



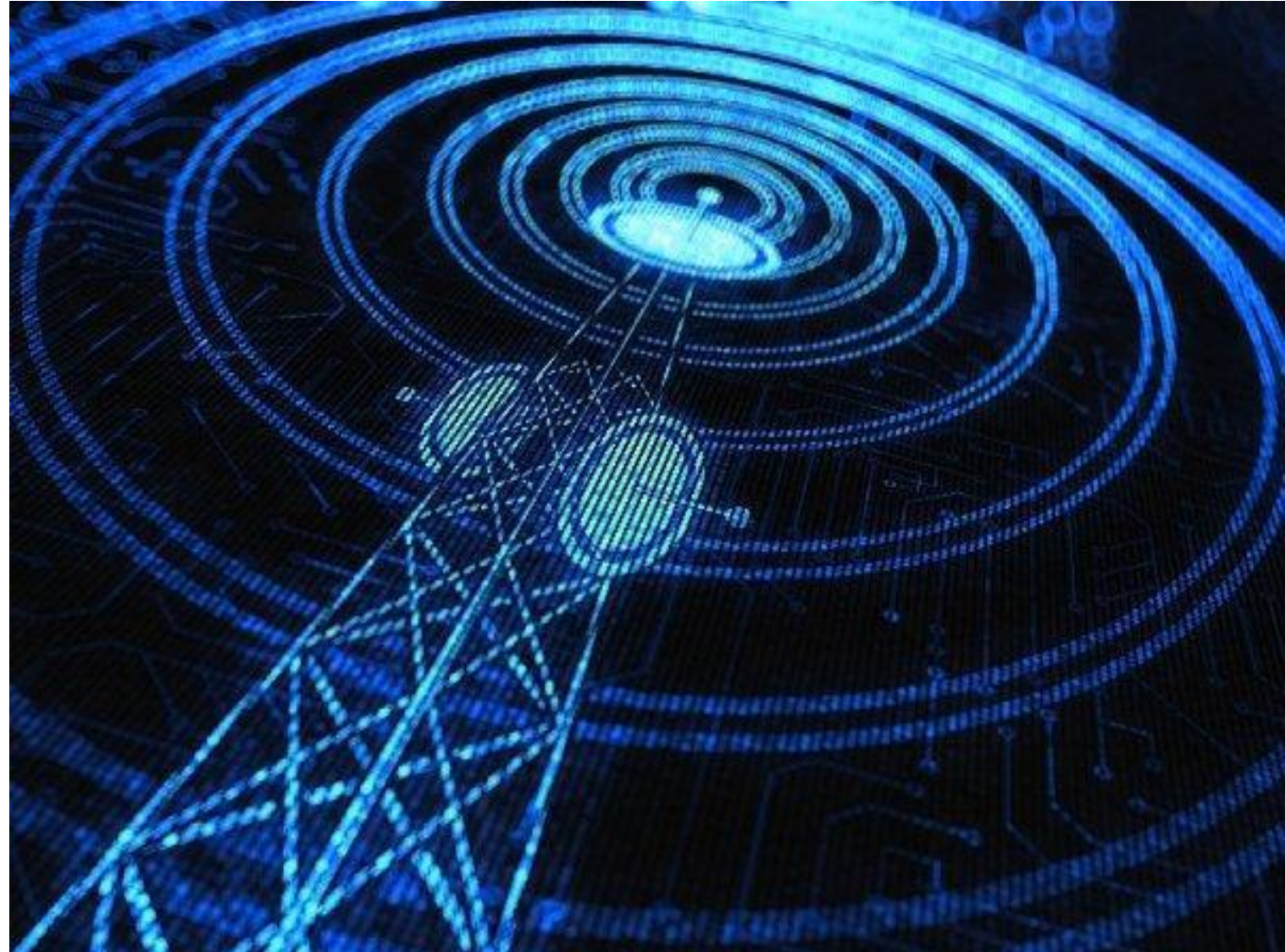
SAFNOG-5 & iWEEK 2019

August 26-28, 2019 | Indaba Hotel
Johannesburg, South Africa



The WOAN is back !

2 x 25 MHz of 800 MHz
band (band 20).
2 x 20 MHz of 2600 MHz
FDD (Frequency Division
Duplex) band (Band 7).
25 MHz of 2600 MHz TDD
(Time Division Duplex)
band (Band 38).





