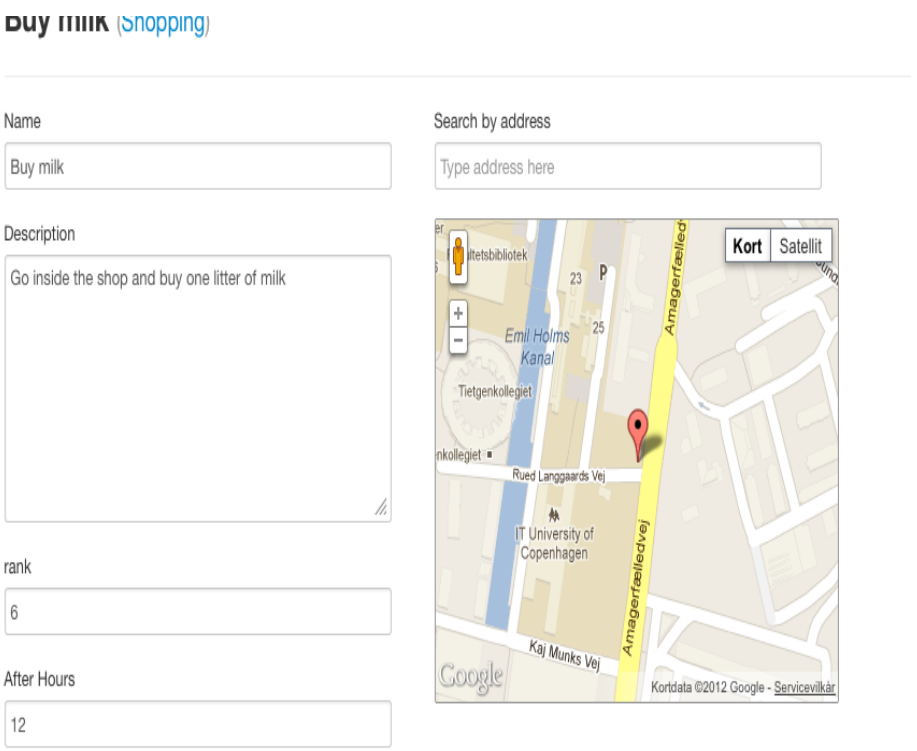
10:00-10:45 research task pitches
10:55-11:40 circulating projects in Atrium

