



**MINISTRY OF POSTS AND TELECOMMUNICATIONS**

**ITU-BDT Regional seminar on IMT-2000 for CEE & BALTIC states**

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**IMT-2000 RELATED ACTIVITIES IN AFRICA :  
RESULTS OF THE DOUALA SEMINAR**

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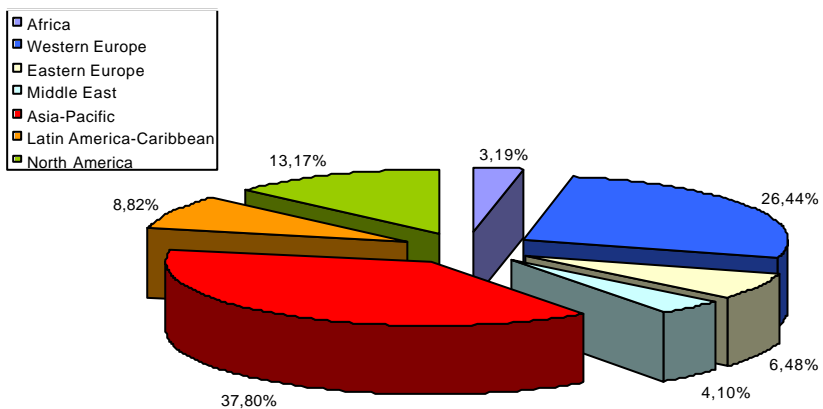
**Plan of the presentation**

- Mobile telecommunications in Africa
- IMT-2000 in Africa
- Results of the Douala seminar
- Conclusion

## MOBILE TELECOMMUNICATIONS IN AFRICA



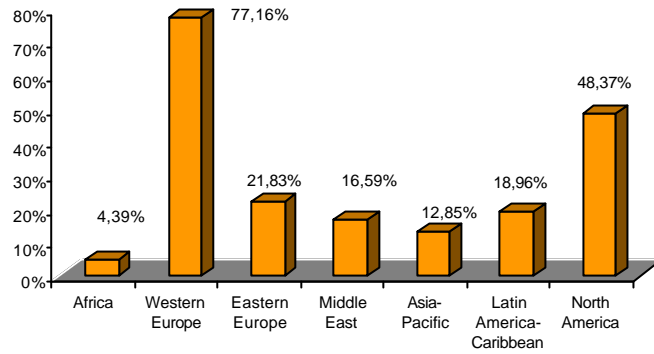
**1- With about 37.7 millions\* subscribers (end 2002) Africa's share of the global mobile telecommunications market is quite low**



\*source : Global Mobile, ITU



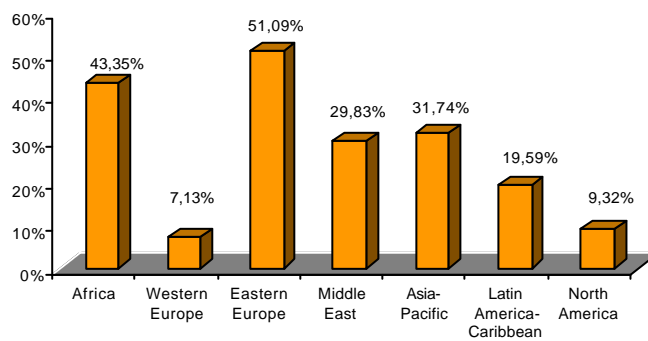
## 2- The average penetration rate is relatively low\* (end 2002)



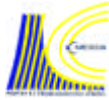
\*source : Global Mobile



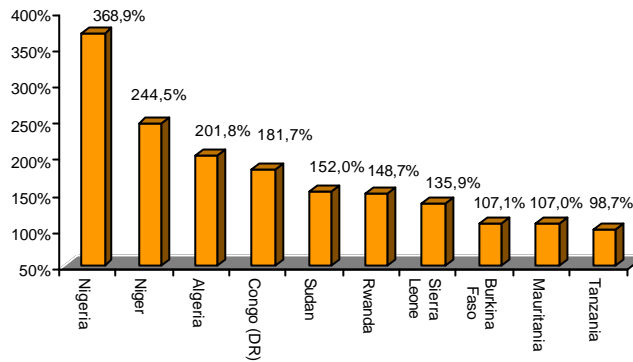
## 3- But the continent has a high average growth rate\*



