



netCommons.eu

A classification of business and organizational models for community network infrastructures

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Specific objectives



- O1.1 **Mapping** CNs providing a description of relevant CNs structure and organization to other WPs.
- O1.2 Provide **feedback and support** to CNs to **evolve** their **internal governance structures** to achieve resilience and sustainable growth.
- O1.3 Provide **feedback and support** to CNs to **improve** their **advocacy capabilities** to achieve higher external socio-economic impact.



good governance tools



- Defining the commons
 - Extent/boundaries: (network, content, services, Internet, IX)
 - Characteristics (open/transparent, free/non-discrim access, neutral/tech+traffic)
- Stakeholders: citizens, volunteers, professionals, customers, public administration
- Communication tools
 - Website, lists, social media, face-to-face meetings
- Participation framework
 - Access => license (& deliberation process)
 - Legal entity
 - Collaboration agreements, universal deployment model (municipal ordinance)
- Network management and provisioning
 - Mapping, IP addressing and routing, device configuration, network monitoring, network crowdfunding
- Governance: conflict resolution, economic compensation
- Sustainability rules (8 Ostrom principles)
- Adaptability rules (5 Ostrom principles)



Governance tools: for what decision?



- Allocation of resources
 - Monitoring eg spectrum, stat analytics
 - recruiting new participants (Sarantaporo seminars)
 - how to create a new node (ninux), what about local groups
- Conflict resolution, monitoring, sanction
 - Ostrom principles or special rules (guifi)
- Legal obligations: compliance vs commitment to lobbying
 - Responsibility (hadopi, freifunk), data retention
- Economic compensation agreements
 - Revenues reinvestment (Guifi)
 - Crowdfunding (Sarantaporo), fee payments, accounting transparency (FFDN)

Structure



Report on the Governance Instruments and their Application to CNs (D1.3)

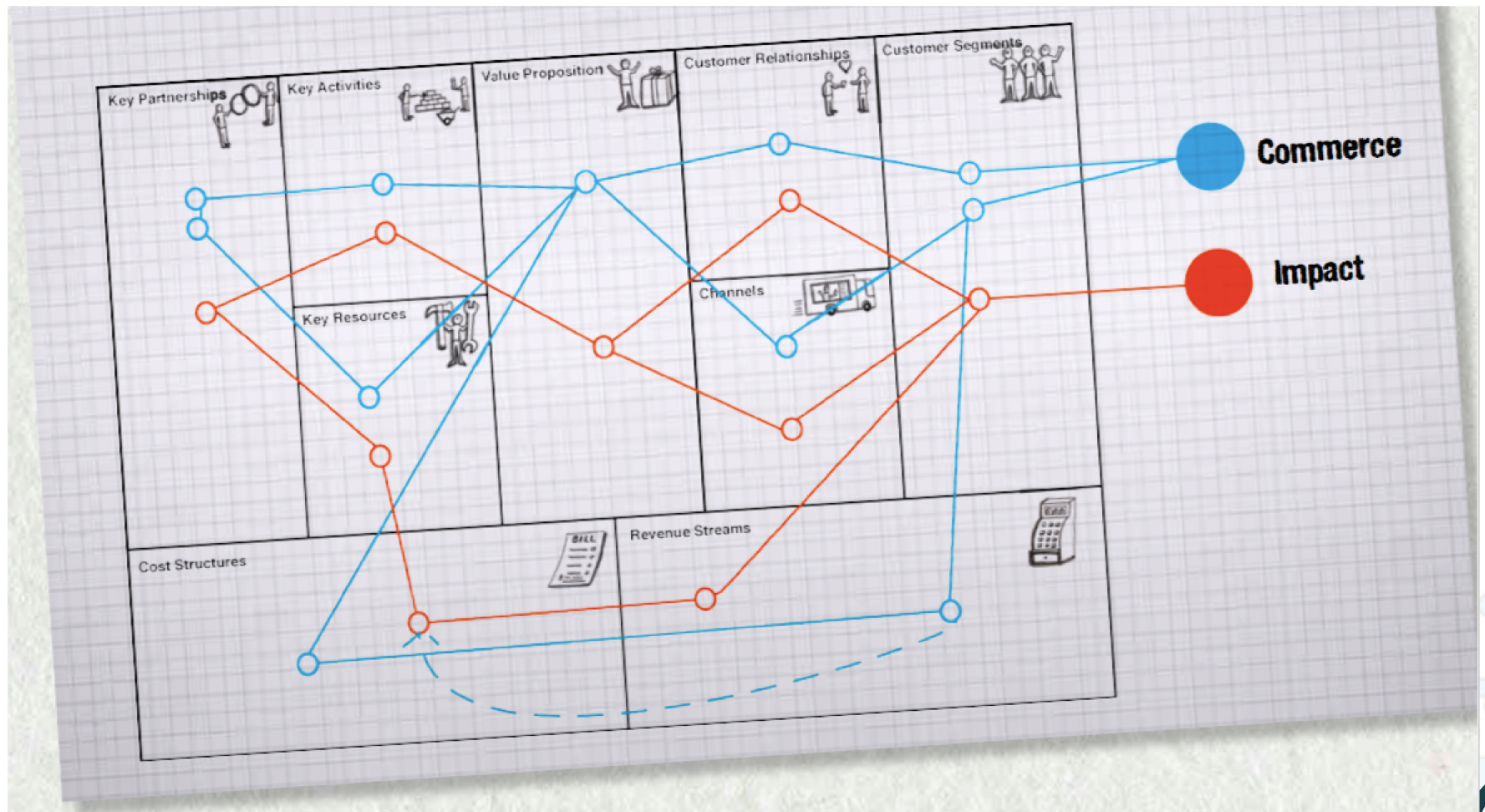
- A social-science perspective of CN
- Governance in the making: analysis and identification of governance tools in CNs
 - Collaborative research: aims and methodology
 - Case studies, inside and outside view
- Synthesis:
 - Patterns and anti-patterns
- Reengineering:
 - Opportunities for organizational improvements
- Monitoring and evaluation



