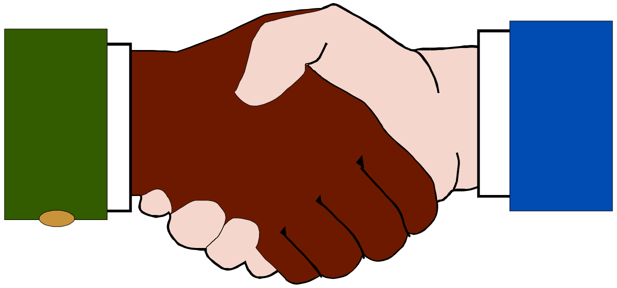
MOVING WEST AFRICA FORWARD

Policy & Technology Imperatives –

Trends, Potentials and Challenges



CTO Working together to achieve sustainable ICT development

All over Africa

Video Presentation

- **What Do You know**

DidYouKnowBrenmanAnimated.mp4

Major Drivers of ICT Growth

Structural changes in telecoms markets	Decrease in PSTN subscribers and PSTN revenue
	Increased competition, privatization
	Market deregulation (e.g. LLU)
	Globalization
Changes in services and user needs	Rapid diffusion of broadband Internet
	VoIP
	Cellular, 3G, WLAN, Wi-Fi
	Digital TV
Technological evolution	Creating innovative, interoperable, scalable solutions in the IP environment
	Ipv6
	Digitalization
	Central Processing Unit (CPU) power and memory capacity, mass storgae
	Optics

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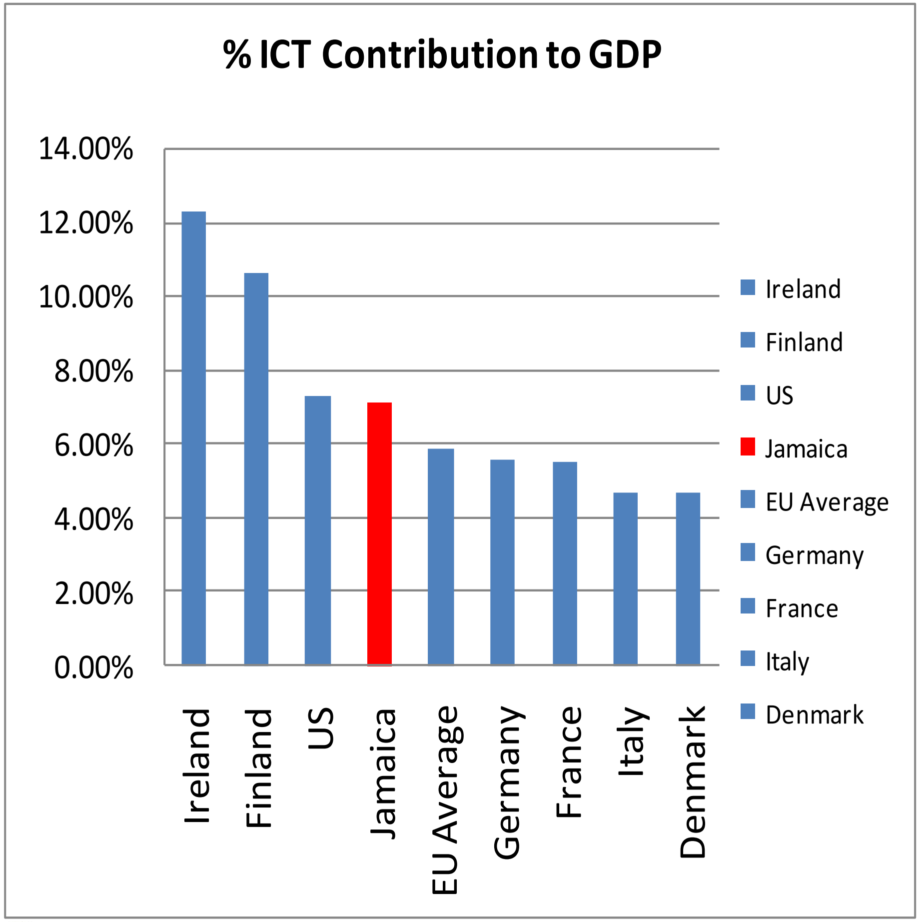
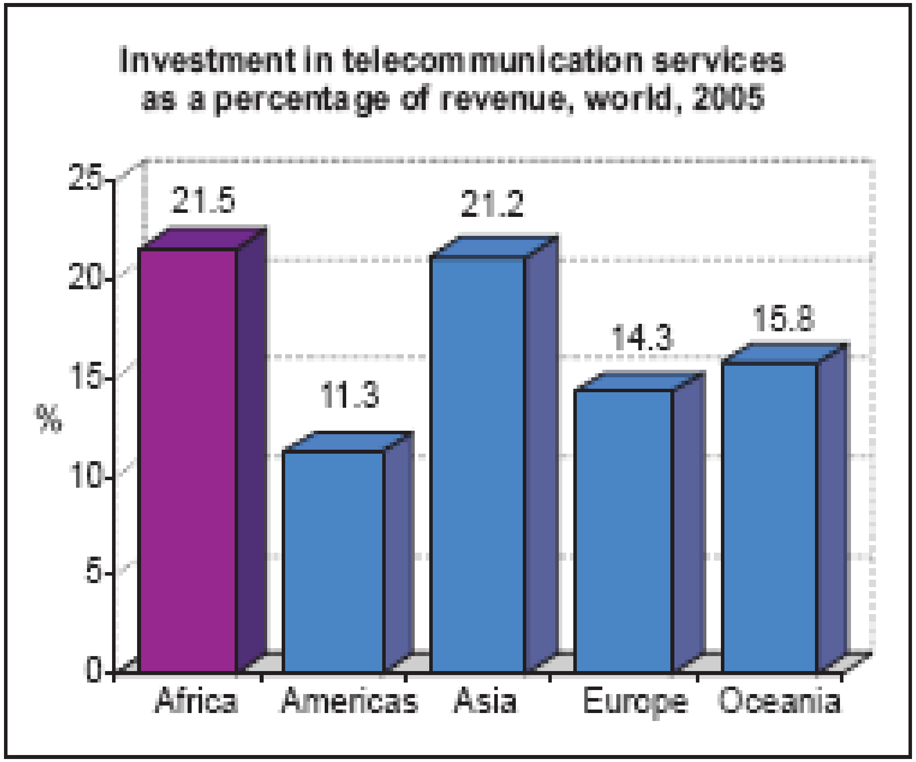
Economic Impact of ICT Growth



