

A Journey to the Platform Economy for Financial Services Firms

By Ananda Bose

Table of contents

Introduction 3

Before we start 4

Entry points in financial services 5

Consumer banking5

Wholesale banking5

So what’s the big issue?6

In closing, a case In point 9

About the author 10

Pivotal is now part of VMware, so some of these products and services are now part of VMware Tanzu™. [Learn more.](#)

Introduction

In 2015, Jamie Dimon, CEO of JPMorgan Chase, made a statement that “Silicon Valley is coming.” What was left unsaid was that perhaps they may eat traditional New York financial services firms for lunch. The Silicon Valley firms loaded with cash—and most importantly, billions of active customers—were working on breaking down the barriers of the last doyen of traditional enterprise: the financial services industry. The primary weapon available to Silicon Valley firms was technology—and to be more specific, efficient technology that leveraged partnerships and straight-through processing rather than traditional manual operations.

Financial services firms have rebounded significantly. However, this change has been driven by three major macroeconomic disruptions:

1. Change in regulations – This led to the adoption of more open behaviors. What happened in the software industry with the emergence of open source, the European Union’s Second Payment Services Directive (PSD2) and open banking has the potential to do that for financial services. Opening up the industry via regulations, these initiatives ask banks to truly become the custodians of data belonging to individuals or enterprises, and allow the ownership of the data to be with the owners, which are the consumers.
2. Change in consumer behavior – This—especially with the use of social media, the share economy and nontraditional media for research and settlement of transactions—created immense disruption in the way people research and consume all product categories, including financial products.
3. Technology change – This, especially the adoption of cloud computing, made it economically viable to do millions of transactions with very little economic value attached to it. In this context, cloud means essentially elastic infrastructure that can be deployed on premises or in the public cloud.

Though disruptive, these changes also provide opportunities that were hitherto unavailable to financial service firms. Not only do these disruptions provide opportunities for revenue enhancement and cost reduction, they also allow for business model change, especially around partnerships, sourcing and engaging customers in their research/decision/buy cycles.

Before we start

It is important to define some of the terms associated with the API and the platform world and, more importantly, to establish a baseline. In the financial services world, these three types of APIs are being increasingly consumed:

1. Private APIs are used within organizations and have been around for a long time. They are used for integrating different applications within an organization.
2. Partner APIs are newer channels used between financial services organizations and third-party providers to perform Know Your Customer (KYC) checks, regulatory checks, payments and so on.
3. Open APIs are a regulator-driven set of APIs largely related with APIs in the areas of account information service provider (AISP) and payment initiation service provider (PISP). Other types include transactional APIs, servicing APIs, sales and marketing APIs, product APIs, and technology APIs.

Some regulators are ahead of others. For example, the Monetary Authority of Singapore (MAS) is a strong supporter of API-based ecosystems. As of November 2017, MAS lists 109 transactional and 163 informational APIs on their website.

Though compliance seems to be the primary driver of openness and the API revolutions, there are other derivative benefits of this type of strategy. Cost reduction is the leading benefit, as APIs largely work in a straight-through mode, saving costs in terms of premises, people, paper and technology infrastructure. Having a robust API strategy also allows the organization to create an ecosystem for its traditional and nontraditional partners, creating an alternate sourcing and servicing engine.

Entry points in financial services

Two questions often asked are, “Where do you start?” and “Which areas in financial services are easier than others to start an API journey?” An easy dipstick check to perform before you embark on a monolith deconstruction and make it ready for APIs is to look at that business function from a perspective of revenue, cost, risk and regulations, and differentiation. Usually, revenue and regulation discussions are much easier than the differentiation and cost part of the equation. Keeping these aspects in mind, here are some selected entry points in financial services.

