



DIGITAL TRANSFORMATION IN AFRICA

Intel Corporation

ITU Regional Forum on Digital Transformation
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OVERVIEW

1. Brief introduction
2. Technological trends
3. Challenges for governments
4. Digital Transformation building blocks, value chain, benefits
5. Some advanced digital transformation programs
6. Digital Transformation efforts in Africa
7. Closing remarks



Setting the scene



WHO ARE WE: INTEL CORPORATION TODAY

The World's Largest Semiconductor Manufacturer

- Leading Manufacturer of Computer, Networking and Communications Products
- Headquartered in Santa Clara, California
- \$55.9B in Annual Revenues - 25+ Consecutive Years of Positive Net Income
- Over 107,000 Employees, 170 Sites in +70 Countries
- 1st World's Most Admired Semiconductor Company by Fortune
- 14th Best Global Brands by Interbrand
- 6th America's Most Reputable Technology Companies by Forbes



DOING THE RIGHT THINGS RIGHT

THE IMPORTANCE OF BEING EARNEST

Reputation Institute's The 25 Most Reputable Technology Companies - #6

Reputation Institute's Global RepTrak®: World's Most Reputable Companies - #10

CRO Magazine's Best Corporate Citizens - #7

Glassdoor's Highest Rated CEOs— Brian Krzanich ranked #39 (out of 50)

4 Million hours of volunteer service to improve education over the last decade

Fortune's World's Most Admired Companies – #40

Ethisphere's World's Most Ethical Companies

Working Mother's 100 Best Companies

Fortune's Most Powerful Women - Diane Bryant #43

Diversity MBA's 50 Out Front Places for Women & Diverse Managers to Work - #16

Fortune's Change the World List - #39

Largest Voluntary Purchaser of Green Power in the United States since 2008

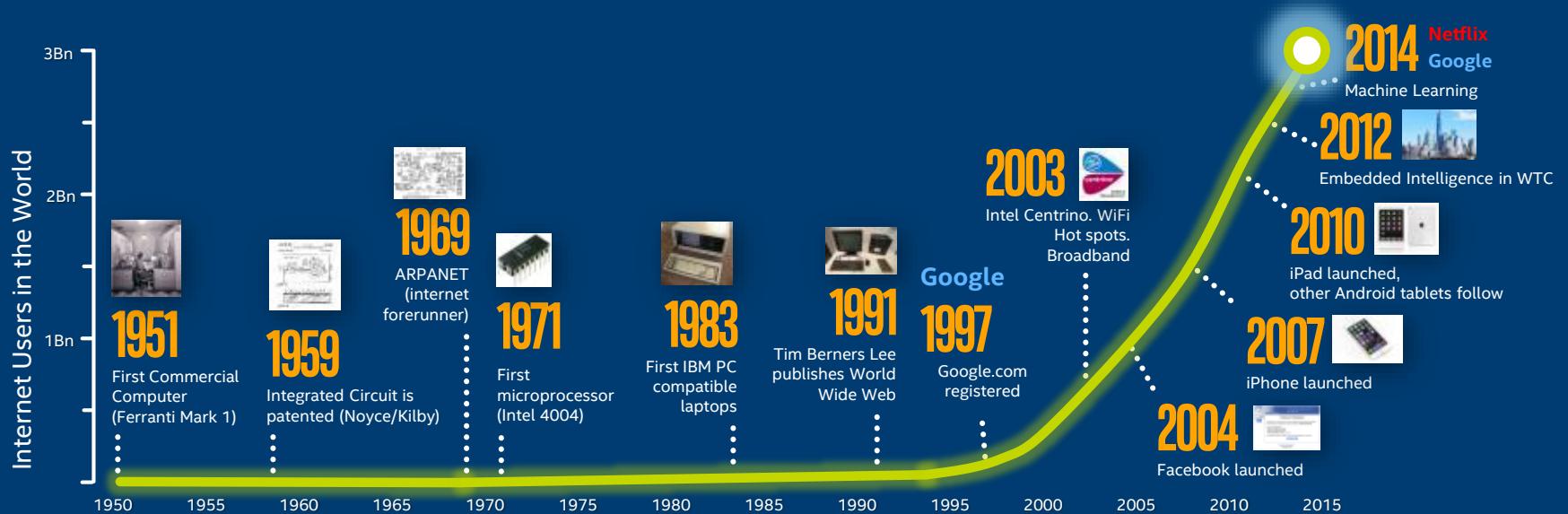
EPA's National Top 100 Green Power Users - #1