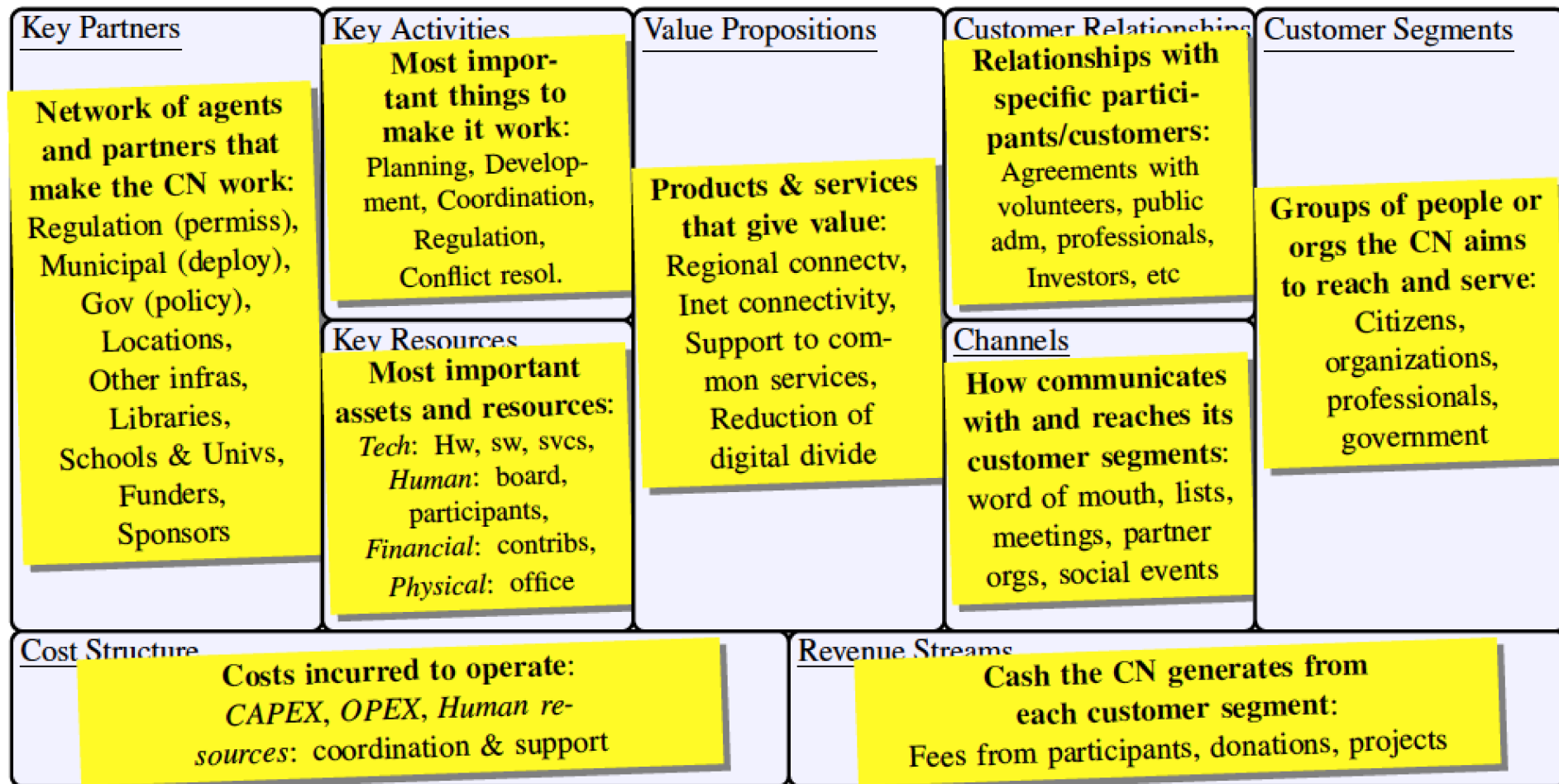
Recommendations and good practices



