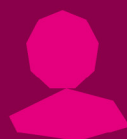


Challenges of Pix and Gov.br:

sovereignty, safety, and
inclusion of Brazilian Digital
Public Infrastructures (DPIs)



R\$



**instituto de defesa
de consumidores**

We are an independent organization that has been working for over 38 years to defend and promote the rights and interests of consumers.

We expose abuses, pressure authorities, and participate in the development of laws and public policies in pursuit of fair, healthy, and sustainable consumer relations across various sectors, including financial services and digital rights.

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Introduction: **Digital Public Infrastructures (DPIs) in Brazil**



Digitalization has become a structural element of contemporary societies. Governments, businesses, and citizens increasingly rely on digital systems to carry out everyday activities, from accessing public services to conducting economic transactions, and from interpersonal communication to managing social policies. In this context, the concept of **Digital Public Infrastructure (DPI)** has gained prominence in recent years.

To understand what Digital Public Infrastructures (DPIs) are, metaphors are often used to liken them to familiar systems such as highways, plumbing, or electrical grids. These comparisons generally help visualize the social function of these infrastructures, which provide access to public or private services on a large scale. However, given the development of various DPIs around the world, with differing governance models, implementation strategies, and user experiences, there is still no consensus on a consolidated definition of the term. It remains a contested concept, marked by differing interpretations of what characterizes these infrastructures and, especially, the meaning of the adjective “public.”

Nonetheless, regardless of the definition adopted, the central challenge has been to ensure that these systems—at various stages of development and implementation—are secure, reliable, guided by public interest, and compatible with the protection of human rights, particularly the rights to privacy and data protection.

The literature identifies three main categories of DPIs: 1) **Digital identity**, a system that enables **identification and authentication** to access public and private services; 2) **Digital payments**, represented by systems that connect banks, payment platforms, and apps, ensuring **instant financial transactions**; 3) **Data sharing**, a system that allows **verification and exchange of data** among citizens, governments, and businesses.

Brazil's journey toward developing what are now called DPIs intersects with the country's history of computational technology development, as Brazil has accumulated significant experience over the past decades in using digital systems to process citizens' personal data. Along this path, the country has even gained international recognition for implementing large-scale systems such as the **Gov.br** platform and **Pix**, examples of how the combination of technological innovation, state coordination, and social engagement can transform access to public services, financial system dynamics, and the exercise of citizenship.

Despite their achievements, the development of Brazilian DPIs is at different stages of evolution, raising critical questions and challenges:

- ➔ How can we ensure the universalization of DPIs in Brazil, considering disparities in internet access and connection quality, as well as low digital literacy among the population?
- ➔ What measures are being taken to ensure that people not only have access to DPIs but also know how to use them critically and safely?
- ➔ Given the flaws and biases in facial recognition that affect vulnerable groups, can DPIs truly be considered inclusive?
- ➔ Are there contingency plans and clear protocols for responding to cyberattacks that could cripple these infrastructures?
- ➔ What safeguards are being applied to prevent undue surveillance and abusive data use by public and private entities?
- ➔ How can we avoid technological dependence on major foreign providers that could compromise the sovereignty and safety of Brazilian DPIs?
- ➔ If the use of these technologies can be co-opted by private interests, where is the guarantee that they will serve the collective interest?

Concerned with the debates surrounding these questions, Idec's Telecommunications and Digital Rights Program has closely monitored the development of two Brazilian DPLs: Pix and Gov.br.

Gov.br is one of the main digital platforms for accessing public services and, in 2025, reached approximately 170 million registered users. Launched in 2019, this portal exemplifies Brazil's efforts to optimize the State-citizen relationship, aiming to make public services faster, more efficient, and more accessible. Through a Gov.br account, citizens can, for example, check social benefits, track legal proceedings, obtain documents such as the Digital Employment Record Book, renew passports, simulate retirement, file taxes, or participate in government programs. Gov.br is now a cornerstone of Brazil's digital transformation.

