E-BOOK

An AI infrastructure you can bank on

Build a data infrastructure that sparks innovation and drives revenue

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AI is everywhere you look

Artificial intelligence is giving the financial services industry a major makeover, driving transformation in just about every aspect of the business.

From launching innovative new products to reducing risks and elevating the customer experience, AI is transforming the way that banks operate.

AI is here. It's there. It's everywhere. And it's not going anywhere anytime soon. Experts estimate that AI could generate more than $1 trillion in value for the banking industry by 2030.[1]

The possibilities are endless, but building an AI infrastructure—especially in a highly regulated environment—isn't easy. You need a data infrastructure that can unleash the power of AI throughout your organization. Lucky for you, we've got the experience and the know-how.

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A recent NVIDIA survey of financial services professionals showed:

83%
of financial services professionals say that AI is important to their company's future success.

34%
say that AI will increase their company's revenue by 20% or more.

The top 3 ways that AI is impacting business

Creating more accurate models	42%
Creating a competitive advantage	41%
Building new products	34%

AI is the future of financial services

The pandemic has accelerated digital transformation for business in every industry—especially in financial services where virtual banking has become the next big thing.

- Bank branches are closing faster than ever, and some experts believe banking may become **100%** digital by 2035.[2]
- **30%** of consumers use contactless payments due to COVID.
- **70%** see themselves remaining with contactless payments post-COVID.

As consumer preferences shift, financial services institutions are looking to AI to reduce risk through heightened fraud detection, increase productivity through AI-powered creditworthiness assessments, expand service offerings, and enhance the customer experience.

The future is here

Fraud detection
With AI on your side, you can prevent credit card fraud by instantly detecting unusual behavior in an account. You can also use AI to help identify and prevent insurance fraud for loss claims.

Customer service
AI makes going to the bank a thing of the past. With guidance from chatbots, customers can open new accounts, subscribe to new services, and quickly solve issues. No waiting in line. No piles of paperwork.

Creditworthiness assessment
AI is used to quickly generate decisions based on income and credit history, without human error or emotions.

Product innovations
AI is the driving force behind mobile payment systems that allow customers to pay for their morning coffee without currency or cards.

Market predictions
AI quickly and accurately analyzes earnings call transcripts and performs a sentiment analysis to help determine how investors will react.

Fraud detection

Most banks have dedicated teams to detect fraud and money laundering. But despite their best efforts, fraud is still on the rise.

According to a recent study, payment card fraud losses in 2020 reached an all-time high of $28.65 billion worldwide.[3] Rules-based expert systems currently used to catch fraud have become too easy to beat.

Security teams armed with AI, on the other hand, can prevent credit card fraud by instantly detecting unusual behavior in an account and reducing the need for human intervention.

Machine learning and deep learning can look at a wide variety of data types, including transaction history data from banks, smartphone data, real-time structured and unstructured data, a client's behavior, location, and buying habits, and speech data from banking call centers (natural language processing). Cameras and computer vision inside banks and at ATMs provide extra security. And it's all done in near-real time.

Instead of receiving hundreds of alerts, a fraud investigator can focus on the ones that are most likely to be fraudulent, making the investigation more effective and efficient. AI can also help identify and prevent insurance fraud for loss claims.

Acceleration is imperative

Reports of identity theft in the United States rose by **113%** from 2019 to 2020[4]

Credit card fraud in the United States rose by almost **45%** in 2020[4]

In the United States, a total of **$3.3 billion** was lost to fraud in 2020[4]

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Creditworthiness assessment

Lending money to complete strangers is risky business. And for financial institutions, risk is a four-letter word. In the past, loan officers evaluated a handful of key metrics on loan applications, such as employment history, income status, debt to income ratio, and history of borrowing and repaying loans.

AI now makes it possible for companies to look at an individual's income and credit history, without human error or emotions. This approach effectively helps tap the market for underserved borrowers.

That's why many emerging and high-profile companies are using AI to determine creditworthiness and streamline the loan application process. By intelligently opening up to new borrowers, financial institutions stand to gain new customers and grow their business—without increasing risk.

"The ability to use machine learning AI is essential to our mission to serve the financially underserved."

-Shanghai PDDAI

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ppdai.com

Shanghai PPDAI makes dreams possible for the financially underserved

In many countries, especially those with developing economies, smartphones are plentiful, but credit scores are not. That's why Shanghai PPDAI increasingly depends on AI to help process an increasing amount of unstructured data as it expands to other countries.

With the power of data, PPDAI has surpassed the limits of consumer lending in China. Their digital transformation allows them to serve the financially underserved and lend money to everyone in China.

