

ITU/BDT Regional Seminar on Broadband Wireless Access (BWA) for rural and remote areas for Africa

Presentation 6

CDMA DEVELOPMENT IN CAMEROON



YAOUNDE 18 – 21 SEPT.

Mr. FRU ANE

CDMA Development in Cameroon

1 - Where Do We Come From?

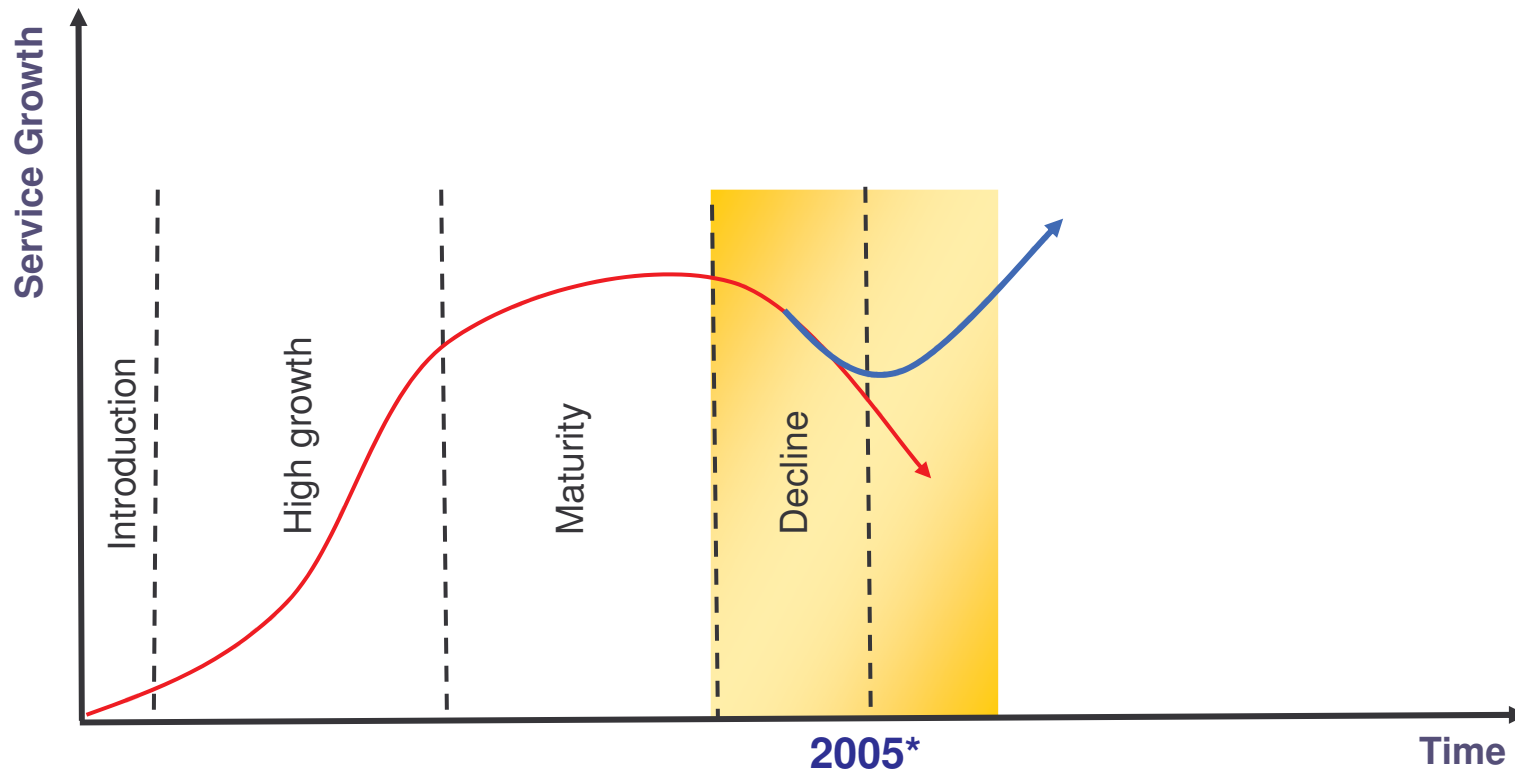
2 - Where Are We Today?

3- What is Our Way Forward?

4- What Are Our Main Challenges?



- Predominantly copper in the access network
- Copper technology around the decrease stage of its life cycle
- Major changes in the telecommunications environment of Cameroon (1998)
 - ✓ Market opened for competition with two mobile operators (1999)
 - ✓ Internet service provisioning is fully liberalized (both IAP and ISP)
- Camtel is created in 1999 as a 100% owned state company (historical operator) and immediately put to the market (privatisation).
- 7 years after the privatisation process is still on.
 - ✓ Dilapidated and outdated infrastructure
 - ✓ Services offered are essentially those carried by copper lines
 - ✓ No or insignificant infrastructure renewal
 - ✓ Constant loss of revenues (High OPEX due to infrastructure aging, static copper based offer vs. dynamic range of services required by the demand)

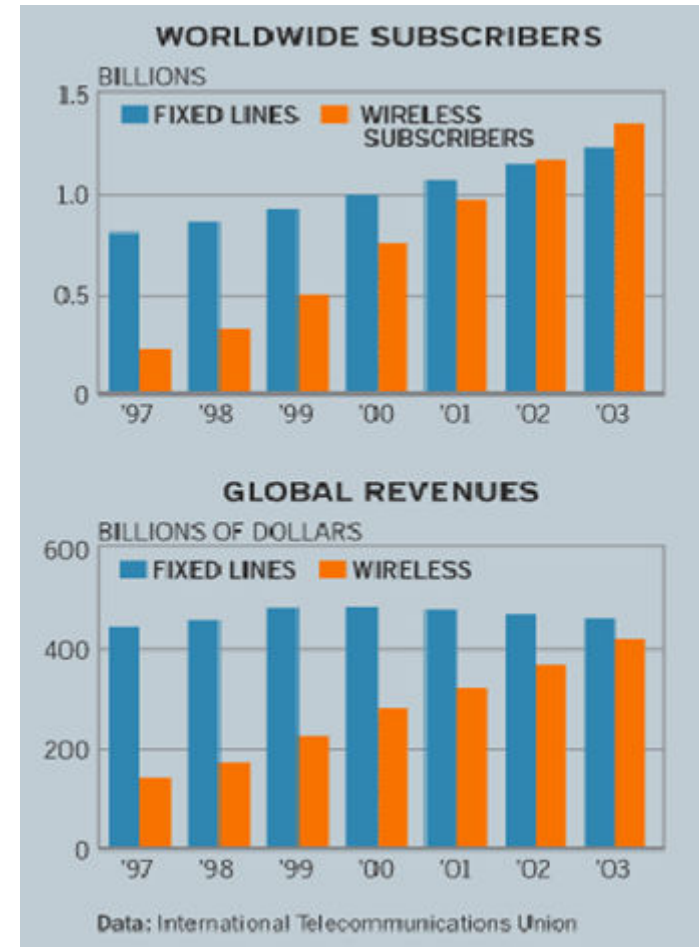


*Timid takeoff due to :

