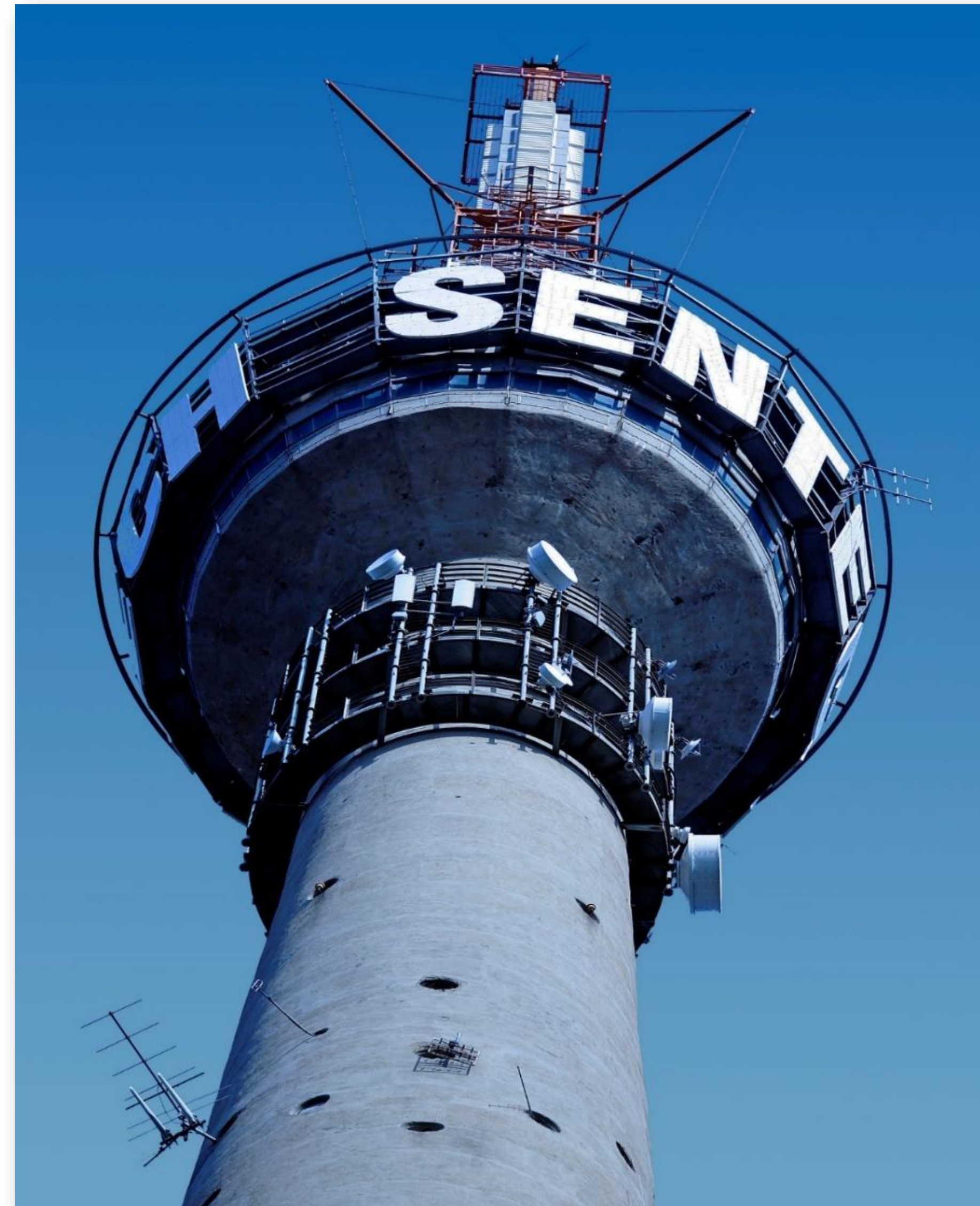


# Bridging the Digital Infrastructure Gaps to enable connectivity

Itumeleng Segaloe  
Chief Strategy Officer



GovTech 2023

# Itumeleng Segaloe

Chief Strategy Officer at SENTECH

Responsible for: Corporate Strategy,  
M&A and Partnerships, International  
Business and Brand

MBA (Strategy & Finance)

