SATELLITE: A COMPELLING AND EFFECTIVE SOLUTION TO BRIDGE THE BROADBAND DIVIDE

SESSION 2: REVIEW OF THE IMPLEMENTATION OF THE REGIONAL INITIATIVE FOR EUROPE ADOPTED AT WTDC-14

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AGENDA

- Introduction
- The Case for Satellite Broadband
  - Current broadband penetration levels
  - Where are the Unconnected?
  - Technologies for broadband infrastructure
  - When to use satellite broadband
  - Why is satellite important for broadband?
  - New developments in satellite broadband
  - Applications of satellite technology
- Regulatory Considerations
- Financial Considerations
  - Cost of satellite broadband
  - Financing models for Satellite Broadband (Ground Infrastructure)
- What is ITSO doing?
- Closing Remarks

INTRODUCTION

- The importance of broadband and ICTs as an accelerator of social, economic, and environmentally sustainable growth for all is widely recognized.
- According to the latest ITU “Measuring the Information Society Report” (2015), 3.2 billion people are now online, representing 43.4% of the global population.
- Bridging the digital divide helps create a more inclusive and cohesive society.
- Connectivity must be brought to remote and rural areas, so that no one is left behind.
- The SDGs specifically cite ICTs in many of their targets as necessary for sustainable development.

THE CASE FOR SATELLITE BROADBAND:
CURRENT BROADBAND PENETRATION LEVELS

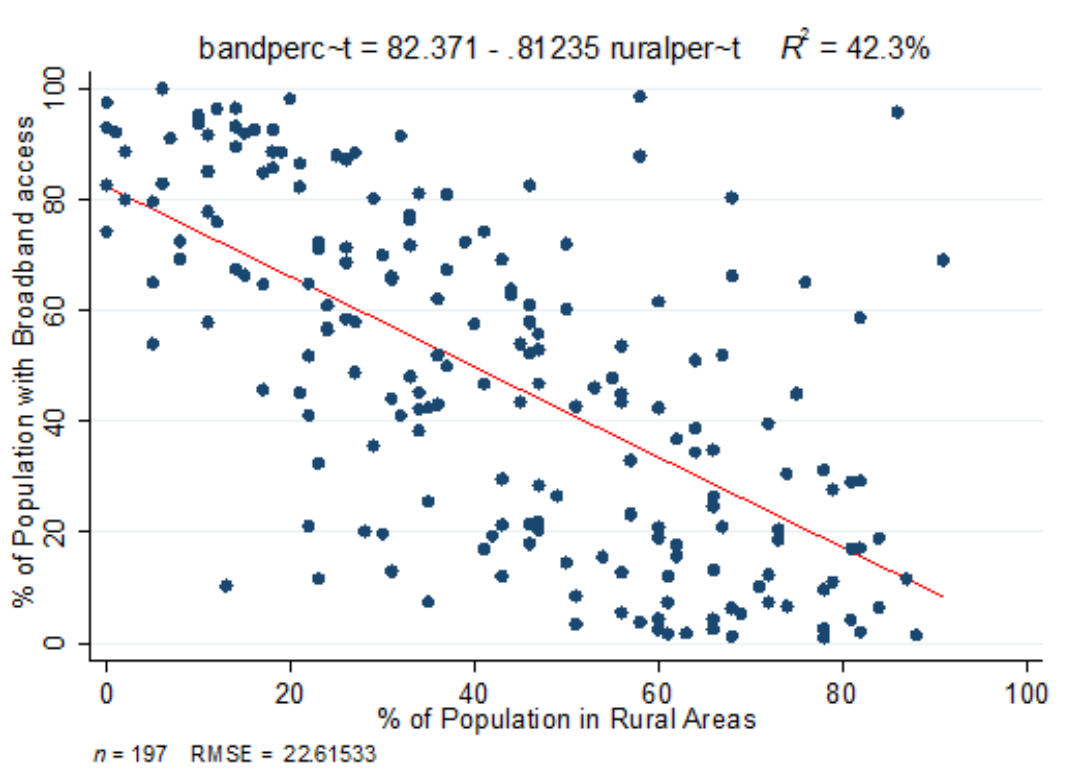
- There is a huge divide between the well-connected urban centers and off-the-grid rural areas: 70% of people who do not have access to broadband infrastructure are in rural areas.

