

AHEAD |  PURE STORAGE®

Applying AI in Financial Services, Now

Accelerating the time to impact



Introduction

The Future of Financial Services?

Artificial intelligence (AI) has transcended its early experimental use and now captures the attention of boardrooms across every industry. It's moved from a "nice to have" to a "must-have."

If an organization isn't already using AI operationally, its board will be asking, "why?"

Far from being luddites, many financial services companies will already be familiar with elements of AI. It has, for some time, been applied in processes as varied as fraud detection, credit adjudication, and personalized marketing. But recent advancements in technology have unveiled far more sophisticated models that have opened the door to a broader set of use cases.

Today's AI is more powerful, capable of processing vast amounts of data in real-time, and delivering insights that were once considered out of reach. For financial services organizations, this could mean removing friction from transactions, democratizing access to credit, transforming the payments landscape, or combating financial fraud on a global scale with laser-like precision.

However, these advancements come with their own set of challenges. The widespread adoption of AI will result in a dramatic increase in data volumes, which can come with unexpected costs and significant environmental impacts. Organizations will need to manage much larger quantities of information in a way that is both cost-effective and environmentally sustainable.

In *Applying AI in Financial Services, Now*, we'll explore the challenges and opportunities that come with AI adoption at scale. You'll gain insight into the operational, infrastructural, and reputational impacts that AI can have upon a financial organization. And we hope that after reading, you'll be left with a clear idea of the steps your business can take to unlock AI's transformational power.

Because AI isn't the future of financial services. It's the present.

How AI is Boosting Revenues in Financial Services

\$1 Trillion

Extra annual revenue in the financial services industry, created by overall AI usage

Up to \$340 Billion

Extra annual revenue in the financial services industry, created by generative AI

Up to 4.7%

Total financial services sector revenue that will have been created by generative AI

Source: [McKinsey & Company, 2023](#)

Section 1

Cutting Through the Hype

Amidst the excitement surrounding AI, it's easy for organizations to get lost in the hype. But turning buzz into value means cutting through the noise. Financial services organizations need to set their aims for AI to supplement their wider strategic plans. And they need to take practical steps today in order to set the stage for success.

Setting the Stage for AI Success

Good preparation starts with taking a strategic approach to AI adoption. Financial organizations need to identify the specific use cases where AI will deliver the most value. Of course, this will be different for every business. It could be focused on enhancing customer experiences, streamlining operations, improving risk management, or a myriad of other goals. What's most important is having a solid business rationale in place before AI adoption starts.

Best practices suggest starting with pilot projects that target the high-impact areas you have identified, while being realistic about the capabilities and limitations of AI technologies. Proof of concepts should be used to build internal expertise, demonstrate tangible benefits, and secure buy-in from stakeholders.

The goal should be to develop a scalable AI strategy that can evolve as the organization grows and as technology continues to advance. Whether that's building new AI assistants that can handle basic transactions for customers or developing more intelligent robo-advisors that can help people grow their wealth – AI needs a strong and stable infrastructure on which it can perform over the long term.

The Need for Computing Power and Efficiency

Deploying AI at scale requires immense computing power on a level that many organizations don't currently possess. Often, the default solution is to turn to cloud-based platforms. But cloud data infrastructure can also be more expensive than initially anticipated, particularly when accounting for the high-performance requirements, real-time data processing, and seamless data migration associated with AI workloads.

The optimization of resources is essential to successful AI operations. This could involve a hybrid approach that balances on-premises and cloud to manage costs and performance effectively. Specialized hardware and data storage solutions can also help reduce overheads.

Integrating AI into Core Operations

Successfully implementing AI is no small feat. It involves adopting brand new frameworks that can seamlessly incorporate new technologies into existing systems, without affecting operations.

Beyond frameworks, AI must be constantly monitored and refined to ensure it performs optimally and remains aligned with organizational goals. Data scientists, AI specialists, and machine learning engineers have the skill to do this. But these positions are in high demand at a time when talent is scarce. Reuters estimates that there is a hiring gap of 50% between the AI roles that businesses are creating, and the talent available to fill them.

Source: <https://www.thomsonreuters.com/en-us/posts/technology/needed-ai-skills/> Reuters estimates that there is a hiring gap of 50% between the AI roles that businesses are creating, and the talent available to fill them. Financial organizations wishing to adopt AI need to invest heavily in talent acquisition or find a partner who can provide the expertise they need more cost-effectively.

Source: [Thomson Reuters, 2023](#)

Building and Maintaining Trust in AI

In financial services, trust is a currency that, once lost, is difficult to regain. When throwing AI into the mix, organizations must increase their vigilance even more. Customers need to know that their financial institution is using AI in a transparent, secure, and ethical way. Regulators need confidence that its use is compliant and safeguarded against breaches and misuse.