- 1-Succesful clean up operation of access network mainly in Yaoundé and Douala
- 2-Several completed low scale copper extension projects
- 3-Effective introduction of ISDN and ADSL services



- From ITU data, the number of wireless subscribers overtook that of fixed Network in 2002. This turning point was reached much earlier in Cameroon
- The number of wireless subscribers increases much faster than that of the fixed network. In Cameroon the ratio is much less than one fixed subscriber for 10 mobiles. Yet the most important part of the global demand remain unsatisfied.
- The fast spreading wireless subscribers base has diverted huge traffic from traditional PSTN. This erosion of traffic has caused a constant slash of CAMTEL's revenue.



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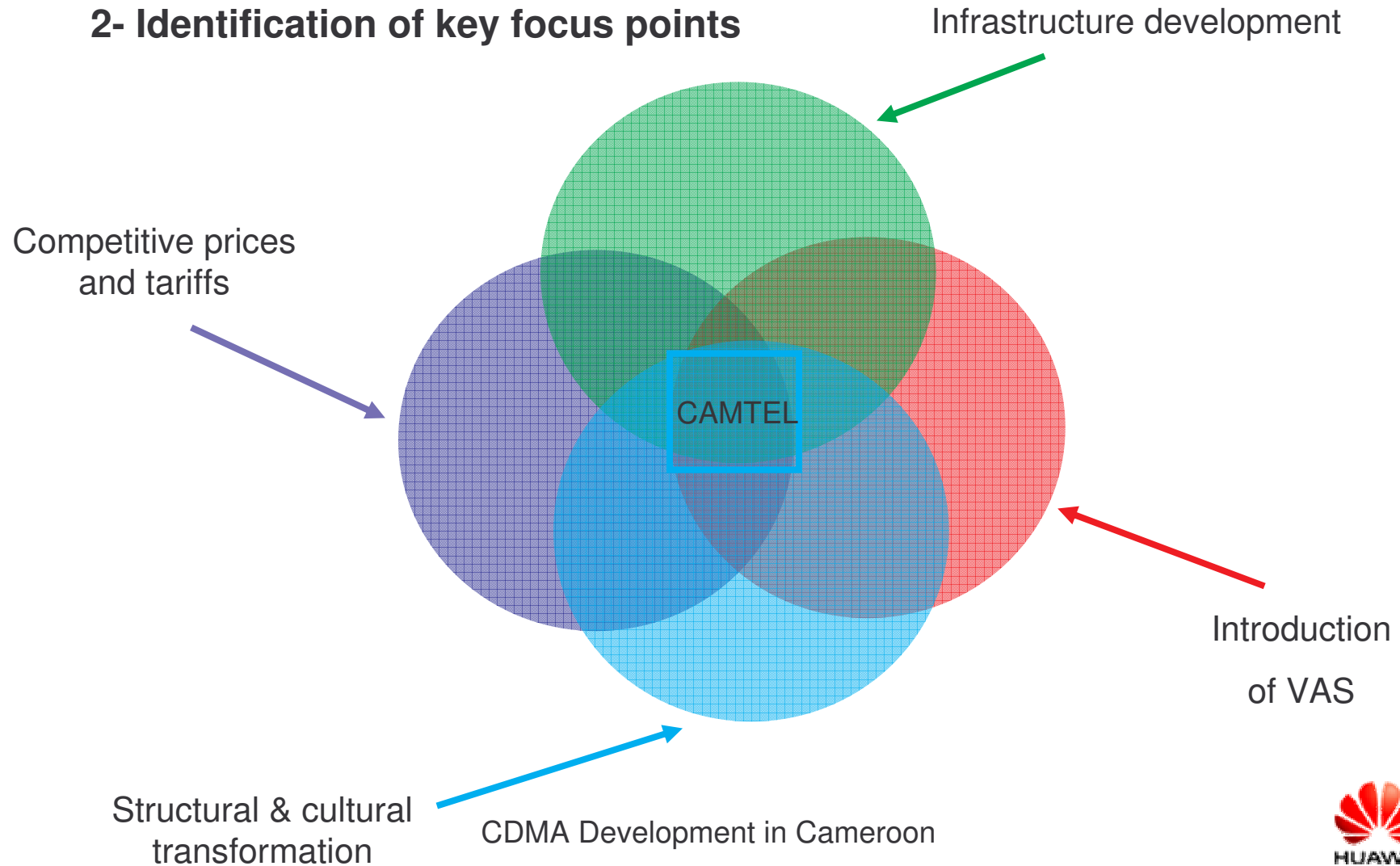
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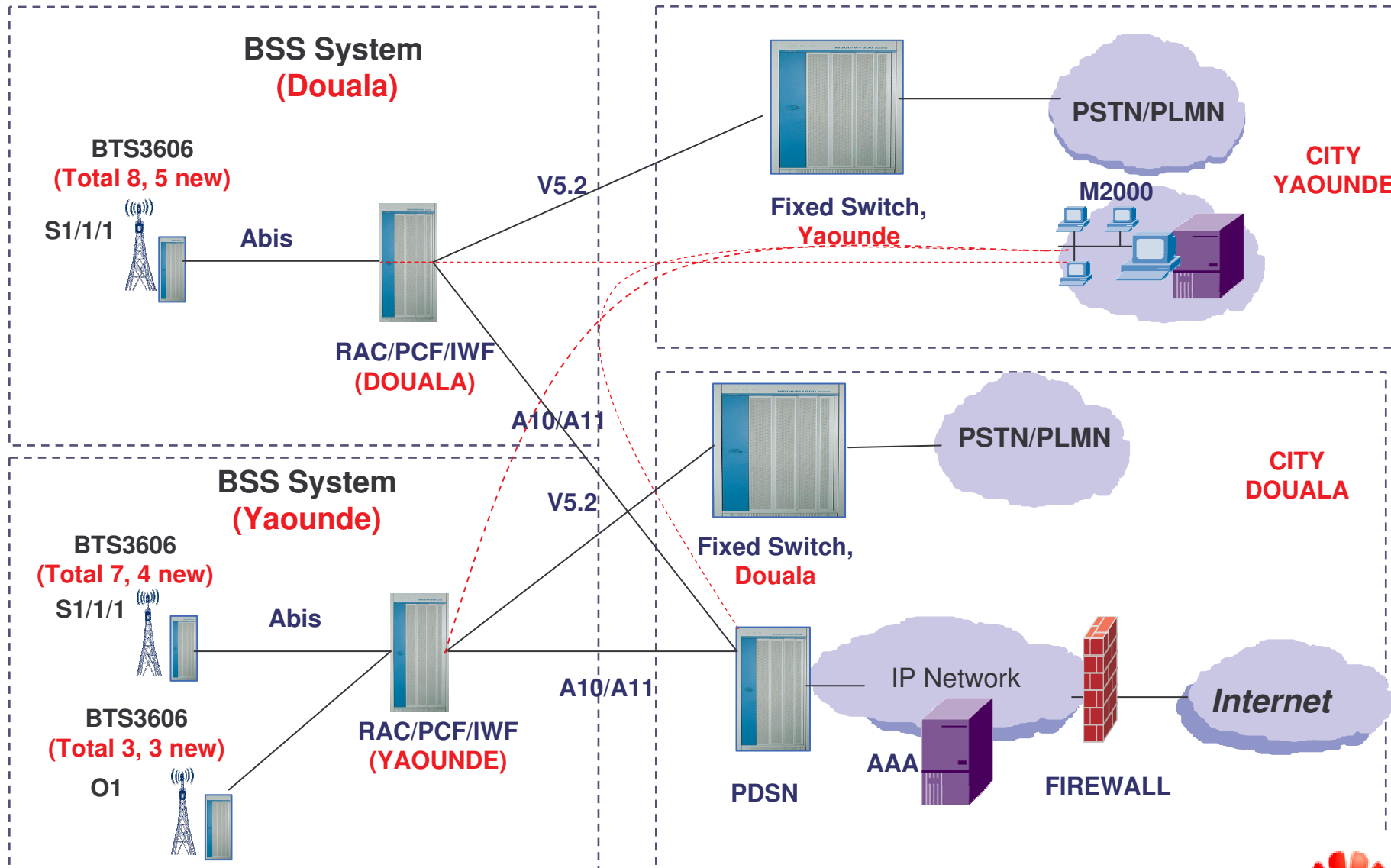
3- What is Our Way Forward?

