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DREX:

Digital Currency or Infrastructure for the Tokenized Economy?



Advancing Trust

Through Innovation, Governance & Education

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Author's Message

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Let's Talk About Drex

As an innovation enthusiast and someone deeply passionate about the evolution of Brazil's financial system, I had the privilege of following yet another landmark initiative led by the Central Bank of Brazil.

The project was originally introduced as the "**Real Digital**" and, shortly before the end of the Central Bank's previous administration, was renamed **Drex** by then President Roberto Campos Neto. The new name represented far more than a branding exercise; it marked the beginning of a new chapter in the discussion about the future of Brazil's financial infrastructure.

I must admit that this remains one of the most intellectually **challenging** topics I have encountered throughout my career. This White Paper does not seek to provide definitive answers or exhaustive technical explanations. Instead, its purpose is to offer a clear, practical, and accessible perspective on the fundamental concepts behind Drex, bringing together lessons learned throughout the project, recent research, and reflections that continue to emerge as the initiative evolves.

As you read, you will notice that the same questions appear repeatedly: **What exactly is Drex? Is it a new form of money? A technology platform? Infrastructure for digital assets? Or perhaps all of the above?**

Depending on whom you ask, the answer may differ, and that, in itself, makes the discussion particularly fascinating.

Rather than simply following the development of a new technology, we are witnessing the construction of a **new layer of Brazil's financial infrastructure**.

Just as happened with Pix and Open Finance, the full impact of Drex will likely unfold over the coming years as new use cases mature and the ecosystem continues to evolve.

I hope this paper helps make the discussion more accessible, encourages new perspectives, and most importantly, inspires even more questions.

Because when it comes to innovation, the best answers often begin with the right questions.

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Executive Summary

Drex has become one of the most significant initiatives in Brazil's financial innovation agenda. Yet few topics generate such diverse interpretations.

Some describe Drex as a **Central Bank Digital Currency** (CBDC), while others view it as **infrastructure for tokenized assets**, **a platform for smart contracts**, or even **the next evolution of Brazil's financial architecture.**

These different perspectives demonstrate that Drex is far more than a technological innovation. Understanding its true purpose requires looking beyond simplified definitions.

This White Paper examines **Drex's evolution** from its original conception as the “Real Digital” to the various phases of the Central Bank of Brazil's pilot program. It introduces the key concepts underpinning the initiative, explores its architecture, reviews the primary use cases under development, and discusses the technological, regulatory, and governance challenges surrounding its implementation.

Rather than providing a purely technical analysis, this paper offers a **strategic perspective on Drex's potential role in the evolution of Brazil's digital economy**.

Topics such as asset tokenization, smart contracts, privacy, interoperability, the role of private-sector participants, and emerging business models are analyzed through the broader lens of financial infrastructure transformation and the opportunities it may unlock.

This study is not intended to deliver definitive conclusions. Instead, it aims to contribute to an ongoing discussion that will continue evolving over the coming years.

Understanding Drex is not simply about understanding a new technology, it is about exploring how Brazil's financial infrastructure may evolve and what opportunities that transformation could create for citizens, businesses, and the broader financial ecosystem.

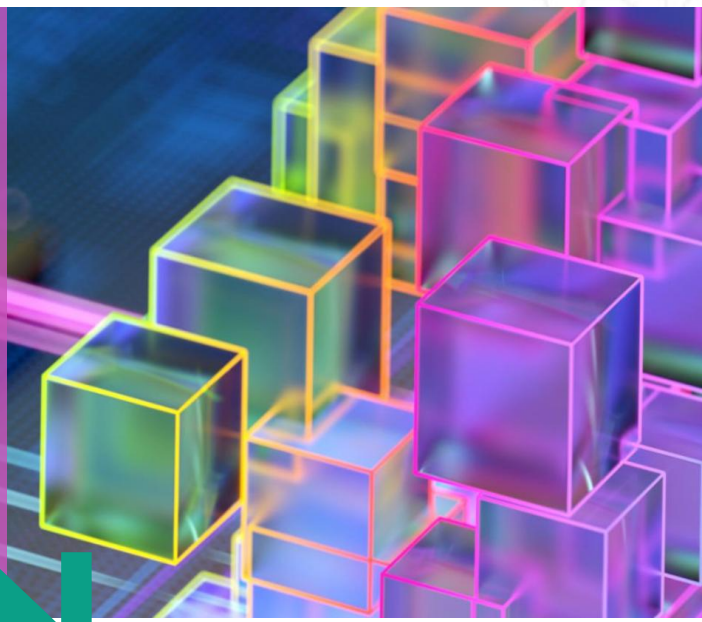
Why Talk About Drex Now?

Over the past few years, the financial industry has become increasingly familiar with concepts such as **smart contracts, digital assets, tokenization, digital currencies, blockchain, distributed ledger technology (DLT), and central bank digital currencies (CBDCs)**. These terms frequently appear in discussions about innovation, yet they are often difficult to understand for those who do not work in this field every day.

Although these concepts may seem unrelated, they all represent different dimensions of the same transformation: **the digitalization of financial infrastructure and the search for more efficient, secure, and programmable ways to represent, transfer, and exchange money, assets, and rights.**

Before exploring Drex's role within this new landscape, it is worth demystifying some of these concepts. After all, understanding the language is the first step toward understanding the transformation.

More than simply introducing new terminology, these concepts represent a profound shift in paradigm. Money is no longer viewed solely as a means of payment. It is becoming part of a programmable digital infrastructure capable of connecting people, assets, contracts, and financial services.



Essential Glossary for Understanding Drex

Key concepts explained in a simple and practical way.