\*source : Global Mobile



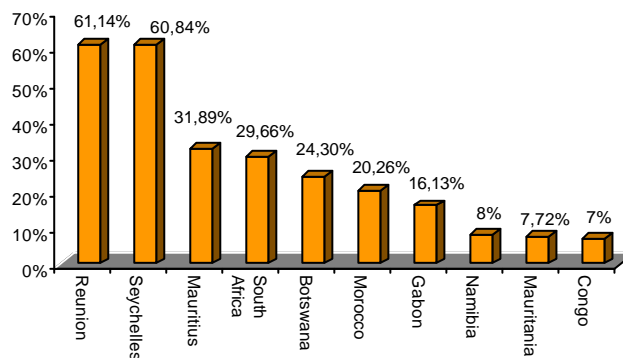
#### 4- With growth rates (2001/2002) above 90% on the top 10 markets by growth rate



Source : Global Mobile, ITU



#### 5- Few countries have penetration rates\* (end 2002) similar to those of developed countries



\* source : Global Mobile



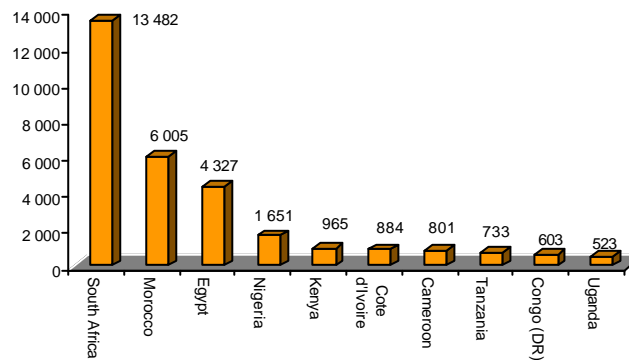
**6- Despite growth rates above the worldwide average during the next years, the penetration rate would remain below the average**

Pays	Croissance 2002-2007	Taux de pénétration 2007
Afrique du Sud	14,20%	31,52%
Botswana	66,75%	34,87%
Cameroun	48,19%	6,70%
Côte d'Ivoire	91,70%	9,00%
Egypte	98,46%	11,80%
Ghana	80,96%	2,97%
Kenya	103,08%	5,75%
Maroc	89,35%	35,53%
Maurice	86,53%	54,34%
Mozambique	255,79%	3,50%
Namibie	200,00%	21,40%
Nigeria	543,20%	7,79%
Ouganda	44,09%	2,90%
Sénégal	76,01%	6,75%
Tanzanie	25,59%	2,25%
Tunisie	638,59%	31,60%
Zimbabwe	184,42%	6,59%

Région	Croissance 2002-2007	Taux de pénétration 2007
Amérique du Nord	40,18%	65,90%
Amérique du Sud	73,97%	31,20%
Asie-Pacifique	82,23%	19,90%
Europe de l'Est	105,77%	42,80%
Europe de l'Ouest	18,06%	81,90%
<b>Moyenne mondiale</b>	<b>64,27%</b>	<b>27,70%</b>



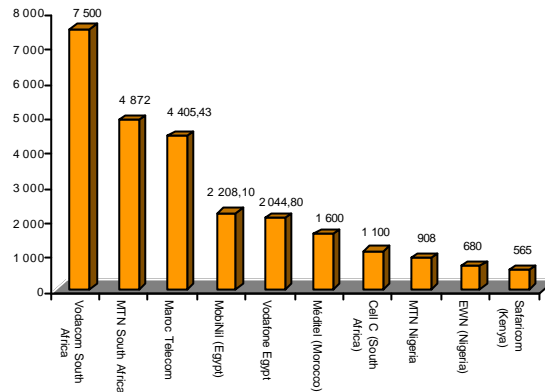
**7 - The top 10 markets (number of subscribers\*, in thousands, end 2002) represent more than 80% of the continent's subscriber base**