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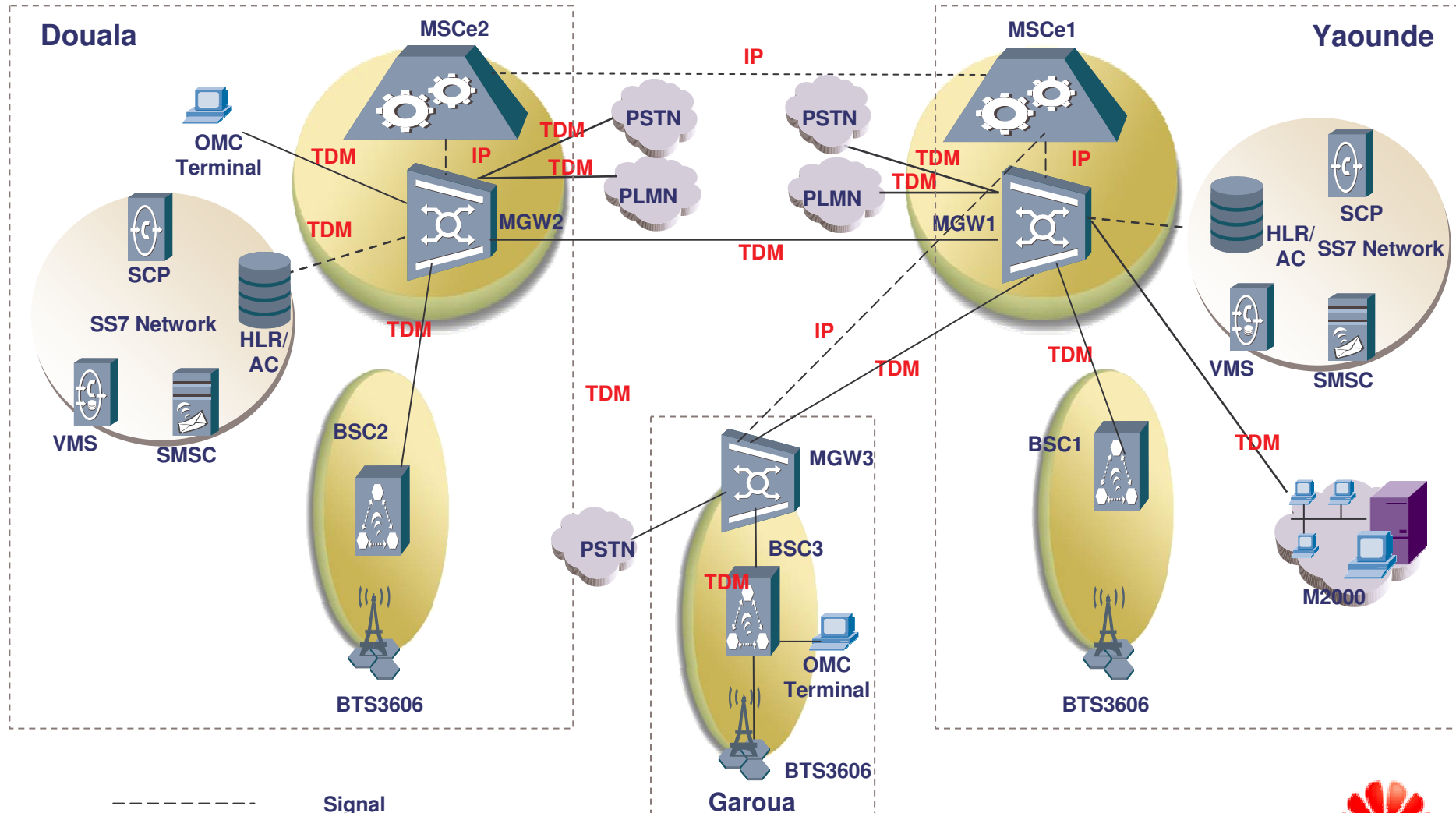
1- Adoption of CDMA Broadband Wireless Access since 2005.

