

The Business Value of Cloud in Financial Services

EXECUTIVE SUMMARY

Financial services companies, across the banking, insurance, and capital markets segments, are continuing to shift key components of their IT infrastructure to the cloud, and they increasingly depend on cloud technology infrastructure to operate back-office processes and directly serve customers. A CIO at a major service provider for the capital markets industry that spends over \$25 million annually on cloud services described the state of this transition to cloud: “When you talk to financial services firms in the marketplace today, everyone understands what the cloud brings to the business. The differentiator today is how quickly organizations are moving to the cloud.”

To understand more about the business value obtained from the adoption of cloud services, research conducted by GLG, surveyed 100 business and technology leaders in financial services companies that utilized Amazon Web Services (AWS). This panel indicated that their organizations saw improvements in key metrics stemming from their adoption of AWS technologies in core areas of their business, including customer experience, risk management, application and transaction processing, and product innovation.

Migrating to cloud services resulted in:



ABOUT THE RESEARCH

GLG, the World's Insight Network, brings decision makers the insight it takes to get ahead, providing meaningful connections through a network of 1 million experts, the world's largest and most varied source of first-hand expertise. In September 2023, AWS engaged GLG to conduct a survey of 100 IT and business leaders at financial services firms, including the banking, insurance, and capital markets segments. GLG conducted the study in a double-masked manner to ensure objectivity in the study. Survey respondents in this study had decision-making authority over the selection of cloud infrastructure services and their organizations had been using AWS services for at least 12 months.

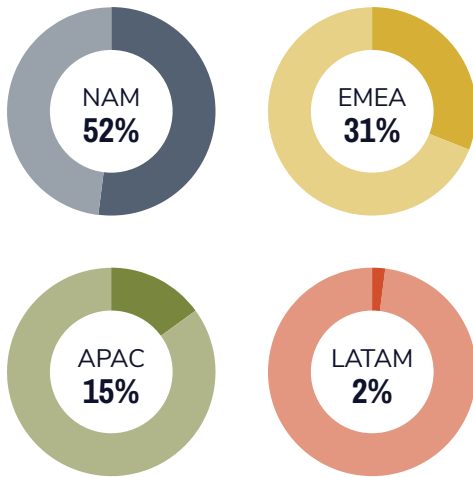
The research, conducted through GLG, was to understand the business value realized by financial services companies' adoption of AWS services. The key goals were to:

- Identify the areas of business performance impacted by cloud services adoption
- Quantify the improvement to key performance indicators (KPIs)
- Illuminate the means by which cloud services adoption improves KPIs

The figures below indicate respondents' level of seniority, their companies' annual revenue, and segmentation of respondents' companies within the financial services industry. The length of time on AWS differed among the 100 professionals we surveyed. Respondents were asked to compare their business metrics before and after their adoption of AWS. To assist in interpretation of the survey findings, GLG conducted in-depth, qualitative interviews (IDIs) with experts possessing similar profiles to our survey respondents.

