Access Partnership

The Future of Banking: Adopting Cloud-Based Solutions in Latin America

An Access Partnership report commissioned by Salesforce
September 2021

Executive Summary

COVID-19 has accelerated the 'digital imperative' call of organizations, positioning digital technologies like cloud computing at the forefront of efforts to boost digital transformation.

Cloud computing is intertwined with everything we do — from remotely accessing files during pandemic-related lockdowns, to using on-demand streaming services or providing analytics for optimized banking solutions. In the financial sector, cloud services are increasingly enabling organizations to deliver better products and services to the benefit of consumers.[1] The flexible nature of cloud computing offers instant availability, resilience and security.

Cloud computing adoption in the banking industry continues to advance as organizations realize how critical this technology is to their business operations. As the Institute of International Finance (IIF) asserts, cloud adoption questions are not about '*if*, *but rather* , *how.*'[2]

The cloud computing market is poised for rapid growth in Latin America. According to the International Data Corporation (IDC), 75% of large regional enterprises will put a mechanism in place by early 2022 to shift to cloud-centric infrastructure and applications twice as fast as before the pandemic. IDC estimates that, of the projected $460 billion IT spending in the region from 2020 to 2023, 35% of it will be cloud-related.[3]

Cloud computing solutions could also advance financial inclusion in Latin America; cloud services can help the banking sector reduce costs and increase flexibility, allowing more citizens and companies that lack access to banking to make use of financial services.

However, significant steps need to be taken to harness the benefits of the cloud within the region's banking sector. In this report, Access Partnership articulates practical regulatory recommendations to achieve the uptake of cloud computing among banks, particularly by addressing common misconceptions and barriers. These include:

1. lack of information and/or poor understanding of how cloud computing works;
2. keeping up with regulatory trends and global best practices regarding sensitive data management;
3. ambiguity and lack of government endorsement;
4. increased public attention and new data governance regulations; and
5. insufficient connectivity infrastructure.

For financial institutions to reap the benefits of cloud technology, enabling policy frameworks and industry best practices must be implemented to build trust and a common understanding between the Financial Services Industry (FSI), regulators and end-users.

> *" Cloud adoption questions are not about 'if', but rather 'how' "*
>
> — The Institute of International Finance

[1] Cloud computing is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. Gartner says Four Trends are Shaping the Future of Public Cloud, Gartner (2021).

[2] Cloud Computing in the Financial Sector Part 1: An Essential Enabler, Institute of International Finance (2018).

[3] Worldwide IT Industry 2021 Predictions and Latin America Implications: Building Resiliency to Thrive in the Next Normal, IDC FutureScape 2021 (2020).

Realizing the Cloud Computing Potential for FSIs in Latin America

There is no denying it: the COVID-19 pandemic has accelerated the pace of digitalization across multiple industry verticals—including the tightly-regulated financial sector.[4] Financial institutions have adopted digital tools, including cloud computing services, to become more competitive and secure, and enhance their service offerings to address the needs of both local and global costumers. Traditional banking institutions are transitioning rapidly from legacy IT to cloud-based systems that incorporate many types of datasets; these systems are playing an essential role in keeping operations running smoothly and securely in the aftermath of pandemic-related lockdowns and the closure of many corporate headquarters. Meanwhile, FinTechs, which develop as cloud-native from the start, continue to flourish. IDC estimates that by 2022, **nearly 75% of enterprises in Latin America will shift to cloud-centric infrastructure and applications** – twice as fast as adoption rates prior to the pandemic.[5]

By adopting cloud computing, the banking sector can access multiple benefits. The technology allows for increased personalization, scalability, security, resiliency, and agility thanks to its capacity to easily manage massive datasets. For instance, cloud adoption will enable FSIs to deliver a hyper-personalized digital banking experience to help customers manage many types of daily financial transactions. In financial services, cloud computing not only **improves efficiency by up to 40%, but also reduces capital-intensive efforts and non-labor costs**, such as IT maintenance, operation expenses, and datacentres spending.[6] As a result, the banking sector can achieve enhanced speed-to-market and productivity, unlocking more resources and investment opportunities that support growth and innovation. IDC claims that the Latin American economy will remain on its digital path, generating a $460 billion spending on IT from 2020 to 2023 – **35% of which relates to the cloud.**