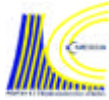
\*source : Global Mobile, ITU



## 8 - And the top 10 operators (number of subscribers\*, in thousands, end 2002) **around 70%**



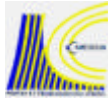
\*source : Global Mobile



## 9 - The African mobile market is characterised by : a high percentage of prepaid subscribers

Pays	Part abonnés prépayés
Afrique du Sud (MTN, 31/03/03)	79,40%
Algérie (Djezzy, 31/12/02)	48,50%
Botswana (est. fin 02)	93,53%
Cameroun (MTN, 31/03/03)	97,60%
Côte d'Ivoire (est. fin 02)	89,36%
Egypte (MobiNil, 31/12/02)	80,00%
Ghana (est. end 02)	88,17%
Kenya (est. end 02)	90,51%
Maroc (31/03/03)	95,27%
Maurice (est. end 02)	70,95%
Mozambique (est. fin 02)	85,88%
Namibie (est. end 02)	87,66%
Nigeria (MTN, 31/03/03)	97,90%
Ouganda (MTN, 31/03/03)	97,90%
Rwanda (MTN, 31/03/03)	96,40%
Sénégal (est. end 02)	86,07%
Swaziland (MTN, 31/03/03)	94,90%
Tanzanie (est. fin 02)	93,74%
Zimbabwe (est. fin 02)	74,93%

Région	Part abonnés prépayés
Amérique du Nord	10,30%
Amérique du Sud	62,50%
Asie-Pacifique	49,00%
Europe de l'Est	66,60%
Europe de l'Ouest	61,10%
<b>Moyenne mondiale</b>	<b>50,10%</b>



## 10 - And an ARPU which varies from country to country, mainly according to the maturity of networks, and decreases quickly

Pays	ARPU (US\$)	Variation/à l'année précédente
Afrique du Sud (MTN,31/03/03)	21,00	-4,55%
Afrique du Sud (Vodacom, 31/03/03)	23,00	-0,55%
Algérie (Djezzy, 2002)	44,00	na
Botswana (est. 2002)	15,00	-25,00%
Cameroun (MTN, 31/03/03)	21,00	-12,50%
Congo (Libertis, 2002)	28,80	-11,11%
Côte d'Ivoire (est. 2002)	19,00	-17,39%
Egypte (MobiNil, 2002)	19,00	-8,65%
Ghana (est. 2002)	19,00	-9,52%
Kenya (est. 2002)	18,00	-30,77%
Maroc (est. 2002)	11,00	-15,38%
Maurice (est. 2002)	17,00	-15,00%
Mozambique (est. 2002)	30,00	-25,00%
Namibie (est. 2002)	12,00	0,00%
Nigeria (MTN, 31/03/03)	57,00	-5,00%
Ouganda (MTN, 31/03/03)	28,00	-24,32%
Rwanda (MTN, 31/03/03)	27,00	-28,95%
Sénégal (est. 2002)	14,00	-17,65%
Swaziland (MTN, 31/03/03)	21,00	-25,00%
Tanzanie (est. 2002)	24,00	-11,11%
Tchad (Chad Mobile, 2002)	35,40	-4,44%
Zimbabwe (est. 2002)	19,00	-17,39%

Région	ARPU (US\$)	Variation/à l'année précédente
Amérique du Nord	51,00	0,59%
Amérique du Sud	13,40	-11,26%
Asie-Pacifique	28,10	-12,73%
Europe de l'Est	22,80	-9,16%
Europe de l'Ouest	34,20	0,29%
<b>Moyenne mondiale</b>	<b>31,00</b>	<b>-6,31%</b>



