HEPiX spring 2021 - CERN-Solid collaboration

Maria Dimou (CERN) & Jan Schill (IT University Copenhagen)

Overview

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Challenges of the Web

What the Web Stands For

- Universal
- Open for everyone
- Platform independent
- Place for innovation

Browser Wars

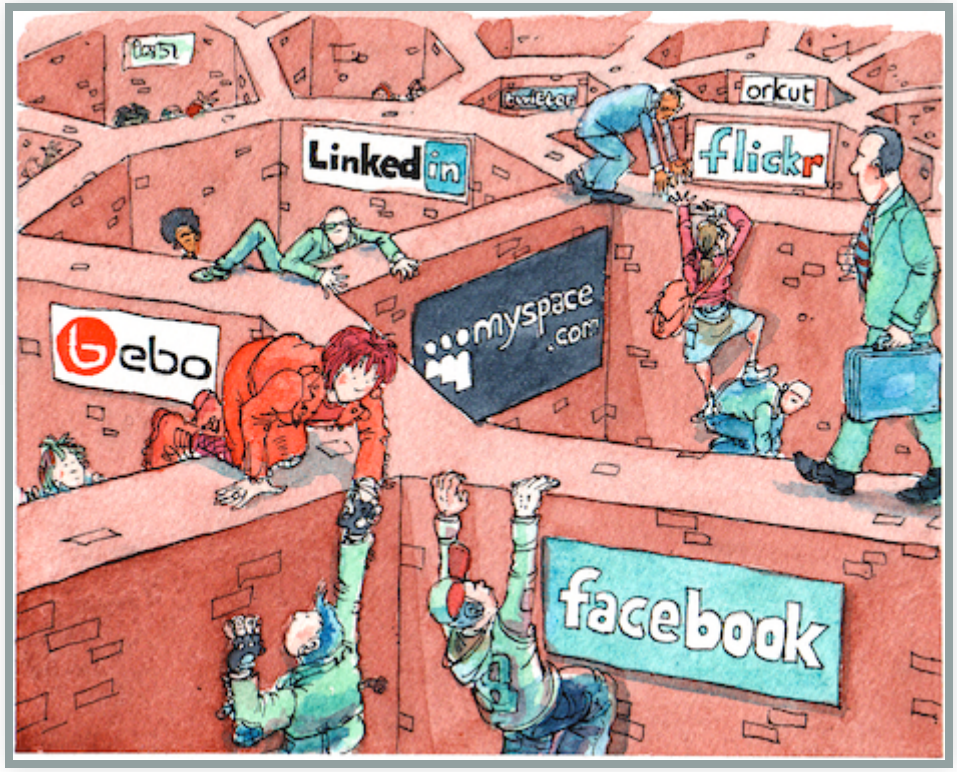
- Internet Explorer
- Netscape Classic vs. Internet Explorer
- One company in charge of the pace of the Web

Web Search Engine Wars

- Google
- One crawler deciding what is visible
- One company in charge of the searchability of websites

Platform Wars

- Facebook
- People’s content hidden away from the public
- One company in charge of the people’s content



Taken from: https://www.w3.org/DesignIssues/CloudStorage.html

What Is Solid?

Separating data from applications

What Is Solid?

- Announced in 2016 by Sir Tim Berners-Lee (TimBL) as **So**cial **Li**nked **D**ata.
- Re-decentralize the Web and empower users' control over their own data.
- Solid includes standards, missing from the original Web specifications, giving back to the users:
  - *ownership* of their *data*, private, shared, and public.
  - *choice* on the *storage* where these data reside and
  - *control* over who has *access* to them.
- TimBL co-founded inrupt to implement the Solid standards.

The Solid Pod

- Regular HTTP server
- Everything is a URI
  - Location for resources, containers, identity for agents, resource descriptions
- Storage support for
  - Any type of data
- Uses RESTful hierarchy
- New to the original Web idea:
  - Linked Data
  - Access control

The Solid Pod Continued

- A decentralized secure data vault to store **any type of data**.
- Data is stored as *Linked Data*, i.e. the resource gets its own HTTP URL on the Web
- When data is stored in someone's pod, they control who and what can access it.
- WebID examples:
  - https://timbl.inrupt.net/profile/card#me
  - https://dimou.solidcommunity.net/profile/card#me
  - https://janschill.net/profile/card#me

(*) Pod: a usually protective container or housing (from the Webster dictionary).

The Solid Servers

A Solid server is a Web server that stores users' pods, with support for access control.

1. **Node Solid Server (NSS):** *Open Source* server by the MIT Solid team since 2016.
2. **Enterprise Solid Server (ESS):** inrupt's commercial *Closed Source* alternative, based on Trellis. Launched in November 2020. Article.
3. **Community Solid Server (CSS):** *Open Source* project by Ghent University, paid for by inrupt, to rewrite NSS from scratch in TypeScript.
4. More servers like PHP or Ruby are in the making

Solid implementations

By start-up companies and government agencies. Most engaged countries, so far, are Belgium, the Netherlands and the UK.

- UK NHS (National Health System)
- Flanders' government applications
- Inrupt developments - sign-up and play

Activities summarised in the Solid newsletter and reported at the monthly Solid World Webinar.

The CERN-Solid code investigation project

1. **Review Solid specifications**
2. **Evaluate Solid implementations**
3. **Enrich Indico with Solid principles**
4. Recommendations on Solid adoption in CERN applications
5. Document challenges, advantages, gaps
6. Presentation of proceedings

Full project description
Comprehensive report on points 1 & 2
GitHub: janschill/cern-solid-code-investigation

References Current

- *The Solid project website:* https://solidproject.org
- *Jan's MSc Thesis description:* https://it-student-projects.web.cern.ch/projects/cern-solid-code-investigation
- *Thesis repo.:* https://github.com/janschill/cern-solid-code-investigation
- *CERN-Solid entry point:* http://solid.cern.ch
- *CERN-Solid chat:* https://gitter.im/cern-solid/community

References Historical

- *The original Web proposal:* https://www.w3.org/History/1989/proposal.html
- *When the CERN Web was Open Source (most data missing today):* https://weboffice.web.cern.ch/WebOffice/