Global Symposium for Regulators Building on Broadband Workshop 2010: Connect a School, Connect a Community National School Connectivity Plans

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Dakar, Senegal
Sofie Maddens-Toscano
ITU Expert

Introduction

- Policy and Regulatory Module reflects a broad international perspective based on an analysis of frameworks and practices from countries around the world

- Goal is to promote understanding and awareness of importance of school connectivity and its effects on the community

Why have a National School Connectivity Plan?

- School access to the Internet is considered an important policy for many countries

- Benefits include:
  - access to online education information
  - development of ICT skills
  - better school administration
  - provide access and training to the wider community

Why have a National School Connectivity Plan?

- "Educational policy-makers, administrators, and practitioners need to be acquainted with the multi-faceted opportunities, challenges and constraints of integrating ICT into education - in other words, to recognize the socio-cultural dimension of the use of ICT in education and to understand that the use of ICT in education goes beyond buying a computer, plugging it into a school, and thinking that things will improve"

- Source: UNESCO on ICT and Education (http://www.unescobkk.org/education/ict/themes/policy/issues-rationale/)

Why have a National School Connectivity Plan?

- The design of well-structured school connectivity plans with realistic timetables can have a big impact on increasing school Internet access throughout the world

- Though school connectivity cannot be achieved overnight, a plan with short-term, medium-term, and long-term objectives can provide a roadmap to the day when the target will eventually be reached

Consistency and Coordination

- School connectivity plans cannot be defined on a stand-alone basis – need for consistency with national policies and strategies to:
  - ➤ Promote ICT connectivity and the availability of broadband in schools and beyond
  - ➤ Promote specific connectivity for the education sector thereby considering specific educational applications of technology

Consistency and Coordination

- Egypt

  ➤ The National ICT policy in the area of education is jointly coordinated by MCIT and the Ministry of Education

  ➤ The plans up to 2015 are as follows:
    - *Integrating technology at schools*
    - *Introducing developed educational software*
    - *Providing electronic educational services*
    - *Establishing the necessary information technology infrastructure*
    - *Distance-training national net*
    - *Training the educational cadres*
    - *Cooperation with donors*

Consistency and Coordination

- Portugal

- By the end of January 2006, all public schools in Portugal had a broadband connection to the internet, thus completing the process initiated in 1997.
  - ➤ The project, an initiative of the Ministry for Science and Technology, started by integrating all schools into the online network of research institutions and universities, strengthening the links between these institutions and facilitating information sharing amongst them
  - ➤ By 2001, Portugal was one of the first European countries to have connected all its schools to the internet