DYNAMIC • SPECTRUM • ALLIANCE

5G

5G SPECTRUM

Existing Mobile Spectrum

New Mobile Spectrum

Coverage & Capacity

Capacity

Below 1 GHz

1-6 GHz

30 GHz

mmWave band

100 GHz

TV

WiFi

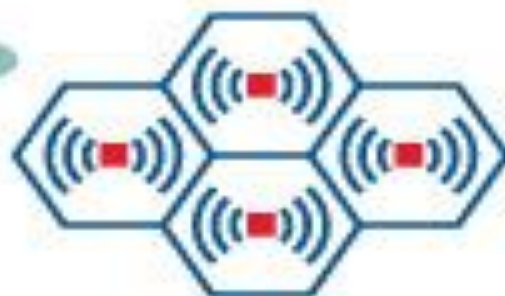
WiFi

Fixed links and Satellite

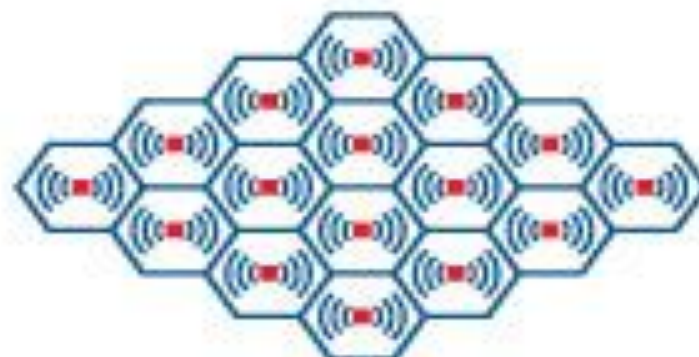
Existing Mobile



Macro cells



Macro and small cells



Small cells



AT&T

5G E  100%  12:45 PM

FUP
Fair use policy

9 G



Photos