Digital Transformation Certificate



# Presentation Outline



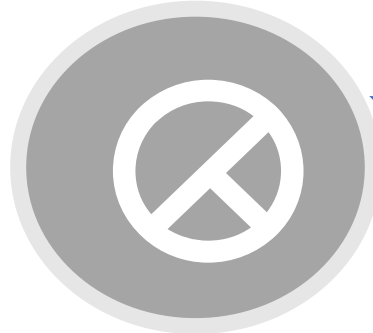
ABOUT SENTECH



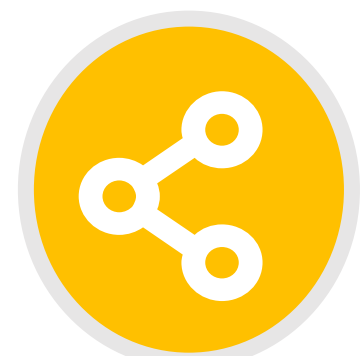
INTRODUCTION



DEFINING DIGITAL INFRASTRUCTURE



OVERVIEW OF AFRICA DIGITAL INFRASTRUCTURE GAPS



SOUTH AFRICA DIGITAL INFRASTRUCTURE OUTLOOK



SENTECH POSITIONING

# About SENTECH

- State-owned digital infrastructure company
- Leading broadcasting signal distributor in South Africa
- Puts on air all Public Broadcaster's radio & TV, community & commercial broadcasters
- National footprint through strategic 340 towers and masts leased to major SA Mobile Network Operators
- Well led and managed SOC with good track record on good corporate governance and citizenry



# Organizational Identity



# Positioning as a digital infrastructure company



**VIDEO AND AUDIO  
CONTENT  
PLATFORM  
PROVIDER**

**Video and audio  
content  
infrastructure and  
platforms provider  
to content providers  
in South Africa and  
Africa**



**TOWERS**

**Passive and active  
infrastructure  
solutions provider:  
colocation, managed  
services, built to suit,  
sale  
and lease back**



