KPMG

Red Hat

How to modernize applications in the era of hybrid cloud

June 2021

———

kpmg.us

TechTarget | **Custom Media**
White Paper

Introduction

Digital acceleration has become a high priority for nearly all organizations, and at the center of that effort is application and IT modernization. Without a smart, well-planned and meticulously engineered game plan, organizations can lose time, money and competitive positioning. This paper looks at how to address application modernization from conception to execution, striking the right balance among technology, people and processes.

Research and financial results are proving that the winning operating model of the digital era is a fully integrated front, middle and back office, creating what KPMG calls the connected enterprise—all laser focused on the customer. Connected enterprises are significantly more nimble and responsive to ever-evolving customer behaviors and changing competitor strategies.

A connected enterprise is a holistic approach to digital transformation that unleashes the power of technology across the value chain without the burden of it. With digital acceleration at or near the top of just about every organization's wish list, business leaders and technology teams need to craft strategies that both maximize the use of existing IT resources and prepare the organization for new functionality with upgraded systems and processes.

For the CIO and the IT organization, this means playing a more influential role, as both the enterprise technology evangelist and modern architect, as well as the champion of breaking down the silos of central control as the builder of all things tech. Application modernization is a linchpin in the overarching digital acceleration schema, advancing the organization's innovation and creating true competitive differentiation. Whatever your organization's most important business goal—entering new markets, enhancing customer experience or extending product and service offerings to capture a bigger share of wallet—application modernization is going to be a core requirement.

More and more often, organizations are realizing that their legacy systems aren't optimized for continuously evolving business requirements based on changing market dynamics and customer behavior. For instance, the COVID-19 pandemic exposed the fact that many organizations were woefully underprepared for things like the onslaught of remote work, supply chain disruptions or the reconfiguration of the competitive landscape. While IT modernization has become a central theme for these times, application modernization is an essential—perhaps the essential— driver to help organizations improve their business readiness.

One research report pegged the global application modernization market at $11.4 billion in 2020, growing 16.8% on a compound annual basis to approach $25 billion by 2025.[1] Of course, while nearly all organizations recognize the need to modernize their application portfolio, far fewer of them have figured out the optimal set of approaches for their enterprise.

Clients are often evaluating multiple options to digitally transform and invest in modern applications. Should they sunset their current technology and start fresh with SaaS or cloud-native applications? Or should they simply abandon their legacy data center and move their applications as is to a cloud-based infrastructure provider? Or is it worth refactoring and re-architecting the application to make it more modern? Finally, should the organization modernize "in place" on premises, so the kinks can be worked out before committing to a cloud service provider?

Maybe the answer is somewhere in the middle: Choose a hybrid deployment model that provides more flexibility in the medium to long term. All these approaches—and others—are likely to be considered by CIOs, CTOs, CISOs and other IT leaders. C-suite business executives also need to play a key role in these deliberations, since application modernization ultimately must serve the overriding purpose of enhancing the organization's competitive position and achieving its business goals.

1 "Application Modernization Services Market—Global Forecast to 2025," MarketsandMarkets, July 2020

Clients are often evaluating multiple options to digitally transform and invest in modern applications. Should they sunset their current technology and start fresh...

Creating and Architecting an Application Modernization Strategy

In considering why and how to adopt a strategy for application modernization, it's important to keep that assessment in a broader, enterprise-wide context. After all, modernizing applications without considering the implications for architecture, hardware infrastructure and IT service delivery isn't likely to yield the kinds of improvements application owners envision.

So organizations are necessarily first starting with the broader issue of digital acceleration to frame the role that IT plays in driving the organization toward achieving critical business goals. Then, those organizations are modernizing their entire IT framework—hardware, software and service delivery—to turn digital acceleration strategy into an actionable plan.

Application modernization, done right, fits into the broader strategy of taking advantage of all underlying technologies to achieve the key business goals associated with digital acceleration. This strategy should be envisioned, developed and implemented using a few core principles, including:

- Keep it simple. Planning and execution doesn't have to be overwhelmingly difficult, but you do need to do your homework.

- Explore your options. Determine where you are going to start fresh, what you are going to leave alone and when you are going to rearchitect, as well as how you hedge against vendor lock-in.

- Crawl, walk, run. Start with selected applications and expand out from there. Commit to a journey.

- You don't know what you don't know. Don't try to do it on your own; identify and work with smart partners that are with you until you realize value from the modernization effort.

- Acceleration is holistic. Application modernization is as much about mindset as it is about technology. It is about culture, people and processes just as much as it is about technology—and even more so.

- Doing nothing is not an option. Every day the organization delays the journey is a day closer to more challenges, more setbacks and more difficulty in achieving business goals. Excuse the cliché, but there's no time like the present.

- Modernize for change. Take the opportunity to modernize applications to environments that can easily be adjusted, configured and adapted for changing technology paradigms and thus, business models.

Avoiding Vendor Lock-In

When it comes to important projects like application modernization, some organizations have delayed moving ahead because of a challenge long associated with complex initiative: vendor lock-in. Whether you're talking about overhauling data center infrastructure, moving to a new operating system platform or embracing browser-based applications, everyone from the CEO and the board to CIOs and application architects worry about having their flexibility limited to the constraints of a particular technology vendor or service provider.

> **When it comes to important projects like application modernization, some organizations have delayed moving ahead because of a challenge long associated with complex initiative: vendor lock-in.**

For instance, organizations should consider which applications can and should be modernized now, which can wait and which should be left alone. This will help prevent having to turn over the reins of all application modernization to a specific vendor at the same time. Also, if you are thinking of working with a specific technology platform, determine if that platform is open and works equally well with all major cloud platforms or if the technology team is predisposed toward a specific service provider for most or even all of its deployments.

