

# Johannesburg

## An African powerhouse

City data report 2021

## OVERVIEW

Digital technology can support Johannesburg to manage rapid population growth and get the most out of its abundant resources.

### DIGITALIZATION READINESS

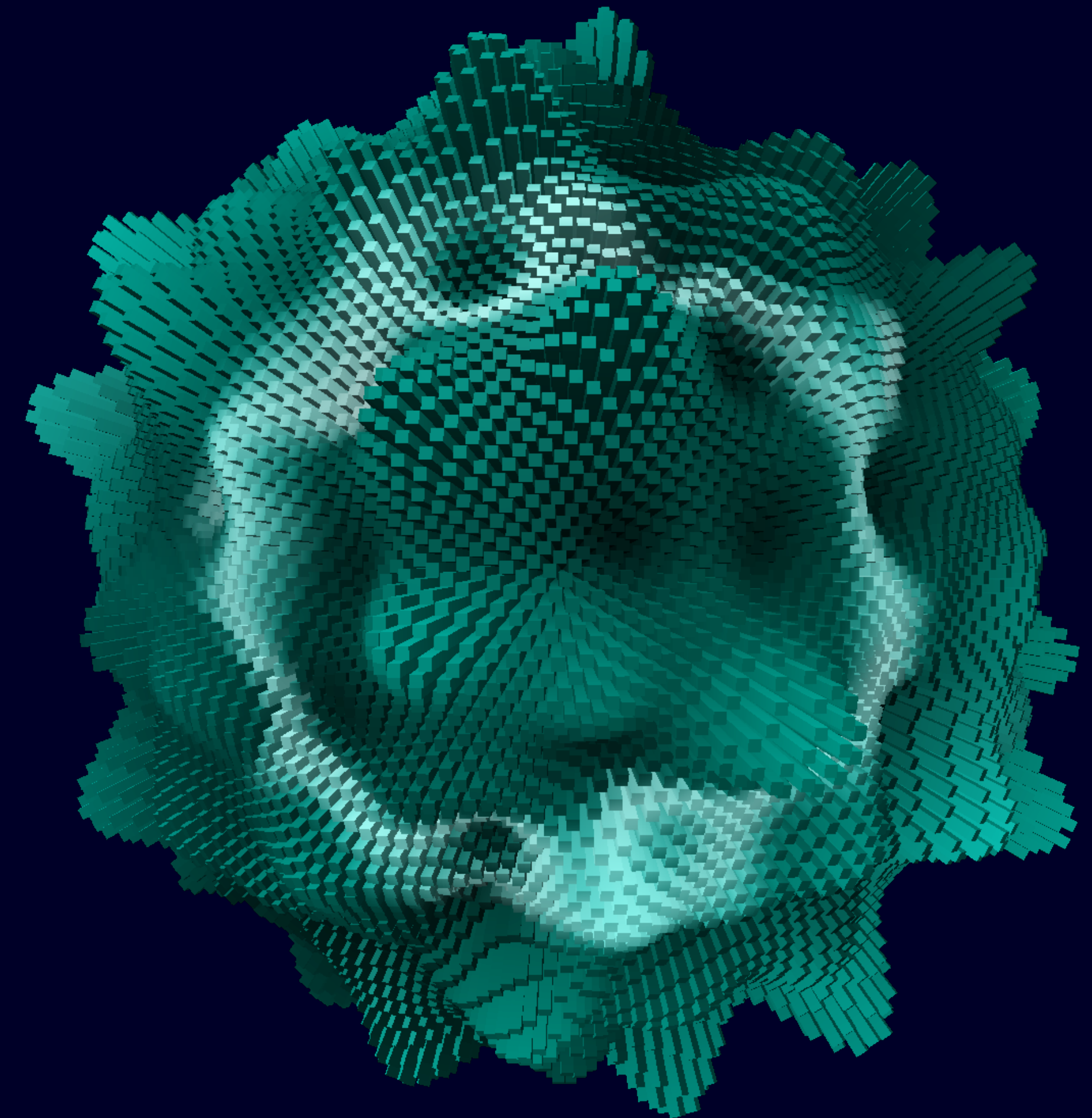
2/10

Improvements to the rail network and guaranteeing energy supply using a microgrid will help Johannesburg to improve on its low Readiness score.

### DIGITALIZATION POTENTIAL

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Johannesburg has many ways to build on its Potential, from digitalization of the mining sector to improving urban mobility and energy.