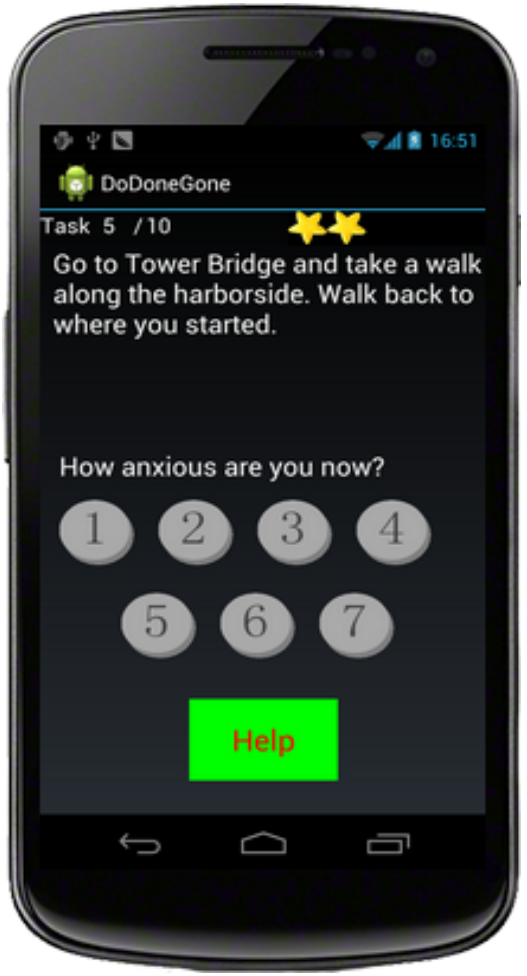
12:20-13:55 group building in AUD3

Forskningsprojekt og akademisk formidling – 3

Research task pitching

John Paulin: DoDoneGone



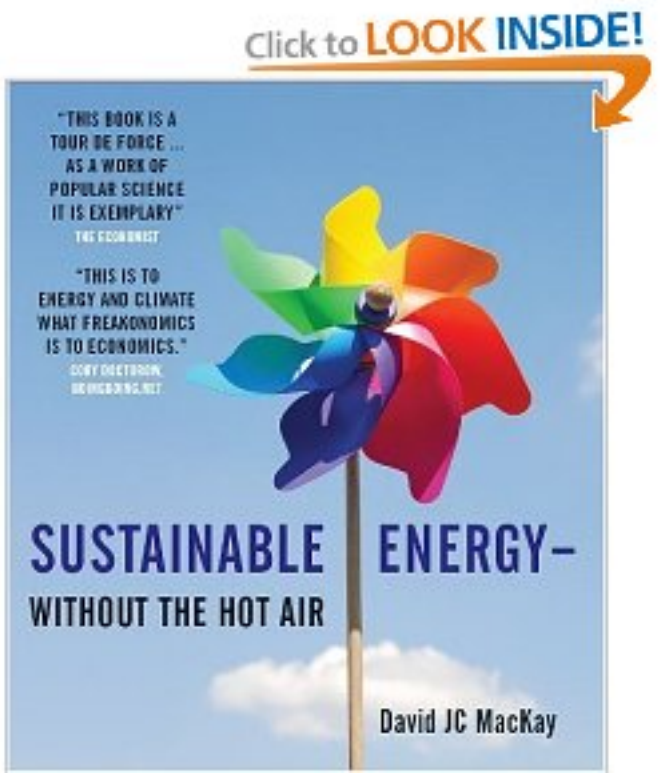


Dr. M. Ali Babar: Software Systems for Sustainability - Potential Projects

- SURGE - Sustainable Utilization of Resources in Global Software DevelopmEnt
- RECHARGE - REquirements of ICT Supported Sustainable beHAvioRal ChangE
- SMART - Software systeMs for sustainAble pRacTices – Universities and/or Public Sector

Laura Watts (video)

David MacKay's book *Sustainable energy without the hot air* presents data on energy consumption, climate, seasonal variations, the structure of the electricity network, and so on, to assess the feasibility of covering future energy needs by various renewable sources.



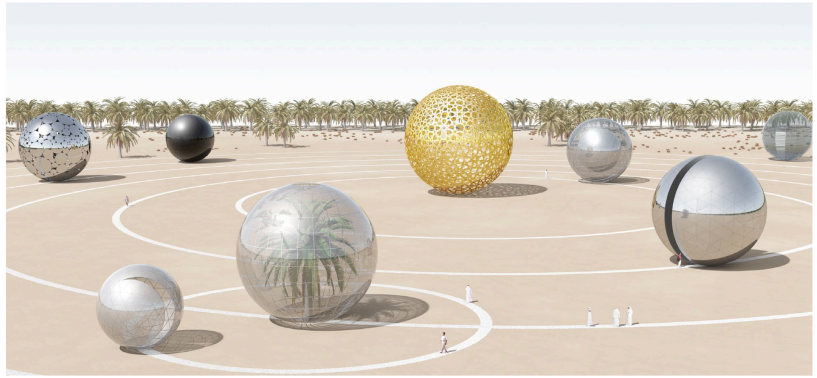
Most of his data are for the UK.

- Find and show such data **for DK**
- First, find out what is **relevant**

Peter Sestoft
sestoft@itu.dk

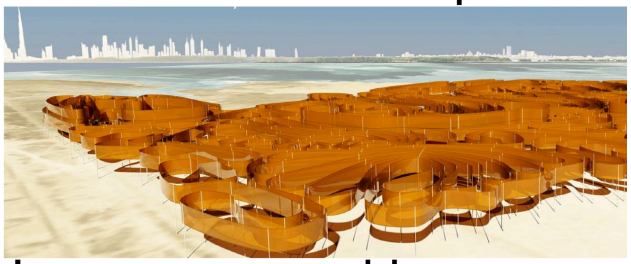
Lea Schick (skype: leaschick)

Art and Renewable Energy



Integrate energy into urban life

Public acceptance



Innovate renewable energy

Does energy production have to be only technical?

Agil udvikling og brugerinddragelse

Udvikling af software med brug af agile metoder vinder større og større udbredelse.
Et karakteristika ved den agile metoder er meget korte udviklingscyklusser, hvor mindre dele af det totale system færdigudvikles. Et andet karakteristika er at brugerne ikke er tænkt ind i udviklingsprocessen.
Brugerperspektivet varetages af en kunderepræsentant, der ikke nødvendigvis er den samme som slutbrugeren.

I et forsøg på at imødegå det manglende brugerperspektiv og samtidig overholde principperne for agil udvikling, har vi eksperimenteret med at bruge et umodereret online værktøj, der er skabt til usability tests til at indsamle brugerinput til user stories.
I eksperimentet bliver brugerne bedt om at fortælle, hvordan de synes at systemet skal designes - det er vel at mærke, et system der ikke eksisterer endnu. Dette sker ved hjælp af et simpelt input, der beder brugerne om at udføre opgaven: "prøv at fortælle hvordan ..."
Indtil nu er der 9 videoer tilgængelige hvor brugerne fortæller. Videoerne er ikke analyseret endnu, men stilles til rådighed for de der har lyst til at skrive om projektet.

