DIGITAL REALTY

# The Executive Guide to Intelligent Infrastructure for **Financial Services**

**Industry Guide**

# Contents



# Foreword

## Your moment to transform has arrived

**The financial services industry is entering a new era - one defined by real-time operations, data-driven intelligence, and accelerating regulatory and competitive pressures.** Meeting these demands will require more than incremental upgrades. It calls for a modern digital foundation - one that brings data, applications, and partners closer together. It needs to deliver the performance and resilience required for AI and provide the compliance, sustainability, and global reach you depend on.

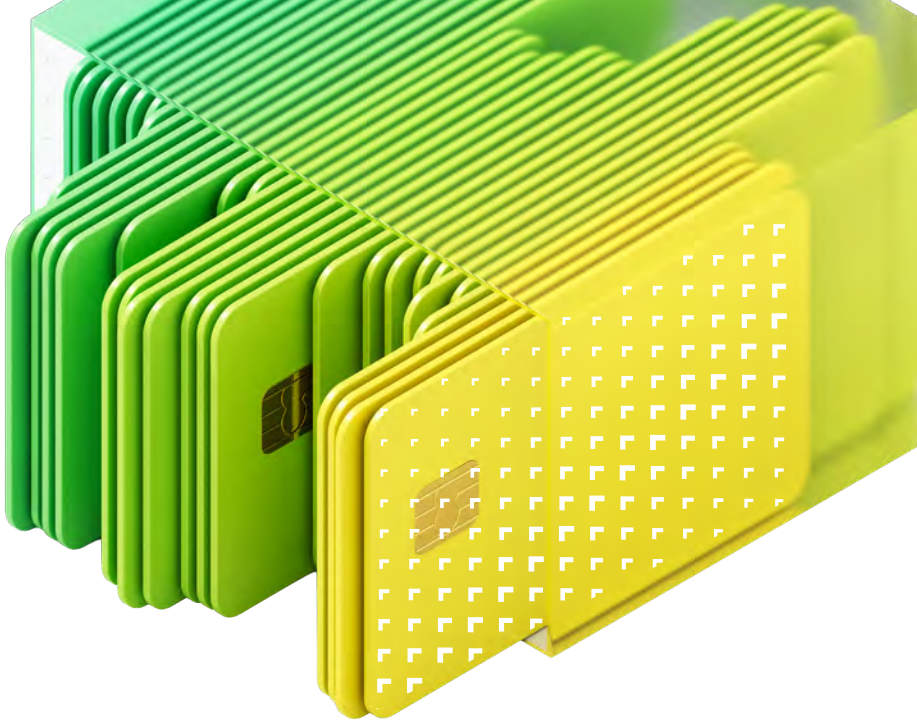
Digital Realty offers that foundation. With a highly connected global platform, industry-leading metro coverage, and next-generation capabilities, we can help you build intelligent infrastructure that secures a competitive advantage.

Here's the bottom line: firms that transform now can innovate faster, operate smarter, and lead the market in the decade ahead. Future-ready financial services start with future-ready infrastructure.

**The time to act is now.**

**Colin McLean**
Chief Revenue Officer, Digital Realty

# Introduction



**Markets are more dynamic, customer expectations are rising, and data has become the defining force behind competitive advantage.**

Institutions of all sizes are striving for real-time responsiveness, stronger resilience, and deeper operational insight. Yet they face growing pressure - from regulatory scrutiny, escalating cyber risk, and increasingly complex digital ecosystems. At the same time, new technologies are accelerating the pace of change and exposing traditional digital infrastructure.

So what does all of this mean for your firm? It means thinking differently about how you operate, compete, and scale. This is a moment that demands you shift toward more flexible, future-ready, and intelligent digital foundations.

### What you'll learn in this guide

- The key trends defining your digital landscape
- What a future-ready digital architecture looks like
- Why data location and latency matter more than ever
- The increasing role of AI
- How regulation, compliance, and data sovereignty shape digital strategy
- The balance between cloud and colocation
- The sustainability benefits of modern digital infrastructure

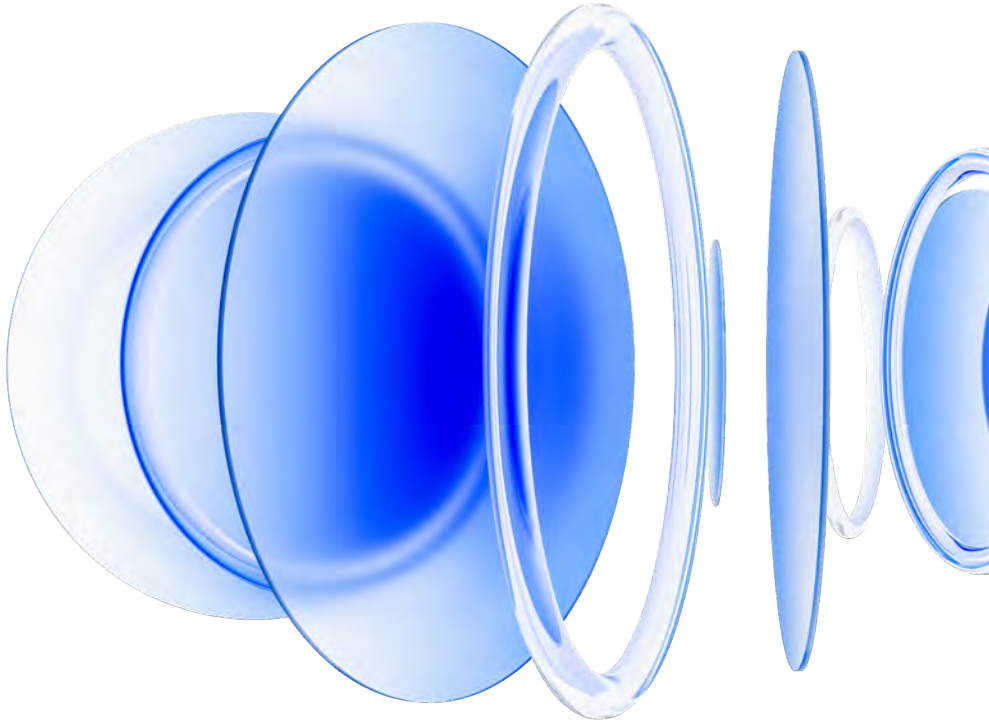
### Why trust Digital Realty's perspective?

Simple: because we provide data centers and colocation services to over 5,000 unique organizations, including the world's most prestigious financial institutions. This gives us exceptional visibility and insight into the relationship between businesses and their data.

No one knows your enterprise better than you. But we can help you level up your strategy so that you can meet tomorrow's challenges head-on.

# Today's challenges and the case for intelligent infrastructure

# Challenges



**Institutions are under pressure to modernize, but several entrenched challenges continue to slow progress. These issues are not just operational annoyances - they're structural barriers that directly affect your competitiveness, innovation, and long-term resilience.**

### Runaway data growth

Your organization is generating immense volumes of data across core banking systems, liquidity and treasury management, stress-testing models, anti-money laundering (AML), sanctions screening, and more. As this data grows, it becomes harder to move, integrate, and use efficiently – a phenomenon known as Data Gravity.

### Performance gaps

Real-time services are now baseline expectations, but traditional architectures often place critical workloads far from clouds, partners, or liquidity centers. Every millisecond adds friction - affecting everything from your real-time payment clearing, liquidity optimization, and AML detection cycles, through to your trade execution.

