Best current practice on alternative operators II:

Layering, vertical integration, wholesale-only

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BCP on Alternative operators


- A Best Current Practice (BCP):
  - A de facto level of performance in engineering and information technology
  - More flexible than a standard, since techniques and tools are continually evolving
  - Carry the endorsement (tech approval) of the Internet Engineering Steering Group (IESG) or IRSG?

- Paired to RFC 7962:
  - Alternative Network Deployments: Taxonomy, Characterization, Technologies, and Architectures
  - Organize, summarize, reference practices +/-
BCP on Alternative operators: “new generation” access

• Document as best current practices (BCP)
  – Alternative … fibre, fixed radio, mobile operators

• Understand mechanisms and environmental factors for/against alternative networks →
  – Spontaneous, crowdsourcing, replication

• Makes sense?
Survey

- Community, Location (central),
- Financing/investment model,
- Legal representation, Infrastructure,
- Economic model, Governance, License, Stakeholders, Regulation, External Incentives, Savings over commercial model,
- Website, Coverage, Started, Scale (homes),
- Policy environment: Universal Service Funds (USF), Influence of USF, USF related links
## A table to collect details

<table>
<thead>
<tr>
<th>Community</th>
<th>Location (central)</th>
<th>Financing/investment model</th>
<th>Governance</th>
<th>Legal representation</th>
<th>Infrastructure</th>
<th>Economic model</th>
<th>License</th>
<th>Stakeholders</th>
<th>Regulation</th>
<th>External Incentives</th>
</tr>
</thead>
<tbody>
<tr>
<td>B4RN</td>
<td>Lancashire, UK</td>
<td>Optional community shares, voluntary work, free wayleave, tax deduction for investment in commons, community loans, a further business development loan from the Esme Fairbairn Foundation</td>
<td>Cooperative: board + member assembly (with shares)</td>
<td>B4RN company, social enterprise of public interest (community benefit society with the FSA under the Industrial and Provident Societies Act 1965)</td>
<td>Active fibre for every parish + backbone with two optical connections to IXPs in Manchester and Edinburgh using leased dark fibre, 1Gbps symmetric for all customers</td>
<td>Initial fee (300-1500 GBP), initial investment (&lt;100k GBP) + monthly fee (30 GBP/ 1 Gbps)</td>
<td>Registered as telecom provider in the UK, wayleave over private land contributed for free</td>
<td>Investors, landowners, volunteers, contractors, consumers, employees</td>
<td>Telecom operator (member of NCA coop)</td>
<td>Gigabit Broadband Voucher Scheme, UK, &lt;3K GBP for each home for installation costs</td>
</tr>
<tr>
<td>guifi.net-goutilone</td>
<td>Gurb, ES, rural</td>
<td>Private investment mainly (local owners, employees), optional crowdfunding from customers.</td>
<td>All infrastructure held in commons. Private operators must sign an agreement with the guifi.net Foundation before doing any economic activity.</td>
<td>Private company</td>
<td>Fibre, WiFi radio links, optical fibre backbone in commons (overseen by guifi.net Foundation)</td>
<td>Infrastructure: can be paid up-front (1500€, usually in one single payment) or rented (170€/month, indefinitely) Service: 180/month (typically) 1 Gbps but subject to availability and specific operators’ conditions</td>
<td>Registered as telecom provider in ES</td>
<td>Consumers, employees, commons (guifi.net Foundation)</td>
<td>Telecom operator (registered in national regulator)</td>
<td>None</td>
</tr>
<tr>
<td>EC Fibre</td>
<td>Vermont, USA</td>
<td>Investors purchase tax-exempt 15 year promissory notes that effectively earn 6% interest</td>
<td>ECFiber is an Interlocal Contract with a Governing Board composed of a representative from each member town (of)</td>
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</table>
Gigabit/fibre networks

- Local networks: rural, urban, regional ...
- Business and governance models: commercial, cooperative, municipal, academic, governmental ...
- Network model:
  - Local/regional/global addressing, routing, redundancy, gateways (CGNAT), etc.
  - IXP like: interconnections, choice of carriers, CDN, VOIP providers, etc.
- But there is more ...
Layering

- **Layers**: (retail) electronic services, "telcos" active network, "netcos" physical infrastructure (dark fiber), "infracos"
- **Vertically integrated**: all layers by one provider
- **Incumbent networks**:
  - Unbundled line access, Bit-stream or VULA,
  - Wholesale access for alternative/challengers
- **Wholesale-only model**:
  - An open access network, sells wholesale services, not retailers
Best current practice on alternative operators

- How you can contribute?
  - Ideas for the table to content: structure
  - Contact me to collect details about BCP cases to document
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