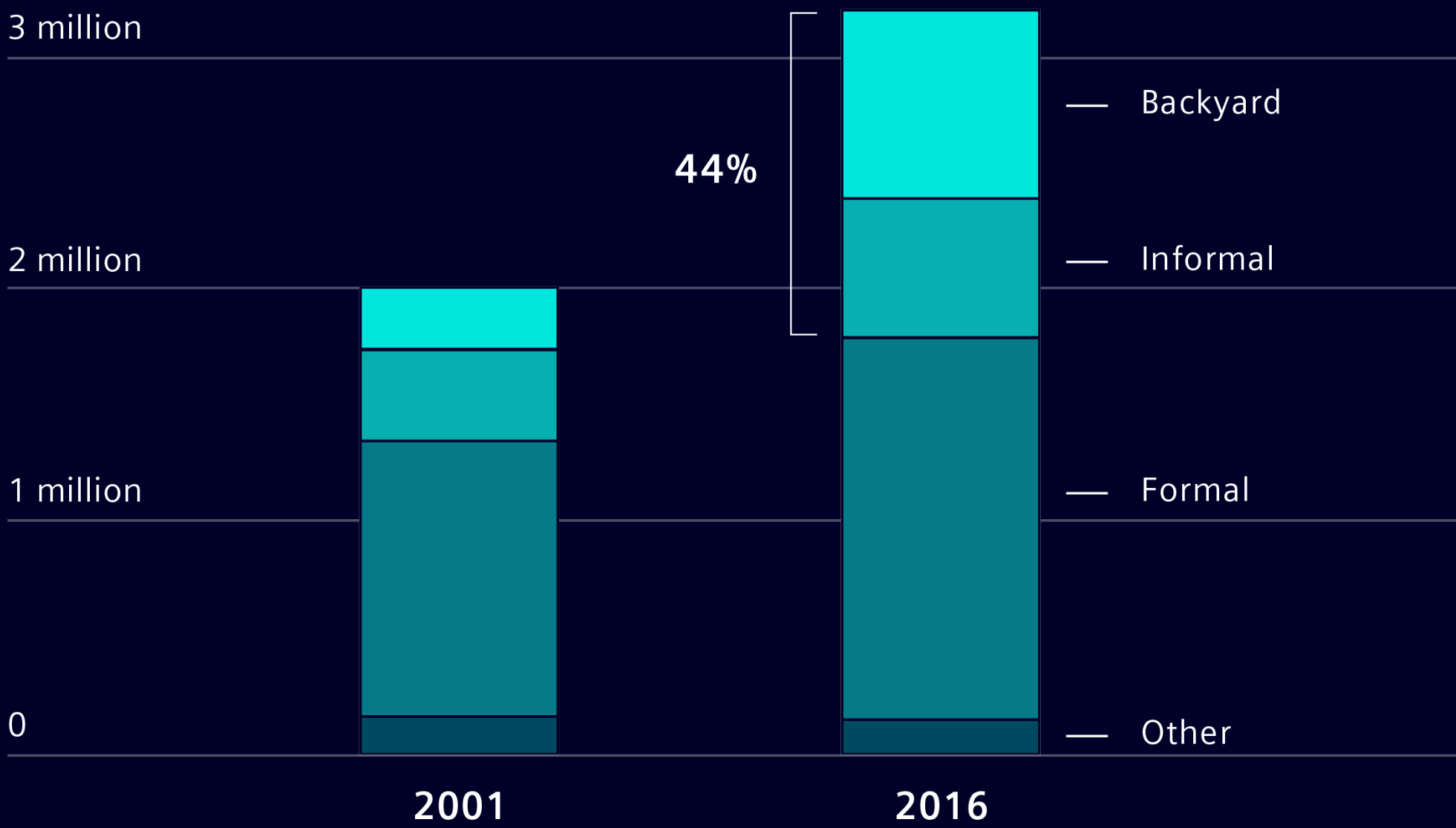


SUSTAINABILITY

# Solar panels help the transition from coal to renewable energy

When Siemens committed to becoming the first global industrial company to commit to turning **carbon neutral by 2030**, it invested in a microgrid at its Southern African headquarters in Midrand, Johannesburg. The unique system combines 1-MW of solar panels mounted on campus buildings and a backup diesel generator with a 140 KWh energy storage system, all integrated via a **Microgrid Controller**. At one location the microgrid system has so far reduced energy demand from the **national grid by 40%**.

Dwelling classifications in Gauteng province, 2001 and 2016



Source: **Gauteng City-Region Observatory**

MOBILITY

# Modern railway infrastructure responds quicker to failures

**Signaling technology** is one area in which Johannesburg can use a targeted investment to increase trip frequency across the entire network. Siemens is currently upgrading the rail signalling system in **Gauteng province** with advanced track systems that are designed to reduce the interval between trains from 15 minutes to around 2.5 minutes. This will allow each line to carry more trains and their passengers.