- Globally, ICT spending is estimated at US$3 Trillion
- Growing at an average of 8.9% per annum
- Representing 6.8% of Global GDP.
- ICT Growth has to be a part of a strategic plan which drives an economy
- Essential part of Global Market Participation.

High Profitability/ROIs In African ICTs

Potential of African telecoms is recognised. Danger signs do not put off those who believe in the future profitability of the African ICT sector and the continents untapped markets.



African Economic/ICT Investment Trends

Africa has improved business/political climate:

-- Average GDP growth of 6% in recent years
-- High commodity prices helping many nations
-- 60% of Africa are democracies compared with less than 20% in the 1980s.
-- Exports from Africa increased from $40 billion in 1990 to $140 billion in 2004
-- Many African countries have $$B debts forgiven
-- Intra-regional trade increased by 55% from 2000-2004
-- Investment interest from China, India, M/East
-- Privatisation of Ghana, Nigeria, Kenya, Botswana Telecoms amongst many new opportunities
-- Additional mobile licenses—5-6 in some countries
-- Special licenses for Wimax, Broadband, Rural, 3G

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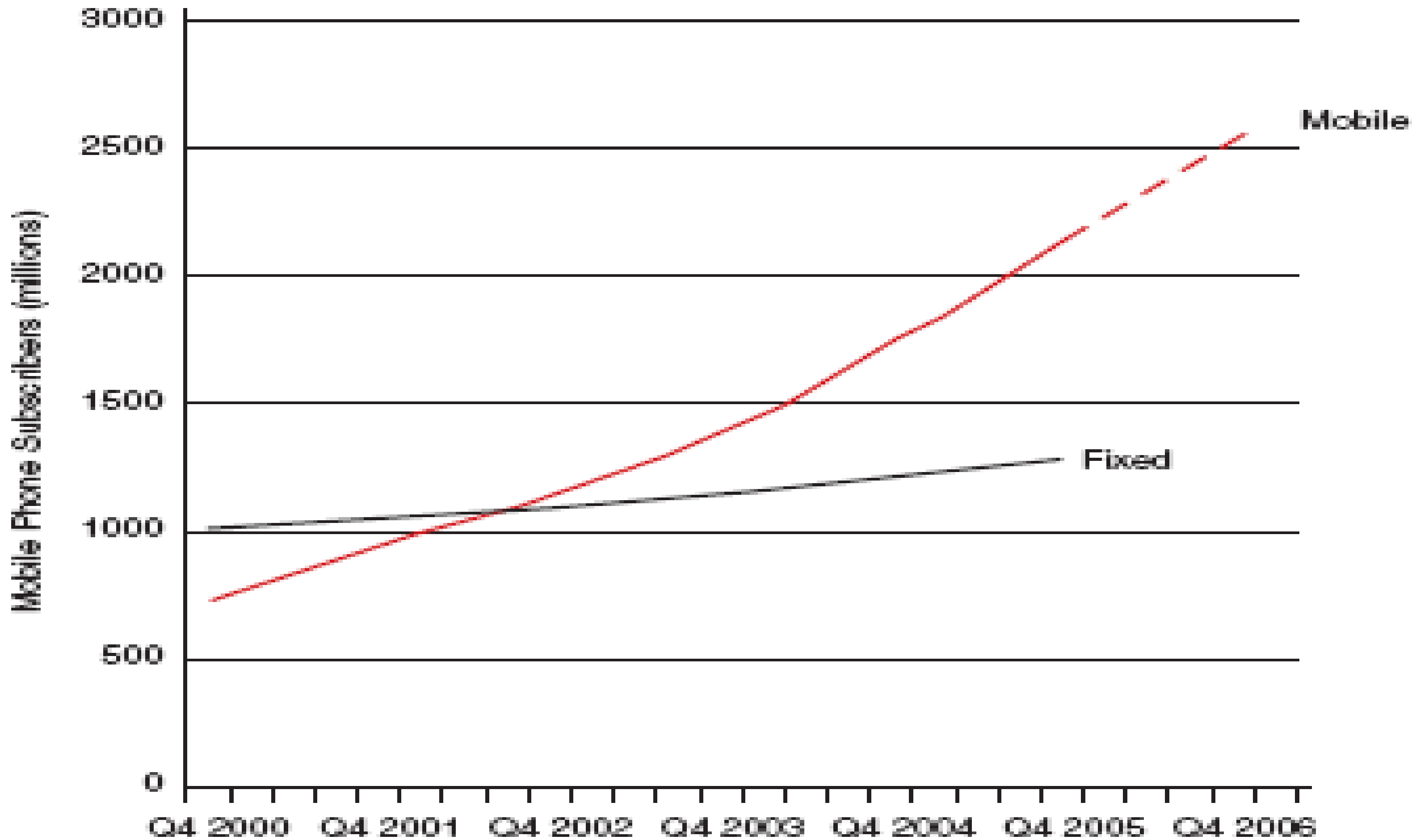
Growth of Mobile Vs Fixed Lines