**BROADBAND  
PROVIDER**

**Broadband  
connectivity  
provider to  
households, clinics,  
schools and  
communities in  
South Africa**



**SATELLITE  
OPERATOR**

**Communication  
satellite operator for  
broadcast and  
broadband  
connectivity for  
South Africa and  
Africa**



**DATA  
CENTRES**

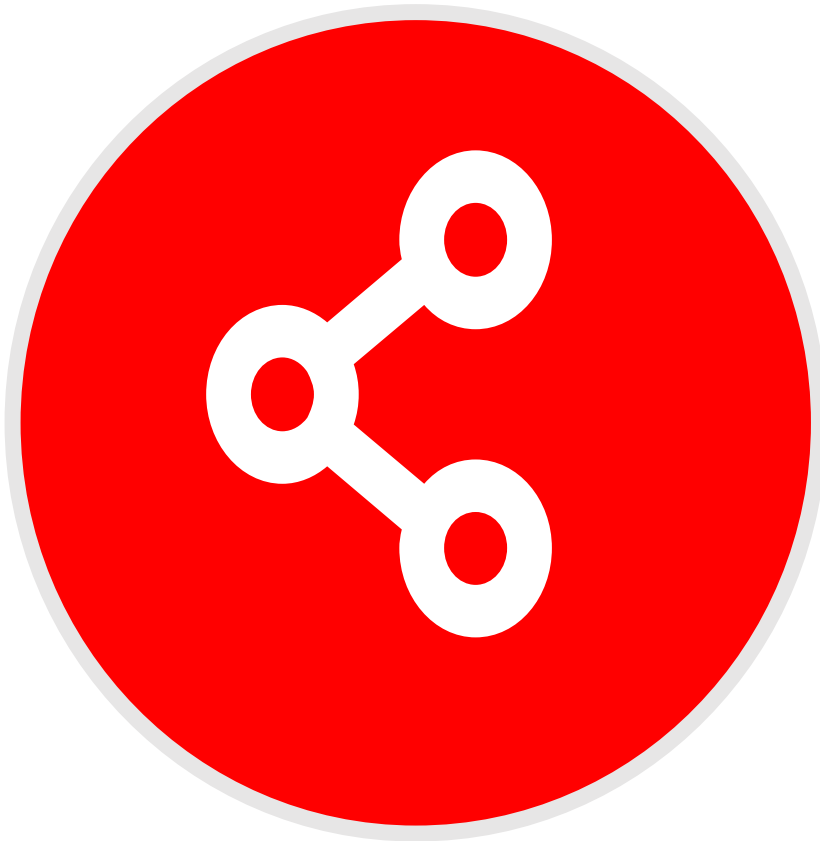
**Colocation hosting  
services**

# Introduction: Digital economy requires inclusive and affordable digital infrastructure



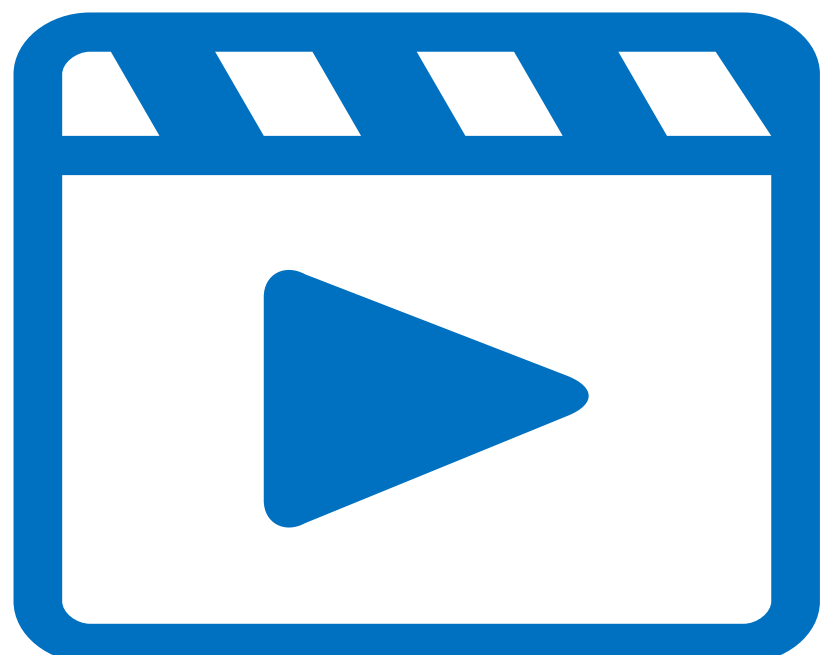
**Digital economy** is essential to meet the requirements of a post Covid-19 digital world because of its potential to create jobs, alleviate poverty and enhance competitiveness through digital transformation

However, digital economy requires modern and robust **digital infrastructure** that is inclusive and affordable



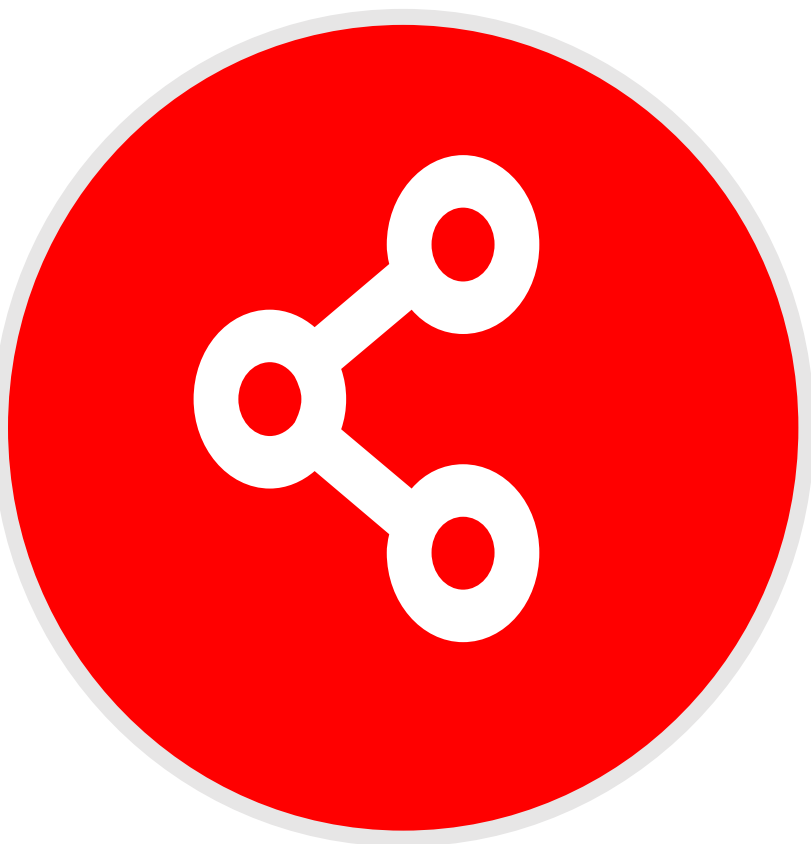
The digital infrastructure gap is a common challenge for all African countries and the most significant barrier on the continent