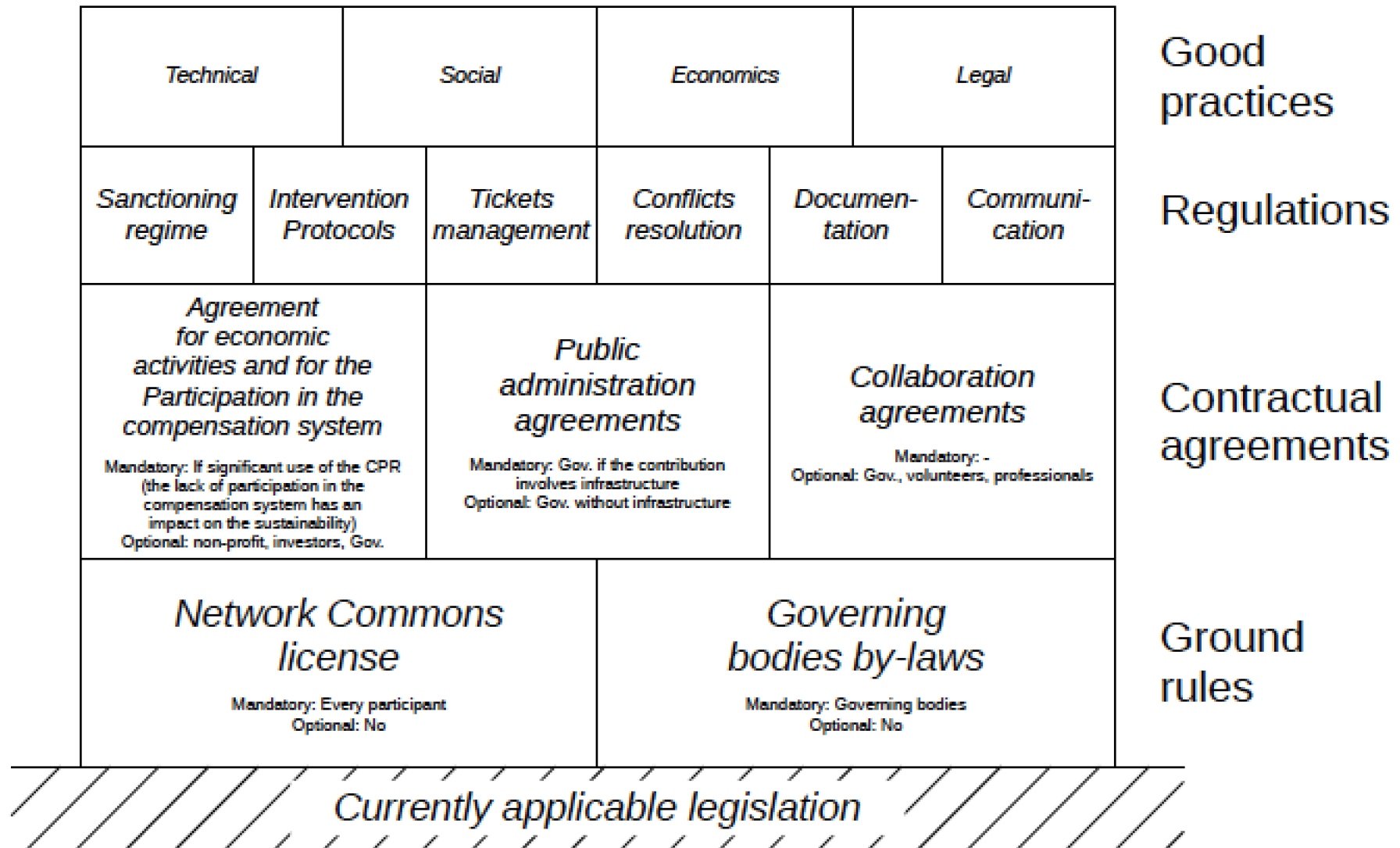
- The outside model: canvas



