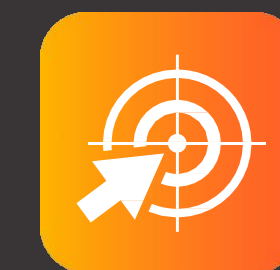


Legacy Modernization: The Path to Turbocharging Digitalization in Financial Services

Banking, Financial Services and Insurance



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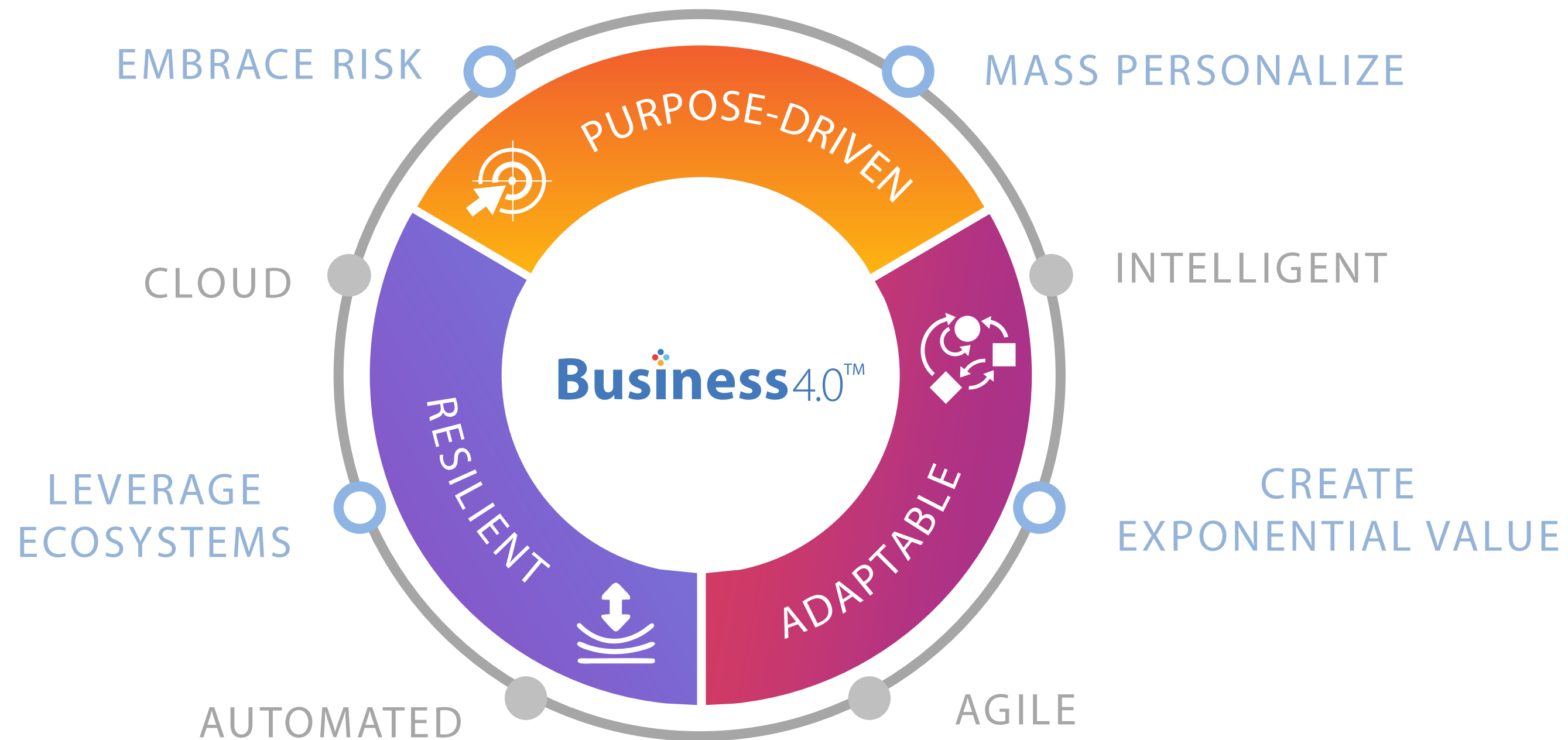


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About the Author



Ayan Sinha

Ayan Sinha is a functional consultant and program manager with TCS' Banking, Financial Services, and Insurance (BFSI) business unit. He has more than 14 years of experience with expertise in the commercial and consumer lending space. His experience spans major transformation programs involving legacy application migration, API enablement, and application modernization. He has a Bachelor's degree in Electrical Engineering from Biju Patnaik University of Technology, Rourkela, India.