### Regulatory compliance

You must meet rising standards for data sovereignty, operational resilience, cybersecurity, and third-party oversight. Yet regulations vary significantly by region, and legacy infrastructure can make it difficult to maintain consistent controls across global operations.

### Technical debt

Many institutions still rely on aging on-premises environments built for a different era. These systems were never designed to support AI, high-speed analytics, or globally distributed data. Maintaining them consumes your resources, limits agility, and makes innovation harder and more expensive.

### Fragmented IT landscape

As you expand across multiple clouds, data centers, and edge locations, complexity rises. Managing connectivity, performance, security, and cost across this distributed environment becomes increasingly difficult without a unified digital strategy.

### The sustainability agenda

You face growing pressure to reduce emissions and improve energy efficiency, yet many legacy environments lack the tools to do so. Intelligent infrastructure offers modern, efficient facilities, renewable energy options, and better reporting.

# Challenges

**Together, these challenges make a compelling case for intelligent digital infrastructure.**

| The challenges | Intelligent infrastructure approaches |
|---|---|
| **Runaway data growth** | Place data and workloads in optimal locations to reduce data movement costs. |
| **Performance gaps** | Establish proximity to clouds, trading venues, payment networks, and counter parties. |
| **Regulatory compliance** | Deploy controlled, compliant environments with consistent security standards worldwide. |
| **Technical debt** | Build a data-centric foundation that supports AI, analytics, and digital operations. |
| **Fragmented IT landscape** | Enhance performance and improve visibility with a unified, interconnected data ecosystem that simplifies workload placement. |
| **The sustainability agenda** | Access energy-efficient facilities that use renewable power, have advanced cooling technologies, and provide detailed reporting. |

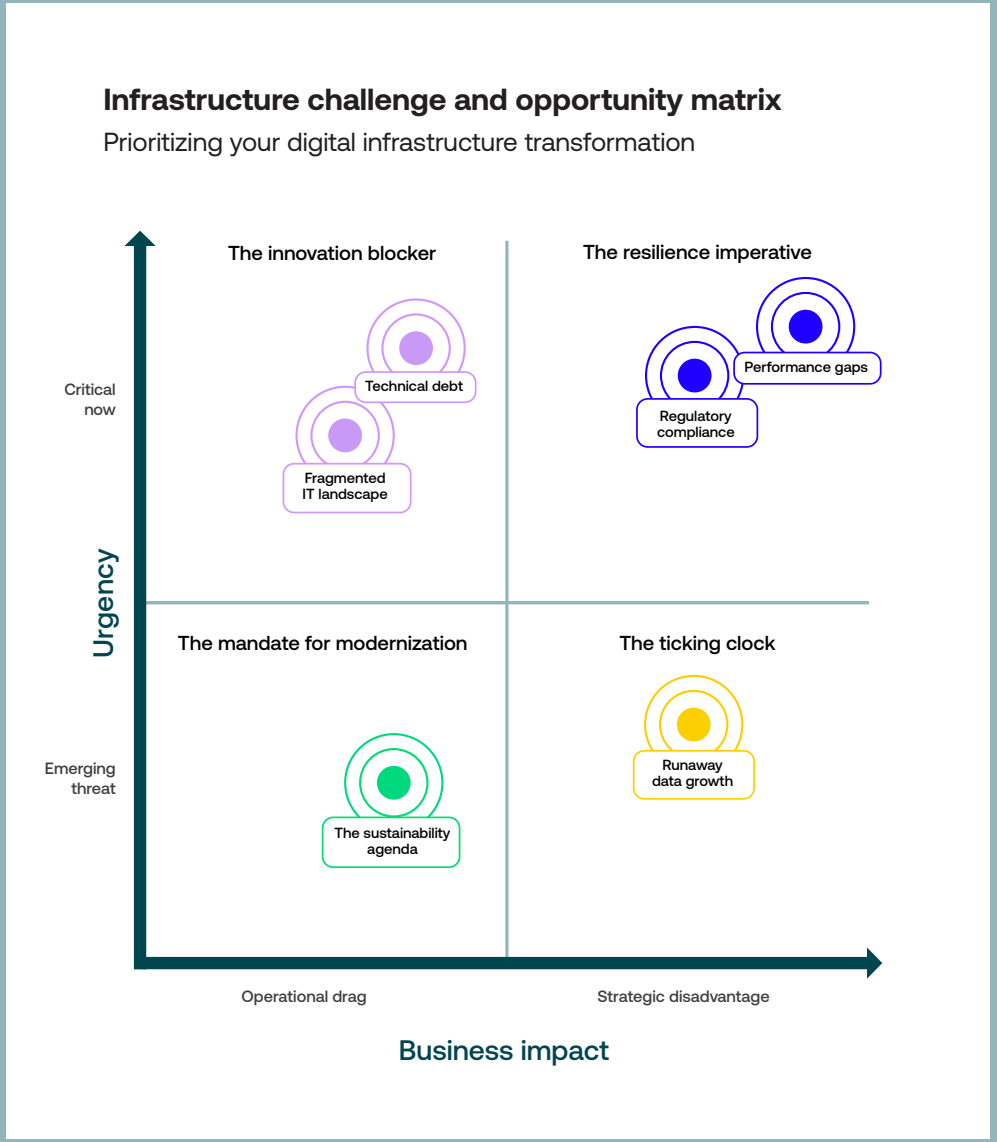



Figure 1: Digital Realty, *Infrastructure Challenge and Opportunity Matrix*

# Proximity pays – why data location matters more than ever

For the financial sector, proximity is an increasingly critical factor in digital performance and as ecosystems become more complex. As operating models shift toward real-time interactions, infrastructure can no longer sit far from the data, clouds, and counterparties it depends on.

# The right metros are key

**New York, London, Frankfurt, Singapore, Chicago, and Tokyo - where your IT infrastructure sits matters. More importantly, ultra low-latency and dark fiber access to the right partners and data networks makes or breaks performance:**

- **Applications** respond faster, avoiding timeouts on key transactions that will cause failure
- **Analytics** run closer to the data they require
- **AI models** can operate with the immediacy that they demand

This supports speed-reliant workloads like market-data ingestion and normalization pipelines, real-time payment authorization, and clearing/settlement cycles.

Proximity also unlocks the network effects that financial services increasingly depend on. Being in the right data center in the right metro means access to a rich ecosystem of cloud on-ramps, payment networks, market data feeds, risk platforms, and industry partners - all interconnected at high speed.

This concentration of connectivity is difficult to replicate elsewhere and offers a strategic advantage that scales as firms expand.

### Bridging the proximity gap

Strategic workload placement is becoming essential to support low-latency front-office trading and digital banking experiences, and position less time-sensitive back-office functions in out-of-metro locations for cost efficiency.