GOV.BR



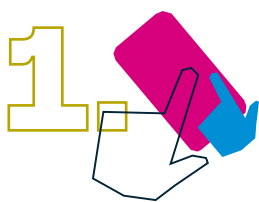
Pix is the country's primary method for making payments and transfers. Created and managed by the Central Bank of Brazil, Pix was launched at the end of 2020, allowing money transfers to be completed in seconds, operating 24 hours a day, 7 days a week. Unlike other countries, where similar solutions are private, Pix is a public digital infrastructure, free for individuals and integrated with virtually all banks and fintechs in the country. The impact of Pix is enormous: in 2024, it moved around R\$ 26.5 trillion (approx. US\$ 5.2 trillion) and, according to research, was used by 76.4% of the population. This widespread adoption has made Pix a driver of financial inclusion and the most used payment method in Brazil, surpassing debit cards, credit cards, and even cash in many everyday situations.

PIX



Based on studies of these systems and platforms, and through conversations with experts on the subject, we sought to formulate recommendations aimed at contributing to the improvement of these technologies, so that they are developed in a secure, inclusive, and reliable manner, maximizing social benefits without reproducing inequalities.

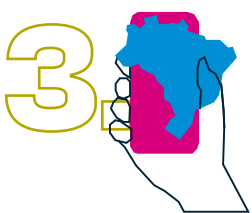
The research **“Challenges of Pix and Gov.br: sovereignty, safety, and inclusion of Brazilian Digital Public Infrastructures (DPIs)”** synthesizes the genealogy of these technologies while developing recommendations based on three analytical lenses:



Digital inclusion for all people: Guaranteeing the universal right to access and use digital technologies, without discrimination related to gender, age, race, disability, socioeconomic status, educational level, or geographic location. Guided by the concept of meaningful connectivity, we aim to ensure that all citizens have their rights respected in accessing services.



Safety, privacy, and data protection: ensuring that consumer privacy and data protection principles are used as fundamental requirements in the development of DPIs. Based on the concept of “privacy by design” and guided by concerns about safety, DPIs must prevent fraud, data leaks, undue surveillance, and service disruptions, and be capable of repairing damages.



Sovereignty and governance: ensuring that the development of these platforms prioritizes Brazilian digital sovereignty, breaking technological dependence on foreign corporations and combating the economic extraction of the country’s strategic data. Their operation must be aligned with the public interest, scientific autonomy, technological diversity, and national legislation, ensuring that Brazil controls and develops its own digital infrastructures, protects sensitive data, and strengthens its capacity for innovation to promote social well-being and address inequalities.

The Challenges of Brazilian DPIs ➔

Digital Public Infrastructures (DPIs) have emerged over the past decade as one of the most strategic fields in public policy formulation. As shared, secure, and interoperable digital systems oriented toward the public interest, DPIs have become the backbone of digital service delivery, access to rights, and the construction of sovereignty in the digital environment.

However, while they represent progress, Pix and Gov.br also expose central dilemmas in the field of digital public policy. The first is **digital inclusion**. In Brazil, access to digital services is still shaped by structural inequalities: income, education, territory, gender, and race determine who can fully benefit from innovations. Elderly people, rural populations, communities in the Legal Amazon, and low-income families remain at a disadvantage. Even with high internet penetration in the country, data shows that **meaningful connectivity is still low** for more than half of the population. In terms of public policy, this means that the advancement of DPIs cannot do without investments in network infrastructure, digital literacy, and inclusion strategies that encompass all people. The Balcão Gov.br (Gov.br service desk) program, which offers in-person assistance to users, is a concrete example of a state response to this challenge, but it remains a limited initiative given the scale of the problem.

Another important point concerns privacy and **personal data protection**. Brazil approved the General Data Protection Law (LGPD) in 2018, which established robust regulatory parameters. However, in practice, the accelerated growth of DPIs has revealed vulnerabilities: members of the payment system have already reported large-scale Pix key leaks, and consumers frequently suffer from **fraud and scams**; Gov.br, by centralizing multiple services and sensitive data, **has become a prime target for phishing schemes and social engineering**. This reinforces the need for a continuous safety strategy, based on “privacy by design” protocols and digital education campaigns for consumers. From a public policy perspective, safety must be considered not only a technical attribute but also a matter of accountability for the sectors involved, as part of a regulatory agenda that **ensures trust in the digital environment**.