Consumer banking

- Internet and mobile banking – No longer simply transactional channels, internet and mobile banking have evolved as frontline capabilities of financial services to acquire and service customers. More than 50 percent of transactions in consumer banking happen through these platforms. Customers are looking for subscriptions, new service provisioning and contextual advice (such as location based or transaction based) to happen through this platform, not just transactions.
- Consumer lending (unsecured lending) – More than 50 percent of unsecured lending requests happen through nontraditional channels, and the unsecured lending market constantly moves toward sourcing and servicing via a third party with financial institutions providing capital and sharing the risk. This strategy is currently working well, especially in the small and midsize enterprise (SME) segment, as well as the unsecured lending market in Asia and North America.
- Mass affluent and mass wealth – Europe and North America still remain the market for private wealth, but Asia continues to add new entrants to the mass affluent and mass wealth space. More than 50 percent of sourcing, research and transactions happen on the internet and mobile platforms. Robo advisory is currently working on the long tail and is expected to move into the mainstream in the future. Regulations will continue to become tougher, especially in the KYC/anti-money laundering (AML) and politically exposed person (PEP) areas, resulting in higher costs of acquisition. But pressures on operations costs will continue, especially as nimble providers challenge established players on the cost and the outcome space. Net-net is an area where a lot of disruptions are happening and is likely to be impacted by an ecosystem partnership strategy.

Wholesale banking

- Trade and treasury services – With new competition such as Alibaba, UPS and Amazon, traditional trade and treasury businesses or large financial institutions are under threat. Powered by the knowledge of goods being bought and sold as well as powerful technology infrastructures, these behemoths are taking away market share in this space and shrinking banking margins. An API strategy lowers costs and allows newer types of services and partnerships to evolve, making a significant impact on both the revenue and cost fronts.
- Straight-to-bank services and wholesale internet banking – Banks will be modernizing their internet and mobile channels on the wholesale side as customers need more up-to-date liquidity information, as well as easier integration for payments to their infrastructure.
- Financial product distribution – Financial product distribution (largely insurance products, but could also be applicable to asset management products) is likely to change massively in the next year due to changing consumer behavior and the availability of choices.

So what's the big issue?

Figure 1 depicts an illustrative, high-level layout of a financial services architecture. It shows some challenges that make it quite difficult for a financial services organization to adapt to the requirements of the new API world.

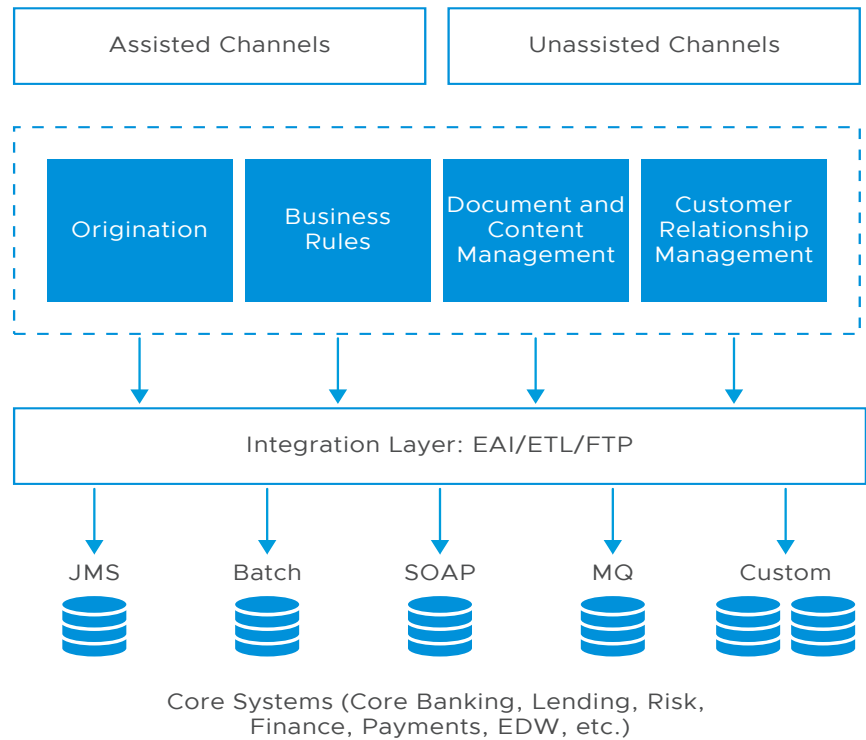


FIGURE 1: Illustrative high-level layout of a financial services architecture.

