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How application modernization future-proofs organizations

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Overview

Despite the wide availability and the advantages of cloud technologies, many companies continue to run their enterprise applications using classic stacks and application servers. They employ an "if it ain't broke, don't fix it," approach and focus on short-term goals, ultimately failing to make wide-sweeping changes that would benefit their business for decades to come.

The interconnectedness of our digital ecosystem requires companies to modernize their application stacks to continue to expand their market presence. But updating legacy systems is far from straightforward.

Application modernization involves transforming and revolutionizing legacy software and systems to update them to the advanced standards of today's environment. As one element of digital transformation, application modernization requires multiple shifts to be effective: human capital, operational and technological.

Companies that look at modernization as a necessary, continuous transformation process (i.e., Kaizen) can rapidly develop, test and launch new applications, processes and workflows. Removing complexity while increasing transparency into the entire software development lifecycle enables better collaboration across development, security and engineering teams. Companies that do not address the problems with their current infrastructure, outdated code, application maintenance costs and lack of scalability run the risk of falling behind the competition.

Through modernization, companies can drive agility throughout the organization, improve user experience, increase business flexibility and performance and enhance security.

Many legacy applications may be strategic to a business but do not provide the nimbleness required to address new business opportunities and competitive challenges. They often also create subpar customer experiences. Legacy application portfolios are often difficult to support, update, scale, access and hold critical data.

And in a world where companies increasingly build ecosystems and partnerships that require an instantaneous transfer of information between parties (often through APIs), failing to modernize one's technology stacks puts them at a significant disadvantage versus the competition.

Application modernization not only updates applications, it also optimizes business processes, which can boost innovation by enabling companies to focus on new ideas and products rather than patching archaic code and answering a growing number of support tickets. It drives business innovation, creating agility and empowering technical leaders, developers and citizen developers to help organizations create new products and services that drive revenue growth through experiences that delight users.

Application modernizers are saving up to 12.5% on annual hardware costs, 5.8% on annual software costs and 2.4% on project costs, according to IDC

Choosing the appropriate modernization approach will enable a company's critical legacy applications to scale and allow new cloud-native applications to interconnect with both on-premise and cloud environments seamlessly. The result is a company that can quickly and nimbly add a new business feature, service or product into the market.

How to begin

Application modernization begins with a wholesale inventory of current and future business capabilities, from externally facing customer features to internal security and data analysis requirements.

Many companies will find they are running various platforms in various environments, including different cloud services, because of acquisitions, preferences by previous IT leadership, entropy or a lack of budget for upgrades. The result is an application and platform morass that drags down efficiencies, limits innovation opportunities and depletes budgets.

The right strategy for portfolio modernization or new application development is a business choice. The approach is unique to every company that must consider whether to design, redesign, refactor or reengineer to future-proof its business on the cloud.

The ever-changing digital environment forces companies to democratize their data and modernize their application stacks to expand their market presence and remain competitive and differentiated. Through modernization, companies can amplify business flexibility and performance, enhance security, increase their IT agility and improve user experience.

Most important is the use of an empathy-first, experience design approach, recognizing that all technology, no matter how autonomous it is, will be used by humans. Applications which are designed or redesigned without embracing experience design will usually fail because customer, employees and even partners may find the intended features to be too cumbersome and may abandon use or create new workarounds instead of adopting and embracing the new application. Focusing design and modernization efforts on human usability and usefulness significantly increase the success and longevity of an application or a portfolio's lifespan.

Four benefits of application modernization

1 Reimagine your business

Companies can no longer build and market only a few products that don't change much from year to year. Competition abounds, and stagnant organizations will be attacked from all sides. Companies that can produce and deploy innovative ideas quicker than the rest of the industry can achieve a significant and lasting competitive advantage.

There is now a laundry list of ideas, concepts, methodologies and tools, leaders must understand and embrace immediately.

- **The cloud**
  A distributed environment where applications and data live and can be accessed from anywhere with permissions.
- **Agility and agile methodology**
  No longer an approach limited to IT, leading organizations depend on an agile methodology to better identify new opportunities and respond to the competition.
- **Design thinking**
  A methodology that puts the customer first and makes concrete decisions based on what they need and what would most appeal to them.

And then there are individual technologies such as Artificial Intelligence, automation, Internet of Things, blockchain and 5G, to name a few that can make or break a company's future.

Of course, most companies that lag in embracing new technologies don't do it because they fail to see the value or prefer the status quo. More likely, they are too dependent on legacy technology or systems and don't know exactly how to change when it feels like they're so far behind.

Application modernization requires a highly tuned, innovative approach that relies on intense collaboration, the tools needed for rapid execution, an end-to-end methodology and a community of digital transformation experts. Companies are under greater pressure to ideate, build, measure, iterate and scale solutions seamlessly and securely.

2 Accelerate speed to market

One of the primary objectives of application modernization is to significantly improve speed to market, enabling response to changes in market demand and seizing new opportunities with agility.

