European Commission

Net4all
Italy

This project demonstrates how a public and private investment mechanism can result in an open network and a strong economic business model. The model only works, however, if everyone fulfils their commitments.

It also demonstrates that the public local intervention of municipalities and regional government can benefit, but not displace, the market of telecommunications operators.

Source
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Photo: Net4all

In 2013, Net4all was launched to bring ultra-fast broadband via fibre optic cables to industrial and handicraft areas, where micro, small and medium-sized enterprises suffered from lower competitiveness and productivity due to the digital divide in the Italian region of Emilia Romagna.

Lead by the regional 'in house' subsidiary service provider, LepidaScpA[1], the project is based on the reuse of existing passive public infrastructure and a public-private partnership of co-investing enterprises to build new networks. The project involved:

- LepidaScpA / Regione Emilia-Romagna provided connectivity via the Lepida network, managed the operation and found private telecommunications operators to provide the service.
- Municipalities in whose territory the under-served handicraft and industrial areas are based contributed to running the project and provided free access to the publicly owned passive infrastructures, namely street lighting ducts.
- Companies based in the targeted areas paid a once-off sum for the fibre and its installation, ranging between €4,500 and €5,500 on average. The cost of connecting each area depends on how far it is located from a point of presence (POP)[2] of the existing Lepida network, as well as the state of the street lighting ducts.
- Certain local Chambers of Commerce who recognised the value of ultra-fast broadband for competitiveness participated in providing grants to companies covering up to 50% of the networking cost.
- Telecommunications operators adhered to the model and used bandwidth provided by LepidaScpA to operate in market failure areas.

The resulting network became a public infrastructure made available to the co-financing companies for free, usually on a 15-year renewable concession model[3].

The connectivity and other value-added services are provided by private telecommunications operators buying bandwidth from LepidaScpA at a favourable price. Where no interested operators are found, the connectivity is provided by LepidaScpA itself. This allows for prices comparable to those found in areas not affected by the digital divide, thus eradicating another element of discrimination among different locations.

In terms of impact, the largest companies experienced a reduction of 75% in costs related to connectivity. Ultra-fast connectivity enabled a reorganisation of work. In one case, it allowed a printing company to stop working at night, which had been the only time when the ADSL[4] connection allowed them to upload big chunks of data. In others, it allowed for video-conferencing and saving on travel. Technicians working outside their headquarters could now work remotely using virtual private network services. Internal management was made easier and almost all companies began considering introducing cloud solutions[5] for internal applications.

1 LepidaScpA is an in-house service provider established by Regional Law (11/2004). It was created in 2007 by the Emilia-Romagna Regional Government. It is the end result of a process that started in the beginning of 2000, with the design and implementation of a homogeneous and efficient broadband network (Lepida Network) linking all local authorities in the region with optical fibre. Since 1.1.2019 the company is called LepidaScpA, following a process of merging between Lepida SpA and another regional in-house focused on ICT for the health system, Cup2000.

2 POP/Point of Presence mainly refers to an access point, location or facility that connects to the Internet and helps other devices establish a connection with the Internet.

3 "A Concession gives a concessionaire the long term right to use all utility assets conferred on the concessionaire, including responsibility for operations and some investment. Asset ownership remains with the authority [...]. The concessionaire will pay a concession fee to the authority which will usually be ring-fenced and put towards asset replacement and expansion."
Source and further information: https://ppp.worldbank.org/public-private-partnership/agreements/concessions-bots-dbos

4 Asymmetric Digital Subscriber Line: internet over copper cable, with faster download speeds than upload speeds

5 Cloud-based computing allows users access to software applications that run on shared computing resources via the Internet.