The ICT sector is key to driving digital transformation, so it is necessary to invest in digital communication infrastructure for economic benefits to societies



The entertainment & media sector's rebound and growth will require emerging digital technologies and infrastructure in delivering compelling content anywhere from any device

# Defining Digital Infrastructure: Services that make use of technology capabilities



The technology, equipment and systems that provide **linkages, networks** and **pathways** to connect people and communities with data, products and services.

Digital infrastructure refers to services that make use of technology capabilities.

It includes:

- Internet backbones (connections)
- Fixed broadbands
- Mobile telecommunications
- Communications Satellites
- Network infrastructures (e.g. Wifi networks etc)



**Infrastructure should be affordable and universally accessible**



# Unpacking digital infrastructure

## INTRODUCTION: DIGITAL INFRASTRUCTURE

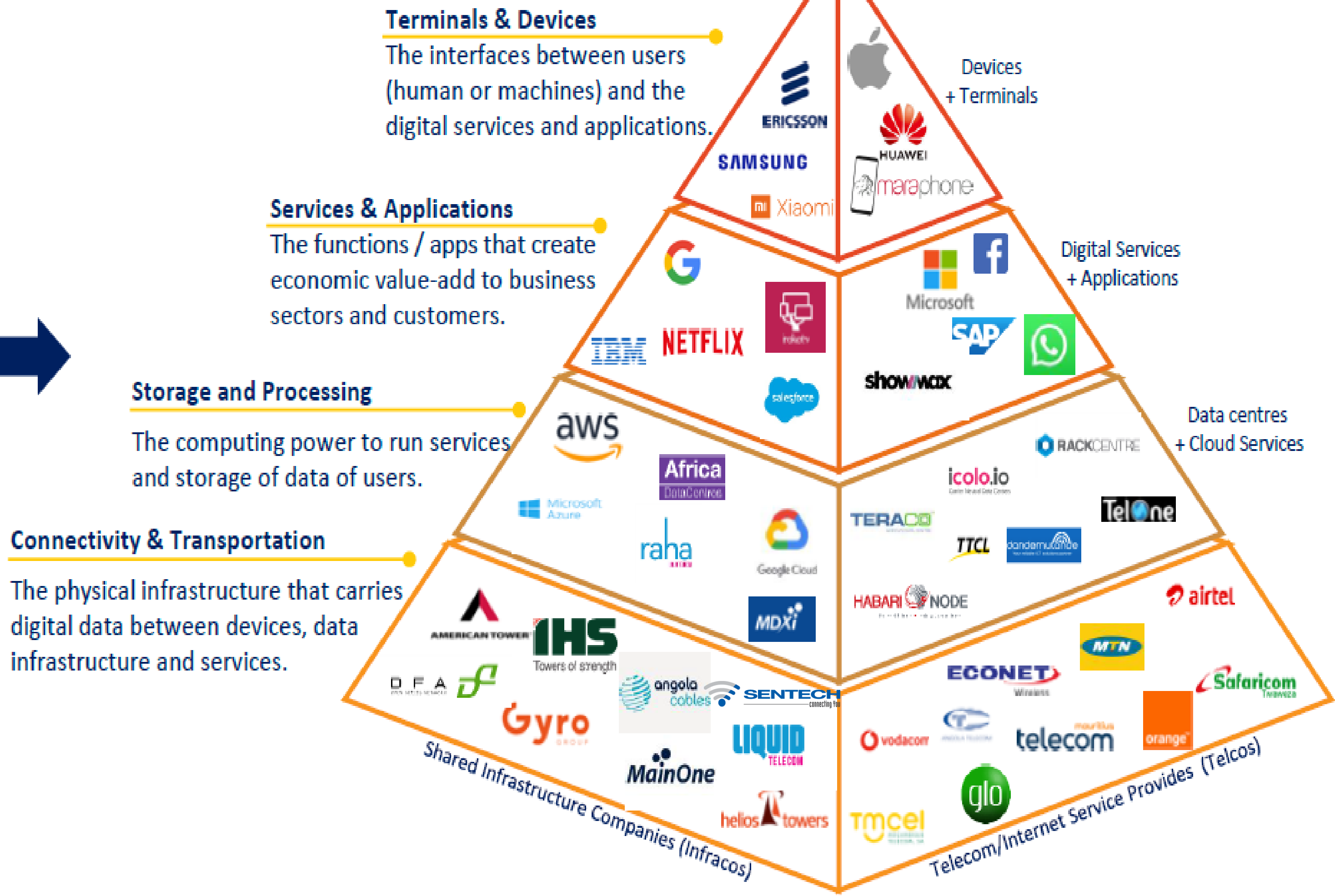
Digital infrastructure is defined as foundational services that are necessary to the information technology capabilities of a nation, region, city or organization. It consists of the physical infrastructure of connectivity (hard components) as well as equipment, devices and applications/systems (soft components).