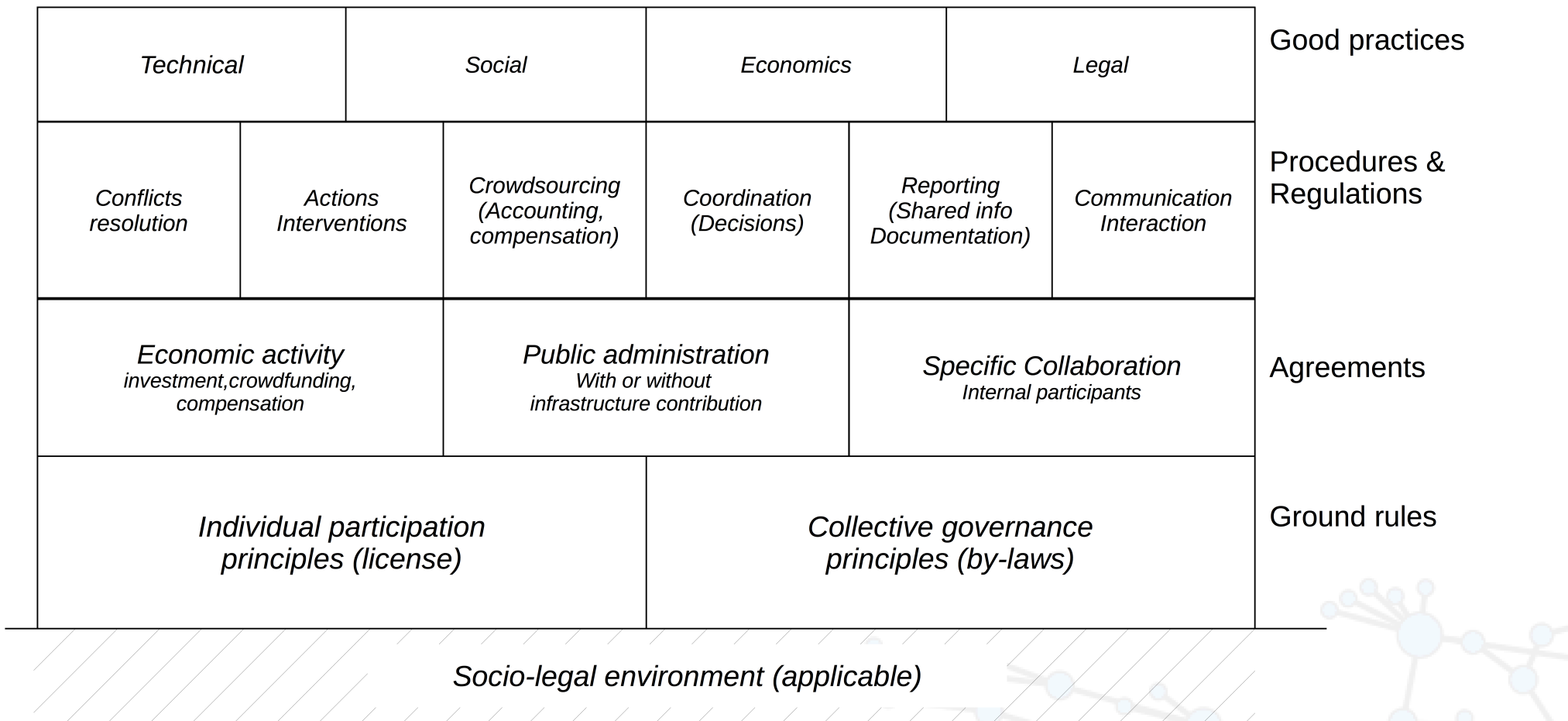
Outside view

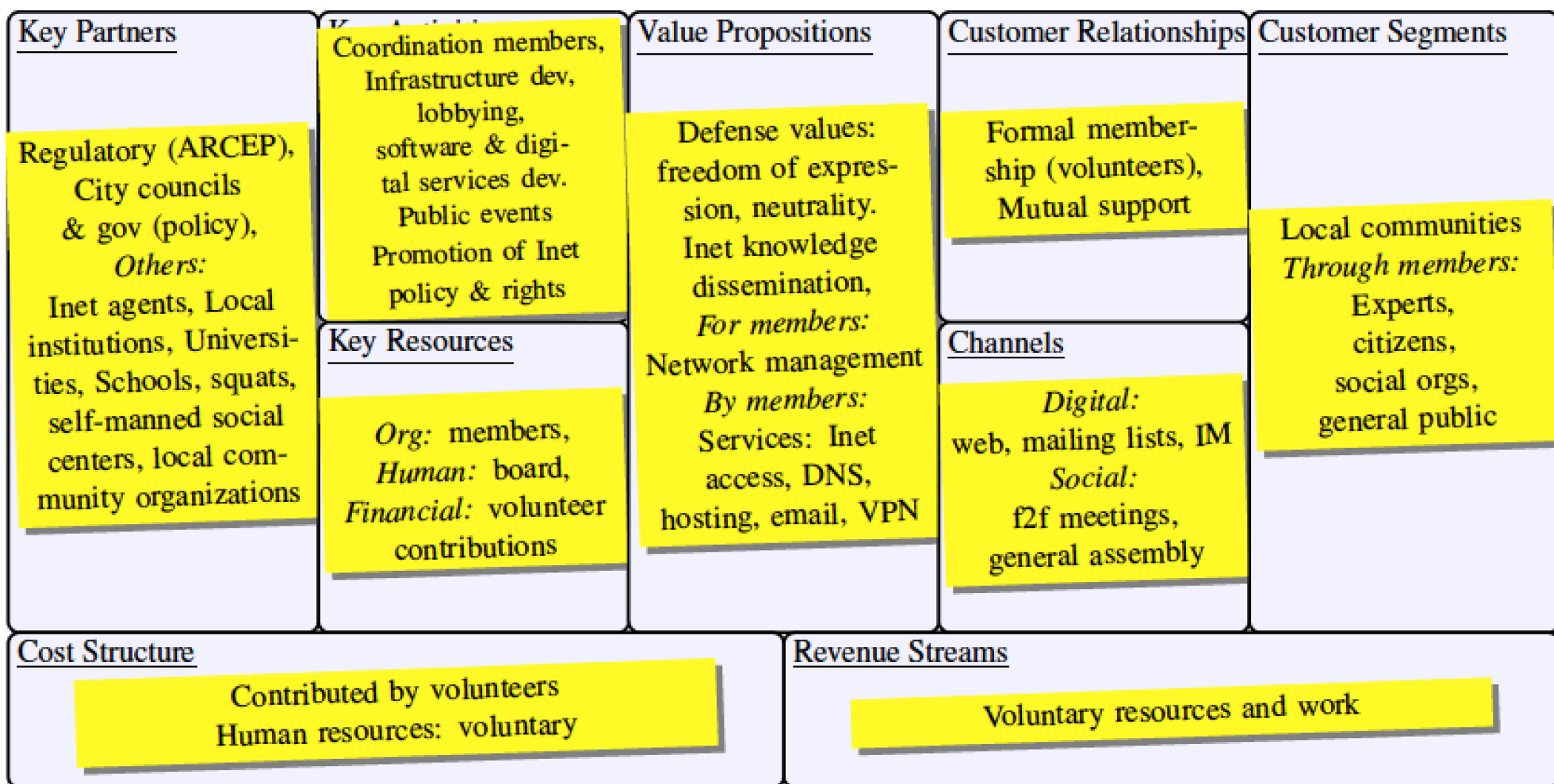