Finally, the greatest political challenge lies in issues involving **sovereignty and governance**. Although Pix and Gov.br are conceived as public infrastructures, their operation and technological support still rely, in part, on **services and solutions from foreign companies**. The case of the “sovereign cloud,”

announced as a strategy to keep sensitive data under national jurisdiction, illustrates these tensions and attempts at resolution. In parallel, commercial disputes involving Pix (with the United States investigating its impact on American payment companies and considering trade barriers) demonstrate that DPIs are not merely technical tools but also geopolitical assets capable of influencing Brazil's position on the global stage.

Governance, in this sense, becomes a key word. The Pix Forum and Committees (such as the Central Data Governance Committee – CCGD and the Advisory Committee of the National Digital Government Strategy – CC-ENGD) are examples of bodies created to expand social and federative participation in the DPI debate, but they still need to advance in **transparency, diversity of voices**, and **accountability**. A robust digital infrastructure requires balancing technological efficiency with social oversight, to ensure that these infrastructures primarily serve the collective interest and are not co-opted by private interests or authoritarian logics.

Our Main Recommendations →

Below, we present Idec's recommendations for the improvement of Brazilian Digital Public Infrastructures (Gov.br and Pix), organized according to the thematic pillars of Digital Inclusion, Safety, Sovereignty, and Governance.

DIGITAL INCLUSION RECOMMENDATIONS



ASSUMPTION



Although legislation prohibits businesses from refusing cash payments (and both the Central Bank and Procon have warned against this abusive practice), the widespread use of Pix in recent years makes it necessary to ensure that users have a variety of payment methods available.

RECOMMENDATION



It is recommended to reinforce regulations and practices **that encourage commercial establishments to accept, without discrimination, different forms of payment, ensuring full inclusion and accessibility for all users.** Pix is a relevant alternative, but it must not be used as a justification to refuse other payment methods, especially cash.



ASSUMPTION



Users who lack internet access or digital devices are unable to use DPLs. More than 20 million Brazilians still do not have internet access, according to IBGE data (2025). There are significant challenges related to connectivity among the Brazilian population that should not hinder progress in financial inclusion.

RECOMMENDATION



To expand and facilitate access for users facing connectivity difficulties, **it is recommended to prioritize Pix Offline in Pix's development roadmap** as an essential measure to ensure full digital accessibility.



ASSUMPTION

Users still face barriers in accessing Gov.br, whether due to lack of biometric-compatible devices, potential non-recognition of racialized and trans faces, connectivity limitations, or low digital literacy. Balcão Gov.br exists in 66 cities (according to the platform's website as of Sept/2025), but there is still no clarity regarding its expansion plan.

RECOMMENDATION

- **Periodic publication of transparency reports detailing the expansion plan for the Balcão Gov.br**, including information about agencies not part of the traditional in-person citizen service network linked to public bodies or entities.
- Define a safety protocol for in-person service.

The **Balcão Gov.br** is an in-person service desk initiative designed to support Gov.br users. It targets citizens facing technological challenges, providing a more human-centered approach to assistance.

ASSUMPTION

Access to digital public services must be guaranteed even in contexts of **limited or nonexistent connectivity**.



RECOMMENDATION

To ensure full access to digital public services offered online through the Gov.br platform, it is essential that the State enables **access to these services offline**.

Educational campaigns about Gov.br

ASSUMPTION

Today, increasingly, accessing digital services requires proving—and authenticating—one's digital identity. In this context, it is essential that users understand how to protect this identity and that educational mechanisms are in place to clearly explain the topic.

RECOMMENDATION

Promote educational campaigns with practical guides to raise awareness among the target audience and support understanding of how to use government online services, including guidance on access functionality restricted to previously declared methods, as a way to ensure greater safety for the population.

