

Telecom Advisory Services

# THE CONTRIBUTION OF CLOUD TO ECONOMIC GROWTH **FOCUS ON KENYA**



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# Impact of Public Cloud Adoption in Kenya

## Organization level

**Efficiency gains:** increased outputs with the same inputs for organizations adopting cloud.



**Increased agility**



**Faster innovation**

## Country level

**Spillover effects:** economic growth resulting from the aggregate efficiency gains of all organizations adopting public cloud.



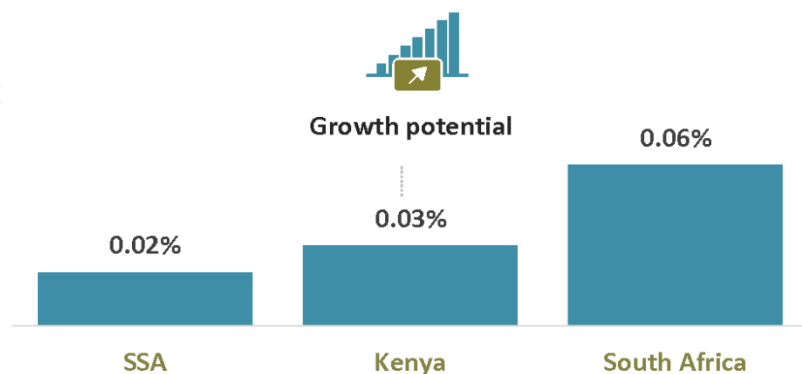
**Cost savings**

## Spillover effects

Most of the economic impact of cloud adoption is driven by spillover effects. The **remainder (9%)** is driven by organizations spending in cloud services.

**91%**

## GDP growth impact of 1% adoption of cloud



# Impact of Public Cloud Adoption in Kenya



## Enabling Policies and Regulations

Promote adoption of cloud in public and private sectors.



# 26%

## Cloud Adoption

26% of organizations in Kenya adopt cloud services vs 49% in Western Europe and North America.



## Impact on the Kenya Economy



# KES 12.9B

**2021:** 0.08% of the GDP  
KES 12.9 billion economic value

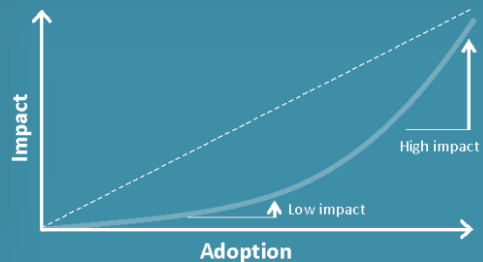


# KES 1.4T

**By 2033:** 0.56% of the cumulative GDP  
KES 1.4 trillion economic value

## Increasing returns to scale

An increase in cloud adoption results in a more than proportional impact on GDP.



This brief study highlights the contribution of cloud adoption to economic growth in Kenya. The paper draws from broader research from Telecom Advisory Services on the impact of cloud adoption in the Sub-Saharan Africa (SSA) Region.

We define cloud computing as the on-demand delivery of IT resources via the internet with pay-as-you-go pricing. This means that, instead of buying, owning, and maintaining their own data centers and servers on premise, organizations remotely access computing power, storage, databases, and other services on an as-needed basis.

Economic research provides vast evidence of the efficiency gains cloud enables at the firm-level through increased agility, cost savings, and faster innovation. Some studies extrapolate efficiency gains at firm or industry level to estimate the aggregate impact of cloud on national productivity. However, no research thus far quantifies the causal relationship between cloud adoption and economic growth, as measured by the Gross Domestic Product (GDP). In other terms, how much GDP growth does 1% of cloud adoption yield?

To answer this question, we developed a macro-economic model using a state-of-the-art econometric approach and the latest publicly available data. Our model estimates GDP growth based on public cloud adoption in a worldwide sample of countries over 2014-2021. We calculate cloud impact as the sum of cloud spending of organizations and the efficiency gains enabled by cloud adoption throughout the entire economy, or so-called “spillover effects”. Our model does not account for the construction effect of cloud infrastructure, i.e., the ripple effect of investment across sectors of the economy to build cloud infrastructure. We model the impact of access to cloud, regardless of whether cloud infrastructure is present in country or not.

We estimate that in 2021 alone, cloud adoption in Kenya added 0.08% to the GDP, amounting to KES 12.9 billion of economic value. More than 91% of this impact comes from spillover effects on the economy, while the remainder (9%) is driven by cloud spending from Kenyan public and private organizations.

In terms of spillovers, we find that an increase of 1% in cloud adoption by Kenyan organizations will yield an average GDP increase of 0.03%, above the SSA average at 0.02%, but lagging behind the SSA regional leader, South Africa, where 1% cloud adoption yields 0.06% GDP increase.

Our research confirms that the economic impact of cloud is guided by a “return to scale” effect: cloud economic impact grows with the penetration of cloud. When cloud penetration is low, the economic impact of 1% cloud penetration is minimal. When cloud penetration reaches a critical level, cloud starts having proportionally more impact on the economy. The return to scale for cloud impact is consistent with prior research on the economic impact of digitization and broadband.

Twenty-six percent of organizations in Kenya adopted cloud computing in 2021, versus 49% in Western Europe and North America. Kenya therefore has the potential to improve cloud penetration. By doing so, the country will benefit from increasing returns to scale and unlock KES 1.4 trillion of additional economic value over the next decade (2023-2033), representing 0.56% of Kenya’s cumulative GDP. Kenya has ambitious plans to diversify their economies through digitization. However, unlocking the potential of cloud will require aggressive policy reforms to make public cloud available for all.