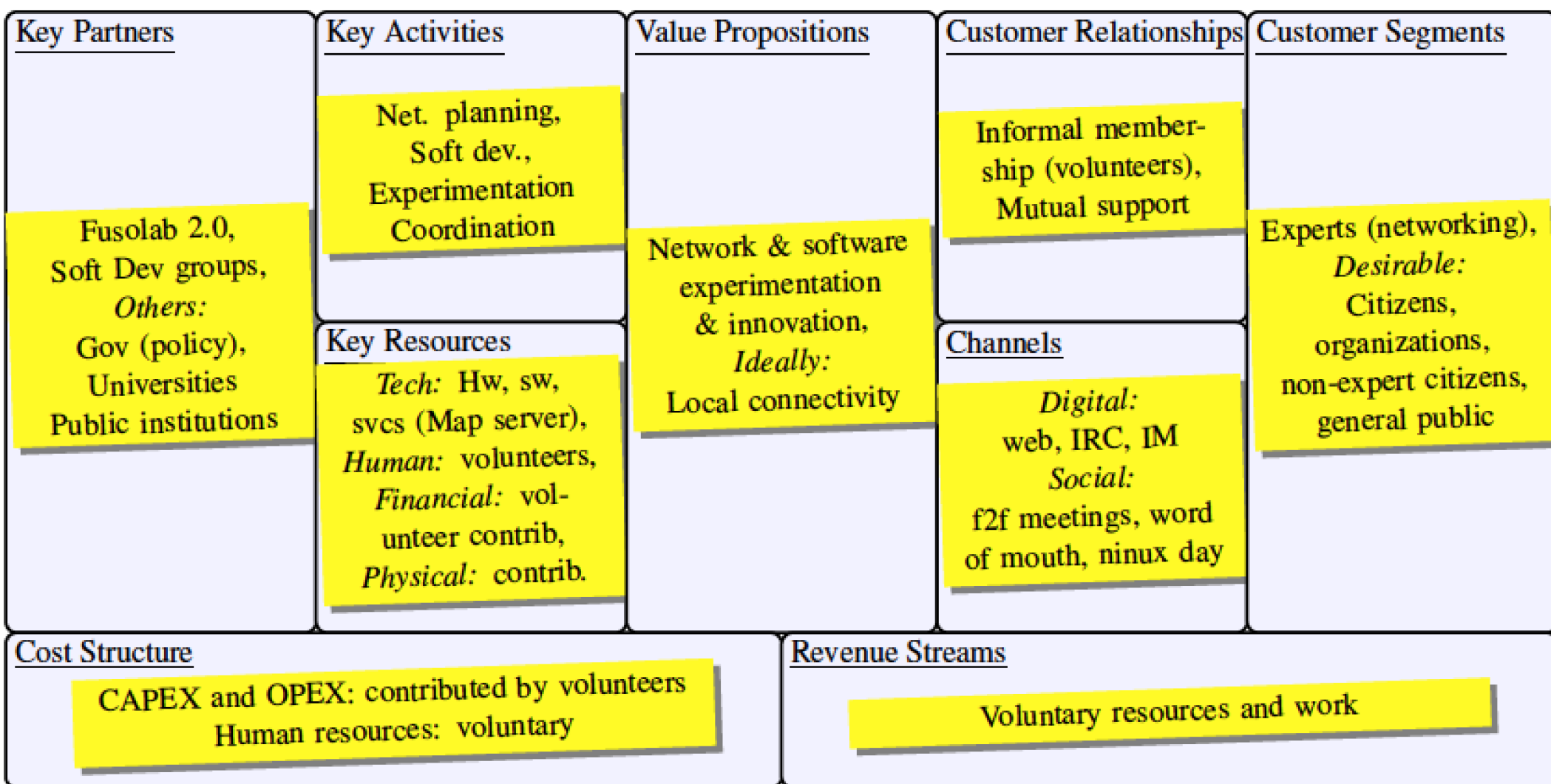
Inside view (guifi.net)