2- Identification of key focus points





CDMA Development in Cameroon



--- Signal Bearing

	Trial phase - 10k (7 sites, 450Mhz)			First acquisition - 20k (12 sites, 450Mhz)			Second acquisition - 125k , 800Mhz			Total per cities
	S2/2/2	S1/1/1	O1	S2/2/2	S1/1/1	O1	S2/2/2	S1/1/1	O1	
DOUALA		3			2					5
BANA					1					1
BAFOUSSAM					1					1
BUEA					1					1
YAOUNDE		3		1	2			4		10
KRIBI					1					1
MEYOMESSALA		1								1
MENGWA						1				1
EBOLOWA						1				1
MBALMAYO						1				1
GAROUA								1		1
Total as of 10 Sept, 2006										24

Sub Total(450 MHz)	S2/2/2	S1/1/1	O1	Total		BTS	BSC	MSC	MG	PDSN	
First Phase	0	7	0		19	DOUALA	8	1	1	1	1
Second Phase	1	8	3			YAOUNDE	15	1	1	1	0
Total(450 MHz)	1	15	3			GAROUA	1			1	
Total(800 MHz)	0	5	0			5					

Services offered	Trial phase - 10k (7 sites, 450Mhz)	First acquisition - 20k (12 sites, 450Mhz)	Second acquisition - 125k , 800Mhz
Voice	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Fax(G3)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Data(Up to 153.6Kbps)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SMS	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
VMS	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
EVDO (up to 2.4Mbps)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other VAS	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Two types of billing:

- Pre - paid
- Post - paid

- For Voice and SMS applications



GCP 500

- For Voice, SMS and Data applications



ETS388



ETS310



ETS688

VIP

- 800 MHz for Voice, SMS and Data applications (Use RUIIM card)

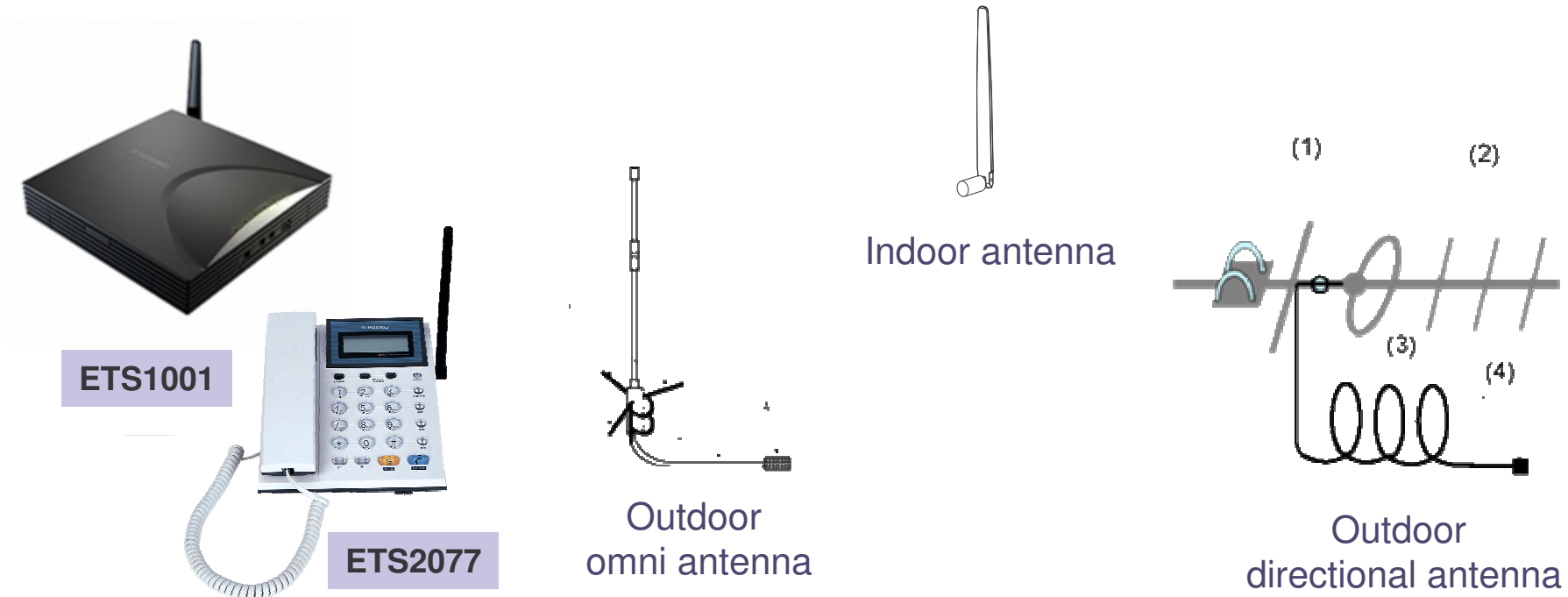


C218



C506

CDMA Development in Cameroon



- Packet data service, max. Rate: 153.6kbps/38.4kbps (uplink/downlink)
- Circuit data service, max. Rate: 14.4kbps.
- G3 analog fax (applicable only for ETS1001/ ETS1201/ETS1501).
- PC digital fax
- Extends coverage by FWT with outdoor direction antenna, **cost effective solution for WLL in remote area**



