Module 1
Introduction to the importance of digitization for local food producers and basic approach to the web

CONTENT 3: Technical solutions for Internet Connection problems in rural areas

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Introduction: Why a good digital connectivity matters for LFP

- Importance of the digital uses for the new challenges of LFP:
  - ➢ The visibility of the farm
  - ➢ The direct contact with the customers/the community of customers
  - ➢ New technical digital uses: participating to databases, being informed about meteorological alerts, etc.
  - ➢ Easier and faster management
  - ➢ See also content 1

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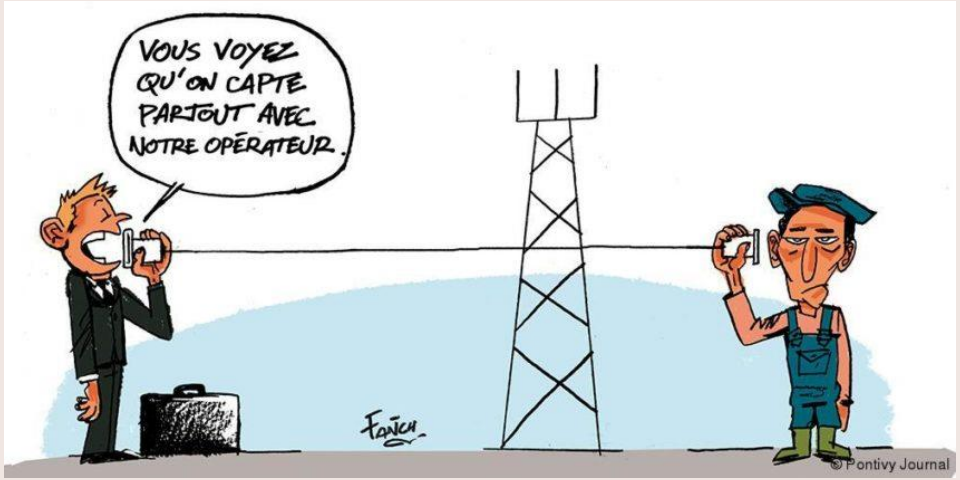
1. Understanding the barriers of connectivity in rural areas

- Geographical barriers
- Low population density
- A few professional providers
- High infrastructure costs for a few number of users
- Limited service provider interest



"you can see that the telephone goes everywhere with our operator" - Credit Actu – le Ploermelais

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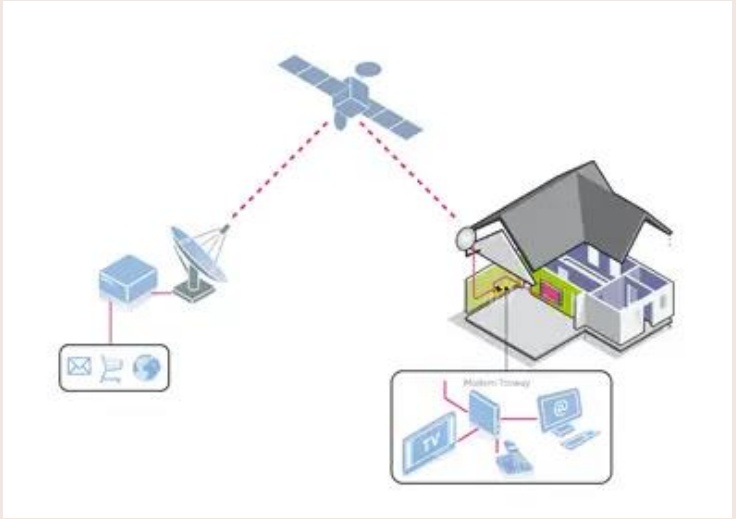
2. Satellite connections

- How it's working ?

Satellite internet in rural areas works by transmitting data between a user's satellite dish and a satellite in space. The satellite communicates with a network operations center on Earth, which is connected to the broader internet. When a user requests data, like opening a webpage, the signal is sent from the dish to the satellite, relayed to the ground station, and then routed through the internet.

The process reverses to deliver the data back. Satellite internet is ideal for remote locations where traditional broadband infrastructure (like cables or fiber) is unavailable, though it can be affected by weather and latency.



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2. Satellite connections

- Providers: Starlink, HughesNet, Viasat,
- https://www.broadbandforall.eu/ : an online tool that helps citizens find a local distributor capable of providing them with immediate connectivity, wherever they live. Provided by The Global Satellite Operators Association (GSOA) with the support of the European Commission
- Pros: wide coverage, quick deployment.
- Cons: latency, weather dependency, cost of the equipment (around 350 €)

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3. Fixed Wireless access

- How it's working ?

FWA uses wireless devices that act like miniature cell towers to connect homes and businesses with high-speed internet service. Devices can be mounted on high places. They are then less expensive to install than fiber optic cable. Infrastructure requirements: towers, line-of-sight

- Pros: relatively low cost, high speeds
- Cons: signal interference, limited range

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4. Supporting the extension of fiber optics

- How it's working ?

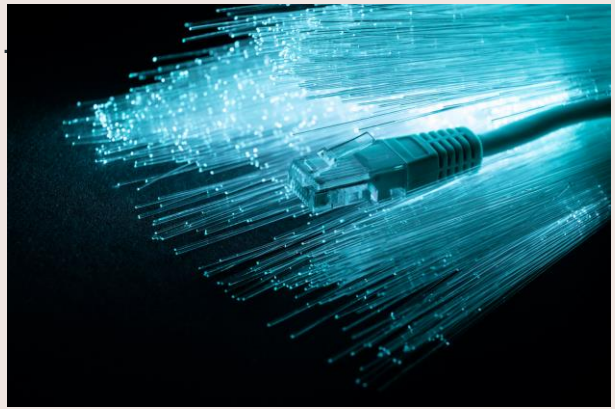
An optical fiber is a hair-thin glass wire in which light signals emitted by a laser can travel.

This glass wire is then surrounded by several plastic protective sheaths.

This is a wired technology for transmitting information, particularly between computers:

No electricity flows through optical fibers, only light.

- Benefits of fiber optics: high speed, reliability
- Challenges: high installation costs, extensive groundwork
- Innovative approaches: community cooperatives, public-private partnerships.



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4. Supporting the extension of fiber optics

- Innovative approaches: community cooperatives, public-private partnerships

In Europe, the development of fiber optics in rural areas depends on the political will of national and local authorities, who mobilize substantial investment budgets to convince operators to install fiber optics.

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5. Mobile Broadband and 4G/5G

Utilizing cellular networks for internet access

Benefits of 4G and 5G technologies :

- Solutions for rural areas: small cells, signal boosters
- Not very expensive, both for operators and users

Negative side: Download speeds can vary significantly depending on signal quality and network congestion

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6. Community driven approaches

- Local cooperatives and non-profits organizations
- Public/private initiatives : the loon project - https://x.company/projects/loon/
- Crowdsourcing and community funding.
- Examples of successful community-led projects : The Community-led broadband project builds 1 Gbps fibre network in rural Scotland - https://youtu.be/4VOhTiSYChQ

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Useful links

- Access to an internet operator anywhere in Europe
- The Community-led broadband project
- Rural Connectivity toolkit

References

CONTENTS

- Practical information about connectivity in rural areas (french)
- Financial tools for connectivity in rural areas

IMAGES

- Freepik