Inside view

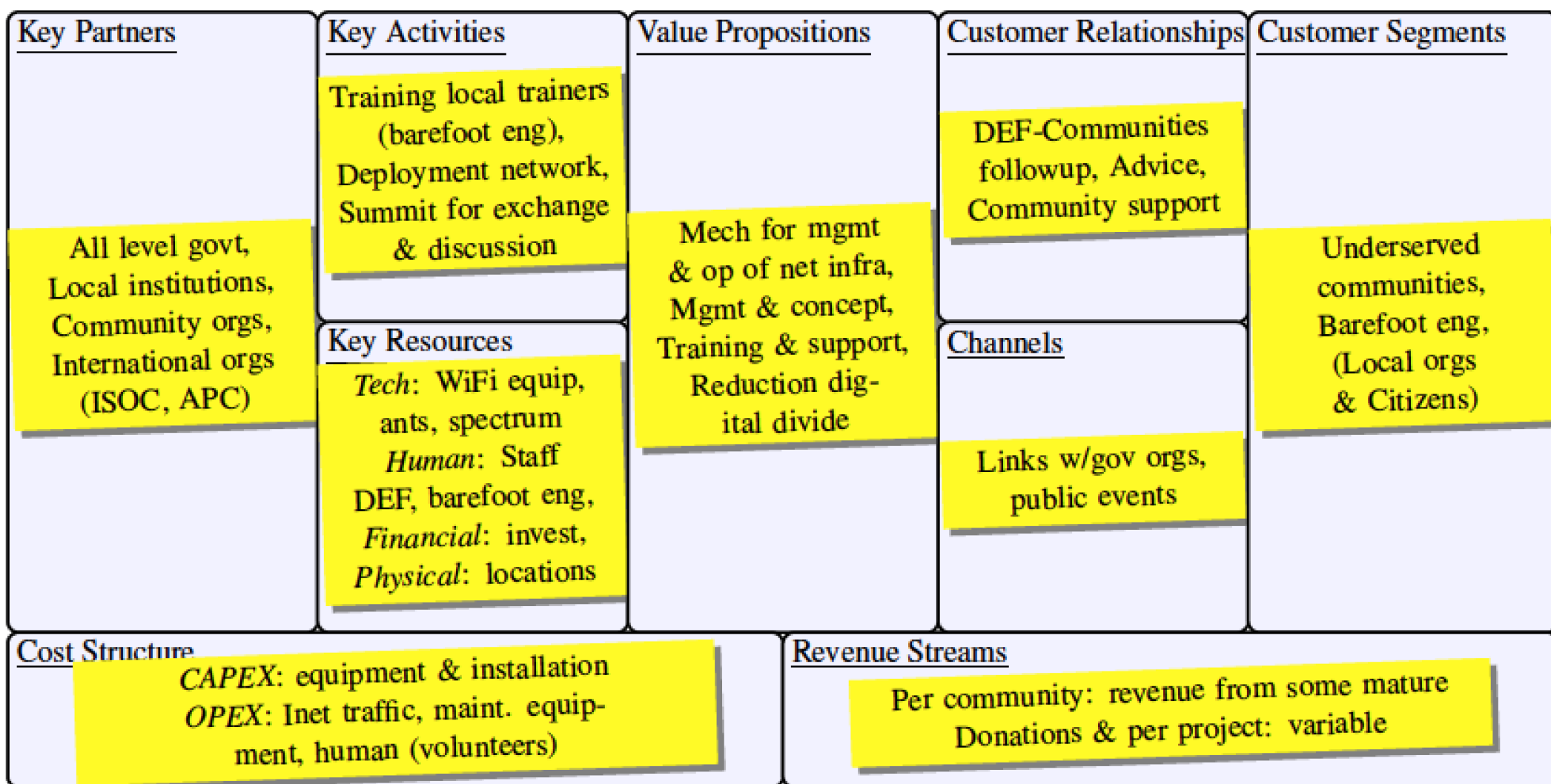








Key Partners	Key Activities	Value Propositions	Customer Relationships	Customer Segments
Local comm orgs, Technology providers (ICT), Service providers (VOIP, ISP), Umbrella orgs Global orgs.	Construction local net, Mgmt service by local coop, Inter-community coop Lobbying <i>Tech:</i> Community cellular, antennas, license, Inet, VOIP svc, <i>Human:</i> Central & local staff, <i>Financial:</i> CAPEX natnl. office, investt local infra, operat. costs <i>Physical:</i> of-	Ways to manage & operate own mobile operator. Local dev of apps for local needs. Reduction digital divide.	Installation radio base stations. Advice operation & maint. Integration VOIP Tech support <u>Channels</u> State promoters, Word of mouth, Media coverage, Links w/local orgs	<i>Communities:</i> Rural, marginalized indigenous. Without telecom coverage & high migration to USA. Communities w/200-7,000 inhabs in Oaxaca, Chiapas, Veracruz, Puebla.
<u>Cost Structure</u> CAPEX: 10,000 USD purchase & installation station. OPEX: operation staff 200 USD + VOIP calls + assistance 1 USD/user ++			<u>Revenue Streams</u> Per member/month: 2 USD/member + incoming calls Per community: 2000 USD + 0.8 USD/user	