Digital Asset	A digital representation of an asset, right, or item of value that can be stored, transferred, or traded electronically. *Source: Bank for International Settlements (BIS)*
Token	A digital record that represents an asset, a right, or a unit of value within a digital platform. *Source: Federal Reserve*
Tokenization	The process of converting a physical or financial asset into a digital representation (token), enabling it to be traded, transferred, and automated within a digital environment. *Source: Bank for International Settlements (BIS)*
Smart Contract	Software that automatically executes predefined rules once specified conditions are met, without requiring manual intervention. *Source: JPMorgan*
Blockchain	A technology that records transactions in a sequence of linked blocks, providing traceability and data integrity. *Source: JPMorgan*
DLT (Distributed Ledger Technology)	A technology that enables records to be shared and synchronized across multiple participants or nodes. *Source: Bank for International Settlements (BIS)*
CBDC (Central Bank Digital Currency)	A digital form of sovereign currency issued by a central bank. *Source: Bank for International Settlements (BIS)*
Sovereign Currency	The official currency issued and backed by a country's central bank, serving as the national unit of account and medium of exchange. *Source: Bank for International Settlements (BIS)*
Programmability	The ability to embed automated rules into money, assets, or transactions through software. *Source: Global Government Finance*
Interoperability	The ability of different systems and platforms to communicate and transact seamlessly with one another. *Source: Bank for International Settlements (BIS)*

If Pix Solved Instant Payments, What Gap Is Drex Designed to Fill?

Drex has evolved significantly since its original conception as the “Real Digital”. The pilot program has advanced, new use cases have been introduced, and important technical discussions continue to be led by the Central Bank of Brazil in collaboration with financial institutions, technology companies, and other ecosystem participants.

Even so, several fundamental questions remain unanswered. This should not be viewed as a weakness of the project. Rather, it reflects the natural evolution of an innovative initiative being developed collaboratively and continuously refined.

Throughout the preparation of this White Paper, one question surfaced more frequently than any other in conversations with specialists, pilot participants, financial institutions, and professionals following Drex's evolution: If Pix solved instant payments, what problem is Drex intended to solve?

Interestingly, despite the importance of the initiative, there is no single answer. **Depending on whom you ask, the explanations vary considerably.**

- ✓ Some view Drex as the **natural evolution of Brazil's financial infrastructure**.
- ✓ Others emphasize its ability **to tokenize assets and automate transactions through smart contracts**.
- ✓ Some see it as **a platform capable of enabling an entirely new ecosystem of financial services and innovation**.
- ✓ Others highlight **gains in operational efficiency, programmable settlement, cost reduction, or the emergence of entirely new business models**.

All of these perspectives are valid. Yet none of them alone seems sufficient to explain the project's full scope. Perhaps that is because Drex was never designed to solve just one problem. Its true purpose may be to **create an infrastructure capable of solving many problems in fundamentally different ways**.

Rather than closing the discussion, this perspective leads to an even more important question: **What exactly is Drex?**

Drex: Currency, Platform, or Infrastructure?

One of the greatest challenges in understanding Drex lies in the way it has been presented.

Depending on the source, it may be described as: a digital currency, a Central Bank Digital Currency (CBDC), a platform for digital assets, infrastructure for smart contracts, or a new environment for delivering financial services.

Each of these descriptions appears, at different stages, in the official communications issued by the Central Bank of Brazil throughout the project's evolution. This does not indicate inconsistency. Instead, it reflects how the understanding of Drex itself has matured over time.

When discussions first began in 2020, the primary focus was the possibility of issuing a Central Bank Digital Currency (CBDC), naturally inviting comparisons with similar initiatives around the world.

As research progressed, particularly through the LIFT Challenge and the Drex Pilot, the discussion expanded beyond the concept of digital currency to include tokenization, smart contracts, digital assets, and programmable settlement.

Today, it may be more accurate to understand **Drex as a new layer of Brazil's financial architecture built upon central bank money**.

This distinction may appear subtle, but it fundamentally changes how the project should be understood.

If the discussion focuses solely on the currency, the central question becomes:

"Why do we need a “Real Digital” if Pix already exists?"

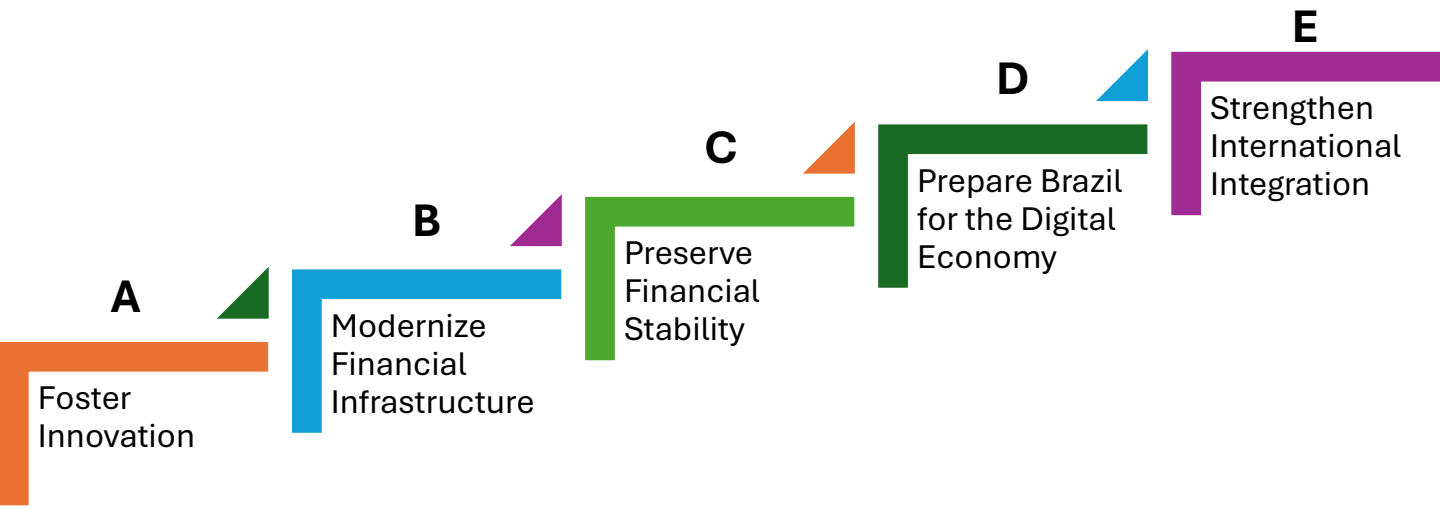
But if the focus shifts to infrastructure, a much broader question emerges:

"What new markets, services, and business models become possible with this new infrastructure?"