Regular audits, ethical reviews, and transparent reporting can help institutions build trust around their responsible AI use. But how data is managed is just as critical. The way data is collected, stored, used and protected is vital for maintaining integrity – and avoiding the damaging reputational risks that come through mismanagement.

Section 2

Building Computing Power

By its very nature, AI is a resource-intensive endeavor, demanding vast amounts of data, substantial computing power, and significant time to yield results. For financial institutions, this presents a problem: how do you build a data platform that can support AI's growing demands without becoming prohibitively expensive or environmentally unsustainable?



The Reality of Hybrid Cloud Environments

Most financial services companies today operate within hybrid cloud environments—a combination of on-premises infrastructure and cloud-based solutions. At first glance, the cloud might seem like the obvious choice for AI experimentation: it offers scalability, access to advanced tools, and the ability to quickly spin up resources as needed. However, the financial impact of using the cloud for AI workloads can be heavy.

The sheer volume of data that needs to be processed, stored, and analyzed can quickly drive up cloud costs. Even more so, when you factor in the continuous need to transfer data between on-premises systems and the cloud. The fact it takes significant time to train AI models to efficacy can further compound these expenses. If these costs aren't carefully controlled, they can erode the return on investment that AI is supposed to deliver.

The Environmental Impact of AI

Data centers take up large spaces and require significant amounts of electricity and potable water to both power and cool. This combination of space, energy, and water requirements contributes to a large carbon footprint. Goldman Sachs estimates that the AI boom will see the energy requirements of global data centers rise 160% by 2030, accounting for up to 4% of the world's electricity consumption.

As public and regulatory scrutiny around the environmental impact of business intensifies, financial institutions will need to demonstrate that their AI initiatives are environmentally responsible.



The Need for Simplicity

AI is complicated. But the management of the data feeding AI should be simple. Many organizations move to adopt AI without getting their house in order first, but problems with the underlying data management can wind up negatively impacting the success of AI projects. Complicated and fragmented systems are both costly to maintain and also hinder innovation. AI requires the seamless integration of vast datasets across various sources. Any inefficiencies in data management can grind progress to a halt. The simplification of infrastructure and data management processes is key. This can be done by consolidating infrastructure into a format that is denser and more flexible. Using a common operating system across every environment can also bring simplicity, removing the need to learn multiple complex management systems.



It's clear that an AI-enabled financial organization needs infrastructure that is robust and efficient. As AI advances, traditional on-premises or cloud-only solutions may no longer be enough. A new form of infrastructure is needed that can keep costs in control, help organizations reduce their environmental impact, and keep data management simple and effective.

Section 3

Integrating AI and Applications

Integrating AI with existing applications and infrastructure is a daunting task. It's not simply a matter of adding a new tool to the technology stack. Instead, a holistic approach is required that considers data connectivity, security, operational resilience, and the overall architecture of the IT environment.

The Importance of Data Connectivity and Security

At the heart of any AI system is data. For financial institutions, this data often resides across a variety of sources, including customer databases, transaction records, and external data feeds. To fully leverage AI, these disparate data sources need to be connected in a way that allows for seamless data flow and integration.

But connection is not without risks. The sensitive nature of financial data means that any integration must be done with the highest levels of security in mind. Safeguards are needed that ensure data integrity and compliance with regulatory standards, especially where regulations around data privacy and protection are stringent.

Frameworks and Roles for Safe AI Integrations

Successful integration relies on a business having the right frameworks and roles in place to ensure that AI is implemented safely and effectively. These frameworks encompass everything from data governance policies and security protocols to the workflows that define how AI applications interact with other systems.

Equally important are the roles that support AI integration. Data scientists and AI specialists are important, but IT professionals who understand the intricacies of the existing infrastructure also have a key role to play. These positions all need to collaborate effectively with compliance teams to ensure an AI ecosystem is robust and secure.

Integrating AI with Existing Applications

Financial services companies often have complex IT environments, with systems that have been built up over many years and are deeply embedded in daily operations. Integrating AI into this mix requires careful planning and execution to avoid disrupting the business.

A flexible architecture is needed that can accommodate new AI applications while maintaining the stability and functionality of existing systems. This might involve modernizing certain parts of the infrastructure, adopting middleware solutions that facilitate communication between AI and legacy systems, or implementing APIs that allow for seamless data exchange. Ultimately, it comes down to having confidence in the ability to deliver AI solutions throughout the full technology stack, with the ability to manage and optimize interactions all the way to the operational level.