De spørgsmål man kan stille er:
Videnstyper og Udvikling
- hvilken viden er det man får fra brugerne?
- er denne viden egnet til at indgå i en udviklingsproces?
- er den egnet til at bruges i forbindelse med user stories?
- hvilken viden får vi ikke adgang til?

Fortælling
- er der forskel på brugernes fortælle struktur?
- er der noget der ikke virker i den måde vi har "promptet" brugerne til at fortælle?
- er der noget der mangler?

Velfærdsteknologi til ældre

- **Studier af ikke-sproglige udtryk**: Demente og tale-besværede ældre som deltagere I etnografiske studier – hvordan kan man repræsentere brugere, der ikke har et sprog?
- **Projektreview**: Hvad er 'velfærdsteknologi til ældre' I designpraksis omkring brugerdrevet innovation og design af ældreområdet?
- **Litteraturreview**: Hvad er 'velfærdsteknologi til ældre' i forskningslitteratur om emnet? – Hvem er 'de ældre'? Hvilke teknologier? Hvad er velfærd?

MARIE ERTNER

Energy in computer games:
a cultural/media studies project

- Energy management essential game mechanics
- What are the existing game metaphors for energy consumption and use?
- What do they have to do with real life?
- Why are they like that? Mindset behind?
- Can we learn something from them and apply to real life?

Sebastian Büttrich

Philippe Bonnet: Know More, Use Less?

