



Intel's Role in Digital Transformation

Financing Mechanisms for Accelerating Digital Transformation

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Turhan Muluk, Global Public Policy Manager

ITU-D Representative

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Agenda

- Intel's Role in Digital Transformation
- Funding Mechanisms
- Conclusions and Recommendations



KEY SUCCESS FACTORS FOR DIGITAL TRANSFORMATION

- Political support and coordination between different Ministries
- National and regional plans including financing mechanisms
- High-speed, High-quality Broadband network and services
- Demand creation programs
- Digital Skills

THE INCOMING FLOOD OF DATA

The rise of connected things and media by 2020

- **212B** sensors
- **50B** devices
- **47%** connections will be machine to machine

Generating tremendous amounts of data every day in 2020

- Internet users **1.5 GB** per day
- Self-driving cars **4,000 GB** per day
- Connected planes **20,000 GB** per day
- Connected factory **1 Million GB** per day
- Smart Hospitals **3,000 GB** per day

Source: Amalgamation of analyst data and Intel analysis.
And VNI Global Traffic Forecast. VNI stands for Visual Networking Index.





**A NEW GENERATION OF
NETWORKS AND DIGITALLY
SKILLED PEOPLE ARE NEEDED
FOR DIGITAL TRANSFORMATION**



INTEL INVESTING ON TECHNOLOGIES FOR DIGITAL TRANSFORMATION



Drones



Healthcare



Emergency Services



Autonomous Driving



Smart Cities



Smart Agriculture



Manufacturing



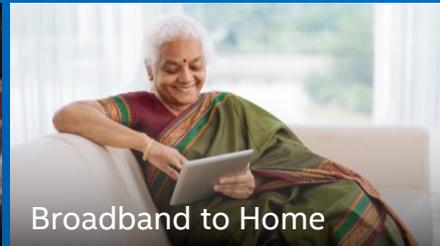
Supply Chain/
Logistics



Virtual and
Merged Reality



Mobile Office

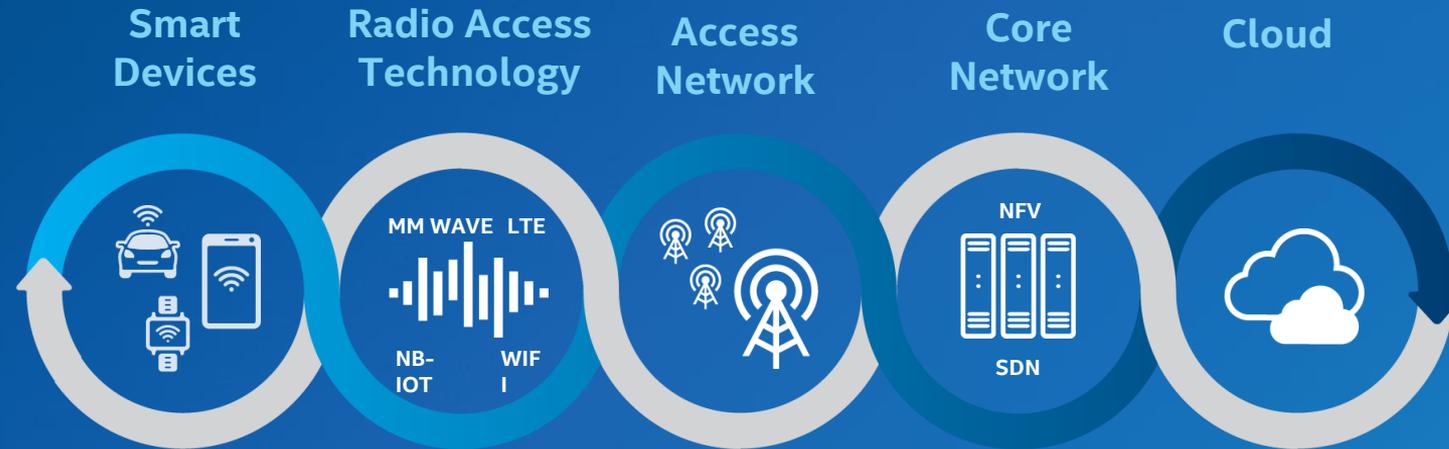


Broadband to Home



Entertainment

INVESTMENT ON COMPUTING AND CLOUD TECHNOLOGIES FOR DIGITAL TRANSFORMATION TO MAKE EVERYTHING SMART AND CONNECTED



Intel Powers 5G End-to-End
(5G is very important for WSIS and Sustainable Development Goals)