Ensuring Operational Resilience

Every financial organization needs the confidence that their systems can handle the demands of AI without breaking down. This is also where a flexible architecture can help – making an infrastructure that is adaptable to new challenges, whether from evolving customer expectations, regulatory changes, or an increased amount of AI workloads.

Operational resilience also means having the ability to quickly respond to and recover from incidents that could impact AI performance, such as data breaches, system outages, or algorithmic failures. This requires a comprehensive approach to risk management that includes robust monitoring, regular testing, and contingency planning.



Successful integration requires not only the right technology but also the right strategies, frameworks, and expertise. It's vital that an organization can draw upon a deep understanding of both the technical and regulatory landscapes to ensure that AI is working optimally, wherever it is assisting the business. For those companies that lack the skills in-house, a trusted technology partner, with the skills and expertise on hand to make AI work effectively, can make all the difference.

Section 4

Maintaining Trust

Trust is the bedrock of financial services. Customers entrust institutions with their money and their most sensitive information, from personal identification details to financial transactions and investment strategies. A breach of this trust—whether through data breaches, unethical practices, or unreliable AI recommendations—can have catastrophic consequences.

But trust is waning. [A 2024 survey found that customer trust in banks has fallen significantly since 2022. Less than half of customers say they will “certainly” stay with their current bank across the next year.](#) The stakes couldn't be higher.

The Ethics of Data Usage and Protection

Customers need to feel confident that their information is being used responsibly and that it is protected from unauthorized access. This involves implementing stringent data governance policies that define how data is collected, stored, and used, as well as ensuring compliance with all relevant privacy regulations.

But ethical data use goes beyond protection alone. It also needs to include how AI-driven decisions are made. If an AI system is used to assess creditworthiness, for instance, it must do so in a way that is fair and unbiased. Any perception that AI is being used to exploit or disadvantage customers can erode trust. Financial institutions must therefore ensure that their AI systems are ethical, transparent, and aligned with customers' best interests.

Addressing AI Hallucinations and Biases

AI hallucinations occur when an AI system generates outputs that are not based on real-world data or logic, leading to potentially misleading or incorrect advice. Biases, on the other hand, can arise from the data used to train AI models, resulting in outcomes that unfairly disadvantage certain groups of people.

For financial services companies, these issues can have serious implications. If a customer receives incorrect advice from an AI system or feels that they have been unfairly treated, it can lead to a loss of trust and, in some cases, legal or regulatory consequences. To mitigate these risks, institutions need to implement rigorous testing, validation and documentation processes to ensure that AI systems produce accurate and unbiased results.

Adapting to Evolving Regulations

As AI usage in financial services grows, so too will regulatory scrutiny. Governments and regulatory bodies around the world are increasingly focused on ensuring that AI is used in a way that is transparent and accountable. The proposed EU AI Act and the AI Research Innovation and Accountability Act in the US will impose new requirements on how AI systems are developed and deployed, particularly in high-stakes sectors like financial services.

Institutions must be prepared to adapt to these evolving regulations. This means building flexibility into their AI frameworks so that they can quickly adjust to new regulatory requirements as they emerge.



Maintaining trust in the age of AI requires a concerted effort. Ensuring it is used ethically, without bias, and with compliancy to evolving regulations will be a significant challenge for financial services organizations.

Section 5

Preparing Your Financial Institution to Accelerate AI

As we've explored so far, simply being enthusiastic about AI isn't enough to ensure it will be a success. Thorough preparation is required to overcome the challenges of compute power, integration, and trust that AI presents.

So, what are the key steps your financial institution can take, right now, to ensure that you're able to accelerate towards full AI enablement?

1 Define Your Use Cases

The first step is to determine which use cases across your organization will see the most benefit from AI. Small proof of concept tests should be run in these areas to both minimize operational disruption and get to value at pace. The results of these tests can be analyzed to more accurately estimate the potential impact and return on investment of a wider roll out.

2 Assess the True Cost of Your AI Needs

Carefully assess the most cost-effective infrastructure for your data. As we've explored, the costs for the compute, storage and data transfers needed for AI workloads in the cloud can be prohibitively expensive. They should be weighed against modern all-flash solutions to see if modernizing on-premises infrastructure can save money in the long run.

3 Build an Efficient, Flexible and Performant Infrastructure

Once you know where your infrastructure will be located, it's vital to ensure that it stays up to the task. It needs to have the power and capacity to process and analyze data at scale. Simple data management is required so that data can be pulled from multiple sources with ease and efficiency. And its long-term flexibility – the ability to scale to new workloads and technologies – needs to be built in.