The Role of the Central Bank

Since publishing its first guidelines in 2021, the Central Bank of Brazil has made it clear that **Drex should not be viewed as a standalone initiative**. Instead, it is part of a broader strategy to modernize Brazil's financial infrastructure, aligned with the BC# Agenda and with similar transformations taking place around the world.

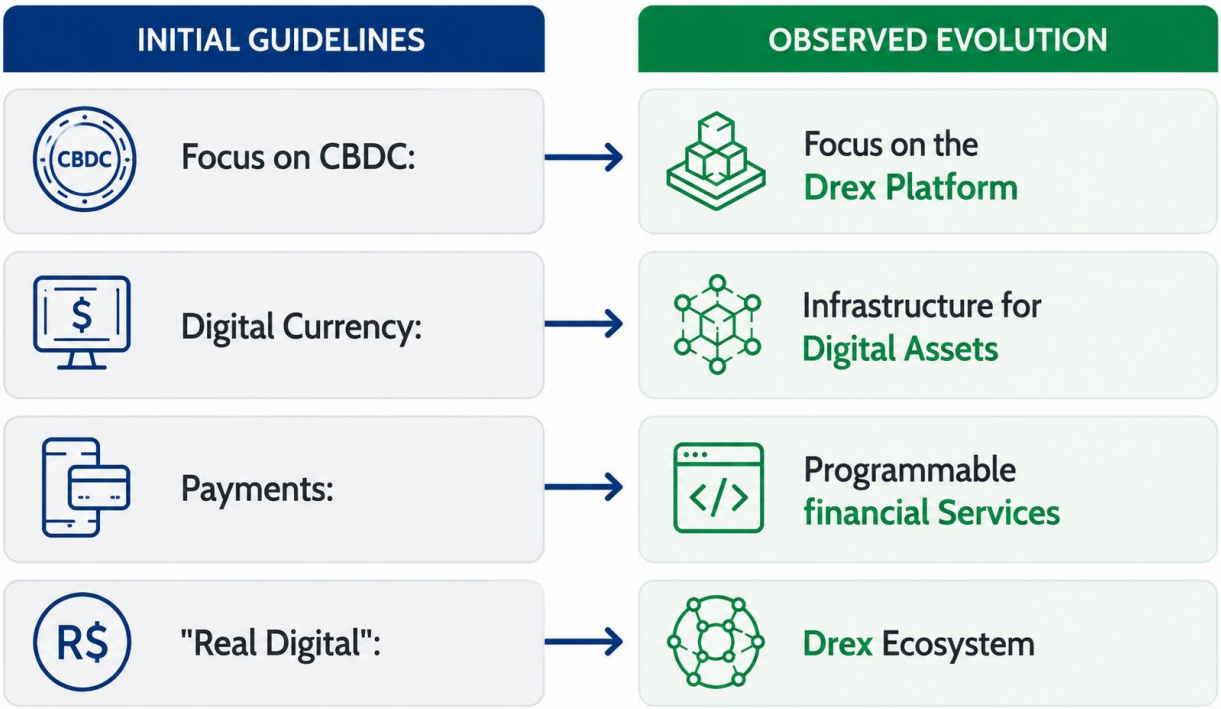
An analysis of the Central Bank's strategic guidelines issued between 2021 and 2023 reveals five overarching objectives.



A	**Create an infrastructure capable of supporting smart contracts, programmable money, and new business models based on digital assets.**
B	**Provide a standardized environment for settling transactions involving digital assets with high levels of security, interoperability, and automation.**
C	**Ensure that innovation takes place within a regulated environment, keeping central bank money at the core of transaction settlement.**
D	**Enable citizens, businesses, and financial institutions to build innovative digital services on a shared infrastructure.**
E	**Establish an architecture compatible with international initiatives, supporting interoperability and paving the way for future cross-border payments.**

The Role of the Central Bank (Continued)

What Changed Between 2021 and 2023?



Over the past few years, the Central Bank of Brazil has played an unusual role compared with many financial markets around the world. **Beyond its traditional regulatory responsibilities, it has become one of the country's primary catalysts for financial innovation.**

This naturally raises an important question: **How long will the market continue responding to the regulator's initiatives instead of leading the next wave of transformation?**

Perhaps the true success of Drex will not be measured by the sophistication of the technology or by the number of pilot use cases. Instead, it may be measured by the moment when **banks, fintechs, technology companies, and the broader financial ecosystem begin using this infrastructure as the foundation for creating solutions** that today are not even part of the regulatory agenda.