Source: Wireless Intelligence and ITU

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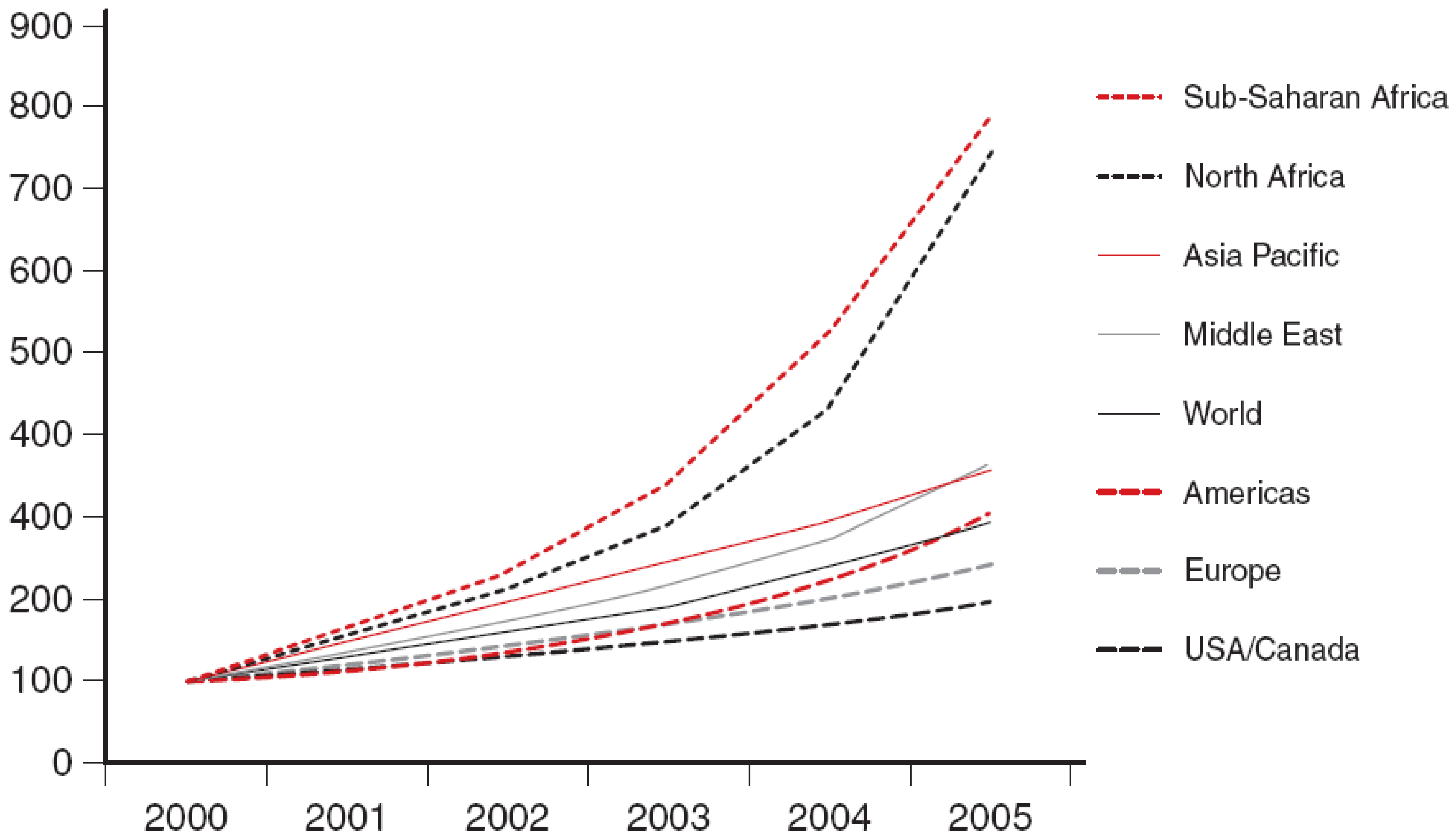
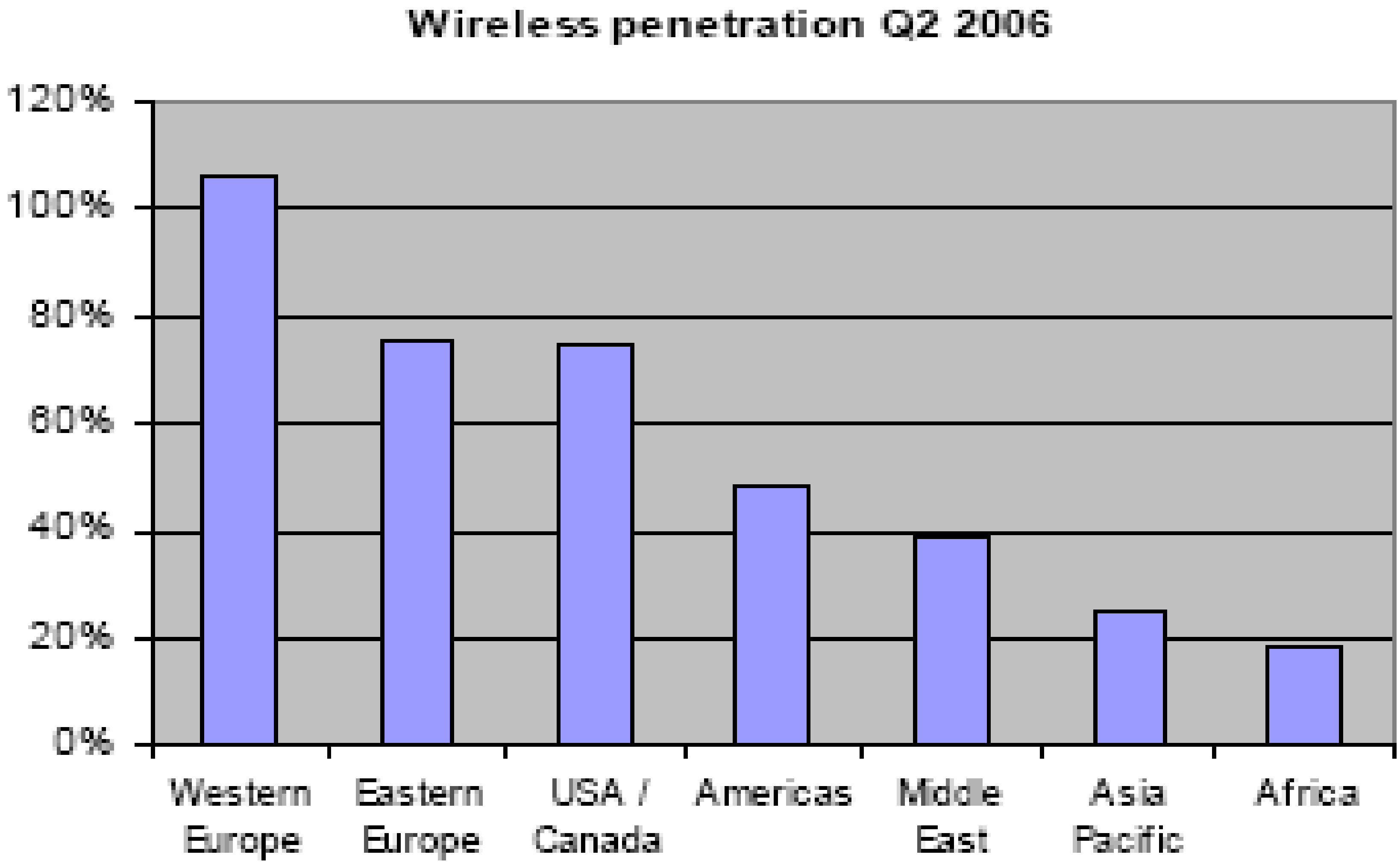
Mobile Subscribers Growth Rate