Learn more →

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Product development and innovation

As banking goes virtual, limitless possibilities open up for innovation with new products and services and countless ways to improve the customer's experience. Digital engagement is more important than ever, and AI plays a key role in providing a seamless digital experience for customers.

Self-serve, personalized banking
AI makes building and maintaining brick-and-mortar bank branches a thing of the past. With guidance from chatbots, customers can open new accounts, subscribe to new services, and quickly resolve issues from anywhere. With the help of chatbots, many financial services institutions are saving money with automated processes that reduce risk and increase efficiency. This translates to improved customer satisfaction and reduced churn.

Contactless payments
Banking's new buzzword is "contactless." And introverts rejoice, because it looks like contactless payments are here to stay. AI is the driving force behind mobile payment systems that allow you to pay for your morning coffee without currency or cards. Cashierless payments require multiple elements: authentication and access (connecting a physical shopper to a validated bank account), computer vision (to associate a shopper with a product selection by virtue of proximity), inventory monitoring, and back-end software.

Recommender systems
With AI, consumers no longer need to spend hours researching options for credit cards, insurance, or loans. Instead, recommender systems act like mind readers and deliver relevant options directly to the consumer. No questions asked. By using a combination of collaborative and content-based filtering to deliver highly targeted content, recommendations can account for as much as 30% of revenue—which can translate into billions of dollars in sales.[5] Recommenders also increase conversion by providing personalized messages to consumers, improving loyalty and satisfaction.

The time is now

PwC's "Financial Services 2020 and Beyond" report states that established financial companies risk losing 25% of their business to more agile startups.[6] And 70% of financial leaders reported speed of change in technology as a concern.[6] Complicating matters is the fact that consumers have more information about competitive offerings, and it's easier than ever for them to switch. According to PwC, consumers are becoming more demanding and less loyal: One in three millennials in the United States is open to switching banks in the next 90 days.[6]

So how do you stay competitive when the rate of change is increasing rapidly? AI now plays a central role in launching innovative new products, reducing risk, and elevating the customer's experience. But traditional approaches to AI involve slow architectures that silo analytics, training, and inference workloads. This approach creates unnecessary complexity, drives up costs, and constrains speed to scale.

As data volumes continue to increase, many companies will be forced to modernize their infrastructure to be able to gather, interpret, and present massive quantities of data for real-time AI.

Established financial companies risk losing

25%

of their business to more agile startups.[6]

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Three keys to success

Here are three requirements to build a data infrastructure that sparks innovation and drives revenue.

1. Vast amounts of data

Data is key to identifying patterns, developing predictive insights, and enabling increasingly accurate autonomous systems. Typically, the more data, the more accurate the model. But more data means larger AI models—some with millions or billions of parameters. Training models of this size can take weeks of compute time and require the best-of-the-best machine learning and deep learning frameworks

Not only does all of this data need to be managed, it also needs to be protected within the strict parameters of internal and external compliance regulations.

2. Seamless data movement

Volumes of data are massive and stored in many different forms. And that data lives everywhere—across multiple clouds and in the data center. Data silos and technology complexity are major hurdles to getting AI projects into production.

In a modern AI infrastructure, thousands of edge locations gather terabytes of data every day. Effective AI requires a data pipeline that spans the entire ecosystem, from ingest and data prep all the way to analysis and tiering. Data must be able to flow quickly and freely throughout the pipeline at every step. Deep learning only scratches the surface when access to this data is limited by a siloed infrastructure.

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3. Speed

Applications such as chatbots use <u>natural language processing</u> (NLP) technology to ingest, process, and respond in a humanlike way, with an undetectable lag between a user's question and the AI's response.

For fraud detection, AI operations must be able to detect unusual behavior and respond instantly to stop hackers in their tracks. It takes just milliseconds for a hacker to gain access to your data, but you may not know that there was a breach for more than 200 days. That gives fraudsters a lot of time to do a lot of damage.

