



African Telecommunications Union

wireless telecommunication policy trends

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outline

1. the **key terminology** definitions
2. the **4 eras** and their **main policy/focus**
3. the **key elements** for each era



Part 1

the **key terminology** definitions



the key terminology definitions

1. **Wireless** => mainly radio spectrum based
2. **Policy** => A policy is a **deliberate system of principles** to guide decisions and achieve rational outcomes. **Notables** about policy/policies
 - a **statement of intent**, and is implemented as a procedure or protocol. Policies are
 - generally adopted by a **governance body within an organization**. Policies can
 - **assist in both subjective and objective decision making**.
 - assist in **subjective decision** making usually assist senior management with decisions that must be based on the relative merits of a number of factors, and as a result are often hard to test objectively, e.g. work-life balance policy.
 - assist in **objective decision** making are usually operational in nature and can be objectively tested, e.g. password policy
3. **Trends** => a **general direction** in which something is developing or changing.

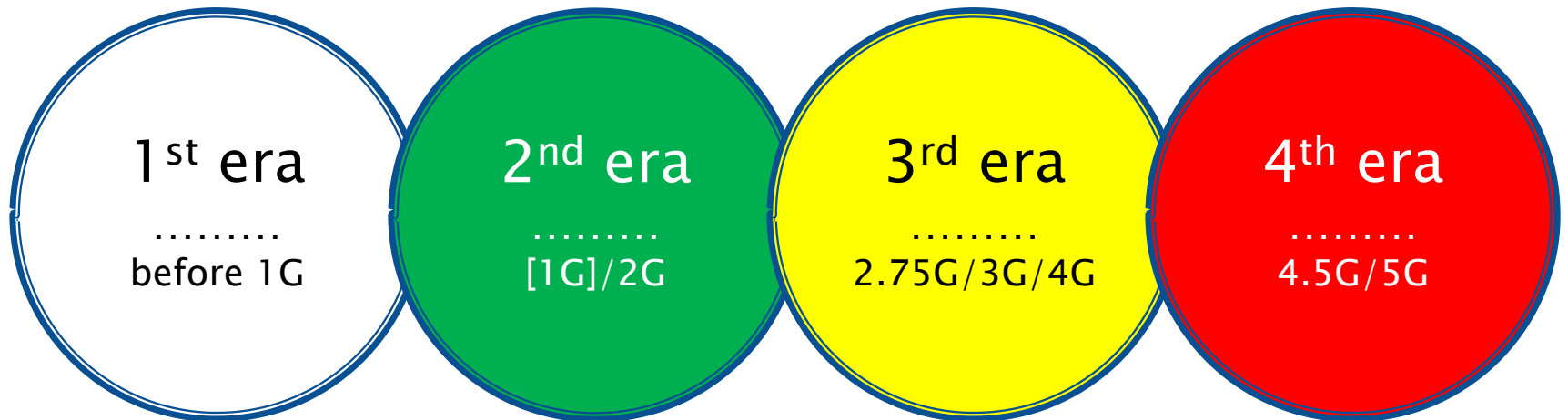


Part 2

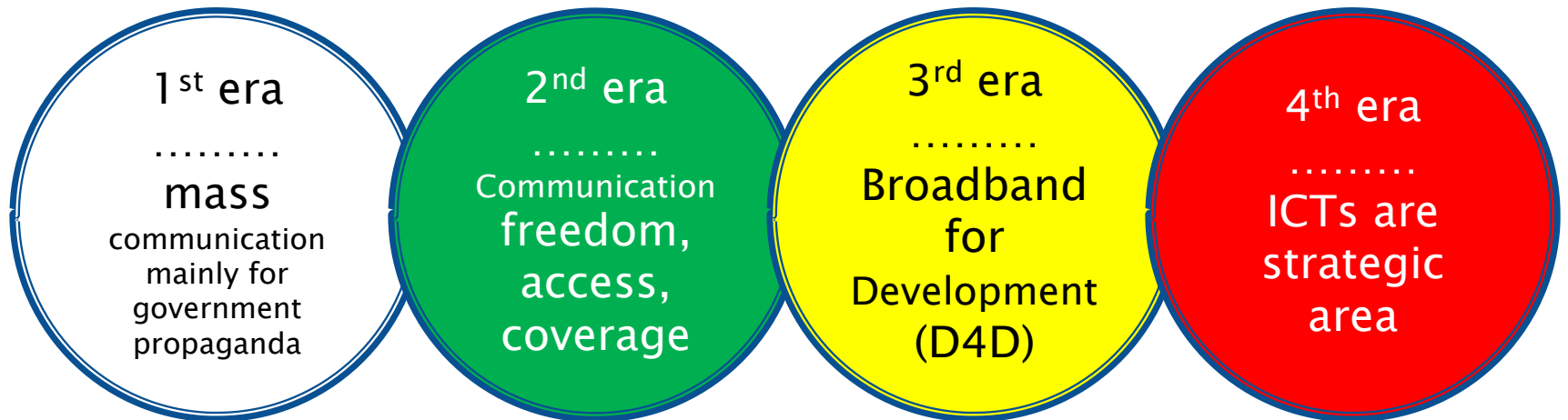
the 4 eras and their main policy theme



the 4 eras – the generations (Gs)



main policy theme



Part 3

the **key elements** for each era



1st era – Before 1G – Mass communication mainly for government propaganda

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- **Broadcasting** (TV and Radio) was the key ICT technology. Hence it got **>50%** of prime spectrum (“**spectrum policy**”)
 - **PSTN (Landline)** was the key voice communication technology (focus was on offices, public institutions and pay phones in few places)
 - **Home connection** was 100% luxury.
 - **Telecom run by states**, seen as **employment vehicles** and run as **charity**.
 - **FAX, Telegram** as key services
 - **Spectrum administered** by PSTN mainly for TV, 2-way radios, SW, MW, sound broadcasting.
 - No ICT Ministry of Regulators
 - **No Internet. No Google. No WhatsApp** either!!!



2nd era – [1G]/2G – Communication freedom, access, coverage, ...

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- Communication **freedom comes to mankind** **BUT at a high price** for both handsets and airtime (**use it or loose it**)
 - **GSM replaced AMPS** very-very quickly due to AMPS viability limitations
 - **SMS comes with a bang** and would give birth to MMS