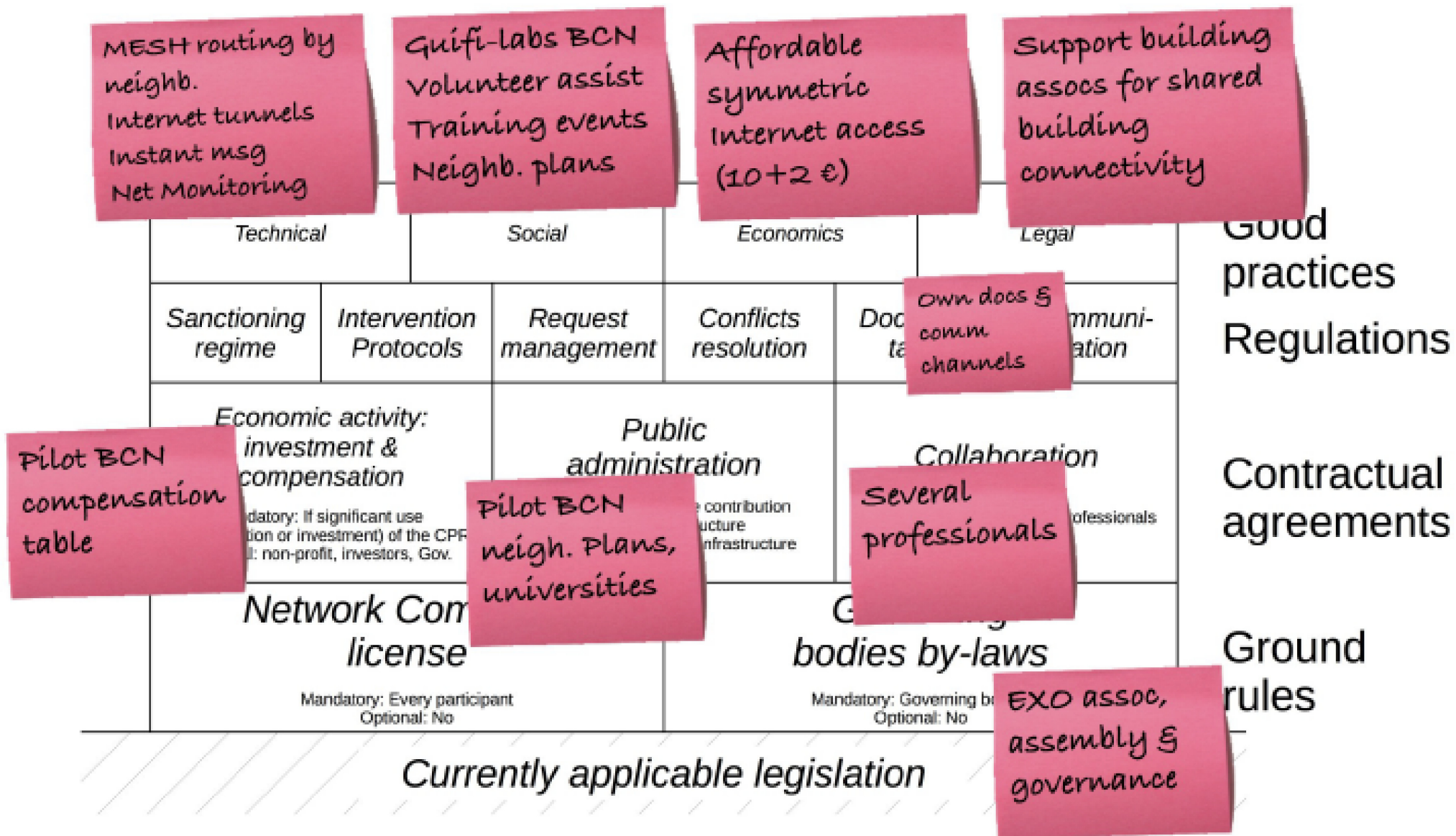




Key Partners	Key Activities	Value Propositions	Customer Relationships	Customer Segments
guifi.net Foundation City councils Universities	Dev local network Inet commons Training & experim. Lobbying	Network infra, coop provi- sion services, dev. local app & svcs, reduction dig- ital divide	Installation mesh net, Advice on net operation, Integration w/ISPs, Tech support, Community support	Citizens: interested in alternative networks and symmetric Internet connectivity
	Key Resources		Channels	
	Tech: routers, ants, Human: board, trained vols, Financial: invest, Physical: locations		Word of mouth, guifilabs, links w/orgs, social events	
Cost Structure		Revenue Streams		
CAPEX: nodes, servers & routers OPEX: Inet, rack, maint. equip- ment, human (volunteers)		Per member/month: 10€ member + 2€ Internet tunnel Donations & per project: variable		



<u>Key Partners</u> Regulation (perm), Municipal (deploy), Gov (policy), Locations (tower,duct), Open Access Nets, Libraries, Schools & Univs, Funders, Sponsors	<u>Key Activities</u> Planning, Develop- ment, Coordination Inet commons, Regulation, Conflicts, Lobbying <u>Key Resources</u> Tech: Hw, sw, svcs, <i>Human</i> : board, participants, Financial: contrib, <i>Physical</i> : office	<u>Value Propositions</u> Regional connectv, Inet connectivity, Support to common svcs, Reduction dig- ital divide	<u>Customer Relationships</u> Agreements with volunteers, public adm, professionals. Tech & com- munity support Compensation tabs <u>Channels</u> Digital: forums, SAX conference, word of mouth, guifilabs, links w/orgs, social events	<u>Customer Segments</u> Citizens, organizations, professionals, government
<u>Cost Structure</u> CAPEX: servers & routers (backbone) OPEX: common svcs, IX traffic <i>Human resources</i> : coordination & support		<u>Revenue Streams</u> Compensation fees from par- ticipants (professional & orgs) Donations & per project		

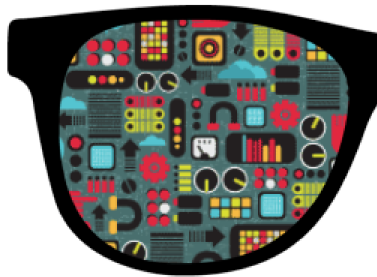


Organisational Patterns



Lessons from software design patterns, agile methods → Patterns for commons (Schuler, Bollier, Helfrich)

→ Patterns for network infra commons



Design Patterns

Patterns are higher-order designs, which occur repeatedly in object-oriented design. They have been formalized, and are generally considered a good development practice.