INTEL INVESTMENT ON EDUCATION FOR DIGITAL TRANSFORMATION

User Experience

Hardware



Software &
Services



Content
Ecosystem



Implementation
Support



Billions of US Dollar investment for the education technology and programs

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INVESTMENT ON E-LEARNING IS IMPORTANT FOR DIGITAL TRANSFORMATION

- Government are **already investing billions of US dollars each year for classical education systems**. They usually **ineffective, inefficient and inconsistent** if not updated and improved by technology.
- Education Transformation is in reality an Education Based Digital Transformation**. Students will teach digital skills to their friends – families; **whole society benefit**, not just students.
- Digital learning can help to **close the gap** in Digital Divide.
- ICT based education system is for the future generations, gives them necessary **skills and intelligent knowledge for the digital transformation**.
- With e-content, they learn as they play and they play as they learn. Whatever learned stays with them since they enjoy the learning process – **Good learning experience**
- Digital Literacy** is key for the Internet Usage, e-inclusion and **Digital Transformation**.



Intel® Innovation Generation Initiative

Make Tomorrow



Future Skills



She will connect



Higher Education (Universities)



Intel® Innovation Generation Initiative

- **Intel® Make Tomorrow:** aims to inspire young people to become creators and problem-solvers through technology-focused maker activities that build their innovation skills.
- **Intel® Future Skills:** aims to close critical gaps and transform today's workforce development and youth empowerment programs through the infusion of technology curricula, hands-on innovation experiences and employability skills training.
- **Intel® Higher Education:** works with higher education institutions to integrate technology across academic disciplines to ensure a broader range of students can apply technology to make a difference in their communities and the world (more than 670 million US Dollar Investment since 2001).
- **Intel® She Will Connect:** aims to accelerate closure of gender gaps in technology access and careers by empowering more girls and women to use technology, connecting them to economic and social opportunities, and inspiring them to become future innovators.



Some of the other important Intel Programs/Investments

- **Affordable broadband programs** for low income people in cooperation with governments and operators.
- **Intel Teach:** More than 15 million teachers trained in 70 countries. Largest, largest program of its kind.
- **Digital learning courses** for the students.
- **Intel Global Girls and Women Initiative:** Empower millions of girls and women through education and technology to advance economic opportunity.
- **Intel® Learn Easy Steps Program:** Teaches basic computer literacy, which is a key 21st century skill, enabling enhanced social and economic self-sufficiency. Deployed in more than 40 countries.
- **Global/Regional Intel Broadband & USF Leaders Forums** (brought key leaders of ICT, Broadband, and Universal Service and Access Funds, Ministries, Telecom regulators together to share best practices)
- **ITU/Intel Digital Transformation Forum** in Morocco (one panel on Financing Mechanisms)
- **Broadband Commission's** Report on Demand Creation: Six successful country programmes to stimulate broadband adoption (Costa Rica, India, Senegal, Kenya, Colombia)



FINANCING MODELS (SOURCE: PROF. RAUL KATZ)

- **Public-utility Financing Model**
- **Public-Private Financing Model**
- **Central government funding:** government funds through grants, low rate loans from a development banking source, or a Universal Service Fund
- **Operator-funded:** Operator funds from the capital budget, sometimes complemented by borrowing from lender at a rate reflecting the company's WACC (Weighted Average Cost of Capital) or even issuing of a bond.

UNIVERSAL SERVICE FUND

- Universal Service Fund is an opportunity for the funding. Many countries have USFs but not all countries are effectively using them.

Therefore it is important to;

- Develop successful USF projects for Digital Transformation (especially for the use of ICT in Education and broadband/device programs for low income people).
- Use USF Projects as a model for National Scale Projects.
- Consider to impose an upfront USO (Universal Service Obligation) for the licences. 700 MHz is a very good opportunity. Germany successfully deployed for LTE 800 MHz (licenced operator can start to offer service in the cities after completing the mobile broadband coverage of predetermined rural areas).

Recommendations on Digital Transformation Acceleration

- Get political support from country/regional leaders (Presidents, Prime Ministers, Leaders of African Union, Arab League, APEC etc.)
- Accelerate high-speed, high-quality broadband networks and develop broadband supply/demand programs.
- Consider different financing mechanisms (including Universal Service Fund) and benefit from successful models from other regions/countries.
- Develop national and regional Digital Transformation Plans including financing mechanisms (like European Union's Digital Agenda Program).
- Provide effective use of Universal Service Funds (especially ICT in Education and “Broadband+Device” programs for low income people).
- Support public-private partnership projects/programs.
- Invest on Digital Skills/Innovation Programs
- Implement right policies/regulations and incentives for the investors.



THANK YOU