Camera



App Store



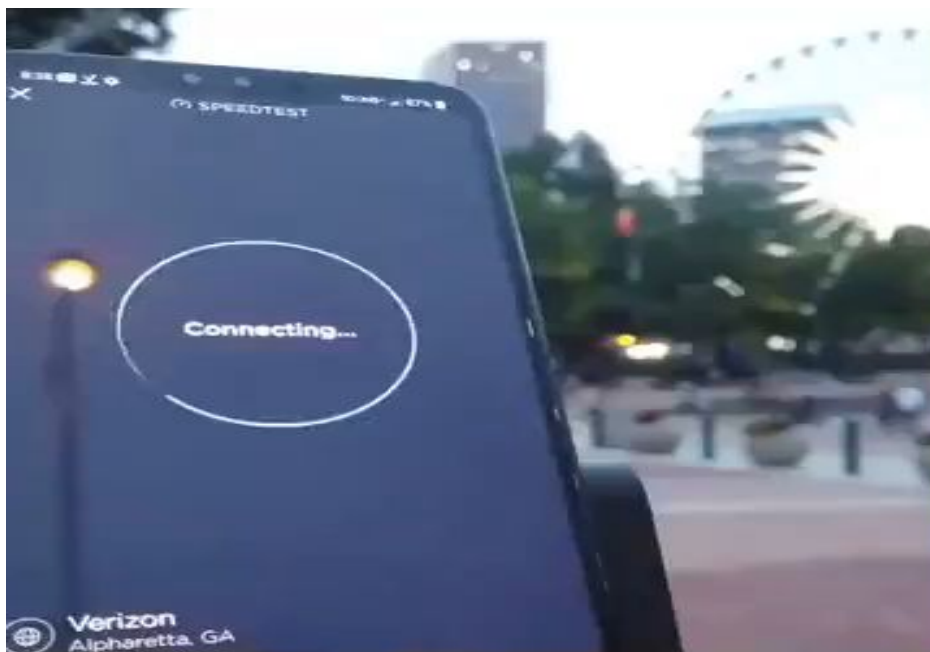
The Weather



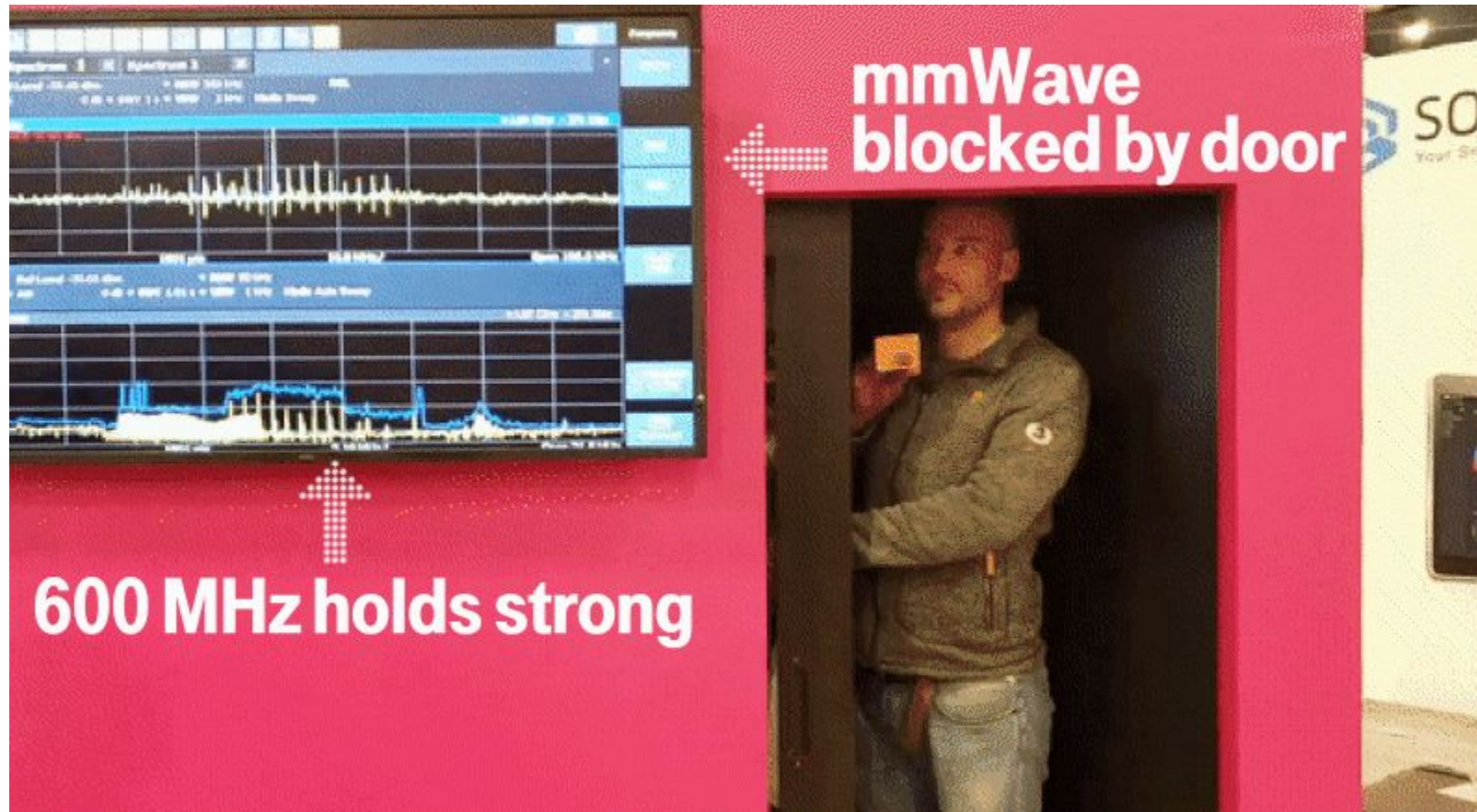
Maps



Google Maps



5g problems



The Need for Speed

1G



3G



Commet - I



2G



4G






You're on a Huawei to Hell, China tells US: We'll fight import tariffs, trade war to bitter end

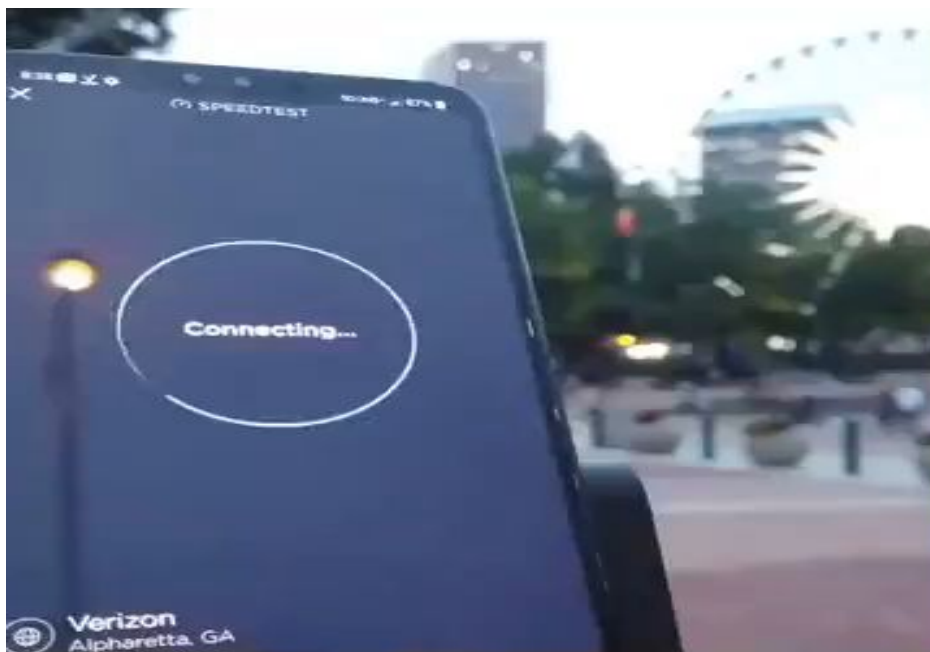
Beijing slams Trump's 'abuse of export control measures', vows to take some sort of action