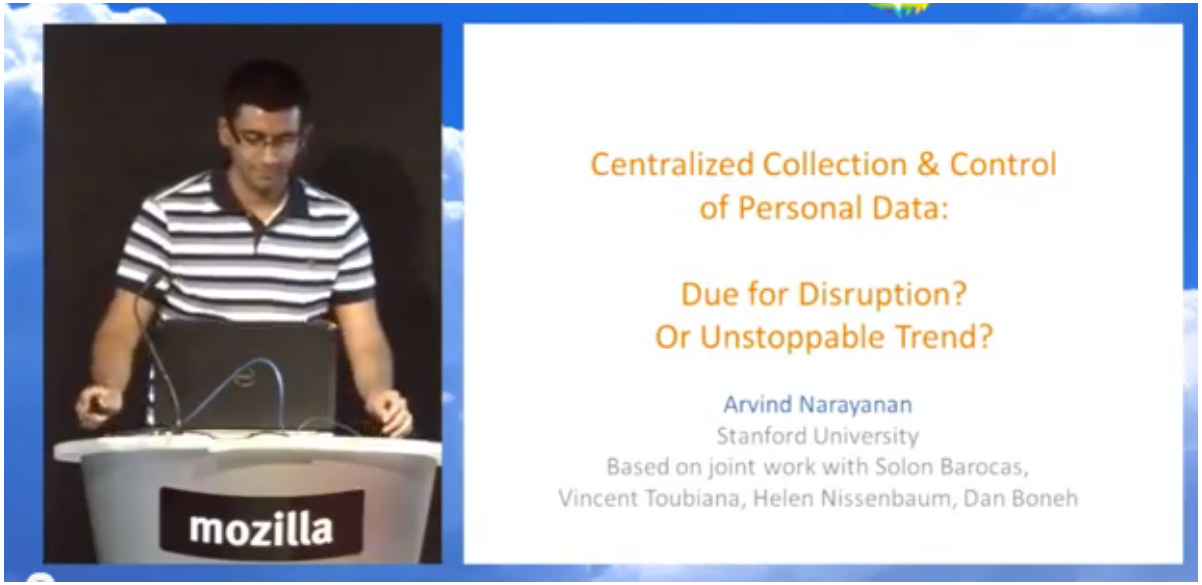
http://www.simpleenergy.com/

Gadgetizing PV for Developing Countries

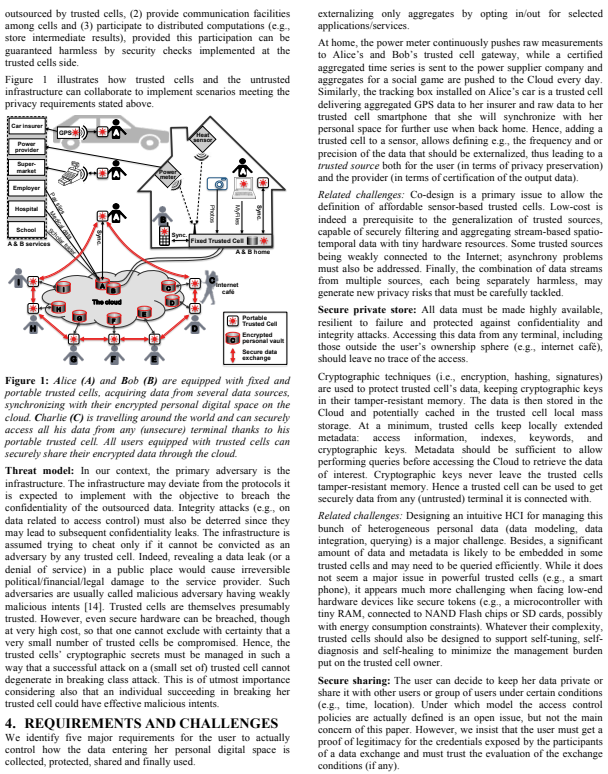
http://www.solenergibox.dk

Ownership Challenges of the Decentralized Prosumer Grid

The role of personal data in the Energy Sector



http://www.youtube.com/watch?v=8gvjwgGJuHA



outsourced by trusted cells, (2) provide communication facilities among cells and (3) participate to distributed computations (e.g., store intermediate results), provided this participation can be guaranteed harmless by security checks implemented at the trusted cells side.

Figure 1 illustrates how trusted cells and the untrusted infrastructure can collaborate to implement scenarios meeting the privacy requirements stated above.

Figure 1: ***Alice (A) and Bob (B) are equipped with fixed and portable trusted cells, acquiring data from several data sources, synchronizing with their encrypted personal digital space on the cloud. Charlie (C) is travelling around the world and can securely access all his data from any (unsecure) terminal thanks to his portable trusted cell. All users equipped with trusted cells can securely share their encrypted data through the cloud.***

Threat model: In our context, the primary adversary is the infrastructure. The infrastructure may deviate from the protocols it is expected to implement with the objective to breach the confidentiality of the outsourced data. Integrity attacks (e.g., on data related to access control) must also be deterred since they may lead to subsequent confidentiality leaks. The infrastructure is assumed trying to cheat only if it cannot be convicted as an adversary by any trusted cell. Indeed, revealing a data leak (or a denial of service) in a public place would cause irreversible political/financial/legal damage to the service provider. Such adversaries are usually called malicious adversary having weakly malicious intents [14]. Trusted cells are themselves presumably trusted. However, even secure hardware can be breached, though at very high cost, so that one cannot exclude with certainty that a very small number of trusted cells be compromised. Hence, the trusted cells' cryptographic secrets must be managed in such a way that a successful attack on a (small set of) trusted cell cannot degenerate in breaking class attack. This is of utmost importance considering also that an individual succeeding in breaking her trusted cell could have effective malicious intents.

4. REQUIREMENTS AND CHALLENGES

We identify five major requirements for the user to actually control how the data entering her personal digital space is collected, protected, shared and finally used.

Controlled collection of sensed data: The targeted user(s) should be the unique recipient(s) of raw sensed data and would accept externalizing only aggregates by opting in/out for selected applications/services.

At home, the power meter continuously pushes raw measurements to Alice's and Bob's trusted cell gateway, while a certified aggregated time series is sent to the power supplier company and aggregates for a social game are pushed to the Cloud every day. Similarly, the tracking box installed on Alice's car is a trusted cell delivering aggregated GPS data to her insurer and raw data to her trusted cell smartphone that she will synchronize with her personal space for further use when back home. Hence, adding a trusted cell to a sensor, allows defining e.g., the frequency and or precision of the data that should be externalized, thus leading to a *trusted source* both for the user (in terms of privacy preservation) and the provider (in terms of certification of the output data).

Related challenges: Co-design is a primary issue to allow the definition of affordable sensor-based trusted cells. Low-cost is indeed a prerequisite to the generalization of trusted sources, capable of securely filtering and aggregating stream-based spatio-temporal data with tiny hardware resources. Some trusted sources being weakly connected to the Internet; asynchrony problems must also be addressed. Finally, the combination of data streams from multiple sources, each being separately harmless, may generate new privacy risks that must be carefully tackled.

Secure private store: All data must be made highly available, resilient to failure and protected against confidentiality and integrity attacks. Accessing this data from any terminal, including those outside the user's ownership sphere (e.g., internet café), should leave no trace of the access.