- Coordination between policies
  - ➤ School connectivity was defined in the 'Ligar Portugal' ('Connecting Portugal') initiative , a project led by the Ministry of Science and Technology aimed at boosting Portugal's student to computer ratio and helping to create a technology infrastructure network across all 8,000+ Portuguese public schools by the end of 2009
  - ➤ Ligar Portugal is one of the strategic pillars of the Portuguese Technological Plan ('Plano Tecnológico'), a government program for growth and competitiveness based on the promotion and development of the Information Society
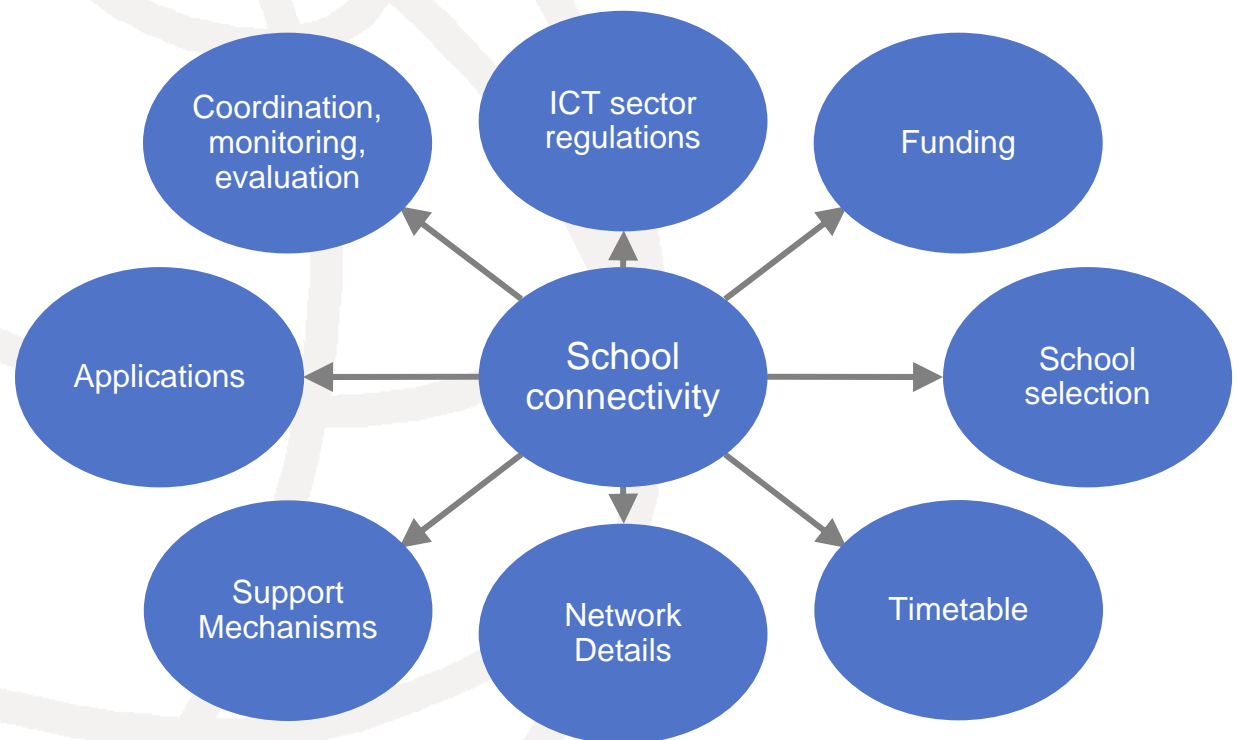
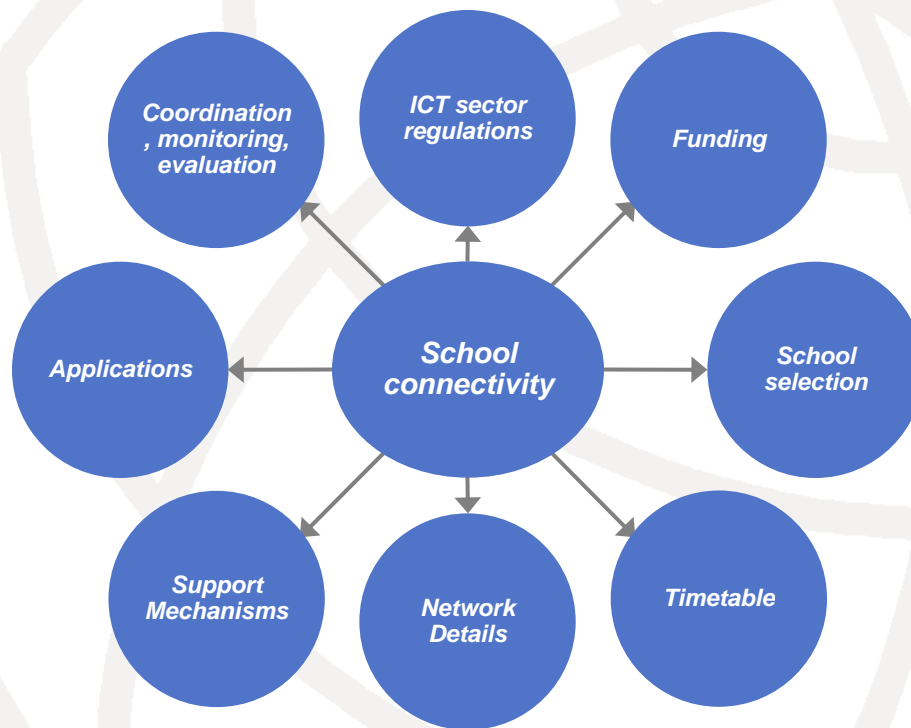# Stakeholders in school connectivity
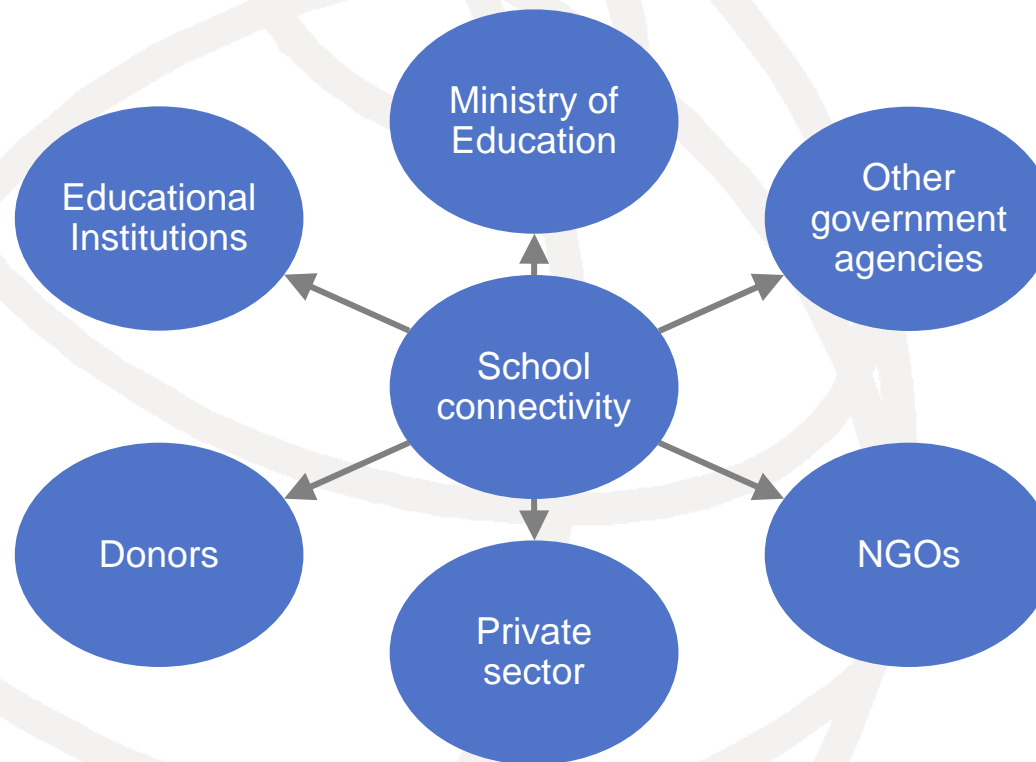
Key considerations for school connectivity

