

# Overcoming enterprise application legacies



# Introduction



In an era of rapid business technology innovation, legacy applications can sometimes feel like skeletons in the corporate closet — remnants of a bygone era that linger on, haunting growing organizations with their antiquated code and creaky infrastructures. It's a scenario that leaves many companies grappling with a paradox: The tools that once propelled their success now stifle innovation, casting doubt on their ability to stay competitive and respond to ever-changing market dynamics.

Dealing with legacy apps, however, isn't as simple as "out with the old, in with the new." For all their shortcomings, legacy systems remain inextricably woven into the fabric of many business operations, supporting the core processes that keep many companies strong. Untangling this knot of outdated technologies and intricate dependencies is an enormous task that requires a delicate balance of strategic planning, technical expertise and unwavering commitment.

The solution to tackling legacy applications is carefully determining which ones are no longer fit for purpose and which should be modernized and how. For companies at this crossroads, the choice is to embrace the future and embark on a transformative journey or cling to the familiar and risky obsolescence in a world that shows no mercy to those who refuse to evolve.

The path to app modernization is tricky, but the rewards are almost certainly worth it. Most importantly, the time to do it is now. A recent survey from Statista shows that 58% of respondents cited increased security as the top factor driving legacy app modernization. Dependence on legacy apps is also draining IT budgets and wreaking havoc on companies' efforts to reduce costs.

This whitepaper examines old systems' financial, operational and strategic impact and outlines a plan to guide companies through this important transition.

## The burden of legacy applications

One of the biggest dangers of legacy applications is that companies have become so accustomed to them that they might not even be aware of just how costly they are. Unfortunately, outdated systems can create widespread problems, from draining financial resources to hindering innovation and complicating compliance. Legacy apps can quietly destroy competitive advantage in the following ways.





## Increased costs



Legacy applications place a heavy financial burden on companies by exhausting resources that could be better used for innovation and growth. One of the primary financial drains of legacy applications is maintenance costs, which can be significant. These costs often include ongoing expenses for hardware upgrades, software patches, security updates and specialized technical support to maintain outdated apps. In particular, costs for technical support can add up quickly as the pool of experts proficient in legacy technologies diminishes, driving up the cost of retaining or training skilled personnel. As a result, some businesses see their annual maintenance costs increase by as much as 15%, causing significant financial strain.

Investments in legacy app maintenance can have a ripple effect across a company, particularly regarding opportunity costs. Committing resources to old technology means companies miss out on the chance to invest in cutting-edge technologies and innovative solutions that could improve operational efficiency, enhance the customer experience and drive revenue growth. A company struggling with a cumbersome legacy system, for example, may find it hard to keep up with competitors that have adopted modern, agile platforms, ultimately risking market share decline and reduced profitability. Opportunity costs also appear in the form of suppressed innovation, decreased productivity and missed market opportunities, which are hidden taxes. This hidden tax grows over time, stifling an organization's ability to stay competitive and responsive to changing market dynamics.

## Productivity loss and operational inefficiencies

Legacy systems can wreak havoc on a company's productivity and efficiency. One big problem is system downtime. Old hardware and software are more likely to fail and crash, causing costly disruptions that can grind operations to a halt. Not only can this lead to direct revenue losses, but it also hurts a business's reputation and frustrates customers.

Legacy applications also reduce employee productivity because workers spend too much time and resources on maintenance and troubleshooting. Front-end legacy app engineers, for instance, must often deal with clunky, hard-to-use interfaces, perform manual data entry and endure slow response times that stop them from focusing on more meaningful tasks, such as improving the user experience and developing new features.

Using outdated technology also causes significant operational headaches. Legacy apps often need more integration capabilities with modern tools and platforms, resulting in siloed operations and manual workarounds. As a result, companies may need to build cross-platform interfaces or "wrapper" applications to bridge gaps, incurring additional costs and complexities. Legacy systems also limit real-time data visibility and reporting, hampering informed decision-making and the ability to respond to market dynamics effectively.



## Security risks and compliance challenges

With the ever-increasing sophistication of hacking technology, it shouldn't be a surprise that legacy systems are particularly vulnerable to security breaches. Outdated systems often lack robust security features, such as multifactor authentication, advanced encryption protocols and real-time threat monitoring capabilities. These applications also usually fail to receive critical patches and updates, especially if vendors no longer support them, leaving companies especially vulnerable.