- There is a strong negative correlation between access to broadband infrastructure and the percentage of population living in rural areas.

SATELLITE BROADBAND:
WHERE ARE THE UNCONNECTED?

- The scatter graph adjacent compares the percentage of a country's population with access to broadband infrastructure to the percentage of people living in the country's rural areas.
- It depicts a strong negative correlation between access to broadband infrastructure and the percentage of population living in rural areas.

Access to Broadband Infrastructure in Urban and Rural Regions



THE CASE FOR SATELLITE BROADBAND: TECHNOLOGIES FOR BROADBAND INFRASTRUCTURE

- There are three main technologies for broadband infrastructure:
  - fiber optic cables
  - terrestrial microwave systems
  - telecommunications satellites

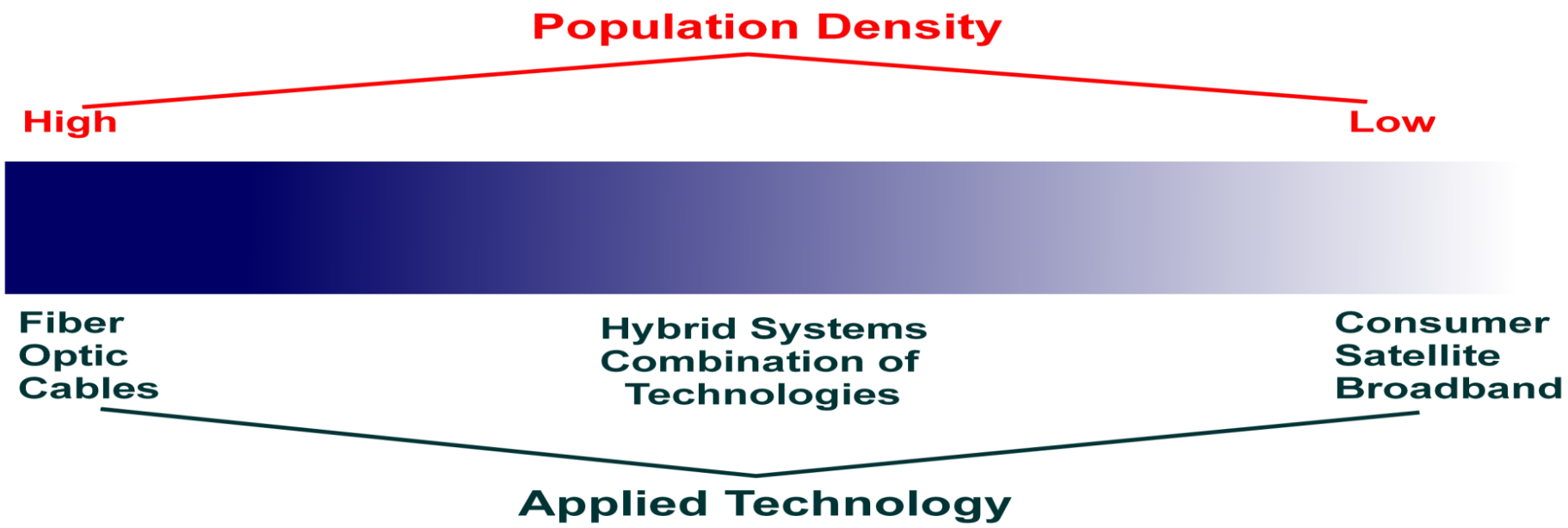
- Fiber optic cable and terrestrial microwave systems tend to be the preferred media in densely populated areas because of their transmission capacity and cost effectiveness.

- Satellite broadband is more cost effective than terrestrial technologies in rural and low population density areas.

- Satellite broadband is uniquely placed to provide access to rural, remote, and low population density areas.

ITSO

THE CASE FOR SATELLITE BROADBAND:
WHEN TO USE SATELLITE BROADBAND



- Satellite broadband is the best and possibility the only option for widespread remote settlements.

SATELLITE BROADBAND:
WHY IS SATELLITE IMPORTANT FOR BROADBAND?

- Satellites are **point-to-multipoint systems**, i.e., they do not end at a single, specific point, but can reach all geographic targets within a given area, thus giving instantaneous coverage over a region.
- Satellite is the only broadband technology that provides full coverage, in metropolitan as well as in rural or most remote areas, including mountainous regions, islands, the seas and the skies.
- Satellite infrastructure already exists, the provision of services only requires the purchase of ground equipment
- The cost of services is independent from distance or number of subscribers.