Cryptographic techniques (i.e., encryption, hashing, signatures) are used to protect trusted cell's data, keeping cryptographic keys in their tamper-resistant memory. The data is then stored in the Cloud and potentially cached in the trusted cell local mass storage. At a minimum, trusted cells keep locally extended metadata: access information, indexes, keywords, and cryptographic keys. Metadata should be sufficient to allow performing queries before accessing the Cloud to retrieve the data of interest. Cryptographic keys never leave the trusted cells tamper-resistant memory. Hence a trusted cell can be used to get securely data from any (untrusted) terminal it is connected with.

Related challenges: Designing an intuitive HCI for managing this bunch of heterogeneous personal data (data modeling, data integration, querying) is a major challenge. Besides, a significant amount of data and metadata is likely to be embedded in some trusted cells and may need to be queried efficiently. While it does not seem a major issue in powerful trusted cells (e.g., a smart phone), it appears much more challenging when facing low-end hardware devices like secure tokens (e.g., a microcontroller with tiny RAM, connected to NAND Flash chips or SD cards, possibly with energy consumption constraints). Whatever their complexity, trusted cells should also be designed to support self-tuning, self-diagnosis and self-healing to minimize the management burden put on the trusted cell owner.

Secure sharing: The user can decide to keep her data private or share it with other users or group of users under certain conditions (e.g., time, location). Under which model the access control policies are actually defined is an open issue, but not the main concern of this paper. However, we insist that the user must get a proof of legitimacy for the credentials exposed by the participants of a data exchange and must trust the evaluation of the exchange conditions (if any).

Shale Gas Futures

Some analysts expect that shale gas will greatly expand worldwide energy supply.[3] China is estimated to have the world's largest shale gas reserves.[4] A study by the Baker Institute of Public Policy at Rice Energy Information Administration ased shale gas production in the US and Canada could help prevent Russia and Persian Gulf countries from dictating higher prices for the gas they export to European countries.[5] The Obama administration believes that increased shale gas development will help reduce greenhouse gas emissions.[6] Some studies have alleged that the extraction and use of shale gas may result in the release of more greenhouse gases than conventional natural gas,[7][8] although a post on the petroleum industry front-group *Energy in Depth*[9] blog has criticized the Howarth paper one of these for relying on implausibly high leakage rates and misstating the global warming potential of methane.[10][11] Other recent studies point to high decline rates of some shale gas wells as an indication that shale gas production may ultimately be much lower than is currently projected.[12][13]

http://en.wikipedia.org/wiki/Shale_gas

It plays an increasing role in the supply of gas in the United States since the beginning of the xxi century . The success encountered by this new type of operating the United States is underpinned by heavy subsidies and by local law, which allows the owner to take better advantage of the resources of the subsoil in France [1] .

The shale gas potential also interested several governments of Canada, Europe, Asia and Australia. Some analysts also expect that shale gas could significantly increase global energy supplies . A study by the *Baker Institute of Public Policy* of Rice University , the increased production of shale gas in the United States and Canada could help prevent Russia , the Qatar and Iran dictate price high for the gas they export to Europe .

However, seismic risks and problems environmental noted or implied, including the pollution of air and water, cause a strong distrust of the public and some governments vis-à-vis the resource.

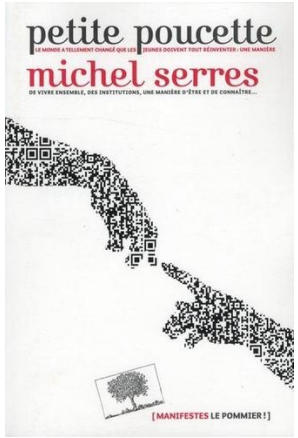
Because of these conflicting interests, the topic is the subject of controversy through blogs or events, as well as a lobbying on the part of companies and environmental NGOs involved.

http://fr.wikipedia.org/wiki/Gaz_de_schiste

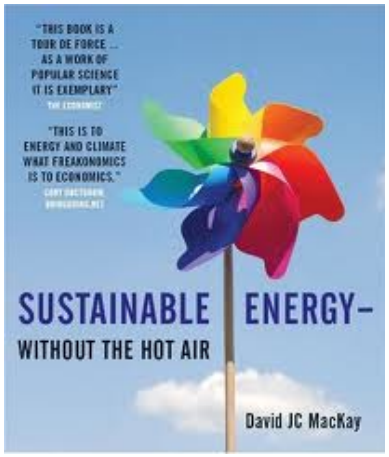
Jysk gaseventyr truer drikkevandet

P1 Dokumentar 23. august 2012 kl. 14:03 på P1

Hør udsendelsen (59:00)



Energy Transitions



Resten af dagen …

10:55-11:40 circulating projects in Atrium

12:20-13:55 group building in AUD3