“Global Commercialization Workshop/Conference for innovative Development 2016”

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Presented by **ROM** Consults Ltd, Ghana.

PRESENTATION OUTLINE

- Introduction
- Company Introduction
- Profile
- Projects
- Country Profile
- Ghana ICT Sector Overview
- Private Sector ICT Overview
- Commercialization Situation
- Technology Demand Information
- Areas of Possible Collaboration
- Challenges
- Conclusion

INTRODUCTION OF ROM CONSULTS LTD

ROM CONSULTS LTD

- WHOLLY GHANAIAN OWNED
- A LIMITED LIBILITY COMPANY
- HEADQUARTERS IN GHANA
- PRESENCE IN WEST AFRICAN SUB-REGION

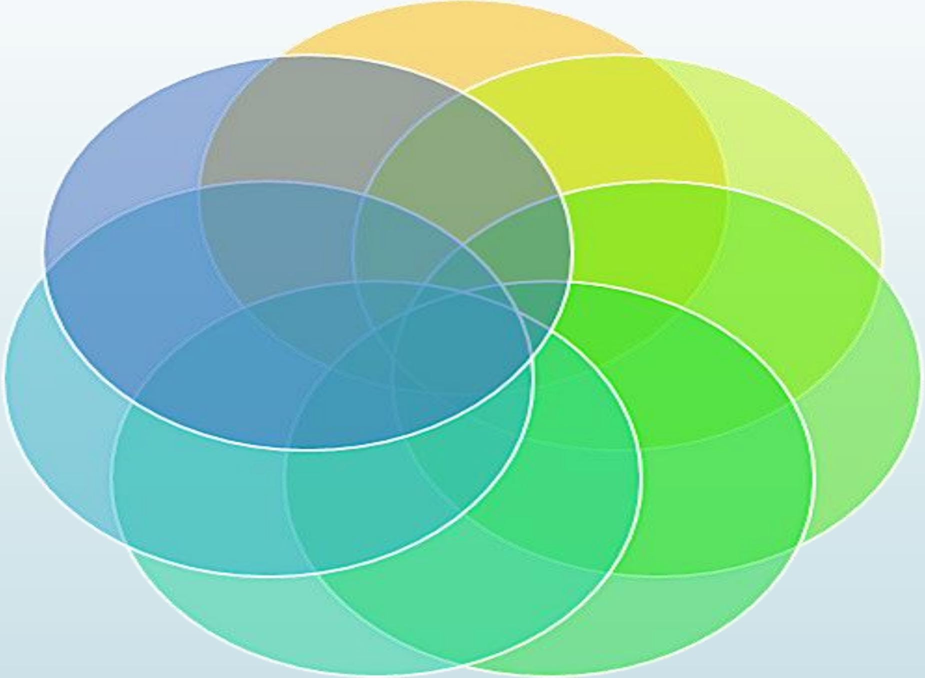
Introduction continues

PROFILE

Highly Qualified Management Team

Over a 1000 Projects completed

17 years + in Business



Strong service support to enable our clients have maximum benefit from their investments.

Radio/Telecommunication engineering and Electrical Engineering.

Procurement of ICT and Telecommunication Equipment/Devices.

Civil Engineering

PROJECTS

- Phase 1 E-Government : LAN and FIBRE Deployment for Gov't sector
- TEE Project for MNO: TEE (over 3000BTS &MW) installations for MTN & VDF
- OSP Projects for MNO: Fiber deployment for MTN, VDF & Airtel
- FTTH Project: Fiber to the Homes & Enterprises for VDF
- GIFEC Project: Rural Telephony Project for the Gov't

COUNTRY PROFILE

Population: 27 million (Ghana Statistical Service, 2015)
Area: 238,537sq. Km.
Region: West Africa.
Capital City: Accra
Currency: Cedi (GHC)
Languages: English (Official) and Others.
Government Type: Multiparty Democracy.
Internet Penetration: 12.3% (NCA Ghana,2014)
GDP Per Capita: $1,442.8 (World Bank)
Domestic Bandwidth Capacity: 16 TBps (MOC Ghana, 2013)
Submarine Cables: 5 submarine cable companies.(NCA Ghana,2015)
Number Telecom Operators: 6 Operators (NCA Ghana,2015)
Urban Population Growth Rate: 3.5%
Literacy rate: Male (88.3%), Female (83.2%) (World Bank,2014)
Rural Population Growth Rate: 0.9%
Telecom Regulator: National Communications Authority (NCA,Ghana)

In-Country Coverage Map For Fiber Backbone Network

Presente

Ghana ICT Overview

Ghana's telecom and ICT sector is very dynamic and competitive as well as one of the brightest spots in an economy has had a rough ride over the last two years.