Drex, Pix, and Open Finance: Complementary Agendas

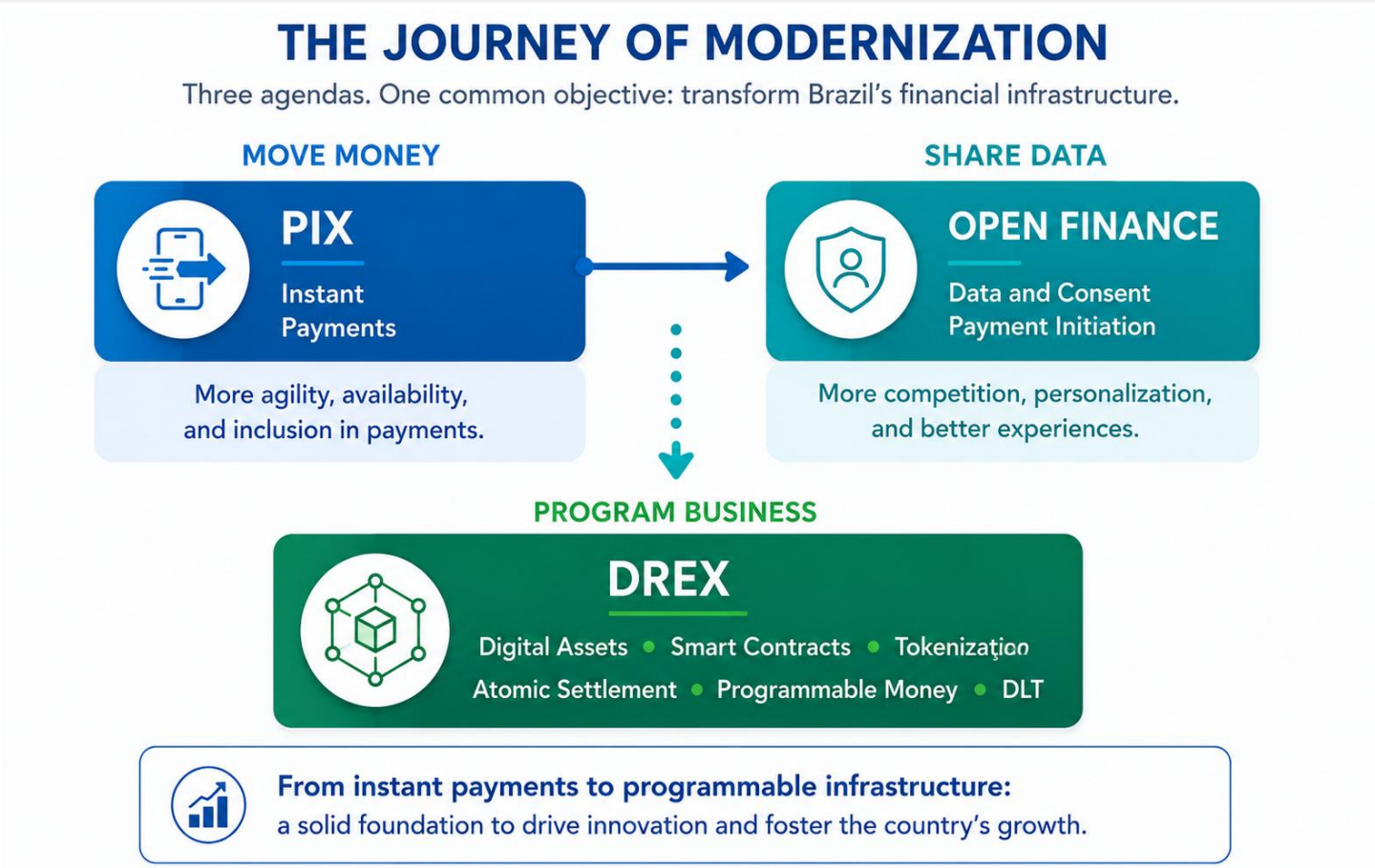
Over the past several years, the Central Bank of Brazil has led one of the most significant transformations of the country's financial infrastructure.

Although Pix, Open Finance, and Drex are often presented as separate initiatives, they can be understood as different stages of a single modernization strategy for Brazil's financial system.

Each initiative was created to address a distinct challenge. Despite their different purposes, they share common principles: increasing efficiency, promoting competition, encouraging innovation, strengthening security, and creating new economic opportunities.

Together, they have built complementary layers of Brazil's financial architecture.

Users experience Pix when making an instant payment. They experience Open Finance when securely sharing financial data to access products and services. Drex, however, may be different.



Unlike the previous initiatives, its infrastructure is likely to remain largely invisible to end users while enabling entirely new forms of financial interaction behind the scenes. From this perspective, Drex does not replace Pix, just as Pix did not replace Open Finance. Each initiative operates at a different layer of the financial infrastructure, complementing rather than competing with one another.

Complementary Agendas (Continued)

If Drex achieves its objectives, there is a strong possibility that most users will never even realize they are using the **Drex Platform**.

Instead, it will operate as an invisible infrastructure layer, enabling increasingly complex transactions to occur automatically, securely, and seamlessly.

Viewed from this perspective, the Central Bank's initiatives can be interpreted as successive stages of the same modernization journey.

- **First, money could move instantly.**
- **Then, financial data could be shared securely and in a standardized manner.**
- **Now, the objective is to create an infrastructure capable of enabling the programmable movement of money, digital assets, rights, and contracts.**

This progression suggests that Drex does not replace either Pix or Open Finance. Rather, it represents the next stage in Brazil's financial modernization agenda.

"I had the privilege of contributing to each of these three initiatives at different moments. Looking back, it is difficult to see them as isolated projects. To me, they represent successive chapters of a single transformation of Brazil's financial infrastructure.“

Carolina Sansão M. Alexandrino

Lessons Learned from Phase 1

The Drex Pilot was designed to go far beyond validating a new technology.

Its primary objective was **to assess the feasibility of an infrastructure capable of supporting digital assets, smart contracts, and programmable settlement while preserving the high standards of security, privacy, and financial stability** that characterize Brazil's financial system.

Throughout Phase 1, financial institutions, technology companies, and the Central Bank worked collaboratively to test different architectural models, interoperability mechanisms, and use cases.

Beyond validating technical assumptions, the pilot generated valuable lessons that helped shape the evolution of the project.

Technology Is Only the Starting Point

The pilot demonstrated that the technology required to support digital assets, smart contracts, and programmable settlement already exists.
The challenge is no longer purely technological.
It now lies in building a platform capable of meeting market demands with security, scalability, interoperability, and sound governance.

