ITUInfographics

Cloud: The engine for digital transformation

What is it ?

Cloud computing or "the Cloud" is the delivery of on-demand computing resources—from data storage to applications and services—over the internet on a pay-as-you-go basis.

The use of Cloud computing for processing, transmitting, and storing data makes it significant for the provision of public and private services for countries at all levels of development.

While Cloud computing is not new in its essence as a technology, major technology advances have made Cloud computing more attractive, economically sustainable, relevant to many, and main stream.

Cloud services can be applied in a wide range of areas, including for new working styles, supply chain innovation and for government e-services such as education and healthcare.

It is
a service that can offer
- Communication
- Infrastructure
- Computing
- Data storage
- Network
- Platform
- Software

It is not
- Data centers
- Internet
- Web hosting
- Hosting and outsourcing IT services

Key characteristics

Cloud technologies, architecture and business models are evolving - the key characteristics, however, remain stable and define Cloud computing as a phenomenon.

Broad network access *Users can access physical and virtual resources from wherever they need to work*

Measured service *Pay as you go*

Multi-tenancy *Every customer enjoys own space over shared resources*

Rapid elasticity and scalability *Scale up or down quickly and easily to meet demand*

On-demand self-service *What you need, when you need it 24/7/365*

Resource pooling *Physical or virtual resources are aggregated and shared*

Opportunities

- Scalability
- Agility
- Mobility
- Cost reduction
- Efficiencies
- Innovation
- Smart apps
- Big data

Challenges

- Infrastructure and access
- Interoperability
- Jurisdiction
- Appropriate legislation
- Appropriate regulation
- Trust and privacy
- Awareness

Pillars of a cloud-savvy strategy

Infrastructure
Cloud requires robust infrastructure to provide reliable connectivity across devices and apps

Innovation
Cloud enables innovation at lower cost and greater scale

Skillsets
It is essential that people develop the relevant skills and knowledge to contribute to and fully benefit from Cloud

Trust
Cloud computing relies on the trust established between users, providers, and regulators

What's next ?

- Development of Cloud scenarios for new services and applications to fast-forward development towards the achievements of SDGs.
- Studies on topical issues such as big data, Internet of Things, Artificial Intelligence and intelligent storage solutions as well as cross-jurisdiction issues.
- Ongoing standardization work is looking at new Cloud services, trusted intercloud solutions and interoperability for the Cloud.
- Development of a framework for measuring cloud implementation and assessing countries' readiness to enable data-driven policy making.

Cloud is a valuable way for governments to deliver effective and efficient services to their constituencies

ITU and Cloud computing

At ITU, ITU-D Study Group 1 studies the policy and regulatory aspects of Cloud computing as part of the work of Question 3/1.

Also at ITU, the ITU's Telecommunication Standardization Sector (ITU-T) and the International Organization for Standardization's Joint Technical Committee for Information Technology (ISO/JTC1) are working on providing a set of standards and guidelines in support of cloud adoption: they are called ITU-T Y.3500 and Y.3600 series.

Cloud computing will lead the way to the digital future