Mobile services demand have been resilient and rising each year.

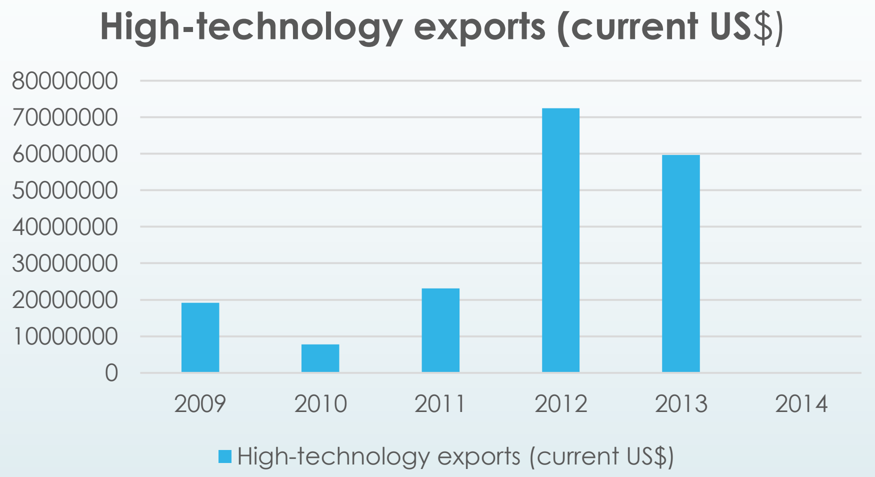
A total of 32.6m mobile subscribers were recorded as of 2015, and indicating a penetration market of 119.41%

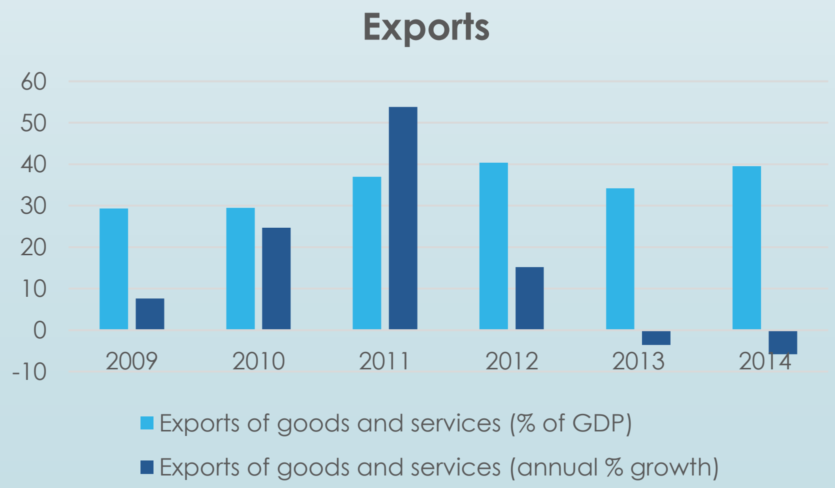
Source: National Communications Authority

Private Sector ICT Overview

- Ghana's ICT sector has chalked some success, including its international broadband connectivity, thriving tech start-up scene and good internet penetration growth.
- Ghana has a range of local ICT companies which are mainly SMEs.
- Many Ghanaians are still unconnected, businesses are not harnessing technology.
- Government's prioritization of ICT and rising private investment in technology like LTE and 4G acting spurring the growth of the private ICT sector.

COMMERCIALIZATION SITUATION





COMMERCIALIZATION SITUATION Cont.'

- **Policy Environment**

National Science, Technology and Innovation Policy

Ghana intends to migrate from the low science and technology-poor practices and worldview associated with tradition-bound society to an STI and knowledge-based society with an economy based on high levels of production, processing, industrialization and manufacturing.

Ghana's STI policy seeks for the country a future whose STI capability would enable it to produce and process maximally the natural resources that she is blessed with and also has the knowledge base to participate actively in the production of higher technology goods and services for local consumption and for export".