Voice service



Data service
or PC fax



Phone call



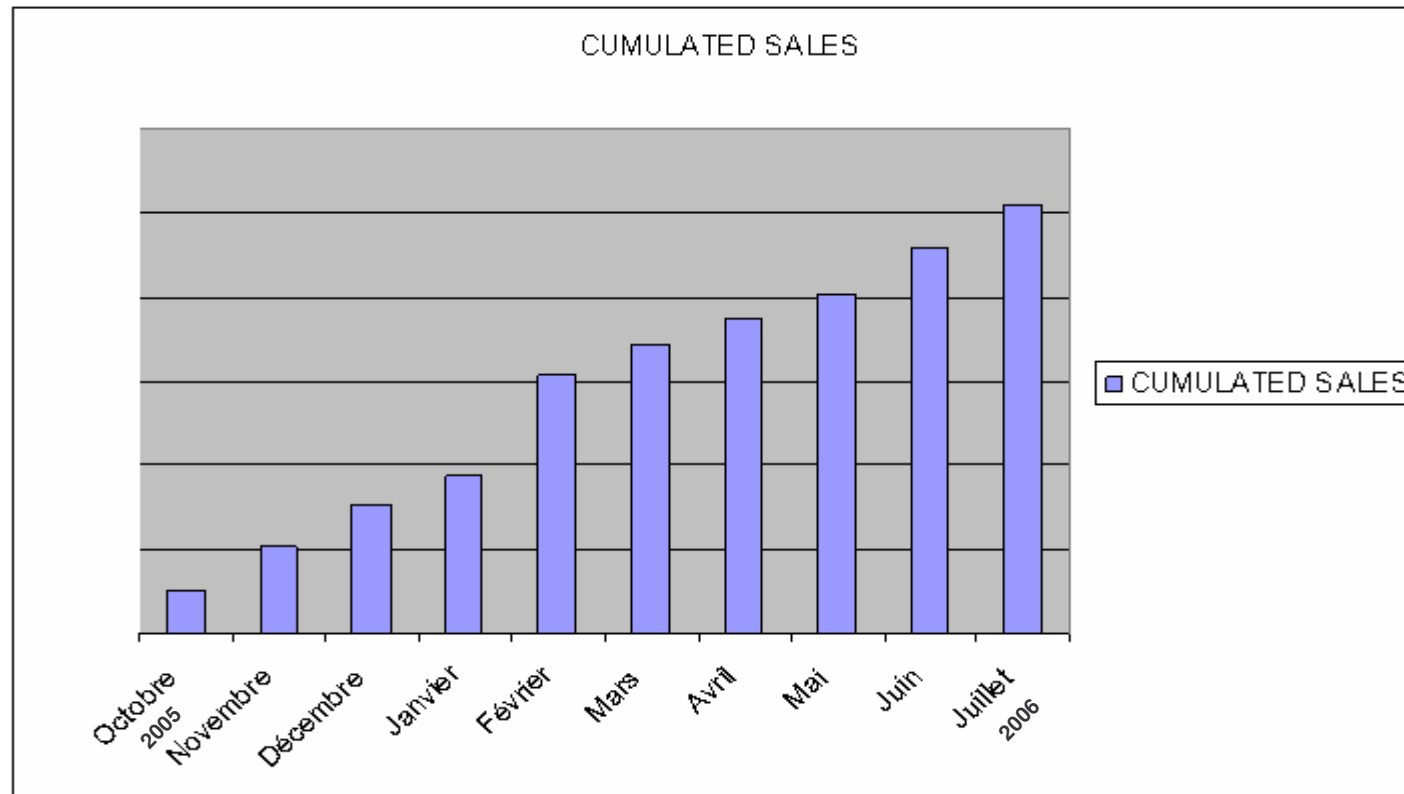
Public phone call
(with a charging meter)



Data service
or PC fax



G3 analog fax



- ✓ **An average monthly growth of 90%**
- ✓ **Double digit increase of the number of subscribers from October 2005 to July 2006**

1 - Where Do We Come From?

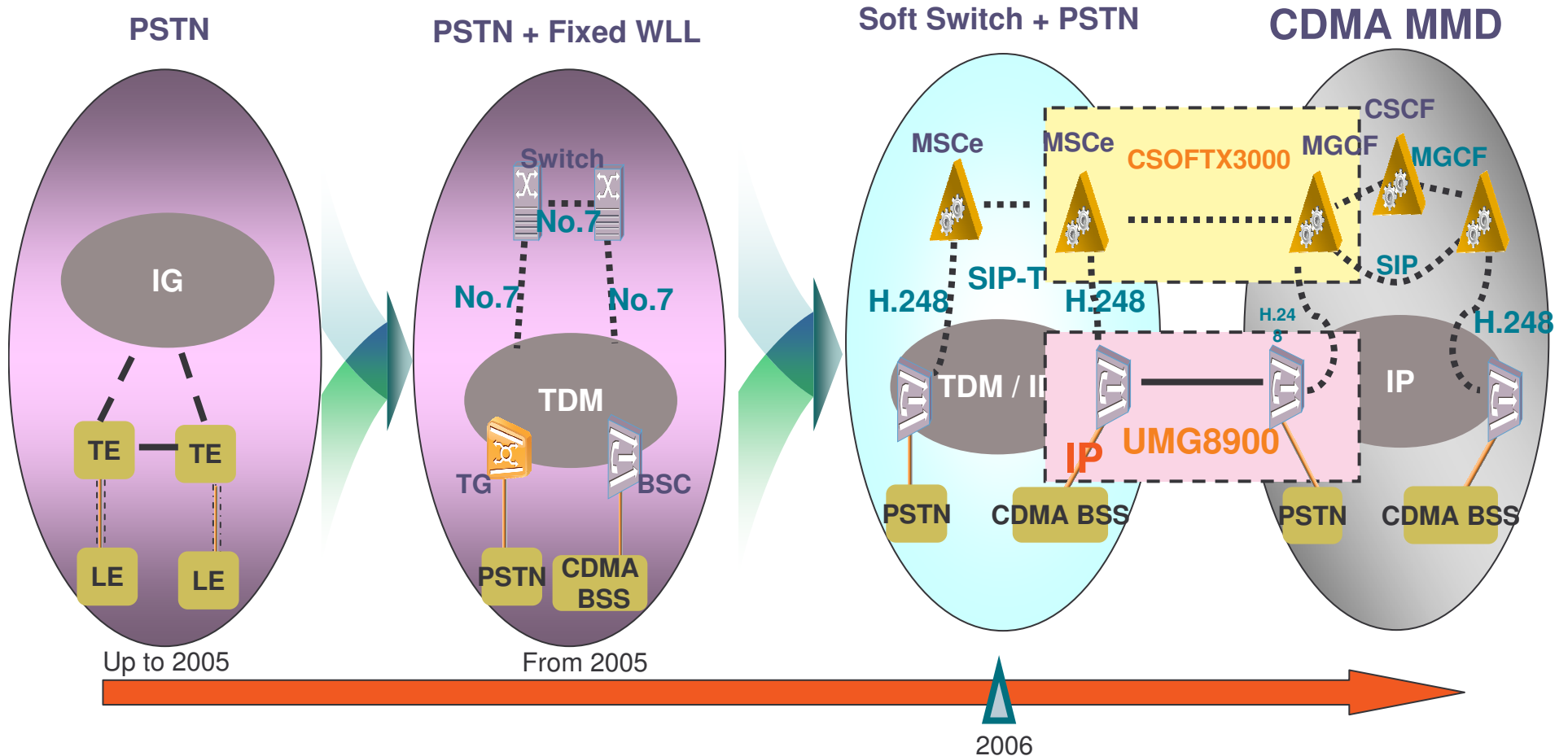
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3- What is Our Way Forward? Fixed + Wireless + IP



From 2006 CAMTEL is operating both Fixed copper network and a modern CDMA Wireless network with a strong potential for growth.

