

# UNDERSTANDING THE RELATIONSHIP BETWEEN CUSTOMER SATISFACTION AND MOBILE BROADBAND

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Michael N. Dazhi  
mndazhi@aol.com  
Consultant

**DAZHi** Techno – Consult

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# Introduction:

**Broadband refers to any high-speed Internet connection that offers integrated access to voice, high-speed data, video-on-demand, and interactive delivery services.**

**Broadband offers the following services:**

- **Multimedia content download**
- **Online games**
- **Capability of watching video clips and movies online**
- **Listening to music in real time, including live broadcasts**
- **Internet meetings and video chats**

# The Customer

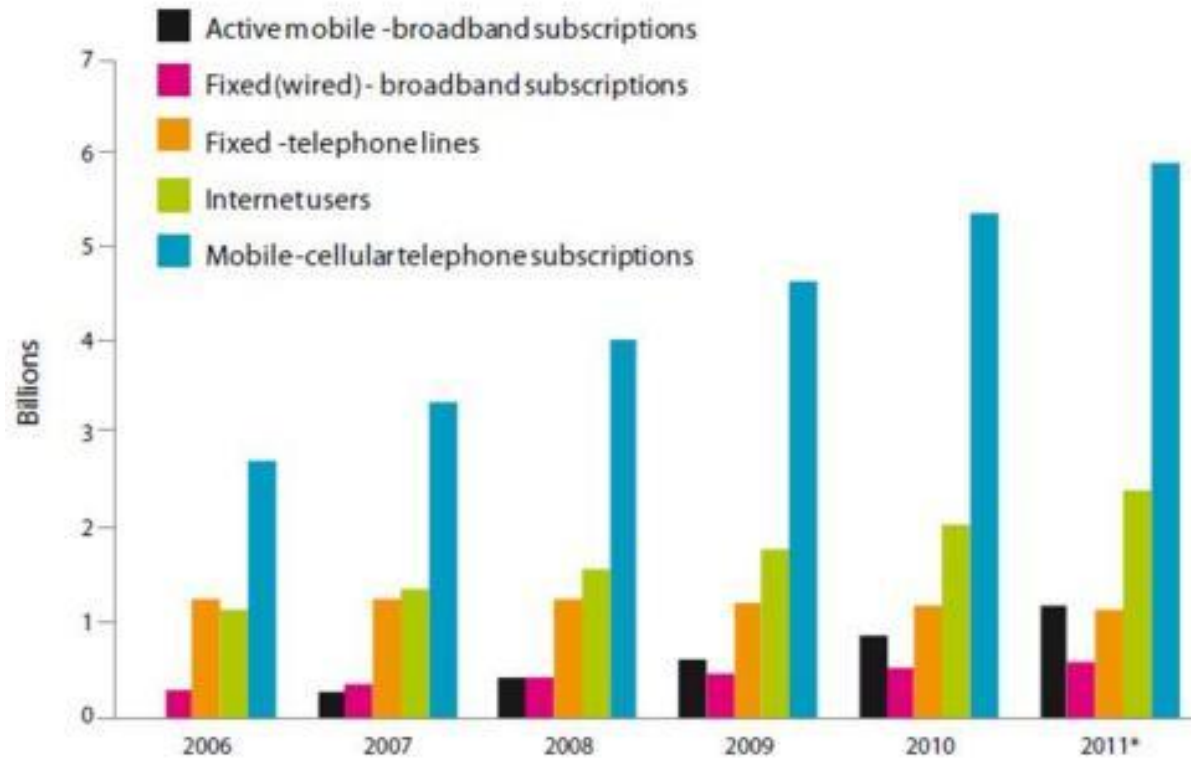
**The customer is the consumer of the broadband service, and the most important component in the broadband-service supply chain.**

**It is therefore important to ensure the customer is happy.**

**Hence the customer has the following expectations in regards to broadband services:**

- The customer expects to be able to access broadband anytime and anywhere at an affordable price.
- To access broadband with the aid of portable access devices
- Enjoy high data rate broadband access
- Wants more broadband technologies options to choose from, e.g cellular broadband, satellite broadband and TV + broadband.

