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Background paper on the ICT sector in Sudan

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Introduction:

Sudan (officially the **Republic of the Sudan**) is the largest country by area in Africa, and the tenth largest country in the world by area. Its area is 2.5 million sq. km. (967,500 sq. mi.), it consists of 25 states, situated in Northern Africa. The capital is Khartoum. It is bordered by Egypt to the north, the Red Sea to the northeast, Eritrea and Ethiopia to the east, Kenya and Uganda to the southeast, Democratic Republic of the Congo and the Central African Republic to the southwest, Chad to the west, and Libya to the northwest.



People:

- ◆ Nationality: Sudanese.
- ◆ Population (2005 est.): 35.1 million.
- ◆ Annual population growth rate (2003-2008): 2.53%.
- ◆ Ethnic groups: black 52%, Arab 39%, Beja 6%, foreigners 2%, other 1%

◆Religions: Islam (Sunni) 70% (in north), indigenous 25%, Christian 5% (mostly in south and Khartoum)

◆Languages: Arabic (official), , English

◆Local dialects like Nubian, Ta Bedawie, diverse dialects of Nilotic, Nilo-Hamitic, Sudanic languages

◆Education: Literacy rate: 61% (2003 est.)

◆Health: birth rate: 34.5/1000; infant mortality rate: 61.0/1000; life expectancy: 58.9; density per sq mi: 45

◆Economic : GDP (2005 est.)\$84.93 billion; per capita \$2,100. Real growth rate: 7.7%. Inflation: 11%. Unemployment: 18.7% (2002 est)

Telecom sector :

◆Ministry of information and communication:

It supervises The National Telecom. Corporation (NTC) ,The Public Post and Telegram Corporation, The Sudanese Radio and Television Corporation , Sudan News Agency , The External Information Council, SUNA International Relations, Sudan Academy for Communications Sciences and The National Press Council.

◆National telecom. Corporation :

Established on 2001 to replace the national telecom council . in 2001 the telecom Act was issued. Its responsibilities include organizing the work of operators and service providers; the execution of the ministry politics; to improve the performance of telecom sector

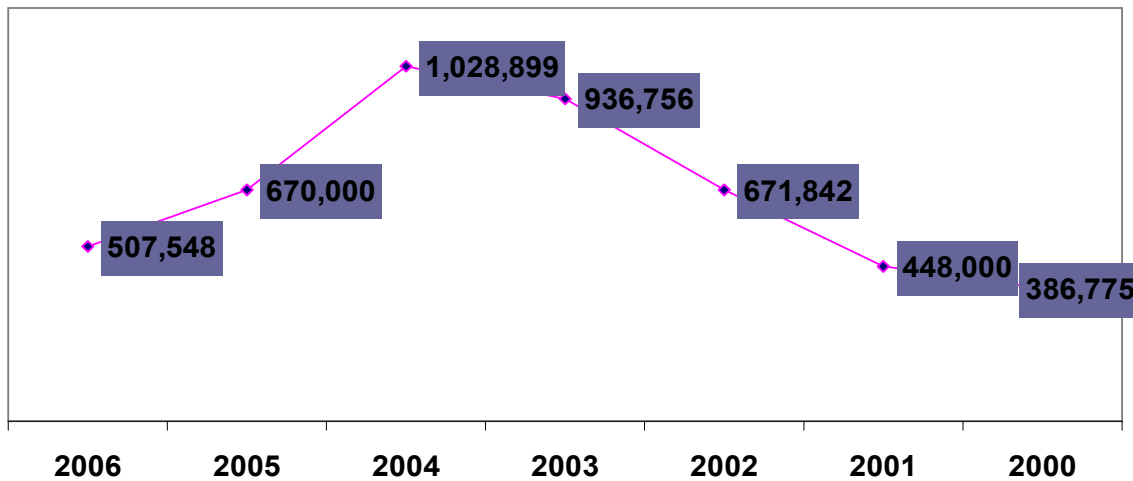
Telecom. Market:

Two fixed telephone operators:

◆**Sudatel:**

established on 1993; and started to provide its service on 1994. It had been the monopolist for long time now it has a competitor (canar); the no. of its subscribers is 507,584 which declined rapidly (1,028,899 in 2004 to 670,000 in 2005).