Global Mobile Penetration Levels



Africa's Digital Divide Dilemma

	Rural	Urban	Total	Teledensity
Mobile Phones	37m	327m	364	38.5
Fixed Lines	7.5m	24m	31.5	3.4
Broadband Connection	3m	62m	65	6.7
Total Population	634m	341m	975	

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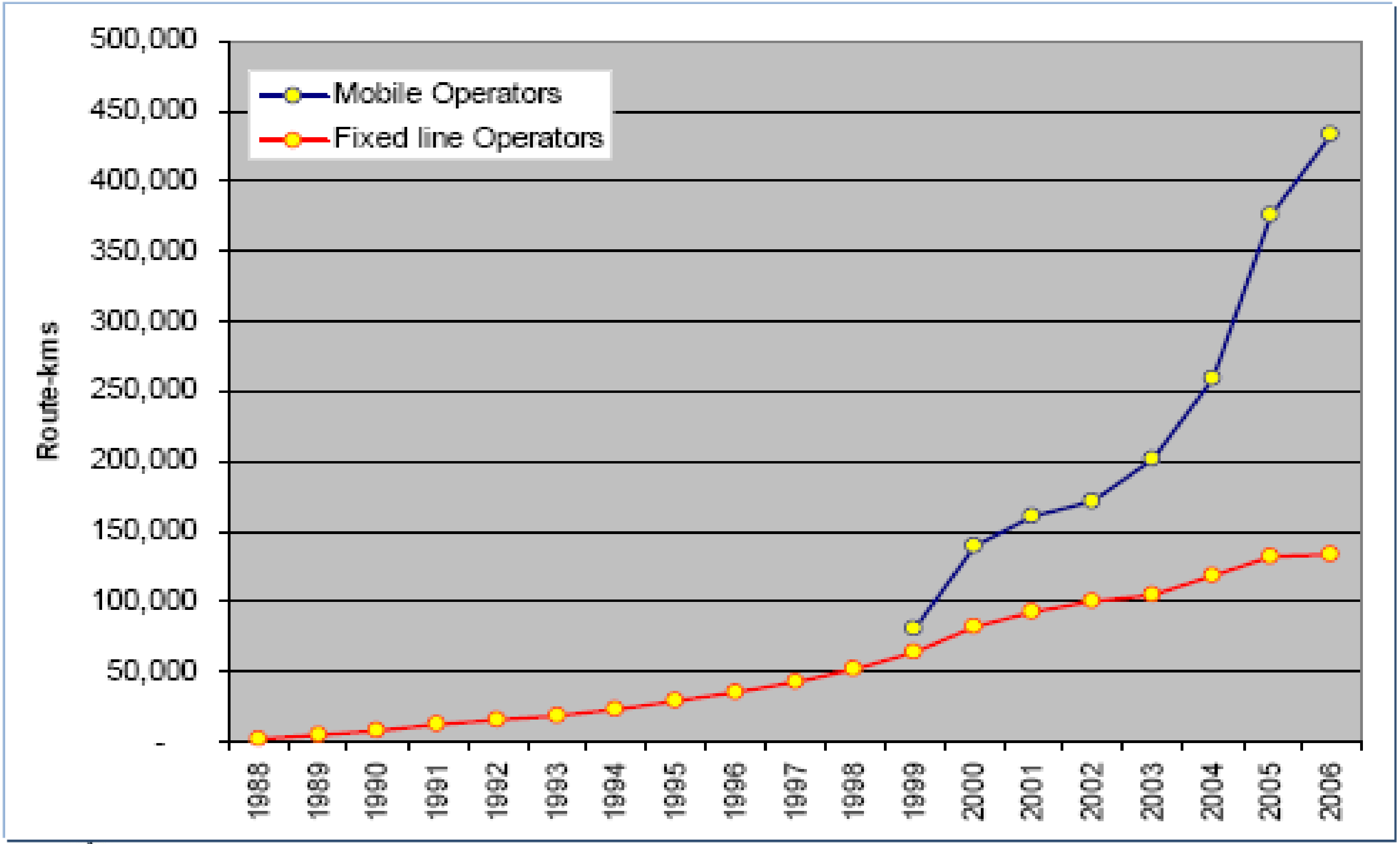
Africa's Backbone Network Development