Therefore, satellite broadband plays a crucial role in connecting rural and low population density areas.

SATELLITE BROADBAND:
NEW DEVELOPMENTS IN SATELLITE BROADBAND

- Satellite broadband has vastly improved in terms of quality and the speed/capacity of the latest systems is comparable to or better than some fixed/residential broadband systems in Europe or in the United States.
- I.e., **High Throughput Satellites (HTS)**, have recently been developed to provide broadband services. Examples of HTS satellites:
  - Intelsat Epic^{NG} system
  - The Inmarsat I-5 (Global Xpress) network
  - Eutelsat's E 65 WA, E 117 WB and E 172 B

Coverage Map of Intelsat's Epic^{NG} satellites, an example of HTS

THE CASE FOR SATELLITE BROADBAND:
APPLICATIONS OF SATELLITE TECHNOLOGIES

- Smart Societies
- E-learning
- E-Health
- E-banking and other virtual finance initiatives
- Rural Economics
- Natural Resources Exploration
- Agriculture initiatives

Cure International Hospital serviced by SATMED and SES satellites. Source: SATMED

THE CASE FOR SATELLITE BROADBAND:
APPLICATIONS OF SATELLITE TECHNOLOGIES (CONTINUED…)

Recent examples of satellite broadband initiatives include:

- Vodacom partnered with Intelsat to extend service to over 700 rural sites in the Democratic Republic of Congo.
- Inmarsat worked with Turksat, allowing Turksat to offer a significantly larger amount of mobile satellite products and services to its customers.
- Eutelsat and Facebook teamed up to leverage satellite technologies to get more people on the African continent online.

Source: Insightssuccess

REGULATORY CONSIDERATIONS

- Regulation and policies play a critical role, and can either foster or hamper the provisioning of connectivity **Therefore it is crucial to create an enabling regulatory environment.**
  - Regulation can promote innovation, investment, and effective infrastructure which can strengthen and diversify the ICT resources that are available to communities.
- National Broadband Plans (NBPs) are a good way of accomplishing an enabling environment and the inclusion of satellite broadband in NBPs is crucial.
  - The following countries, among others, directly consider **satellite broadband** in their connectivity regimes:
    - United States of America
    - Kenya
    - Brazil
    - Malaysia
    - The European Union
    - Australia
- Governments must transition towards collaborative regulation (5th generation) which takes into account cross-sectoral cooperation towards similar policy goals.

FINANCING CONSIDERATIONS:
COST OF SATELLITE BROADBAND

- Communications satellite projects can range from US $300-$600 million.
- Satellite deployment costs are typically high, up-front and fixed, which are typically recouped over the expected 15-year lifetime of the satellite."
- Satellite construction and deployment costs are usually taken care of by the satellite operator.
- Distance independent Capital Expenses (CAPEX).
- Provision of satellite broadband services requires only ground infrastructure.

FINANCING CONSIDERATIONS:
FINANCING MODELS FOR SATELLITE BROADBAND (GROUND TECHNOLOGY)

The four models below could be employed to secure financing:

- Central Government Funding
- Localized Government Funding
- Public-Private Funding
- Commercial (Private) Funding

There are also many multilateral and financing organizations that can support major development projects, including research, consultation and non-refundable grants:

- World Bank Group
- International Finance Corporation (IMF)
- Inter-American Development Bank (IADB)

WHAT IS ITSO DOING?

- Capacity Building
  - ITSO's program has three courses: one for policy makers and regulators, another for Earth station operators and engineers, and a third course for a combination of both technical and regulatory participants.
  - ITSO founded the Program on International Communications Regulation and Policy at American University's Washington College of Law
- Specific Projects
  - Pacific Islands
  - Caribbean
- Assistance with the Development of National Broadband Plans

CLOSING REMARKS

- Large parts of the population are without access to key digital services like broadband, with many of these people located in developing countries and in sparsely populated communities.
- Satellites can help deliver government and commercial services to these people, with many satellite operators already leading the way.
- Satellite is more cost effective than terrestrial means in rural, remote, and low population density regions.
- There are many options available for financing satellite broadband deployment and keeping the cost of services down for end users.

THANK YOU,

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