Abstract



Mainframe applications or legacy applications often limit an organizations' ability to quickly respond to changing data and operational conditions. And this is sharply evident in the banking and financial services industry where legacy systems have thus far slowed down the pace of end-to-end digitalization. Besides limiting financial institutions' ability to grab new business opportunities, the absence of complete digitalization has also compromised customer experience – a key differentiator in the digital era. Furthermore, the onslaught of the COVID crisis has also underscored the

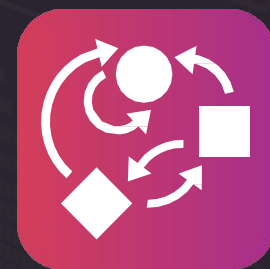
need for digital channels for performing banking operations. Given that the crisis is set to continue for a longer period than initially anticipated, legacy modernization has emerged as a crucial imperative for financial institutions. This white paper outlines a mainframe modernization approach to enhance financial institutions' business capabilities and help them to not only sustain operations during the long-drawn COVID-19 battle but also support their customers through the crisis and aid recovery efforts.



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Legacy Modernization: A Prerequisite to Growth and Transformation in the Digital Era

Faster, better, and cost-effective innovation is the name of the game to stay ahead in the highly competitive financial services arena. For financial institutions, digitalization is a crucial prerequisite to driving business growth, building customer loyalty, creating new sources of revenue, and expanding market share. However, traditional banks and finance companies are constrained by legacy systems in quickly responding to changing trends and market shifts, in turn compromising their ability to compete with fintechs and new entrants.

In the financial services industry, mainframe has a long legacy of applications going back over 50 years. Consequently, mission-critical mainframe applications must be kept up-to-date to address modern business demands. Modernizing them will mandate cloud and DevOps adoption, enhancing the user interface, and so on. Undertaking such a transformation will help banks and finance companies gain a competitive edge through faster time-to-market and better customer experience besides facilitating digital enablement.

The urgent need for core modernization in financial institutions is evident. However, modernizing existing core systems through a big bang approach may not be feasible given its potential to disrupt business-as-usual. In our view, banks must adopt an incremental approach to improving infrastructure and adding capabilities, which is a less risky option.