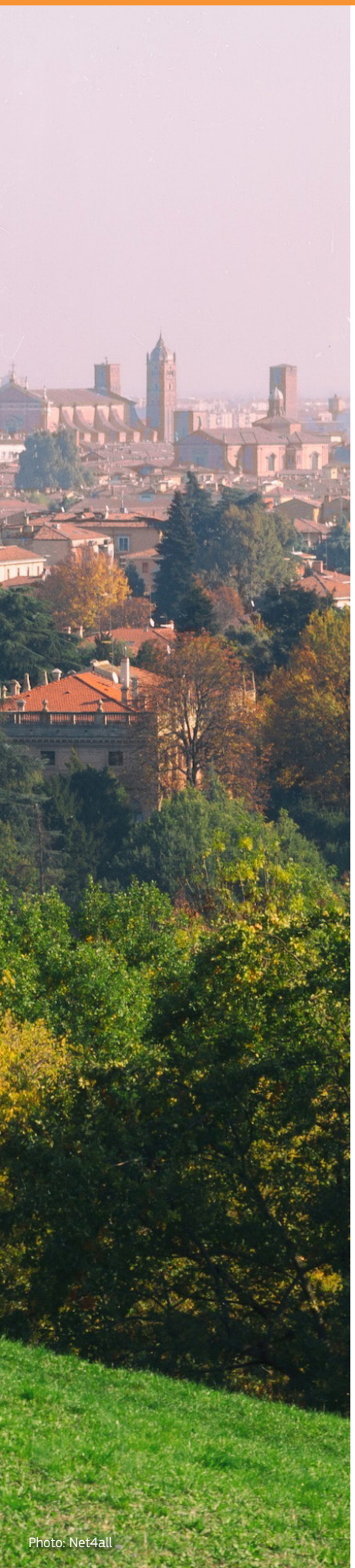

Photo: Net4all

Good practices in project planning

- ✓ Taking into account the direct and indirect socio-economic impacts attained by the project including the impact on the affordability of services for end-users taking into consideration the quality of services offered (e.g.: price / quality; price / speed)
- ✓ Mapping public passive infrastructures (poles, ducts) and examining whether they can be used and under which conditions
- ✓ Making the facilities (passive infrastructures) owned by the public sector available at an attractive economic rate
- ✓ Getting/empowering the local market operators interested in peripheral and rural areas. There is a growing number of challenger companies that specialise in rural fibre and wireless network deployment
- ✓ Keeping control of the deadlines for the completion of the works and actively supporting and encouraging the issuing of construction permits

Leading organisation	LepidaScpA
Financing	The public bodies (municipalities and LepidaScpA) make the public facilities (passive infrastructure) available for free. The local companies pay for the fibre and its installation (average cost per company: €4,500 - €5,500). Additional contributions from municipalities (in kind) and LepidaScpA (10% of total cost, covering feasibility study and operation management)
Speed / Performance	≥100 Mbps (Megabits per second)
Technology	The infrastructures are based on fibre optic cables and are FTTX[1]. A backbone is created from the closest joint of the Lepida Network to a central point of the selected area where a switch cabinet is placed. From there, links are deployed, going to the residing companies involved. The link is terminated with an apparatus inside the company area.
Average price of standard service for households	Maximum prices for the private enterprises (high Service Level Agreement): • €103/month + VAT for symmetrical[2] and guaranteed 10 Mbps • €206/month + VAT for symmetrical and guaranteed 30 Mbps • €410/month + VAT for symmetrical and guaranteed 100 Mbps • €823/month + VAT for symmetrical and guaranteed 300 Mbps • €1.646/month + VAT for symmetrical and guaranteed 1000 Mbps This includes additional services such as connection to Lepida's data centres or backup solutions in fixed wireless[3] access on a licensed frequency.
The network	The model is already provided in 190 handicraft and industrial areas and more than 250 enterprises.

1 Fibre to the x or fibre in the loop: a general term referring to different types of fibre deployment:
FTTP/FTTH/FTTB: fibre laid all the way to the premises/home/building
FTTC/N: fibre laid to the cabinet or node, with copper wires completing the connection

2 Equal download and upload speeds

3 Wireless communication devices or systems used to connect two fixed locations with a radio or other wireless link.