Some key principles to consider:

– As valuable as public cloud computing is, you don't necessarily need it to do application modernization.

– Don't commit to a single cloud platform for all your workloads, whether they are being modernized or not (yet).

– On-prem-based private clouds are an excellent starting point to modernize key workloads, especially using open source platforms, containers and microservices, and other approaches that support cloud-native applications.

Another key point to consider: Open source platforms, especially when optimized for both on-premises and cloud environments, usually offer the most flexible technology foundation. They effectively bridge the near- and long-term options for organizations.

That means it makes sense for organizations to embrace an "open" mindset and predisposition toward open platforms. Also, it will be easier to avoid vendor lock-in if you move beyond simple infrastructure virtualization toward a more modernized, container-based architecture.

Containers are great for application modernization for several reasons. First, they speed application development and deployment while reducing the time needed for maintenance and increasing the opportunity for innovation. Second, containers make it easier and faster to integrate legacy applications you may not want to modernize at this time. Third, they are a better match for the skill sets of newer hires that have "grown up" in the world of containers and microservices. Finally, they offer enhanced security over legacy development models and lower development and deployment costs.

What to Look for in Solutions and Partners

Tackling application modernization—especially within the broader context of digital acceleration and IT modernization as part of a market-speed operating model transformation—demands that organizations leverage both technical and business expertise. That's because modernization must account for identifying, selecting and integrating the right technical tools, business acumen and process expertise.

In the overwhelming majority of instances, it makes sense to work with trusted advisers and partners that already have experience and expertise in collaborating with and on behalf of clients to plan, develop, implement and manage application modernization efforts. The right partnership of technology excellence and transformation management skills can not only help demystify and reduce the complexity of application modernization, but also substantially lower the risks typically associated with an operating model overhaul.

For a trusted adviser, you should look for an organization that is skilled in modern technology deployment and that understands and speaks the language of business, where the focus is on transformation outcomes, culture change, process re-engineering and risk-reward analyses. For your technology partner, you need an organization with real-world, enterprise-grade technology development and deployment bona fides, a strong commitment to openness, and an ability and a willingness to configure and tailor technical solutions for specific business goals with tools and techniques that can continuously track and validate return on investment and time to value.

Perhaps most important, your adviser and technology partner should have a track record for successful, outcomes-based collaboration in application modernization. When it comes to something as strategic and fundamental to your organization's success as modernization and digital acceleration, choosing the right partners can make the difference.

Bottom line: Trying to tackle application modernization exclusively with an already overworked and often less-experienced in-house team may not enable you to operate at market speed. Organizations should focus on bringing together a dedicated team of partners that work together, alongside in-house personnel, to achieve essential business goals.

KPMG and Red Hat Application Modernization

One alliance delivering tangible value in real-world scenarios is Red Hat and KPMG. Red Hat's leadership in open source technologies for both on-premises and cloud-based environments has been widely acknowledged for more than a decade, while KPMG has long-standing experience and specialization in management and IT consulting, with a focus on helping organizations use technology more effectively for digital acceleration.

> **Modernization must account for identifying, selecting and integrating the right technical tools, business acumen and process expertise.**

The substantial years of experience of the two organizations allow them to bring a wide range of skills and lessons learned to bear on behalf of organizations of various industries, business models and sizes. This partnership is invaluable to organizations looking to modernize their applications portfolio, typically as part of a strategic IT modernization effort.

The KPMG and Red Hat alliance uses an open, container-centric solutions model, utilizing microservices to recast traditionally large, monolithic enterprise applications as a more nimble and flexible set of smaller applications that can be developed and deployed more rapidly and easily. The solution, which has been successfully implemented for several years, has achieved fast time to value, substantial return on investment and low total cost of ownership for a modernized application portfolio.

Red Hat's market-leading technology uses OpenShift, an enterprise open source container platform utilizing Kubernetes for orchestration and management to provide:

- More infrastructure options
- Reduced debugging time, generating faster time to market
- Lower costs through improved resource utilization
- Upgraded security and scalability

KPMG technology enablement and transformation services are all about the right mix of business process and technology skills, as well as approaches tailored for each client's needs. KPMG professionals bring both strategic insights and execution capabilities to help organizations achieve their application modernization goals.

Organizations that commit to a technology direction using containers, microservices and cloud computing can avoid vendor lock-in and shift direction rapidly when necessary. With increased frequency, organizations are discovering that using market-tested alliances like the one between Red Hat and KPMG is the smart way to accomplish those business goals, using modernized technology solutions.

Conclusion

Modernizing applications with open source containers fuels agility and scalability, while affording organizations flexibility in their cloud transformation journey.

For more information on how the KPMG and Red Hat alliance can help your organization achieve the goal of modernization and digital acceleration, please visit: read.kpmg.us/redhat.

Vinodh Swaminathan

Principal, CIO Advisory and
Red Hat Alliance Leader

KPMG LLP

vswaminathan@KPMG.com

203-940-1284

Amy Czech

Alliance Director

KPMG LLP

aczech@kpmg.com

212-954-2446

E.G. Nadhan

Chief Architect and Strategist

Red Hat

enadhan@redhat.com

Some or all of the services described herein may not be permissible for KPMG audit clients and their affiliates or related entities.

The information contained herein is of a general nature and is not intended to address the circumstances of any particular individual or entity. Although we endeavor to provide accurate and timely information, there can be no guarantee that such information is accurate as of the date it is received or that it will continue to be accurate in the future. No one should act upon such information without appropriate professional advice after a thorough examination of the particular situation.

kpmg.com/socialmedia

kpmg.com/app

This content was commissioned by KPMG and produced by TechTarget Inc.