Adding a Social Dimension to the Web of Things

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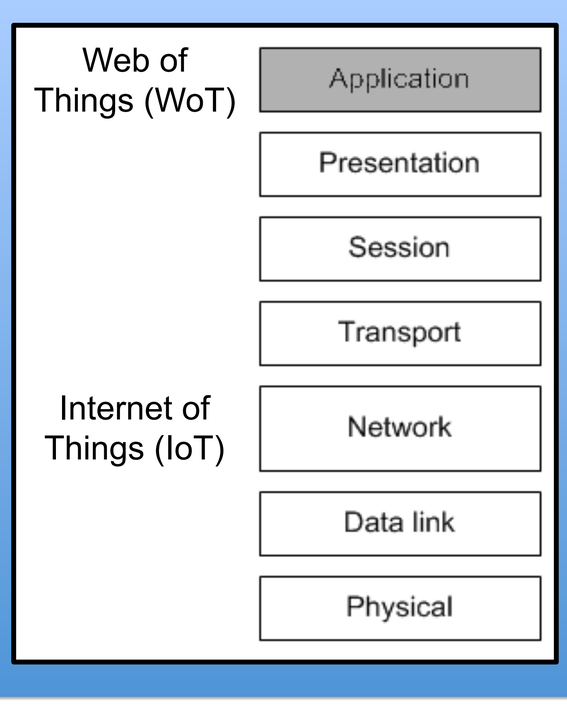
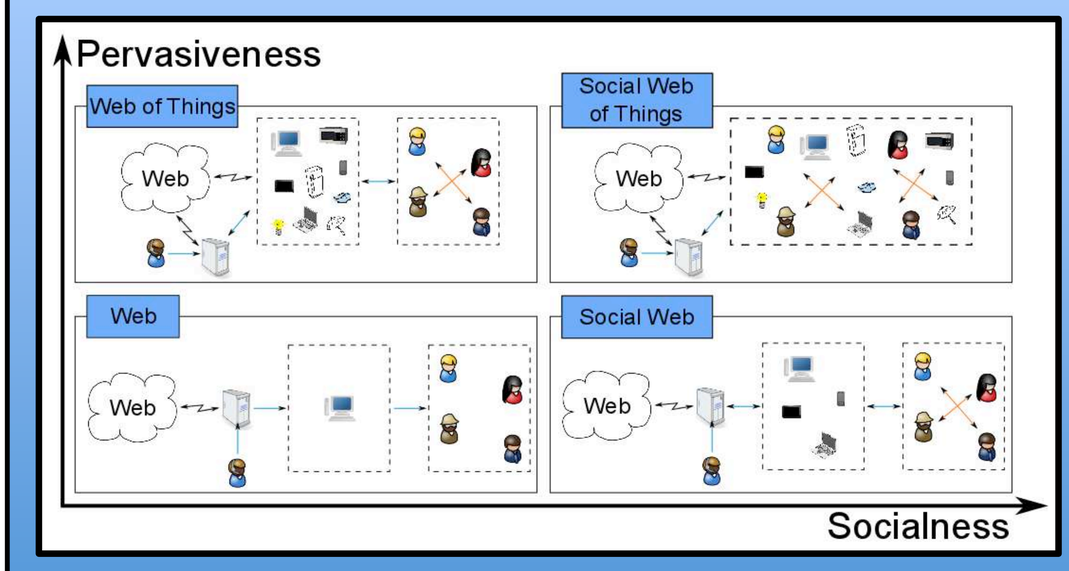
Andrei CIORTEA[1,2], Olivier BOISSIER[1], Antoine ZIMMERMANN[1], Adina Magda FLOREA[2]
[1]École Nationale Supérieure des Mines de Saint-Étienne - Institut Henri Fayol
[2]University "Politehnica" of Bucharest

Context

- Growth in connected devices
- Things become Web-enabled
- The Web is now social





Motivation

- Enable scalability and understandability form a user experience perspective
- Interconnect billions of things and users in an effective and scalable way
- Endorse things with capabilities of discovering one another and collaborating in WoT apps

Approach

- Design a *Socio-technical Network* of people and autonomous things.
- Use multi-agent normative organizations for (i) bringing autonomy to things, while in the same time (ii) controlling the autonomy of things and (iii) supporting coordinated behavior in WoT apps.

