INTERNATIONAL TELECOMMUNICATION UNION Telecommunications Development Bureau (BDT) REGIONAL OFFICE FOR AFRICA



Telecommunication/ICT Network Management and Development

1. ASSESSMENT OF THE ACTUAL SITUATION CENTRAL AFRICA

STATUS

TWO CATEGORIES

1. WAR STRICKEN COUNTRIES

Democratic Republic of Congo

Burundi

Rwanda



Central African Republic Congo

Chad (Recently more stable.)

Continued

STABLE DEVELOPING COUNTRIES
Cameroun
Equatorial Guinea
Sao Tome & Principle
Gabon

STRENGTHS

- Special attention by other international aid is being given to war torn countries to develop the telecommunication network.
- ITU special assistance.

WEAKNESSES



- In war stricken countries, Infrastructure development has been retarded due to war.
 - Inadequate local financial resources for development.
 - Policy of immediate maximum profits by certain operators. Poverty.

EASTERN AND SOUTHERN AFRICA

STATUS

Each country is at a different level of development. However, the subregion may be grouped in three categories

1.

South Africa and Mauritius High teledensity. High area coverage of fixed and mobile networks. On migration path to 3G and IP Telephone. Fair ICT penetration

2.



Remaining SADC region states including Kenya and Uganda.

Teledensity of between 0.8 and 1 per 100 people High population covered by mobile networks Network elements are being digitalized. Low ICT penetration

Continued

3.

Ethiopia and Eritrea

- Teledensity of less than 0.5 per 100 people
- Low population covered by mobile networks
- Very low ICT penetration
 - Network Elements are being digitalized.

STRENGTHS

- Member States in the Regional Economic Integration groupings are working together in projects like the RSII (SADC) and COMTEL (COMESA).
- The Role of SATTC in telecommunication sector



ITU assistance

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Continued WEAKNESSES

- 1. Management shortcomings
- 2. Insufficient well-trained and experienced human resources in new technologies and services.
- **3. Inadequate financial resources for development.**
- 4. Lack of African telecommunication manufacturing industry.
- 5. Policy of immediate maximum profits pursued by certain operators especially in mobile networks.
 6. Poverty.



WEST AFRICA

STATUS

- Low teledensity
- Insufficient uniformity in the networks
- Low ICT and Internet penetration
- Insufficient technical interconnect capacity

STRENGTHS

- Establishment of CMTL SA
- ITU assistance
- Regional Economic Integration grouping approach



Continued

WEAKNESSES

- Management shortcomings
- Insufficient well-trained and experienced human resources in new technologies and services.
- Inadequate financial resources for development.
- Lack of African telecommunication manufacturing industry.
- Policy of immediate maximum profits pursued by certain operators especially in mobile networks.
- Poverty.



GENERAL TECHNICAL WEAKNESSES 1. NETWORK MANAGEMENT

- Insufficient practice of technical management procedures.
- Unavailability of network operations and administrations data.
- Co-existence of analogue and digital equipment.
- Network Interface difficulties and propagation problems.
- Unsatisfactory Network Operation, Interoperability and Quality of Service standards.
- Difficulties in obtaining Network management data from operators and Regulators.
- Unavailability of Network performance history.
- Obsolescence and difficulties with supply of spare parts (production lines having closed down).



Continued

- 2. NETWORK DEVELOPMENT
 - Insufficient network planning of interconnection capacity.
 - Insufficient, if not none, network development in rural, remote and isolated areas.
 - Unavailability of IP Telephony penetration.
 - Insufficient planning of platforms for new technologies and services.
 - Insufficient local funds for network development.
 - Insufficient implementation of internationally accepted standards of signaling and inter-state harmonization of signaling.
 - Low data speed (9.6Kbps) in mobile networks.
 - Very low teledensity.
 - High costs of Internet access penetration.



2. LAID DOWN ACTIVITIES AS PROGRAMS

- a) NETWORK MANAGEMENT
 - Network Operation, Interoperability and Quality of Service standards.
 - Network Management and Maintenance.
- b) NETWORK DEVELOPMENT
 - Network Planning.
 - Network Implementation.
 - Network Development (as in upgrading and expansion to cover urban, rural and remote areas).

In the following fields

- Spectrum management and Radio monitoring.
- Broadcasting.
- Mobile terrestrial communications.
- IP and innovative applications.



3. MEASURABLE OBJECTIVES In the fields and within activities mentioned;

- 1. Creation of tools.
- 2. Creation of training material and guidelines.
- 3. Assistance to members.
- 4. Information sharing.
- 5. Handling of special needs.
- 6. Coordination within ITU.
- 7. Partnership.



Matrix of measurable Objectives in the fields and within activities .