## Global metro coverage wherever you need it

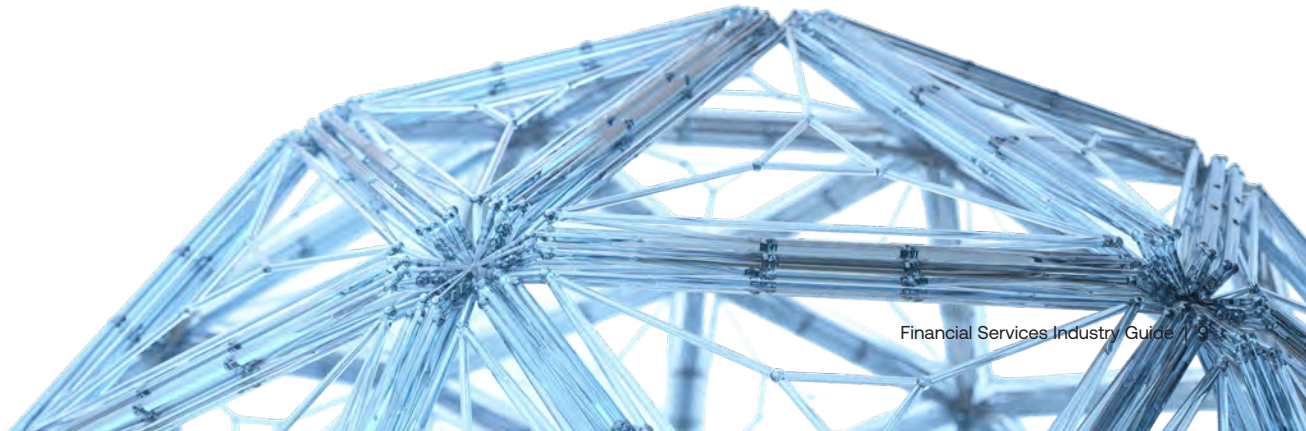
**Digital Realty** operates a truly global footprint:

**300+** data centers across

**55+** major metro areas worldwide with 99.999% uptime

That includes critical financial services hubs such as **London, Frankfurt, New York, Singapore, Tokyo,** and many more.

With our **global platform**, you can tap into local markets fast while retaining a unified, interoperable backbone for global operations.



# The cost of distance: how latency impacts financial services

**Milliseconds matter in real-time operations. The further from metro locations your infrastructure is located, the greater the negative impact on your competitive advantage.**

## 70%

of companies in financial services are tying a data location strategy to their AI strategic plans.

Digital Realty, *Global Data Insights Survey*, August 2024

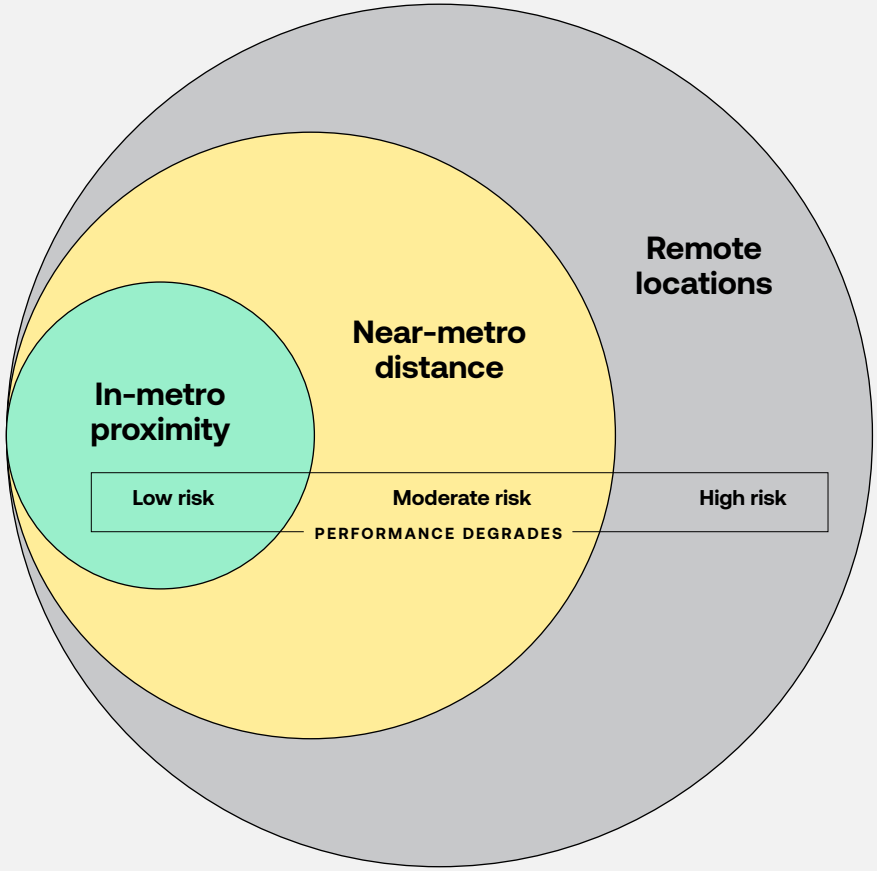



Figure 2: Digital Realty, *The Business Impact of Data Center Proximity*

**LOW RISK**

### In-metro proximity

| TRADING | FRAUD DETECTION | PAYMENTS | CUSTOMER APPS |
|---|---|---|---|
| Competitive advantage | Real-time prevention | Instant clearing | Seamless experience |

**MODERATE RISK**

### Near-metro proximity

| TRADING | FRAUD DETECTION | PAYMENTS | CUSTOMER APPS |
|---|---|---|---|
| Noticeable delays | Some lag in detection | Acceptable processing | Occasional slowness |

**HIGH RISK**

### Remote locations

| TRADING | FRAUD DETECTION | PAYMENTS | CUSTOMER APPS |
|---|---|---|---|
| Competitive disadvantage | Batch processing only | Delayed settlement | Poor user experience |

# Unlocking the power of AI

The AI shift is in full swing, and rapidly becoming a transformative force in financial services.

# Infrastructure powers the AI shift

**From risk modeling and real-time fraud detection to portfolio optimization and customer engagement, institutions are racing ahead with deploying AI for faster insights, sharper accuracy, and more efficient operations. But its full potential can only be realized when the underlying digital infrastructure is built to support the scale, speed, and complexity these workloads demand.**

### AI is front and center

Financial services firms are deploying AI across the value chain to accelerate credit decisioning, personalize digital experiences, detect AML anomalies in real time, enhance compliance monitoring, streamline stress-testing workflows, optimize treasury operations, and improve intraday liquidity forecasts. As models become more sophisticated and data-hungry, the need for high-performance environments increases.

### Model development requires serious compute power

A growing number of institutions are building and training their own AI models rather than relying solely on off-the-shelf solutions. This approach offers greater control, transparency, and competitive differentiation - but it also requires access to powerful compute, high-density environments, and low-latency data pipelines.

### Infrastructure is the real AI bottleneck

AI success depends on fast access to large, distributed datasets. If data and compute live in different places, latency drags down performance and egress fees increase. It is essential to place your AI workloads close to the data they consume.