SAFETY AND DATA PROTECTION RECOMMENDATIONS:



Guidelines for oversight of Pix Manuals

ASSUMPTION



Fraud cases are **handled unevenly** depending on the actions of institutions within the Pix arrangement. Despite the existence of the Pix Safety Manual, there is no evidence of oversight mechanisms implemented by the Central Bank, nor of its effective adoption by financial institutions.

RECOMMENDATION



Monitor the adoption of **communication guidelines between institutions and consumers** in cases of Pix fraud (via MED Self-Service and MED 2.0).

Enhancing Fraud Prevention and Enforcement on Gov.br

ASSUMPTION



Public trust in government digital platforms depends on the **perception of safety** and the **ability to respond to incidents**. There is no dedicated **support channel for fraud resolution for Gov.br users** nor is there a transparency channel that reports the volume of fraud cases.

RECOMMENDATION



1. Prevention Campaigns: The government should carry out systematic campaigns about fraud on Gov.br and issue alerts to prevent risky practices.

2. Detection of Atypical Activity: Prioritize the development of tools for mapping atypical activity and behavioral biometrics that identify suspicious behavior patterns, issuing alerts to users about potential risks and thereby strengthening the safety of access to Gov.br. **These technologies must be implemented with citizen privacy safeguards and should generate intelligence for producing reports that identify common patterns of scams and fraud.**

3. Support: Create a dedicated channel for resolving issues related to scams and fraud for users.

4. Enforcement: Improve oversight and enforcement mechanisms to combat fraud on Gov.br.

Improvements to Pix Operations: Mistaken Pix Transfers

ASSUMPTION

In cases where a Pix transfer is **made in error**, there is no institutional pathway available for consumers to recover the funds.

RECOMMENDATION

- ➔ Design a **standardized process to be adopted by institutions for resolving user errors** when making Pix transfers.
- ➔ Guide institutions on which data may be disclosed to help identify the recipient.

Improvements to MED (Special Refund Mechanism)

ASSUMPTION

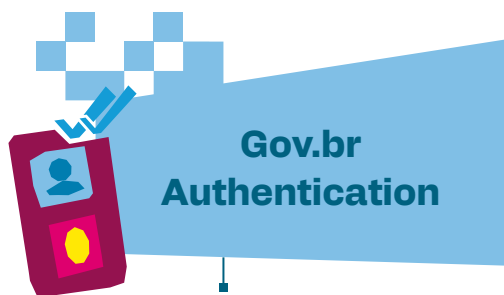
Safety must be ensured from the design phase of Pix technology with standardized problem-resolution requirements to make it easier for users to understand. Currently, there is no regulation guaranteeing full reimbursement in fraud cases, even when MED (Special Refund Mechanism) is used, which weakens consumer protection.

RECOMMENDATIONS

- ➔ Ensure the **expansion of MED 2.0 refunds** to cover **all transaction amounts**, since the current minimum threshold is R\$200, but 75% of Pix transactions are below this value.
- ➔ Create a MED 2.0 Monitoring Committee.
- ➔ Monitor MED requests for amounts below R\$200 to generate evidence that may support lowering this threshold in MED 2.0 applications.
- ➔ In confirmed fraud cases, ensure full reimbursement to victims, following the refund model adopted in the United Kingdom, where victims are reimbursed within five business days. In this model, the refund is split between the institutions involved in the fraud: 50% is covered by the receiving financial institution and 50% by the paying institution.
- ➔ Evaluate the possibility of adjusting the MED-Fraud terminology to facilitate consumer understanding of the feature.

It is a Pix mechanism created to receive and record cases of fraud as well as operational failures. Once a ticket is raised in the MED system, the financial institutions involved begin implementing the appropriate procedures aimed at reimbursing the claimants.

Recent data show that the number of reimbursement requests through MED nearly doubled in 2024 compared to 2023, rising from about 2.5 million to approximately 4.95 million requests. However, only around 9% of those were accepted, either in full or partially, mainly because the current version of the mechanism can only trace and block funds that remain in the first receiving account. In most cases, the stolen money has already been transferred or withdrawn, leaving no available balance for recovery. Between January and July 2024, the Central Bank reimbursed approximately US\$ 63 million for fraud cases and about US\$ 6.6 million for operational failures.