If you're thinking about implementing AI for smarter trading, you'll have to think fast. Really fast. Trading on the stock exchange can be done in less than half a millionth of a second—that's more than a million times faster than the human brain can react.[7]
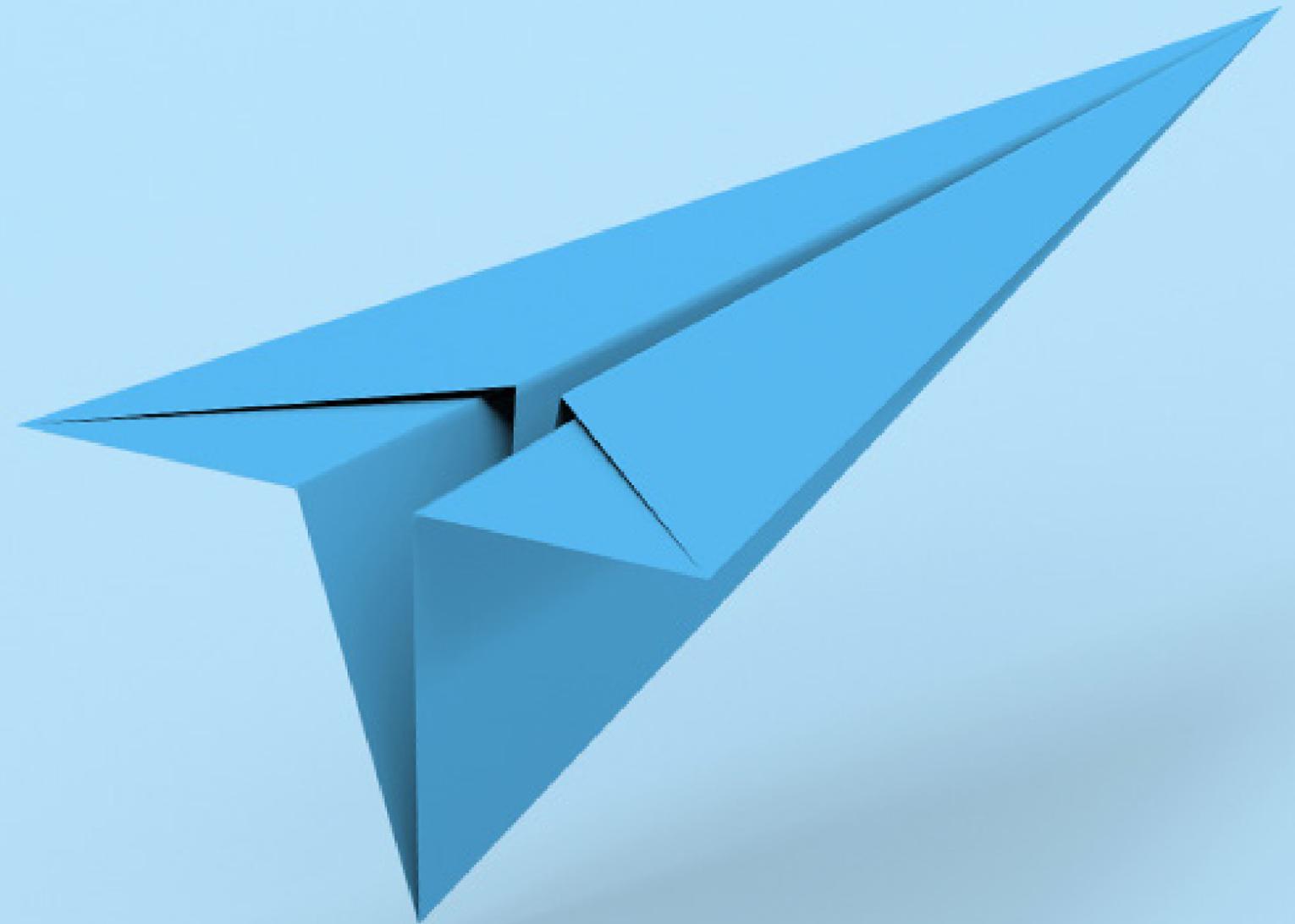
Artificial intelligence meets real business benefits

NetApp is the trusted, industry-leading advisor to more than 9,000 financial services organizations worldwide, solving performance and security challenges and helping them gain a competitive advantage in this fast-evolving marketplace.

NetApp helps make sure that your finance data is always available in the right place at the right time to fuel transformation. We remove data silos to provide real-time market-ready analytics and to help you combat fraud with proven AI solutions. And as the data authority on hybrid cloud, NetApp delivers AI solutions that remove bottlenecks at the edge, core, and cloud to enable more efficient data collection, accelerated AI workloads, and smoother cloud integration.

NetApp® AI solutions:

- Leverage API and Python integrations to make it easy for developers to create standardized, repeatable processes for more accurate experimentation.
- Support seamless, cost-effective data movement across a unified hybrid multicloud environment.
- Integrate with AI leaders, channel partners, systems integrators, software and hardware providers, and cloud partners to deliver smart, powerful, trusted AI solutions that help achieve your business goals.

NetApp is positioned as a leader in the IDC MarketScape for worldwide scale-out file-based storage. Which is important because AI workloads are scale out and file based.

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Make your data scientists happy

5x
Run 5 times more data through your pipeline.

<60 seconds
Copy datasets in seconds rather than hours or days.

~20 minutes
Configure your AI infrastructure with Ansible integration.