By [Iain Thomson](#) in [San Francisco](#) 16 May 2019 at 20:22

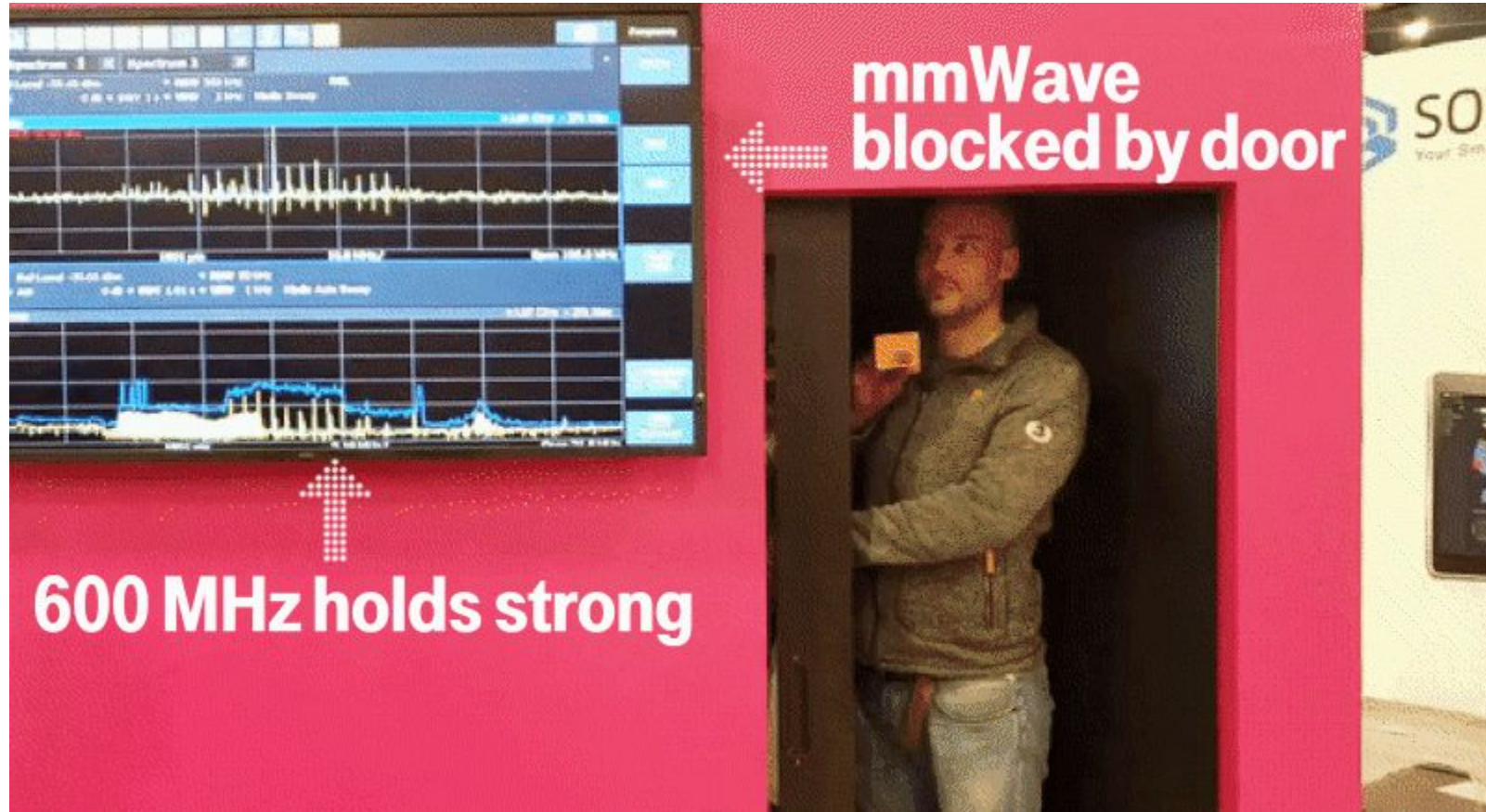
30 

SHARE ▼





5g problems



Verizons new home 5G modem

28ghz & 39ghz

***Business
customers
Unlimited 5G \$45
FUP 35GB then
200kbps***



Verizons new home 5G modem

28ghz & 39ghz

*Home customers
FUP 50GB with
speeds throttling
to 3mbps .*



Verizons new home 5G modem

28ghz & 39ghz



Verizons new home 5G modem

28ghz & 39ghz



RCA

ABBA

THE WINNER TAKES IT ALL - ELAINE





USTDA