While processes might differ, there are common elements in defining School Connectivity Plans

Coordination, monitoring, evaluation

ICT sector regulations

Funding

Applications

School connectivity

School selection

Support Mechanisms

Network Details

Timetable

ICT sector regulations

Liberalization is not enough - Regulatory change must also address access and cost

➢ The gaps between urban and rural areas in terms of access to ICT infrastructure remain high

- Accommodate market realities
- Innovative licensing and spectrum management mechanisms can promote school connectivity
- UAS Policy can promote school connectivity

➢ The costs of connectivity remain unaffordable for many education institutions

- UAS Funds can be used to fund school connectivity - affordability
- E-rate Programs

Tunisia

➢ Tunisia has implemented a **multi-dimensional strategy** that focuses on:

- Modernizing its infrastructure – agreement with Tunisia Telecom to connect schools
- Establishing a favorable legal framework to facilitate the equipment of all institutions- licensing
- Restructuring its education system taking into account the requirement that all students acquire ICT skills (e.g., teaching computing from basic education and embedding ICT into the curriculum)

Ecuador

- **<u>Universal Service Strategy</u>** includes support for providing internet connectivity to schools – mainly in areas where there is no Internet access

- CONATEL develops annual plan for funding from FODETEL (UASF)

- Example: a 469,000$ project providing broadband connections and free internet access to 74 schools in Canton Montufar Municipality

Morocco

- The **universal service policies** were revised in 2004 - targeted at areas of market failure, cooperation of industry (e.g.: permitting operators to suggest universal service projects and providing them with "pay or play" options)

- The **revision of the telecommunications legal and regulatory framework** from 2004 and renewed licensing approach led to the expansion of services through market forces

Morocco

- The main components of the universal service framework in Morocco include the following aspects:

  ➢ An interministerial committee, the "Comité de Gestion du Service Universel de Télécommunications (CGSUT)," which designs and selects national universal service projects , including the funding of the GENIE Program

  ➢ A universal service fund, "Fonds du service universel des télécommunications" (FSUT), which was created in 2005 to fund universal service projects selected by the CGSUT
    - Operators pay up to 2% of revenues excluding interconnection
    - Also includes grants and international donor funds