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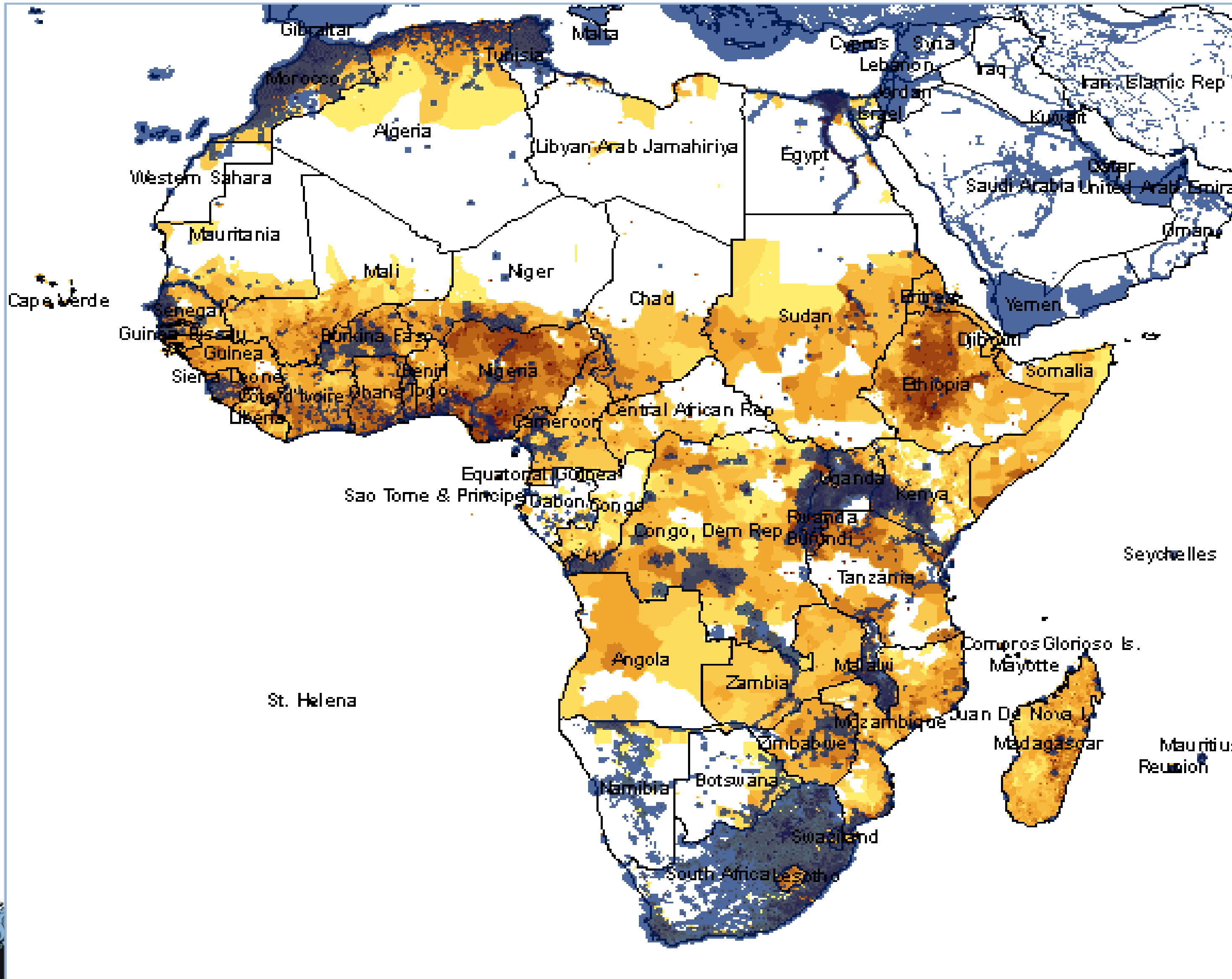
Population Vs Mobile Penetration



Africa’s Rural-Urban Digital Divide

- Africa’s Mobile sector - Exponential growth
- Rural Teledensity still remains <1% for both Mobile telephony and even less for Internet / broadband connectivity
- Over 70% Population in Rural Semi Urban Areas
- Convert `Universal service obligation’ in to Universal Service Opportunity
- Cheetah-Pole-Vault in reaching the `unreached’