Adapting the architecture in Figure 1 to an API-driven platform economy poses foreseeable challenges:

1. **Scale** – The integration layer is the bottleneck—along with host systems—to achieving scale at an optimal cost. The average cost per transaction is likely to be in tens of dollars, so the scalability requirements will be huge, but the cost per transaction needs to be marginal or very low to make this platform business profitable. Current ESB or messaging-based infrastructure is expensive and unlikely to scale at an optimal price.
2. **Deployment patterns** – As hybrid technologies become the norm, the use of containers, platform as a service (PaaS) and microservices-based architectures create newer challenges around deployment, management and upgrade/update cycles. Current deployments largely use virtual machines and three-tier deployments. Due to the dependency on an integration-centered architecture, integration artifacts are built based on dependencies, usually resulting in long testing cycles and an inability to respond quickly and discover fast availability of existing services.
3. **Security** – Multiple multifactor authentication methods abound; isolation, newer types of hacks and risk mitigation are newer challenges that platform owners have to deal with. Current platforms usually deal with fixed multifactor operations.
4. **Release cycles** – Release cycles for features and capabilities will become shorter as consumers demand newer features. Current platforms have release cycles by quarter or months. These release processes and requirements management are largely built for delivering projects and not outcomes, as they are centered on process optimization rather than customer experience.

5. Payments – This is possibly the biggest area of disruption. Newer payment mechanisms will need to be integrated, including but not restricted to paying to email IDs, phone numbers, national ID-connected bank accounts, QR code-based payments, national switch-based merchant clearing services and near field initiated payments.
6. Marketing – Largely restricted to a list on monthly cycle-based marketing policies, new interaction platforms will leverage location, context and transactions to implement the next best actions that reduce cost of conversions and improve cross-sell/up-sell.
7. New channel for sourcing and servicing – With the emergence of APIs and interactions between partners through them, these channels become new low-cost channels for sourcing and servicing. Architectures are not currently geared to enable such use cases.

Given these challenges and our experience with successes, here is a short to-do list that might be helpful for financial services firms starting their API journey:

- Start with the customer at the center of your design universe instead of products. This will allow you to understand the customer's immediate concerns as well as the larger ecosystem that the customer participates in during the research/decide/buy cycles.
- Start with some of the entry points suggested in this white paper.
- Understand your integration layer. While breaking the integration layer into microservices is a big win that can save you money, it is unlikely that you would be able to completely let go of your legacy integration layer. What is likely to emerge is a strategy that encompasses the new with the old. The beginning is usually converting the check or ESB dip services into microservices-based apps, or even moving the services to low-cost caching solutions. Straight-through business processes—especially areas such as payments, fraud and KYC/PEP—and consumer banking straight-through applications and servicing come next. The later and more complicated stages involve breaking down long-running workflows through a combination of microservices and existing legacy messaging. An alternate strategy for low-volume and high-cost process automation can be robotic process automation, which will also be part of the integration strategy of the future.
- Move to a culture of delivering outcomes rather than projects. Delivering a market-ready MVP and adding features iteratively is something that organizations have to learn how to govern, fund and execute effectively. Most financial services companies work on a program-based budget with set ROIs and returns amortized over a period of time. This usually results in a long period before the actual realization of the ROI happens and more so around requirements becoming redundant due to the time that it took for a program to be delivered. Iterative delivery with an MVP-based approach is perhaps a better answer to this conundrum, but would also require changes in program and product governance.
- Leverage shared cloud-like and cloud native architecture wherever possible, as the new economy dollars are much less than old economy dollars. As a financial services organization moves to microservices and APIs, there is a dependency of automation, especially around continuous integration and continuous delivery (CI/CD) and container orchestration. This type of architecture is not static and is continuously refactored, resulting in even more stress on automation. Cloud is likely to mean a combination of single or multiple public cloud solutions, on-premises solutions and private cloud options.
- Make all new projects cloud native, leveraging cost savings from brownfield modernization. These new products will usually contribute to the modernization of approximately 5 to 10 percent of the technology sprawls in most organizations. The savings or the efficiencies delivered can help to finance and modernize erstwhile brownfield applications, creating value for the organizations and greater operational flexibility.