ASSUMPTION



Authentication mechanisms must be secure, accessible, and **respectful of the diverse identities** and conditions of the population.

RECOMMENDATION



1. **Alternatives to facial recognition:** Ensure mechanisms for initial access, validation, and elevation of safety levels that do not involve facial recognition, offering alternative options for citizens.
2. Encourage and develop campaigns to increase the use of two-factor authentication on Gov.br, promoting greater safety for users.
3. Establish a central governance body to review and approve the level of authentication required for each service, based on the risk and sensitivity of the data or operations involved, avoiding excesses and ensuring consistency.

ASSUMPTION



The lack of **transparency** about institutions with **high fraud rates** hinders preventive action and informed decision-making by users. Naming and disclosing these institutions could create incentives for improvements in resolution rates. This information would help consumers choose which institution to contract for using Pix.

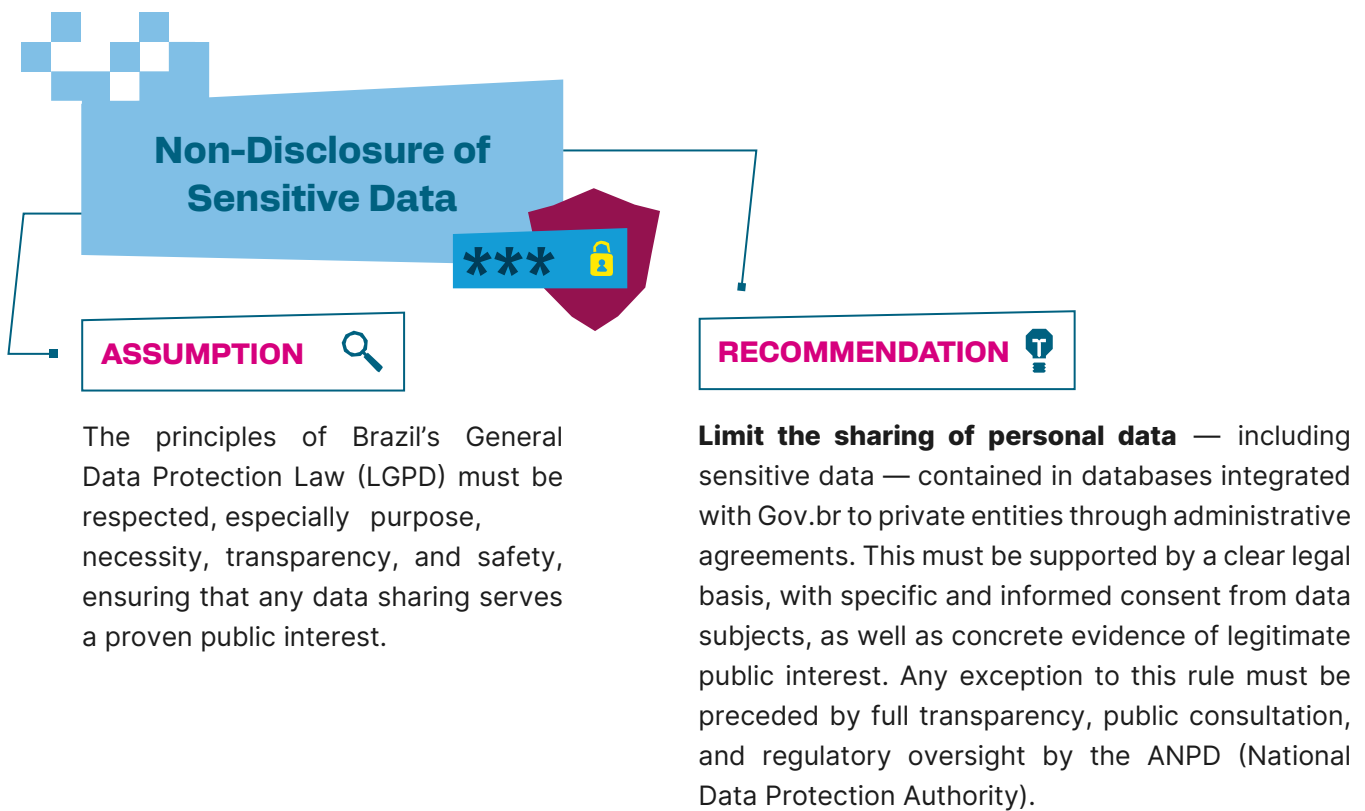
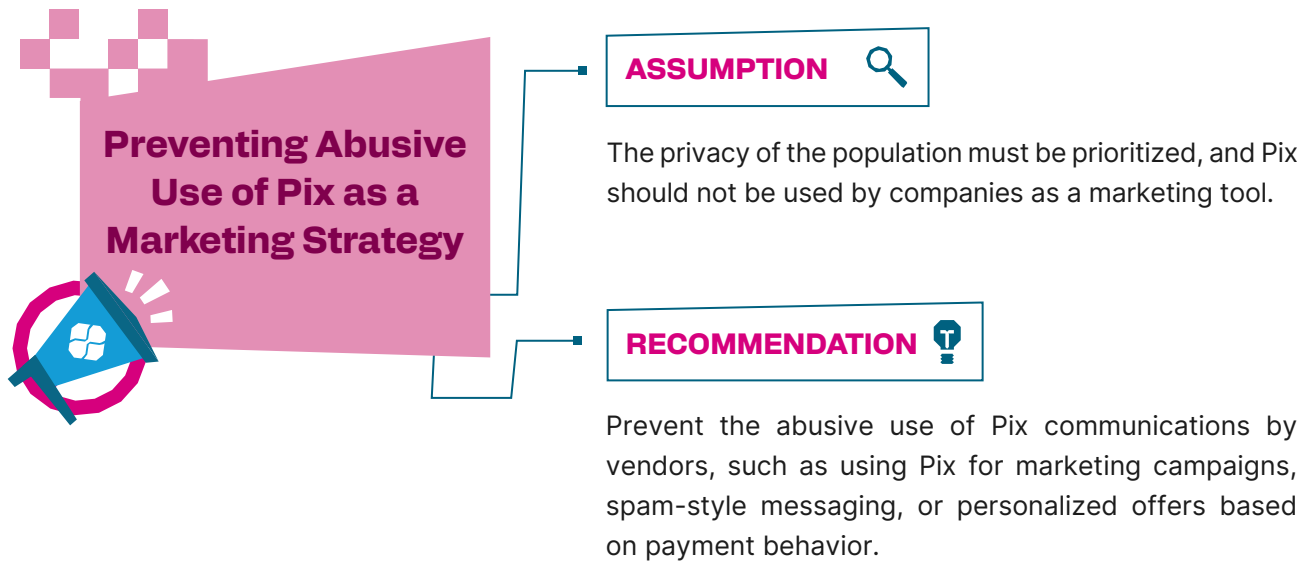


RECOMMENDATION



Establish a Ranking of Financial Institutions with High Rates of Fraudulent Accounts. The registry should include indicators such as those provided in MED 2.0:

- a. **Confirmed fraud rate** per transaction;
- b. **Suspected fraud rate**, considering the ratio between analyzed infraction reports and the volume of received transactions;
- c. **Infraction report rejection rate**, indicating ineffective use of MED by the receiving institution;
- d. **Participation in fraud**, measured by the proportion of infraction reports accepted by the participant relative to the total number of accepted reports in Pix;
- e. **Improper blocking rate**, reflecting the value of blocked funds in rejected reports relative to the total analyzed;
- f. **Other relevant indicators** to be defined by the Central Bank of Brazil, based on technical and scientific evidence.