Use Cases Create More Value Than Technology

Infrastructure alone does not transform markets. The true value of Drex will depend on its ability to solve real-world problems for citizens, businesses, and financial institutions by enabling services that are currently too complex, too costly, or simply impossible.
Perhaps the most significant shift throughout the pilot was that the discussion moved away from: "Which technology should we use?“ toward: "Which problems are truly worth solving?"

Privacy Emerged as One of the Greatest Challenges

As smart contracts and digital assets were tested, it became increasingly clear that preserving user privacy, while maintaining regulatory oversight, financial supervision, and anti-financial-crime controls, would become one of the Drex Platform's greatest challenges.

Lessons Learned from Phase 1 (Continued)

The Five Pillars of a Programmable Financial Infrastructure

The success of Drex depends on balancing **five essential attributes**. Strengthening one of them often requires architectural decisions that directly affect the others.

Achieving the right balance is what ultimately makes the infrastructure resilient, secure, and future-ready.

1. DECENTRALIZATION

A distributed infrastructure enhances system resilience, reduces dependency on a single participant, and expands the ecosystem's capacity for innovation.



5. SECURITY

Within financial markets, security is more than a technical requirement, it is a non-negotiable principle. The infrastructure must remain resilient against cyberattacks, fraud, operational failures, and systemic risks while preserving transaction integrity, service continuity, and, above all, trust across the ecosystem.

2. PROGRAMMABILITY

Smart contracts automate business rules, integrate digital assets, and enable financial services that previously depended on manual processes or multiple validation steps, significantly increasing innovation and operational efficiency.

4. SCALABILITY

A national infrastructure must process large transaction volumes with low latency, high availability, and consistent performance, even as adoption grows and additional use cases are incorporated.
Scalability is not simply about processing more transactions.
It is about doing so without compromising efficiency, costs, or user experience.

3. PRIVACY

The infrastructure must protect user information and confidential data while complying with Brazilian law and preserving the ability of regulators to conduct supervision and enforce anti-money laundering (AML), counter-terrorist financing (CTF), and other regulatory requirements.

The challenge is not to maximize a single attribute, but to build an infrastructure capable of **balancing**, simultaneously, **decentralization, programmability, privacy, scalability**, and **security**.

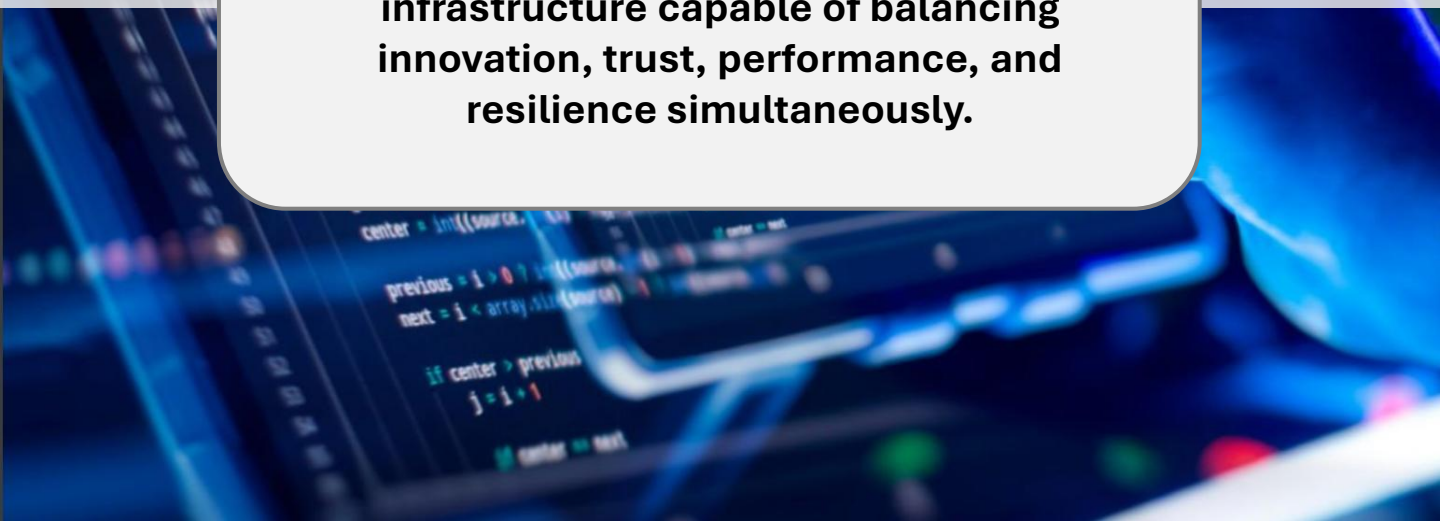
Lessons Learned from Phase 1 (Continued)

Perhaps the most important lesson from Phase 1 was **recognizing that building a programmable financial infrastructure requires balancing attributes that often compete with one another**.

- Greater **programmability** generally increases the complexity of **privacy and security**.
- Greater **decentralization** can introduce additional **governance challenges**, increase coordination requirements among participants, and make performance optimization more complex.
- Likewise, **improving scalability without compromising security, privacy, or operational efficiency** remains a permanent challenge for any national financial infrastructure.