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4. YEARLY UPDATED OPERATIONAL PLAN FOR FOUR YEARS

For Each activity/program, within the fields and measurable objectives, analysis of;

- Annual Objectives
- Performance indicators
- Actions

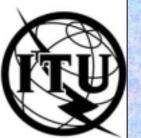
has been considered for the following years.



Year 1 Year 2 Year 3 Year 4

ACTIVITY PLAN

1		Spectrum		1. A. C. A. S. S.	
-	FIELDS &	Management and	Server Contraction	Mobile terrestrial	IP and Innovative
	ACTIVITIES	Radio Monotoring	Broadcasting	communication	applications
- 18 S	Network				
1	Planning	Year 1	Year 1	Year 1	Year 1
11				S 10 3	and the second
	Network	Year 1 & Year 2 &	Year 1 & Year 2 &	Year 1 & Year 2 &	Year 1 & Year 2 &
2	Implementation	Year 3	Year 3	Year 3	Year 3
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3	standards.	Year 3	Year 3	Year 3	Year 3
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4	Development	Year 3 & Year 4	Year 3 & Year 4	Year 3 & Year 4	Year 3 & Year 4
a ser ala	Network	13 S. (* 3844)	10 1 S. (* 1944)		
5	Management	Year 1 & Year 2	Year 1 & Year 2	Year 1 & Year 2	Year 1 & Year 2
files?	Network		Star Star		a the first the
6	Maintenance	Year 1 & Year 2	Year 1 & Year 2	Year 1 & Year 2	Year 1 & Year 2



ICT's PRIORITY AREAS

- Provision of universal access and universal service (basic (voice) telecommunication service
- Energy (electricity)
- Technological skills
- Expansion and enhancement of affordable telecommunication services
- Increase of affordable terminal communication equipment.
- Increased Internet access penetration



- Development of other social and economic infrastructure such as financial, content, e-commerce culture etc.

IMT-2000 Key Drivers

- Wireless Internet mobile phone Adoption
- Rapid service creation
- New Revenue streams
- Bandwidth
- Capacity
- Lower cost base



Cellular/mobile systems evolution

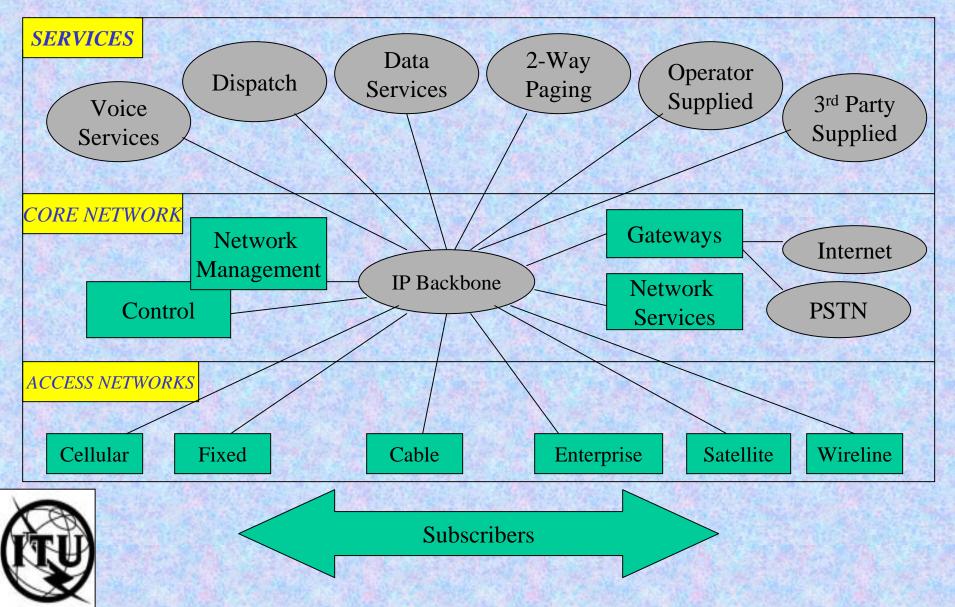
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GENERATION	CDMA	TDMA (GSM)	DATA RATES
		TDMA IS-136,	
		GSM 900, GSM	14.4Kbps to 64
2G	IS95A TO IS95B	1800 & PCS	Kbps
			64Kbps to
		GSM 1800 & PCS	144Kbps to
2.5G	IS95A TO IXRTT	1900 TO GPRS	384Kbps
		TDMA IS-136 TO	
		EDGE, GPRS	384Kbps to
	IXRTT TO 1XPlus	TO EDGE &	1.4Mbps to
3G	TO DS Narrow	EDGE TO UMTS	2Mbps to 5Mbps

(1

Conclusion:- IP Convergence for Broadband Data, Voice and Multimedia Networking



THANK YOU

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NETWORK MANAGEMENT AND DEVELOPMENT FOR AFRICA TEAM

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