The key is to use a reusable, solution-based approach to speed up modernization efforts and fundamentally accelerate speed to market for our clients. From there, they can accelerate digital capabilities by hyper-leveraging reusable blueprints and components using the everything-as-a-code approach, democratizing high in-demand skillsets to maximize developer productivity and accelerate talent transformation.

In a digital world, developer productivity requires a platform that optimizes delivery effectiveness, empowers talent, enables inner sourcing and accelerates Agile/DevOps maturity. The right platform leverages high-quality, reusable component collections, automated governance, quality controls, microservices and containerization.

The positive result directly lowers mean time to resolve issues and influences speed to market. Teams must be able to deploy services, test and refine in a matter of minutes rather than weeks or months.

Powering these accelerations requires a platform based on a detailed knowledge of industry pain points, challenges and solutions, most likely developed by an expert partner. Companies often struggle to containerize and migrate their applications to the cloud within months, which the right partner can accomplish through the same effort while improving DevOps maturity within days.

3 Reduce the cost of solutions

One of the most fixable costs in an organization is technical debt, which occurs when companies build a solution or product using existing, outdated technologies.

As legacy technology ages, companies accrue technical debt when they patch bugs or take temporary shortcuts to improve performance. As that application needs to be updated, it may outstrip the abilities of that legacy technology, requiring a strip-down and rebuild.

> According to IDC, 500 million digital applications and services will be developed using cloud-native approaches by 2023.

By issuing quick fixes and patches, companies solve their problems for one day but likely overburden their applications or have patchwork code that is more susceptible to security issues or outright failure in the future. And the more those legacy apps are modified and the older they become, the more problems the changes cause rather than solve.

Taking shortcuts to deliver a project quickly can result in future rework, incremental cost and the chance that adding features to an application without fixing past problems may cause the application to fail. Prioritizing speed over code quality creates technical debt measured through software entropy. UST's Entropy Index helps clients understand which legacy applications and processes must evolve and where to begin.

The cost of legacy solutions balloons as the world gets more modernized. Much like an older version of a cell phone that slows to a crawl and does not receive newer software updates, legacy applications drain resources from an organization and require so much effort that they take valuable attention away from future opportunities. Technical debt builds over time and becomes harder to reconcile the longer an organization waits to address it. While fine in small quantities, technical debt is disastrous if allowed to grow unchecked.

Beyond technical debt, legacy applications cost organizations in many different ways. Even if you can still build and update solutions from legacy organizations, doing so will undoubtedly take more time, produce more errors and decrease employee satisfaction.

In addition, it may be harder to recruit top talent if you are not offering an updated technology stack. And those you do convince to join might struggle if they are used to modernized coding approaches and have not been taught how to work with your legacy applications.

Many organizations balk at modernization because they've heard of similar modernization projects that have had rocketing costs.

While a painful and difficult consideration, the reality is that application portfolio modernization for most organizations, is a question of when, not if. The costs will likely only increase the longer a company takes to address it.

IDC found 54% of Enterprises plan to create/write new capabilities, 44% plan to re-use/modify existing applications, and 43% plan to procure new off-the-shelf. You have options! Migrate what makes sense for the business; which is typically not all applications.

Other causes of rising costs include, poor requirements, inferior architectural design on legacy technology, deficient quality engineering practices and immature DevOps/DevSecOps practices.

Still, there are ways to avoid ballooning costs, all of which require a trusted partner with an established and documented plan.

4 Eliminate security issues

As organizations modernize their applications and migrate to the cloud, it's a golden opportunity to ensure they design for enterprise security standards and adopt industry best practices in DevSecOps and a "security-first" mindset.

Legacy applications are more likely to have outdated security or exploitable patches that are ticking time bombs to a company's ongoing operations.

Modernizing your applications requires fortifying security postures with a shift-left approach that institutes DevSecOps practices to preempt potential vulnerabilities.

Information security teams are responsible for establishing the security standards, designing well-secured templates and landing zones that teams can adopt with confidence. But designing is only half the battle. You need to drive the adoption of those standards and help institute DevSecOps best practices by enforcing and orchestrating various security scans and security gates, such as a static code scan, container scan and dynamic code scan.

UST's unique approach and solution

The right strategy for portfolio modernization is a business choice. The approach taken is unique to every company that must consider whether to design, redesign, refactor, reengineer or retire applications to future-proof its business.

UST's comprehensive suite of platforms, accelerators and services helps bridge the gap to cloud for companies at all stages of their modernization journeys. We reimagine your applications by co-ideating with your business and technology teams. We address your technical debt with our low-code/no-code platforms, which reduce maintenance and support while providing faster time to market. And, we help transform your teams and their practices with modern DevOps, DevSecOps and SRE practices during our engagement.

Engage our strategy and modernization services anywhere within our multi-step methodology and take advantage of the UST PACE platform to accelerate productivity, improve visibility and power innovation. UST PACE automates workflows, provides transparency across toolsets and makes available high-quality, reusable components to speed time to market.

Learn more about our methodology, platforms and services at ust.com/cloud.

Together, we build for boundless impact

About us

For more than 20 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 29,000 employees in 30 countries, we build for boundless impact, touching billions of lives in the process.

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