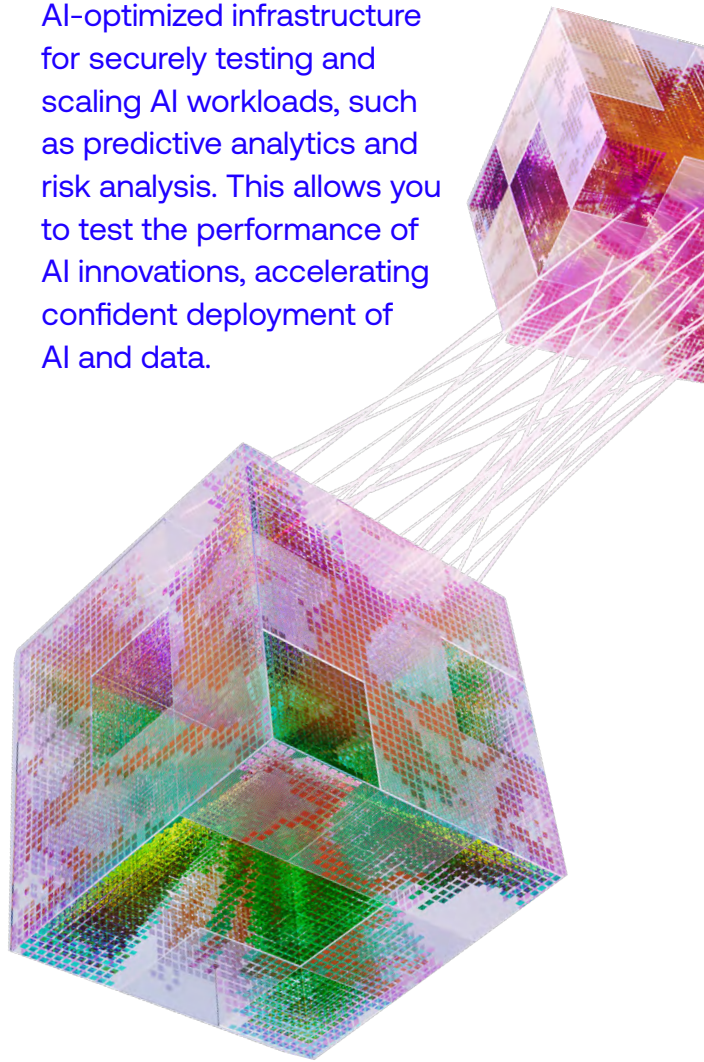
66%

of companies in financial services are building AI capabilities into products or services.

Digital Realty, *The State of Data and AI in Financial Services*, November 2024

## A testbed for innovation

Digital Realty Innovation Lab (DRIL) provides essential, high-performance, AI-optimized infrastructure for securely testing and scaling AI workloads, such as predictive analytics and risk analysis. This allows you to test the performance of AI innovations, accelerating confident deployment of AI and data.



# AI maturity, where do you stand?

**AI is changing the game - but not all financial firms are moving at the same speed. See where your organization is currently positioned, and what you must do to progress.**

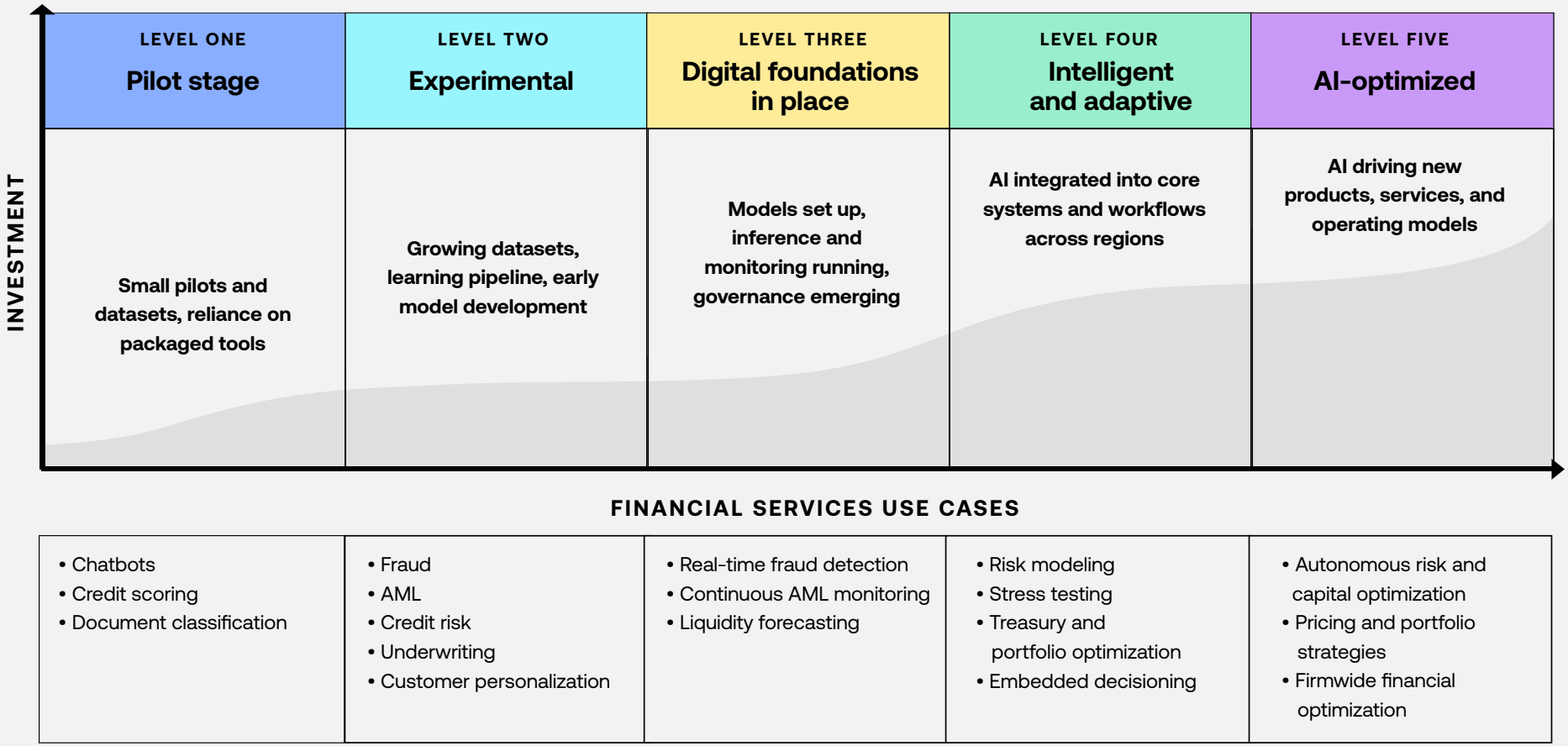



Figure 3: Digital Realty, *The AI Maturity Curve for Financial Services*

# Connectivity – the role of colocation and interconnection

For financial firms, colocation isn't just a convenience: it's an essential strategic enabler.  Embedding infrastructure within dense, interconnection-rich data center ecosystems optimizes data location, compute capacity, and network reach.

# The colocation ecosystem advantage for financial services

**Delivering AI-ready financial services requires infrastructure engineered for speed, scale, and resilience.**

**Low-latency connectivity for real-time finance**
Place infrastructure closer to markets, payment networks, and liquidity venues, with greater speed and reliability.

**Interconnected financial ecosystem**
Connect directly with market data providers, payment processors, fintechs, cloud services, risk platforms, and counterparties.

**Cloud-adjacent architecture**
Gain fast, direct access via cloud on-ramps to major cloud providers for seamless integration of trading platforms, customer applications, and more. All of this without latency or bandwidth constraints.

**AI-ready infrastructure**
Support demanding financial workloads with the high-density power, cooling, and compute capacity needed for AI-driven operations.

**Resilient financial-grade infrastructure**
Ensure continuous access to mission-critical systems with built-in resilience, disaster recovery options, and high availability for core services.

**Compliance and data security**
Certified colocation facilities provide the physical and logical controls required to support financial regulations, data sovereignty requirements, and cybersecurity standards.

**Cybersecurity and fraud mitigation**
Robust physical and digital security protects sensitive financial data, transaction flows, and backend systems.

**Colocation isn't just about hosting servers, it's about embedding financial infrastructure into a global, high-performance grid that supports the full breadth of digital workflows.**

**Scalable infrastructure without CapEx**
Avoid the cost and complexity of building in-house data centers while gaining the flexibility to scale infrastructure.