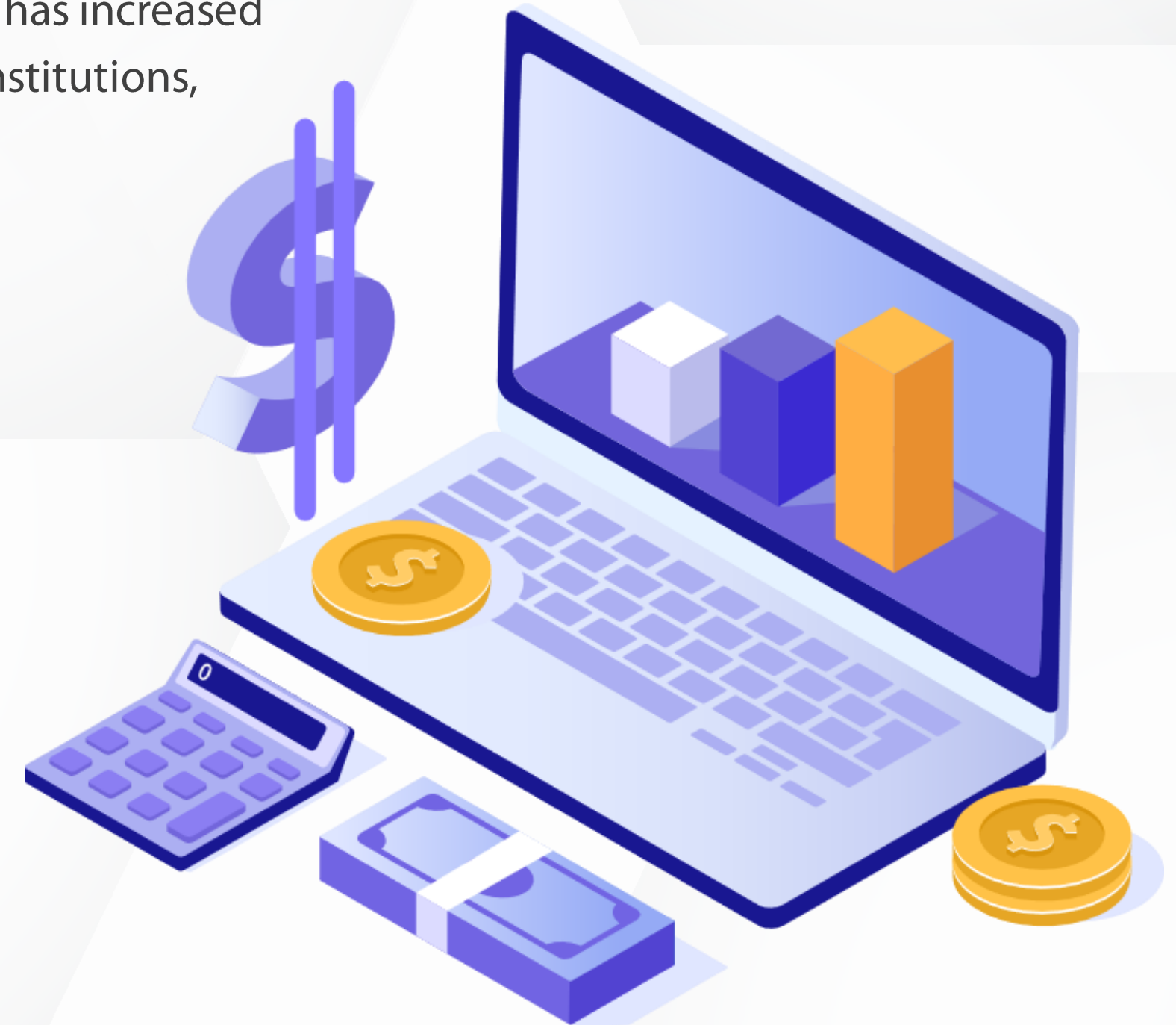
Evaluating the Legacy Landscape

Legacy systems use mainframe and AS400 user interface, which pose challenges in application programming interface (API) enablement – a key prerequisite to digitalization in a legacy environment. In addition, legacy screens and interfaces do not possess the features required for easy access from mobile devices and open source cloud platforms. This necessitates business users to physically log in to the legacy applications in order to perform day to day business operations; as a result, use of legacy applications need extensive employee training, resulting in increased costs – a common business problem faced by banks. Legacy application infrastructures limit business agility and multi-platform DevOps adaptability hindering banks in achieving connected ecosystem architecture, thereby posing an impediment in real-time data processing, faster delivery of new features, and speedy launch of new offerings. Fintechs have been successfully exploiting this gap and enticing customers away from incumbents through innovative digital offerings putting traditional banks at a competitive disadvantage.



The primary casualty of legacy mainframe applications is customer service and experience. To process customer requests, service executives have to manually log in to legacy systems and enter the data. In addition, customers are put on hold as the executive toggles between multiple applications to process the request, adversely affecting agent efficiency and leading to poor customer experience. Furthermore, such delays can be especially distressing in the prevailing COVID situation where the number of calls to contact centers has increased exponentially. Thanks to the legacy application architecture in most banks and financial institutions, customers have had to wait for days to get their requests processed resulting in payment defaults, and consequent delinquency reporting to credit bureaus, negatively impacting customers' credit scores for no fault of theirs. Another problem with legacy architecture is that a simple bug in any one module can bring the entire application down, resulting in business downtime, inconvenience to customers, and poor experience.

Monolithic legacy application architectures have certain inherent challenges such as large application size and high complexity that hinder banks from maintaining the desired pace of digital transformation. Legacy infrastructure is a barrier to the adoption of new technologies, given a change in the framework and coding language affects the entire legacy application, making digitalization expensive and time-consuming. In addition, legacy applications constrain banks and financial institutions from complying with new regulations introduced by federal regulatory bodies.