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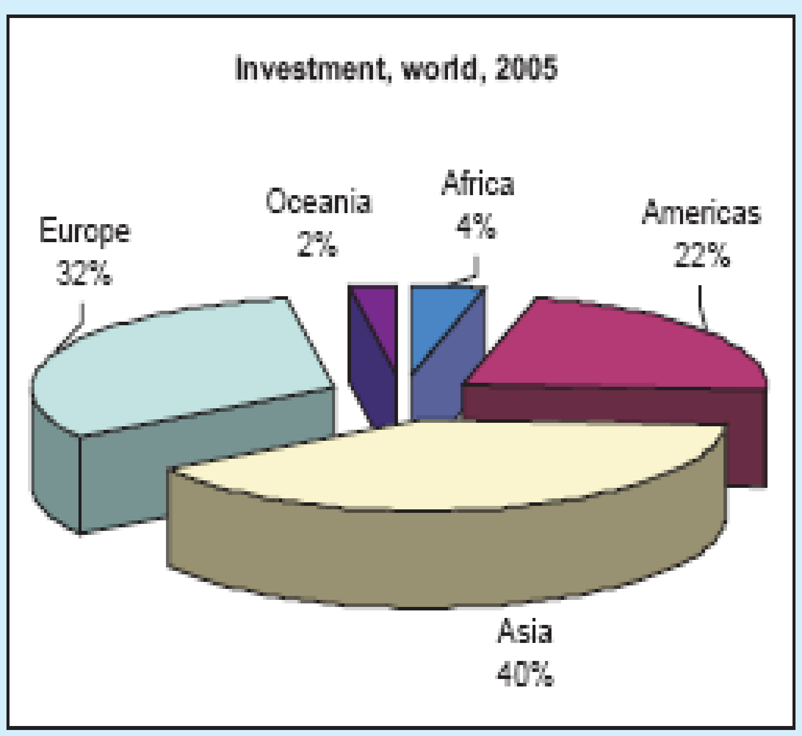
Under-investment In African ICT

Notwithstanding recent growth, Investment in African ICT is far behind all regions apart from Oceania: investments needed in telcos, broadcasting, fibre 4 Internet,
IT, including manufacturing

Africa – USD 12.9 per capita

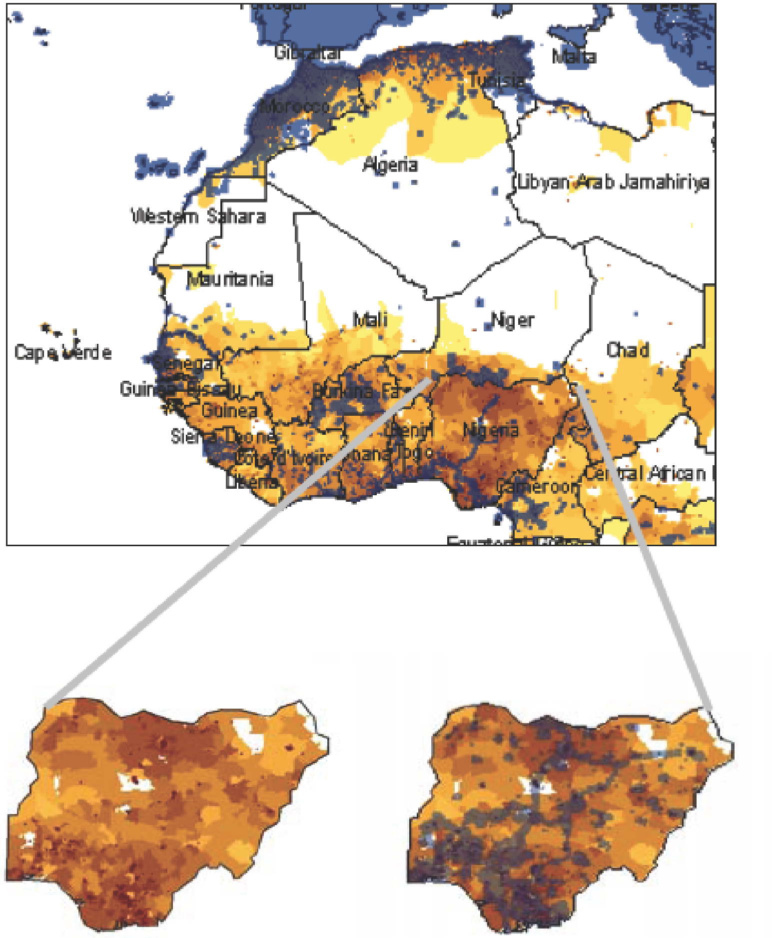
Oceania – USD190.80 per capita



Investment in telecommunications 2005

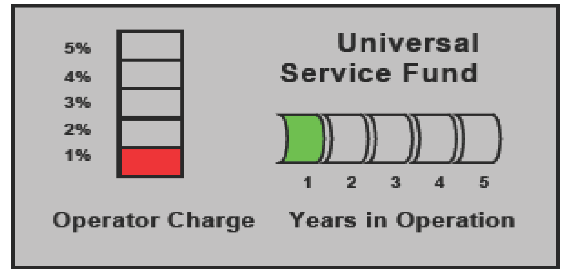
West Africa Population/Mobile coverage

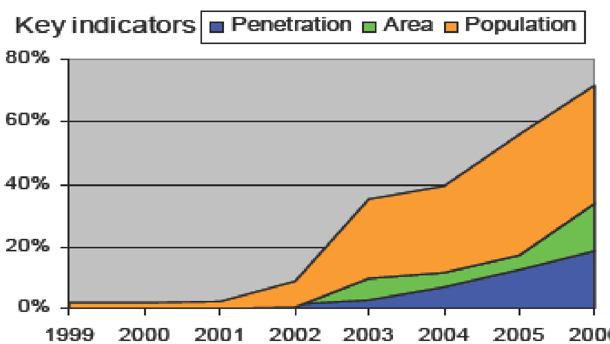
Nigeria



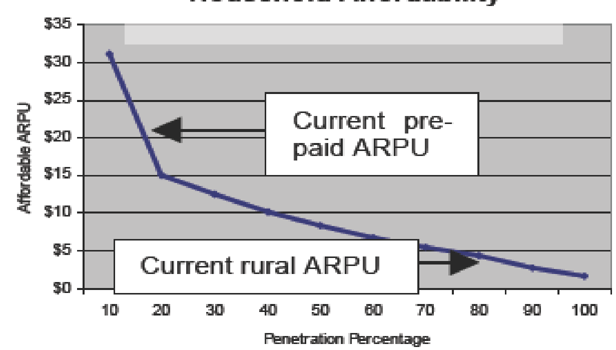
Population Density
139.3 Persons / Sq. Km