# The Customer and Cellular Broadband

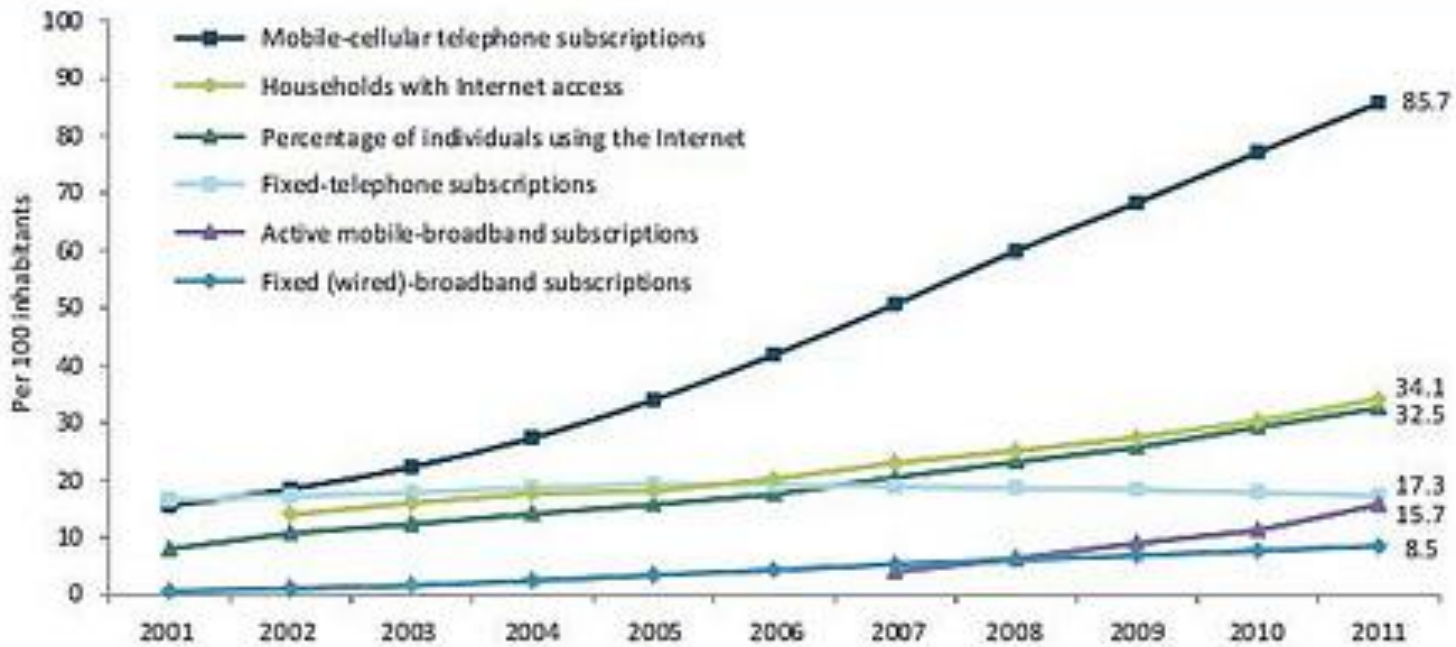


Note: \* Estimate

Source: ITU World Telecommunication/ICT Indicators database

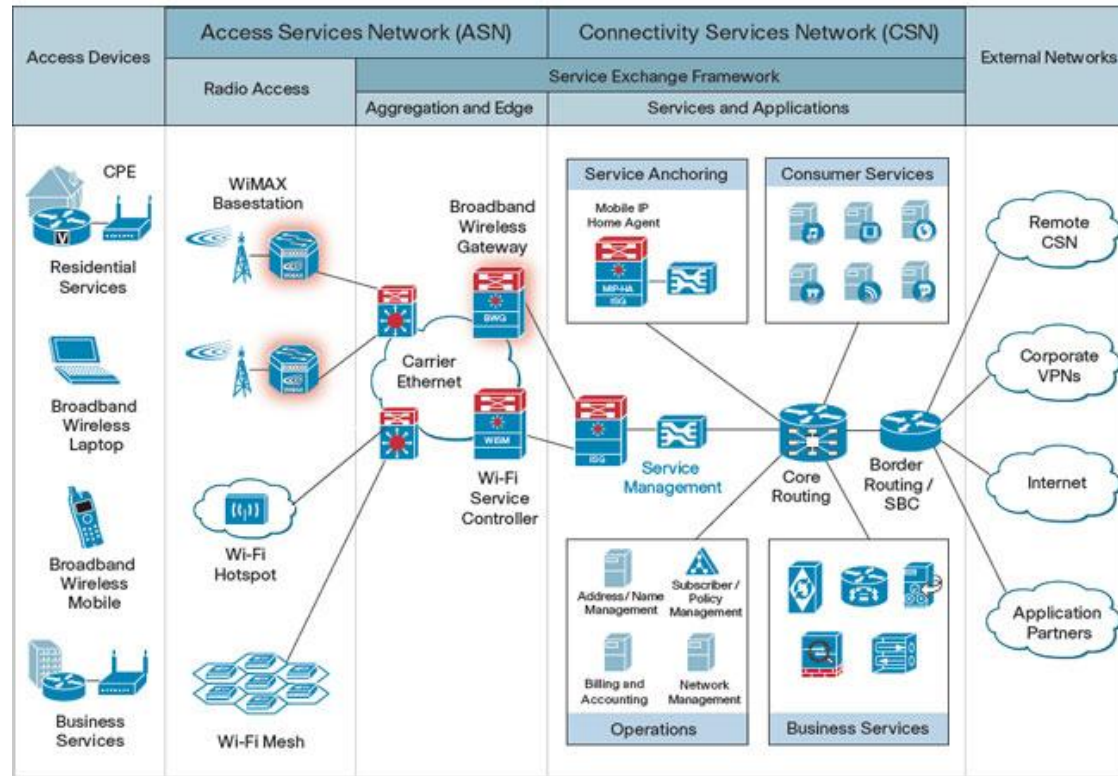
# The Customer and Cellular Broadband

Chart 1: Global ICT developments, 2001-2011



Source: ITU World Telecommunication/ICT Indicators database.

# Mobile Cellular broadband Network



## Challenges of Mobile Cellular broadband:

- Cost of acquiring the access devices is high for the customer
- Network infrastructural problems

# Mobile Cellular broadband

## Access devices:

- Modem
- Smart phones
- Tablets
- Access Radio



For the customer to be able to access broadband using these devices, the devices must be affordable.



# Mobile Cellular Technologies

		Real World (avg)		Theoretical (max)		Availability