### Digital Infrastructure Ecosystem



### Digital Infrastructure Landscape



# Overview of Africa digital infrastructure gaps

Africa remains behind by global standards in terms of fibre network and broadband connectivity; spectrum and data center processing capabilities

Sub-Saharan Africa	Global
<p>Digital infrastructure gaps a common challenge (Sub-Saharan Africa, 2021):</p> <ul style="list-style-type: none"><li>▪ Mobile connectivity at <b>49%</b> unique subscriber penetration and <b>30%</b> mobile internet subscriber penetration</li><li>▪ <b>52%</b> smart phone penetration</li><li>▪ <b>470</b> million internet users</li><li>▪ <b>160 000</b> towers infrastructure</li><li>▪ Fixed broadband household penetration: <b>2.2%</b></li></ul>	<p>Global digital infrastructure (2021)</p> <ul style="list-style-type: none"><li>▪ Mobile connectivity at <b>65%</b> unique subscriber penetration and <b>55%</b> mobile internet subscriber penetration</li><li>▪ <b>72%</b> smart phone penetration</li><li>▪ <b>5</b> billion internet users</li><li>▪ <b>4,9</b> million towers infrastructure</li><li>▪ Fixed broadband household penetration: <b>58.6%</b></li></ul>

# South Africa Connectivity Outlook

- ❖ National population 3G coverage stood at **100%**
- ❖ Households with access to Internet **[77,5%]**
- ❖ Network coverage (4G, LTE) : **[98%]**
- ❖ 5G coverage stood at **[20%]**
- ❖ 5G coverage stood at **0%** (Mpumalanga, Limpopo & Northern Cape)
- ❖ Households with access to cellphones only, **[89,4%]**

Source: ICASA, State of ICT in South Africa, March 2023

# Digital Infrastructure opportunities: To invest in mobile networks, fibre and data centers

ICT has been one of the most dynamic and resilient sectors on the continent

Increased level of infrastructure operators sharing initiatives by network operators and diversifying into new infrastructure (data centers).

Significant growth opportunities due to massive youthful population and rapid urbanization

Sub-Saharan Africa remains a mobile first market with 930 million mobile service subscriptions in 2021

There are opportunities to invest in mobile networks, fibre-optic and data centers in Sub-Saharan Africa so as to enable digital services and platforms



# South Africa Digital infrastructure Outlook



- **FIBRE-OPTIC:** SA has advanced and robust **submarine cable network** connecting it to both East and West coasts of Africa and onwards
- The country has 7 submarine cable system with a total design capacity exceeding 70 Tbps in 2021
- **Fibre** reach and density continue to grow to enable evolving broadband adoption and new technology rollouts
- Fibre broadband penetration has continued growing particularly with the adoption of fibre and 4G/5G FWA technologies, replacing DSL lines



- SpaceX's Starlink **satellite** service, with already over 1400 satellites is expected to be available in South Africa by 2022.
- **South African government, through SENTECH is planning to launch a communication satellite to provide for both broadcast and broadband connectivity**

# South Africa Digital infrastructure Outlook



- **TOWERS:** South Africa can be considered a mature market in terms of infrastructure sharing, with the ownership of more towers are expected to shift to independent towercos in the coming years.
- **SENTECH's national footprint of strategic 340 towers and masts have been the backbone of broadcasting and telecommunications**



