

„Broadband in the 21<sup>st</sup> century“  
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# Broadband cooking recipe

A pragmatic approach to the implementation of a  
successful broadband development strategy for rural areas

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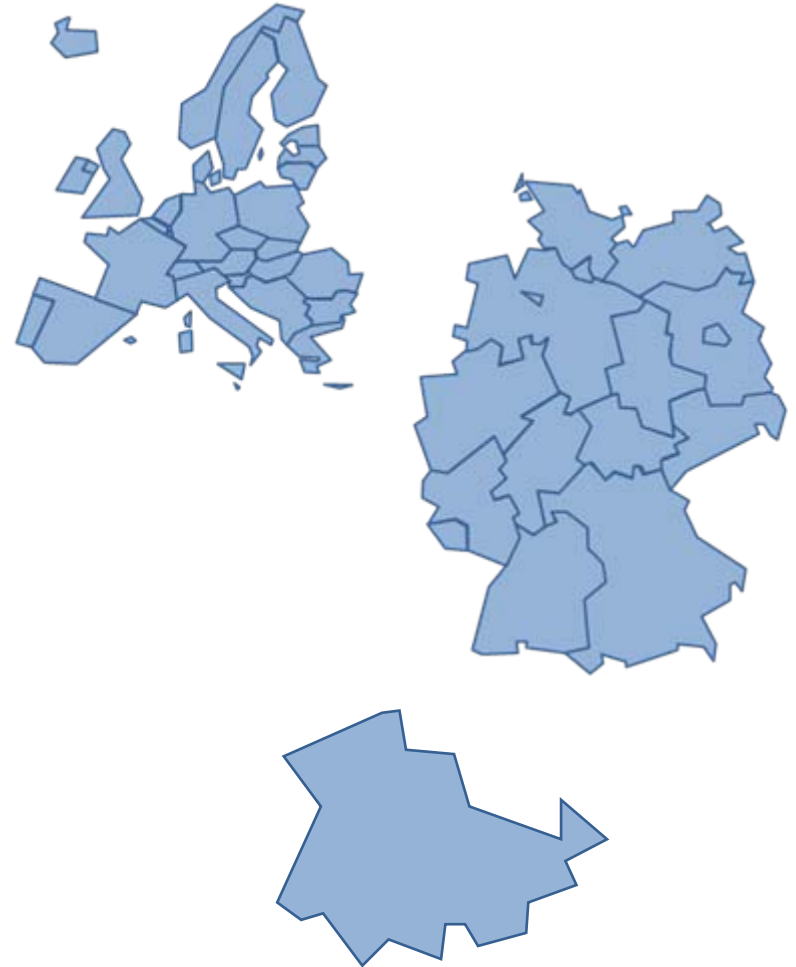
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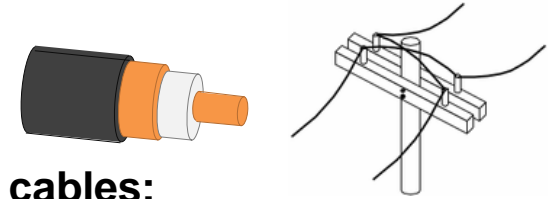
Project management,  
infrastructure development  
with local communities





## Fiber optics:

- Virtually unlimited transmission capacity
- Virtually unlimited transmission distance
- Virtually unlimited lifetime
- Virtually unlimited availability



## Copper cables:

- Limited [capacity x distance] product
- Expensive raw materials
- Interference and interception issues
- The infrastructure already exists



## Radio technologies:

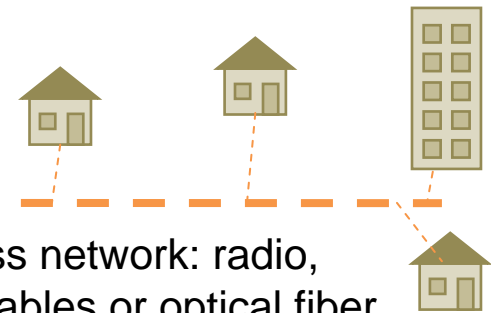
- Limited capacity (radio frequency spectrum)
- Limited reach (obstacles)
- „Light“ infrastructure
- mobile internet: interesting market as a complement to broadband



