

U S
T .



Streamlining Digital Transformation in Financial Services



WHITEPAPER

A guide to maximizing
ROI and minimizing
complexity

ust.com

Table of contents

| | |
|--|-----------|
| Cloud migration challenges | 1 |
| Re-platforming | 2 |
| Technical solutions | 3 |
| Operational governance challenges | 4 |
| Managing risks and controls | 5 |
| Release management | 6 |
| Enabling and training users | 7 |
| Improving the journey | 8 |
| Optimizing migration | 9 |
| Managing replatforming | 10 |
| Building beyond with AWS | 11 |
| Controlling governance | 12 |
| Managing risks and controls | 13 |
| Controlling release management | 14 |
| Implementing effective training | 15 |
| Powerful teamwork | 16 |

Cloud migration challenges

Financial services companies face unique challenges when migrating their infrastructure to the cloud. These include clearly understanding the end goal and success metrics, as well as determining which components of their IT ecosystem need to transition to achieve that goal. This information is critical in setting the scope of the migration project, team involvement and business impact.

Another major challenge is dealing with legacy technologies that may not be supported in the cloud environment. Many financial services organizations have applications and systems built on outdated programming languages or operating systems, requiring significant effort to update their code and architecture before migration.

In addition to the technical challenges, financial services companies must also update their existing operating models for managing application runtime and support, which are typically optimized for on-prem infrastructure. To make the most of cloud computing, companies must adopt an automation-led site reliability engineering (SRE) and DevOps operating model.

Finally, transitioning from one cloud provider to another is a complex process that requires careful planning and execution. Even for organizations already using cloud computing, moving from one cloud to another may require customization due to the variety of technologies offered by providers like AWS, Azure, and Google Cloud Platform. Financial services companies need to be aware of these challenges and plan accordingly to ensure a successful migration to the cloud.

Re-platforming

Financial services companies face unique cloud migration challenges as the needs of an application can evolve during migration, requiring re-platforming to make them viable again. Some applications can simply be relocated and work in the cloud, but this lift and shift can create inefficiencies preventing them from leveraging the full power of the cloud. Others need to be transformed in a way that will make them viable in the cloud. Sometimes, an application can be scaled down to a microservice or API while maintaining the same functionality level.

In other cases, the application requires a complete rebuild to ensure no loss of features and functionality. Financial services companies must carefully consider their options. They need full information to choose the approach that provides the highest degree of backward compatibility, the best cost savings, and the least effort for transition to the cloud.

Financial services companies need to understand why they might want to scale down an application to a microservice or API versus a complete rebuild. Organizations striving to shift left will push toward microservices and APIs as low-code opportunities abound for these solutions, creating solutions to be consumed by micro-frontends. Alternatively, a complete rebuild of the entire application is likely a better fit for organizations that must maintain their code architecture fully. Financial services companies should evaluate all of their options in order to choose the approach that best fits their needs for a successful migration to the cloud.

Technical solutions

Financial services institutions that benefit from cloud providers like AWS have solutions built into their infrastructure to manage growth and migration. However, without an in-depth understanding of these, effectively orchestrating these solutions can be a challenge. Failure to migrate efficiently can lead to the creation of technical debt. Technical debt can mount until it becomes unavoidable and expensive to address or open vulnerabilities that attackers can exploit. Financial services companies must understand these solutions and orchestrate them effectively to avoid these potential issues.

While AWS can help financial services companies migrate to the cloud, it does not provide customization to create a right-fit solution for each organization. Things are migrated in a similar format to how they came in, without the ability to embrace essential changes like minimization and shifting left. Additionally, AWS does not natively convert to optimize utilizing orchestration such as Kubernetes, which automates operational tasks of container management and helps organizations make the most of cloud technologies. When customizing their solutions, financial services companies need to be aware of these limitations when migrating to the cloud.