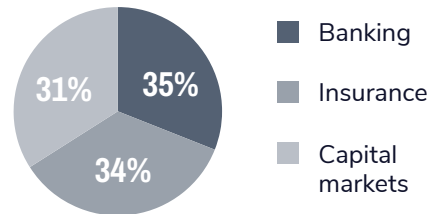
Region

N = 100



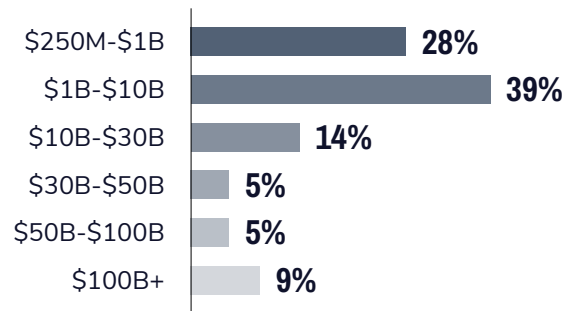
Industry Segment

N = 100



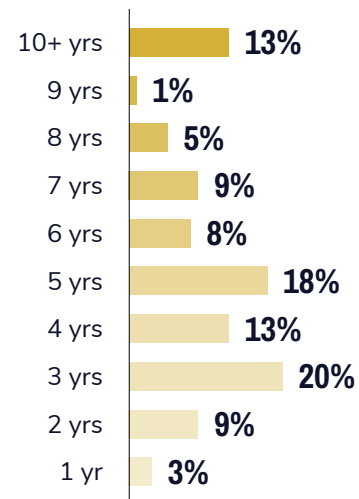
Annual Revenue

N = 100



Length of Time Using AWS

N = 100



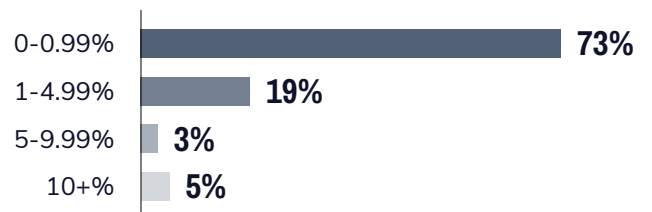
Seniority

N = 100



Cloud Spend as a Percentage of Revenue

N = 100



PATTERNS OF CLOUD SERVICE ADOPTION

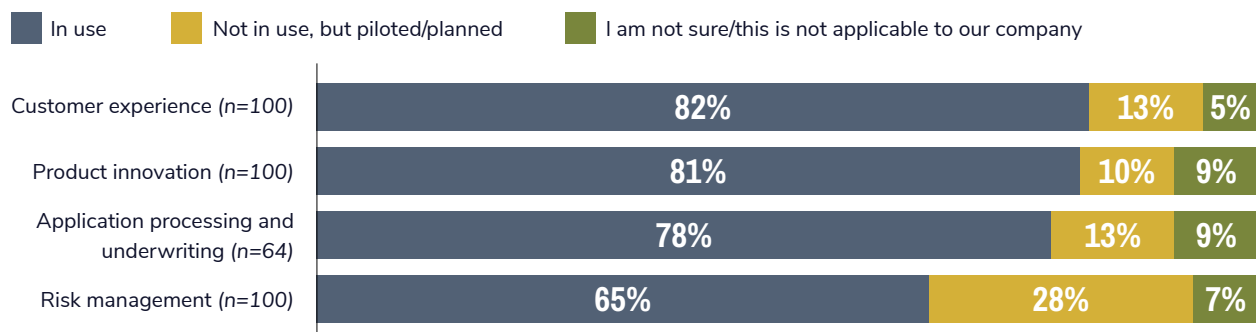
Cloud services represent a significant and growing portion of financial services IT budgets, with respondents reporting that on average 58% of their IT infrastructure expense is allocated to cloud services versus 42% allocated to on-premises infrastructure. Financial services companies tend to allocate more to cloud over time: companies with under three years of experience with cloud services invest an average of 46% of their infrastructure expense in cloud services, while companies with more than seven years of experience with cloud invest an average of 63%. Larger institutions have moved more slowly in their adoption: companies with over 50,000 employees invest an average of 53% of their infrastructure spend into cloud services, compared with the 63% invested by companies with fewer than 5,000 employees. Segments of the financial services industry also vary in their levels of adoption of cloud services: respondents from capital markets firms indicated that their organizations allocate an average of 63% of their infrastructure spend to cloud services while those from banks and insurance companies indicated that their organizations allocate an average of 54% and 57% of their infrastructure spend to cloud services, respectively.

These cloud services are being deployed across a wide range of use cases, but some areas of the business are more likely to utilize cloud services than others. Capital markets firms are most likely to deploy cloud services in support of risk management use cases (77% of capital markets respondents), while banks and insurance companies deploy cloud services at a higher rate toward customer experience use cases (83% and 85% of banking and insurance respondents, respectively). Product innovation, the process by which financial institutions create new financial instruments, products, or services to address new market segments or make use of emerging financial technologies, is an essential use case across all segments: 81% of respondents indicated that their organizations utilized cloud services for this purpose.



As the CTO at one of the world’s largest banks, which spends nearly \$1 billion annually on the cloud, explained, “Cloud services have proliferated to lines of business based on how they connect to the revenue stream. From the customer perspective, this includes how an organization is going to create a more digital customer experience. In the tier-one level of financial services, cloud services are widely embedded in the majority of business applications to create value, accelerate opportunity, and enable global variation in how products and services are offered.”