## 11 - The high percentage of mobile users in the total of telephony users in most of the countries translates fixed by mobile substitution

Pays	Abonnés mobiles/ total abonnés (fixe+mobile)
Afrique du Sud	73%
Angola	63%
Botswana	74%
Cameroun	88%
Côte d'Ivoire	72%
Egypte	37%
Ghana	56%
Kenya	75%
Maroc	84%
Maurice	54%
Mauritanie	87%
Mozambique	66%
Namibie	58%
Nigeria	70%
Ouganda	90%
Sénégal	66%
Tanzanie	77%
Tunisie	29%
Zimbabwe	53%

Pays	Abonnés mobiles/ total abonnés (fixe+mobile)
Allemagne	52%
Argentine	45%
Australie	55%
Brésil	48%
Bulgarie	48%
Chine	49%
Corée du Sud	58%
Espagne	64%
Etats-Unis	42%
France	52%
Grèce	63%
Hongrie	64%
Inde	20%
Indonésie	59%
Mexique	63%
Pays Bas	60%
Pérou	57%
Turquie	51%

# IMT-2000 IN AFRICA



## **Importance of IMT-2000 for developing countries**

- Mean to achieve universal service/access goals
- Diversification of the telecommunications services offering
- Provision of new services
- Factor of integration in the Information Society
- Development of connectivity
- Fast provision of voice and non voice services in uncovered regions





## Objectives to be met by IMT-2000 to match the needs of developing countries

- Recommendation ITU-R 819-2 describes the objectives to be met by IMT-2000 to match the needs of developing countries
  - Provide in both urban and rural areas, economical services of high quality and integrity comparable to those of fixed networks ;
  - Be capable of serving a wide range of user densities and coverage areas as well as remote regions ;
  - Take account of the need to match, efficiently and economically, spectrum usage to local conditions where there are only a few users and where severe propagation conditions are encountered ;
  - Be modular in the IMT-2000 design to allow a system be introduced with minimum initial investment, permitting flexible growth in terms of number of users, coverage areas and types of services ;
  - Allow for large cell sizes.



## Some characteristics of developing countries

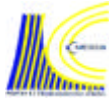
- A low income per inhabitant (less than 600 US Dollars per year) and a huge foreign (external) debt ;
- A young population (more than 50% of the population is less than 35 years old) interested in mobile telephony services and wireless messaging ;
- Vast sparsely populated rural areas : more than 50% of the population live in rural areas ;
- Difficult geographic terrain ;
- High illiteracy rate ;
- Need for basic telecommunications services : most consumers expect narrow band services such as voice communications and electronic messaging ;
- Growth of the use of Internet ;
- Low traffic density.



## Requirements of developing countries

- Flexibility in the use of the identified spectrum
- Sufficient amount of spectrum to guarantee competition in suitable frequency bands in different types of environments : mountains, forests, deserts, costs ...
- Globally harmonised use of the spectrum to allow roaming and economies of scale
- Good quality of service at affordable prices
- Solutions allowing access to basic telecommunications services to the majority of users on most of the national territory, including sparsely populated and low traffic density areas, in a reasonable timeframe and in affordable economic conditions
- Large cells sizes
- Network and terminal equipment at affordable prices
- Smooth transition from first and second generation systems to third generation systems

## Results of the Douala seminar



## Objectives of the seminar

- A seminar on the mobile market and ITU studies on IMT-2000 was held in Douala (Cameroon) from the 22nd to 23rd of September 2003
- Participants were from administrations, regulators, operators and manufacturers in Africa and France, as well as from the ITU representation for the Central African Region
- The objectives of the seminar were:
  - ✓ to contribute to the reflection on the future evolution of mobiles services that would match the needs of these countries.
  - ✓ to establish a coordination strategy for African countries concerning ITU studies
- Topics developed during the seminar:
  - ✓ importance of the mobile market in Africa;
  - ✓ IMT-2000 and ITU;
  - ✓ needs of African countries;
  - ✓ evolution of IMT-2000 at the ITU.
- During the seminar, a declaration of administrations was established