At a national scale, widespread deployment of cloud computing, particularly among Small and Medium Enterprises (SMEs), increases economy-wide innovation and competitiveness, playing an essential role in a vibrant digital economy. According to the Review of Business and Economic Literature, cloud adoption can generate 0.05% higher GDP growth in the short term and 0.3% higher GDP growth in the

Success Story: BCI

Chilean bank BCI adopted cloud-based solutions, resulting in a rise in customer satisfaction ratings from 3.9 to 4.5 out of 5. To optimally serve its customers, the bank is now managing accounts with personalized scope, automated sales processes and customer support services.

[4] According to the OECD, the financial sector is the set of institutions, instruments, and the regulatory framework that permit transactions to be made by incurring and settling debts; that is, by extending credit. The sector also encompasses technology providers, telecommunications operators, and any new company that helps or carries out activities in baking, insurance, and securities.

[5] Worldwide IT Industry 2021 Predictions and Latin America Implications: Building Resiliency to Thrive in the Next Normal, IDC FutureScape 2021 (2020).

[6] Next-gen Technology Transformation in Financial Services, McKinsey & Company (2020).

medium term.[7] In a similar vein, the Mexican Institute for Competitiveness (IMCO) estimates that six subsectors of the Mexican economy – including non-stock market financial and credit intermediation institutions– could save up to 0.16% of the Mexican GDP with increased adoption of cloud computing.[8]

Cloud computing solutions can drive financial inclusion. Its data processing capabilities allows cloud systems to make studied predictions, accepting potentially successful SMEs that would have otherwise been rejected for a lack of resources. Moreover, the solution should increase the flexibility of time-to-market, enabling financial institutions to bridge the accessibility gap, particularly among vulnerable populations. This could be particularly beneficial in Latin America, where 45% of adults do not have a bank account.[9] When linked with the rising mobile penetration rates (projected to reach 73% by 2025), the region has the opportunity to accelerate financial inclusion efforts with solutions like mobile banking, giving more people in Latin America the opportunity to enjoy of the benefits of being part of the banking system.[10] Against this backdrop, the **cloud market expansion in Latin America is expected to grow at a 23% compounded annual growth rate from 2019 to 2023.**[11]

Furthermore, cloud data centers represent a greener solution than on-premises IT infrastructure, as they are more energy-efficient, optimizing consumption with efficient cooling technology. IMCO estimates that the reduction of carbon emissions from Mexico's medium- and large-sized business sector, by migrating to the cloud, would be equivalent to removing 90,000 cars from circulation.[12]

Despite attractive regional prospects, Latin America faces important **constraints on the adoption of cloud technologies, as outlined in the following section**.[13] Consequently, national governments, financial companies and Cloud Service Providers (CSPs) in the region should work together to foster an enabling and safe environment for the widespread adoption of cloud solutions.

FSI Cloud Adoption in the Region Remains Challenging

Cloud computing has a remarkable potential to spur sustainable social and economic growth in Latin America; however, critical elements need to be addressed to unleash its full potential.

1. Lack of information, and/or poor understanding of how cloud computing works

There is often a lack of knowledge – and sometimes outright **misinformation – about cloud computing** or, more specifically, how the cloud might affect data security and privacy. This provokes hesitancy to use cloud-based tools and prevents governments from creating an optimal regulatory environment for

[7] The Economic Impact of Cloud Computing on Business Creation, Employment and Output in Europe. An application of the Endogenous Market Structures Approach to a GPT innovation, Federico Etro (2009).
[8] Non-stock market financial and credit intermediation institutions; retail trade in self-service and department stores; food industry; radio, television and other telecommunications; educational services and government activities. Cómputo en la Nube: Nuevo Detonador para la Competitividad de México. IMCO- Mexican Institute for Competitiveness (2011).
[9] The acceleration of financial inclusion during the COVID-19 pandemic: Bringing hidden opportunities to light, Mastercard (2021).
[10] Cloud Computing: Opportunities and Challenges for Sustainable Economic Development in Latin America and the Caribbean, IDB (2018). The Mobile Economy 2020, GSMA (2020).
[11] Cloud Computing in Latin America: Telco Cloud Offers, Best Practices and Market Opportunity, GlobalData (2020).
[12] Cómputo en la Nube: Nuevo Detonador para la Competitividad de México. IMCO- Mexican Institute of Competitiveness (2011).
[13] Size and technological complexity may translate into a variety of hurdles, including migration, management, integration challenges.