GSM Coverage
72% Population / 34% Area



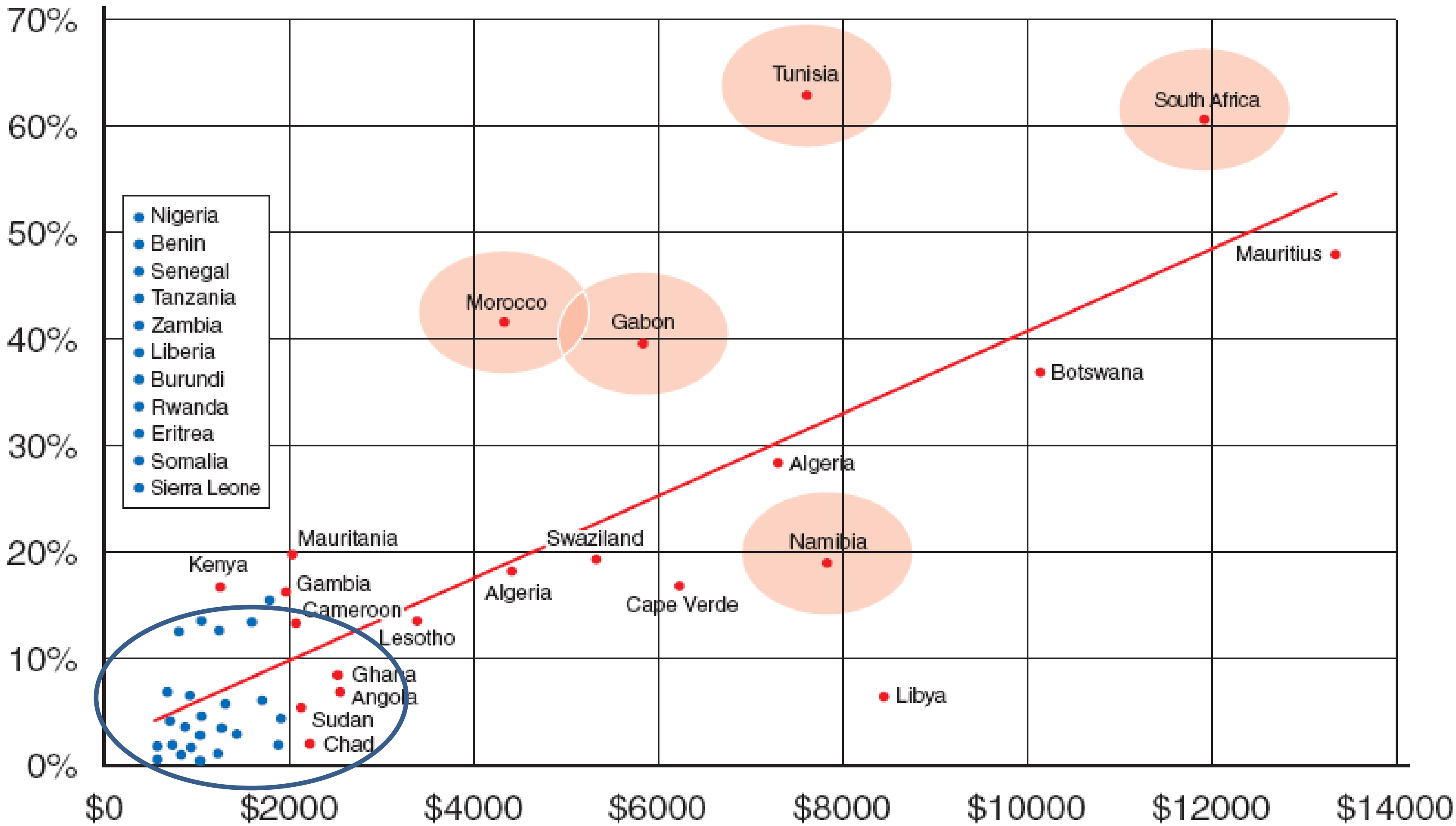


Household Affordability



West Africa's Mobile Penetration Vs Income

7: Penetration (Q4) and Per Capita GDP (PPP) 2005[42]



Source: Wireless Intelligence, AIA World Factbooks, and PwC Analysis

West Africa’s Rural-Urban Divide

- Mobile revolution restricted to `Mobile Voice’ - very little to showcase on Internet and Broadband Access
- Emphasis on Broadband, Internet expansion and Rural connectivity for infrastructure development
- Need to harness the potential of rural & semi urban areas through IP Networks with unlimited bandwidth on demand
- Breaking Barriers through `Bridging the Digital Divide – Affordable, Accessible & Reliable connectivity for both Rural and Urban Areas

West Africa's Backbone Networks Characteristics

- The low capacity of the networks;
- Geographical concentration of backbone networks on urban areas and inter-urban routes;
- Development of national connectivity; and
- Limited aggregation of traffic on backbone networks through a wholesale market or through network-sharing.

