Ecobytes

Ecobytes is a hosting provider focusing on delivering ecologically aimed and community-supported IT services to non-profit organisations, movements and communities. Currently over 100 nodes (members and their user communities) exist which are physically located in Belgium, Finland, France, Germany, Holland, Portugal, United Kingdom, Turkey and Canada. Most of them relate to organisations and networks of different sizes (from ten up to several thousand members) doing education and dissemination on topics of sustainability, such as transition towns, food sovereignty, community-supported business, degrowth and so forth.

Our story is one of fragmentation on the code side and fragmentation on the user side.

On the code side essentially similar UI functions and experiences have to be redeveloped and deployed for different platforms (Drupal, Wordpress, Ruby on Rails, …). As each of these components only works for one particular platform and cannot be moved to any of the others, a huge amount of code duplication is the result. On the user side, we have people and communities sharing the same servers, but, despite the similarity of values and aims (if not the same person being part of different networks), they are not able to share data across their platforms. They are digitally divided. Cooperation and social innovation is blocked.

{>> Add graph with the Ecobytes "federation" infrastructure and services - "as a platform" <<}

Some relevant nodes

- co-munity social collaboration platform (Drupal)
- Transition Network Germany (Ning)
- Transition Network UK (Drupal)
- Community-supported agriculture network Germany (Typo3)
- Global Ecovillages Network Sites (Drupal)
- European Youth For Action (Wordpress)
- Janun youth environmental network Lower-Saxony (ezPublish)
- Indymedia (several platforms, in the Portugal example attached is Drupal)
- TransforMap Discourse (Discourse)
- allmende.io (Discourse, Etherpad, ownCloud, GitLab, Ghost Blogs, GroupServer, Mailman)

Issues

- Cooperation is blocked by different user bases across platforms.
- Sharing is blocked due to the lack of common ontologies and APIs across platforms.
- Missing cross-platform system for privacy control on people and their personal data.

Stories

Cooperation across nodes

Resources available to development are static, but the communities of users and their demands grow exponentially. As the needs across grassroots communities are very similar (e.g. document collaboration and sharing, blogging, calendar, mapping, etc.) there is an attempt to converge and coordinate efforts and reduce IT costs between collectives, both through sharing/federation of infrastructure as well as in building product-oriented teams for joint development. However, this process faces several challenges, ranging from the existence of different non-interoperable platforms to the lack of coordination capacity for sharing infrastructure and human resources.

There is no way to exchange non public data with one another, even though they may share the same server. Identities don't cross platform boundaries and access control is managed differently everywhere. But without a common user base, cooperation cannot even begin.

The following is a list of some of the platforms with very similar functions which sometimes even share the same technological stack. Nevertheless they require multiple development teams for producing similar features, rendering development extremely expensive and leading to low-quality implementation of platforms for grassroots communities. Furthermore this hinders users of similar features from communicating and sharing with each other.

- co-munity.net - based on Drupal Open Atrium 2.x
- wachstumswende.de - Python/Django platform providing document management, collaboration and social networking
- sites.ecovillage.org - Drupal 7 platform, heavily relying on Organic Groups
- transitionnetwork.org - Drupal 7 platform
- transition-initiativen.de - Ning
- solidarische-landwirtschaft.org - Typo3

Converging these sites on a common centralized platform is not a desirable or effective option. On one hand, political and cultural differences among groups would make this difficult. On the other hand, identification of groups with their platforms and the recognized importance of a diverse ecosystem for being resilient (also online) make such a development unwanted.

We require a framework where we can develop needed features once, for one platform, but are still able to share it with the other platforms, independently of the technological stack used. This would enable technicians and end users from different communities to converge in diverse and efficient agile teams for the incremental development of specific features.

Privacy, data ownership and sharing

Consider the following: If I want to have people look at a protected piece of information on my system, I should not need them to get an account on my platform, but rather grant access to decentralized groups and users by simply adding a reference to them.