# A platform for secure global operations

**Colocation enables financial institutions to plug into rich ecosystems - linking clouds, data, and partners while maintaining the performance, resilience, and compliance you demand.**

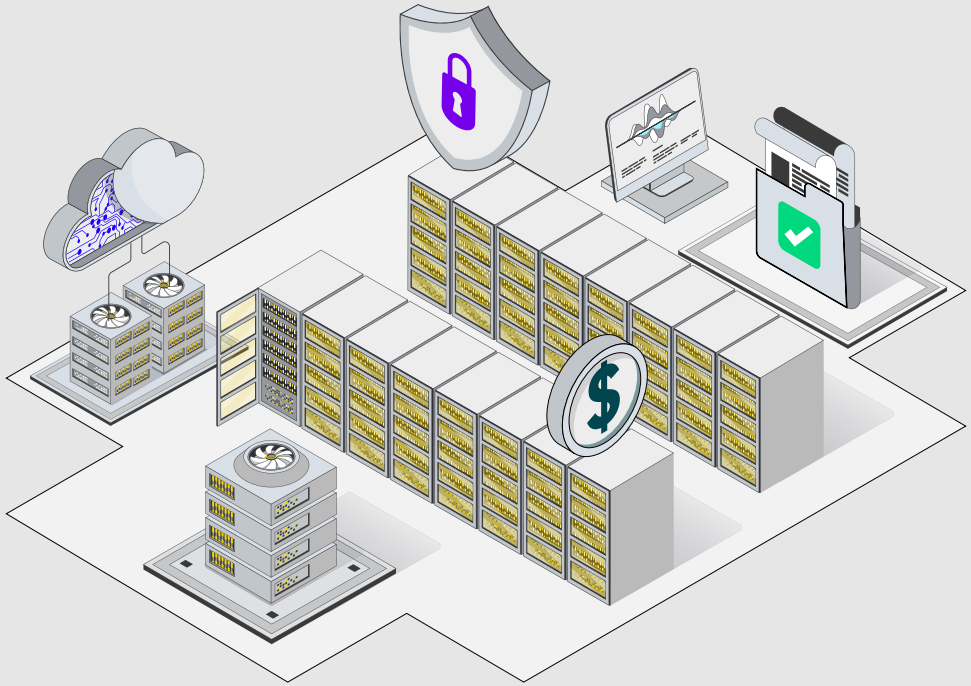
## The advantages of colocation for financial services

### Connectivity

**Cloud on-ramps**
Direct access to leading clouds

**Ecosystem**
Connect to customers and partners

**Low-latency**
Optimized for speed-critical workloads



### Colocation

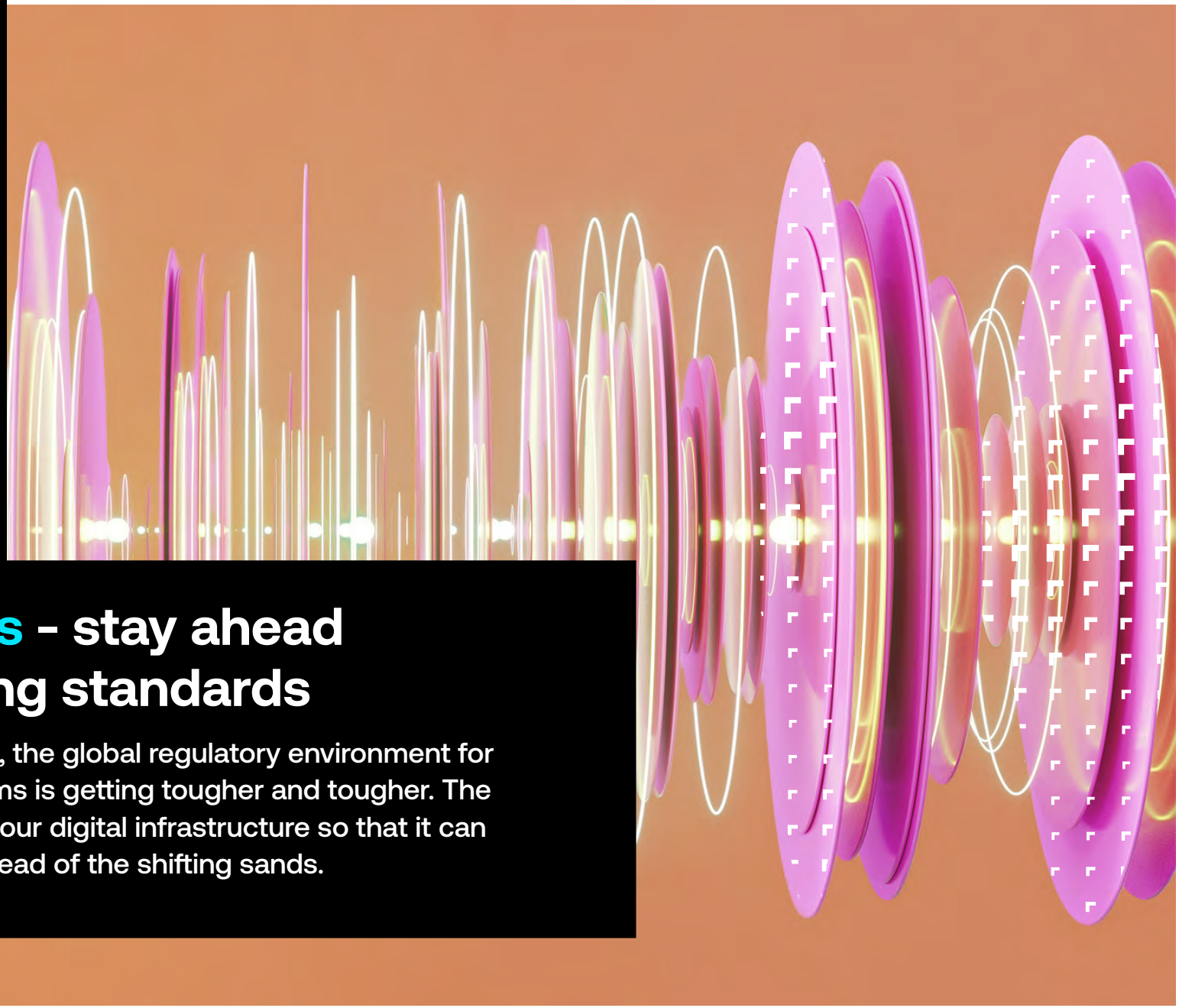
**AI-ready**
Built to support AI innovation

**Lower CapEx**
Reduces infrastructure investment costs

**Compliance and certifications**
Supports global financial compliance

**Security and resiliency**
Designed for resilience and trust

Figure 4: Digital Realty, *The Advantages of Colocation for Financial Services*



# Regulations - stay ahead of tightening standards

Everywhere you look, the global regulatory environment for financial services firms is getting tougher and tougher. The answer is to evolve your digital infrastructure so that it can adapt to and stay ahead of the shifting sands.

# Regulation, compliance, and data sovereignty

**As operations expand and data volumes grow, you must navigate an increasingly complex mix of global, regional, and sector-specific rules,  all while maintaining performance, security, and customer trust.**

### A constantly evolving regulatory landscape

Firms face stringent requirements around data protection, operational resilience, cybersecurity, and third-party oversight. Across North America, Europe, and Asia, standards continue to tighten, such as:

- General Data Protection Regulation (GDPR)
- Digital Operational Resilience Act (DORA)
- EU AI Act
- Federal Financial Institutions Examination Council (FFIEC)

Regulatory environments are always evolving, making compliance a strategic, not operational, issue.