EPA's 100% Green Power Users - #1

Global 100 Most Sustainable Corporations - #56

Newsweek's Green Rankings on Us - #71

THE WORLD IS REACHING AN ACCELERATED INNOVATION WAVE



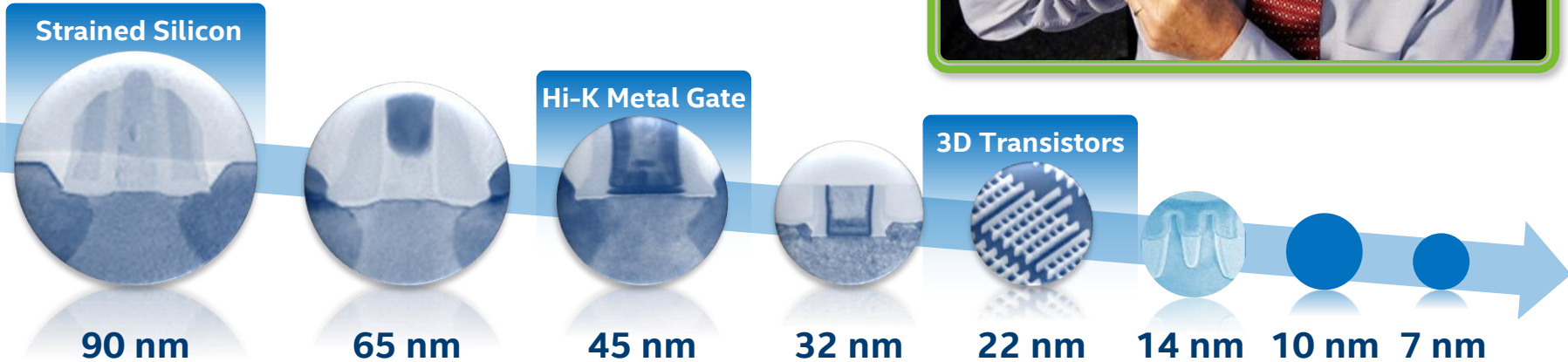
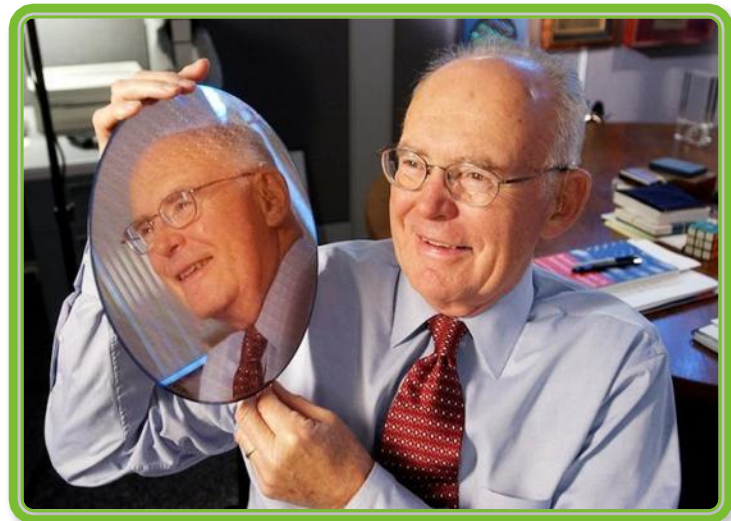
**RISE OF THE CONNECTED, "AS A SERVICE" WORLD DISRUPTS ENTIRE INDUSTRIES
...YET, 60% OF THE WORLDS POPULATION ARE STILL UNCONNECTED**

Source: Internetlivestats.com; Intel 4004 photo: Hellisp / Wikipedia; Compaq portable photo: Geni / Wikipedia; iPad photo: mama_mia / Shutterstock.com; iPhone photo: Zeynep Demir / Shutterstock.com