  ➢ Introduction in 2004 of a new "pay or play" approach to operators' contributions to the universal service mission – operators may contribute in actions – their payment to FSUT will be adapted according to approved projects

Morocco

- GENIE
  - PHASE I (2005-2008)
    - In March 2005, the Moroccan government adopted a strategy having as its main objective the generalization of ICT in all public schools with the aim of improving the quality of teaching
    - The first phase of the program cost about $11 million and aimed at providing over 8,600 schools and high schools with Internet-connected multimedia rooms (between 8 and 15 computers per room) by 2008
    - The program defined a preferred speed of 512 KB/s per school
    - The equipment required was estimated at 104 000 computers and 17 200 printers over 3 years
    - Infrastructure, teacher training, and the development of pedagogical content were also part of the plan
    - In 2009 a first evaluation was published, concluding that only 1878 schools were equipped
  - PHASE II (2009-2013)
    - More coordination with education sector and integration of education reform goals into program
    - More focus on governance, monitoring and evaluation
   - Ambitious goals of equipping 9260 schools by 2013 with a cost of approximately 1172 millions dh (149 million $)

Brazil

- National Rural Telecommunications Program is aimed at increasing Internet for rural populations
  - ➢ Linked to 450-470 MHz band spectrum auction
  - ➢ License conditions required companies awarded spectrum to provide free Internet access to rural public schools in concession areas

- Broadband in Schools Program – Ministry and operators agreed to modify license conditions to provide connections of at least one Mbps to urban public schools at no cost

South Africa

- ICASA issues licenses with obligations to "lessen the digital divide"
  - ➤ As part of its community service obligation, NEOTEL must provide high-speed Internet connectivity to public schools and other educational institutions
  - ➤ As part of its 3G license, Vodacom is required to provide broadband wireless connectivity to 5,000 schools over 8 years
- Ministry of Education must identify schools to be connected

Funding
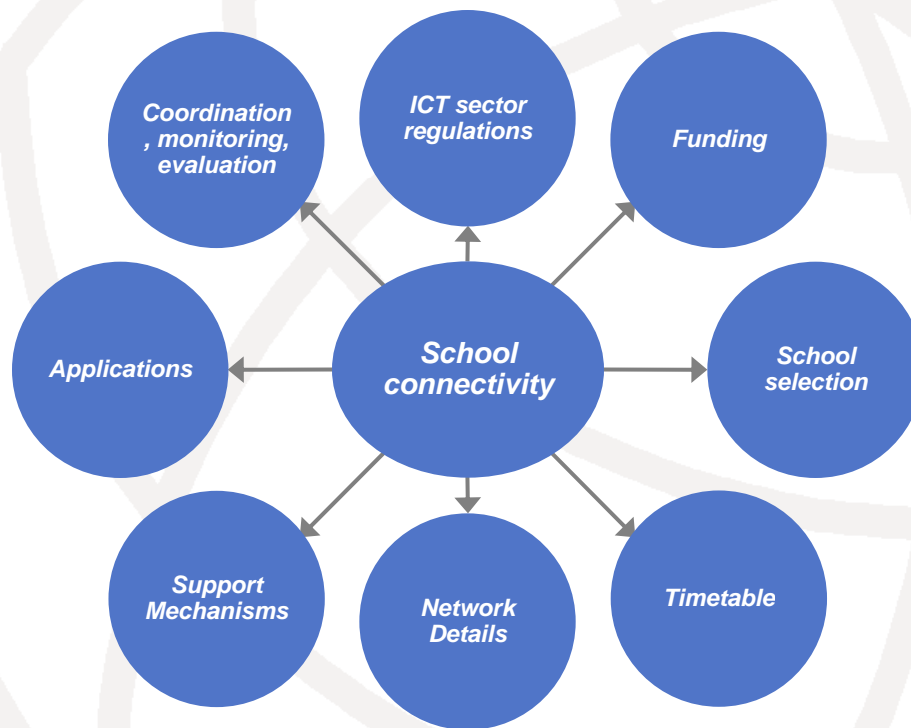
- *Government*
- *Donor Agencies*
- *Private Sector*
  - *Operators*
  - *NGOs*
  - *Equipment Manufacturers*
- *Other*

Jordan

- The Jordan Education Initiative (JEI) is a global-local, public-private partnership that aims to improve education in Jordan through effective use of Information and Communication Technologies (ICTs) and create a model of education reform for other countries

- The JEI includes the cooperation of global corporations, Jordanian entities, and governmental and NGOs working together, working with the Government of Jordan

Which schools to connect?