CDMA Development in Cameroon





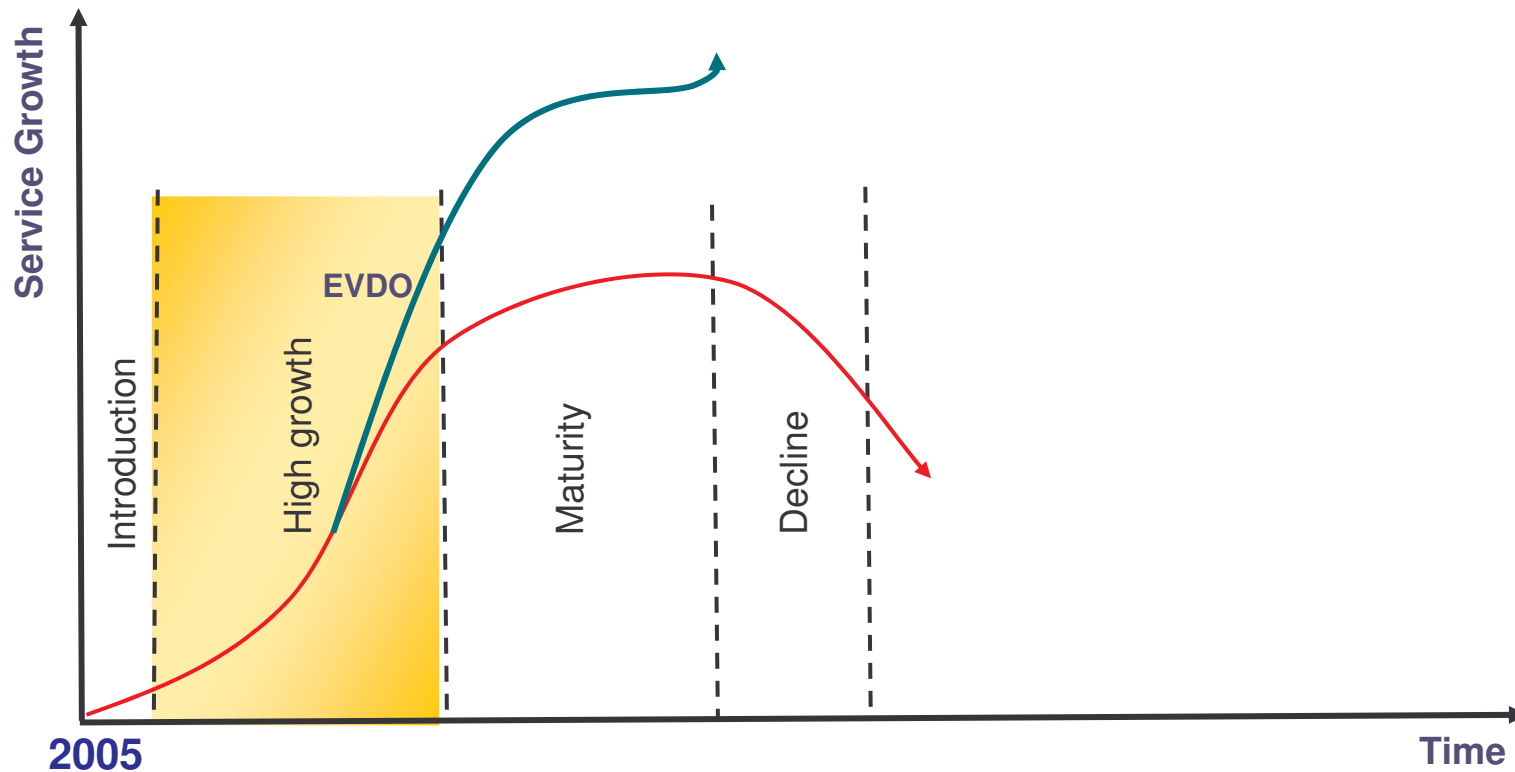
camtel

3- What is Our Way Forward?

Expand then introduce pertinent innovative technologies and services

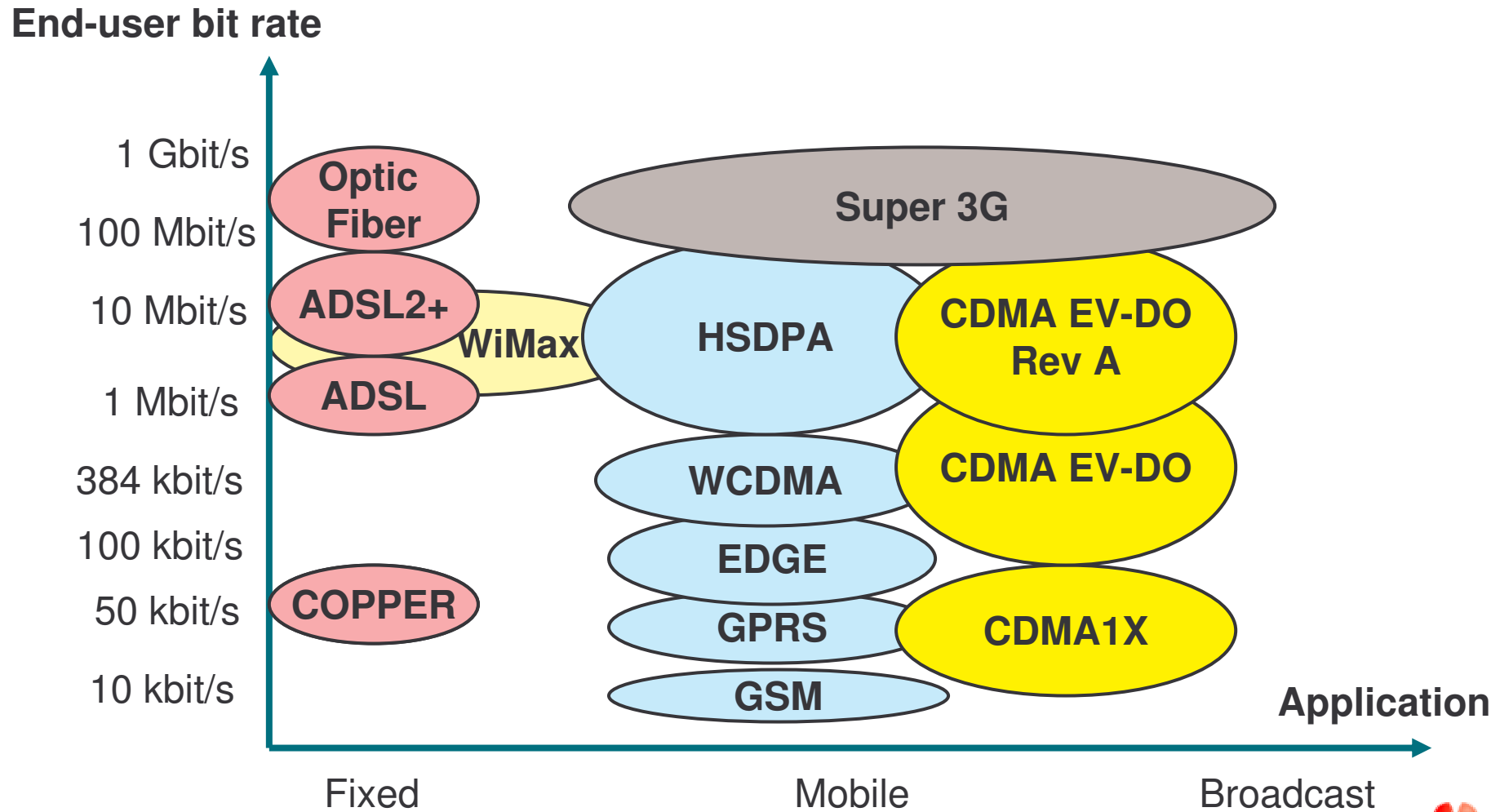
- Continue to expand the customer base through an adequate blend between copper and wireless services
- Improve wireless network attractiveness by introducing innovative services like EVDO

