The Contribution of Cloud to Economic Growth

Focus on the United Arab Emirates

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TELECOM ADVISORY SERVICES LLC

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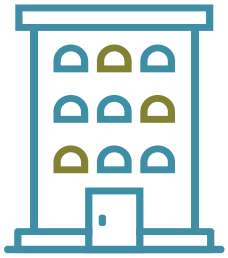
Impact of Public Cloud Adoption in the UAE

Organization level

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



Country level

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

Increased agility

Faster innovation

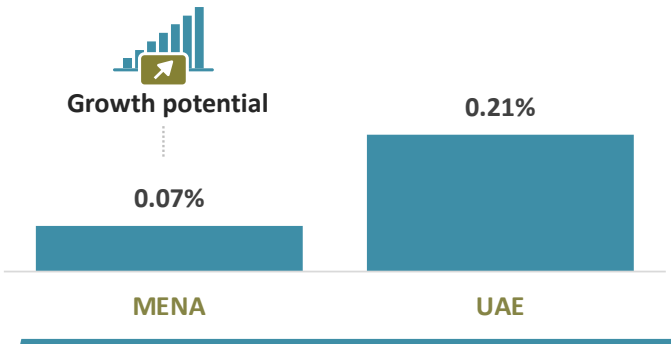
Cost savings

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



As an economic accelerator, cloud contribute to economy up to 17% more than broadband does.

Impact of Public Cloud Adoption in the UAE

Enabling Policies and Regulations

Promote adoption of cloud in public and private sectors.

43%

Cloud Adoption

43% of organizations in the UAE adopt cloud services vs **49% in Western Europe** and **North America**.

Impact on the UAE Economy

$9.5b

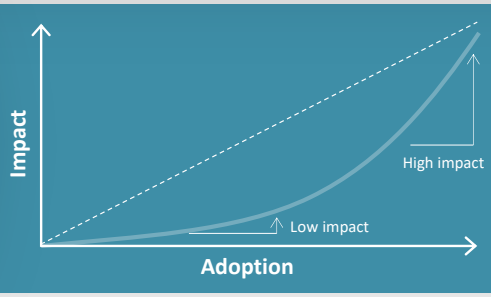
2021: 2.26% of the GDP
USD 9.5 billion economic value

$181b

By 2033: 2.5% of the cumulative GDP
USD 181 billion 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 the United Arab Emirates (UAE). The paper draws from broader research from Telecom Advisory Services on the impact of cloud adoption in the Middle East and North Africa (MENA) 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 the UAE added 2.26% to the GDP, amounting to USD 9.5 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 UAE public and private organizations.

In terms of spillovers, UAE is the MENA country where cloud adoption is driving the highest economic growth. We find that an increase of 1% in cloud adoption by UAE organizations will yield an average GDP increase of 0.21%, 3x more than the MENA average. As an economic accelerator, cloud in the UAE is 17% more powerful than mobile broadband.

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.

Forty-three percent of organizations in the UAE region adopted cloud computing in 2021, versus 49% in Western Europe and North America. The UAE therefore has the potential to improve cloud penetration. By doing so, the Emirates will benefit from increasing returns to scale and unlock USD 181 billion of additional economic value over the next decade (2023-2033), representing 2.5% of the UAE's cumulative GDP. The UAE have 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.