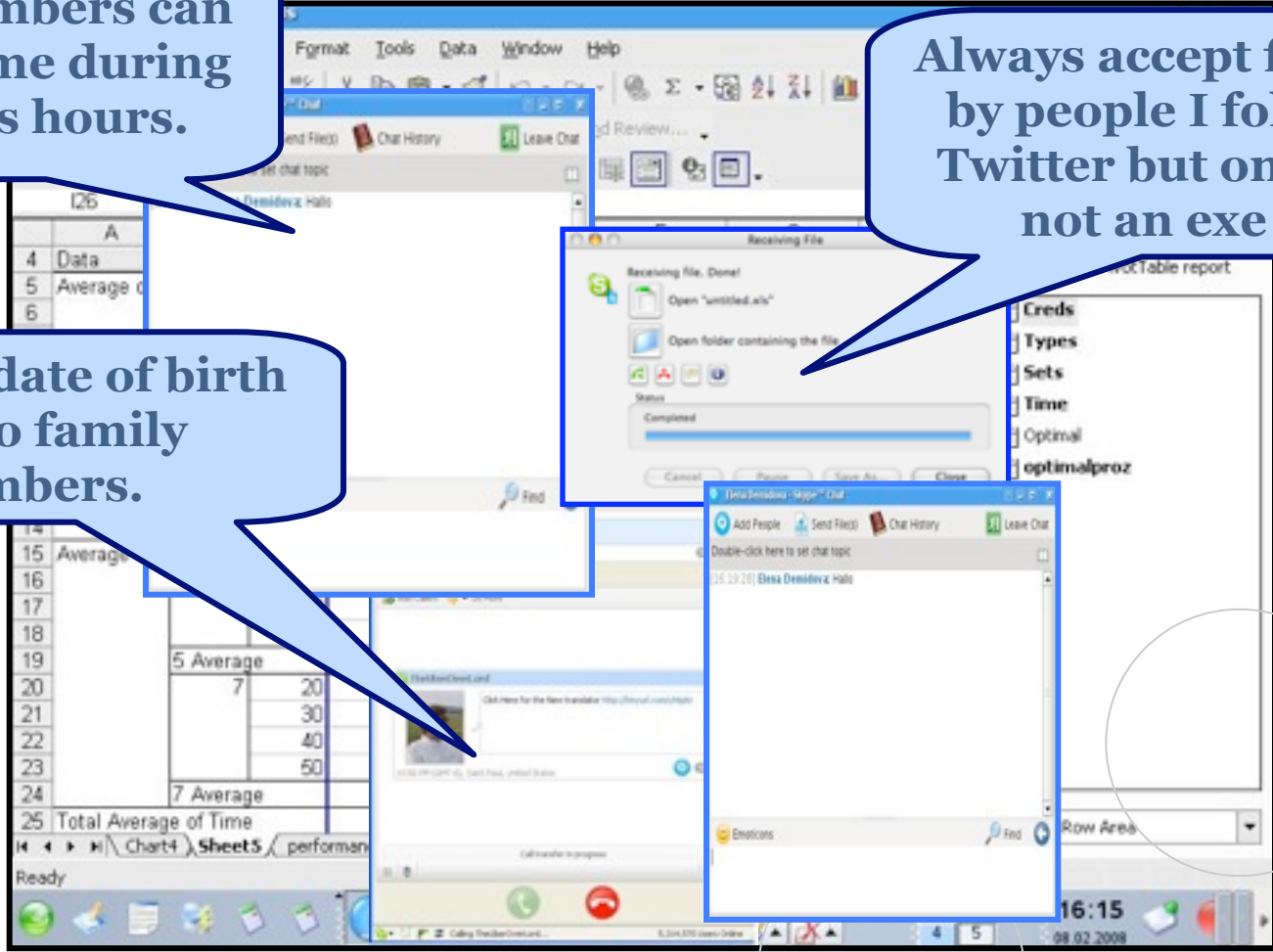
# Possible use-case



DERI members can only call me during business hours.

Always accept files sent by people I follow on Twitter but only if it's not an exe file.

Show my date of birth only to family members.