Through the development of sharing systems, namely an online seed exchange system, the Plantei.eu platform provides an infrastructure that promotes interaction and coordination of

different actors on the sharing of material resources, knowledge and collaborative resolution of problems, aiming at an increased perception of the seed and the associated knowledge as common good. This free and open source seed bank and exchange platform, which earned a prize for social innovation in Portugal, allows users to have their own personal seed bank/collection, to co-produce Commons knowledge on seeds, traditional varieties of plants and their uses, to exchange seeds with other users and to promote innovative approaches for plant selection and breeding.

Ecobytes has been collaborating and working tighly together with the Solidarische Landwirtschaft (Solawi) Netzwerk web team to provide infrastructure, tools and services for a growing number (over 100) of community-supported agriculture initiatives. First assessments of the needs of target communities have been conducted an online survey, a hackathon pilot testing and direct interviews at the Solawi Netzwerk meeting, providing blueprints for different use cases on co-munity.net. However, additional specific tools such as recipes and crop planning are needed. A needed innovation here is to be able to link to data on varieties used, their characteristics and so on across different datasets.

Providing integration of the tools and a federation of data (e.g. on varieties) is seen as crucial for the success of this initiative and its capacity to raise awareness on the global threat of reduced agricultural biodiversity and seed ownership. The decentralization of the seed production cycle, lowering food production costs to farmers and final consumers, is another blocked innovation by silos of data.

The existence of different platforms lacking common ontologies and modern, interconnecting APIs is at the core of the problem here.

Grassroots content production and quality control

Ecobytes has been host of several nodes of the Independent Media Center, also known as Indymedia, recognized as the first open publishing platform in the world. Indymedia uses an open publishing and democratic media process that allows anybody to contribute. It originated during the Seattle anti-WTO protests worldwide in 1999 and remains closely associated with the global justice movement, which criticizes neo-liberalism and its associated institutions. However, in the recent years Indymedia collectives have been collapsing, as their user base and editorial collectives move towards more efficient platforms for dissemination, particularly Facebook. Although the possibility for anonymous publishing has been a central feature of Indymedia, the observed behavior signalizes that the large majority of users, even among political minorities, are willing to disclose their personal data in exchange of access to more information.

Apart from the obvious argument of the large user base of mainstream social networks, one of the main reasons for this behavior is related to the importance of "knowing" the author of a data source and maybe something more about her. Large social networks are able to offer this kind of relationships that automagically enable processes of peer reviewing of information published by the people, effectively enforcing community-like mechanisms of social control.

Solving this would require a hyperplatform capable of generating UUIDs for each piece of content and metadata on standardized (or convertible) evaluation criteria for content.

OuiShare

OuiShare is a global community and think and do-tank with a mission to build and nurture a collaborative society by connecting people, organizations and ideas around fairness, openness and trust.

It has a yearly conference on the collaborative society OuiShare Fest in Paris.

The third conference will be on 20-22 May 2015.