Annual public transport trips per capita



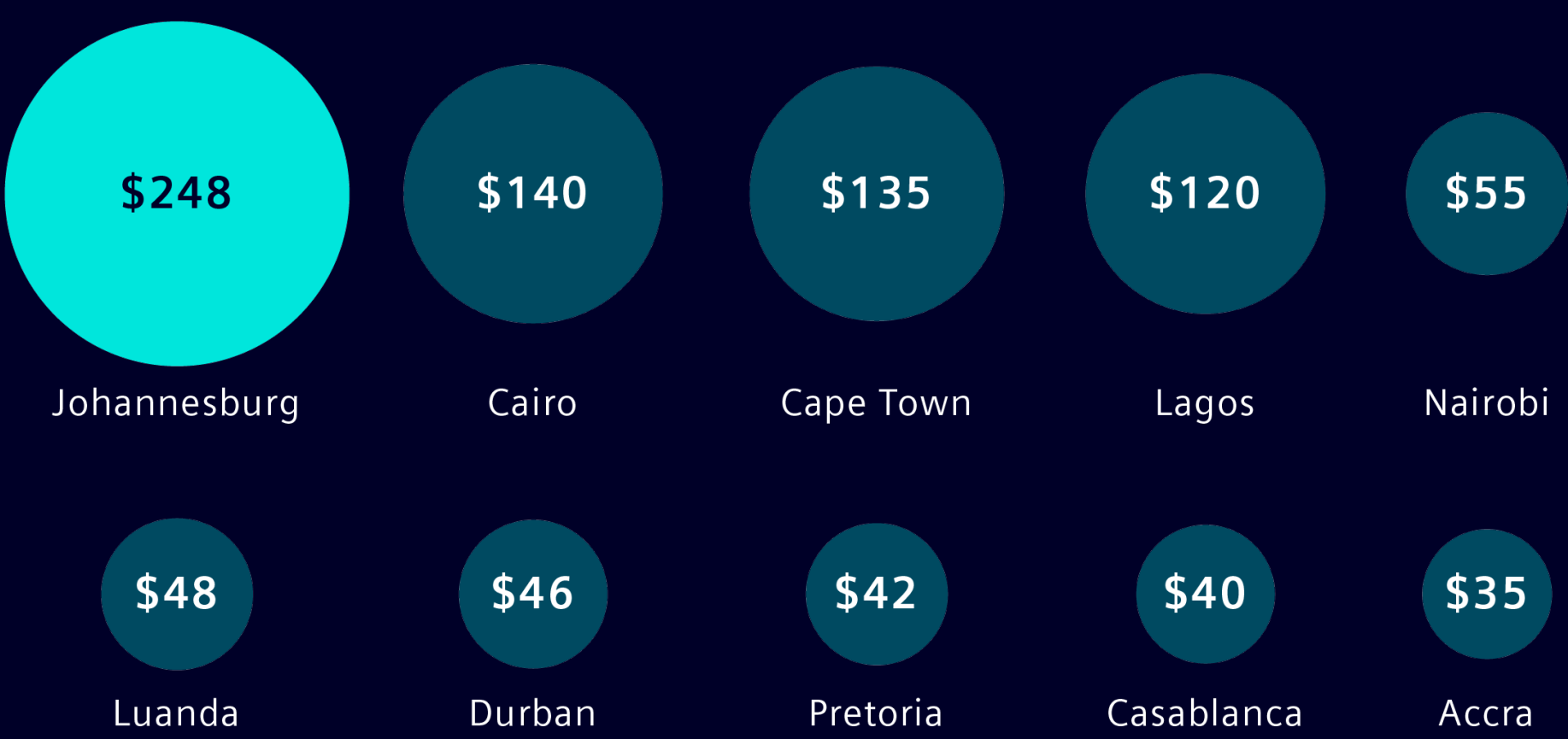
Source: **World Council on City Data**

OPPORTUNITY

# Smart mining technologies can increase skills and yield automation

Digitalization has the potential to also increase driverless transport, wireless underground communication networks and remote-controlled machinery. There is tremendous potential for South Africa to invigorate its mining sector with new **mining engineering** skills, as well as new digital technology that could help transform mining processes. Siemens launched the Digital Mining Incubator to educate the next generation.

Africa’s wealthiest cities in 2019, US\$ (billions)



Source: **Money Inc.**



# THE ATLAS OF DIGITALIZATION



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