- Africa accounts for 1% of global data center capacity of which two-thirds is located in South Africa
- Massive investments and large-scale **DATA CENTER** projects have continued to expand already mature data centre in South Africa
- SA ranks 24 globally on Cloudscene based on data centre density and is the most advanced data centre market in Africa
- **SENTECH is investing in Data Centers to service content creators and broadcasters**

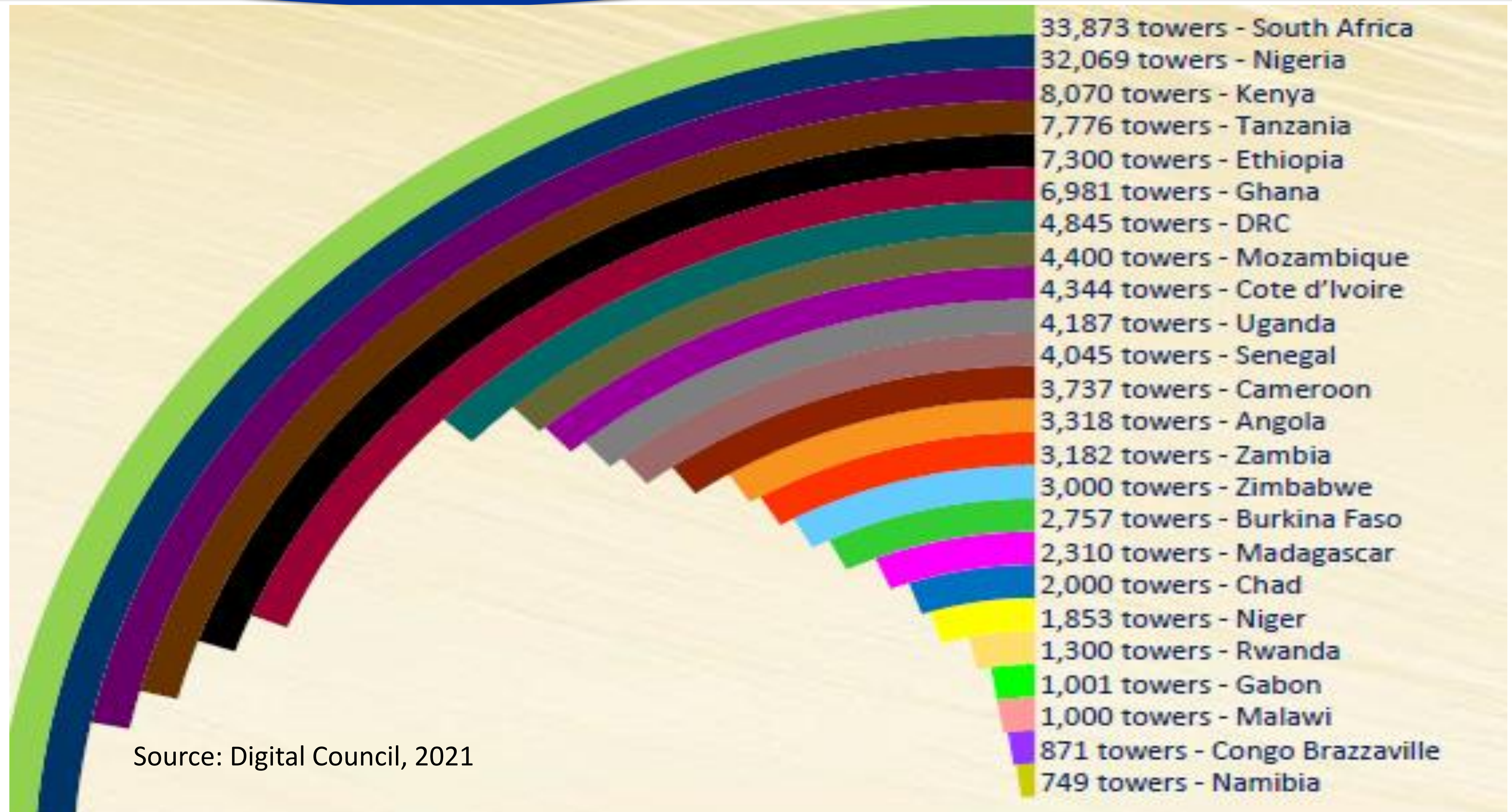


- South Africa Telecommunications market has an **OTT** future worth investing in
- **SENTECH is investing in OTT infrastructure to support streaming services**