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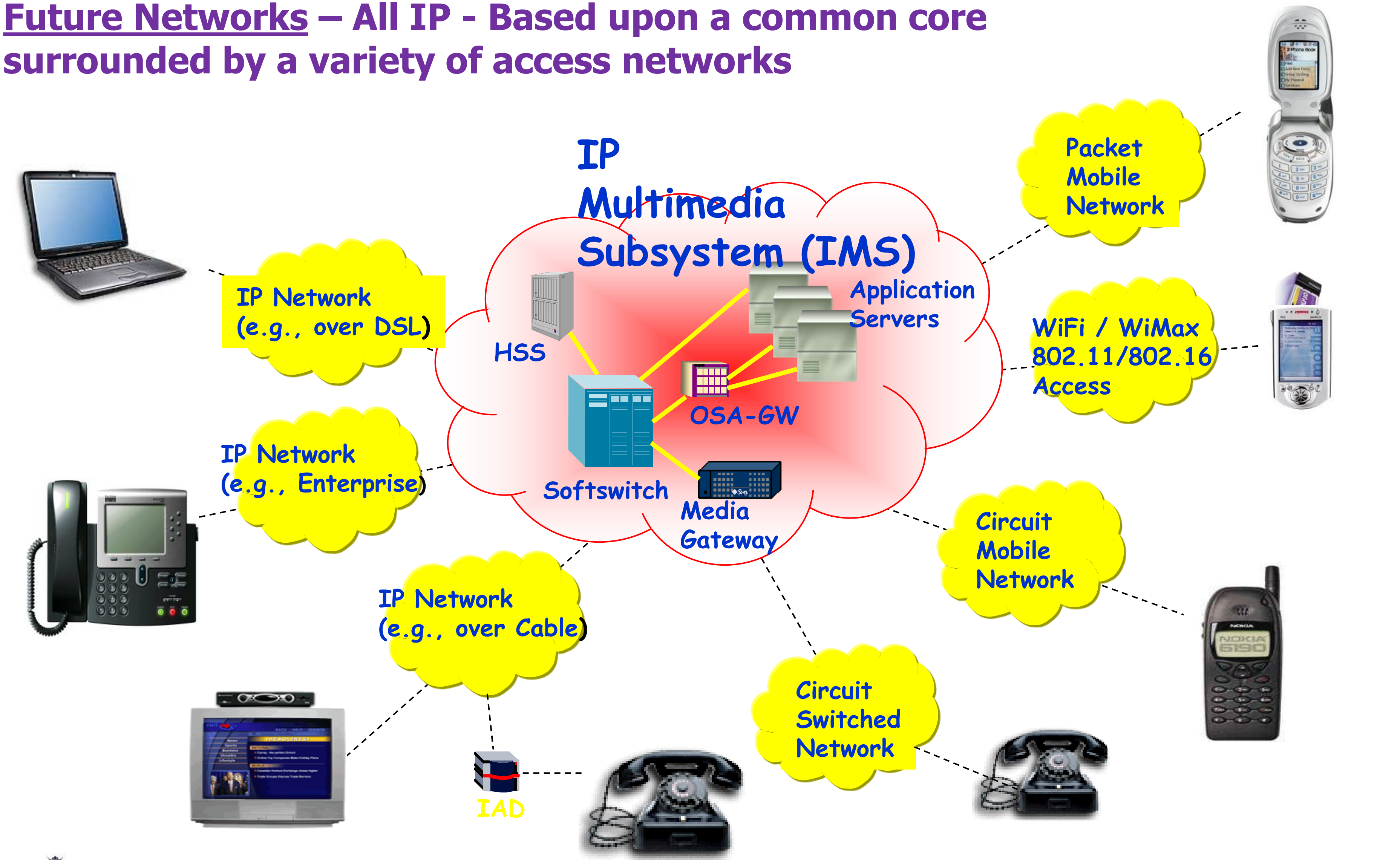
West Africa's ICT – Moving Forward

- Gradual move towards Technological Convergence – national broadband network, digital broadcasting
- Continued IP and mobile growth = key digital enablers, for switching, transmission and terminals -
- Growth of digital radio, IPTV, VoIP, fibre and satellite
- Consumers seek multipurpose ICT terminals– radio/TV set, phone, camera, Internet, MMA
- Policy and Regulatory convergence supporting networks converge and multi-purpose multi-media content
- Local Content Generation - user-generated content: UTube, MySpace, Facebook, etc allowing citizens to become broadcast reporters/photographers

Future Networks – All IP - Based upon a common core surrounded by a variety of access networks



West Africa’s ICT Vision 2020 – Action Plan

- Development of National Fibre Backbone
- Development of Nationwide Broadband Network
  - Through technology neutral, unified licensing
  - Enabling private enterprise in urban /rural areas to develop Broadband services
- National ICT – e-Government Action Plan
  - Creation of e-Development labs for G2G, G2B, G2C
    - e-education, e-health, e-commerce, e-agriculture, e-taxes
  - ICT Incubators – ICT Business start up initiative
  - Local content / applications development

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Conclusions

- **The World is in a Knowledge Age**
- **Global ICT trends are leading to Convergence**
- **Commonwealth Economies have improved over Last 20 years**
- **Major Opportunities exist for ICT Investment in West Africa member countries**
- **Liberalisation, Privatisation, Competition=Opportunities**
- **New Equity, Debt and Venture Funds Available for Member Countries**
- **ICT Sector Getting Highest Returns on Investment in the Commonwealth**

  CTO is working with Governments, Operators, Vendors, Investors, Funding agencies and others to help in bringing about National Telecom Infrastructure Development and bring about social and economic development through universal access / connectivity.
- ***CTO welcomes collaboration with ALL stakeholders***

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Video Presentation

- **Education – Sub Sahara Village connectivity**

2 Education - Sub-Saharan Africa.wmv

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Thank You

Bashir Patel
Director of Programmes
Commonwealth Telecom Organisation
64 – 66 Glenthorne Road
London, W6 0LR
e-mail: b.patel@cto.int
Tel: +44 208 600 3802
www.cto.int