

Collaboration for the future: Building a harmonized Infrastructure across the Caribbean Nations

The impact of cloud computing

Cloud computing has significantly reshaped how governments and commercial organizations utilize IT resources, emphasizing cost savings, agility, scalability, and enhanced service delivery. By shifting from traditional, capital-intensive IT infrastructure to cloud-based models, organizations can now access on-demand services, which are both flexible and efficient. This shift allows them to pay only for the resources they use, reducing the need for large-scale investment in rarely used infrastructure and enabling dynamic scaling based on actual demand (Nichols & Sprague, 2012). Cloud computing promotes innovation by allowing advanced technologies like AI and machine learning, often embedded in cloud platforms.



Giovanni King- CEO

This fosters faster data-driven decision-making and streamlined interagency collaboration, reducing silos and promoting integrated solutions across departments (Bleiberg & West, 2015). As the importance and relevance of cloud services and cloud service providers (CSPs) in society have grown, policymakers and regulators are looking for ways to benefit from this new technology while managing possible risks. As the Caribbean is strengthening its position as a region of economic growth and innovation, individual governments need to consider the potential of cloud computing and how we can use this technology to ensure data sovereignty and protect the data of our citizens and businesses.

Opportunities for economic growth

Cloud computing presents a wealth of opportunities for economic growth and collaboration among individual Caribbean states. The challenge lies in managing our cloud services to bolster our sovereignty and empower our governments to drive their individual and regional digital transformation. The solution? Harmonizing government policies and regulations to ensure interoperability and achieve a combined scale that will position the region as a formidable player in the global market. This necessitates a resilient and scalable electronic communications infrastructure that supports this goal and, more importantly, encourages governmental cooperation.

At the moment, many Caribbean governments still rely primarily on hyperscale cloud providers - Amazon (AWS), Microsoft (Azure), and Google (Google Cloud) - for their data and cloud needs. These three account for approximately 67% of the cloud infrastructure services market globally in Q2 of 2024 (Glanville, 2024).

Collaboration for the future: Building a harmonized Infrastructure across the Caribbean Nations

However, the dependency on these commercial, non-local cloud service providers has started to raise concerns in the Caribbean and worldwide. Governments are beginning to question the wisdom of using these providers as national data security and privacy concerns are becoming more assertive. Additionally, the increasing cost of these services - and the fact that these funds disappear into the bank accounts of foreign businesses instead of being used to invest in local tech initiatives - are reasons to look for alternatives.

Collaboration at a higher level: Your role in shaping the future of the Caribbean's digital economy

The question that looms large is: How do we create an electronic communications infrastructure that serves as the bedrock for the further development of a regional digital economy? The proposed electronic communication infrastructure is designed to meet the cloud needs of Caribbean nations. It offers the resilience, flexibility, and performance that are crucial for building a regional digital economy capable of supporting the digital economy of each Caribbean nation. The challenges are indeed significant, but there is always a way forward. The way forward is through collaboration at a much higher level, a level that we must strive to achieve.

Regional collaboration among Caribbean governments is crucial in supporting the development of a federated cloud solution. Let's focus on the following two key areas to make this vision a reality.

- 1.. Shared electronic communications infrastructure and resources
2. Standardization of policies and legislation

1. Shared electronic communications infrastructure and resources

Establishing an interconnected data center framework across the Caribbean, where member states contribute and share resources, enables cost-effective data storage and management infrastructure. This approach benefits from economies of scale and can reduce redundant investments across nations, as envisioned in the Caribbean Telecommunications Union's (CTU) Single ICT Space initiative (Cloudcarib, 2022).

2. Standardization of policies and legislation: A crucial step towards ensuring a smooth digital transformation

Harmonizing ICT policies, regulations, and data governance standards across the region would support smoother digital transformation and ensure compliance with shared security, privacy, and data handling protocols (Cloudcarib, 2022).

Collaboration for the future: Building a harmonized Infrastructure across the Caribbean Nations

The Caribbean Data Association (CDA) formation, in November 2023, was a pivotal milestone supporting this vision. Among other goals, the CDA seeks to create clusters of interconnected data centers in the Caribbean. Such a cluster opens important new capabilities, including mirroring data center workloads and data between two or more locations. This capability allows data centers in our region to offer enhanced resilience and redundancy, a crucial step towards our shared vision.