# SA Digital infrastructure Outlook- FIBRE NETWORK: Consolidation of tower assets and increased competition

Network	Fibre Network
Telkom	165 900km
Vodacom	33 000km
Liquid Tel SA	23 600km
MTN	23 000km
Vumatel	18 000km
Broadband Infraco	14 863km
Dark Fibre Africa	14 000km
Seacom/FibreCo	4000km
MetroFibre Network	2700km

# SA Digital infrastructure Outlook- TOWER COUNT: New models for tower assets, consolidation and lease back, site sharing to reduce costs and focus on core network



Nigeria and South Africa are two countries in SSA with the largest number of tower count. Nigeria has 32,069 whilst South Africa has 33,873

Population density per tower is a good indicator on the gaps in tower. High amount of people per tower indicates more sites are needed



# SA Digital infrastructure Outlook- TOWER COUNT: New models for tower assets, consolidation and lease back, site sharing to reduce costs and focus on core network




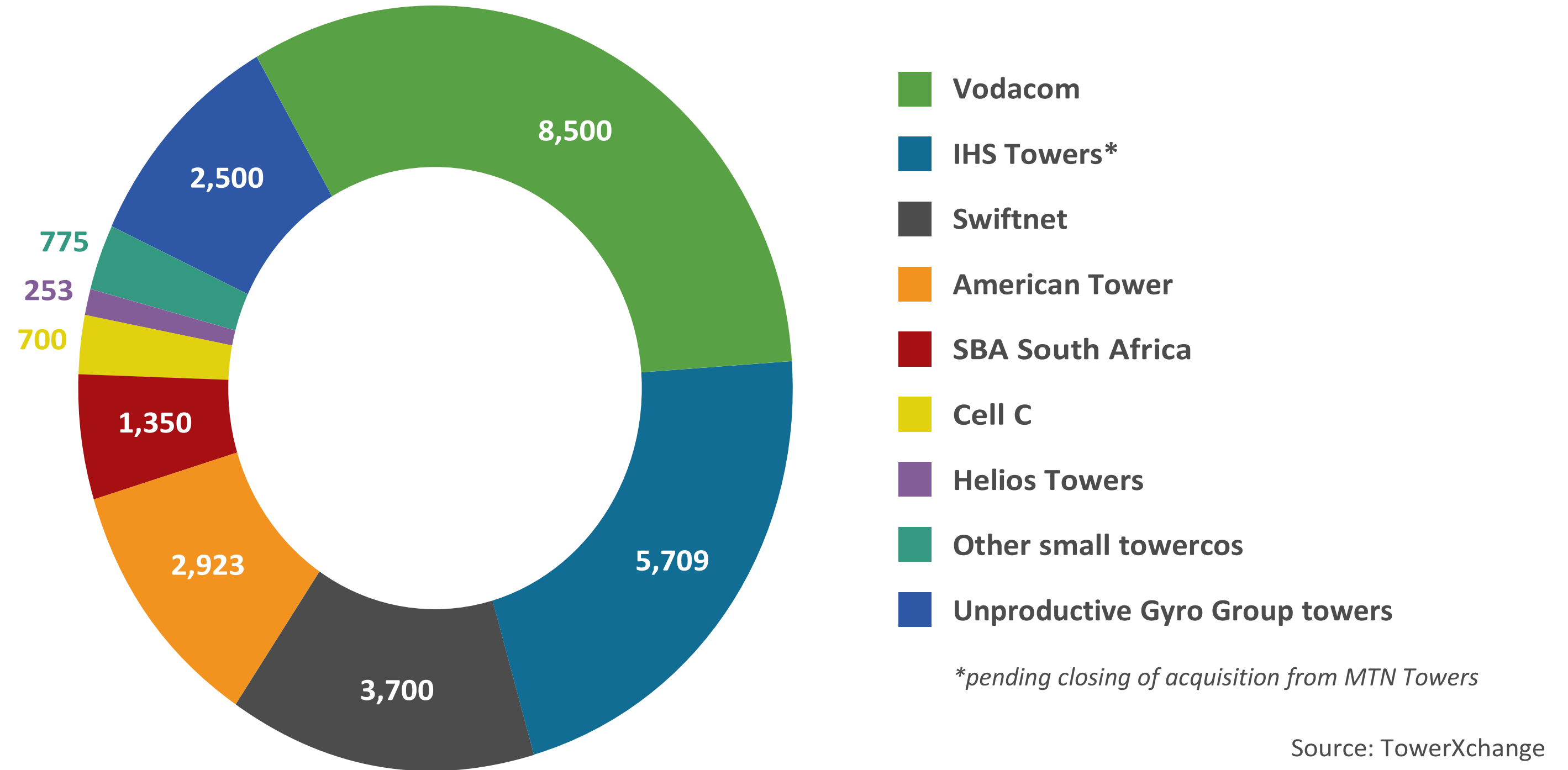
		
<b>Towers:</b> 26,310	<b>Population:</b> (World Bank, 2020): 59,309,000	<b>Subscribers:</b> (World Bank, 2020): 95,959,000
<b>SIMs per tower:</b> 3,647		<b>SIM penetration:</b> 161%
<b>MNOs:</b> MTN, Vodacom, Telkom, Cell C, Rain		
<b>Towercos:</b> IHS Towers*, American Tower, SBA South Africa, Helios Towers, Swiftnet, Atlas Tower + ~20 other middle market towercos		
<b>ESCOs:</b> Abbott Technologies, IHS Towers*		
<small>*pending closing of acquisition from MTN Towers</small>		

Figure 24: South Africa – estimated tower count



There are five MNOs in the South African market – MTN, Vodacom, Telkom and Cell C, with new data focussed MNO, Rain, having recently launched. Cell C is in the

to get a foothold in the South African market since Cell C sold their portfolio to American Tower back in 2010; with Cell C currently on the brink of insolvency.

activity in South Africa, culminating in an agreement between MTN and IHS Towers for a sale and leaseback deal covering 5,709 sites. Included in the deal is an