cloud adoption, negatively impacting uptake by the banking sector.[14] Migrating to the cloud entails a paradigm shift in how IT systems are procured and managed, as well as challenging legacy approaches to working. The **lack of information around these issues can easily lead to misconceptions about the technology and generate hesitancy regarding its use**. According to a recent Accenture survey that included the input of C-suite executives from banks in 17 countries, more than 40% of employees ranked "lack of cloud skills within the organization" as one of their top three barriers to cloud adoption.[15] For example, in Argentina, financial entities were slow in adopting the technology (despite the perceived advantages of cloud services) due to concerns over data security.[16]

Failure to create a clear and common understanding – among banks (adopters), sector regulators and end users – about the cloud, its impacts and benefits, and how to regulate it, constitutes a recipe for poor cloud adoption. This problem impacts the public sector disproportionally, whereby different government agencies have different – and sometimes contradictory – approaches to the technology, which in turn, generates **unclarity and inconsistency.**

The shift to the cloud also generates fear of organizational disruption. Cloud-using institutions need to adapt to new methods of managing IT, which impacts how regulators oversee the banking sector. According to an Inter-American Development Bank (IDB) expert, **cloud technologies force a change in the supervisory paradigm of financial institutions.** For instance, *ex-situ* supervision of cloud systems can be challenging or sow distrust among regulators, who are used to performing on-site examinations.

> *"Cloud technology forces a change in the supervisory paradigm of financial institutions."*
>
> — IDB Financial Innovation Expert

2. Keeping up with regulatory trends and global best practices regarding sensitive data management

Financial datasets are generally treated as sensitive. In addition to including crucial personal information that individuals may be wary about disclosing, sector-related **data may be subject to specific confidentiality obligations and heightened security requirements under contracts or regulations.**[17] Systems that manage financial data can also be treated as systemically or economically significant (e.g., Globally-Systematically Important Banks as defined by the Financial Stability Board) and therefore subject to performance and reliability standards.[18] These concerns lead to at least three distinct types of barriers to cloud adoption:

1) Consumers may lack trust that their data, when entrusted to digital and cloud-based systems by financial companies, will be adequately protected from misuse, abuse, or breaches;

[14] Cloud Computing: Opportunities and Challenges for Sustainable Economic Development in Latin America and the Caribbean, IDB (2018).
[15] Sky High Hopes: Navigating the Barriers to Maximizing Cloud Value, Accenture (2020).
[16] Cloud Computing: su aplicación en la banca privada argentina, Universidad Argentina de la Empresa (2014).
[17] Cloud Computing: Opportunities and Challenges for Sustainable Economic Development in Latin America and the Caribbean, IDB (2018).
[18] 2019 list of global systemically important banks (G-SIBs), Financial Stability Board (2019).

2) Businesses may lack trust in the CSP or may lack a clear understanding of data governance, service quality, and liability/accountability in the cloud; and
3) Regulators may lack confidence that data in the cloud can be stored according to security requirements or the know-how to handle complex situations (i.e., in case they must intervene on cross border transfers for a particular reason).

> *"CSPs make security part of their core business, ensuring strict levels of data protection and consumer trust."*
>
> — Tech Industry Expert

Regulatory responses to the third concern, in particular, may result in additional compliance requirements, such as **data localization rules and strict security regulations (for example on breach response protocols or regulatory pre-approvals).** As regulators do not see the infrastructure, it can be hard for them to trust the technology. Regulators worry that "agile" means companies have no responsibility. Similarly, banking institutions in many cases pre-emptively limit where and how they store and use certain types of data, anticipating concerns of regulators or believing that they would not be compliant, otherwise.[19]

In reality, roles and responsibilities remain clear and CSPs have effective physical and logistical security controls locked in. According to a tech industry expert interviewed for the report, **CSPs make security part of their core business, ensuring strict levels of data protection for consumer trust**.