OuiShare has local communities across the world and in most European countries. These are very light weight structures that have influence but no ability to set rules on their partners. They therefore have to work with the tools that all the other groups work with. Auli Kutt of OuiShare labs, has worked on listing all the tools used by OuiShare in the following diagram:
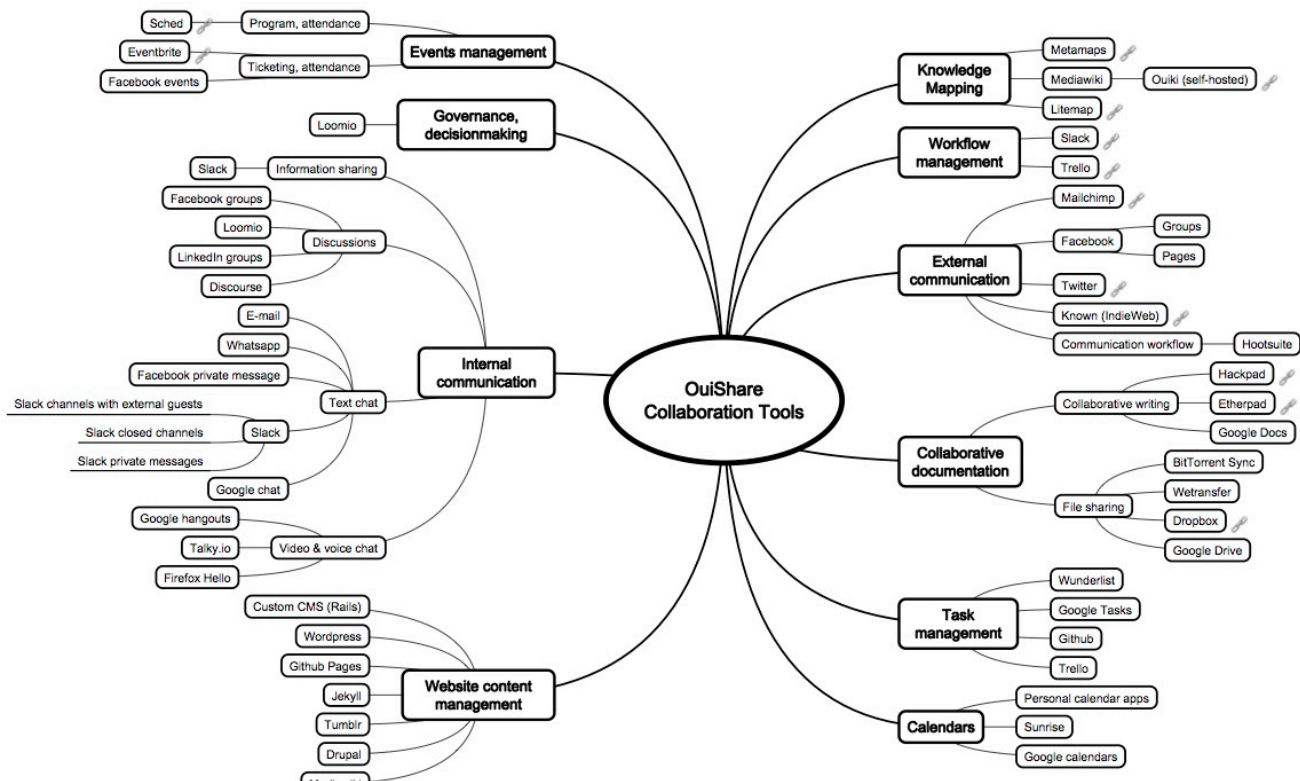
It consists of 13 categories, for a total of 55 tools and growing. Most[a][b][c][d][e] of these tools save their data on a siloed server. Each User Interface is designed for the data on one specific domain. This leads to a large set of usability problems related:

- to multiple identities, or centralisation of identities in one of the large social networks
- fragmentation of data across systems
- difficulty of working with partners who have their information on different systems in slightly different tools
- user access and management issues

    - complicated to monitor access tool by tool basis for each user
    - problematic to guarantee security of shared passwords for some group-managed tools

- information overload for less involved members

- information overload and redundancy across channels
- complicated to describe work protocols and keep them up to date

OuiShare has several types of members who need to access tools of different types with different intensity.
- Core Connectors work daily on operational activities with extended teams
- Local and thematic Connectors are leading a local or an interest group, and contributing with less frequency on a volunteer basis
- All Connectors need to access all central tools - currently E-mail, Documents (Google Drive, Dropbox), Calendars (Google), Task management (Trello), Workflow (Slack), Knowledge collection (Ouiki/Mediawiki), Decision making (Loomio), and the central Facebook group
- Members are following OuiShare activities, active members need to work on teams with Connectors, contribute and access tools on a project basis or with random frequency
- Friends and members are also distributed between over 100 Facebook groups and have produced valuable knowledge there which cannot be easily exported or integrated with other systems

Large players such as Google apps are trying to solve this by creating centralised ecosystems of tools where the storage would be placed on their servers. But this won't help for more sensitive data or large volumes of business data, or even interrelations between many different organisations.

Instead, the co-operating systems platform, would enable the data to remain distributed, with the ability to link sets of data across organisations. A new partner coming across new resources would not need to move all their previous content, but may just need to choose a new interface to interact with it. User Interfaces would be designed then to follow linked data so that they can then read/write data across each partners servers.