SUDATEL

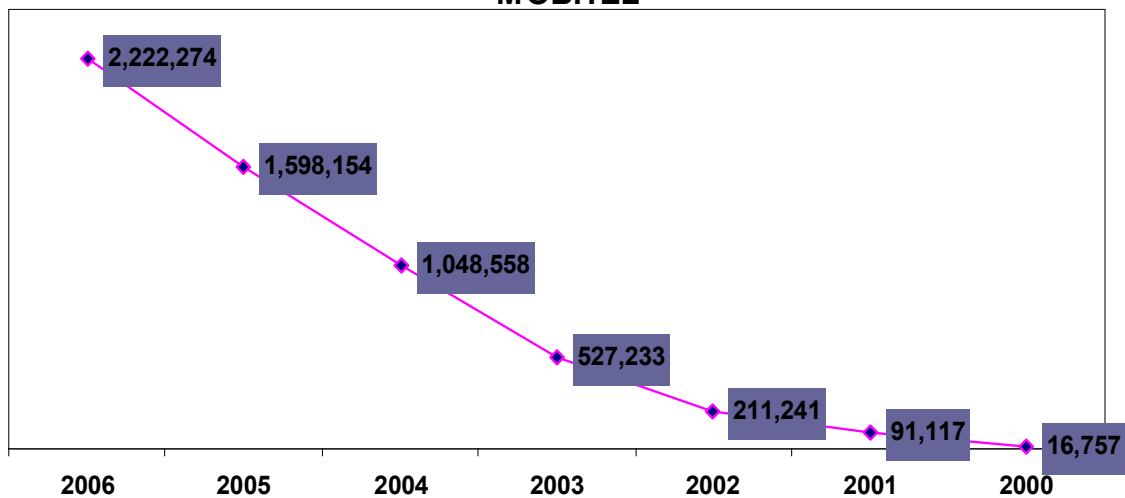


◆ Canar : established on 2005; started its commercial operation on 2006 . Now it has 71,636 subscriber.

◆ Three Public Cellular Mobile operators :

1. Mobitel: using GSM and GPRS technologies.

MOBITEL



2. Areeba : started to provide the service in July 2005 , using GSM technology and 3G (planned)

3. Sudani recently established (2006), owned by Sudatel and using its infrastructure

- ◆ 23 Internet Service Providers.
- ◆ 20 Pre-paid For Fixed telephone Service Providers.
- ◆ 19 Value-added Service Providers. SMS, IVR,

The measurement of ICT indicators:

The national telecom. Corporation is mainly responsible of data collection, estimation and forecasting sometimes. It could resort to other institutions to get the related information if any , but firstly we check the reliability of this information, actually there is no many institutions taking care of the ICT measurement .But recently many entities are getting more and more interested in these indicators to ensure the status of the technology , which becomes the most important indicator of the development, innovation and promotion .

The main beneficiaries are all the institutions, ministries , companies and banks. NTC can get the main indicators directly from the operators and service providers (main telephone lines , no. of cellular mobile subscribers ,etc) . but there are real difficulties in the measurement of more specific indicators ; such as no. of personal computers , internet access and usage , no of actual tv sets , etc .

For all these difficulties NTC has a proposal for a survey to cover all Sudan in order to get the real indicators , that to be considered as a base to plan and forecast .

The ICT Indicators :

Here the core indicators according to the ITU handbook :

No.	ITU code ¹	Indicator	Comments
Fixed Telephone network			
1	112	Main (fixed) telephone lines in operation	570,000
2	117	Total capacity of local public switching exchanges	1,491,826 (switch) 2,023,640 (network)
3	1142	Percent of main lines connected to digital exchanges	100%
4	116	Percent of main lines which are residential	NA
5	1162	Percent of main lines in urban areas	NA
6	1163	Number of localities with telephone service	244

No.	ITU code ¹	Indicator	Comments
7	1112	Public payphones	3669
Mobile network			
8	271	Mobile cellular telephone subscribers (post-paid + prepaid)	Mobitel : 1598154 Areeba : 229786 Total : 1827940
8.1	271p	Mobile cellular subscribers: prepaid	Mobitel : 1542610 Areeba : 225829 Total : 1768439
9	2712	Digital mobile cellular subscribers	1827940
9.1	271h	Total number of subscribers to mobile networks	1827940
9.1.1	271L	Number of subscribers to low and medium speed mobile networks	1827940
9.1.2	271G	Number of subscribers to IMT-2000 (3G) high-speed mobile networks	- CDMA 2000 1x established on 2006 (Sudani). - UMTS in under testing (Areeba)
10	271land	Percent coverage of mobile cellular network (land area)	N/A
11	271pop	Percent coverage of mobile cellular network (population)	5.22%

Text/data network			
12	311	Telex subscriber lines	Service stopped
13	412	Private leased circuits	1269
14	413	Total subscribers to public data networks	3169
15	4213	Internet subscribers	DSL : 1900 Dial up : 9 ISP
15.1	4213d	Dial-up Internet subscribers	N/A
15.2	4213tb	Broadband Internet subscribers	2026
15.2.1	4213cab	Cable modem Internet subscribers	Service not established