Predictable Silicon Track Record Executing to Moore's Law

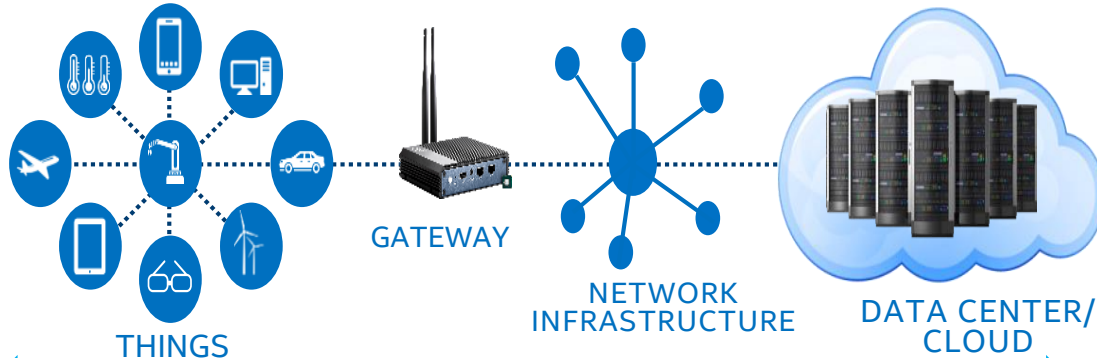
50TH ANNIVERSARY 2015

Enabling new devices with higher functionality and complexity while controlling power, cost, and size



THE INTERNET OF THINGS (IOT)

IoT will drive the next frontier of digital transformation for business, government and society as a whole



SILICON, SOFTWARE AND SECURITY c
SCALABILITY

WIND RIVER

THE INTERNET OF
THINGS:

*Devices that connect to the Internet
integrating greater compute capabilities
using data analytics to extract information*

Technology building blocks

Miniature sensor
technology

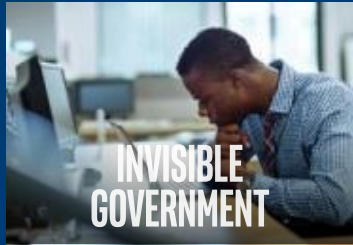
Convergence of device

Ubiquitous broadband
connectivity (LTE, 5G, Fibre)

Data analytics

Data-centre and cloud
computing

GOVERNMENTS OF THE FUTURE WILL BE . . .



Government services become seamless and painless to citizens to use.

Commercial Services set the bar for Government Services delivery.

Private partnership to replace gov't operation



Gov't need to accelerate Policy, Legislation and Trust
i.e. Inclusion of citizens and Business to help to transform Government.



Government uses real-time data as a basis of decision making and Policy changes.

Adjust for future trends

i.e. sectorial, unemployment



Advanced Technology will greatly impact Government on revenue and infrastructure spending.



The need for electronic ID will require massive changes to regulations, laws and citizen trust and culture

KEY BUILDING BLOCKS TO DIGITAL TRANSFORMATION

Funding Models

- Need sustainable funding model across ecosystem
- Governments need to co-invest to drive infrastructure programmes
- Universal Service Funds can be used to drive devices, connectivity and training
- Universal Service obligations linked to high-demand spectrum: 700MHz, 800MHz

Privacy, Security, Integrity

- Openness & Transparency foundational
- Build culture of trust – Government/Citizen/Business
- Strong Policy & Legislation on confidentiality/Privacy/Transparency
- Personal Data Protection - Ownership and Usage need to be controlled & audit by users
- Cybersecurity by design

Digital Economy

- Financial Inclusion
- Digital Payment capability
- Entrepreneurship & Innovation
- Fraud reduction
- Credit availability

Infrastructure

- Electricity is available, affordable and reliable
- National Broadband Strategy (wired & wireless)
- Accessibility and Affordability of access
- Quality & Reliability of network (bandwidth & up time)

Human Capital Development

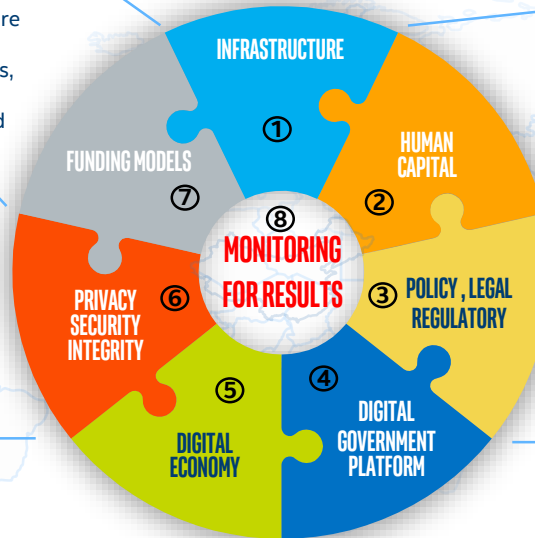
- Digital Inclusion (access, knowledge and skill)
- Digital Literacy (Technology savviness)
- Empowered all citizen (women ~ 50% pool of Talent)
- Capacity Building
- ICT capable government employees