Approach to Legacy Modernization

Most legacy applications in banks and financial institutions reside on mainframe platforms. So, how must banks proceed with legacy modernization given the heavy investments involved and its potential to disrupt day to day business operations? Incorporating legacy modernization programs incrementally into ongoing implementations is less costly than complete replacement as it preserves the function in the existing systems. In addition, the risk of operational disruption too is much lower with an incremental approach. Modernization techniques such as exposing APIs from legacy applications to the external world can improve application quality and help to create a connected ecosystem in financial institutions (see Figure 1).

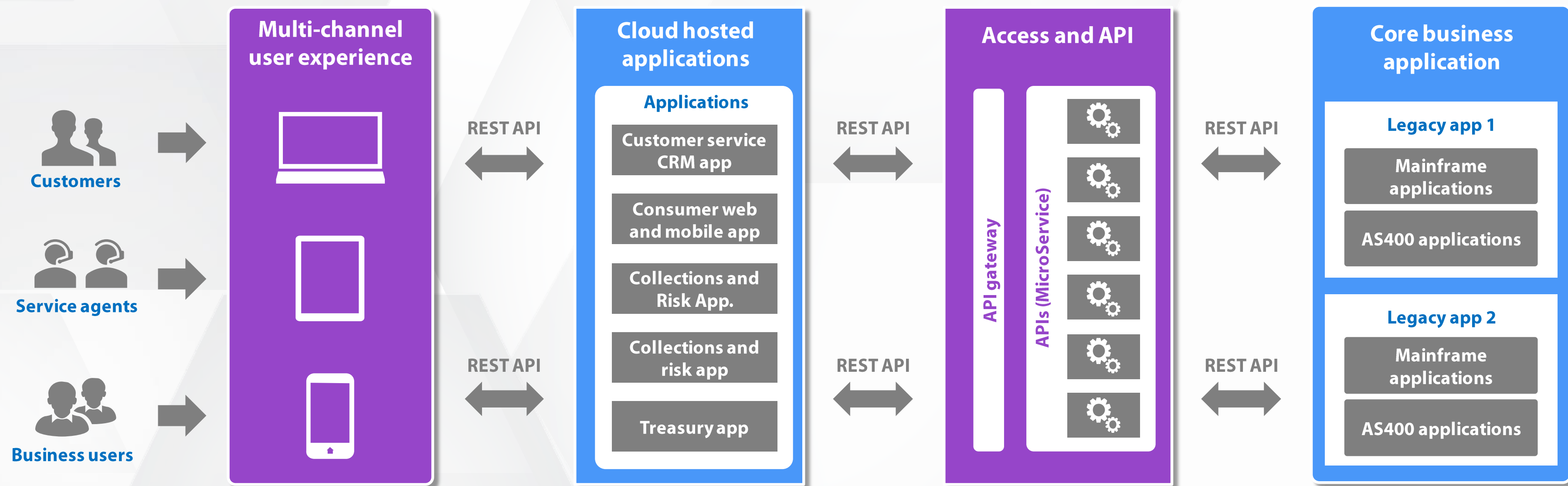


Figure 1 : Connected Ecosystem Architecture in a Legacy Environment

In our view, leveraging the Z system API Gateway to host legacy applications will not only enable API-fication but also help accelerate digitalization. Scalable RESTful APIs can be created for mobile and cloud applications in a secure manner from legacy applications residing on Mainframe by leveraging the Z system API Gateway. The API-fication of the legacy applications (see Figure 2) will facilitate the adoption of DevOps principles in turn enabling the integration of legacy and open system applications to create a unified business module or application that can be accessed through any digital interface. Such an architecture will help eliminate the challenges from the closed system inherent to legacy applications.