15.2.2	4213dsl	DSL Internet subscribers	1900
15.2.3	4213ob	Other broadband Internet subscribers	90 VSAT
16	4212	Estimated Internet users	1.14 million
16.1	4212f	Percent female Internet users	49.9 %
16.2	4212f%	Female Internet users as percent of female population	3.2 %
17	424	PWLAN locations	N/A
18	28	ISDN subscribers	400 (ITU Report) service stopped.
18.1	281	Basic rate ISDN subscribers	N/A
18.2	282	Primary rate ISDN subscribers	N/A
18.3	28c	ISDN voice channel equivalents	N/A
19	4214	International Internet bandwidth	20 Mbps
19.1	4214og	Outgoing	10 Mbps Uplinks
19.2	4214ic	Incoming	20 Mbps

Quality of service

Quality of service Parameters and indicators are the most important indicators to monitoring telecom sector and the operator's performance.

QoS indicators must include some parameter regarding to customer complaint and users perceptions.

20	123	Waiting list for main lines	N/A
21	143	Faults per 100 main lines per year	95.5
22	141	Percent of telephone faults cleared by next working day	90%
*	*	General Complaints	544238 (Sudatel)

Traffic

23	1311m	Local telephone traffic (minutes)	N/A
23.1	1313wm	Fixed to mobile traffic (minutes)	529,780,000
23.2	1311im	Internet Dial-up traffic (minutes)	40,55,34,696
24	1312m	National trunk telephone traffic (minutes)	512,000,000 Including 131 1m

25	132mb	International incoming and outgoing telephone traffic (minutes)	450,000,000
25.1	132m	International outgoing telephone traffic (minutes)	100,000,000
25.2	132mi	International incoming telephone traffic (minutes)	350,000,000
26		Public data traffic (non-Internet)	N/A
27	133wm	Outgoing mobile minutes	1,779,068,184
27.1.1	1331wm	Outgoing/originating mobile minutes to same mobile network	N/A
27.1.2	1332wm	Outgoing/originating mobile minutes to other mobile networks	N/A
27.1.3	1333wm	Outgoing/originating mobile minutes to international	64,504,884
27.1.4	1334wm	Roaming minutes out (own subscribers)	N/A
27.1.5	1332wmf	Outgoing mobile minutes to fixed networks	171,846,730 (local+ national)
27.2.1	1335wm	Incoming international minutes to mobile network	N/A
27.2.2	1336wm	Roaming minutes in (foreign subscribers)	N/A
27.3	133sms	SMS sent	N/A
27.4	133mms	MMS sent	N/A
28		International outgoing telegrams	N/A

Tariffs (SD)			
31.1			Fixed local telephone service tariffs –residential
31.1.1	151	Installation fee for residential telephone service	5,000
31.1.2	152	Monthly subscription for residential telephone service	585
31.1.3	153	Price of a 3-minute fixed telephone local call (peak rate)	15
31.1.4	153o	Price of a 3-minute fixed telephone local call (off-peak rate)	15
31.2			
31.2.1	151b	Installation fee for business telephone service	5,000
31.2.2	152b	Monthly subscription for business telephone service	585
32		National telephone call prices	16
33		International telephone call prices	110 (1 st group) 152 (2 nd group) 250 (3 rd group)
34.1.1	151c	Mobile cellular connection charge	40,000Business 20,000Regular Mobipaid 20,000 (16,750 credit) Salamat 7,500 (4.250 credit) Sawasana 12,500 (100 credit)
34.1.2	152c	Mobile cellular monthly subscription	Business 3,000 Regular 1,500 Mobipaid 750 Salamat 750 Sawasana 750

34.1.3	153c	Mobile cellular - price of 3 minute local call (peak)	Mobile – Own Mobile Business 18 Regular 21 Mobipaid 23 Salamat 23 Sawasana 23 Mobile-Local Business 16 Regular 18 Mobipaid 19 Salamat 19 Sawasana 19 Mobile-National Business 26 Regular 28 Mobipaid 29 Salamat 29 Sawasana 29 Mobile-Other mobile Business 22 Regular 22 Mobipaid 28 Salamat 28 Sawasana 28
34.1.4	153co	Mobile cellular - price of 3 minute local call (off-peak)	Mobile – Own Mobile Business 18 Regular 21 Mobipaid 23 Salamat 23 Sawasana 23 Mobile-Local Business 16 Regular 18 Mobipaid 19 Salamat 19 Sawasana 19 Mobile-National Business 26 Regular 28 Mobipaid 29 Salamat 29 Sawasana 29 Mobile-Other mobile Business 22 Regular 22 Mobipaid 28 Salamat 28 Sawasana 28
34.1.5	153sms	Mobile cellular – price of SMS	5