Working together to create harmonized cloud strategies

To strengthen the position of the Caribbean as a whole and decrease the dependency on hyperscalers, we will need more than everyone's data center's technical capabilities. Creating a Caribbean federated cloud will require joint, harmonized strategies and policies from all local governments for the cloud. This is the only way to ensure true data sovereignty and the safe and secure transfer, storage, and processing of our data. This means that the individual governments in the region need to come together and decide how the Caribbean will deal with critical cloud-related issues. What tasks and workloads do we want to run in the cloud? A full-cloud approach, where all tasks and workloads are run in the cloud, offers the benefits of scalability and cost-effectiveness.

However, a hybrid model - with some workloads running locally and others in the cloud - may be a better choice for specific applications or data types. According to our local legislation, what data can we store in other jurisdictions? How do we ensure we comply with privacy laws and regulations in the Caribbean and globally? The key is collaboration, which means being willing to work together and act as an integrated global region instead of individual small island nations. This way, it will not only be possible to get bigger and better deals from significant players in telecoms, hardware, software licensing, and other essential components of a modern regional IT infrastructure, but the Caribbean will become a significant player itself, opening the door for new market opportunities.

Let us do this!

As a region, we need to act more decisively. We have to make conscious decisions and choices about how to move forward and how we can best work together. Every nation should have a data center to support local governmental and business needs and act as a fully capable nexus in the wider Caribbean network. We also need to ensure that all islands have physical connections - submarine fiber optic cables - essential for the fast and secure transport of massive data.

Collaboration for the future: Building a harmonized Infrastructure across the Caribbean Nations

The CDA is already working hard to gain support from local data centers and individual governments. At the same time, CARICOM, the Organization of Eastern Caribbean States (OECS), is working to create and improve frameworks for the easy and safe exchange of information, goods, and services between these countries. We already have some excellent champions in different governments that use their influence to promote the ideas and goals of CARICOM, CTU, CANTO, CDA, and other regional organizations with the same objective. Until the required treaties and frameworks are in place, local organizations and players should already begin to demonstrate some of the great things we can expect from such a broader Caribbean approach, with proofs-of-concept of practical applications that will lead to a more substantial flywheel effect. As a region, we can achieve far greater success than any individual country can. It will take courage, determination, and willingness to collaborate, sometimes setting aside local preferences to favor a stronger whole. Let us come together and have the will to do this. In that case, the Caribbean can claim its place as a strong global player, both technologically and commercially.

As a region, we must commit to creating an ethos that can support a federated cloud infrastructure. We must focus on sovereignty, transparency, interoperability, and trust as a region. We must create a framework that provides standards and technology solutions to create secure, interconnected data spaces and enable trusted data exchanges across cloud providers. With such an approach, we can help regional entities build a federated cloud that integrates local and international providers, allowing them to offer cloud services that comply with local governance and secure against external risks. Key elements in this approach are Trust Framework and Compliance, Federation Services for Interoperability, Data Spaces for Sector-Specific Integration, Support of SMEs, and Innovation.

Works cited

Works Cited

- Bleiberg, J., & West, D. M. (2015, February 9). Analyzing the Federal Government's Use of the Cloud. Opgehaald van Brookings: <https://www.brookings.edu/articles/analyzing-the-federal-governments-use-of-the-cloud/>
- Cloudcarib. (2022, September 7). Cloud Carib and CTU Sign MOU supporting a Caribbean Single ICT Space. Opgehaald van <https://www.cloudcarib.com/2022/09/12/cloud-carib-and-ctu-sign-mou-in-support-of-a-caribbean-single-ict-space/>
- Glanville, G. (2024). AWS, Azure, and Google Cloud: Who's got the edge? Opgehaald van STL Partners: <https://stlpartners.com/research/aws-azure-and-google-cloud-whos-got-the-edge/>
- Nichols, K., & Sprague, K. (2012). How governments can get ahead in the cloud. McKinsey & Company.