3. Ambiguity and lack of government endorsement

Governments' stance on the cloud – including their silence – can have a powerful effect. If governments do not support cloud computing, FSIs will not be inclined to adopt such technologies. **Banking institutions may feel uncomfortable without a clear approval of a relevant government organization.** To this end, countries such as Argentina, Chile and Costa Rica have adopted cloud-first type policies, an approach that pursues digital transformation with cloud at the core.

Looking beyond the region, the Monetary Authority of Singapore (MAS) publicly recognizes that cloud services benefit the banking sector and help them improve the efficiency of their operations. MSA has pioneered the industry's digital transformation with the support of cloud services, establishing a Financial Innovation and Technology Group (FTIG) and publishing outsourcing guidelines for financial institutions. This sends a strong message to CSPs and financial companies considering cloud adoption.

Existing regulations carried out by Latin American financial regulators, often designed before cloud computing was widespread, can be ambiguous and contradict ways of managing cloud-based IT. However**, if regulators promote guidelines or establish clear definitions that, while encouraging the use of cloud, do not hamper their capabilities to monitor financial institutions, cloud adoption may thrive.** For example, Argentina's ONTI explicitly

[19] Financial Institutions Need to Pursue Their Own Path to the Cloud, BCG (2021).

Success Story: Argentina

Argentina's National Office of Information Technologies (ONTI) began implementing a "cloud first policy" after evaluating cases in regions including Europe. Point 3 of **ONTI's Technological Decalogue** issues guidelines and criteria for government entities that make use of cloud computing services. This framework validates best global practices and places technology at the core, from the set-up to maintenance.

states technical specifications, such as avoiding "vendor lock-in", or determining data locations (two in the Americas and one in Europe).

4. Increased public attention and new data governance regulations

The rise in use of data-driven solutions and cybercrime, as well as the economic impact of the pandemic, has increased pressure on governments around the world to enact comprehensive data protection laws and regulations. For instance, **many authorities in Latin America are currently revising or considering revamping existing data protection regulations.** For instance, Uruguay has ratified Convention 108+, while Argentina and Mexico have endorsed it.[20]

Additionally, the increase in cyberattacks also feeds into the uncertainty of government regulators. Protecting FSI consumers from cyberattacks plays a role in ensuring the soundness of the overall banking system. This is particularly relevant in a region where, from June 2019 to June 2020, ransomware attacks increased year-on-year by 108%.[21]

While we consider it positive that governments in the region are debating and legislating on data governance and cybersecurity matters, we are seeing, in some instances, hasty discussions not always backed by best practice. This increase the risk of divergent policies being enacted across the region that negatively impact the future of cloud adoption in Latin America. For example, burdensome initiatives and restrictions on cross-border transfer affect the prospects of using cloud services in financial services, hindering the ability of organizations in the sector to improve operations based on this technology. In the same vein, FinTech start-ups looking to service a domestic market may face restrictions if cross-border data transfers are barred.

5. Insufficient connectivity infrastructure.

Connectivity infrastructure, particularly high-speed broadband connectivity, is the backbone of digital transformation, yet not everyone has equal access. For example, broadband-quality internet connection and access to mobile connectivity are unevenly distributed in the region. **The full economic potential of cloud computing can only be leveraged with robust connectivity infrastructure, which in turn enables access to data storage, processing, and management.**

Latin American countries face challenges in expanding connectivity and Information and Communication Technology (ICT) infrastructure to lay the basic foundations for cloud adoption. In addition, regional differences in Internet access and a stark rural-urban divide also have an impact. For example**, while economies like Chile and Costa Rica**

[20] Convention 108+ is the European Union's legally-binding data protection treaty.