U.S. TRADE AND DEVELOPMENT AGENCY

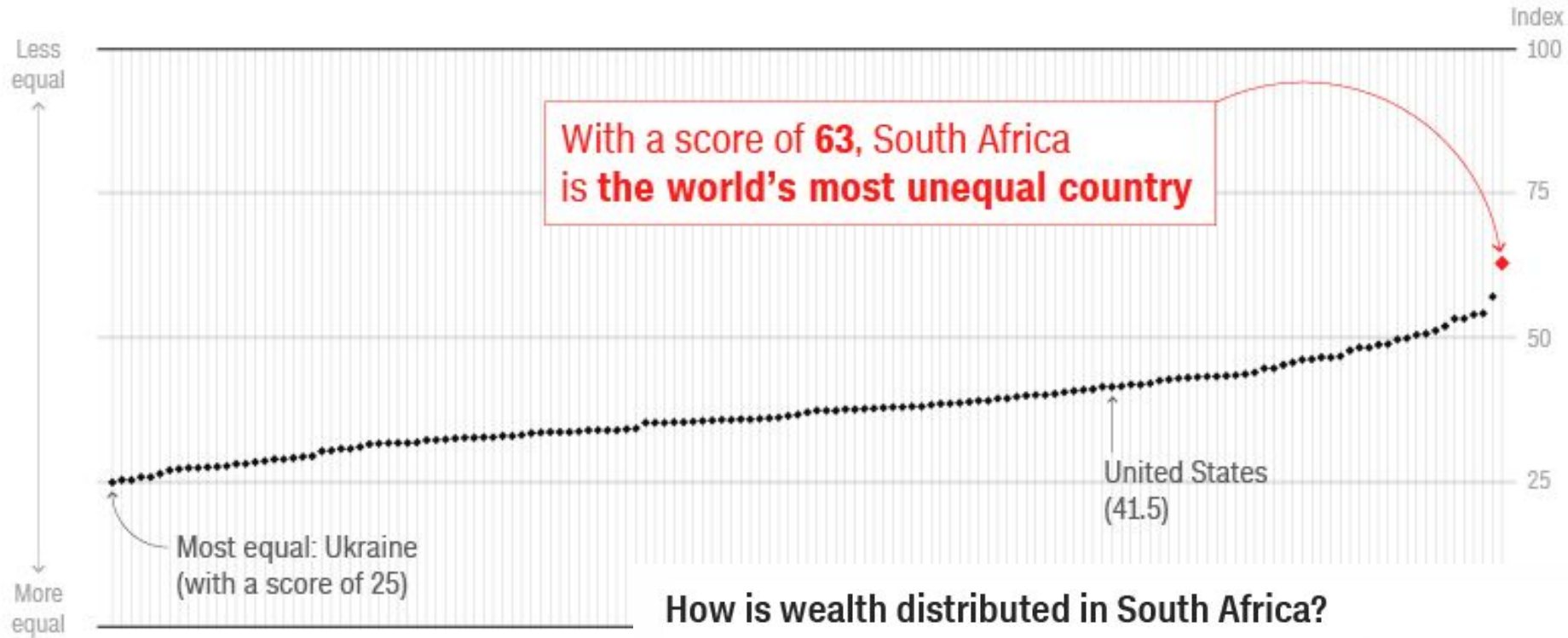


TV White Space



Income inequality: How does South Africa compare?

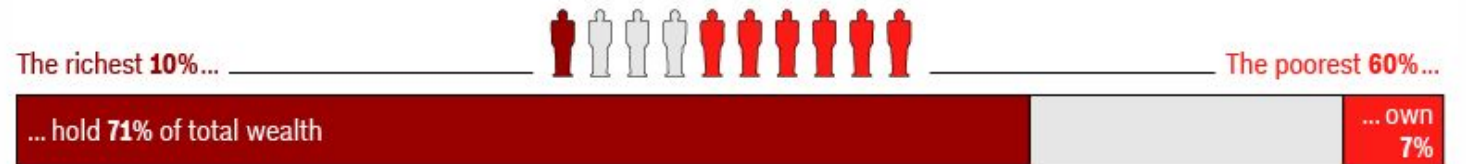
The Gini index measures the distance to perfect equality. The less equal a country's income distribution, the higher its score



10 May 2019



How is wealth distributed in South Africa?



OECD AVERAGE:

The richest **10%**...

... hold **50%** of total wealth

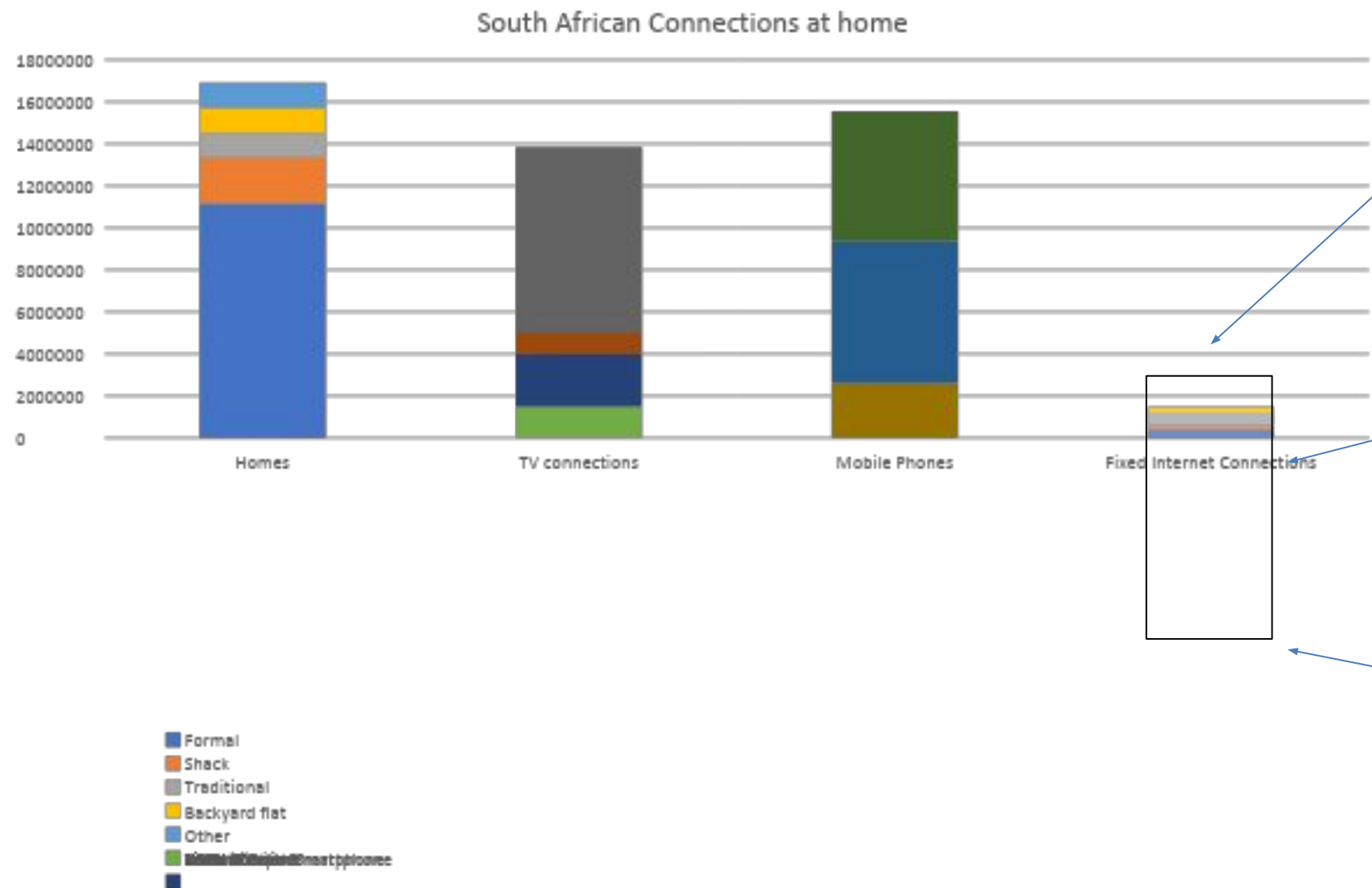
The poorest **60%**...