		Download	Upload	Download	Upload	
2.5G	GPRS	32-48Kbps	15Kbps	114Kbps	20Kbps	Today
2.75G	EDGE	175Kbps	30Kbps	384Kbps	60Kbps	Today
3G	UMTS	226Kbps	30Kbps	384Kbps	64Kbps	Today
	W-CDMA	800Kbps	60Kbps	2Mbps	153Kbps	Today
	EV-DO Rev. A	1Mbps	500Kbps	3.1Mbps	1.8Mbps	Today
	HSPA 3.6	650Kbps	260Kbps	3.6Mbps	348Kbps	Today
	HSPA 7.2	1.4Mbps	700Kbps	7.2Mbps	2Mbps	Today
Pre-4G	WiMAX	3-6Mbps	1Mbps	100Mbps+	56Mbps	Today
	LTE	5-12Mbps	2-5Mbps	100Mbps+	50Mbps	End 2010
	HSPA+	-	-	56Mbps	22Mbps	2011
	HSPA 14	2Mbps	700Kbps	14Mbps	5.7Mbps	Today*
4G	WiMAX 2 (802.16m)	-	-	100Mbps mobile / 1Gbps fixed	60Mbps	2012
	LTE Advanced	-	-	100Mbps mobile / 1Gbps fixed	-	2012+

Source: techspot.com

- As the technology improves, system optimisation is expected by operators. By doing this, better and improved service provisioning will be realised.

