

VSAT Applications Delivering Broadband Services in Sudan

By:

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Sudan

Geographical Background

- Largest country in Africa.
- Covering an area of (million square miles) 2,505, 813 square kilometers.
- Varying terrain and climate with areas of desert, mountain ranges, swamps and rain forests.



Telecommunication Field Structure and Policies

● September 1994 The **Sudan Telecommunications Public Corporation (STPC)** divided into:

- A private telecom company, **Sudan Telecommunications Company (Sudatel)** &
- A regulatory body, **National Telecommunications Council (NTC)**

SUDATEL

● **Sudatel** is a private company where the government has the majority of shares but only 20% of the voting power and control. Sudatel is in charge with the provision of a national backbone, including national and international telecommunications services, and it has a 15-year lease with effect from 1994.

Current Internet Situation

- 15 ISPs offer Subscription Free Internet (SFI) via phone lines.
- Sudatel has revenue sharing agreements with all the ISPs except for those who provide wireless internet.
 - Icom
 - Canar Tel.
- Datacomm market is some what liberalized with the entrance of **Canar** Tel in early 2006.

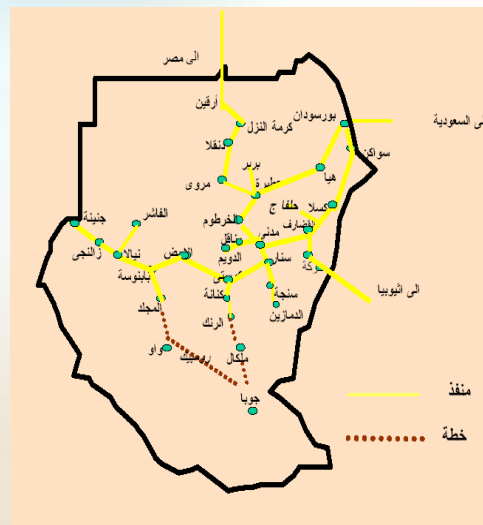
- “Internet accounts in Sudan grew at a healthy CAGR of 56.7% over the period from 2001 to 2005”.
- By end of 2005, the Internet accounts penetration rate stood at a mere 0.2% , including subscription-free Internet, and DSL.

International Internet Bandwidth (Mbps)	2001	2002	2003	2004	CAGR 2003-2004
Uplink	4	14	39	169	333%
Downlink	12	24	90	202	124%

- Sudatel provides ADSL & HDSL services in few regions of the country.
- Currently DSL services are provided by Sudatel only, but Canar Tel is about launching its services in the coming months.

	2002	2003	2004	2005
DSL Exchanges	-	-	8	29
DSL Users	-	-	1400	1900

Fiber Optics Connections



- An appreciable number of users won't be reached by fiber

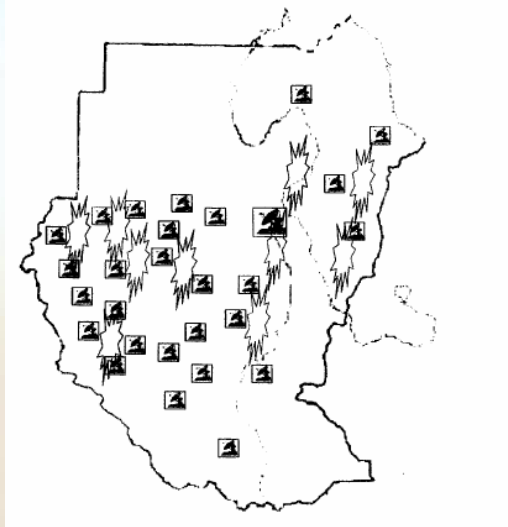
Turning Towards Space

- VSAT Technology with its advantageous features emerges as one possible solution to the problem of broadband availability.
- Considering:
 - Reach the last-mile in remote areas
 - Faster deployment
 - Support of asymmetric traffic through star/mesh networks architecture.
 - Distance independent charges
 - Reliable high speeds communication services
 - Flexible combination with other terrestrial transmission facilities.

More Competitive Features

- Lower incremental costs (installation, maintenance,...)
- Sooner realization of revenues
- Greater flexibility to meet uncertain levels of penetration and rates of growth.

VSATs & Domestic Satellites in Sudan



Hindrances

- Monopoly.
- Restrictive governmental policies in the telecommunication field (limited licences).

Future Vision

● If we can have:

- Cooperation between governments, specialized organizations & leading companies.
- Suitable content
- Training & learning centers.

THEN...

WE CAN

● Converge VSAT technology with other wireless technologies to provide broadband services to help in:

- Rehabilitation of refugees & qualifying them for better life (south & west)
- Fighting illiteracy (66 %)
- Sharing experiences
- Developing rural areas & bridging the digital divide.



That's All Folks!

Thanks