Backbone: long-distance,  
high-capacity infrastructure



Access network: radio,  
copper cables or optical fiber

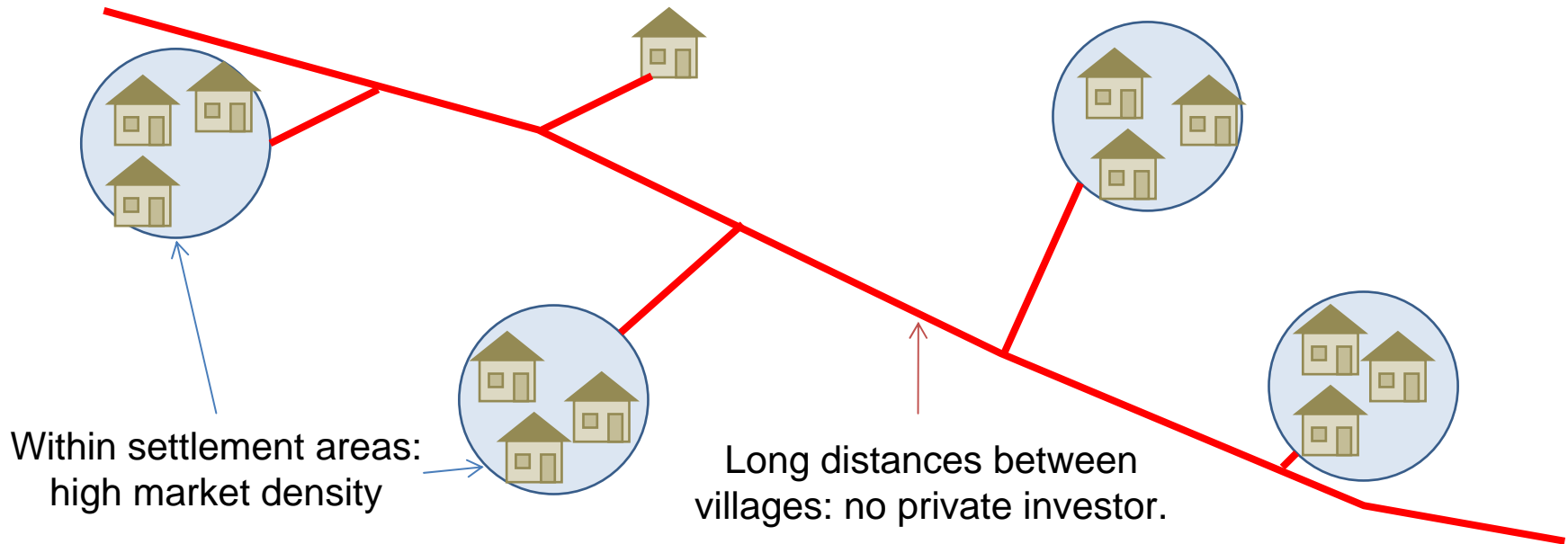


**An easy-to-use indicator for measuring broadband development:  
the distance between the end-user and the nearest optical fiber**

	Market regulation	Public Financing	Technical support	Infrastructure Planning	Demand stimulation
EU					
Federal state					
Higher regional level (states)					
Lower regional level					
Local communities					

Find the right decision level for the right job.

„Enable the private market, not replace it.“



**Backbone infrastructure:**

- High costs compared to investments in urban areas.
- Competition at the infrastructure level is not possible in rural areas.