- Top-down Approach
  - Centralized agency identifies schools to be connected (e.g., primary, secondary, tertiary; public, private; urban, rural)
- Hybrid Approach
  - Centralized agency decides on national specifications for connectivity but individual schools must apply
- Bottom-up Approach
  - Schools arrange for their own connectivity through own funds or funds offered to them by private sector or NGOs

Which schools to connect?

- Key questions
  - ➢ Public or private
  - ➢ Rural or urban
  - ➢ Inner city schools
- Determining factors
  - ➢ School level
  - ➢ Availability of electricity and telecommunications infrastructure
  - ➢ Teacher to student ratio
- Examples
  - ➢ Canada *First Nations SchoolNet*: Internet access, computers and technical support to schools on reserves for aboriginal people, especially schools not yet connected to Internet
  - ➢ Chile *Enlaces*: targets school connectivity for federally subsidized public schools
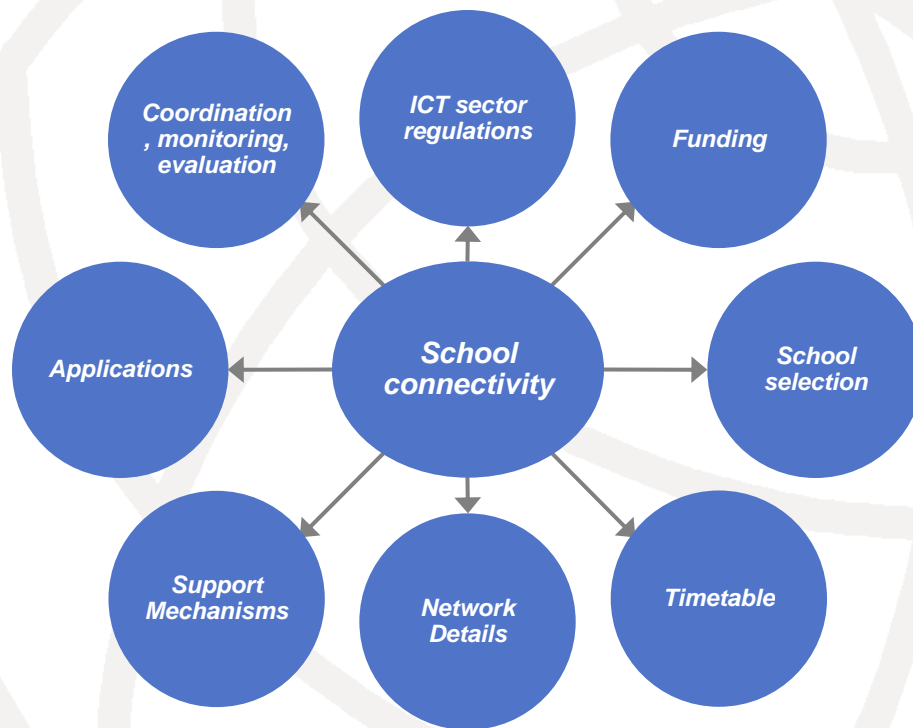
Timetable