[21] Cybersecurity in the time of COVID-19 and the transition to cyberimmunity, CEPAL (2020).

claim 80% of Internet users as a share of the country's total population, the regional average is around 60-65%.[22] As such, the lack of available infrastructure makes it harder for the banking sector and its customers to effectively adopt cloud services. According to a tech industry specialist, "connectivity is the central element of the cloud strategy … the challenge relies on providing the necessary infrastructure so that large datacenters have less latency, greater redundancy … and multiple levels of availability".[23]

Looking Beyond: Considerations for the Financial Ecosystem

Based on the challenges explained above, we outline the following considerations for financial institutions, regulators and CSPs, as the region seeks to harness the benefits of digital technologies and fuel post-pandemic economic recovery.

1. **Clarity on how cloud adoption by the banking sector impacts obligations.** Regulators and the industry should work together to clarify policy around data governance (classification, localization, migration, and security), ensuring current regulations are fit for purpose. Setting out a clear process for banking institutions and CSPs to follow when entering outsourcing arrangements is crucial, as is establishing clear responsibilities for (and distinctions between) entities that control, process, or manage data. **The latter includes providing clarity and consistency within the several offices of the government regulator and FSIs.** This will allow financial institutions, CSPs and regulators to have a tangible direction and increased certainty on the implementation and auditing process when cloud is involved.
2. **Cloud First policies for FSIs.** Governments across the region should consider setting up cloud adoption strategies and policies (with clear definitions), as well as incentives for the use of cloud services among banking institutions. **Sending a solid message/definitive statement stating their support for the cloud provides incentives** for the use of these services among financial companies. Likewise, integrating outsourcing guidelines directly applicable to financial companies on cloud services is also important
3. **Comprehensive training programs to build cloud skills and talents.** Regulators, governments and CSPs should pursue opportunities for collaboration and provide training and other educational resources to foster maturity in key areas (e.g., privacy and security, data classification) for regulators and industry. **Trained personnel capable of understanding technical, identity and legal issues, as well as the need for collaboration among stakeholders, cultivates confidence** and enables the ecosystem to move faster to adopt cloud technology.
4. **Strengthening security conversations**. While regulators and industry tend to raise security as one of the main challenges for cloud adoption, recent studies have found that a well-designed cloud setup can protect against more security threats than a traditional IT setup**. Socializing with more intensity these findings can help counter security concerns**. This apprehension

[22] Internet users as share of the total population in countries in Latin America and the Caribbean as of January 2021, Statista (2021).

[23] Empresas consideran nube como estrategia para la transformación digital: IDC. Milenio (2021).

should be frankly discussed and dispelled. Financial companies, the industry and public officials should aim to work together to place data protection and security at the forefront.

5. **Multistakeholder alliances**. Platforms could be established between Latin American governments (new government units or task forces) and industry players **to coordinate cloud transition and share best practices that leverage security and innovation**. For instance, this could include reviewing and adopting globally tested practices that facilitate supervision and auditing without hampering controls and assurances on risk and security management.
6. **Regional regulatory harmonization.** Financial companies and financial regulators should consider **convening within neutral regional organizations to devise checklists and guidelines with harmonized requirements** and rules on topics such as data security, localization, classification, and migration frameworks to enable smoother adoption across jurisdictions. Likewise, regional cloud auditing standards could be agreed upon (and adopted across the region) for greater regulatory interoperability and trade facilitation. Requiring a periodic, certified audit to be conducted, rather than unlimited physical access, will simplify compliance and foster trust between the industry, CSPs, and regulators. Harmonization strategies can also include simplifying the regulatory process (i.e., avoiding regulatory approvals for each workload). This collaboration can also facilitate the alignment of local policies with international principles, such as the Basel Framework from the Basel Committee on Banking Supervision.[24]
7. **Improve access to connectivity and related resources. To effectively deploy cloud, it is necessary for the region to analyze how to invest in connectivity**, including high-quality broadband access systems. It will also be pivotal to achieve better mobile broadband access and create a marketplace where there are affordable ICT devices. Although not strictly specific to cloud computing for the financial services sector, improving access to connectivity and related resources is crucial to raising the digital literacy and readiness of Latin America, so its citizens can thrive in today's digital economy.

[24] The Basel Framework, BIS (2021).