Decentralised Citizen Engagement Technologies
For direct democracy and economic empowerment

W3C Team Review,
hhalpin@w3.org (former W3C D-CENT )
Background: Digital Social Innovation

D-CENT context
How does EC funding work?

- ...calls for funding (FP7, H2020) that come out every few years. W3C via ERCIM pursues these regularly. D-CENT gives ERCIM a budget contribution of 276,260 (half time employee at 90K per year 50% for 3 years with 90% overhead costs).

- ...as long-term alternatives and as such can maximize both research results and standardization work. Most Semantic Web European research is funded this way (over 1B euros+)

- ...the idea behind Future Internet was to build a “European Cloud” (1B euros+) but didn't work out. They convened Expert Groups to determine what to do. I pushed for decentralized bottom-up to funding 'the usual cast of characters' given Europe's high percentage of SMEs (Small-to Medium size enterprises).
What is digital social innovation?

- “A type of social and collaborative innovation in which innovators, users and communities collaborate using digital technologies to co-create knowledge and solutions for a wide range of social needs and at a scale and speed that was unimaginable before the rise of the Internet.”

- The European Commission asked for a study to be done to 'prove' there was grassroots innovation that was being ignored by existing R&D research and research innovations.

- Co-written by myself, proposal by Nesta was accepted and IRI took the subcontract due to issues with ERCIM that were unresolvable (at the time).

- Policy workshops in Brussels to spread awareness (see slides by Geoff Mulgan): http://www.slideshare.net/digitalsocialeu/geoff-mulgan-digital-social-innovation-policy-workshop
Creating a Survey

- http://digitalsocial.eu

- How many small (including non-profit) innovators are actually out there who want to change society?
RDF Survey Infrastructure

• All data is available as Linked Data: http://data.digitalsocial.eu
• Used Swirrl/FutureEverything's framework with Ruby on Rails but problems: lock-in, no internationalization, high rates, massive slowdown.
The DSI Map
Making sense of DSI Map
Data-Driven Innovation Analysis

• Lots of innovation but its disconnected (only 26% connected, .875 clustering coefficient). 3 large networks Open Hardware (%10), Democracy (%5), Open Data (%5) and Colloborative Economy (%7).

• Power-law scaling not yet achieved due to difference between super-connectors and long tail.

• Data Analysis published in ESWC2015 ”Crowdmapping Digital Social Innovation with Linked Data”

Decentralised and privacy-aware tools for democratic participation
D-CENT will...

• ...provide social movements with immediately useable digital tools for direct democracy and economic empowerment

• ...grow long-term alternatives to today’s highly centralised platforms and power structures

• ...bring together hackers, academics, and policy makers with a large number of citizen groups and democracy activists across Europe
D-CENT will...

- develop the building blocks of an open, decentralised, privacy-aware Digital Ecosystem

- implement a distributed and standardised identity management giving citizens control over their personal and social data

- enable real-time collective democratic deliberation and decision making, sharing of open data, and social digital currencies for the common good

- promote large-scale adoption of open standards, free software, open data and open APIs
Project Objectives

Service Ecology - Social

Decentralised tools
For networked democracy

Open social web standards

Decentralised open policy

Blockchain - social currency

Architecture

Prototypes

Agile / Lean

Spain

Finland

Iceland

Large-scale pilots
D-CENT principles:

- Citizen ownership of data and access to knowledge
- Security and privacy by design
- Federation, open source, open standards
- Inclusiveness, accessibility, collective governance
- Exploiting the network effect through mass user adoption and replicability across Europe
Open standards for the Social Web

- User control of personal data
- Decentralised ecosystem based on strong authentication, single sign-on, group and access control data
- Portability, identity management, federation

- Use of ActivityStreams 2.0 (W3C), Oauth 2.0/JWT/JWS (IETF).
A decentralised digital Ecosystem for Networked Democracy

Collective Deliberation by DemocracyOS and Your Priorities

+ Collaborative law making

Open Ministry

+ Real-time polling, open decision making API (Open Ahjo Helsinki), voting Appgree and Agora voting, crowdfunding integrating social feedback from citizens
Linking civic participation to sustainable models: Bitcoin for the social good
Project Organisation
WP7
Project Management

