NOKIA

Community Broadband

Background

Provide universal, affordable and sustainable broadband connectivity to improve inclusion, safety, resilience and attractiveness in a hyper-connected world.

Access to essential public services, economic development and broader attractiveness of your territory now depends on once unimaginably fast internet access. Around the world, ultra-broadband connections can improve inclusion, government services and citizen retention. With COVID-19 recovery funds being allocated to bridging the digital divide, now is the time to consider ultra-broadband for your community.

This brief describes how Nokia can help your community stay in or even lead the race to ultra-broadband, which is essential to the life of your city or county.

Challenges

A decade ago, when Google asked which communities would want a gigabit fiber network, over 1,100 communities applied. Today, in a post-pandemic era, that number would likely be much greater, across the world.

There are really only two options to consider when thinking about ways to get ultra-broadband service to your community:

1. Hope that a traditional service provider will build it
2. Launch your own community-led broadband project

If you choose the second option, the success of any major investment hinges on careful consideration of five key factors:

- **Economic:** The economics of building and operating an ultra-broadband network are critical to the success of your project. Every community broadband initiative must understand why current market forces are not producing the affordable, abundant bandwidth that communities seek.

- **Political:** Upgrading a community's broadband network requires an ongoing commitment, which itself requires a stable political environment with strong leadership. If the community has other pressing issues, a volatile political situation, or leadership not willing to defend the broadband project, it may be difficult for the project to be a long-term success.

- **Legal:** Deployment of a new network or an upgrade from existing infrastructure will have to address many legal issues. These include:
  - Providing access to rights of ways and poles
  - Ensuring the construction does not violate environmental or historical preservation laws
  - Meeting local and state construction requirements, as well as various local, state and federal obligations to communications providers

- **Financial:** Every network requires significant up-front capital costs against future revenue streams. Obtaining the most efficient capital is critical to the long-term sustainability of the project. This can be achieved in a wide variety of ways.

- **Technical:** While fiber is the best technology for community broadband networks, fixed wireless access (FWA) is, under certain circumstances, a great complement to your fiber network. In any case, there are several technical issues that must be resolved to ensure that the network is planned and deployed to provide for today's needs and technologies as well as those of the future smart city services.

How we help you

Nokia recognizes both the complexity of community broadband deployments and the fact that it might not be government's role to manage and operate the network. We can work with partners and offer an end-to-end, flexible approach that is structured to facilitate and secure the deployment of your network.

Work with a reliable partner throughout the entire project cycle
Our approach leverages our experience and expertise with community broadband deployments worldwide to help you:

- **Plan:** Consultancy, business modeling, funding modeling and risk mitigation
- **Design:** Network and detailed infrastructure design
- **Build:** Project governance, execution, installation and commissioning, operation readiness and end-to-end testing

- **Operate:** Maintenance, network operations center (NOC) build and commissioning, management of the interface to service provider networks
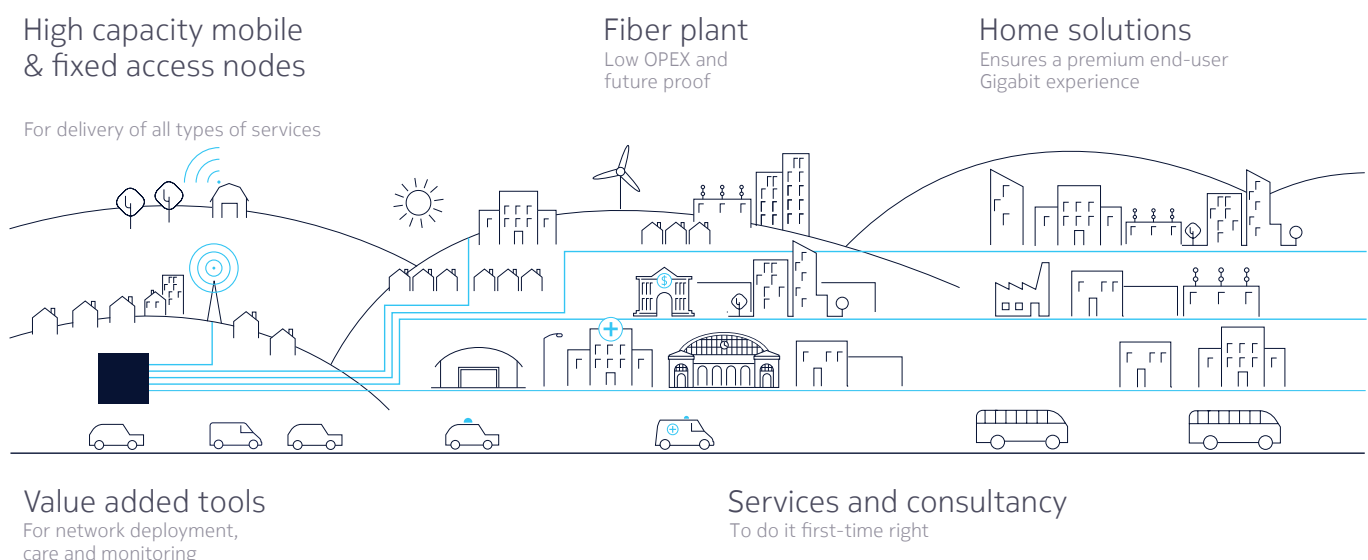
Choose a structure to suit your needs
Depending on the model you choose, we can:

- **Do it together:** With our partners, we provide the entire ecosystem to complement your efforts, including:
  - Business case
  - Business model structure
  - Network design
  - Project governance
  - Management of the interface to service provider networks
  - Transfer back to the community/operator

- **Help you do it yourself:** We give you comprehensive guidelines to help you launch your project and conduct day-to-day management, project blueprints and operation handbooks.

Leverage a best-of breed end-to-end portfolio
From fixed and wireless ultra-broadband to IP and optical networking, operations subsystems/business subsystems (OSS/BSS), and professional services, Nokia is a strong market leader. This allows us to be agnostic, selecting the technologies that offer the best total cost of ownership (TCO)/performance/investment protection ratio for a sustainable investment for all project stakeholders.

Figure 1. We provide the value for decades to come

High capacity mobile
& fixed access nodes

Fiber plant
Low OPEX and
future proof

Home solutions
Ensures a premium end-user
Gigabit experience

For delivery of all types of services

Value added tools
For network deployment,
care and monitoring

Services and consultancy
To do it first-time right

NOKIA

- Why our approach is different
- i) With the most complete portfolio of best-of-breed networking technologies and a full set of professional services, we offer a reliable, one-stop shop solution for community broadband.
- ii) As a technology and market leader in fixed and fixed wireless broadband access, we are technology agnostic and leverage the best of both worlds to optimize network performance.
- iii) We are accustomed to working with long term investors and consortiums and leverage this experience to offer a true turnkey approach.
- iv) Beyond the broadband foundation, we can help with urban digital infrastructure and smart city services to further develop your territory.

How you benefit

- Enhance inclusion within your community by connecting underserved areas to the digital society and economy.
- Retain and attract new citizens and businesses to your community.
- Develop and deploy new digital services (efficient, safe, resilient and sustainable cities and territories) that will further improve your government's operations and services offered to your community.

Let us help you

Nokia is committed to helping governments bridge the digital divide with more sustainable, affordable and accessible communications. Our mission is to invent and deliver trusted networks that unleash the value, competitiveness and attractiveness of your community, city or region.

Contact us to learn how our ultra-broadband solutions for government can help you increase your competitiveness and promote inclusion.

For more information on Nokia's solutions for governments, visit

networks.nokia.com/government/broadband-plan