### Data sovereignty and localization take center stage

Where data sits and who ultimately controls it have become global priorities. Financial services firms increasingly need to ensure that data stays within specific jurisdictions, meets regional audit requirements, and is handled in accordance with local privacy and security laws. Respecting local data sovereignty rules is critical.

### The infrastructure challenge behind compliance

Legacy environments make it difficult to implement consistent controls across borders. Financial institutions need infrastructure that can support regulated workloads (e.g., AML) systems, stress-testing models, liquidity reporting engines, and core banking data stores) as well as regional data residency requirements. Intelligent infrastructure - especially when deployed in compliant colocation environments - helps you meet these regulatory demands.

# Regulatory requirements increase complexity

**Over time, increasing layers of regulation are placing a heavy burden on legacy IT. A new kind of digital infrastructure is needed to stay ahead.**

## Compliance: regulatory requirement are increasing in complexity

Financial institutions need infrastructure that can keep pace with evolving compliance demands.

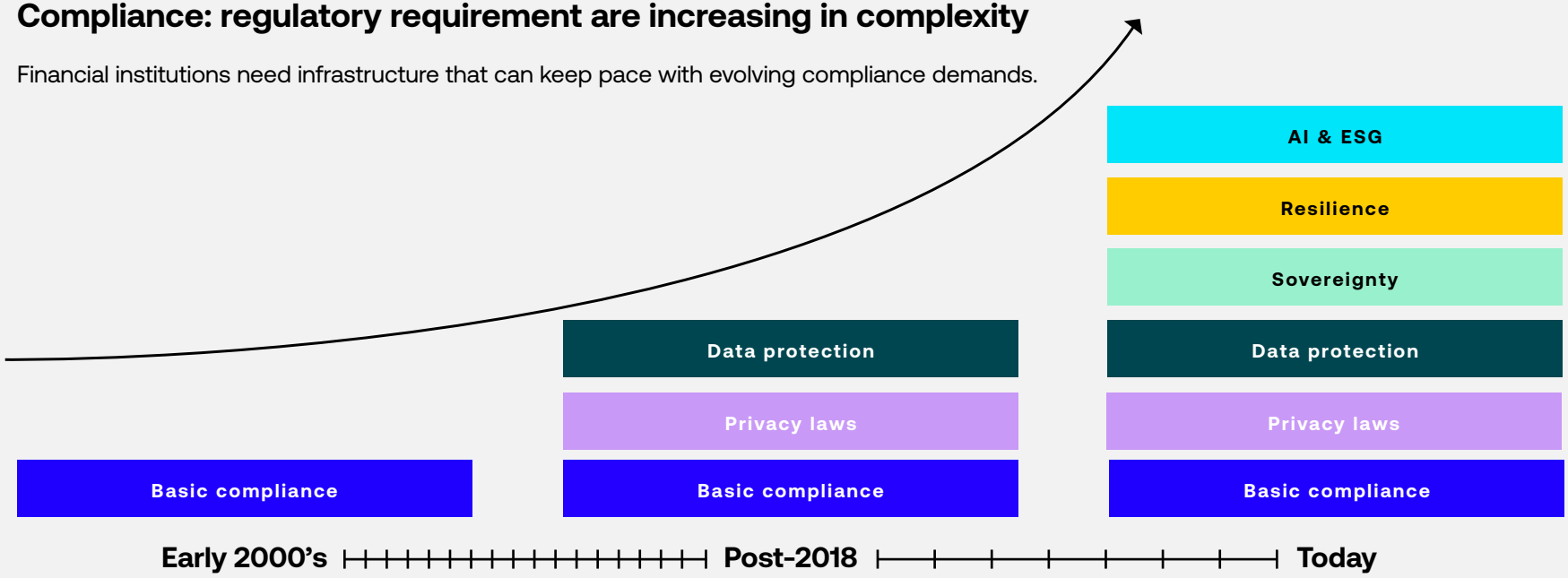



Figure 5: Digital Realty, *Compliance: Regulatory Requirement Increasing Complexity*

# The sustainability imperative

As data volumes surge and AI drives new layers of compute intensity, you must balance digital innovation with responsible growth. Upgraded, intelligent digital infrastructure plays a central role in meeting this challenge.

# Rising expectations across regulators and markets

**Financial services organizations now face an accelerating wave of sustainability reporting requirements.**

These include the Corporate Sustainability Reporting Directive (CSRD), Green Asset Ratio (GAR), Corporate Sustainability Due Diligence Directive (CSDDD), Securities and Exchange Commission (SEC) climate-disclosure requirements, and International Sustainability Standards Board (ISSB). Meeting these expectations requires accurate, auditable data on digital operations - especially energy consumption, cooling efficiency, location-based emissions, and supply-chain impacts.

### A future-ready sustainability foundation

As you scale AI, real-time analytics, and digital engagement, sustainable infrastructure isn't optional - it's the only path to operational resilience, regulatory compliance, and long-term trust.

**61%** of data and AI leaders say sustainability goals are the most important factor impacting AI strategy

Digital Realty, *Global Data Insights Survey*, August 2024

## Digital Realty's sustainability impact

**1.5 GW**
of renewable energy capacity under contract

**8.8 MW**
of onsite solar installations

**185**
data centers matched with 100% renewable energy

**42%**
of irrigation and cooling needs from non-potable water sources

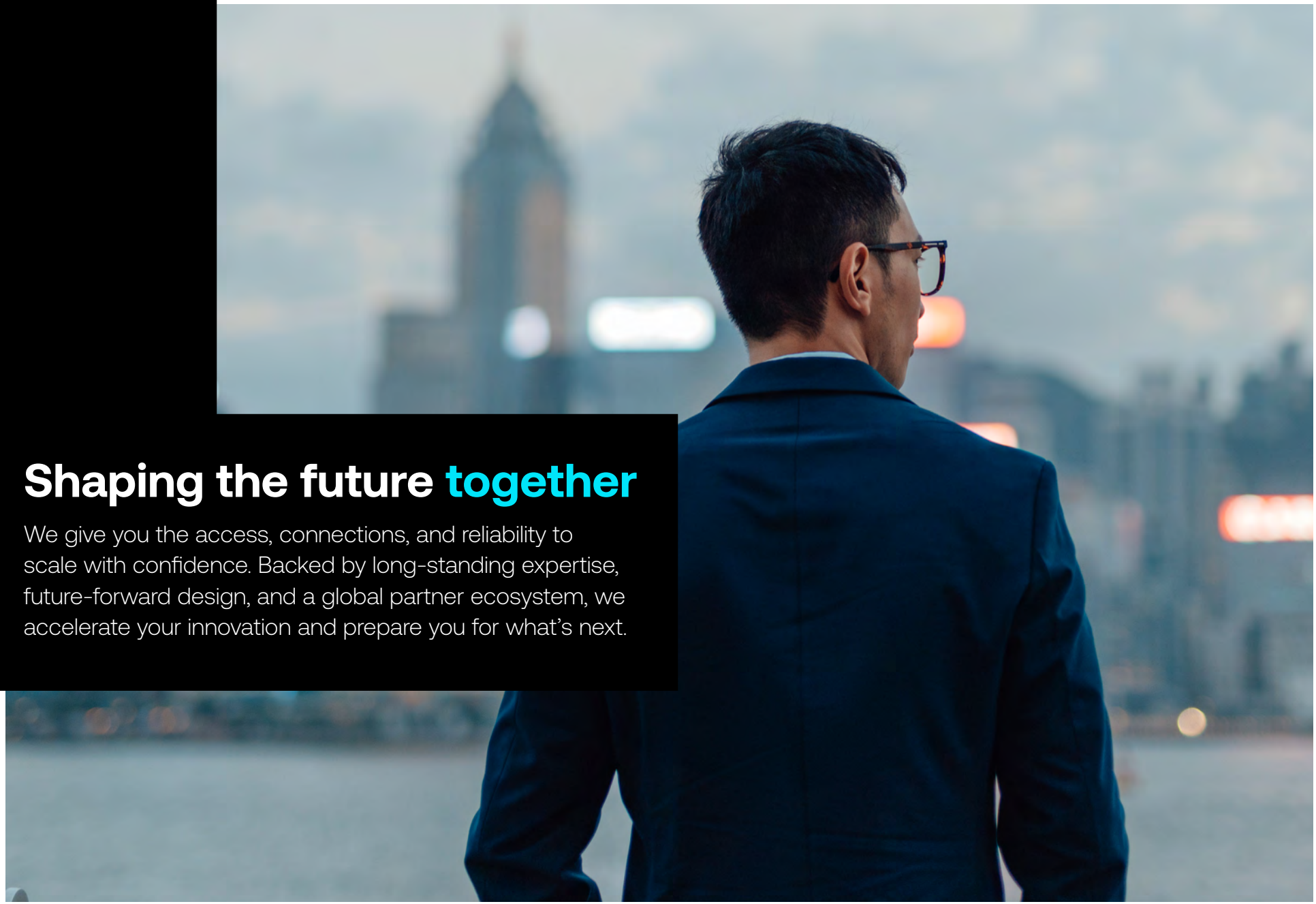
**75%**
renewable energy of global electricity needs in 2024