Cloud Service Use Cases



Other in-use uses cases include ERP, Robotics, Business Assurance, & Back-office Management.

CUSTOMER EXPERIENCE

Financial services companies are utilizing cloud services to acquire and onboard new customers as well as drive improvements in how they serve, support, and retain existing customers. Cloud services enable financial institutions to integrate internal and external data sources and build a complete view of prospective and current customers, improving customer acquisition processes. Banks and insurance companies saw increases in click-through rates in advertising campaigns after the adoption of cloud services, with respondents reporting an average 37% increase for banks and an average 24% increase for insurance companies. Capital markets firms saw an average 44% increase in customer conversion rate, the largest among the segments, likely because this metric is especially relevant for the wealth management subsegment and an area of significant investment for companies in that space. All segments reported a reduction in the cost of customer acquisition, with banks and insurance companies reporting an average reduction of 28% and capital markets firms an average reduction of 33%. As a cloud computing executive at a property and casualty insurance provider that spends approximately \$10 million on cloud services annually described, “Customer segmentation used to be monstrous and the analysis was difficult. Now things have changed: all the customer data lives in a data lake, and we have out-of-the-box algorithms. No development is required, we just need to point to our data and start playing around with it. Segmentation has become much easier, and since it has become easier, we can use our time to tailor our services accordingly because we know what our customer looks like.”

Cloud services are used to streamline customer onboarding by automating know your customer (KYC) and anti-money laundering (AML) processes. Across all segments, financial services companies saw an average 41% reduction in time to onboard new customers, with banks seeing slightly greater reductions in time to onboard than insurance companies. Cloud services also support the AI-enabled chat capabilities that automate customer service interactions and improve agent productivity in call centers. All segments also reported an average 40% reduction in call handling times. A CTO at one of Europe’s largest banks, which spends over \$1 billion on cloud annually, explained:

“From an onboarding perspective, cloud services are definitely driving improvements in overall efficiency and customer experience. We are now processing the data and doing document verifications in real time, so the approval process is getting faster. It used to take days, but now we have an answer within minutes or seconds.” Financial institutions are seeing not only more efficient onboarding but also a reduction in errors and incidence of fraud. Respondents from banks and insurance companies reported large reductions in the number of abandoned applications during customer onboarding (38% on average) and in the number of onboarding fraud incidents (42% on average).

Customer experiences across acquisition, onboarding, and service are empowered by cloud services, driving better overall satisfaction. Respondents from banks reported an average 38% increase in customer satisfaction, while capital markets firms reported an average 42% increase and insurance companies an average 35% increase. Banks and insurance companies also reported an increase in net promoter score (NPS) of 33%. A chief data officer at a major asset management firm that spends more than \$500 million annually on the cloud explained how cloud services directly connect to improved NPS: “When you had to deploy stuff in your own data center, it took you time to buy hardware, rack it and stack it, run network connections, and install a bunch of proprietary software. The dynamic has really changed in the cloud because a lot of these



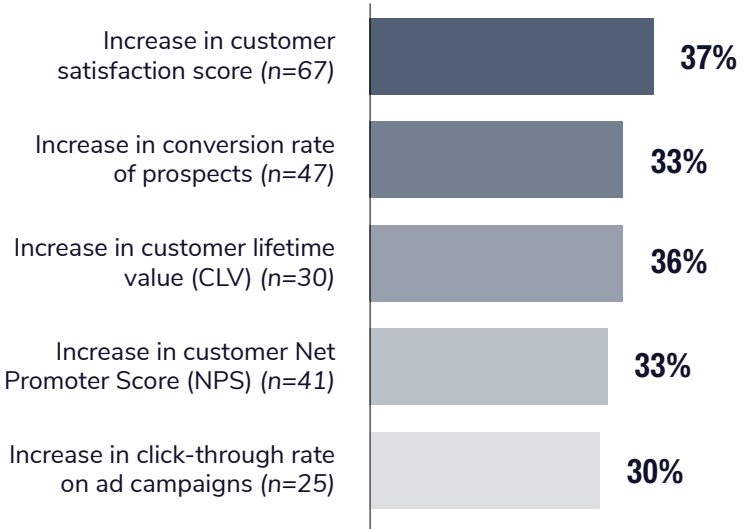
41%

*average reduction in time
to onboard new customers
across all market segments*

are services that you activate, and five minutes later you can start taking advantage of them. Your platform has higher availability, which internally enables you to concentrate more on the client-facing solution, and then the measurements of those capabilities are more agile, with constant enhancements and optimizations based on customer responses. The ability to tune that customer experience is where cloud gives you a lot more efficiency and quicker time to market. As you see that consistently getting better, obviously your NPS scores will improve as a result of that.”