... own **13%**



Source: World Bank and University of South Africa, 2011-2015.

South Africa Connected households

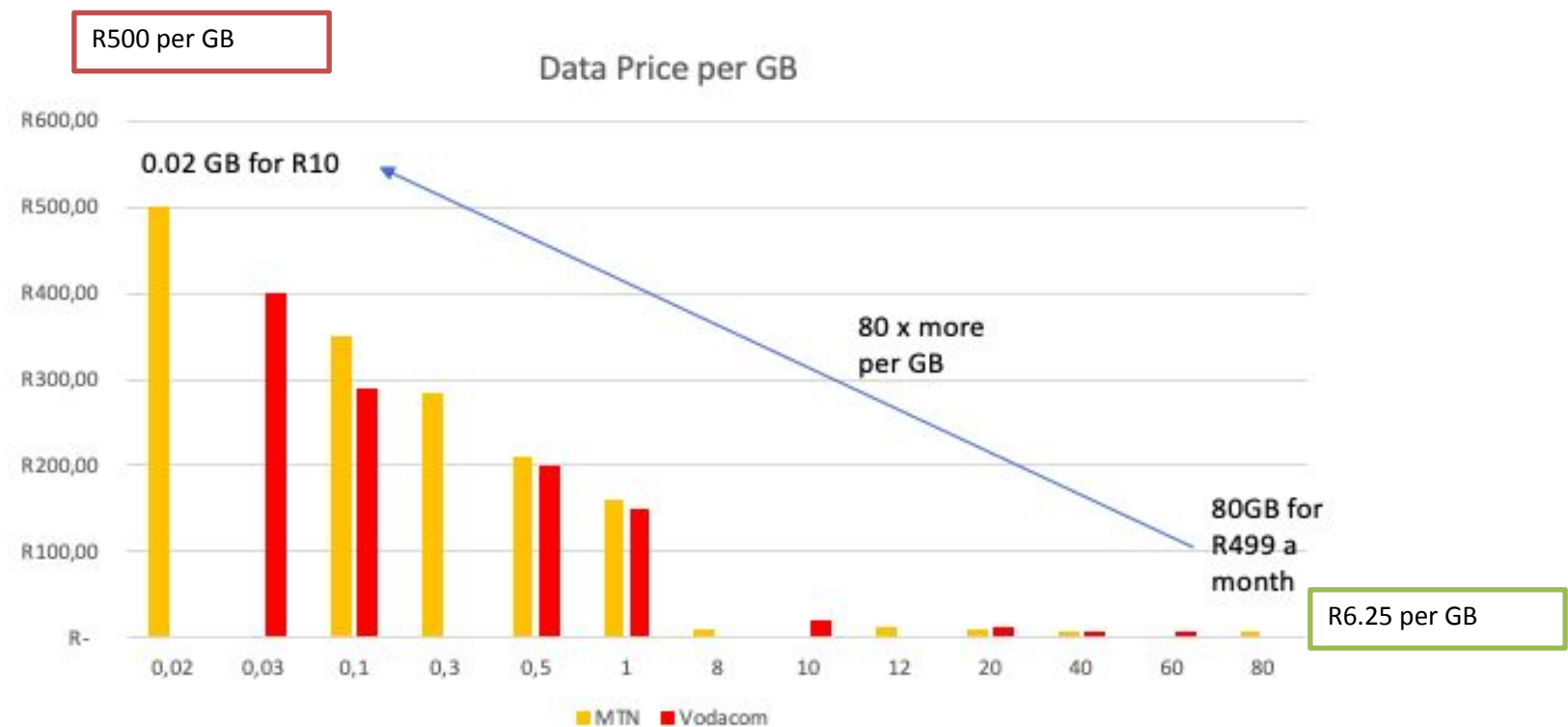


7.5 million lower income homes are paying up to **80X** more for Internet access than high income homes

Smart phone Internet access.
Data Cost up to R500 per GB

Only 10% of SA homes have fixed affordable Internet.
Data Cost < R10 per GB

Cost of Data contracts



Pre paid data bundles	Post paid 24 month data contracts
Low income	High income
Uncreditworthy	Creditworthy
Only data option available	One of many data options available

Broadband Connectivity for Education



Google sponsored a 10 school TVWS installation with TENET in Cape Town, South Africa using Carlson equipment.