Operational governance challenges

The cloud allows for rapid growth and development; developers can create additional technologies and services without oversight. However, moving to the cloud falls outside many organizational governance controls. This lack of a central and holistic governance strategy can lead to exposure and additional risk for financial services companies on multiple fronts. These risks include compromised security posture, out-of-control cloud costs, and a growing infrastructure footprint with ever-growing architecture and technical debt. Financial services companies must prioritize a central and holistic governance strategy to ensure a successful migration to the cloud that minimize these risks.



Managing risks and controls

Moving to the cloud involves additional risks you must manage to create a safe and effective migration. With hundreds of applications, managing technology capabilities, constraints, and regulatory needs simultaneously are challenging. The migration comes with additional risks from new security threats, along with ensuring that your customers receive the same level of service throughout the migration process and beyond.

Financial services companies need solutions that help them overcome these challenges when moving from on-premises to the cloud or from one cloud to another. Existing solutions may no longer be applicable in the new environment as the perimeter has changed. Often, the shift is from detective to preventative controls to account for the increased attack surface. Additionally, IT financial controls become necessary to monitor cloud spend and usage, which helps validate technical architecture decisions.

To address these challenges, financial services companies need solutions that help them map existing controls from one phase to the next, creating visibility into their migration and ensuring that existing types of protections are recreated during the migration process while also including new requirements. Understanding ownership is crucial, so responsible parties are in place and know their role in managing and mitigating the risks.

Adopting Site Reliability Engineering (SRE) best practices such as policy for code and automation of controls allows financial services companies to establish a continuous compliance scalable framework. This framework helps ensure they comply with industry standards and regulations while minimizing risks and maximizing cost savings. Financial services companies must prioritize SRE best practices when migrating to the cloud to ensure a safe and effective migration.

Release management

Cloud acceleration can benefit financial services companies by allowing them to rapidly create new applications and integrate code changes on the fly. However, it must be done in a controlled manner to avoid introducing problems along the way. Financial services companies must create technical constraints and implement the right IT operations processes to ensure that appropriate checks are in place for all new code moving forward. Developers must be prepared for this process to ensure its success.

A robust CI/CD pipeline can streamline code changes and rapidly move from development to production while ensuring appropriate code validation and security checks occur before pieces are integrated into production. Designing this process well adds technological gates to consistently deliver safe and organized code. Ineffective design and implementation can add unnecessary friction to the build and release process, creating phases where individuals may not know they are responsible for steps required to move code forward. This ultimately results in barriers to flow and a sub-optimal value stream. Financial services companies must prioritize effective design and implementation to ensure a streamlined build and release process that adds value to their operations.

Enabling and training users

Cloud is a powerful tool that allows developers a lot of control and flexibility. Preparing developers for this new power and how to optimally use it to fit in with business processes and governance is crucial to safe migration. Only some developers, especially when migrating from on-premises into the cloud, have the breadth of experience to know every new technology they will use and how to use it most effectively.

User training ensures that teams can make the most of a new cloud environment. It helps to familiarize them with the architectural and technological changes that are being implemented. It also helps them to understand the new technology's capabilities, so they can optimally architect and implement new solutions to take advantage of the powers of the cloud while minimizing costs by leveraging the right technologies and scaling.



Improving the journey

Mendix and UST can help financial services companies make the most of their cloud transition and migration. With Mendix and UST, financial services companies can streamline their transition and orchestrate the entire process in a controlled manner with complete visibility. Mendix and UST help financial services companies optimize their migration processes, transforming applications to fit their new needs while reducing risks that can occur throughout the process.

Mendix and UST can provide financial services companies with the tools and support they need to navigate their cloud transition and migration confidently. The combination of these platforms can help companies identify potential issues before they become problems, allowing them to course correct as needed. Mendix and UST help financial services companies maximize the value of their cloud transition by ensuring a seamless and efficient process that reduces risk and increases productivity.