**28K MTCO2e**
Metric tons of carbon dioxide equivalent annually saved through energy-efficient projects

# Modern infrastructure supports responsible growth

**Intelligent digital infrastructure can significantly reduce the environmental footprint of financial institutions by delivering:**

- High-efficiency power and cooling systems, enabling lower power usage effectiveness (PUE) and reduced energy waste
- Access to renewable energy across regions, supporting long-term sustainability and decarbonization goals
- Advanced monitoring and reporting, providing granular insight into energy usage, carbon intensity, and environmental performance
- Efficient workload placement, reducing data movement, and improving compute efficiency for analytics and AI
- Modernized facilities that outperform legacy on-premises environments in both emissions and operational cost



# Shaping the future together

We give you the access, connections, and reliability to scale with confidence. Backed by long-standing expertise, future-forward design, and a global partner ecosystem, we accelerate your innovation and prepare you for what's next.

# The digital landscape for financial services is evolving fast

**Your future depends on having a partner that understands it. We are ready to support you in seizing tomorrow's opportunities.**

### From experimentation to embedded intelligence

Over the next decade, financial services organizations will shift from selective AI adoption to enterprise-wide, autonomous systems capable of detecting risk, optimizing liquidity, personalizing services, and streamlining compliance in real time. This will elevate the importance of data location, latency, and the flexible digital foundations that Digital Realty provides.

### Sovereign data and AI reshape strategy

As regulators tighten expectations around data residency, model transparency, and cross-border flows, firms will increasingly rely on localized processing environments. Infrastructure must support sovereign requirements without slowing innovation - enabling regulated data, models, and workloads to stay close to home while maintaining global reach. Our colocation suite enables sovereign architectures globally.

### Digital trust becomes a differentiator

Customers and regulators will expect greater clarity around how data is used, how AI decisions are made, and how third-party risk is managed. Institutions will need secure, interconnected environments to maintain trust across increasingly distributed operations. We bring you this transparency and visibility today.

### Next-generation technologies

Quantum computing (though experimental today), ever-more advanced interconnection fabrics, and high-density AI architectures will unlock new possibilities in fraud detection, portfolio optimization, and real-time analytics. Firms that invest today in intelligent, low-latency infrastructure, like Digital Realty's, will be positioned to adopt these breakthroughs rapidly.

# The shape of your future architecture

## Here's what rewiring to intelligent architecture with Digital Realty will really look like for your enterprise.

| **Today** (typical financial services architecture) | **Tomorrow** (future-ready financial services architecture) |
|---|---|
| **Fragmented systems** | Unified, real-time data exchange |
| **High data movement cost** | Localized, sovereign storage zones (reducing data transit) |
| **On-premise technical debt** | Hybrid cloud plus colocation architectures |
| **Siloed risk and fraud analytics** | Real-time AI decision engines |
| **Manual compliance overhead** | AI-automated monitoring plus regulation technology fabric |
| **Latency-bound trading systems** | Metro-proximate, exchange-adjacent nodes |
| **Limited AI readiness** | High-density GPU clusters in colocation (power and cooling is key) |

## Digital Realty — building tomorrow's digital infrastructure

### Digital Realty Innovation Lab (DRILs)

Our live, high-density labs where our customers are testing and validating hybrid cloud, AI workloads, and colocation before full deployment.

### Liquid cooling at scale

Over 170 of our data centers support high-power densities (up to 150 kW per rack), enabling efficient, energy-optimized AI and HPC workloads

### Quantum-ready campuses

We've launched the first-ever "Quantum-AI Data Center" inside our JFK10 facility in New York City to help build the foundation for next-generation digital infrastructure.

# Business Impact

**We've supported some of the world's most ambitious financial firms to transform their digital infrastructures.**

## Compliance, low-latency, and high-security for flatexDEGIRO

### Challenge

flatexDEGIRO needed a professional IT environment that could meet the high requirements of the online brokerage market while enabling the digital business to scale to the highest security and compliance standards.

### Solution

Digital Realty developed a "built to suit" solution. Based on our secure, global and networked data center architecture PlatformDIGITAL®, the existing location could be connected to the new one quickly and easily.

### Outcome

Latency, certified security and scalability have significantly strengthened the firm's offering. Together with Digital Realty, the financial services provider is ready to shape a visionary future.

flatexDEGIRO

## High-density colocation transforms risk calculation for a European leader

### Challenge

A European financial services leader with tens of millions of clients worldwide needed to scale and distribute the organization's high-performance computing (HPC) capabilities to enable financial risk calculations.