Need for realistic timeframe
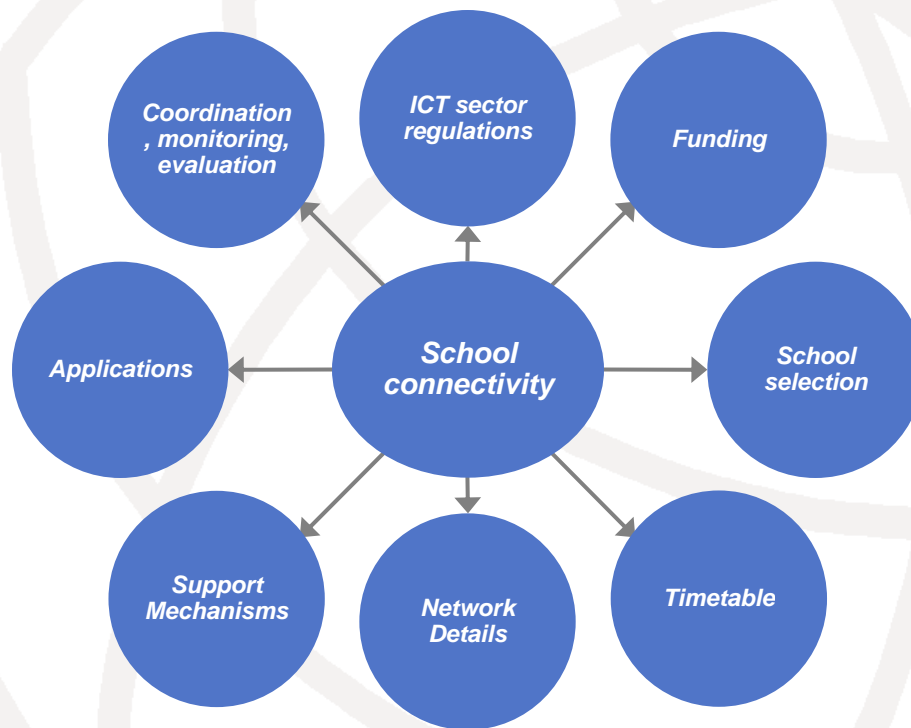
Variables include
- *Sequencing of schools*
- *Status of ICT Legal and Regulatory Framework (competition, # players, licensing)*
- *Status of connectivity (internet/broadband)*
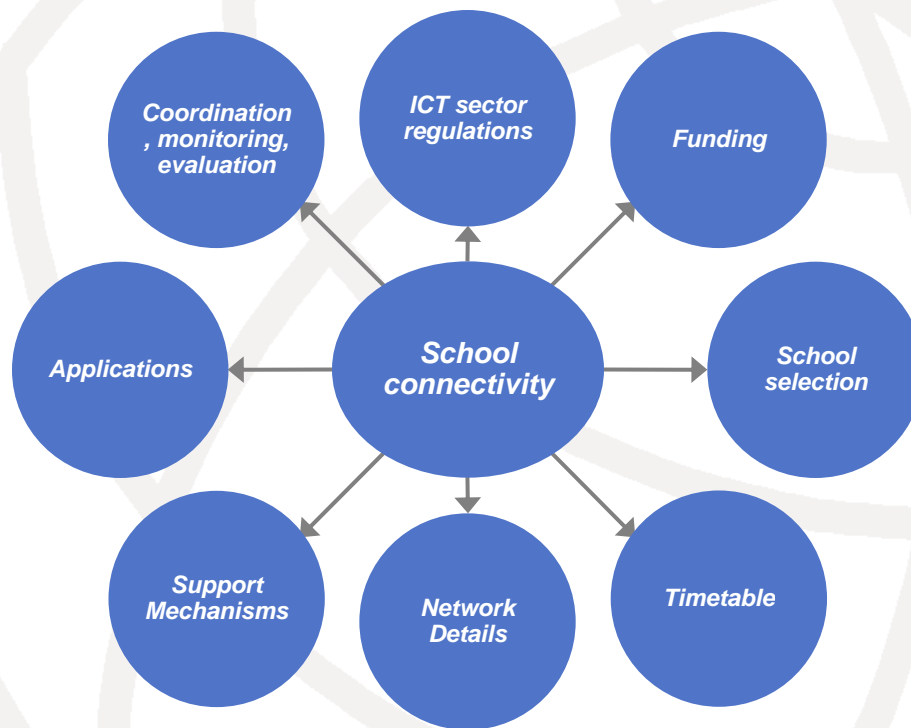- *Funding mechanisms for ICT/school connectivity*

Network details

- **Selection of Broadband Technology**
  - Speed
  - Migration Policy

- **Means of Provision of Access to the Network**
  - Direct Access to the Internet
 - Through an Educational Network

Network details

- *Technology should not *only* be equated with fixed computer connections; there is also an important place for other technologies, such as mobile, satellite, interactive radio and broadcast TV*

- *Network Topology within Schools*

Network Details

- The most appropriate, cost-effective, and sustainable technology needs to be defined considering how this can be applied for the different educational objectives

- Some forms of terrestrial wireless and satellite technologies that do not require installation of wireline networks may provide a solution for remote and isolated areas

- Network details with the supporting elements, such as electricity, maintenance, and technical services also need to be considered
  - ➤ solar energy may need to be considered to run computers (and radios) in remote and isolated areas.