"We are excited to work with Mendix and what it means for UST and our clients. Mendix's industry-leading platform, along with its proven capabilities, will allow us to continue to help our clients achieve greater innovation as they embark on their digital transformation journeys. We look forward to working alongside Mendix and believe this work will allow us to stay competitive in an industry where the popularity of low-code technologies continues to grow."

Maureen Doyle-Spare

General Manager - Asset & Wealth
Management and Insurance, UST.

Optimizing migration

Developing applications using traditional methods can be time-consuming for financial services companies, requiring skilled developers to create code for new functionalities. It can also involve tedious steps like making database connections, integrating existing core platforms like Customer Relationship Management, and scaffolding existing technologies into the solution.

Mendix offers a low-code development platform that simplifies and streamlines this process for financial services companies, allowing them to rapidly build, deploy, and operate enterprise-grade applications. With Mendix, developers can create portable, scalable, and resilient applications without specialized cloud expertise. They can reduce the time spent on tasks like automation and data integration. Leveraging visual development, developers can rapidly move from design and inception to creation and delivery without increasing their workload. This can help financial services companies save time and resources while increasing productivity.

Mendix also provides financial services companies with the tools and support they need to develop applications that meet their specific needs. With Mendix, financial services companies can develop applications that integrate with existing core platforms like Customer Relationship Management, allowing them to create more streamlined and efficient workflows. Additionally, Mendix offers a variety of automation and integration features that can help financial services companies improve their processes and increase efficiency.

Managing replatforming

Replatforming presents serious challenges for financial services companies, and decisions made during this process can have far-reaching effects on an application's future performance. Reimagining everything is not always viable, so financial services companies must carefully determine which applications will benefit most from transitioning.

Mendix assists financial services companies with decision-making using years of experience, helping other organizations in the financial industry transition to the cloud. Mendix can help your organization prioritize legacy systems that otherwise would not transition well and help define a long-term process to gradually re-imagine systems that directly transitioned to the cloud. A gradual transition allows your teams to streamline interfaces over time, eliminating redundant and confusing screens and replacing them with clean, intuitive interfaces without disrupting staff with a cutover transition.

Multiple clients have leveraged Mendix to transition their custom applications built on legacy technology to be cloud- first. One example is a large European bank with over 600 business-critical applications built leveraging shadow IT tools like Access, Excel, and SharePoint. The lack of IT Operations support for these applications presented a regulatory & operational risk. In the first year of leveraging Mendix, this company was able to replace 10% of its shadow IT portfolio and has since consolidated functionality or decommissioned another 400 applications over three years.

Similarly, a large European insurance firm faced increasing costs due to technical debt and misalignment with IT governance processes. By leveraging the Mendix platform, they saved \$700,000 of development costs compared to traditional development. It enabled business resources to adhere to the IT Governance processes, streamlining their transition to agile development.

Building beyond with AWS

AWS offers a range of technologies customized and optimized for targeted tasks, making it a valuable resource for financial services companies. Mendix helps organizations make the most of their out-of-the-box cloud-native AWS toolset, which includes: ideation, development, testing, IT governance, and DevOps as after DevOps part of the Mendix Platform, resulting in greater ROI from your AWS infrastructure investment while turbocharging your ability to complete the transition.

With the Mendix Platform, financial services companies can build the flexibility to adopt new technologies as necessary, enhancing their applications in the future when new capabilities present themselves without significant upheaval and interruptions. This allows financial services companies to pivot rapidly to adapt to changing business needs without needing costly infrastructure or separate software. By taking advantage of AWS and Mendix, financial services companies can ensure that their applications remain agile, scalable, and adaptable in the face of changing business needs.



Controlling governance

When embracing the cloud, organizations need to build governance components into their new architecture, similar to how they did on-premises. Even though the technology exists elsewhere, the need for oversight and consistent implementation of best practices is still ongoing. With the rapid development process of the cloud, it is even more crucial that these processes are implemented and have controls in place to ensure they are followed consistently.