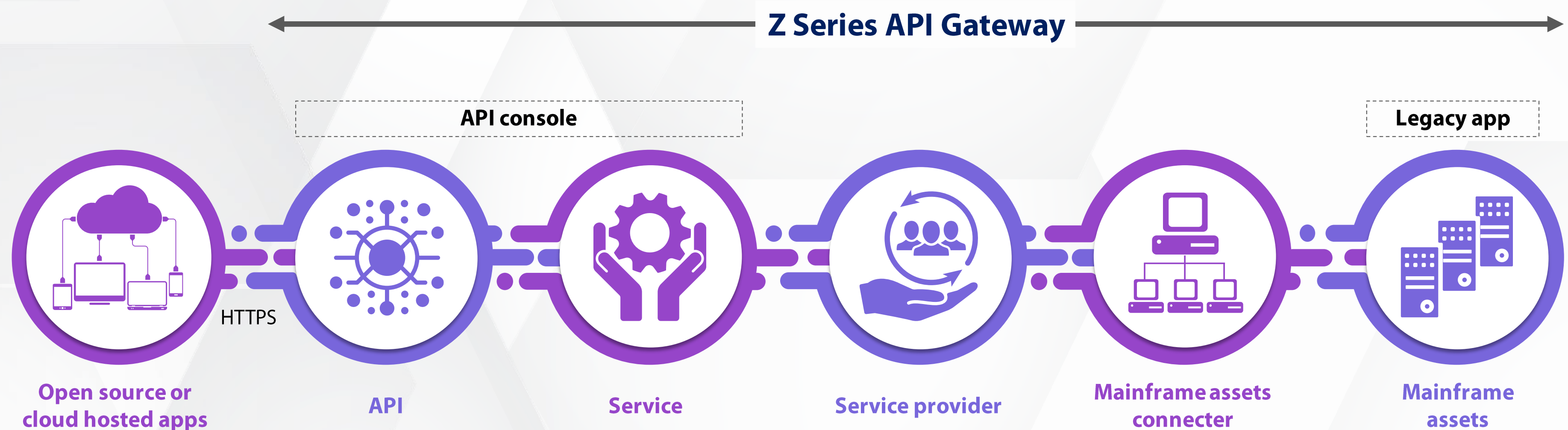


Figure 2 : API-fication of Mainframe Legacy Applications

Case-in-point

A large auto finance company based in the US had its auto loan and lease servicing systems on mainframe. The online screens for transaction and customer request processing in the legacy application were in the legacy information management system (IMS). Consequently, customer service agents had to toggle between the legacy online application and the CRM cloud application to service and manage customer requests. This resulted in long wait times, poor customer experience, and negatively affected agent productivity. And this was especially noticeable during the ongoing COVID-19 crisis when the company's contact center witnessed a huge spike in call volumes.

We proposed exposing the legacy IMS applications through RESTful APIs, which were mapped to the legacy business modules. This eliminated the need for users to physically log into the legacy application to process a transaction or request. Contact center agents could access the APIs from the cloud based CRM applications to service customer requests. Consequently, agents could directly trigger and process service requests using the straight-through channel, eliminating the multiple toggle operations between legacy and CRM applications. This new architecture enabled real-time processing of customer requests, eliminating delays in processing besides helping the company to manage a huge volume of customer calls during the ongoing pandemic.



With this solution, the client realized multiple benefits:

Reduced processing
time resulting in YoY
saves of \$114,000



Automated straight-
through transaction
processing



Increased efficiency
by 200%

Minimized call wait time
by 67%, improving
customer experience



Real-time transaction
processing enabled the client
to handle huge volumes of
transactions efficiently during
the COVID-19 crisis

200% increase in transaction
processing capability at the
client's customer service center



Looking Ahead

Several financial services organizations are evaluating their mainframe application portfolio to best determine how to modernize them to meet evolving business needs and the expectations of their customers. The Z System API Gateway is an enabler that has the potential to help financial institutions to achieve a connected ecosystem in turn facilitating legacy transformation.

The COVID crisis has put digitalization in the spotlight. With social distancing restrictions poised to become a permanent feature of the post COVID world, banks and financial institutions are under intense pressure to ramp up digitalization programs. Given legacy modernization is the cornerstone of rapid digitalization, financial institutions need to act quickly or risk being left behind.

Contact

For more information on TCS' Banking & Financial Services, please visit <https://www.tcs.com/banking-financial-services>

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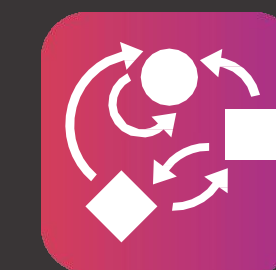
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