4 Prioritize Environmental Sustainability

AI, with its intensive data processing requirements, can significantly impact your data center's overall environmental footprint. To mitigate these risks, it's essential to adopt technologies that enable you to do more with less. This means using less energy, space, and water in your data centers while still delivering the performance required for AI workloads.

5 Integrate AI Within Your Existing Landscape

AI technologies need to be effectively integrated with legacy systems and applications to deliver meaningful results. However, this integration can be complex, requiring careful planning and adherence to best practices. It's vital that you have the right expertise and data management in place to help you integrate without disrupting key services.

6 Ensure Trust Runs Through Everything

Maintaining customer trust through AI adoption is paramount. Data must be visible, controlled, and recoverable at all times. Poor data management can lead to breaches, lost data, and ultimately, lost trust. Using a data platform can simplify this process, enhance security and accountability, and build levels of trust amongst customers and regulators.

Conclusion

Preparing to Capture the AI Opportunity

AI represents a transformative opportunity for the financial services sector, offering new ways to solve long-standing challenges while unlocking unprecedented potential for innovation. From automating processes and enhancing customer experiences to improving fraud detection and expanding access to credit, AI will soon become a core aspect of how financial organizations operate. For financial organizations, capitalizing on this opportunity means acting now, laying the groundwork that will allow AI to grow and flourish within their operations.

However, as stewards of public trust, financial institutions face a dual responsibility. Not only must they lead the charge in AI adoption, but they must also do so in a way that is transparent, ethical, and accountable. Financial services companies are in a unique position to shape the future of AI, but this comes with added complexity and responsibility.

As we've explored, success in this new AI-driven world calls for more than just ambition—you need the right infrastructure, frameworks, and strategies in place. Building a sustainable, efficient, and flexible technology foundation is critical. From scalable compute power and data storage to secure and transparent data management, these are the building blocks that will allow AI to deliver lasting value.

With partners like Pure Storage and AHEAD, you can be sure that you have the advanced data storage technologies and expertise in place to help you unlock that value, balance innovation with responsibility, and stay competitive in the age of AI financial services.

It's time to act on AI.



Factsheet

Pure Storage and AHEAD

Pure Storage and AHEAD deliver a stable, performant, and cost-effective infrastructure foundation that grows sustainably with your organization

Our data storage platform helps you seamlessly adopt transformative technologies while maintaining simplicity in management. It is sustainable by design, using less energy and space while delivering quality data performance for far longer.

We are accountable from strategy through execution, offering strategic consulting and managed services, along with innovations in practices like security and data management. This empowers you to advance with speed and impact, achieving more with less without sacrificing performance or profitability.



In-built Sustainability

Pure Storage's range of all-flash data storage solutions are designed with sustainability at their core, helping organizations reduce their environmental impact without compromising on performance. By taking up less rack space than spinning-disk storage solutions, you can reduce the physical footprint of your data centre and the energy consumption it requires by up to 85%. What's more, each Evergreen® subscription comes with guarantees for data reduction and maximum energy usage.

Flexible Infrastructure

Pure Storage Evergreen® offers the world's most flexible storage subscriptions, giving businesses a sustainable and scalable storage solution that grows with them. Its unique architecture allows for non-disruptive upgrades and expansions, ensuring that infrastructure remains performant and efficient over the long term. By investing in an infrastructure that is both powerful and adaptable, your organization can handle rapid AI growth while keeping management simple and straightforward.

Easy Integration

AHEAD specializes in guiding financial institutions through the intricacies of AI integration, helping them develop the frameworks and strategies needed to start safely and effectively. Whether it's connecting AI to existing data sources, implementing security protocols, or ensuring operational resilience, AHEAD provides the expertise required to build an AI-ready infrastructure that supports your broader business goals.

Trusted and Secure

Pure Storage's backup and recovery solutions, combined with **AHEAD**'s managed services and consulting, provide a comprehensive approach to data management. Our joint solutions ensure that your data is not only secure and compliant but also easily recoverable in the event of an incident.

Let Us Help You Accelerate Your Impact With AI

Pure Storage and AHEAD have joined forces to deliver a stable, performant, and cost-effective infrastructure foundation that grows sustainably with your financial services organization.

Our data storage platform helps you seamlessly adopt transformative technologies while maintaining simplicity in management. It is sustainable by design, using less energy and space while delivering quality data performance for far longer.

We are accountable from strategy through execution, offering strategic consulting and managed services, along with innovations in practices like security and data management. This empowers you to advance with speed and impact, achieving more with less without sacrificing performance or profitability.

Ready to Do More with Less, Without Sacrificing Performance or Profitability?

Contact our Financial Services team [here](#).

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