WP1
Methodology, Social Design, Evaluation

WP3
Economic Analysis
Building knowledge Commons

WP4
Technical Design and specifications

WP5
Lean and Agile Pilots

WP6
Dissemination, Standardization, Education, Exploitation

WP2
Data analysis, modeling, visualisation

Integration and federation

Federation, large scale tests WP5

Specification and development

Social and technical design iteration

Framewor ks and action research
Participant organisation map

- Nesta, UK (coordinator)
- CNRS–Centre d’économie de la Sorbonne, France
- Dyne.org Foundation, The Netherlands
- Forum Virium Helsinki, Finland
- International Modern Media Institute, Iceland
- NEO Europe
- Open Knowledge Foundation, UK
- Open University of Catalunya and Barcelona Media, Spain
- World Wide Web Consortium, France
Main outcomes

**Multidisciplinary research**
Collective intelligence, social currency, Identity, knowledge commons
(D2.1, D2.2, D3.1, D3.4, D4.1)

**Socio-economic Impact & Evidence**
(D7.1, WP1, WP3)

**Launching to the Public Dissemination Strategy**
(D6.1, D6.2, D6.3)

**Methodology, social requirements**
(D1.1, D1.2, D3.4)

**Technical requirements**
(D4.2)

**Technical Architecture design**
(D4.3)

**3 pilots and Beta prototypes**
(D5.1)
LeanUX and Agile methodology
From User requirements to technical requirements
Large scale pilots: Launch of beta platform Finland, Iceland, Spain

**Spain**
- Citizens Municipal Coalition
- Guanyem
- Podemos
  - New political party

**Finland**
- Helsinki
city
decision
- Open Ministry
- Helsinki
city public consultation service
- Social networking
- Social data store
- Authentication
- Privacy
  - aware
group
ware
- Blockchain
- Enabling grassroots response to Helsinki city decision
- Citizen Initiative Crowdsourcing tools
- Municipal citizen elections

**Iceland**
- Better Reykjavik
- Better Iceland
- Reykjavik Town Hall
- Your Priorities
- Social networking
- Social data store
- Authentication
- Privacy
  - aware
group
ware
- Blockchain
- Enabling grassroots response to Helsinki city decision
- Citizen Initiative Crowdsourcing tools
- Municipal citizen elections
Guanyem and Podemos

descarrega document en PDF

Abajo, En Castellano.

1085 Participants

1085 votes emesos

AFIRMATIU
96.68 % 1049 Votes

NEGATIU
2.49 % 27 Votes

ABSTENCIÓ
0.83 % 9 Votes
Helsinki- Crowdsourcing Tools for Citizens Initiatives

**Avoin Ministeriö**

**Anna oma ehdotuksesi**

*TOIMENPIDE- JA LAKIEHDOTUKSET (7)*

- **Lakiehdotus** turkistarhaamisen kielämyskseen
  - 68081 / 50000

- **Suora demokratia**
  - Keräys päätynyt: 01.03.2012 – 31.08.2012
  - 217 / 50000

- **Kansalaisaloite tasa-arvoisesta avioliittolaisesta**
  - 127004 / 50000

**Järkeä tekijänoikeuslakiin**
**Velkakattolaki**
**ENERGIAJUOMAT K16 - Kansalaisaloite**
Iceland: Better Reykjavik

NEWS

Betri Hverfi 2014

Innedingu hugmynda lauk 30. nóvember. Ails bárst um 500 hugmyndir og þökkum við kærlega fyrir þátttöku. Starrsfólk umhverfis- og skipulagssviðs fer nú yfir hugmyndirnar ...

Æfingatæki í Bakkalundi í Breiðholts

Æfingatækjjum fyrir skokkara og aðra sem vilja stunda holta hreyfingu úti við hefur verið komið fyrir í Bakkalundi í Breiðh...

Leikadstaða við Gufunesbæinn

Leikadstaða við Gufunesbæinn í Grafarvogi hefur verið stórþætt. Þar er búið að koma fyrir ails konar leiktæki...

IN OFFICIAL STATUS

Officially successful (154)  Officially failed (83)  Officially in progress (154)

Påa er orðið tímaski að eilthvað sé hugaða um Hverfisgötu
Gerði Hverfisgötuina að mannvælnið gøti. Hér er niðamyrkum og gangstæðir ílla farner. Vantan allan gróður og hýtt umhverfi. Og hana nú!!!
Validation with DemocracyOS

- A tool being developed by Argentinian programmers, hired in Uruguay by Neo (Evan Henshaw-Plath)
- Used by Guanyem (Podemos) to write their ethical code (1000 users)
Worked too well!