OuiShare would be an early adopter for the deployment of the platform, giving [f][g]its members access to a distributed social network. Hopefully this would spur other OuiShare members to adopt the standards, and so to grow the community worldwide into the biggest social network ever: the social web spanning the world.

Use Cases / LD solutions

Distributed social web:

Every person at OuiShare gets a personal profile page that can also return an RDF description of them giving them a WebID. The profile page data can link to the people they know (foaf:know) in different organisations. (see video demo) Some of this information can be protected for confidentiality reasons. This allows any software agent able to read the linked data to create a user interface appropriate for the device (phone, laptop, wrist watch,…) and user (blind person, different languages, etc…)

Each member can publish (with access controls) the time zone of their current locaion so that other members wishing to call them, can be made of the time of day at which the person are calling finds themselves. (never call someone in japan at 3 in the morning again)

Finally social network browsers can allow people to discover new contacts and gain some initial trust through their position in the social web. Eg. someone is travelling to OuiShare Fest, and meets someone at the conference. After scanning their card, they find they know a few people in

common)
Calendaring:
When a meeting is organised people participating in the meeting can be identified using their WebID. This WebID allows software agents to fetch information from their profile - whatever organisation this belongs to - and display a small info box containing picture, name, blog, telephone number, email, skype address etc… (whatever is relevant) to someone who wishes to know more about who is attending. This allows one to organise cross institutional meetings as if they were intra-organisational ones.

Each actor's calendaring information could be made available without divulging the details of what is taking place to specific groups of actors in order to facilitate automatic meeting organisation. (Instead of Doodling suitable times and several reminders, it can be deducted half automatically from participants' calendars or from the available time slots they have indicated.)

Note that each meeting has its own global group identifier (as a URL) which lists the members attending the meeting (see next story)

Document Sharing

During the teleconf (done over webrtc for p2p conferencing over the web?) a number of participants realise that they have some documents that could be relevant to the project. Using the group Id mentioned above, the users (all in different organisations) can drag and drop the members of the meeting onto the access control list of their documents (regardless of the document platform) and give them access (read and/or write). As a result the other members of the conference can click on a link and open the document to collaborate, using annotations, comments, and various forms of discussions.
A collaborative working space can also be put up to allow all the members of the conference to share their findings for future archiving.

Blogging

As a result of the call a document can be produced that is made available publicly or to a roughly described group of users such as friends of friends (foaf), or friends of friends of OuiShare members, or … Subscribers to OuiShare blog posts can be alerted to the new content, which can appear in their news feeds - or in contemporary parlance their "wall". Trusted groups of users - which can be defined as flexibly as anyone trusted by a trusted users - can comment on the post, thereby removing the dilemmas that came with the blogosphere of either allowing everyone to comment and risk being spammed, or to slow down feedback through clumsy human filtering.

PAIR

If the group discover an Idea missing in their Project. [example needed], they may create a data wiki page describing it, or find one on the web. They can use this concept to categorise some previous posts they published. As they discuss its relevance, various partners may find that they have projects that tie into this idea. This may lead to the group tying into other projects or to create a new one. Various Actors may find resources such as spare buildings, events, skills, mathematical equations, or even other ideas related to this, and these could crystallize into a

specific project, with deadlines, subprojects, etc… The Projects, Actors, Ideas and Resources need none of them belong to the organisation that initiated the ideas, or contributed to a project. This allows diverse organisations to put together projects fluidly and thereby resolve problems that any single organisation would have found un imaginable.

Research & Degrowth

{>> Add some context introduction here<<}
{>> Describe community with how many nodes, etc. <<}

Problems

- usage of Facebook and Twitter for providing updated information
- different platforms in the network using different technologies
- lack of cooperation between local or thematic communities

Relevant online nodes

- Organisation main site (Wordpress)
- Degrowth portal (Wordpress)
- Trainers and open knowledge network and degrowth-related courses (Drupal)
- Movimento per la Decrecita Felice (Italy) (Wordpress)
- Netzwerk Wachstumswende (Germany) (Django/Proprietary)
- Summer School on Degrowth and Environmental Justice (Joomla)

Stories

Connect degrowth relays

{>> RELAIS general, PortNet description << }

Open review, access and communication in international conferences

{>> International degrowth conferences <<}

Commons-based peer production of training materials

{>> GROWL <<}

Collective processes of synthesis and policy-making

The international degrowth conferences, as well as several events at the degrowth relays" it has become common to apply a methodology called the Group Assembly Process (GAP), as a collective process for collective synthesis of project, actions, ideas and research.