**Solution:** public financing (partially) and leasing model „fair access“.

## **Demand layer:**

- Qualified broadband demand
- Quantitative market analysis (business/ private)

## **Coverage layer:**

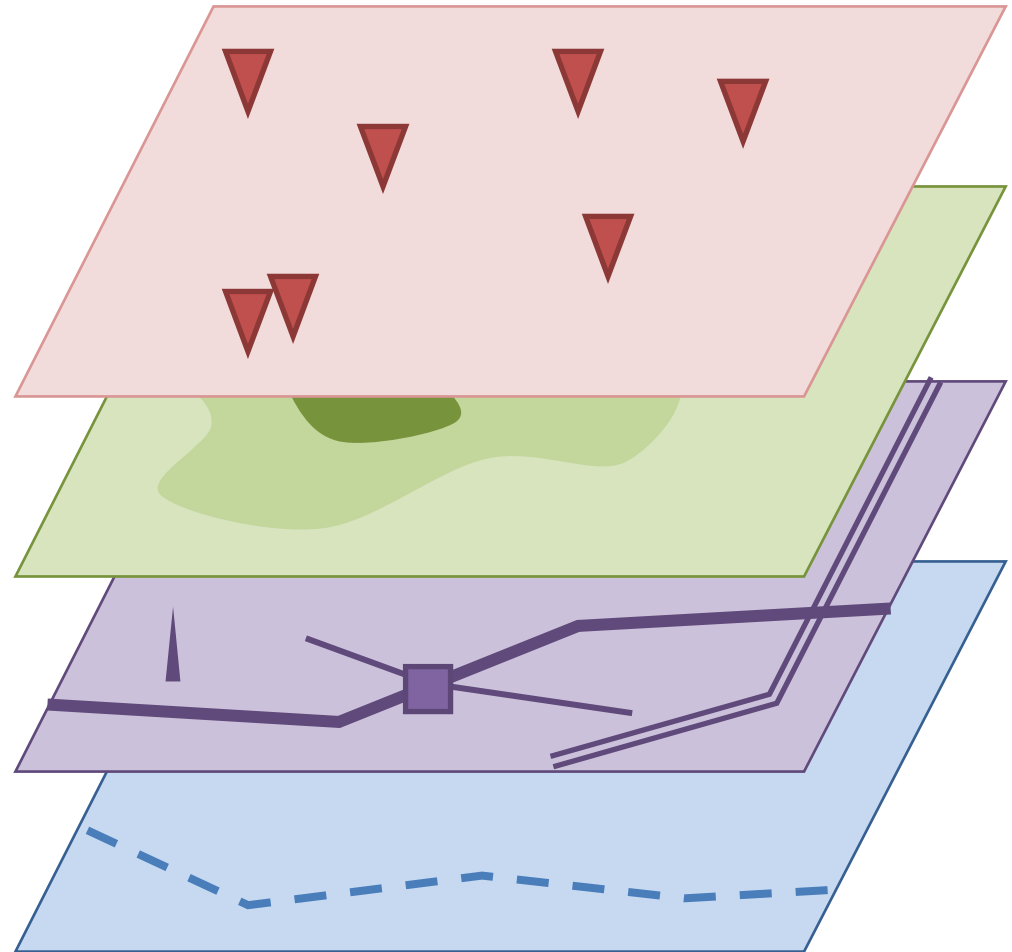
- Broadband coverage
- Available bandwidth/ quality

## **Infrastructure layer:**

- Telecommunications infrastructures
- Other relevant infrastructures

## **Development layer:**

- Draft planning
- Planned upgrades



**Make it Web 2.0!**

**A. Demand analysis:** evaluate the market size and the economic detriment for not-connected companies.

**B. Analysis of the existing infrastructure:** figure out the current broadband coverage and other relevant infrastructures for broadband development.

**C. Draft infrastructure planning:** draw the lines of an efficient development strategy.

**D. Negotiations with the telecommunications operators:** negotiate the contribution of the private market to the development of the infrastructure.