Managing risks and controls

When migrating to the cloud, the threat landscape and security control needs change, which is a crucial consideration for financial services companies. Mapping existing control requirements to the cloud can be challenging. UST helps financial services companies overcome the transition of managing risks and controls in the cloud with PACE. Leveraging reusable blueprints and components powered by PACE, UST helps financial services companies rapidly integrate necessary solutions to manage risks and implement the appropriate controls in the cloud without reinventing new solutions every time. PACE improves decision-making and risk mitigation by leveraging transparency and improving visibility across every stage of the Software Development Life Cycle (SDLC). Customized dashboarding places vital information in the hands of key stakeholders in real-time, accelerating decision-making and improving the accuracy of risk calculations.

Controlling release management

Cloud development can offer financial services companies increased speed and agility, but it needs to be tempered with security and development best practices to ensure that vulnerabilities are assessed, and quality assurance is maintained. This helps ensure that the development process does not become an express pipeline to bugs and vulnerabilities.

Financial services companies can choose between low-code development and traditional development. For those opting for the low-code route, Mendix's low-code development platform integrates CI/CD streamlining the development to deployment operations, which combines well with cloud migration by incorporating rapid development processes with cloud agility. This can help financial services companies streamline their development and deployment processes, allowing them to move more quickly without sacrificing security or quality.

For financial services companies with more robust traditional processes, UST and Mendix can help develop whole CI/CD processes adapted to the cloud to include automation for expediting development while taking necessary steps to ensure that only well-vetted code reaches production. UST's vast experience allows them to rapidly customize solutions following existing design patterns that have been proven effective across industries. With UST, financial services companies can benefit from trusted solutions built to scale and accommodate their organizational structure.

Implementing effective training

Building a secure framework is the foundation of an effective build pipeline in the cloud for financial services companies. Providing training to developers on how to best utilize their environment cost-effectively can help optimize outcomes in the cloud. UST develops in-depth training programs customized to financial services companies to help developers transition from on-premises to harness the full power of the cloud. UST's holistic approach to training takes into account cloud basics, security, planning for automation, determining if a low-code tool is suitable for financial services companies' needs, and optimizing infrastructure.

Training staff in the financial services industry helps make them good stewards of the development environment, creating ways that scale effectively without building cumbersome infrastructure. Investing in staff training reduces the time it takes for them to acclimate to the new environment and become productive in their new domain. By providing financial services companies with the necessary training, UST can help ensure that their citizen developers are equipped with the skills and knowledge they need to make the most of their cloud environment.

Powerful teamwork

With the combined skillset of UST and Mendix, financial services companies can remove the roadblocks and hurdles to transitioning into the cloud. UST and Mendix help financial services companies create a solid yet flexible foundation for migrated solutions that will carry well into the future. The journey into the cloud can be full of challenges and complex decisions best answered with experience. UST and Mendix bring a breadth of knowledge and expertise to help financial services companies seamlessly transition from on-premises and existing cloud environments into AWS.

Financial services companies face unique challenges when migrating to the cloud, but with UST and Mendix, they can confidently navigate the process. The combination of these platforms can help financial services companies identify potential issues before they become problems, allowing them to course correct as needed. UST and Mendix bring a wealth of experience and expertise to the table, providing financial services companies with the support they need to successfully transition to the cloud.

Together, we build for boundless impact

For more than 23 years, UST has worked side by side with the world's best companies to make a real impact through transformation. Powered by technology, inspired by people and led by our purpose, we partner with our clients from design to operation. Through our nimble approach, we identify their core challenges, and craft disruptive solutions that bring their vision to life. With deep domain expertise and a future-proof philosophy, we embed innovation and agility into our client's organizations—delivering measurable value and lasting change across industries, and around the world. Together, with over 30,000 employees in 30 countries, we build for boundless impact—touching billions of lives in the process. Visit us at:

ust.com

© 2023 UST Global Inc.

**U ■
S T**