# The Customer and Satellite Broadband

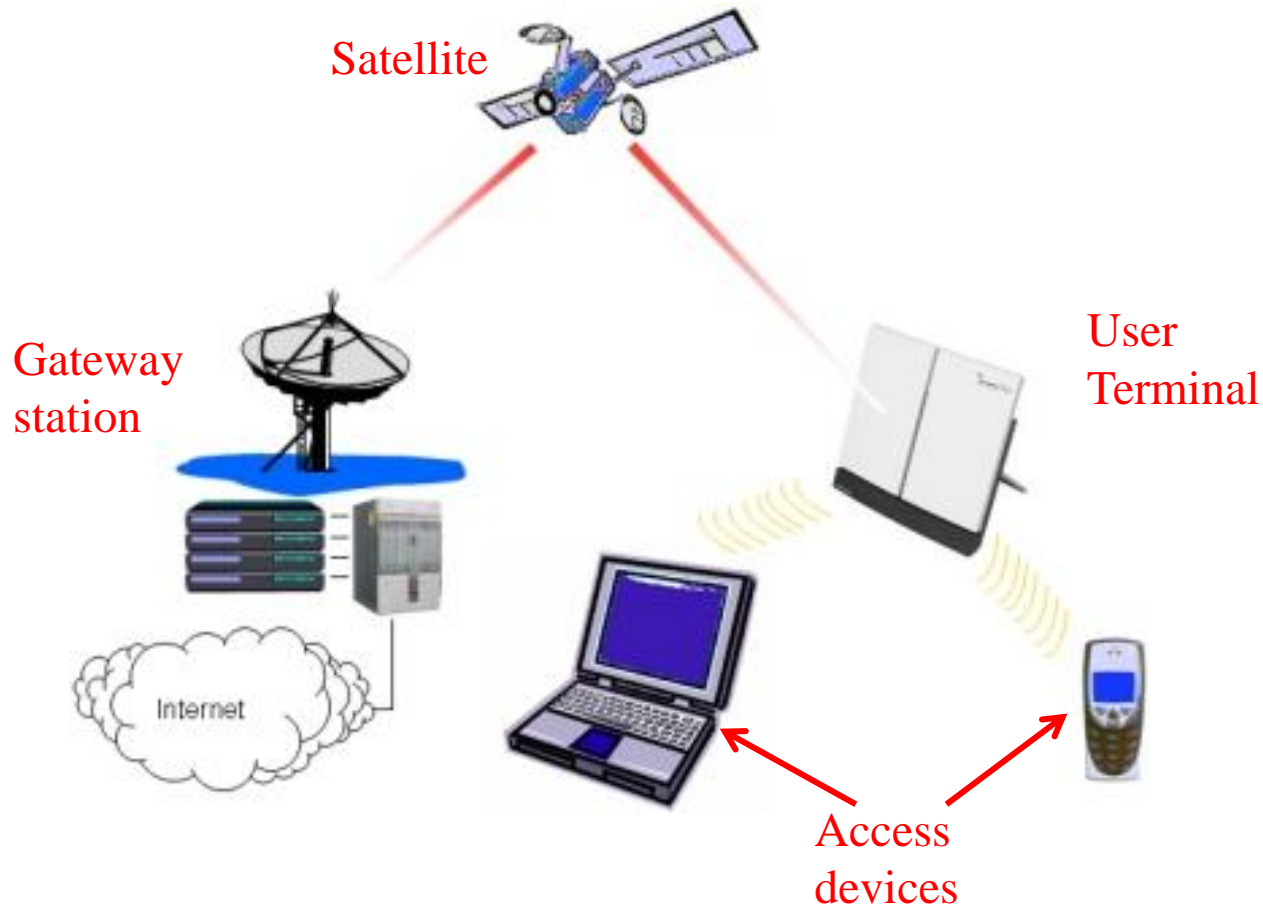
Figure 1 — Projected growth in satellite broadband subscribers



Source: Northern Sky Research (NSR)

This has a growing subscriber base, nonetheless more awareness needs to be made on the potentials of satellite mobile broadband.





# Satellite Broadband Network



- A satellite communications system transmits both in the forward and reverse direction. Content can be accessed via the satellite from the gateway station, by the user terminal (UT) as downlink. An uplink from the UT allows for transmission in the reverse direction.