- Pia Mancini does TED talk with over million views based on her experience. Podemos wins Barcelona election.
- DemocracyOS leaves Neo, Evan Henshaw-Plath to Avaaz, and DemocracyOS gets Y Combinator funding!
Standards-based Software

ActivityStreams 2.0, OAuth, JWT/JWS
Stonecutter (OAuth provider)

- Manage/download (VCard) personal data.
- What apps are using OAuth to access your data.
- JSON Web Tokens (IETF JWT) with IETF JWS (JSON Web Signatures)
- [http://sso.dcentproject.eu](http://sso.dcentproject.eu)
- [https://github.com/d-cent/stonecutter](https://github.com/d-cent/stonecutter)
@context: "http://www.w3.org/ns/activitystreams",
published: "2015-12-18T14:25:40.240Z",
@type: "Add", --- used to customise the feed

object: {
  displayName: "Why?",
  @type: "Question" --- used to set the action text
}

actor: {
  displayName: "Jane Doe"
  URI: "http://www.dcentproject.eu/janedoe"
}

target: (optional) {
  url: "http://objective8.dcentproject.eu/objectives/41", (optional)
  displayName: "The Garden City Law Objective"
}
}
Mooncake (ActivityStreams 2.0 reader)

- Can read any ActivityStreams 2.0
- Reads AS2.0 as a REST API and tries to update based on ids and dates.
- [http://mooncake.dcentproject.eu](http://mooncake.dcentproject.eu)
- [https://github.com/d-cent/mooncake](https://github.com/d-cent/mooncake)
Objective8 (Voting)

- Trying to make it easy to launch community currencies using blockchains (to reward voting, etc.).
- Everything serialized as ActivityStreams 2.0
- [http://objective8.dcentproject.eu](http://objective8.dcentproject.eu)
- [https://github.com/d-cent/objective8](https://github.com/d-cent/objective8)
Freecoin (Not-yet-finished digital social currency)

• Trying to make it easy to launch community currencies using blockchains (to reward voting, etc.)

• [https://github.com/d-cent/freecoin/](https://github.com/d-cent/freecoin/)
• Trying to aim for a problem space where we see some natural mapping between federation and data ownership in high-value cases (decentralized direct democracy).

• Not based on *individual* ownership of data, but on *social* control of data.

• Not RDF-based at core. Based on Clojure (Java) backend and Javascript front-in, but use RDF for interchange and extensibility of AS2.0. Clojure probably a mistake due to maintenance issues.

• Demonstrates you can use existing well-deployed standards (OAuth 2.0) to manage personal data. Not using WebID+TLS, but everything has a WebID (URI). Trying to keep interop with existing serves easy using AS2.0 and OAuth.

• Would be able to convert to more Linked Data Platform and RDF if RDF Javascript libraries were mature (likely maturing now thanks to Crosscloud) and triple-stores faster.
Decentralization is naturally privacy invasive to passive global adversaries (NSA) through traffic analysis. Mix networking is necessary (See PANORAMIX EC project (4 million euros) led by Uni. Edinburgh. More of a long-term project, but better re high latency messaging than even Tor and interest from MIT Crypto research group.

Decentralized security requires crypto, but public key usage in PGP is a usability and security failure. Usability: How can we attach keys to users in a natural way? Security: Keys need to change and be updated (key size, post-quantum concerns). Can we audit and make key discovery privacy-enhancing? Yet D-CENT and Social WG do not have security expertise. See NEXTLEAP Project led by INRIA and George Danezis at UCL. Could this help Crosscloud or the Social WG?

Why would people use decentralized systems? What sorts of problems fit to decentralization? Social-economic incentives? Are we construing social-economics issues as technical ones?

Management of EC Projects: Projects are to ERCIM, no control by W3C management or domains. How does this kind of work with standardization?

How can research projects help W3C with standards? Should they? What is a "research" project anyways?
Thank you! Next steps for W3C? D-CENT?

Website: www.dcentproject.eu

Twitter: @dcentproject

Vimeo: vimeo.com/dcentproject

Slideshare: slideshare.net/dcentproject

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