

Six Steps to Digital Transformation for Financial Services

**These businesses are feeling the pressure ever more acutely.
Overhauling technology and adjusting business processes will be tough, though.**

Digital transformation is well under way at major financial services corporations in the U.S. and around the globe. In many cases, pilots and the earliest iterations of modernization projects have gone well. But for many enterprises, it's still early days. They've taken one or two steps at the onset of a lengthy journey. And now it's time to pick up the pace and take the next steps on the road to digital transformation

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“**BANKS** and other financial services companies are seeking to optimize how they engage with their customers,” says Scott Sajer, Vice President, Banking and Capital Market at Red Hat. “There has been a focus on expanding their digital capabilities and simplifying the customer experience.”

The need to modernize and transform IT is well known, but financial services businesses are feeling the pressure ever more acutely. Overhauling technology and adjusting business processes at global scale are significant headwinds. Financial services firms are challenged to employ new technologies, adopt new processes, and retrain employees swiftly to meet the demand.

At the same time, customers have become accustomed to accessing a variety of services and products via apps and the web. Mobility and ease of use are givens. The successful financial services company cannot be any less efficient and must be ready to please customers whenever and wherever they demand.

A typical bank has thousands of systems and interfaces in its inventory, across many generations of technologies. Making one change has a ripple effect across multiple systems and slows down the rate of transformation.

A solution that is lightweight and flexible, with modular integration capabilities that enables rapid integration, is key.

But technology alone isn't sufficient. “Companies are, of course, in different stages, but in general we see a lack of bold leadership by people who understand the need to transform,” says Alessandro Petroni, Red Hat's global head of strategy for financial services. “We also see that they may not have the skills in their organization to undertake that journey.”

Getting to the best possible solution can be done with consideration of six steps.

Six steps on the road to digital transformation:

1

Build for competitive advantage

Financial institutions need to have rapid, customer-centric innovation to remain competitive. Their architecture must scale dynamically; withstand failures; adapt quickly; and connect to a wide variety of devices, data, and systems.

But many IT systems provide little competitive value and are complex and expensive to operate and maintain. Outdated systems force staff to spend inordinate amounts of time on basic maintenance and operations, time that would be better spent developing innovative ways to create value for the enterprise.

Open source solutions and platforms have long since become pillars of many enterprises, but their advantages are particularly applicable to financial services.

Consider the case of A.IX Capital in Germany and its need to focus its investments.

To support this innovation, the company chose to take advantage of the Red Hat® OpenShift® Startup Program to deploy Red Hat OpenShift Online with no initial cost. With OpenShift Online, A.IX Capital quickly and easily built a stable and scalable system. As a result, its IT team can focus on innovating to grow its core business instead of spending time on routine IT management.

“Now we spend little time managing or maintaining IT operations, usually just minutes a week. OpenShift is very simple to use. It just works,” says Dr. Fabian Braun, A.IX Capital's founder and CEO.

It's worth noting that whereas open source is a powerful platform, there's a significant difference between supported and unsupported software. Before settling on a new software platform, ask questions such as these:

- Does the vendor offer consistent support throughout the life cycle?
- Is the platform industrialized?
- Does the platform offer compatibility with a multitude of software packages?

2

Exploit the cloud for continuous delivery

As with many large companies, KeyBank found that application delivery resulted in complexity growth over time, with slow manual testing, quarterly release cycles and outages resulting in poor Mean-to-time-Resolution (MTTR).

Among other changes, KeyBank created a DevOps practice that could create a culture of innovation and quickly look at the marketplace for tools that could help increase agility and customer experience. KeyBank's DevOps team wanted to embrace

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an approach that also provided greater security for customer information. Like all large financial services organizations, the bank adheres to complex regulatory requirements that can make it challenging to move even simple changes into production.

To help meet these goals, KeyBank’s DevOps team began considering a container-based application platform, seeking to decrease complexity by isolating applications from the underlying infrastructure and helping development teams get to work with minimal configuration and management time.

Those results were not anomalous. **Red Hat OpenShift** is a **container** application platform that brings **Docker** and Kubernetes to the enterprise. A study by IDC of nine companies using OpenShift as their development platform found that it resulted in development cycles that were 66% faster, reduced IT staff time by more than one-third, and achieved an average five-year ROI of 531%.

3 Use APIs to your advantage

An API is more than a checkbox in your development process. A **modern API strategy** takes advantage of mobile, cloud, and social technologies and makes it easier for others to do business with you.

And perhaps most importantly, API management is a key tool in the development of “open banking,” a system that enables customers to access financial data from a multitude of institutions where they do business. “Open banking offers tremendous potential for financial institutions to innovate at pace, create new revenue streams, and disrupt the disruptors,” says Eric Marts, solutions manager for financial services at Red Hat.