- Get the right executive sponsorship. Executive sponsorship is very important as these new approaches will need business involvement as well as presence for demos and user journeys/stories. This will mean commitment of their time and also a physical presence at far shorter intervals than the norm today. Executive sponsorship also gives a sense of can-do to the teams involved.

These suggested practices usually work well and could help a financial services firm to create an optimized, nimble and agile architecture more suited to the financial and scalability needs of the API-driven platform economy. In terms of how a new age illustrative architecture would look, see Figure 2.

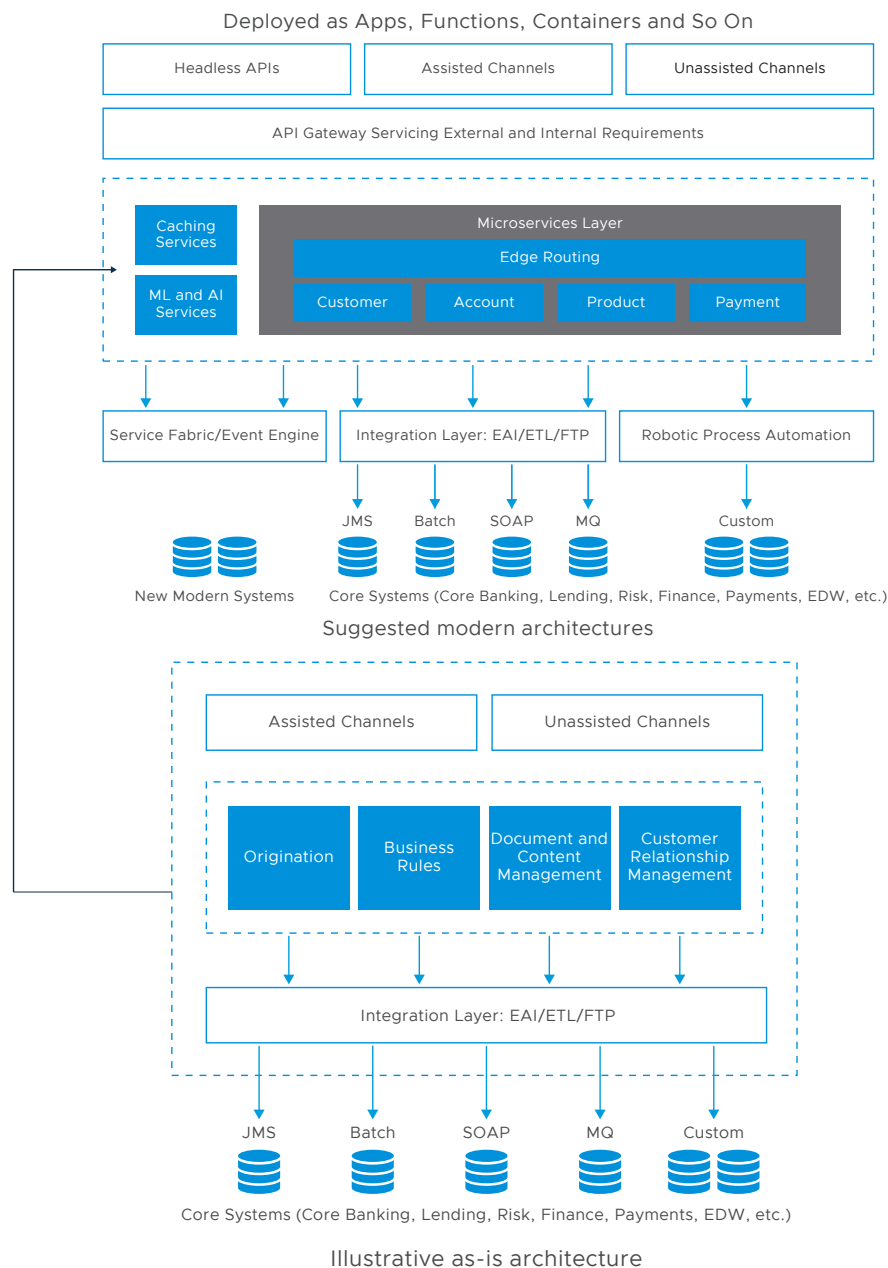


FIGURE 2. New age illustrative architecture.

The architecture modernization suggested in Figure 2 is likely to create value for the financial services organization in the following areas:

- Reduced cost of operations by decoupling the legacy integration layer and leveraging caching services
- Built for CI/CD
- Increased revenue at a lower cost base by leveraging APIs and partnerships in the platform economy
- Infinite scalability as each individual microservice can scale and is not dependent on expensive EAI/ETL-based compute resources
- Capable of delivering new services to new consumer or traditional segments
- Real-time marketing ready

In closing, a case in point

I live in Singapore and have been a long-standing customer of DBS Bank, one of the largest banks in Singapore and also one of the safest banks in Asia. They have operations in Singapore, Taiwan, Indonesia, China, Hong Kong and India, and offer a suite of consumer and wholesale banking products leveraging traditional and digital channels. This section of the white paper speaks about my personal experiences with the bank as a consumer and also information derived from public sources, such as YouTube. These are my personal views and are not representative of the views of Pivotal (now part of VMware).

DBS Bank started their digital transformation program around 2015, and the main target was to provide customers with an experience that was convenient, easy and of the highest quality. Keeping this in mind, DBS pivoted around talent and architectural flexibility that would allow them to participate effectively in the financial lives of their customers.