To support this process, R&D has been working with several research groups on developing a methodology for mapping pathways (Videira et al., 2014). This methodology allows the users to collectivelly explore the effect of concrete proposals between micro and macro levels, therefore fostering an understanding of the global crisis and the very concrete impacts on daily lives that citizens and local policy makers face.

With the development of the relays network, there is an interest in articulating these co-produced knowledge synthesis made by different local communities into global, federated, syntheses. Such a development would allow an increased comprehension of proposed societal transformations across different levels and scales, functioning as a tool both for awareness raising and for collective action.

The outcome of hours of collaborative work in a node is not available to other groups

{>> Describe a story/problem for the degrowth reading groups <<}

Sarantaporo.gr

Sarantaporo.gr wireless community network is deployed in a remote, rural area, spanning 14 villages of the region [1]. It is comprised by

- a backbone of 20 nodes, that interconnect 11 villages' mesh networks, the Technical Institute of Thessaly (Larisa TEI) and other community networks in Greece and Europe,
- 18 microservers currently installed and running within the Confine Project community-lab testbed and that could also host other online services running over the backbone
- 160 wireless access points (villages' local mesh networks), which offer open access to people in the villages.

The backbone was deployed in the framework of the EU FP7 CONFINE project, and was federated with 4 other wireless community networks accross Europe [2]:

- Funkfeuer in Austria,
- Guifi.net in Spain,
- Ninux in Italy, and
- AWMN in Athens

Problems

- remote, rural, isolated area with no or very low bandwidth Internet connectivity,

- lack of dedicated services to cover local communities' needs
- surfacing the value of Wireless Community Networks vs commercial Internet Service Providers

Some relevant links

1. Sarantaporo.gr Backbone Network
2. CONFINE community-lab testbed
3. CLOMMUNITY: A Community networking Cloud in a box
4. CLOMMUNITY Wiki
5. Wireless Battle Mesh
6. Wireless Battle Mesh v5 Warmup event
7. [Trailer. Building Communities of Commons. A documentary on Networks in Sarantaporo area.] (http://common-knowledge.eu/2014/12/19/trailer-building-communities-of-commons-a-docume

Stories

Adding value to the Community Network, building on previous EU Projects

The Sarantaporo.gr Community Network offers an Internet connectivity opportunity in villages with no other offered alternative. As such, the locals realise its value mainly through it use as an Internet gateway. Yet this is hardly a competitive advantage of the CN versus the commercial ISPs. Should the ISPs eventually decide to offer their commercial services in the region, the prevailing comparison criterions will be the cost, the quality of service and the ease of use (i.e. what is the advantage of the CNs versus free satellite Google WiFi?). The real advantages of the CN lay in the following characteristics:

- decentralized, community-owned infrastructure
- symmetrical bandwidth, offering the opportunity for each node to be used as a cost-effective server
- community-focused services designed and deployed by the people who use them
- a chance to be educated and trained with modern internet technologies (;)

A cloud of decentralized services, such as the ones proposed by the <==Co-Ops Systems==> project would offer a first class opportunity to showcase the value of Community Networks, by offering useful, fine-tuned, secure and resilient services according to the needs of the local communities. Two critical technical factors, that are the result of previous EU-funded projects, make this possible:

1. The CONFINE testbed provides the necessary infrastructure, which at the same time enables the project to reach out to many communities across Europe.
2. In the framework of the CLOMMUNITY project [3], a **cloud infrastructure** is being developed, which aims at addressing the obstacles for communities of citizens in bootstrapping,

running and expanding community-owned networks that provide community services organised as community clouds. This infrastructure could be utilized (or provide valuable insight on how) to facilitate the deployment of the proposed services.