Support
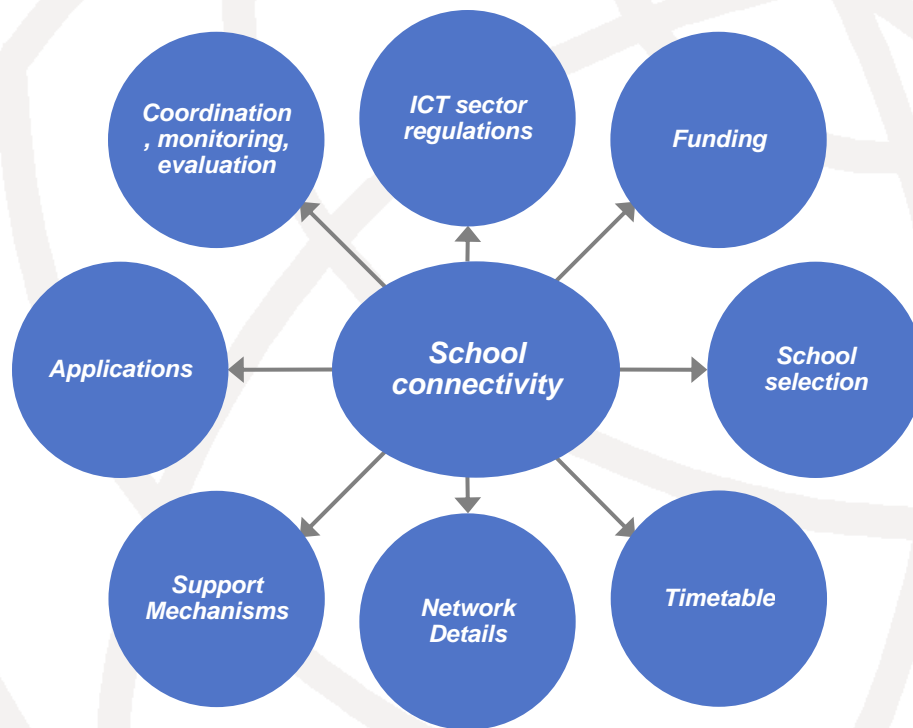
- *Important to include provisions guaranteeing resources for ongoing school connectivity operation, maintenance, and upgrade to ensure reliability and sustainability*

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Support

- Options
  - ➢ Contract with telecommunications operator providing Internet access to train technical staff
  - ➢ Outsource maintenance
  - ➢ Toll-free centers

Building up a plan in practice

- Determine who will be in charge – Ministry of Telecommunications, Education, Regulator, combination?
- Evaluate relevant policies, laws, and regulations - determine changes needed in terms of policy, licensing, universal service, spectrum
- Identify targets /milestones based on evaluation of schools to be connected and phasing of school connectivity
- Identify funding sources and levels – look at universal service financing and types of partnerships that may be available as well as donor agencies and operator contributions
- Decide on network model/access technology – do not forget to look at various technologies/solutions
- Identify appropriate end-user equipment – link with reality check (evaluation)
- Identify support mechanisms

Final Thought

- School connectivity plans can also provide an important means by which to address the connectivity needs of special populations such as:

  - ➤ Women and girls
  - ➤ Persons with disabilities
  - ➤ Indigenous groups
  - ➤ Other special needs groups
  - ➤ Rural or underserved groups

Community Connectivity

- ## Canada

- First Nations SchoolNet (FNS) began in 1996 as a component of Industry Canada's SchoolNet Program, which was part of the larger initiative, "Building a More Innovative Economy."

  ➢ The aim was to provide internet access across Canada ensuring connectivity despite geographic and socio-economic barriers

  ➢ In 2003-04, additional funding was approved for FNS to ameliorate connectivity through high speed networks and services, such as equipment and software applications, helpdesk support, building capacity in the schools, as well as creating information and communications technology (ICT) content and applications

Community Connectivity

- ## Canada

  - Specifically, FNS program objectives include:
    - ➤ Innovative uses of ICT and efficient practices in learning settings;
    - ➤ Availability of technical support and other support for the integration and use of ICT;
    - ➤ First Nation schools on reserve connected to the internet; and
    - ➤ Stimulating on-line learning activities

  - FNS has produced broad community impacts, in that connectivity provided to the community by FNS and, in some cases, the hardware and software, are being used by other groups including adult learners, parents, Elders, youth and women's groups.

Thank You!

Sofie Maddens
Vice President, Regulatory Reform
sofie@tmgtelecom.com

Telecommunications Management Group, Inc.
1600 Wilson Boulevard, Suite 710
Arlington, VA 22209
USA

Tel: +1.703.224.1501
Fax: + 1.703.224.1511

www.tmgtelecom.com