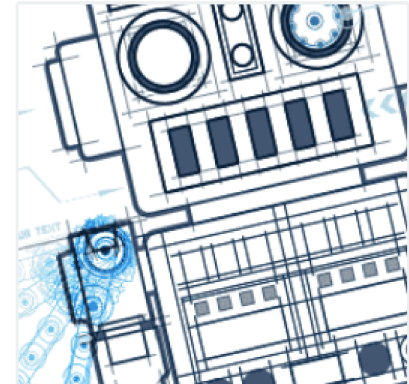
Antipatterns

Antipatterns describe common mistakes, errors, and people issues that can cause a software project to fail.



Refactoring

Refactoring is a disciplined technique for restructuring an existing body of code, altering its internal structure without changing its external behavior.



UML

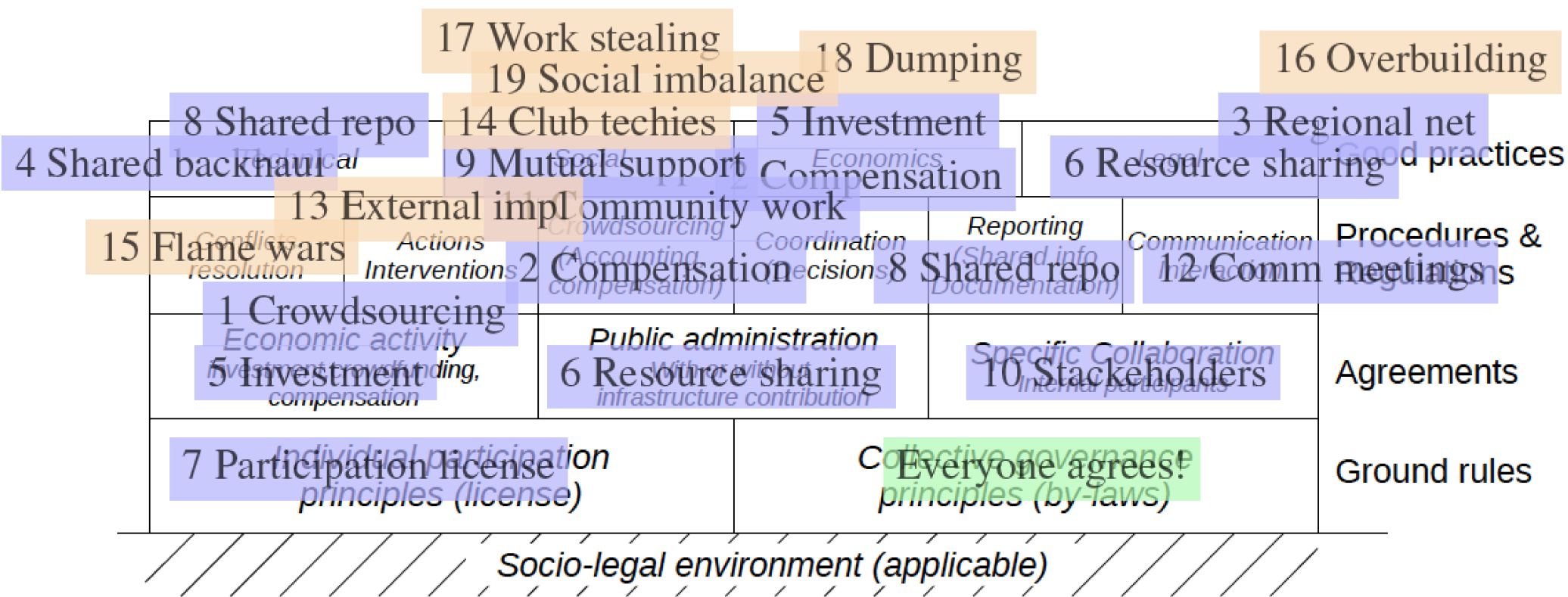
Unified Modeling Language makes it possible to describe systems with words and pictures. Especially notable use case diagrams with their stick figures or the widely used class diagrams.

Patterns



- 1 Crowdsourcing
- 2 Compensation
- 3 Regional net
- 4 Shared backhaul
- 5 Investment
- 6 Resource sharing
- 7 Participation license
- 8 Shared repo
- 9 Mutual support
- 10 Stakeholders
- 11 Community work
- 12 Comm meetings
- 13 External impl
- 14 Club techies
- 15 Flame wars
- 16 Overbuilding
- 17 Work stealing
- 18 Dumping
- 19 Social imbalance





Reengineering



- Investment model for guifi.net, inspired by B4RN, somEnergia.
- Economic sustainability models for W4C in communities and formalization
- Regional network interconnection in Rhizomatica?
- Compensation system inside the eXO community in Barcelona
- Formalization of the ninux governance, valorisation of voluntary work and incentives.
- Increasing public accountability and more balanced participation of minorities in FDN and Tetaneutral communities (FFDN)
- If conditions favorable, support design and implementation of a federation of Zenzeleni-like CN > 10 communities in the region (*dev. of governance model for each, regional backbone network interconn., provision of shared Internet connectivity*)