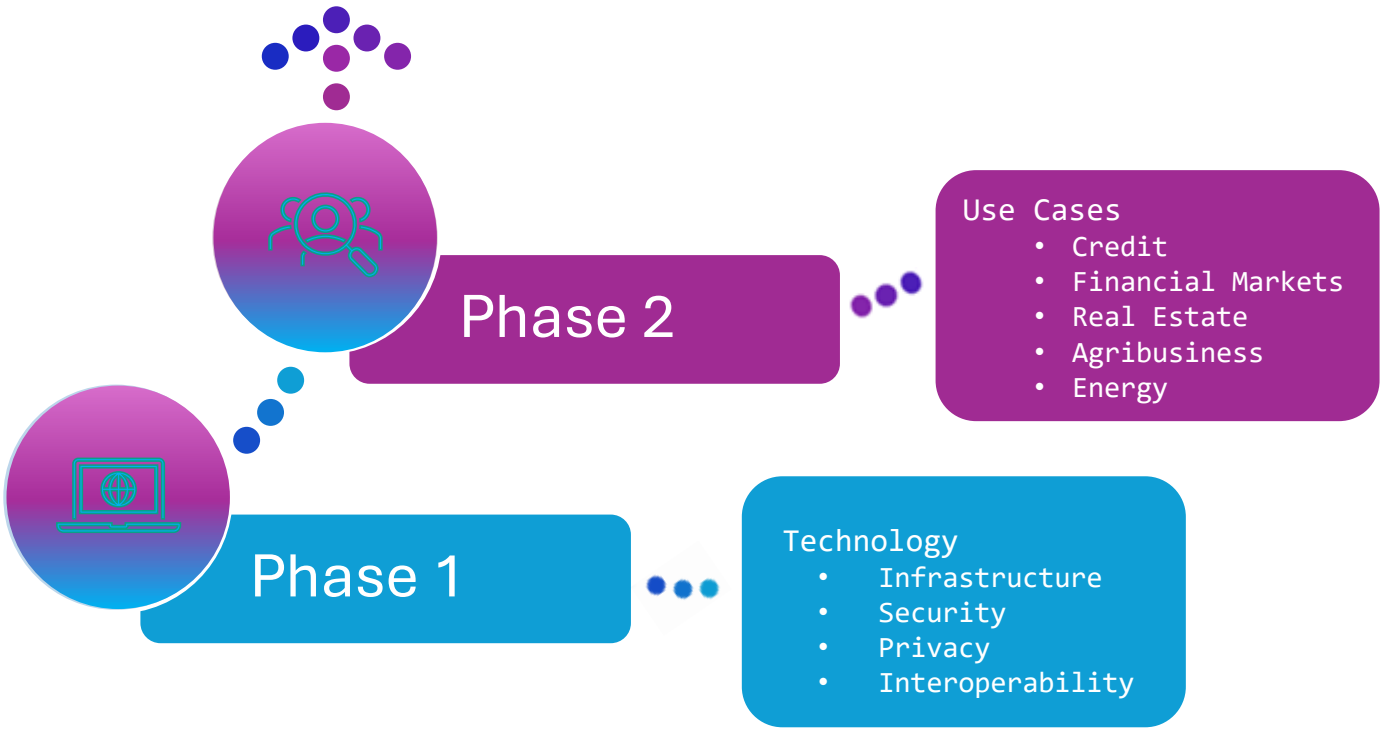
Finding the right balance between **decentralization, programmability, privacy, scalability, and security** continues to be one of Drex's greatest challenges and will likely become one of the key factors determining the platform's long-term success.

Ultimately, the goal is not to maximize a single attribute. It is to build an infrastructure capable of balancing innovation, trust, performance, and resilience simultaneously.



From Technology to Business: The Focus of Phase 2

The evolution of the Drex Pilot marked an important shift in the direction of the project.



This transition represents a natural evolution. Infrastructure creates value only when it **solves real problems, simplifies processes, reduces costs, and enables business models** that were previously impractical or economically unfeasible.

That principle guided the selection of the new Phase 2 use cases. Rather than **testing technology** for its own sake, the Central Bank **encouraged initiatives capable of demonstrating tangible benefits across multiple sectors of the economy through smart contracts, digital assets, and programmable settlement.**

Phase 2 therefore moved beyond technology validation. Its objective became **understanding how an infrastructure built around digital assets can transform the way money, assets, and contracts interact**.

Phase 2 (Continued)

Major Categories of Phase 2 Use Cases

The selected projects address different market needs, but they all share a common objective: making complex transactions simpler, safer, and more automated.

🏛️ **Financial Markets & Capital Markets**

Tokenization, trading, and settlement of government securities, certificates of deposit (CDs), bank credit notes (CCBs), corporate bonds, receivables, and other financial instruments.

✓ Greater efficiency, liquidity, and lower operational risk

🛡️ **Credit & Collateral**

Collateralized lending backed by certificates of deposit (CDs), government securities, and other tokenized assets.

✓ Greater efficiency in the creation, sharing, and enforcement of collateral

🌎 💱 **International Trade & Foreign Exchange**

Trade Finance and optimization of foreign exchange (FX) operations.

✓ Greater integration among documents, assets, payments, and financial settlement

🏠 **Vehicles & Real Estate**

Purchase and sale with the simultaneous transfer of funds, ownership, and registry records.

✓ Reduced settlement risk between payment and asset transfer

🌾 **Agribusiness**

Agribusiness receivables, Rural Product Certificates (CPRs), and agricultural assets

✓ Greater liquidity, traceability, and operational efficiency

⚡ **Digital & Environmental Assets**

Assets on public blockchain networks and decarbonization credits (CBIOs).

✓ Greater automation, transparency, and interoperability across different infrastructures

Note: The 13 themes selected by the Central Bank have been grouped here according to their economic and operational characteristics.

Phase 2 (Continued)

One aspect stands out when analyzing these use cases: very few are designed to replace processes that already function efficiently.



Instead, they focus on transactions that require the simultaneous coordination of multiple participants, registries, assets, and financial resources. These are precisely the scenarios where tokenization, smart contracts, and programmable settlement have the greatest potential to create value.

What Do These Use Cases Have in Common?

Although they belong to different industries, all these use cases share the same underlying challenge: coordinating multiple events simultaneously while ensuring that every stage of a transaction occurs securely, automatically, and in a synchronized manner.

In other words, the Drex infrastructure is designed to enable money, assets, and contracts to "communicate" with one another, reducing intermediaries, increasing transaction predictability, and lowering risks for all participants.