Respondents from the banking and insurance segments reported an average 32% reduction in the cost to serve customers and a 36% increase in customer lifetime value. Across all segments, financial services companies were able to reduce customer churn by an average of 28% after adopting cloud services, meaning that investments made in acquiring customers were retained for a longer period. Cloud services enable these improvements in a variety of ways. For example, machine learning and artificial intelligence tools can help financial institutions develop more personalized solutions and target offers more precisely, improving cross-sell and upsell opportunities, increasing share of wallet, and adding to the overall value customers perceive from their relationship with the institution.

Avg. % Increase Due to the Adoption of Cloud Services



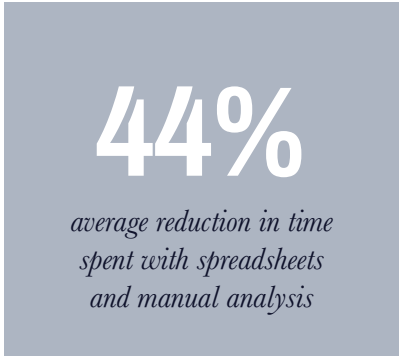
RISK MANAGEMENT

Improvements in risk management impact financial services companies’ top and bottom lines, increasing customer trust, reducing costs passed on to customers, and lowering exposure to financial loss and regulatory action. Adoption of cloud services was observed to have significant impact on financial services companies’ ability to manage risk by improving data management and governance, increasing the accuracy of risk analytics, enabling real-time decisioning, and streamlining regulatory reporting. A cloud computing leader at an insurance provider that spends about \$10 million annually on cloud services explained how these benefits are realized: “We have a cloud-based machine learning model that is trained to identify patterns with fraudulent claims. We train the model that this is bad data and it’s fraudulent, or to identify this kind of pattern. The model keeps on scanning new claims as they come in and flags suspicious data based on the criteria that we have

identified. From this cloud application deployment, we saw significantly reduced payouts of fraudulent claims and processing time.”

Cloud services help financial institutions reduce risk by enabling them to create end-to-end control frameworks for meeting governance requirements and continuously monitoring data quality and conformity. Across all segments, costs associated with fraudulent transactions declined by an average of 39% after adoption of cloud services, as did the number and severity of operational risk incidents and compliance failures, with respondents reporting an average reduction of 38%. Insurance and capital markets firms saw the largest reduction in fraudulent transaction costs, an average of 42%, and capital markets firms in particular saw very high increases in fraud detection rates, an average of 60%. Firms increased their security posture and reduced their exposure to fraud in part by reducing technical debt and complexity. A CIO at a capital markets firm that spends over \$25 million annually on cloud services challenged peers to use the continuously improving security capabilities of the cloud to their advantage: “Using native cloud infrastructure and platform services is core to reducing your technical debt. Any application that’s five, seven years old or older is already in a legacy category. How are firms thinking about re-architecting them and re-platforming them the right way? How are they using the security tools that are for the most part only available in a cloud environment to enhance the protection of those applications?”

Costs associated with core finance and reporting processes declined by an average of 35% across the population surveyed. By creating data pipelines that connect producers and consumers of data, cloud services enable financial institutions to spend less time on data identification and preparation and more time on analytics to support near-real-time decision making. Capital markets firms, which make significant investments in risk-scenario building, saw an average 59% reduction in the compute time associated with large-scale model processing and scenario building, almost double that reported by respondents from banks (32%), while all firms reported an average 44% reduction in time spent with spreadsheets and manual analysis. These improvements in the ability to predict and manage risk translate not only into better efficiency but also overall savings that can be passed along to customers. As a cloud computing leader at an insurance provider that spends about \$10 million annually on cloud services explained, “Initially, when our systems were on-premises, it was a hassle to exchange data multiple times before we even got to processing it. Now with cloud-based analytics, we can process data directly. We’re getting data in real time from different sources; this data is ingested in our cloud platform. Through this ingestion of real-time data, we can dynamically change the premium for the customer. That gives them satisfaction, increases their loyalty, and decreases our risk.”