# Types of Satellite Broadband User Terminals

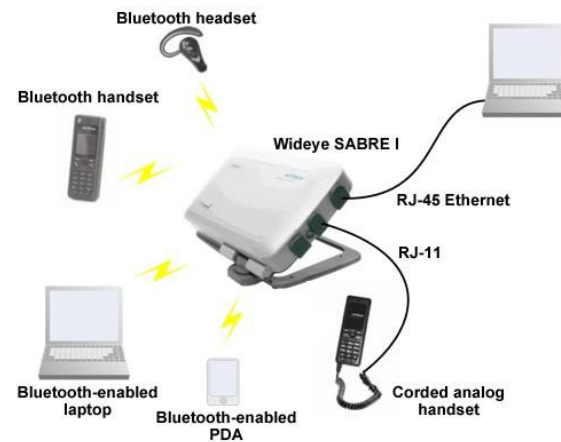
Broadband on the go (also known as in-motion satellite internet) is provided to handheld, portable and vehicular terminals.

	Types	Terminal	Application
1	Portable & handheld terminals		Phones and laptops
2	Land-mobile terminals		Cars, Trucks and trains
3	Maritime Terminals		Ships and boats
4	Aeronautical Terminals		Aeroplanes

# Satellite Broadband:

## Portable Terminal:

- Easy to carry
- Come with useful accessories
- Uses a SIM card
- Multimode terminal



# Satellite Broadband Portable Terminal Applications

A researcher or engineer could easily connect to the internet via satellite broadband, while on field work.



User terminal



# Satellite Broadband Portable Terminal Applications

Some satellite broadband terminals have Wi-Fi access point, and can connect up to 11 wireless devices at up to 100 feet away from the terminal. A team could easily work and connect to the internet using one terminal.



# Satellite Broadband Portable Terminal Applications



A farmer could easily connect to the internet via satellite broadband, and request for seedlings or fertilizer.

Farmers can also connect with buyers over the internet, and sell their products.



# Satellite Broadband

## Land-Mobile Terminal:

- These terminals are used in cars, trucks and trains
- Able to provide broadband access in the vehicle