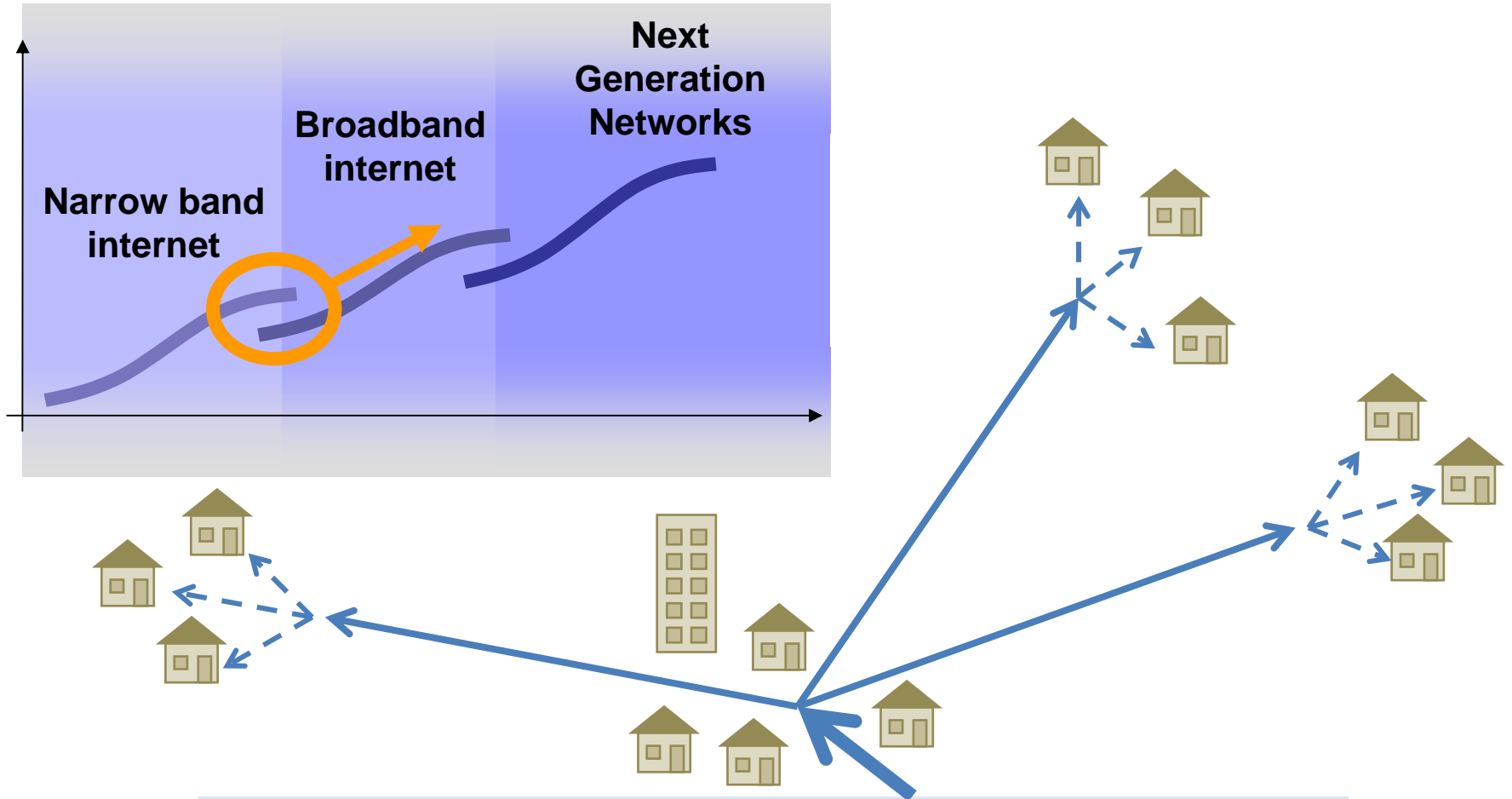
**E. Analysis of the economic opportunity:** compare investment costs, return on investment and risk factors over the next 15 to 20 years.