Adoption of cloud services also accelerates the business processes that support risk management. Cloud services enable financial institutions to pre-underwrite risk assessment models to help customers identify products that match their needs and align product offers to risk profiles so that customer acceptance rates per product are increased. Financial services companies were also able to meet regulatory and compliance requirements more efficiently, with the time required to close books falling by an average of 32%, the costs associated with regulatory reporting processes decreasing by an average of 35%, and the time associated with meeting new regulatory requirements decreasing by an average of 38%.

Cloud services enable more comprehensive and efficient auditing and reporting, reducing the complexity of maintaining compliance through automation and streamlining of regulatory reporting and improved analytics. As a CTO from a major global bank that spends almost \$1 billion annually on cloud services explained, “Our cloud adoption has enabled a unique risk profile to be associated with each vertical and region so that we can continuously monitor, audit, and generate better incident response plans to ensure that our operation remains secure, compliant, and resilient.”

Avg. % Increase Due to the Adoption of Cloud Services



APPLICATION & TRANSACTION PROCESSING

Cloud services support a wide range of use cases in application processing and underwriting, helping to increase the pace and scale of transaction processing while reducing error rates. All firms saw an average 36% increase in the number of transactions processed per year. Respondents from the banking segment reported an average 42% reduction in the time required to process applications, while respondents from the insurance segment reported an average 32% reduction. This difference in improvement may be attributable to differences in overall investment: respondents from banks indicated that their organizations spent an average five times more on cloud services than respondents from insurance companies. Key to improving application processing is the ability of financial institutions to dynamically scale their infrastructure to meet higher demand. As one cloud computing leader at a property and casualty specialist that spends \$10 million in cloud services annually explained: “The process improvement is in terms of provisioning. If I needed higher compute, what was the process before? Wait until the end of year, then we will have a renewed contract with the hardware guy, we’ll get the budget approval, he’ll provide more hardware, we’ll provision it. Now, it is a matter of clicks. You just get approved, you spin up a higher compute, get your job done, and once it’s done, just turn it down. That is a significant boost compared to what we had before.”

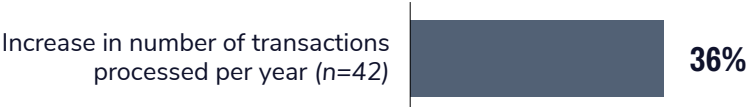
42%
average reduction in the time required to process applications reported by banks

The cloud infrastructure that enables highly efficient underwriting can be significantly more cost effective than replicating the same application on-premises. As a chief data officer from a major provider of financial services for retirees that spends over \$500 million annually on cloud services explained, “If somebody wants to build a model for mortgage underwriting, and they need to be able to get a response from that model in a matter of seconds while the client is engaged, they might need to deploy three, four, or five thousand GPUs into their own data center. That might cost \$20 million just in hardware, which is going to be end of life every three years, and then they have to license agents and operating systems and firewalls and a bunch of other pieces. Instead, I can run and execute that model on a lease using just 3,000 CPUs, but scale it up to 4,000 CPUs to

give a much quicker response and meet all of my digital transaction needs, and be able to do that calculation in a fraction of a second, so the client doesn't even perceive the tons of processing at their feet for a decision associated with their underwriting application." These reduced costs were reflected in responses in the survey: banks saw an average of 39% reduction in costs associated with application processing while insurance companies reported an average of 28% reduction in their costs. Respondents from banks and insurance companies reported an average of 29% reduction in the time needed to make underwriting decisions, while customer reject rates from the underlying process declined by an average of 32%.