The debugging of EVDO is on the way and it is anticipated that the service will be opened to public by the end of September 2006

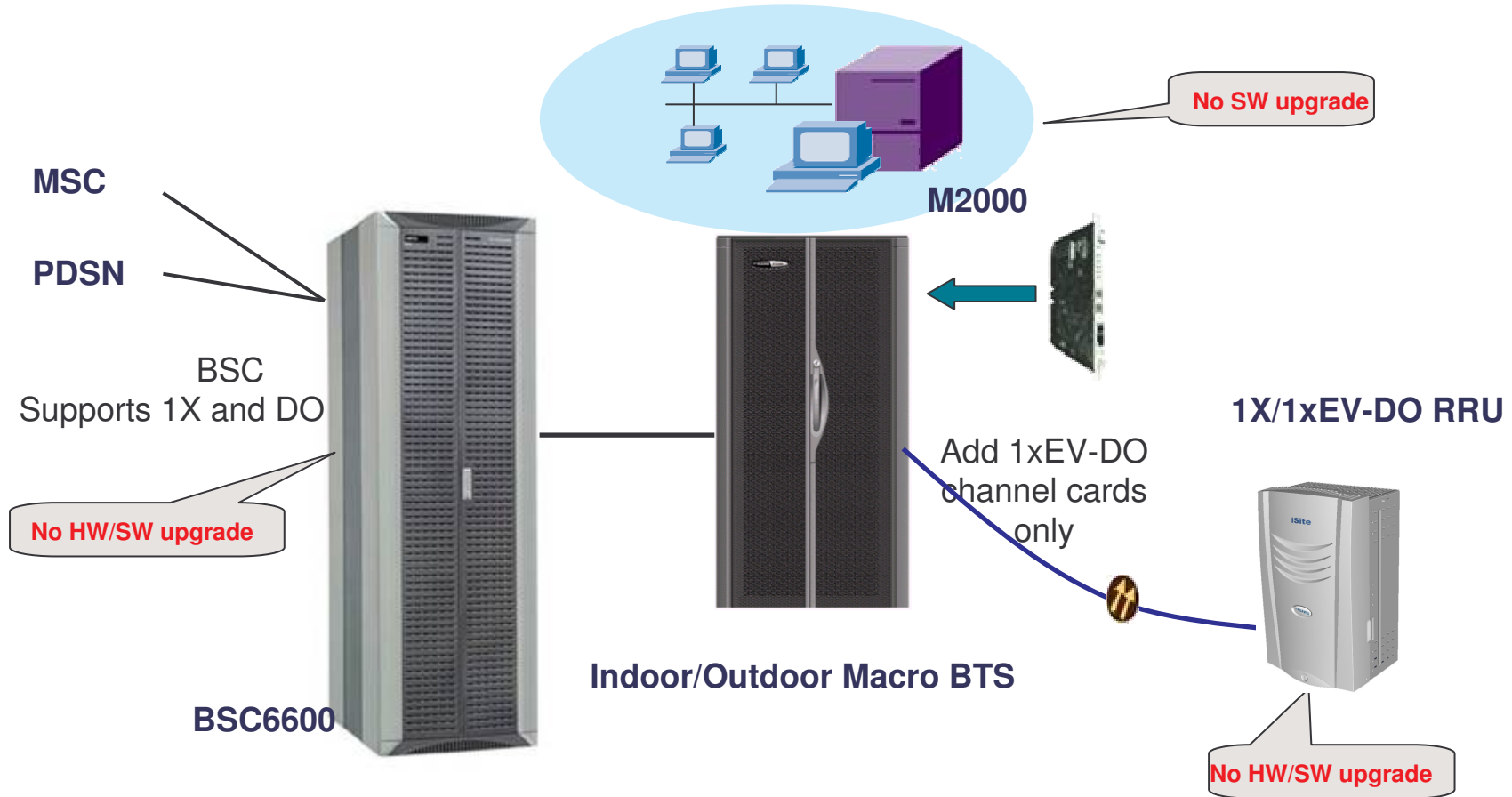


CAMTEL anticipated a faster growth of its wireless subscriber base due to the coming introduction of EVDO connected services

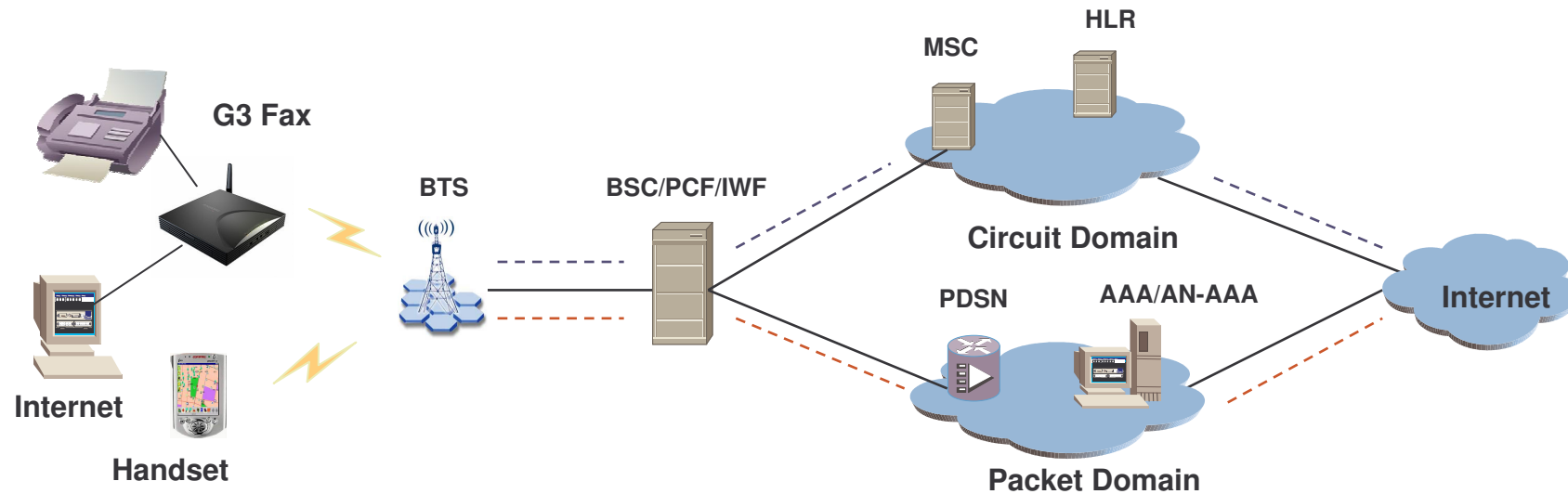
Comparing of Different Technologies.