**F. Project financing:** bring together public and private financing.

**G. Business model (optional):** in case the private market is not able to propose solutions, create a business of public initiative.

**All these points are essential!**

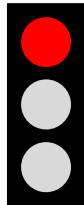
The development of the broadband infrastructure is a continuous process



**ADSL >> „Fiber-to-the-Village“ >> „Fiber-to-the-Home“  
Shape the present, prepare the future.**

**Better infrastructures should generate higher revenues.**

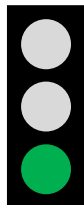
A bad example  
in Germany:



ISDN	DSL	FTTH
104kbit/s	384kbit/s to 16000kbit/s	100Mbit/s
70€/month (average)	35€/month (market price)	35€/month (in Cologne)

**Which investor would be so fool to upgrade the ISDN infrastructure in rural areas?**

A good example  
in Germany:



Local-loop access prices	Regulated price 2007-2009	Regulated price 2009-2014
Fiber optics local loop (OPAL)	13.25€	16.27€
Copper local loop	10.50€	10.20€

**Do not let private actors decouple access prices and connection quality.**

Building a state-of-the-art broadband infrastructure is not the point.  
**Having people use broadband is the real objective.**

**Two main targets:**

- small businesses
- elementary schools

**The digital divide will not reduce by itself**

**Other targets:**

- elderly people
- low education social groups

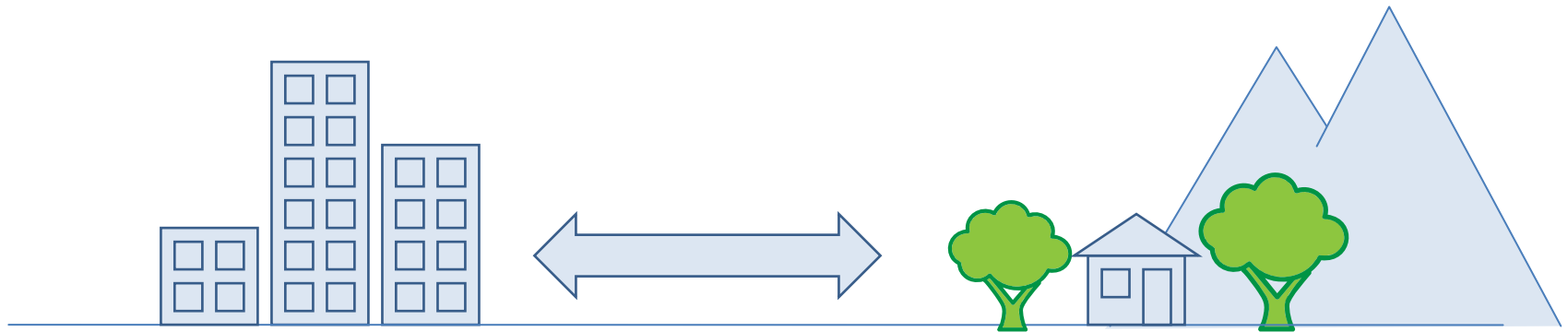
**Up to 1/3 of public broadband programmes should be used for demand stimulation.**

**The three golden rules for an efficient demand stimulation:**

- Users train users (no „teachers“)
- Do not explain; just demonstrate
- Try it yourself and learn by yourself



**A long-term structural digital divide between urban und rural areas.**



**How will you finance the long-term development of the telecommunications infrastructure in rural areas?**

Possible strategies:

- Spend taxpayers' money to develop broadband infrastructures in rural areas.
- Introduce costs redistribution mechanisms between private operators on the basis of the regional distribution of their respective customer base.
- „Free market“: People in rural areas should pay the full price! Put an end to the nationally unified prices.



Tank you for your attention

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