Start your journey today

Are you ready to bank smarter, not harder? Learn more about NetApp's solutions for AI:

- NetApp AI
- ONTAP AI
- NetApp AI solutions for financial services
- NetApp AI solutions for natural language processing
- NetApp AI solutions for computer vision

Questions? Our AI solution specialists are standing by.
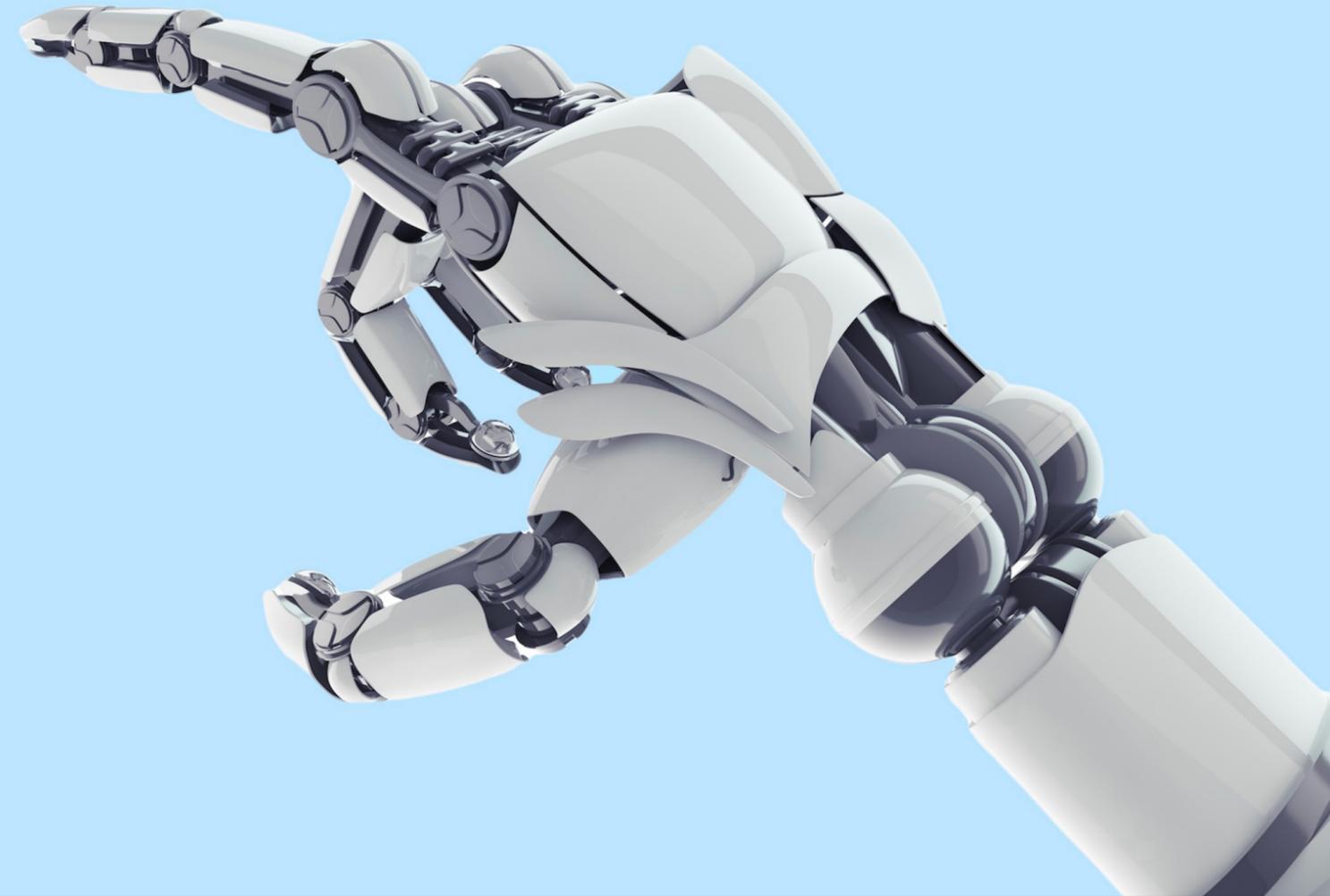
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About NetApp
In a world full of generalists, NetApp is a specialist. We're focused on one thing, helping your business get the most out of your data. NetApp brings the enterprise-grade data services you rely on into the cloud, and the simple flexibility of cloud into the data center. Our industry-leading solutions work across diverse customer environments and the world's biggest public clouds.

As a cloud-led, data-centric software company, only NetApp can help build your unique data fabric, simplify and connect your cloud, and securely deliver the right data, services, and applications to the right people—anytime, anywhere.

To learn more, visit **www.netapp.com**

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