# Possible use-case

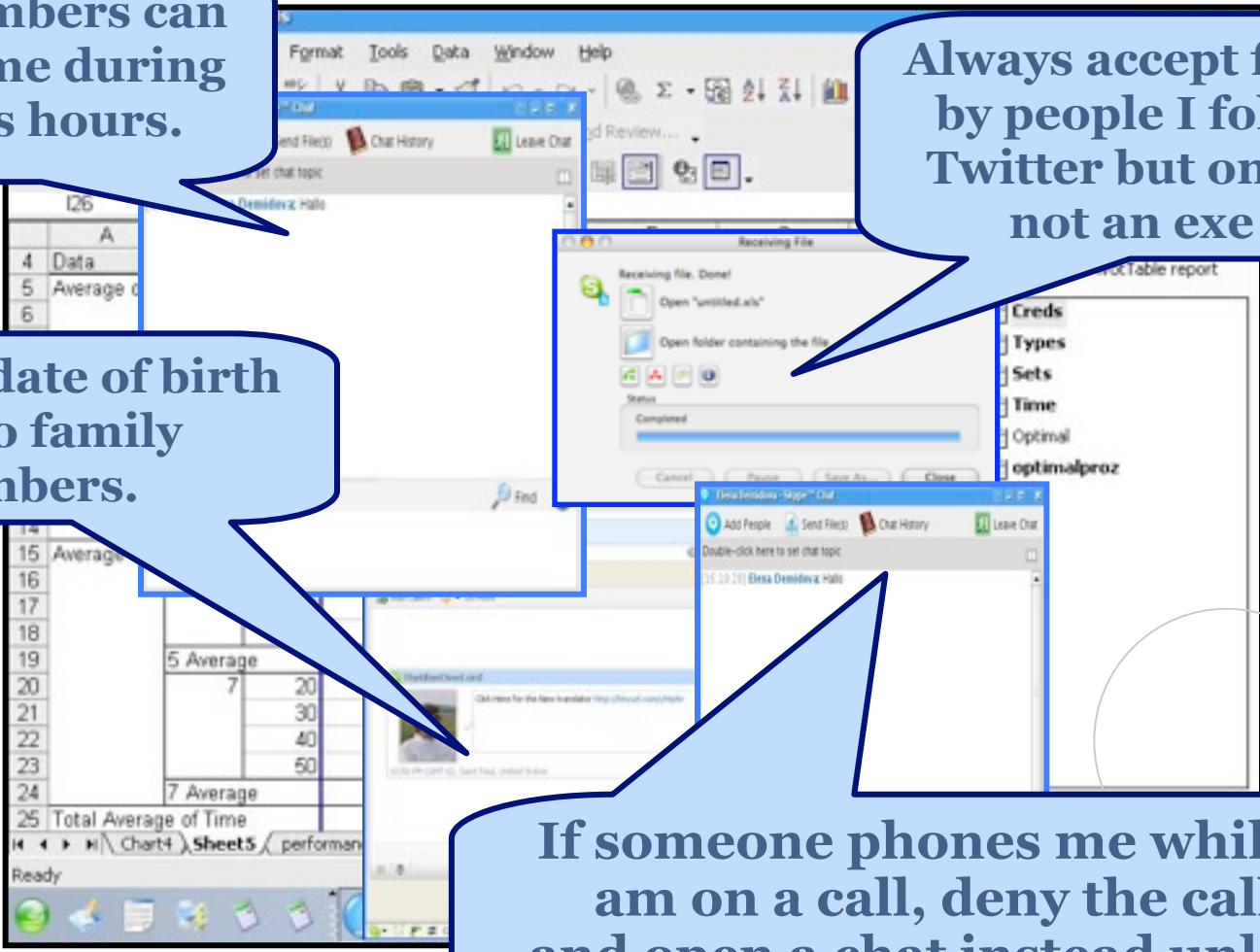


**DERI members can only call me during business hours.**

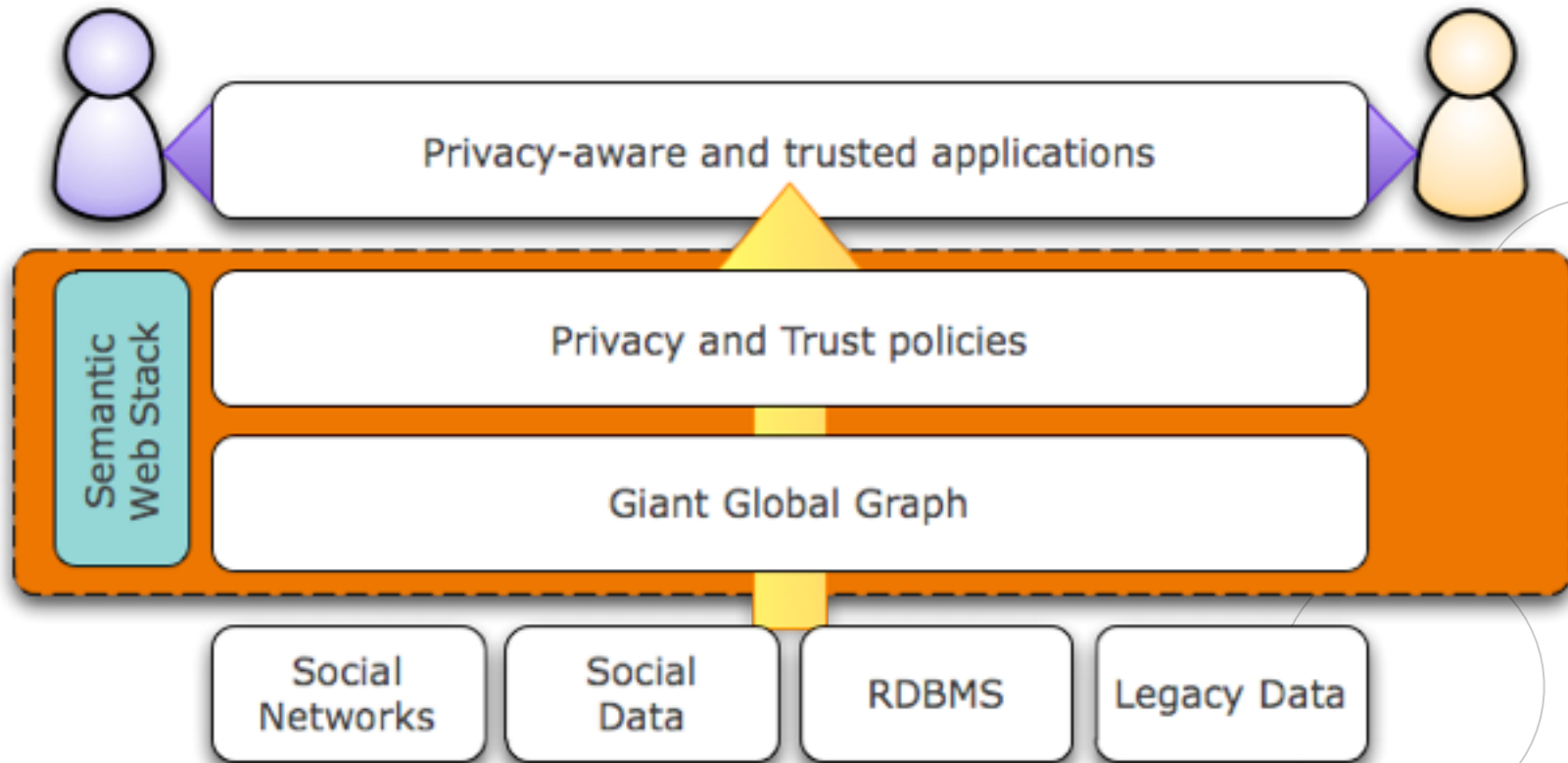
**Always accept files sent by people I follow on Twitter but only if it's not an exe file.**

**Show my date of birth only to family members.**

**If someone phones me while I am on a call, deny the call and open a chat instead unless it's one of my LinkedIn contact.**



# A complete stack for Trust and Privacy on the Social Web



# Summary



The technology stack and the theoretical bits are there

- Semantic Web technologies (FOAF, SIOC, SPARQL, RIF ...)
- Policies languages (Protune), rules, negotiation between agents

It's time to spread it to the works to ensure Trust and Privacy on Social Networks

- Without reinventing the wheel !



# Possible W3C roles



A «Social Web Primer» (e.g. from SWIG or a dedicated «Social Networking» or «Social Web» IG/WG)

- Mainly focused on SW technologies for open, distributed and interoperable Social Networks
- Introducing links from OpenID, OAuth and other community efforts to the previous stack

A «Trust and Privacy on Social Networks» XG

- To overview current state of the art and check what could / should be standardized within W3C

# Opportunities for related discussions



## SPOT2009 - Trust and Privacy on the Social and Semantic Web

- Workshop at the 6th European Semantic Web Conference, June 2009
- Submissions welcome !
- <http://spot2009.semanticweb.org>

# Thank you !



## Contact

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## More about us

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- L3S Research Center - <http://www.l3s.de>
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