The EU has ordered banks in member countries to implement the revised Payment Services Directive (PSD2), which essentially mandates open banking. Even banks not based in Europe will have to contend with that directive, since open banking is a significant competitive advantage they can ill afford to forgo.

“Since the directive will require financial institutions to provide API access to customer information, most will require investment in API modernization and management. This may be particularly challenging for financial institutions that have a long history of mergers and acquisitions or are burdened by technology inherited from the pre-digital era,” says Marts.

4 Establish open identity

Customers will need access to a wide range of digital solutions delivered by multiple solution providers through digital channels.

Solve this problem by establishing **open identity standards** that enable applications to access APIs in a federated fashion. Customers can then authenticate once through an established identity provider without having to repeat the process.

Open identity standards are part of the broader open source ecosystem, which gives enterprises the freedom to use software of their own choice. In 2014 the membership of the OpenID Foundation **ratified the OpenID Connect standard**.

OpenID Connect has been implemented worldwide by Internet and mobile companies, including Google, Microsoft, Deutsche Telekom, Salesforce.com, Ping Identity, and Nomura Research Institute; mobile network operators; and other companies and organizations. It is being built into commercial products and implemented in open source libraries for global deployment.

OpenID enables financial service organizations to securely offer their products thru new channels and partners.

5 Adopt DevOps as a tool to transform your IT department

DevOps is a combination of software development and operations that brings two often separate IT functions much closer to each other to facilitate collaboration and communications between teams. Adopting a DevOps approach is a crucial step in the transformation process.

Implementing DevOps can be challenging, but the payoff can be large. Implementing DevOps means:

- **Opening your culture.** You’ll need to take steps to encourage experimentation, (fast) failure, transparency in decision-making, and recognition and rewards to boost trust and cooperation.
- **Automating to accelerate.** The fastest ROI for your DevOps initiative is automation.
- **Getting the right platform.** With the right platform, you can best take advantage of DevOps cultural and process changes.

Facing industry and competitive pressure, **Barclays bank knew that it needed** to create a more respon-

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sive business and become “the bank of the future,” says Simon Cashmore, head of Platform-as-a-Service (PaaS) middleware engineering at Barclays. “We want to be more dynamic in the way we produce applications and make better use of our underlying hardware and software as well as our staff.”

As part of its cloud strategy, the bank chose to replace its traditional middleware for an on-premises PaaS with Red Hat OpenShift Container Platform. This solution provides its development teams with a more secure, consistent, and scalable platform for application development and hosting.

6 Use microservices to rearchitect existing apps and develop new projects

There is no single runtime, platform, or framework that is the best for microservices. So if you are using a single runtime, technology, or framework for microservice development, it may be wise to start looking at other runtimes, technologies, and frameworks and select the one that is the best fit for the problem you are trying to solve.

Implementing microservices is not a panacea for all your problems. They come with their own challenges. In a recent survey by Red Hat, respondents listed the top four challenges encountered when implementing microservices:

- Corporate culture and organizational challenges
- Microservices management
- Diagnostics and monitoring
- Time and resources

Call to action

When you’re getting ready to start, or accelerate, your company’s journey to digital transformation, “start small, experiment, iterate quickly, and embrace the process with a team willing to think out of

the box,” says Red Hat’s Petroni.

Deciding to move to an open source platform is a key step, he counsels, but don’t think you can go it alone. “It’s very tempting to do everything yourself with open source, because everything is easily available with a click of the download button. But people spend a lot of energy working to integrate all the pieces instead of spending time on their primary jobs,” he says.

Welcome to Open Innovation

A successful digital transformation requires the rapid adoption of new technologies, the embrace of new methods of working, and a commitment to innovation.

“But innovation does not come from sitting in a cubicle,” says Red Hat’s Kris Pennella.

“Innovation is a culmination of a lot of hard work, a lot of experimentation, a lot of coffee, and a lot of disagreements, building to the best-possible new solution.”

Many of those solutions are being nurtured in [Red Hat’s Open Innovation Labs](#). The labs represent Red Hat’s flexible and adaptable approach to help customers solve their most difficult business problems.

Red Hat’s labs are the ideal place to train your team to deploy the latest open source solutions.

In an intensive, eight-week residency at a lab, your team will learn the skills it needs to become “cloud native.” It will:

- Work side-by-side with experts in a residency-style engagement
- Design and develop by using impact mapping and event storming together with the lab team
- Get ongoing mentoring and collaboration from the Labs team and the engineers at the heart of Red Hat’s products

To learn more about the opportunities Red Hat can offer for your continued digital transformation journey, [visit its website](#).