By building on results of previous EU-funded projects, the current project will be adding value to these, as well as gaining momentum in itself.

The upload bandwidth bottleneck

One of the major issues when dealing with decentralized approaches is the connectivity quality. More specifically the upload bandwidth. Currently the commercial packages offered tend to have large download, but rather small upload bandwidth. This weakens the potential of users to 'talk' to other users by running their own server and deploying whatever services they like.

This is not the case with community networks, where the bandwidth is symmetrical, allowing for everyone to deploy services on a personal server, without being forced to host the data to an on-line provider.

In this sense the technology behind community networks can really empower the distributed approach and benefit the proliferation of the LD technology use.

Community-supported alternative agro-tourism

Sarantaporo village, although located at a region of exceptional beauty just opposite of Olympus mountain, has always been a farming and herding community with no tourist infrastructure. Although this is considered a significant drawback in terms of local development, at the same time it offers a leap-frogging opportunity to develop alternative agro-tourism activities. During the 5th Wireless Battle Mesh event [5], which took place in Athens, a 2-day warm-up event [6] was organized in the village, during which the locals accommodated 40 wireless mesh protocol developers from accross the world. It was an opportunity for the locals to meet with the people who develop the open technology that is being used in the local CN infrastructure and for the developers to see the impact of their work in real life. At the same time it was an opportunity to test an alternative mode of tourism, where the visitors got to experience the local way of living and enjoy the beauty of the surrounding landscape.

This kind of alternative tourism requires a trust network to be established between the local communities and the visitors. An infrastructure that would offer the necessary social tools to build this kind of network could enable the development of alternative tourism for the local communities.

Telemedicine

The remote villages around Sarantaporo do not enjoy the health care services offered in urban centers. They are mostly served by weekly visiting doctors and home nursery help programs. The regular checkups require that the local inhabitants travel a distance of 30km to the nearest health center in the town of Elassona, and wasting a day's worth of work every few months. This procedure is highly inefficient as each monitored patient only gets to be examined once every few months, which could easily be done by home, on a weekly basis and in a familiar environment for

the patient. Such an alternative would require the deployment of telemedicine services on the CN infrastructure.

When applying telemedicine solutions a critical factor is the security of personal data. These data should only be owned by each individual and shared selectively with the medical personnel of choice. A potential telemedicine service should be built taking this into consideration and offering decentralized, user-controlled access to the relative health data.

Direct contact of producers and consumers

Farmers of the region, being isolated with no available Internet communication channels with other communities, are selling all their production to in-between traders. The price they get is very low, while the products reach the consumer at a substantially high cost. In at least one case a farmer's daughter from some village set up a web page, using the CN. Through this webpage, this farmer was contacted by a collective which organized an unmediated open-air market and was asked to sell all his yearly production in this market in a much better price for himself and at the same time a much lower cost for the consumers. What's more, using the CN the farmer was able to locate spare parts for his machinery at a much lower cost that he used to pay until then.

This can be the case for all the farmers of the region, provided the availability of a service that matches the interests of the various social groups. Such a service would require the availability of linked data structures to derive information, such as products prices, open-air markets events, contact details with relevant people etc. The same service could also provide barter opportunities by connecting interested peers and also a communication channel between producers to foster the founding of cooperatives.

Enhancing cultural cohesion

Many people from the villages have migrated abroad or moved to urban centers, in search for employment and better living standards. This has led to fracture of the cultural cohesion between them and the elders that continue to live in the villages. The sharing of local cultural events, such as local fairs, cultural festivities, social events etc, can act as a levee in this cultural divide.

The currently available services that allow such a sharing to happen are the commercial social networks and streaming / video services, which demand possession of the user's data. An alternative which does not compromise the data ownership and at the same time allows for this data connect to the involved stakeholders could broaden the possible cultural and social interaction opportunities.

Hack-/Make-/Greenspaces

The project comprises itself a bottom-up development initiative, in this way it will itself be bootstrapping its own co-operation tools while developing the solutions that for the partnering communities involved in the design process. This attachment describes a user scenario based on observed problems to fully exploit the potential of available expertise in the cooperation between communities.