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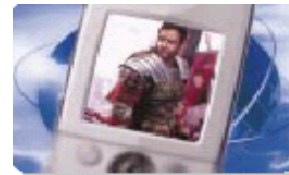
- Only 1xEV-DO channel cards are added to macro BTS
- No extra 1xEV-DO O&M equipment
- RRU, working in both 1X and 1xEV-DO modes



Internet surfing



Online game



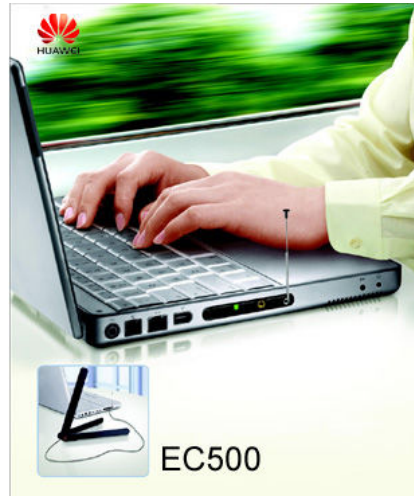
VOD service



Mobile E-business

- **CDMA2000 1X: 153.6kbps; CDMA2000 1x EV-DO: 2.4Mbps;**
- **BSS: Support CDMA2000 1X and EV-DO mixed configuration in one BTS & BSC**
- **Support post-pay and prepay packet data services**

CDMA Development in Cameroon



EC506

CDMA2000 1X EV-DO, CDMA2000 1X RTT and IS-95
 High-speed wireless data rate up to 2.4 Mbps
 PCMCIA Type II interface
 Retractable whip antenna
 External antenna to improve the coverage
 Traffic display and statistics
 Windows2000/WindowsXP operating system

CDMA2000 1xEV-DO / CDMA2000 1xRTT / IS-95
 Sharing 2.4 Mbps transmission rate with multiple users
 Build-in 10/100Mbps switch with 4 Ethernet ports
 Web-based management and configuration
 Build-in DHCP server, DNS relay and NAT

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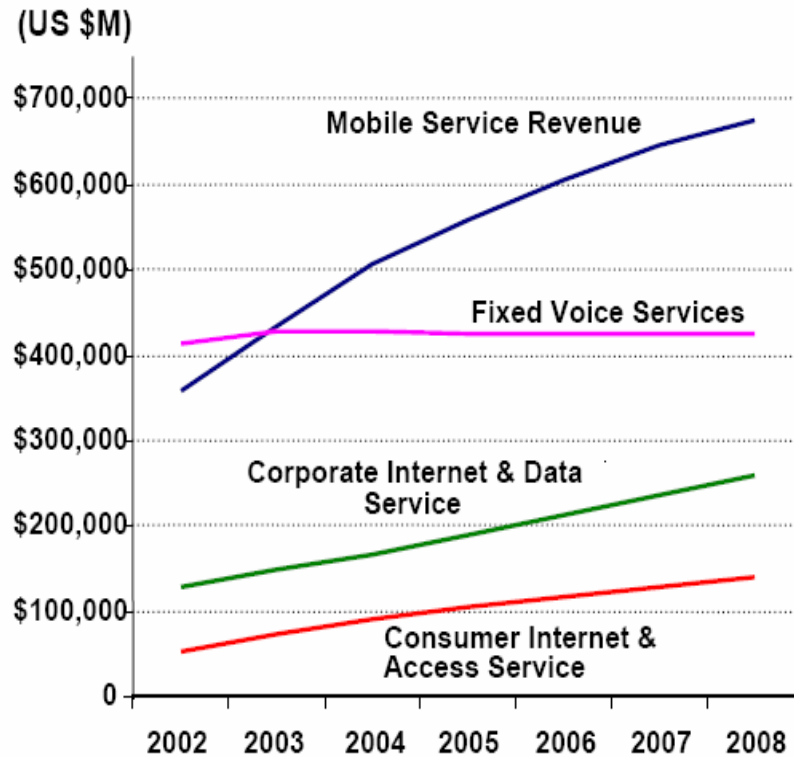
4- What Are Our Main Challenges?

- **Towers**
- **Transmission backbone**
- **Organizational structure and culture**
 - ✓ From an exclusive fixed copper mindset to a mixed of fixed copper and wireless fixed-portable-mobile mindset
 - ✓ Producing more and better quality in a context of downsizing
- **Profitability**
 - ✓ Striking the appropriate Data/Voice ratio

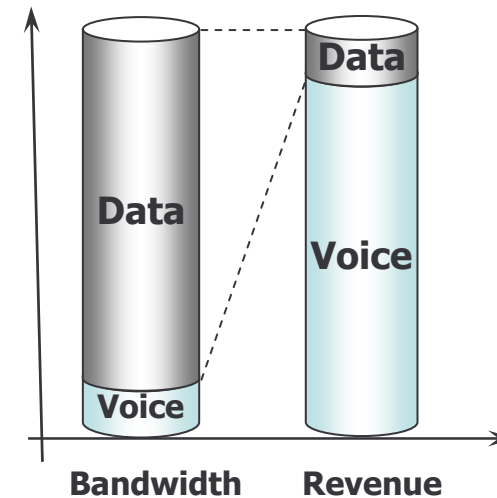


4- What Are Our Main Challenges?

Determining CAMTEL's point of acceptable profitability



Source: Gartner



Mobile and internet capture the growth

Voice maintains high revenue for a less BW





Thank You



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Backbone and Infrastructure

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