Errors, special handling, and losses from write-offs all represent costs that can result from improperly processed or underwritten applications, but respondents reported that adoption of cloud services had mitigated many of these challenges. Cloud services such as intelligent document processing and AI/ML tools increase the speed and accuracy of document processing while reducing costs, enabling greater personalization, and increasing the quality of data used to process applications. Error rates per application declined an average of 32% at banks and an average of 24% at insurance companies, while errors in processing transactions were also reported at different levels between the types of firms, decreasing by an average of 33% for banks and 21% for insurance companies. The number of cases requiring special handling decreased by an average of 33% for banks and an average of 12% for insurance companies.

Avg. % Increase Due to the Adoption of Cloud Services



PRODUCT INNOVATION

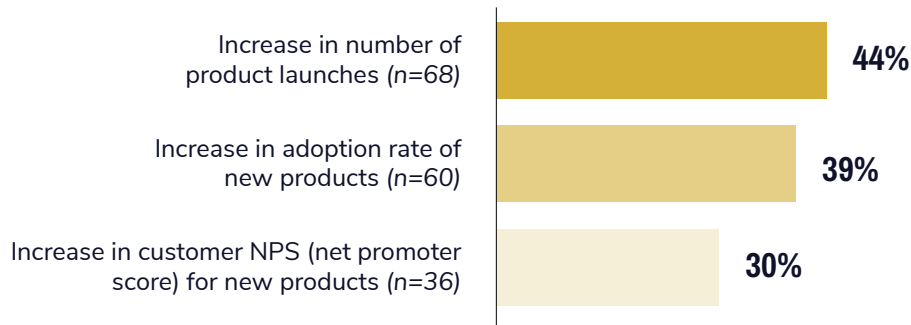
Product innovation is critical to financial services firms' ability to make new offers to customers and increase revenue opportunities. Cloud services provide a flexible and cost-effective platform for developing and testing financial products and services, enabling teams to collaborate on product development, streamline workflows, and accelerate time to market.. A CIO at a capital markets firm that spends over \$25 million annually in the cloud explained, "Cloud services can really help from an agile perspective. [Firms] are building new, differentiated services from the innovative solutions and platform services that are available within the cloud, or they are finding solution providers that can incorporate those services into their overall stack and help them get to these differentiators even more quickly." Respondents from insurance companies and capital markets firms reported the largest improvement in product development cycle length from adopting cloud services, with average 40% and 43% reductions in this metric, respectively.

In addition to reducing the time required to develop new services, the cloud enables teams to collaborate and streamline workflow during product launch and commercialization. Respondents indicated that cloud services reduced the time required to take new products to market, reporting an average 40% reduction in this metric. Secondary KPIs associated with time to market also improved. Across the segments, respondents reported an average 44% increase in the number of product launches, with respondents from smaller firms (between \$250M and \$1B in annual revenue) reporting a significantly higher average 63% increase in the rate

of product launches. Respondents also indicated that the time required to train and onboard new customers had declined by an average of 39%. Not only did respondents describe more products reaching market faster following cloud service adoption, but those products were received better by customers. Rates of new product adoption rose between 35% and 45% on average across the segments. In the banking and insurance segments, improved product innovation also translated into increases in NPS for new products, with respondents in these segments reporting an average 30% increase in NPS for new products.

30%
average increase in NPS for new products reported by banks and insurance companies

Avg. % Increase Due to the Adoption of Cloud Services



CONCLUSION

Research conducted through GLG demonstrated that financial services companies benefit from cost savings and improvements in operations after adopting cloud infrastructure, enabling them to deliver new products and services to customers at greater scale and speed. Moreover, improvements in service quality translate into higher customer retention and satisfaction, creating the foundation for accelerated growth and improved revenue. Cloud services offer financial institutions a flexible foundation for agile development of innovative new offers for customers, powerful analytical tools for modeling risk, a secure environment that adapts quickly to the latest threats, and dynamic sizing to enable greater alignment between infrastructure costs and business needs.



The survey and interview research and analysis contained in this document has been conducted by a consultant engaged by AWS through Gerson Lehrman Group's network of independent consultants and subject-matter experts ("Network Members"). Network Member survey respondents and interviewees were compensated for their participation in the research. All information is as of October 13, 2022, is for informational purposes, and does not constitute legal, accounting, tax, investment, or other professional advice. No representations or warranties (express or implied) are made regarding this document. Neither GLG nor any Network Member shall have any liability whatsoever in connection with the use of this document.