Problems identified (Executive Summary)

Organisational boundaries are more likely to increase hindrances for inter-community cooperation, rather than to decrease them. IT-infrastructure requires additional effort instead of supporting real-world interaction. Project shared between communities essentially have to create a new domain with infrastructure instead of using and interconnecting infrastructure of existing participating communities.

These problems can be traced back to insufficient interoperability of infrastructures (i.e. blogs, wikis, mailing lists,…).
The communities comprise exclusive access domains (esp. no write to foreigners) with very coarse rights-management (i.e. all-or-nothing). Information has to be copied and rewriten, creating duplicates in different channels that increasingly diverge from each other if they are modified by discussion or progressive writing. Synchronisation usually is manual labor that contributes to the participant's goals only very indirectly. People or groups cannot be easily added to communication channels due to interoparability.

Description of Participants

Let us consider a town. We may assume that a city is either sufficiently large to establish separate quarters or is itself of a size of roughly 100,000 inhabitants. Larger cities tend to split up into smaller sub-units.
We can identify at least the following distinct organisations that may be involved.

- Hackspace, Public Garden (Transition Town, Greenspace), Makerspace (FabLab)
- Local Art Community
- University
- City Council
- Local Companies (MediaBusiness and Freelancer)

A **Hackspace** is understood as a place to do research, mostly on digital or electronic gadgets and applications in a creative manner. This includes both reverse engineering and adaption of existing technology, but also the creation of new technology. Hackspaces are the most visible anchor of the community of so-called hackers, who are people interested in the activities described to happen in hackspaces. Hacker-communities around the world are very much different, with different ethical approaches, but most (if not actually all) of these promote open source software and an open, if not libertarian, society.

The Greenspace in Siegen (a public garden) resembles more a movement than an organisation. There are, by choice, few informal decision processes. Therefore, all individual activities are connected to acteurs that involve themselfes in community work.

Story

Situated at the focus of this particular scenario are three non-profit groups. The Hackspace is an established club of computer-affine people that create electronic and digital artefacts and tools. The Hackspace maintains rooms available for working on project and club activities. The Greenspace, a public garden run by volunteers, has access to an area owned by the city council. The Makerspace is still in the startup phase and owns an array of digital fabrication tools, for example 3D-printers. All three organisations have established their own communication infrastructure, mailing lists, wiki- and webpages, but emphasise the importance of direct contact through established meetings.

; Paul: Organises the Makerspace, is actively involved in the Greenspace and has established contacts to many members of the Hackspace.
; Martin: Enjoys programming his computer and has been a member of the Hackspace for a long time. His contact to the physical world is rarely one of creating physical artefacts.
; Jaqueline: Organises and works weekly in the Greenspace. She is very versatile with computers in general, but has no interest in programming.
; Emil: Works as a freelancer in media design. He wants to establish a regional network of creative, technology-affine people.

Members of the Hackspace generally have no problems with using the communication infrastructure. Most members already have established their own processes to handle multiple accounts on various servers. If anything, experimentation and projects create a high dynamic in the infrastructure of the Hackspace, which currently requires constant involvement of the members.

The Greenspace has established a Mailinglist, Wiki and a Webpage as well as a mobile IM group, but the most important communication is handled during weekly meetings. Most members have never contributed to Wiki or Webpage and some are not even subscribed to the mailinglist.

The Makerspace is mostly run and represented by Paul. He is actively involved in the Greenspace as well and working on coordinating activities in all three spaces. He is investing plenty of time in simply relaying information from one group to the other and it is difficult to have all relevant persons at one place at the same time, but it would be helpful to have this more often.

The Hackspace is occupied and run by a bunch of people who are, although very sympathetic to the other projects and spaces, very much involved in their own projects. Martin is a connection to both Jaqueline and Paul, but is not putting too much effort in either of their spaces.