TV WHITE SPACE CENTRE





- USTDA have granted funding for the South African TV White Space project with the below partners .
- Wapa will engage in field trials with equipment from Adaptrum and manage the road map and deliverables and goals of the project . The 1st step into bridging the digital divide in SA !



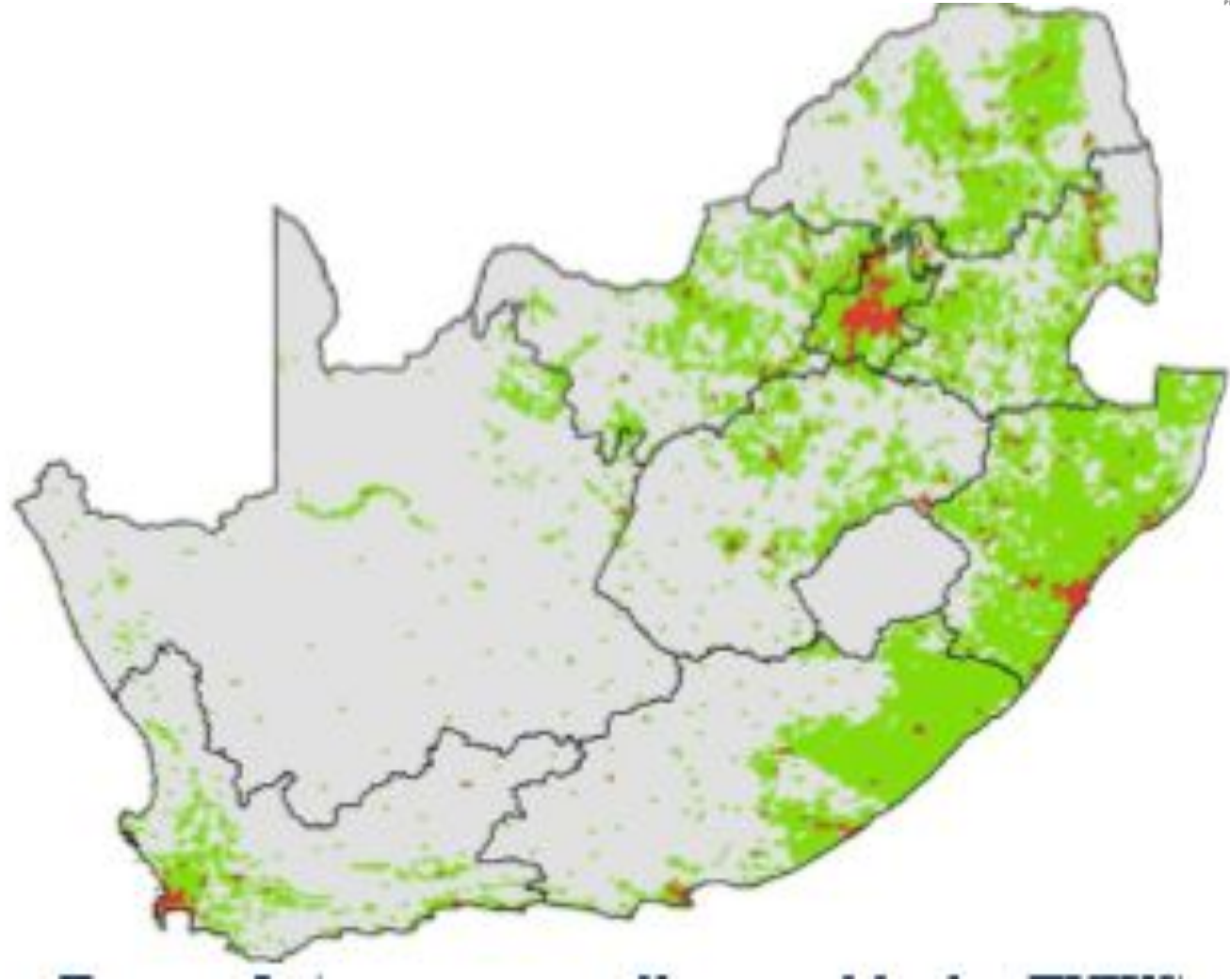


470 – 694 MHz (TV White Space)

***Matching
technology
to
population
density in
South Africa***

Category	Population density (people/sqkm)	Technology likely to be most suitable	Percentage of area covered	Population covered
A	>500	Areas suited mostly to > 1 GHz cellular / Wi-Fi	1.4%	56.3%
B	100 to 500	Areas suited to a mix of TVWS and > 1GHz cellular / Wi-Fi	5.3%	27.2%
C	18 ³ to 100	Areas suited mostly to TVWS	9.6%	12.5%
D	5 to 18	Areas suited to a mix of TVWS and satellite	10.0%	2.4%
E	0 to 5	Mostly suitable for satellite	73.7%	1.6%