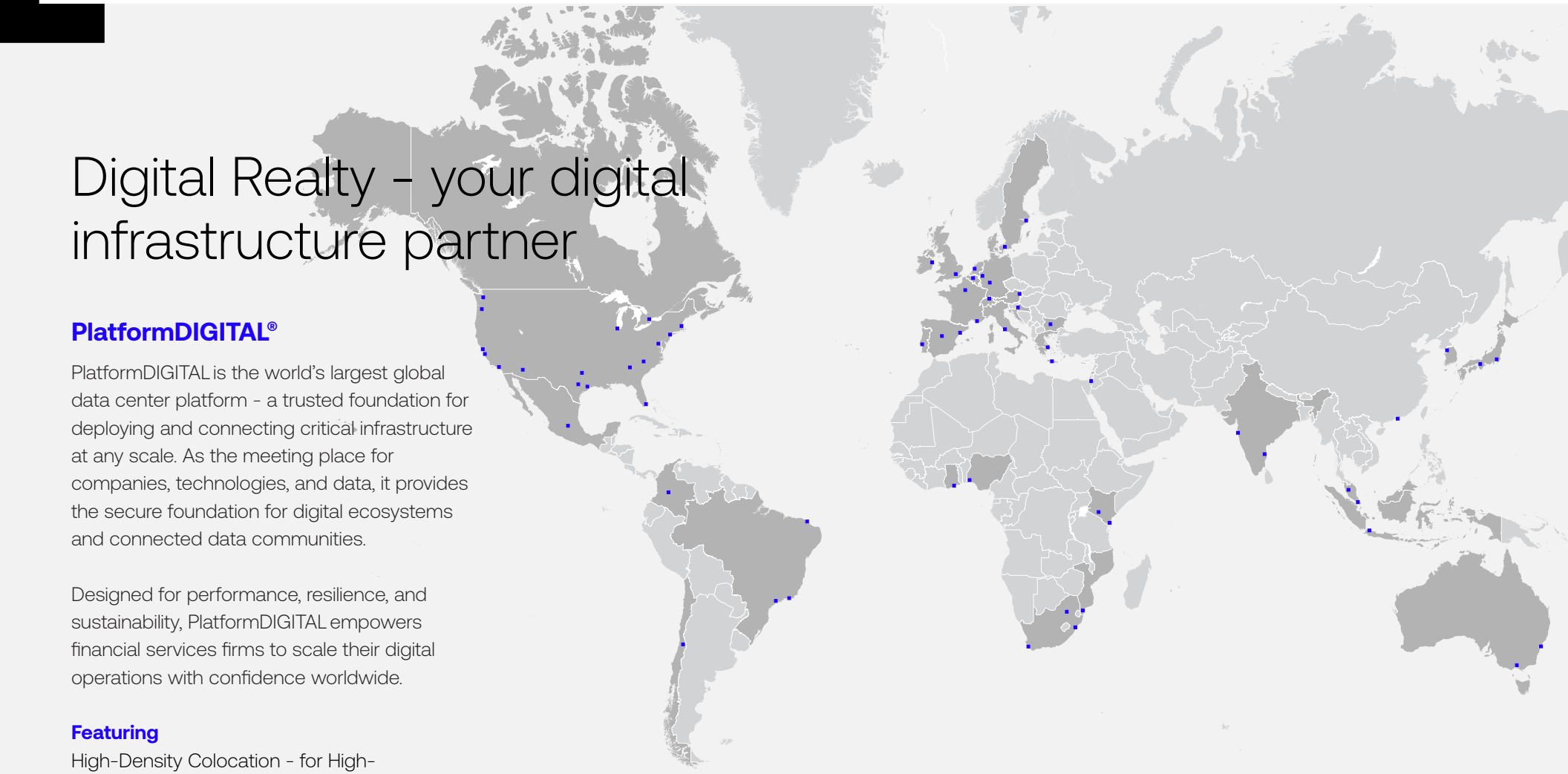
### Solution

High-Density Colocation on Digital Realty's global data center platform, PlatformDIGITAL, provides scalable, turnkey HPC and DLC-ready capacity where and when it's needed.

### Outcome

High-performance computing that supports critical business processes 6x faster, delivers a 30% improvement in energy efficiency, and supports corporate environmental sustainability goals.

# Digital Realty - your digital infrastructure partner



## PlatformDIGITAL®

PlatformDIGITAL is the world's largest global data center platform - a trusted foundation for deploying and connecting critical infrastructure at any scale. As the meeting place for companies, technologies, and data, it provides the secure foundation for digital ecosystems and connected data communities.

Designed for performance, resilience, and sustainability, PlatformDIGITAL empowers financial services firms to scale their digital operations with confidence worldwide.

**Featuring**

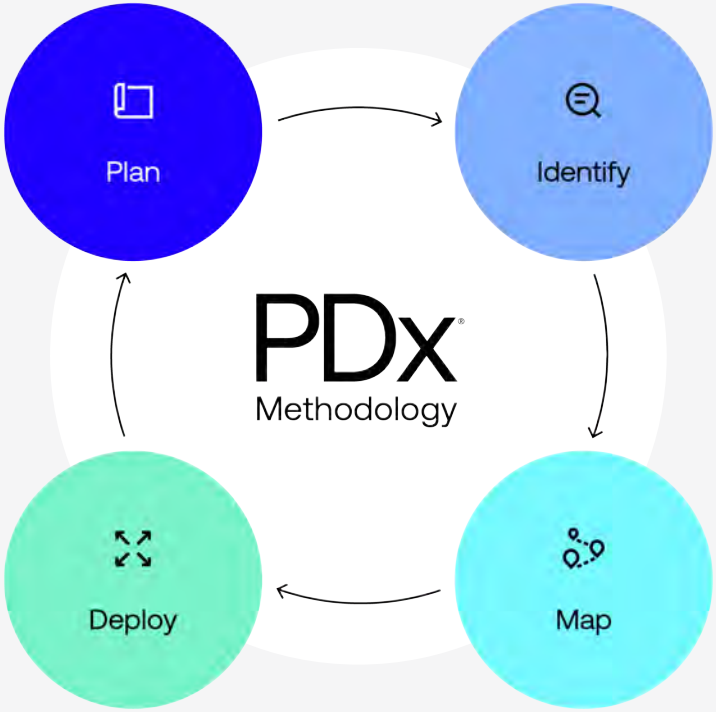
High-Density Colocation - for High-Performance Computing (HPC) and AI advanced liquid cooling solutions.

ServiceFabric® - our open ecosystem of partners and industry-leading interconnection fabric-of-fabric allows you to connect with anyone, anywhere, anytime.

| 300+ | 30+ | 55+ | 6 |
|---|---|---|---|
| Data Centers | Countries | Metros | Continents |

# Evaluate your financial services infrastructure

**Pervasive Datacenter Architecture (PDx)® is our patented methodology shaped by working with thousands of customers. It is a repeatable, data-driven framework that defines how to deploy, interconnect, and scale digital infrastructure globally.**




## Innovative tools to visualize, test, and validate:

**PDx Experience Tools** – unique in our industry, these interactive apps allow you to map out your deployments in advance and see how they will work together to give you the digital infrastructure you need.

**DRIL** - the Digital Realty Innovation Lab gives you and your partners a space to test and validate your solutions.

## Engage our team of experts:

**Solution Architects -** work with you to define your goals, map out dependencies, recommend partners, and shape a roadmap that aligns with your long-term business outcomes.

**Advanced Engineering Group -** drives innovation with flexible modular designs that support diverse power needs, evolving cooling demands, and sustainability goals.

**Solution Engineers** - design infrastructure tailored to your performance, power, cooling, and connectivity needs with built-in flexibility to scale.

**Customer Success** - ensures a seamless deployment and stays with you post-launch to support your evolving needs and minimize risk.

# Your transformation journey begins here

## Are you ready to begin your journey?

You just might have one last question: **what happens now?**

It all starts when you reach out to us. Where we begin together – and how – will depend on where you are on your infrastructure journey. That's the first topic of our conversation. It's also where our partnership begins.

**Interested in learning more?**

Email: **sales@digitalrealty.com**

Digital Realty brings companies and data together by delivering the full spectrum of data center, colocation, and interconnection solutions. PlatformDIGITAL®, the company's global data center platform, provides customers with a secure data meeting place and a proven Pervasive Datacenter Architecture (PDx®) solution methodology for powering innovation, from cloud and digital transformation to emerging technologies like artificial intelligence (AI), and efficiently managing Data Gravity challenges. Digital Realty gives its customers access to the connected data communities that matter to them with a global data center footprint of 300+ facilities in 55+ metros across 30+ countries on six continents.

To learn more about Digital Realty, please visit **digitalrealty.com** or follow us on **LinkedIn** and **X.**