Outdoor Unit



Indoor Unit

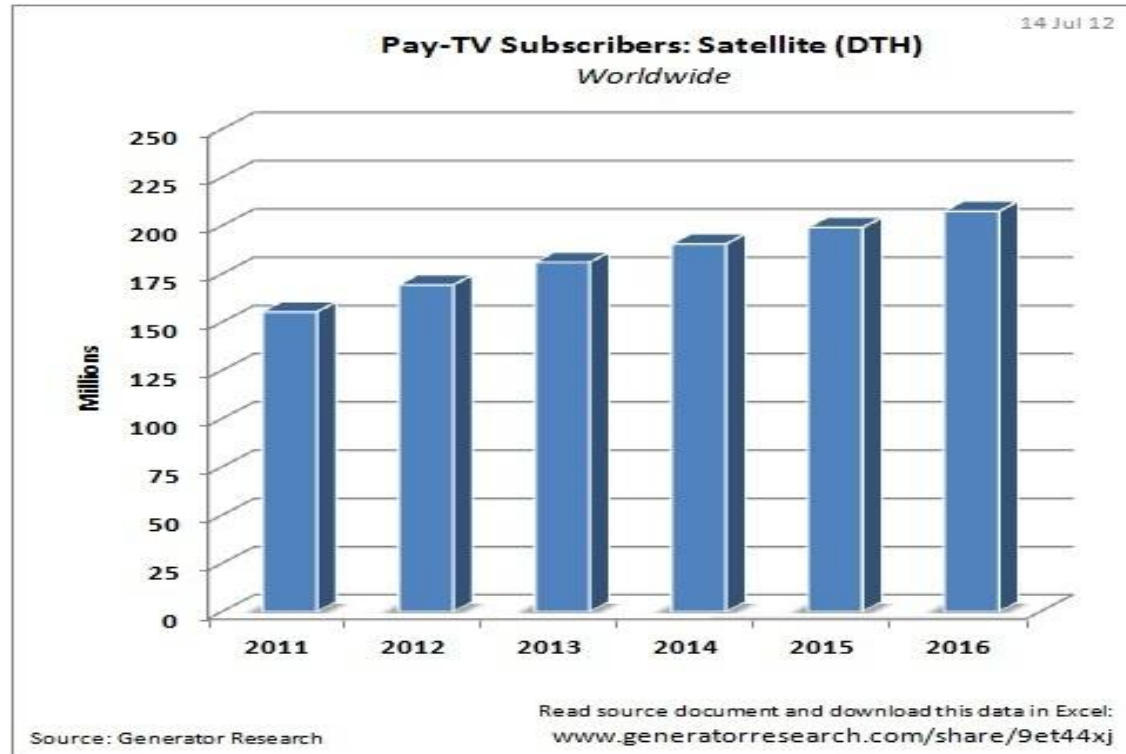
# Satellite Broadband

## Maritime & Aeronautical Terminals:

- Maritime terminals used boats and ships
- Aeronautical terminals used in planes
- Provides broadband access onboard



# Satellite Pay TV + Broadband



- According to Nielsen Three Screen Report (Q1 2011), nearly 60% of TV viewers in some parts of the world were using the internet while watching TV in 2010.

# Hybrid broadcast broadband TV

- How would you feel, if you can watch your pay TV (e.g DSTV) and still have broadband access with the same user equipment along with a set-up-box?



- With HbbTV, you can enjoy video on demand (VOD) and perform online gaming.



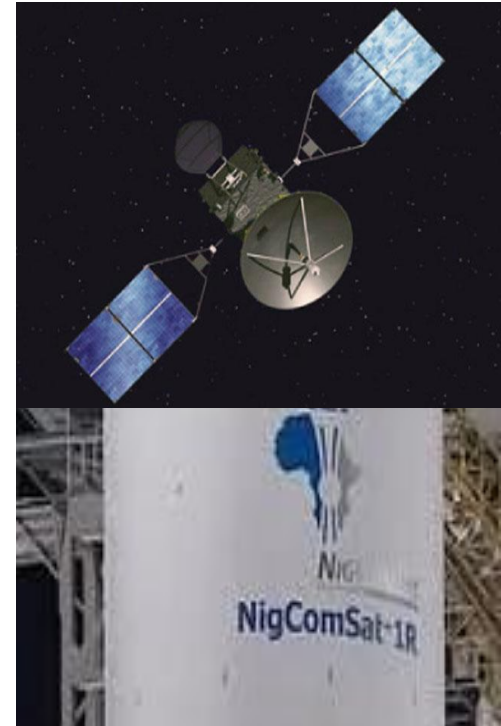
# Nigeria Communications Satellite (NIGCOMSAT) for satellite broadband

Nigcomsat 1R can be used to offer broadband services.

**Orbital location:**  
42.5 degrees East

**Satellite communications features:**  
40 transponders  
C, Ka, Ku and L bands

**Coverage:**  
Africa and parts of Europe and Asia



# Proposed Model for satellite broadband provisioning

The components of the supply chain are outlined below:

S/N	Terrestrial Communications	Satellite Communications
1	<b>NCC</b> Lease spectrum	<b>NIGCOMSAT</b> Lease transponder
2	<b>Operators</b> E.g MTN, Glo, Etisalat	<b>Operators</b> -----
3	<b>Equipment Manufacturers</b> E.g Huawei, Erricson, Semeins	<b>Equipment manufacturers</b> E.g Hughs Network, Comtech etc
4	<b>Retailers:</b> Airtime (recharge) card sellers	<b>Retailers:</b> Airtime (recharge or subscription) sellers

This will create another broadband network service option for the customers, and in addition create jobs for the economy.

# Closing Remarks

- To achieve customer satisfaction, there has to be alternative broadband services that the customer can choose from.
- Broadband access devices should be affordable.
- The terrestrial mobile (telecoms) operators should optimize their infrastructure and services to the latest technology
- Nigcomsat1R can be used to offer satellite broadband services
- Hybrid broadcast broadband TV can be encouraged.
- Additional broadband network services will bring about socioeconomic development through job creation, thereby making everybody happy.

Questions please?



Thank you.