COMMERCIALIZATION SITUATION

- **Legal and Regulatory Environment**
- Ministry of Communication
- Ministry of Environment, Science, Technology and Innovation
- National Information Technology Agency
- Ghana Investment Promotion Centre
- National Communication Authority
- Ghana Telecommunications Chamber
- The Ghana-India Kofi Annan Centre of Excellence in ICT (AITI-KACE)
- Functioning Court System: Fast track Commercial Court

COMMERCIALIZATION SITUATION

- **ICT INFRASTRUCTURE**

Ghana is a natural landing point for international cables. The country is currently connected to five international submarine cables.

- **The South Atlantic 3/West Africa Submarine Cable (SAT3/WASC), linking Portugal and Spain to South Africa**
- **Glo One, a cable with an initial cost of $800m and capacity of 2.5 TB/s, and backed by Nigeria's Globacom, landed in Ghana in 2009, and links Lagos to the UK, with landfalls including Accra, Mauretania and Spain.**
- **The 1.92 TB/s, MainOne submarine cable, owned by the MainOne Cable Company of Mauritius, linked to Ghana in May 2010, initially connecting Portugal to Accra and Lagos, with an initial investment of $240m. The cable now reaches all the way to South Africa**
- **the $650m West African Cable System, reached Accra in May 2011, bringing 5.12 TB/s connections to Europe and 11 other countries in Africa.**
- **African Coast to Europe, a $700m, 5.12 TB/s fibre-optic cable that was launched in May 2013**

Franco-American tech company Alcatel-Lucent and Ghanaian operator Surfline Communications launched Ghana's first 4G LTE network in August 2014

COMMERCIALIZATION SITUATION

- **SERVICE ENVIRONMENT**

Service Type	# of Operators
National Fixed Network Operators	6
Wireless Telephony Operators	2
Internet Service providers	92
Direct to Homes Satellite Services	1
VSAT Data Network Operator	114
Free on Air Television Stations	13
Privately-Owned Radio (FM) Stations	154
Pay Per View	3

Source: National Communication Authority

Mobile Operators in Ghana

Source: National Communication Authority

COMMERCIALIZATION SITUATION

- **USAGE**

Mobile Data Subscribers: 18.8M (68% Penetration Rate)

BWA (4G)Subscribers: 100K

Mobile Voice Subscribers: 36.1M

Fixed Telephony Subscribers: 270K

4G Operators in Ghana

surfline

busy
making good things happen

Blu
MORE TO LIFE

MTN

Source: National Communication Authority

TECHNOLOGY DEMAND INFORMATION


- **DEMAND DRIVERS**

- Consumer demand for internet products is being driven by instant messaging and Voice Over Internet Protocol services such as WhatsApp and Skype, as well as social media services such as Facebook and Twitter
- Desire for information, services and entertainment, from online newspapers to streaming television and video sites
- Demand for other online services, including e-government, mobile money and banking, and mobile online health services and information.

TECHNOLOGY DEMAND INFORMATION

- **BUSINESS DEMAND**

- Demand for ICT services from the business sector has also grown rapidly in recent years, with companies using technology to manage office functions, and, increasingly, to interact with customers.

- A limited pool of qualified graduates for in-house ICT functions, combined with a range of off-the-shelf options from specialist companies, has driven a trend towards outsourcing.

- The expansion of cloud computing in particular has helped companies reduce outlay on internal ICT staff and hardware.

- Local Businesses: Ghana has a range of local ICT companies, many of them small and medium-sized enterprises (SMEs). There is a small but flourishing tech start-up segment that is developing a reputation as one of Africa’s most dynamic.

Areas for Possible Collaboration

- Convergence & Cloud Computing
- Green ICTs
- Geo Information
- Content Development
- Broadband Internet Expansion
- Cyber Security

CHALLENGES

FINANCING:

While there are innovative companies with solid skills base, raising the necessary capital for expansion and access to bigger projects can be an issue

DEMOGRAPHY:

Development across the country and demographic groups, and within local businesses, is less uniform

CONNECTIVITY:

Many Ghanaians are still unconnected, businesses are not harnessing technology: Cost of connection.

CONCLUSION


Ghana’s ICT sector has pockets of excellence

- Rising Private Investment in Technology
- Favorable Government Policies
- Training Institutions and a pool of skilled people
- Government Commitment
- Thriving Tech. Start-up Scene
- Political Stability
- A Decent Pace of Internet Penetration Growth
- Good Legal System
- International Broadband Connectivity

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