According to Towerexchange, there are approximately 26,310 towers in South Africa. An estimated tower ownership in South is shown in the figure below. Sentech's 240 sites represents 1% share of the towers in South Africa. Vodacom dominates the tower ownership (32,3%), followed by HIS Towers (21,7%) and Swiftnet at 14,%.

# SENTECH moving from broadcast signal distributor to becoming a State Digital Infrastructure Company

## DIGITAL INFRASTRUCTURE COMPANY

### Digital Infrastructure

### Solutions & Offerings

### Market



Satellite



Terrestrial



Fibre



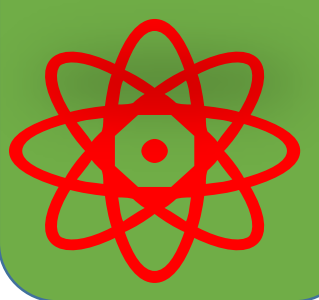
Fixed Wireless



Data center



Over-the-top



4IR technologies

Broadcast Media  
(Inc. Streaming)

Connectivity Solutions

- Smart Communities
  - Smart Health
  - Smart Energy
  - Smart Homes
- Smart Governance
- Co-location

Data/Cloud Services

Public Sector

Broadcasters

Telcos

Enterprises

Small Businesses

Africa market

Global Market



# SA Connect

- Government programme to enable a connection of **5.8 million households across South Africa**. The partnerships amongst SITA, SENTECH, BBI and Industry providers
- The infrastructure will include:
- **1140 km of new fiber optic cable networks through lease and construction (BBI)**
- **20 new and existing points of presence (PoPs) (BBI)**
- **840 new open access base stations (SENTECH)**
- **1600 very small aperture terminal (VSAT) satellite connections (SENTECH)**
- **15 691 government facilities (SITA)**
- Telecoms companies will be obligated to through new spectrum licensing to provide broadband access to public institutions as follows:
  - 18 052 schools
  - 3 967 clinics
  - 1 764 hospitals
  - 567 SAPS facilities
  - 8 241 Tribal Authority sites

# Service Offerings

## Video & Audio Content

Video & Audio Streaming

Digital Terrestrial TV (DTT)

Satellite TV (DTH)

Terrestrial Radio (FM,MW)

Digital Radio

E-learning solutions

## Infrastructure Solutions

Facilities Leasing

Data Centre Services

NOC as a Service

Advertising Space

## Broadband Connectivity

VSAT connections

Fixed Wireless

Fibre

5G connectivity



**Thank You!**