The Irrigation Project One of the main problems of the Greenspace is sufficient watering of the
vegetable beds. It has been complicated to set up a weekly roster. Although volunteers are found, the whole routine is degrading fast
as motivation fades. One of the problems is, that it is not easily predictable whether the plants actually have to be watered. Often, a volunteer assigned for watering finds the plants already watered when he arrives. And watering in itself is neither interesting nor light work. During the week days, the garden itself is often empty as people have to work or are occupied otherwise.

There have been some ideas to solve this problem: having a general meeting every afternoon turned out to spread the work force too far, people rarely met, direct communication was likewise reduced and volunteers found themselves alone in the garden too often. The general feeling of being a community faded. As many Greenspace volunteers are not
"digital natives". Mailinglists, Wiki and Chatrooms turned out to be of limited success for coordination. Most coordination happens during the weekly meetings on Wednesday and Saturday. However in between the plants often suffered from lack of water.

The next idea was to establish at least sensors that report to the Internet, or to even build an automated irrigation system. Without electricity and legal limits to drawing water from the adjacent river, an irrigation system off-the-shelf is not suitable. The Greenspace lacks the money to buy a custom built system. Furthermore volunteers in the Greenspace often lack expertise and curiosity for building such a system themselves. However Hack- and Makerspace together would have the means and expertise to build a rough irrigation system from cheap parts. It is a challenging task, but as a shared project it could be made a reality.

Unfortunately the problem now is to find expertise and resources among the members of the Hack- and Makerspace. Up to now, smaller cooperative projects had worked, because single individuals with roots in multiple communities had made these their personal projects. With the irrigation system, this approach did not work. The individual tasks are too diverse and the overall workload is to high for single individuals.

The only way to set up a shared project for all three spaces again would be to establish some kind of management hierarchy and a project with organisational structures, which is a concept that is not running well with base democratic communities. To participate in the project, participants have to become part of a new organisational space — the project. This means to establish and maintain yet another set of communication infrastructure, outside their own communities. Valuable exchange with the respective communities requires to transfer (i.e. copy) the information from one infrastructure to the next. Acquiring

temporary participants requires to set up new identities within this infrastructure. And finally the project ends with frustrated managers while hackers and makers (as well as gardeners) turn towards their own projects again.

Making it Work...   ...in a cooperative, distributed social network.

Currently, co-operation through a social network would force everybody to join the same monolithic social network (as a cooperation space) and uses only the tools provided there. Aside from the difficulty for a large set of people to settle on one platform, this would exclude all temporary expertise not found on that platform. Thus, what is required is an inclusive (hence open) platform that allows everybody to participate from within their existing communities. This requires tools and protocols that transcendent borders of different infrastructures and makes these infrastructure interoperable.

Given such a distributed platform Jaqueline can create a call for participation within the Greenspace infrastructure (the contents being established during one of the face-to-face meetings). The requirements can be linked (and refined) by voluntary experts in the Hacker and Maker Communities, and commented on by gardeners, from within the Hacker and Maker Infrastructure. By automated linking of the different document, the whole process becomes project-shaped as individuals commit themselves to sub-problems, share solutions and ideas. On of the documents that is created is a roadmap for the project (by incident the author is Paul) and a rough design. Some temporary available expert on sensors (he is staying at the Hackspace for a "Hackover") provides some design ideas and calculations, making use of the identity and credentials from his own Hackspace, that have simply been granted access to the project pages. (Martin could include his identity into the list of project contributors because the infrastructure of Hacker-, Maker-, and Greenspace by now have established a shared project spaces by way of linking their data.)

Obviously, we are confident, that from that point on, the story will run towards a happy end. People join (and leave) the project, parts are contributed, the whole thing grows until first parts are produced and tested and finally the whole setup is installed.

(and celebrated wildly, because some hacker couldn't help to illuminate the flow of water by LEDs, which is not a functional part of the system, but he was working on illumination nonetheless and could easily include his contribution).

Concluding   All three organisations share a general idea of providing services to the general public. Their respective competences and profiles are complementing each other fine, but in order to establish a cooperative project, they have

to setup a complete and separate stack of cooperation infrastructure.
The overhead must not kill these projects, but renders it much
harder to succeed and much more costly to fail.