Policy, Legal & Regulatory framework

- Political, Economic & Social Openness
- Enable & accelerate key ICT infrastructure development
- Create Open & Sustainable Competitive market
- E-Governance / E-Services friendly
- Accelerate Public-Private Partnerships

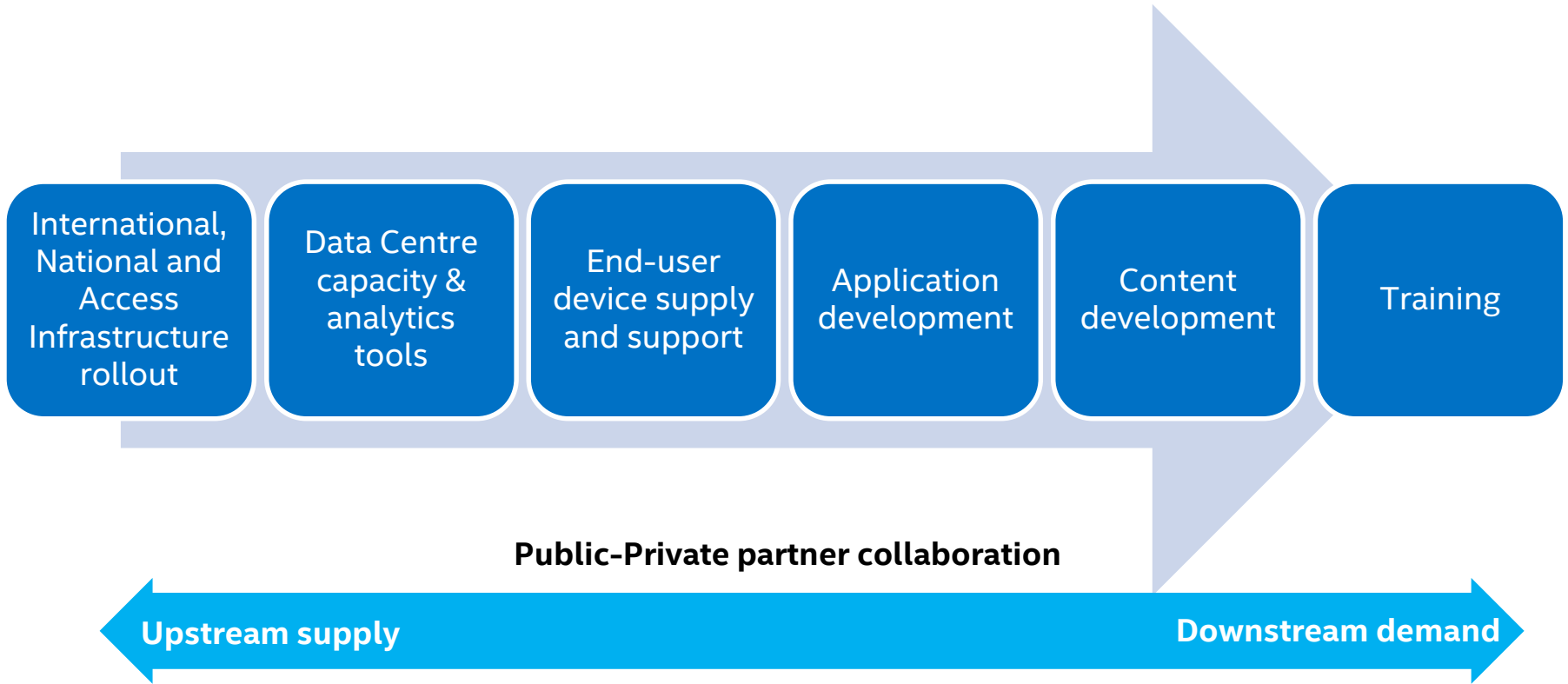
Digital Government Platform

- Optimized Data Center
- Cloud based Infrastructure, Analytics
- EID & End user Device
- Security, Network, Open-Data, Open API
- E-Services platform, Government Portal



DIGITAL TRANSFORMATION VALUE CHAIN

The key challenge for governments is to manage the end-to-end value-chain to ensure that it is sustainable over the long-term



KEY BENEFITS OF DIGITAL TRANSFORMATION



Economic Impact

- GDP Growth
- Job Creation
- Innovation



Social Impact

- Quality of life
- Citizen Happiness
- Services, Education, Healthcare, etc.