With the evolving paradigms of technology and the skilling requirements that go along, DBS developed a unique #Hack2Hire program with which it acquires skills for its needs. Originally started in Singapore, #Hack2Hire has now been rolled out to Hyderabad (DBS' India-based development center). #Hack2Hire is a multiday program, such as a hackathon, but the final prize is an offer letter and a job that would allow the programmer to be part of the unique DBS journey as they move toward the world's best digital bank. Other than #Hack2Hire, DBS has also created immense flexibility in their architecture, making most of their business functions cloud ready via the cAPI program, a collection of more than 200 APIs that have allowed DBS to expose services uniquely to their traditional as well as nontraditional partners. Leveraging these services, DBS is able to integrate efficiently with their traditional and nontraditional partners and offer straight-through unique services through DBS channels. DBS also uses a lot of extreme programming techniques, such as C4 diagrams, pair programming (which is left to project teams and is not mandatory), and product immersion participation between business, partners and technology teams.

In their own words, DBS Bank has leveraged their digital platforms and these approaches to create a platform-based technology model that focuses on business outcomes and user experiences, and not infrastructure and plumbing. This approach leveraging Pivotal Platform (now part of VMware Tanzu) has resulted in measurable outcomes:

- Faster time to market—from six months to less than four weeks for major releases
- Improved self-provisioning of infrastructure from a week to less than an hour
- Zero downtime in the past two years
- New ways to work and deliver outcomes to business

All up, deconstructing monoliths through microservices not only allows a financial institution agility at the technology level, but it also provides the organization with immense revenue and cost containment opportunities. As a practitioner, I believe this is a space to watch out for as the incumbents (financial institutions) take and work with the upstarts (fintechs).

About the author

Ananda Bose works as a director in the Enterprise Architecture group of Pivotal (now part of VMware), covering financial services in the Asia-Pacific and Japan market. Ananda has more than 18 years of experience in helping banking and insurance companies transform their operations and offer innovative solutions to their customers and partners.