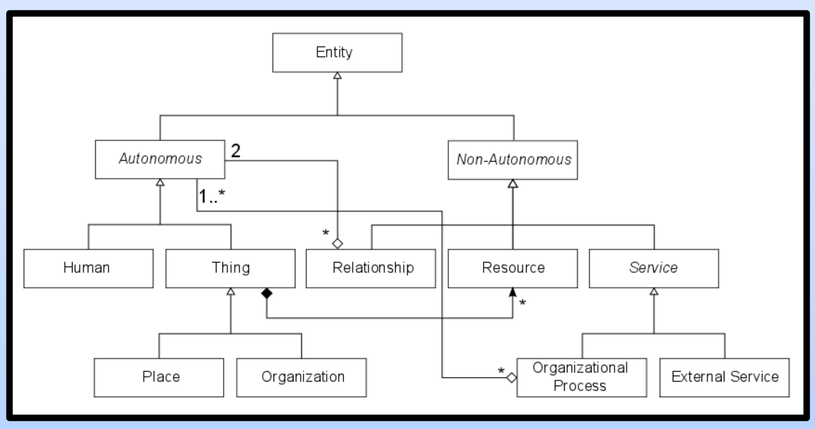
Web of Things: Integrate Web-enabled devices into the Web.

Social Web of Things (SWoT): Integrate *autonomous* Web-enabled devices into *existing* social networking platforms.

The Socio-Technical Network (STN)

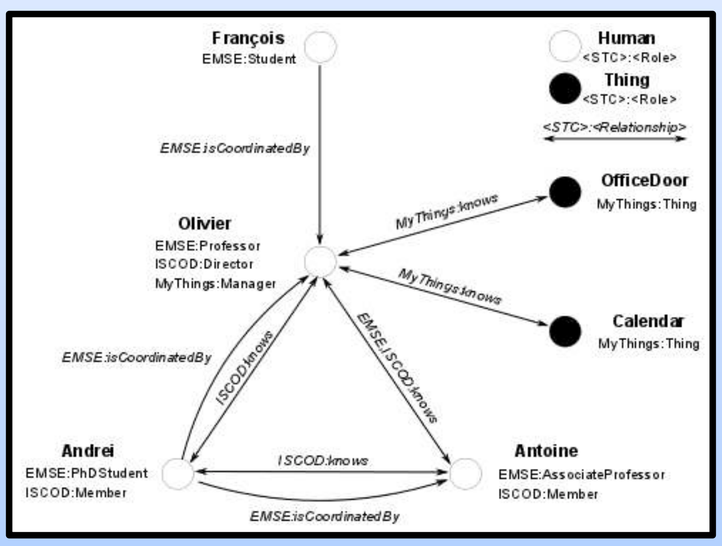
Entities

- An entity is anything in the SWoT that is addressable through an URI.
- All entities have a virtual representation.



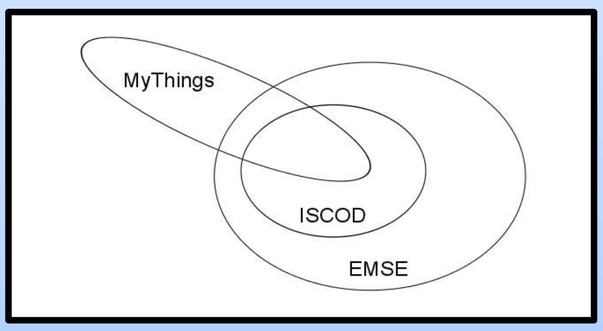
Socio-technical Graph (STG)

- Integrates with existing social graphs (e.g. Facebook, Google+, FOAF, etc.
- Default relationships: *knows*, *checkedIn*.



Linked Socio-technical Contexts (STCs)

- Govern the autonomous growth of the network, service discovery and composition, and smart disclosure of information.
- A STC can be described on several dimensions: *structural*, *functional*, *normative* and *communicational*.
- Represented as multi-agent normative organizations.



Conclusions and Perspectives

We aim at enriching the WoT with a STN of people and autonomous things, thus creating our vision for a *Social Web of Things*.

The STN is composed of:

- Entities, both *autonomous* and *non-autonomous*;
- A STG for structuring the entities that participate in the STN;
- Linked STCs for supporting more autonomy and coordinated behavior in SWoT apps, and setting ground rules for autonomous entities in the STN.

Building the STN will allow us to further investigate efficient mechanisms for service discovery and composition, informed dissemination and smart disclosure of information.

Ecole Nationale Supérieure des Mines SAINT-ETIENNE

Contact: andrei.ciortea@emse.fr

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