SOVEREIGNTY AND GOVERNANCE RECOMMENDATIONS



Governance of the Pix Forum - Expanded Civil Society Participation

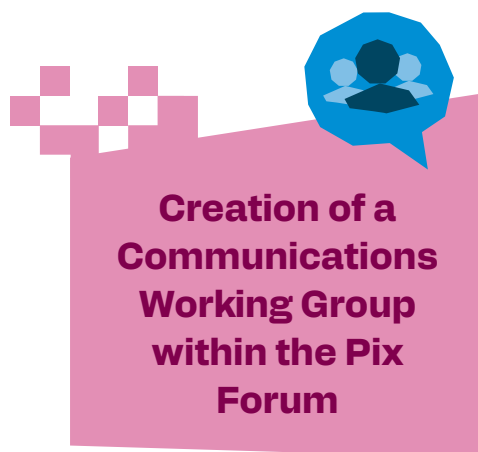
ASSUMPTION

The Pix Forum has **low representation from civil society organizations, including consumer protection** and digital rights groups. This limits the diversity of perspectives and may compromise more inclusive and balanced decision-making.

RECOMMENDATION

The Pix Forum was designed to foster a multistakeholder space focused on developing and improving the instant payments system. According to the Central Bank, it is a governance environment aimed to support this agency in its role towards the operating policies regarding Pix ecosystem.

- ➔ Encourage the **participation and engagement of more consumer protection organizations**, as well as **digital rights advocacy groups**, to ensure a plurality of civil society actors—actively inviting these entities to join the Pix Forum.
- ➔ Recommend that Pix's development roadmap be submitted to public consultation, ensuring the opportunity to discuss the prioritization of features to be developed.



Creation of a Communications Working Group within the Pix Forum

ASSUMPTION

Public trust is a major factor that can either promote or hinder the use of DPs. **Misinformation** and lack of understanding about the financial impacts of new features (such as Pix Installments) can further complicate this scenario.

RECOMMENDATION

It is recommended to establish a **Communications and Outreach Working Group for the Pix Agenda**, within the Pix Forum, which would be responsible for:

1. Defining communication and risk guidelines as new features are introduced.

2. Developing strategies to combat misinformation that could undermine public trust in Pix.

3. Specifying opportunities, key considerations, and risks associated with each feature, contributing to regulatory efforts by the Central Bank.

ASSUMPTION

Publishing documents and making them publicly available can provide stakeholders with greater **insight into decision-making** processes and promote increased **transparency** for the population.

Conduct research to improve the evidence base

RECOMMENDATION

In addition to the relevant data periodically published on Pix statistics, it is recommended to regularly release a Pix Management Report, enabling monitoring of investments made, infrastructure maintenance costs, and anti-fraud actions, among other aspects.

Improving mechanisms for social participation: public access and institutional efforts

ASSUMPTION

There is a lack of clarity regarding **civil society participation guidelines**. Although governance is conducted through the Pix Forum, there is no balance between the private sector, civil society organizations, and other government bodies that could contribute to and expand the debate.

RECOMMENDATION

- ➔ It is recommended that the Central Bank create **mechanisms that encourage innovation within the Pix system**, beyond its internal staff or formal discussions within the Pix Forum. Examples include support for civil society initiatives such as hackathons, open innovation labs, including those focused on fraud prevention.
- ➔ **Clear and public guidelines for broad participation** in the Pix Forum, with defined requirements and responsibilities.
- ➔ **Public disclosure** of members, working groups, contributions, and strategic documents.
- ➔ **Secretariat model** with rotating coordinators and/or increased participation from the Central Bank.



ASSUMPTION



The construction and management of digital public infrastructures must involve **transparency** and **citizen participation**.

RECOMMENDATION



- ➔ **Establish clear and public guidelines for broad participation**, with defined requirements and responsibilities.
- ➔ Create **participatory governance** mechanisms that include representatives from civil society organizations and end users, ensuring that seats are not occupied by Productive Civil Society (business associations), in order to guarantee that decisions about the system are informed by diverse perspectives.
- ➔ Define guidelines for diversity among participating organizations, ensuring representation from all five regions of the country.

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information on the
research, visit:**



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