

CNI DATA METAPROJECT

COMMUNITY NETWORK INFRASTRUCTURE

TECHNOLOGY COOP AND SOCIAL PROJECT

INTRODUCTION

Communications networks are vital for social organisation. Not only as a tool, but also as part of liberatory technology. The way they are designed, developed, deployed and maintained shapes the way they are used and the way community grows around them. As a feedback, it also shapes the tech community, people who cultivate technology for betterment of social life.

The CNI Data metaproject is focused on this intersection. We try to compile, test and deploy standardized network solutions for independent communities. Currently we are working on our initial “showcase” implementation. At the same time, we are creating a new entity. We are trying to create a new standard for technology teams, going beyond the charity/volunteering/non-profit model. The goal is to create a sustainable long-term work-frame, letting tech people move permanently into the solidarity economy.

In broader context, the CNI project is a part of the “Walkaway Economy”, inspired by Cory Doctorow’s book¹ “Walkaway”. On a practical level, it will be connected with the FairCoop² system of cooperatives, using FairCoin³ cryptocurrency, designed specifically for this kind of post-capitalist ventures.

Using the bottom-up approach, we will start from specific projects (see Showcase Projects section below) to let the team naturally grow and mature. Once it is achieved we will proceed to create our own formal entity. Currently the team is

1 <http://craphound.com/category/walkaway/> also available at Library Genesis.

2 <http://fair.coop/>

3 <https://fair-coin.org>

being gathered for first showcase project, with three more in the pipeline. We are now in search for seed money, direct project funding and other support.

ALL OUR ACTIVITY IS BASED ON FEW STRONG PRINCIPLES

We support people's collective and individual self-organisation, however they wish to shape their lives. We respect the freedom of others, keeping our own integrity and independence. We offer our advice and support only if invited by the community or person in question.

We resolve conflicts through mediation and negotiation, and believe violence is only acceptable in the strictest cases of (self)defense.

Our community is affinity-based and we are strongly against all forms of oppression, whatever identity it may concern.

WE FULFILL IDEALS OF SOCIAL LIBERTARIAN REVOLUTION
BY PROTECTING AND IMPROVING THE LIFE OF THE PEOPLE,
USING TECHNOLOGY AS OUR TOOL AND OUR WEAPON.

PROJECT SUMMARY

GOALS

1. Compile, develop and deploy standard data network solutions for community owned and managed networks, including backbone links of various kinds.
2. Design and collectively test the economic and social framework for financially sustainable tech services entity, within the paradigm of solidarity economy and the commons.

METHOD

1. Project-driven development of technology aspect.

2. Learning by doing, within a quick feedback loop, also in the area of self-organisation and self-management.
3. We are working on the basis of donations/independent financial support, and the mutual aid from communities we work in.

TECHNOLOGY

1. Network equipment will be a mix of LibreRouters (and their future derivatives) with other transitional and lower tier hardware (for instance GLI-net, BananaPi, TP-Link routers running LibreMesh software).
2. Application servers will be mostly Raspberry Pi 3 or Banana Pi “all-in-one” routers, running various Ubuntu LTS versions.
3. Power sources will be hybrid solar/wind/local grid solutions, made mostly from local materials and optimized to local technical awareness.
4. Transmission will include WiFi, cables and WhiteSpaceTV UHF/VHF links.

TIMEFRAME

Official life of CNI will start from the moment the first showcase project is approved. From then on, we give ourselves three years (roughly by the end of 2020) to meet the success conditions. Each showcase project will take between 12 and 18 months and we hope to be able to run more than one concurrently.

SUCCESS/DELIVERABLES

1. Successful deployment of 2 out of four showcase projects (see them listed below in Showcase Projects section).
2. Stable coop entity, reaching at least 50% financial sustainability (from services rendered, not from direct donations or side jobs).
3. Technical and economic know-how published under open license and peer-reviewed.

FOLLOW-UP

1. More deployment projects; more coop members (up to ~30).
2. Hardware and software distribution and customization.
3. Remote support and administration services.
4. Training and education services for interested entities and individuals.
5. Going beyond data, to cover all kinds of networks, vital for a healthy and resilient community.

RESOURCES NEEDED

1. **Seed money.** We need to build a stock of hardware for testing and development purposes. We also need to cover running costs until first project is accepted and fundraising money starts flowing.
2. **Team members.** We have now three people interested in working as a “ground support” team in the US and two confirmed first mission members. Looking for two more mission members to fill positions of “hacker” and “maker” and for at least three people to create a European support team.
3. **Tech community support.** Once the first showcase project is accepted, we will start building a broad coalition of supporters including crowdsourced technology support.

SHOWCASE PROJECTS

Rojava community networks. Up to 10 “village internet” installations, backbone links between them, local team trained for administration and further development. Mission timeframe: 6 + 18 months. Team: 4 people. Currently (Oct. 2017) the project is pending approval by TEV-DEM [Movement for a Democratic Society], the confederalist body of self-organized communities in Rojava.