 - **Internet limited to wired LANs** and over desktop PCs or DSL over copper lines
 - The beginning of **spectrum management**
 - Creation of **ICT Ministries and Regulators**
 - **ICTs seen as cash-cows** through license fees and tax
 - **Liberation** to maximize user benefit and government revenue.
 - **Benefit to wider social-economic of Internet** (**narrow-band 2.5/2.75 GPRS**) development is apparent.
 - **Fixed Broadband** on wired connections e.g. fiber and copper



3rd era – 3G/4G – Broadband for Development (D4D)

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- Era of mobile **broadband** and superfast fixed broadband via 3G/4G and fiber
 - **WiFi becomes a staple** (a must) for public areas esp airports, hotels
 - **Correlation between BB and development** is quantifiable and obvious
 - **More spectrum** is identified for IMT to an extent of 'grabbing' some from terre-TV
 - **Controls** (price roaming and to some extent on services via **implicit means**, focus of **QoS**, universal **coverage**,...), subsidies for rural networks, **community networks**.
 - BB is deemed as **essential infrastructure**.
 - **Countries establish BB strategies** including laying of fiber backbones
 - **Additional spectrum** for IMT but auctions also kick-in
 - Start of **Dynamic Spectrum Access** via authorization of TV White Space to promote **community networks**.
 - **Cyber security** becomes a key issue
 - Remarkable developments in various ICT technologies (satellite, HAPs, TV, devices...)



4th era – 4.5G/5G – ICTs are a strategic area

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- ICTs becomes the backbone/fabric of social-economic development
 - ICTs becomes more than BB (IoT, M2M, V2X,...)
 - ICTs becomes the driver/enabler for 4th Industrial Revolution (Steam>>Mechanization; Electricity>>Mass production; IT >>Automation; 5G>>Artificial Intelligence)
 - Governments ENHANCE the active promotion of ICTs (e.g. seed funding, free basic infrastructure, waiver on spectrum fees, massive R&D)
 - Cyber security becomes such a central issue (e.g. ZIMBABWE naming ministry as “ICTs & Cyber Security, USA elevating Cyber Security to a full command force)
 - Focus is on Digital Economies and just not sheer connectivity
 - Spectrum licensed via AUCTIONS to maximize value, however, limited success of this policy
 - Huge addition of IMT spectrum
 - Special Taxation kicks in in some countries (social media tax, money transfers, ...)
 - Infrastructure sharing becomes central issue



thank you

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