Governance Impact

- Increase Public participation
- Transparency, accountability
- Greater efficiency for better public services

DIGITAL COUNTRY TRANSFORMATION ACTIVITIES AROUND THE WORLD



DIGITAL COUNTRY TRANSFORMATION : E-ESTONIA



RE-IMAGINING THE COUNTRY FOR THE NEW ECONOMY

E-RESIDENCY DATA-EMBASSY NO LEGACY LAW



E-ESTONIA: KEY BUILDING-BLOCKS & IMPACT

 DigiDoc	 Digital Signature	 e-Business Register	 e-Cabinet	 e-Law
 e-Police	 e-Prescription	 e-Residency	 e-School	 e-Tax
 Electronic Health Record	 Electronic ID Card	 Electronic Land Register	 i-Voting	 Keyless Signature Infrastructure
 Location-Based Services	 m-Parking	 Mobile-ID	 Mobile Payment	 Population Register
 Smart Grid in Energy Sector	 Social Welfare e-Services	 State e-Services Portal	 X-Road	

Impact of High Digitization

- Open business in 18minutes
- Declare Taxes in 3 minutes - 95% of Estonians
- Digital Signature saves 2% of GDP per year
- i-Voting 2.5 time cheaper
- 33% less queues in Hospital
- 84% of prescriptions are issued digitally
- The Health Information Exchange HIE is used by over 98% of its population and national healthcare costs have fallen to 6% of GDP, making it Europe's most cost effective
- Visits to the Estonia Tax and Customs Board reduced by more than 60%. In the first 9 months of 2015 Estonian Companies have paid 125m euros more in VAT than previous years.

<https://e-estonia.com/components/>

OTHER DIGITAL TRANSFORMATION INITIATIVES THAT HAVE ADVANCED



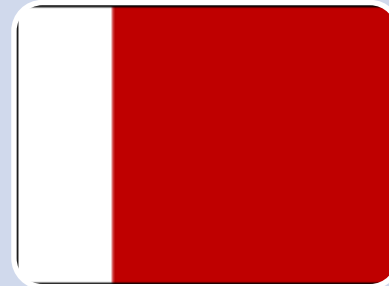
SINGAPORE:

- On-track to build the first smart nation to empower business and citizens



INDIA:

- India has launched Digital India to power-up citizen participation in the economy



DUBAI:

- Developing a digital smart city to improve business efficiencies and deliver quality of life for citizens



EUROPEAN UNION

- EU engaging on development of **single digital market**
- To improve trade in digital goods & services across Europe

DIGITAL TRANSFORMATION EFFORTS IN AFRICA

- **Morocco** – Government developed e-Consultation platform for online access of legislative text and engagement with government
- **Kenya** – Established a national digital learning program to drive primary education
- **Nigeria** – Has introduced Digital ID for public servants and saved more than US\$1 Bn
- **Senegal** – Government has assisted university students and teachers to acquire computers through tax breaks, loan guarantees and subsidies
- **South Africa** – Electronic tax filling has improved efficiencies in the filling of tax returns and improved revenue collection
- **Cote d'Ivoire** – Implementation of the African digital schools Initiative to improve the quality of education training and research

- **Smart Africa Alliance initiative** – Smart Africa in collaboration with Africa Development Bank and intel Corporation have developed a Digital Government blueprint that outlines steps for governments to follow to implement sustainable digital programmes

- **Dubai Action Plan Regional initiatives (WTDC-10):**
 - **Centres of excellence** for human and institutional capacity building (Kenya, Togo, Rwanda, South Africa, Uganda, Angola, Senegal)
 - **Harmonization of ICT Policies in SSA** – has resulted in a number of countries publishing their ICT policies

WHERE TO BEGIN ?

- Embrace what is happening and the urgency to act
- Get support from the highest levels of government
- Elevate digital economy transformation to the national agenda
- Align policy, legislation, institutional arrangements and resources to support the digital transformation agenda
- Develop and Align Digital Country Strategy with national Economic, Social and Political priorities – ***must be government driven but citizen focused***
- Involve & communicate the Digital Strategy Plan to all key stakeholders (Political, Academia, Citizen, Business)



THANK YOU