## Key messages of the seminar (1/3)

- ✓ Africa holds a relatively small share of the global mobile market
- ✓ The average penetration rate remains relatively low
- ✓ Africa has one of the highest average growth rates
- ✓ The African market is characterised by the presence of some international groups: Vodafone, France Telecom/Orange, Orascom Telcom Holding, MTN Group, MSI Cellular Investments
- ✓ High level of fixed by mobile substitution
- ✓ The number of fixed lines has fallen in certain African countries
- ✓ Most of subscribers are prepaid



## Key message of the seminar (2/3)

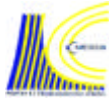
### The impact of mobiles on the economy of African countries:

- Creation of direct and indirect jobs
- Economic growth
- Improvement of standards of living in rural areas
- Economic development thanks to :
  - ✓ Improvement of the functioning of the markets
  - ✓ Increased productivity
  - ✓ Reduction of transaction costs
  - ✓ Facilitated access to emergency and health services
  - ✓ Assistance to the democratic process
- Opening up of rural areas



## Key message of the seminar (3/3)

- How can the mobile market be successfully developed in Africa?
  - Challenge for all actors:
  - Prescribed strategy:
    - For administrations:
      - ✓ Liberalisation and “safeguarding” of competition
    - For mobile operators:
      - ✓ Extended coverage and affordable prices
    - For the mobile solutions providers:
      - ✓ Ready to use solutions adapted to the local markets, allowing cost optimisation and increased profitability



## Douala declaration

- Highlights the need for improved access to information and communication services for all peoples of the world
- Mobile communications have become a major contributor to the Information and Communication Society
- Particular emphasis was put on the following aspects :
  - Coverage extension
  - Harmonisation
  - Technological evolution
  - Digital divide



## Coverage extension

- In African countries, operators continue to deploy 2g systems.
- 3G systems are not envisaged before 2010
- Coverage extension
  - When deploying 3G systems, the issue of extended network coverage beyond the one permitted by 2G has to be taken into account
- Solutions
  - Different solutions are studied in ITU
  - One of these solutions consists in identifying at WRC-07 a frequency band below those that have already been identified for terrestrial mobile systems
- Characteristics of the band
  - Below 600 MHz
  - Globally harmonised
  - Available in most countries
  - Sufficiently wide to allow competition between operators



## Harmonisation

- Main objective :
  - Deployment of mobile services, in particular 2G services today and 3G services in the future, in numerous countries, in harmonised frequency bands that would be identified by the WRC of the ITU for IMT-2000
- Global harmonisation is essential for our countries since it justifies all efforts and investments made for establishing 3G as a global system
- Harmonisation effort should continue in the framework of the ITU and in particular at the WRC
- This effort should lead to the future availability for mobile systems (pre-IMT-2000 or IMT-2000) of all frequency bands harmonised by the WRCs



## Technological evolutions

- The technological evolutions of 3G (called « future development of IMT-2000 and systems beyond IMT-2000 » by ITU) are also envisaged in a globally harmonised manner
- The schedules of these evolutions must remain compatible with the current development of mobile services and the evolution process should allow a smooth transition of 3G capacities and functionalities (compatibility and inter-operability between pre-IMT-2000 and IMT-2000 systems)



## Digital divide

- The wish is expressed for the World Summit on the Information Society (WSIS) :
  - to recognise mobile services as a means allowing developing countries to enter in the Information Society
  - to recommend to manage and use the radio frequency spectrum in accordance with the principles of non-discrimination and global harmonisation



## Conclusion

- IMT-2000 has an important part to play in the achievement of the objective of universal access/service and the economic development of our countries
- Taking into account the needs of the developing countries is essential in the development of IMT-2000
- Identification of bands below 600 MHz is necessary to allow a quick and cost-effective deployment of IMT-2000
- IMT-2000 are an important factor for the integration in the Information Society

Thank you