Puerto Rico recovery and rebuilding⁴. Setting up technical community center in rural Puerto Rico, to implement new technologies, including communications systems, to rebuild infrastructure under community control and make it resilient against the effects of climate change – on technical and political level.

ZAD Notre Dame Des Landes. North from Nantes in France, this patch of land is a patch of freedom – agricultural area, occupied by a diversified horizontal network of communities, not only blocks corporate plans of building bigger airport there, but also makes a brilliant example of alternative development and self-management. We are reaching out to communities there, to learn their experiences in making large area networks and to offer cooperation in making them more advanced and resilient.

Greenland study tour. Greenland is a specific area. 11th biggest territory on Earth, of the size of Saudi Arabia. Semi-autonomous part of Denmark, the only EU polar territory, geographically closer to Canada than to Europe. Recently, rapid climatic changes make it more accessible and more inhabitable. Over decades it will make an important destination for climate refugee. Already dubbed “the new frontier”, Greenland, with its 56 000 strong indigenous population of Inuits (50% of their total number) is under severe threat of exploitation, land and minerals grab and all kinds of colonisation. We are now starting the research phase before going there to learn what are the needs of indigenous people to improve their resilience.

4 Closely cut by one hurricane and few days later directly hit by another, Puerto Rico lost 80-100% of its infrastructure. Deep public debt, slow response from the federal government and a smear campaign started by some circles totaled in the first massive humanitarian crisis on the US territory. On the other hand, rising tension and disappointment among Puerto Ricans made them much more aware of their neocolonial status. See one of many articles here: <http://edition.cnn.com/2017/09/26/us/puerto-rico-maria-recovery/>

WE NEED YOUR HELP

If you like what you read, please help us achieve our goals.

Talk to us privately: cni-coop@protonmail.ch

Talk to us online:

<https://riot.im/app/#/room/#CNI-GuestRoom:matrix.org>

BROADER CONTEXT

CURRENT SITUATION AND WHY WE SHOULD CHANGE IT

Trust and communication in local communities

Communities of a “local” scale (between 250 and 2500 people) use various means of communications. Electronic devices are one of the most important tools of real time communication, as well as asynchronous communications and for storing collective knowledge and memory.

Small communities’ distinct feature is lack of formal institutional structures. Their integrity and efficiency is based on shared memory, personal reputation and trust. Trust is the crucial aspect, a social glue, keeping community together. If the level of trust drops too low, the community either has to dissolve, or to introduce institutional methods to monitor and assure members’ credibility.

In a very insightful simulation “Game of Trust⁵”, Nicky Case shows how communication (among other factors) influences the level of trust, being optimal for an individual to survive in a community. In brief, the highest level of miscommunication⁶, intentional or due to garbled channels, the more this situation promotes cheating as optimal behavior.

From experience we know that community communication is the first target of attack for everyone who tries to disintegrate the community, subdue its members and appropriate its resources.

In electronic communication, communities now mostly use means that are beyond their control. Global networks and social media applications are profiled and secretly censored. –The most efficient communication tool we have into a trap.

5 <http://ncase.me/trust/> (approximately 30 minutes run, and highly recommended!)

6 We can say that the direct factor here is information inequality. Some actors have better knowledge about reality than others.

Instead of letting people exchange their thoughts freely, it is a place of manipulation, surveillance and – in case of need – instant gag order application.

It is time to change the game.

Content, architecture and topology

There are a lot of independent content sources in the internet including decentralised global news networks like Indymedia, Specialised portals like squat.net, Community-oriented groups on Facebook or Google+, and Diaspora pods. They all struggle to create and distribute information in an independent and minimally distorted way. Yet, apart from some very special groups (mainly highly technical), this is mostly a broadcast – horizontal interactions at large use media like Facebook, Twitter or various communicators.

Recently, a new initiative emerged⁷, to create the Integral Communication Cooperative, focused on using a global network to educate, agitate and organize horizontal structures across the planet.

All those projects rely on network architecture and topology, that is designed and optimized to support globalised and centrally controlled model of social communication. Two neighbors, exchanging tweets or Facebook private messages across the street, in fact send them outside of the neighborhood, thousands of kilometers away to a corporate server farm and back again to the house 50 meters apart. Clogging trunk links, overusing electric power and allowing all kinds of surveillance and manipulation in transit.

The said neighbors, in case of any failure in a thousand-kilometers-long link, will be unable not only to communicate (one will finally go outside to see another), but to access their archives and the collective memory, stored “in the cloud”. A simple cut-off at the internet provider node can bring dementia upon the whole community.

7 <https://coopfunding.net/en/campaigns/integral-communication-cooperative/>

Whatever independent content we can generate and host, without proper network architecture and layout, will be lost and unaccessible exactly when it becomes crucial.

A community can only be resilient if its memory, knowledge and communication channels are under its close control.

SO, WHAT IS THE MODEL WE SHOULD AIM FOR?