34.2	153m	Mobile termination rate		14
Other data tariffs				
35		Leased line charges	P-to-P local loop Connection charge 5,000 Monthly rental charge 64 k.bit 12,000 128 k.bit 20,000 256 k.bit 30,000 384 k.bit 35,000 512 k.bit 45,000 1 mega.bit 65,000 2 mega.bit 120,0000 P-to-P inter exchange Connection charge 5,000 Monthly rental charge 64 k.bit 13,000 128 k.bit 22,000 256 k.bit 37,500 384 k.bit 45,000 512 k.bit 50,000 1 mega.bit 84,000 2 mega.bit 150,0000 P-to-P intra exchange Connection charge 5,000 Monthly rental charge 64 k.bit 21,500 128 k.bit 37,000 256 k.bit 62,500 384 k.bit 94,000 512 k.bit 140,000 1 mega.bit 216,000 2 mega.bit 432,0000	
36		Data communication charges	Activation charge 4,000 Monthly rental charge 64 k.bit 8,000 128 k.bit 13,500 256 k.bit 23,000 384 k.bit 35,000 512 k.bit 52,000 1 mega.bit 80,000 2 mega.bit 160,000	
37	Internet tariffs			
37.1	4213c	Internet connection charge	Dial-up (free) DSL 25,000 ISDN 5000	
37.2	4213s	Internet monthly subscription	Dial-up (free) DSL 10,000 ISDN 2000	
37.3	4213p	Internet - price of per minute (peak) connection	Dial-up : 4 DSL,ISDN : flat rate	
	4213po	Internet - price of per minute (off-peak) connection	Dial-up : 4 DSL,ISDN : flat rate	
37.4	4213_t20	Internet access tariff (20 hours per month)	Dial-up : 80 DSL,ISDN : flat rate	

STAFF			
38	51	Total full-time telecommunication staff	3378
38.1	51f	Female telecommunication staff	N/A
38.2	51w	Mobile communications staff	419

REVENUE			
39	75	Total revenue from all telecommunication services	N/A
40	71	Revenue from telephone service	40,472,475,500 (included 711,712,713.1,713.2)
40.1	711	Income from telephone connection charges	N/A
40.2	712	Income from telephone subscription charges	N/A
40.3	7131	Income from local calls	N/A
40.4	7132	Income from national long distance calls	N/A
40.5	7133	Income from international calls	7,538,036,000
41	731	Revenue from data transmission	279,971,750
42	732	Revenue from leased circuits	6,797,389,500
43	741	Revenue from mobile communications	99,551,744,000
43.1	741d	Mobile data revenues	N/A
43.1.1	741m	Text and multimedia messaging revenues	N/A
44	74	Other revenues	N/A
45		Value-added from telecommunications sector	N/A

INVESTMENT			
46	81	Total annual investment in telecom	N/A
46.1	83	Fixed telephone service investment	314,631,862,500
46.2	841m	Mobile communication investment	55,888,143,000
46.3	841f	Foreign investment	36,304,375,770

COMMUNITY ACCESS INDICATORS			
<p>Recently, NTC with help from STIF preparing large proposal to sitting up PIACs. Phase one of the project cover 16 stats (from 25) with 5 center on each (80 center). Every center equipped with 15 PC accessing internet, 4 Telephones, Fax machine and Photocopier.</p> <p>Centers must offer:</p> <ul style="list-style-type: none"> • Basic communications Services. • Fax and Photocopying. • Training. <ul style="list-style-type: none"> - IT. - Community developing. • Internet Café. • Technical Illiteracy Erasure. • E- <ul style="list-style-type: none"> - Commerce. - Learning. - Government. • Public Digital Library. 			

OTHER INDICATORS			
54	955	Number of radio sets	N/A
*	*	Number of radio sets per family	* 2347250 family have at least radio sets.(est)
55	965	Number of TV sets	N/A

*	*	Number of TV sets per family	*1001875 family have at least one TV.(est)
56	965m	Total number of multi-channel TV	4,521,000
56.1	965c	Number of terrestrial multi-channel TV subscribers	21,000
56.2	965s	Direct to Home satellite antennas	4,500,000
57	965cp	Homes passed by multi-channel TV	N/A
58	422	Number of Personal Computers	N/A
*	*	Number of Personal Computers per family	* 1059274 family have at least one PC.(est)