Reflections

After analyzing the Phase 2 use cases, I no longer ask, **"What is Drex for?"** Instead, the more relevant question becomes: **“What new transactions become possible when money, assets, and contracts interact within the same digital infrastructure?”**

This shift in perspective reflects the evolution of the project itself. While early discussions focused primarily on the concept of a central bank digital currency, Phase 2 demonstrates that Drex's true potential lies in the common infrastructure it provides for building entirely new financial services.

Drex was not designed for a single market. Its purpose is to provide a shared infrastructure capable of supporting multiple business models and digital assets while maintaining common principles of security, interoperability, and programmable settlement.



Tokenization: Promise or Real Need?

Few concepts have gained as much attention in recent years as tokenization. It has become a central theme in discussions surrounding Drex, Web3, digital assets, and modern financial infrastructure. Yet one important question remains: Are we addressing a genuine market need, or simply looking for problems that tokenization can solve?

Tokenizing an asset means creating a digital representation of a physical asset, financial instrument, or legal right within an infrastructure that enables automated issuance, transfer, trading, and settlement.

However, digitizing an asset alone creates little value.

The real benefits emerge when tokenization: reduces costs, removes unnecessary intermediaries, simplifies complex processes, or enables business models that were previously impractical.

The conversation therefore moves beyond "**What can we tokenize**?" toward a far more strategic question: "**What actually makes sense to tokenize?**" Not every asset needs to be tokenized.

But some markets may be fundamentally transformed by this capability. Tokenization should never be viewed as an objective in itself. It should be the consequence of solving a real business problem.

If discussions around tokenization continue to focus on practical market challenges and increasingly involve **regulators, industry associations, academia, and the public sector** the ecosystem will likely become much more effective at identifying **opportunities** that generate genuine economic value.

The Role of Banks and Private-Sector Participants

Although Drex is an initiative led by the Central Bank of Brazil, its success will ultimately depend on the ecosystem's ability to innovate, collaborate, and create value

The Central Bank is responsible for building the infrastructure. The market is responsible for creating value.

Just as Pix demonstrated, infrastructure alone does not transform markets.

Banks, fintechs, financial market infrastructures, technology companies, exchanges, registries, and many other participants will ultimately create the products, services, and customer experiences that bring this innovation to citizens and businesses.

Although Drex is led by the Central Bank of Brazil, its long-term success will ultimately depend on the ecosystem's ability to innovate, collaborate, and transform this infrastructure into scalable solutions that deliver measurable value. Achieving this will require coordinated action, clear priorities, and the execution of end-to-end initiatives capable of moving beyond isolated experiments toward broad market adoption.

The Central Bank of Brazil has played a leading role in advancing the country's financial modernization agenda.

Over the past few years, initiatives such as Pix, Open Finance, and Drex have demonstrated that the regulator has done more than simply keep pace with innovation, it has actively helped drive it.

Yet the next stage of this transformation may depend less on the regulator and more on the ecosystem's ability to organize, collaborate, and innovate collectively.

Today, meaningful contributions are emerging from multiple fronts. Industry associations, financial institutions, technology companies, universities, research centers, and independent experts are producing research, fostering debate, and developing initiatives related to Drex.

However, these efforts still occur largely in a decentralized manner. This raises an important question.

The evolution of the tokenized economy will likely require permanent coordination mechanisms that bring together regulators, financial institutions, technology companies, academia, and other ecosystem participants.

In this context, multidisciplinary forums and collaborative initiatives can play a critical role in consolidating knowledge, discussing common standards, and accelerating the maturation of new use cases.

An environment capable of bringing together diverse stakeholders, consolidating lessons learned, developing hypotheses, anticipating trends, and formulating proposals could make a meaningful contribution to the evolution of the ecosystem while complementing the work led by the Central Bank.

Perhaps the next major milestone in Brazil's financial innovation agenda will depend not only on new regulation, but also on the market's willingness to assume a more active leadership role in shaping the future it seeks to build.

Innovation reaches maturity when it is no longer driven by a single institution but co-created by an entire ecosystem.

That may well be Drex's greatest challenge in the years ahead.



Key Risks: Privacy, Governance, Cost, Adoption, and Complexity

The development and implementation of Drex reveal five fundamental challenges.



None of them is purely technological. Instead, they all stem from the need to coordinate a highly interconnected financial ecosystem.

Although technologies such as Zero-Knowledge Proofs (ZKPs) and permissioned distributed ledgers offer promising approaches to privacy and governance, technology alone is insufficient without proper alignment of incentives among participants. Privacy and governance represent the most immediate challenges during the pilot phase. Cost, adoption, and complexity, however, will determine the platform's long-term sustainability.

Ultimately, overcoming these barriers depends less on developing new technology and more on establishing: robust institutional arrangements, sustainable business models for private-sector participants, and user experiences capable of making the tokenized economy broadly accessible.

Governance in a Multi-Stakeholder Ecosystem

One of the most important conclusions emerging from Drex's evolution is that its success will depend less on the underlying technology and far more on the ability to coordinate an ecosystem composed of multiple institutions, markets, and regulators.

Unlike traditional financial systems, where a single regulator often oversees most participants, the tokenization of assets significantly expands the number of stakeholders involved. Real estate, vehicles, government securities, receivables, investment fund units, agricultural assets, and many other asset classes belong to different markets, each with its own regulatory framework, registries, and governance structure.

In this context, the challenge is no longer purely technological, it becomes institutional.

Shared Governance



A platform capable of supporting multiple classes of digital assets requires shared governance across a broad range of participants.

Beyond the Central Bank, regulators, registries, notaries, financial institutions, custodians, fintechs, and infrastructure providers all assume complementary roles within the same ecosystem.

Although this significantly increases operational complexity, it also creates the conditions for entirely new business models to emerge on top of a shared infrastructure.

Programmability expands opportunities but it also expands responsibilities.

The ability of smart contracts to execute financial events automatically represents a major step forward for the financial system.

Governance Challenges (Continued)



Innovation will no longer depend solely on technology. It will depend on the quality of governance.