Surprisingly, in the age of looming radical climate changes and disruption of engineered social peace, old idea of distributed command and control, the idea that conceived the Internet, becomes relevant again. As Nicolas Mendoza writes in his fundamental text about Internet and freedom⁸:

“the distribution of command and control, as long as it remains real, leads necessarily to the collapse of traditional power and to the emergence of an unprecedented social order of distributed power. Such an order, precisely because of power distribution, is close to what anarchist scholars like David Graeber and web activist groups like Anonymous advocate for. In their theoretical and pure form, the founding protocols of a true distributed network as was initially conceived, even while endangered and partially implemented, break the dam towards collective emancipation.”

Over the history of Internet development, architecture, topology and services evolved from distributed to decentralised and centralised model. Not through hard-wired connections, but through routing tables and domain name services, by centralised server farms, offering cheap or unpaid hosting. By capitalist “economy of scale” people of the net were stripped off their **command and control**.

⁸ <https://blog.p2pfoundation.net/life-in-a-network-for-survivors-part-1/2012/06/04>

But the tools for recovery lay in our hands. Hardware, software, protocols and procedures – we have it all. The knowledge is available. Only, the communities are strongly “disincentivised” from learning and using it. Only human beings are conditioned to be passive and lay their command and control in the hands of “professionals”. Only, toxic “learned helplessness” iced with “we will take care of it” keep people in their artificially comfortable bubbles.

So, getting back to our data networks, what can we do it and how shall we start?

Microcosm by microcosm

The basic model is simple. As we are mostly talking about communities that are geographically defined, we can easily design a geographically limited physical network, along the principles of campus networks⁹.

Such a network would have a dual purpose. Most importantly – almost absent in modern networks – it will keep local resources and make them available for local users. There are many open source communities, working of various lists of services and corresponding applications, suitable to the needs of various communities. Following the main reason: building social communication, trust and integral community, we will propose a minimal configuration to support self-organisation and social life.

From this level, virtual reflection of the local community, people will be able to reach out to the world. Their network will give them access to global communication, in a secure way, conserving the bandwidth and helping them to communicate with neighboring communities without leaving their regional bandwidth. The network becomes their neighborhood and the inter-network becomes a distributed confederation of communities, as it was intended from the beginning. This will eventually break the infrastructure monopoly imposed by the ruling groups through political and economic means.

⁹ https://en.wikipedia.org/wiki/Campus_network

But what about GLOBAL village?

Hardly anyone today is a member of just one community. Some of them are physically defined, overlapping with local population. Some are purely virtual, linking people scattered across the globe. Those will not fit “village internet model”. Luckily, there are other distributed solutions, tailored in a way that exactly fits the bill, like Interplanetary File System¹⁰. IPFS, in brief, is a one big torrent swarm, sharing files hosted on individual computers to their neighbors. If a file – be it a picture, a webpage, or a program, becomes popular, it “migrates” over the network and becomes available from more and more places. IPFS is still in the early phase, but it is very promising as a way to support global communities across the world of local networks. While we want to support local and regional communities we do provide tools for virtual communities as well.

WHY THE COOP AND ALL THIS “WALKAWAY” STUFF?

Every context has its own broader context. The scope of this document was to point out how the way the community works **should** influence the architecture of communication network. But there are also ways the network architecture (and, broadly speaking, the way technology is cultivated) influences those who build it.

The tool and the master

The flip side of the famous “master’s tools with not dismantle master’s house” saying is that if we consciously change our tool set, we can build a different kind of house, that the masters in turn cannot dismantle. In the process of creating a new kind of house, we render the old idea of a master obsolete. Just as we change our toolset, we change ourselves. The function of ownership is replaced with stewardship, of delegation with responsibility, of servitude with self-determination.

¹⁰ https://en.wikipedia.org/wiki/InterPlanetary_File_System

The CNI project as a whole is primarily about a different use of technology; about a different way of making technology, a way that cancels the magic division between technocrats and laypeople, between providers and beneficiaries, between the haves, and the have-nots.. This is the way to build trust, to share responsibility and accountability, to co-create the way how community deals with matter, energy and information. In today's world technical infrastructure is a de-facto part of the community, creating a "societal cyborg". We will not escape this, but we can use it in a conscious way to better ourselves.

"Walkaway" as in Freedom

Of course, we are not working in ideal "greenfield" conditions. There is a well entrenched, even petrified, system of exploitation and oppression around us, honed finely to appropriate every resource, every spark of human invention and to absorb it into the reductionist model of capitalist market. We do not plan to confront it head-to-head. Our most strategic goal is to create bubbles of freedom, where people will be able to live in a sustainable way, enjoying appropriate quality of life and being free to "build a new model that makes the existing model obsolete." as R. B. Fuller said.

Most people will not make good revolutionaries. They are not keen to destroy anything, especially until presented with a viable alternative. But many of them would be ready to walk away from the toxic environment, if they have a good place to live elsewhere. We, those who create and support infrastructure of freedom, we believe this is crucial to create such space and we undertake this challenge.

**We Want to Make the World Beautiful,
One Network at a Time!**