*Areas in
green
suitable for
TVWS
'Sweet
spots'*



*Low
population
density rural*



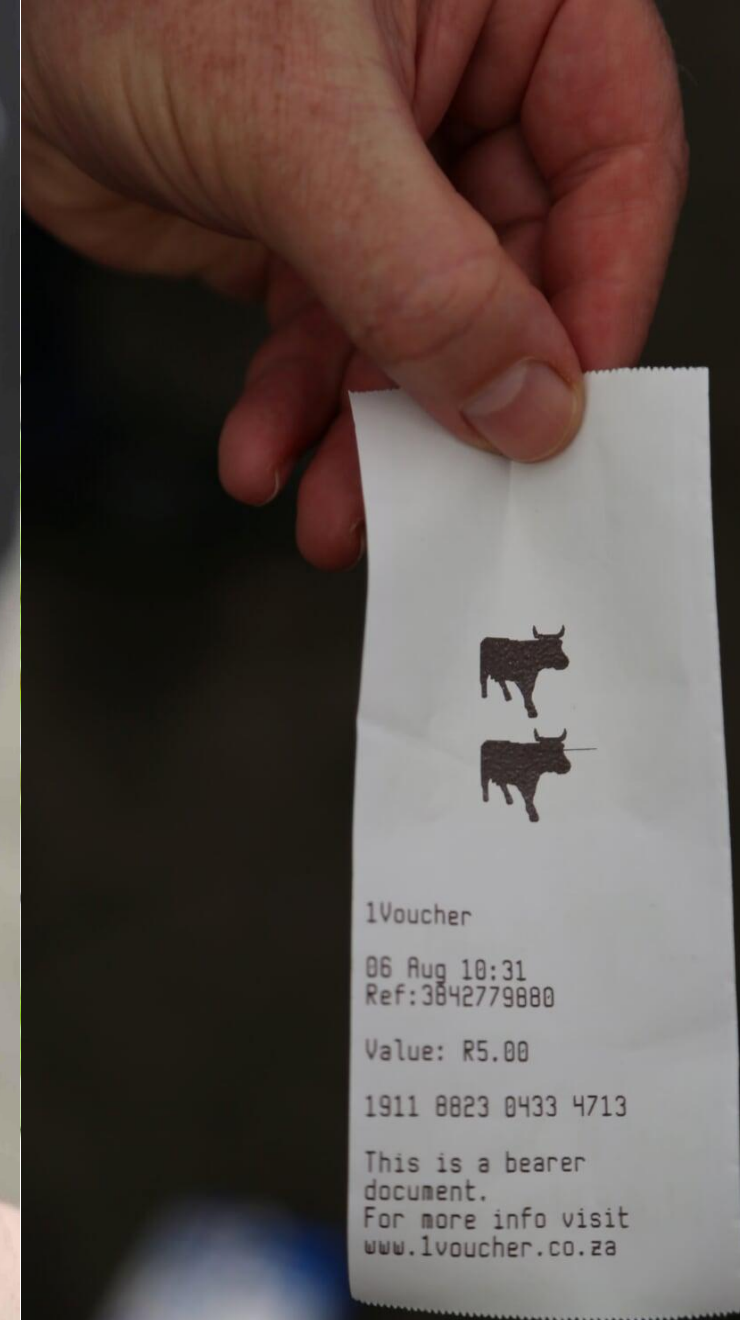
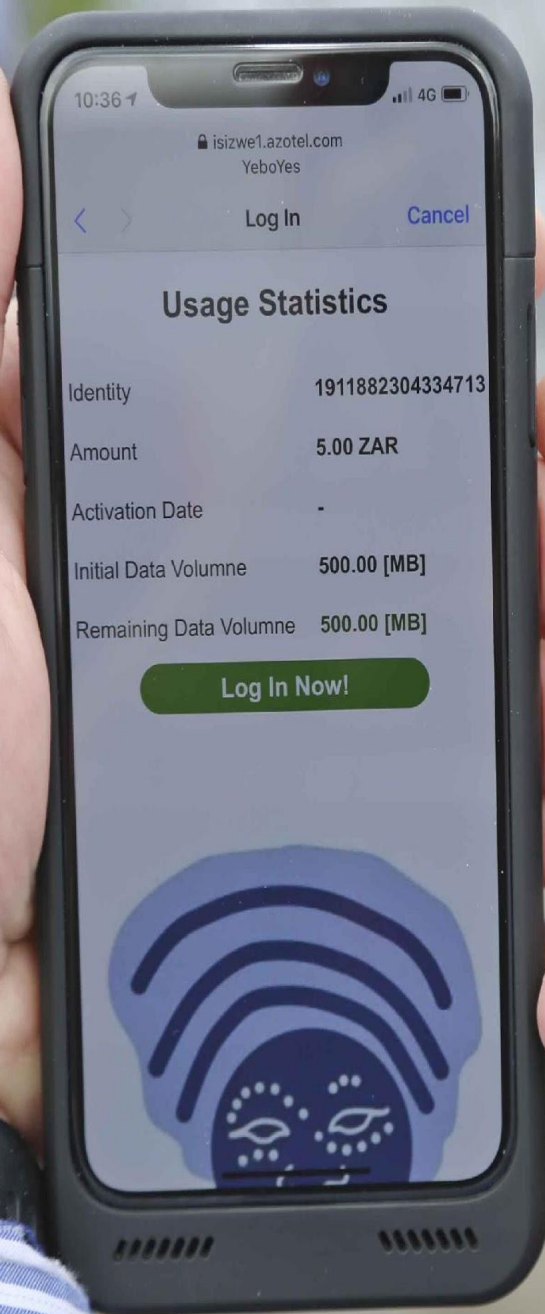
Semi rural



*A fossilized
3310*







*Wisp's will be
the real
heroes in
'Bridging the
digital divide
with dynamic
spectrum'*





You Can Take It to the Bank

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