An ecosystem capable of enabling entirely new business models represents one of the most significant paradigm shifts introduced by Drex.

Rather than building a platform designed to solve every market problem, the objective becomes creating an open infrastructure on which different participants can develop solutions tailored to specific needs.

Within this model, innovation becomes decentralized while preserving common principles of interoperability, trust, and coordination.

The Key Questions That Remain Open

Drex has evolved significantly since its origins as "Real Digital." The pilots have advanced, new use cases have been introduced, and the underlying architecture has matured.

Yet the fact that many of the most important questions remain unanswered is not a weakness. On the contrary, it is a natural characteristic of infrastructures capable of transforming entire markets.



1. Will citizens even realize they are using Drex?
2. Which use cases will achieve meaningful scale?
3. Will the market lead innovation, or continue following the regulator?
4. How should Drex's success ultimately be measured?

The Decisions That Will Shape the Future

ECONOMY

Will Drex democratize access to new markets?
Will stablecoins and CBDCs coexist?

MARKETS

Will tokenization become a competitive differentiator?
How will public and private infrastructures coexist?

REGULATION

Will legal frameworks evolve at the pace of innovation?
How can innovation and consumer protection remain balanced?

INFRASTRUCTURE

How will different countries make their infrastructures interoperable?
How will international standards evolve?

The Real Transformation

Perhaps the most important question is not about Drex itself...



Are we building a new way to represent money...

or a new way to organize the digital economy?

Many of these questions will likely remain unanswered for years.

Others will become clearer as the project evolves. And most likely, entirely new questions will emerge as the technology matures and use cases that are unimaginable today become reality.

Rather than simply introducing a new technology, Drex invites us to rethink concepts that have remained largely unchanged for decades, money, ownership, settlement, custody, trust, intermediation, and even the role of financial institutions in an increasingly digital and programmable economy.

Just as happened during the early years of the Internet, we are still trying to understand a transformation whose full impact will probably only become apparent once it is no longer viewed as an innovation but instead becomes an almost invisible part of everyday life for citizens and businesses.

If that trajectory is confirmed, Drex's greatest legacy will likely not be the creation of a digital currency.

Its most important contribution may be the development of a new financial architecture capable of enabling entirely new markets, business models, and forms of economic interaction that we cannot yet fully envision.

In the end, asking the right questions may prove more valuable than having all the answers.

After all, meaningful innovation has always begun with the courage to question what seems already established.

Perspectives on the Evolution of Drex

The results achieved so far suggest that the discussion around Drex is gradually shifting from technological feasibility toward the business models that can be built on top of this infrastructure.

Rather than simply creating a digital currency, the initiative is evolving into an enabling platform for new financial instruments capable of expanding market liquidity, reducing the cost of credit, and unlocking the economic potential of assets that today remain largely underutilized.

Collateral Tokenization

Among the various use cases discussed throughout the Drex project, collateral tokenization stands out as one of the applications with the greatest transformative potential.

A significant portion of the assets held by individuals and businesses remains economically underutilized, either because of the operational challenges involved in using them as collateral or because of the complexity of registration, validation, and information-sharing processes across multiple institutions.

An interoperable infrastructure could allow certain assets to be pledged temporarily as collateral across multiple transactions while preserving ownership and significantly expanding their economic utility.

Lower Credit Spreads

The use of more efficient collateral has the potential to generate meaningful improvements in credit markets.

The higher the quality, liquidity, and verifiability of the collateral, the lower the perceived risk of the underlying transaction.

As a result, financing costs could decline for both individuals and businesses, benefiting the financial ecosystem as a whole.

New Markets

The opportunities extend far beyond the assets traditionally used as collateral.

Future receivables, pension-related credits, credit rights, partially paid real estate assets, agricultural assets, and many other asset classes may support new financing models that are still emerging.

Ultimately, the greatest value of this infrastructure may lie not in the digital representation of existing assets, but in enabling entirely new markets that are not yet economically viable.

Perspectives on the Evolution of Drex

Throughout the discussions surrounding Drex, one conclusion has become increasingly clear: **The Central Bank's role is not to develop all of these products.** Its mission is to build **a secure, interoperable, and standardized infrastructure** capable of enabling financial institutions and market participants to develop innovative solutions on top of a common foundation.

The true value of this infrastructure will emerge as the ecosystem begins transforming it into products, services, and business models that solve real-world problems. As with Pix, the greatest innovation will likely not reside in the infrastructure itself, but in everything that will be built upon it.

A New Layer of the Financial System

If this vision materializes, **Drex** may become one of the foundational layers of Brazil's next generation of financial infrastructure. Its long-term impact will be measured not only by technological achievements, but by its **ability to foster innovation, expand access to financial services, improve market efficiency, and create new economic opportunities.**



The most successful infrastructures are often those that become almost invisible. Their value lies not in being noticed, but in quietly enabling entirely new ways for markets to operate.



About the Author



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- Carolina Sansão M. Alexandrino has **28 years of experience** in Information Technology, Digital Transformation, and Project Management, including more than two decades dedicated to the financial sector.
- She is a **Co-creator of Pix** and actively participated in the development of major initiatives led by the Central Bank of Brazil, including Open Finance and Drex, Brazil's central bank digital currency initiative.
- Her areas of expertise include **financial innovation, instant payments, cybersecurity, governance, and financial market infrastructure**, with significant experience in nationally relevant projects.
- She is the **Founder of the ClearFi Institute**, an initiative dedicated to producing research, analysis, and thought leadership on innovation, trust, and financial transformation.
- Carolina **currently lives in the United States**, where she follows the evolution of the U.S. financial market and develops comparative studies on global payment and financial services ecosystems.

About ClearFi Institute

ClearFi Institute is an independent initiative dedicated to producing research, white papers, and analysis on payments, financial innovation, governance, cybersecurity, and digital transformation. Its purpose is to contribute to the technical and strategic debate on the evolution of the financial system.