Additional security issues can arise from legacy systems' lack of integration capabilities, as described above. Siloed applications can sometimes lead to "shadow IT," where employees turn to unauthorized apps and services to bridge gaps in capabilities. Unfortunately, these unapproved systems operate outside the purview of IT departments and governance policies, making them especially vulnerable to security breaches.

In addition to security risks, compliance issues also arise as legacy systems struggle to adapt to evolving regulatory standards and industry-specific requirements. Older applications may need more functionalities to accommodate modern security protocols, data privacy measures and audit trails, which increases the risk of non-compliance and potential fines or legal actions. For example, healthcare companies with legacy systems currently face significant challenges in meeting Health Insurance Portability and Accountability Act (HIPAA) regulations because their apps can't adequately protect sensitive patient data.



## Innovation stifling and competitive disadvantage



Disney CEO Bob Iger once offered the following advice for companies: "Innovate or die." Unfortunately, legacy systems can act as a significant barrier to innovation. By shackling organizations to outdated technologies and processes, legacy apps hinder technological adoption, market responsiveness and strategic initiatives crucial for maintaining a competitive edge. Outdated systems lack the flexibility and scalability to accommodate new technologies, such as cloud computing, AI and advanced data analytics – technologies that have become essential to building operational efficiency, superior customer experiences and data-driven decision-making.

The inflexible nature of outdated platforms also makes it extremely challenging to adapt to changing market conditions, customer preferences and emerging industry trends. For instance, a retail company reliant on a legacy inventory management system may struggle to implement omnichannel strategies or real-time inventory tracking, leaving the company at a disadvantage compared to more agile competitors.

Without the ability to innovate and adapt to market changes, companies will likely find it almost impossible to execute strategic initiatives. The inflexible nature of outdated platforms also makes it extremely challenging to adapt to changing market conditions, customer preferences and emerging industry trends. For instance, a retail company reliant on a legacy inventory management system may struggle to implement omnichannel strategies or real-time inventory tracking, leaving the company at a disadvantage compared to more agile competitors.

Without the ability to innovate and adapt to market changes, companies will likely find it almost impossible to execute strategic initiatives. Legacy systems' monolithic architectures and proprietary data formats will leave companies without the agility, scalability and integration capabilities required to support transformative projects, including digital transformation, process automation and data-driven decision-making.

## Talent and resource drain

As legacy applications become increasingly obsolete, the pool of skilled professionals with expertise in their maintenance and operation dwindling quickly. This skill shortage poses a formidable challenge, as companies struggle to find and retain the specialized talent required to keep these systems running. Many resort to costly training programs or outsourcing arrangements. In addition, IT departments frequently find themselves diverting valuable personnel and budgets away from strategic, revenue-generating projects and toward the mundane tasks of maintaining and troubleshooting aging platforms. The result is a need for more innovation, competitiveness and agility.

One of the most overlooked consequences of aging systems is their effect on employee morale and retention. No one wants to work with outdated, cumbersome technologies that consistently cause frustration, especially those accustomed to modern, user-friendly tools and interfaces in their daily lives. Dissatisfaction with legacy systems can lead to decreased productivity, low engagement, project delays, increased costs and competitive disadvantage. In the worst cases, it can lead to high employee turnover rates, as talented individuals seek opportunities for professional growth and an inability to attract and retain top talent.



# Strategies for overcoming legacy application challenges

Abandoning legacy applications entirely is difficult, disruptive and, ultimately, unwise. In many cases, they're deeply ingrained within core business operations. However, a strategic approach to modernization can help companies carefully evaluate dependencies and prioritize critical systems to upgrade. The following three core steps can help guide the process.

## 1. Comprehensive assessment

The first step in modernizing legacy apps is to conduct a comprehensive assessment, including a thorough evaluation of the company's existing system architecture, codebase, dependencies and integration points. This process should engage diverse stakeholders, including developers, business analysts and end users, to build insights into current technical limitations, business process alignment and user experience. Techniques such as code analysis, system profiling and dependency mapping can help uncover system intricacies. Additionally, assessing technical debt – the amount of rework needed to bring an app's code up to modern standards – and data structures can help guide prioritization and data migration strategies.



## 2. Prioritization and planning

The next step in the application modernization process is for key stakeholders from various departments to collaborate to identify the systems that pose the greatest risk or create the greatest bottlenecks and then prioritize modernization. Factors such as system age, maintenance costs, security vulnerabilities and integration challenges should guide the prioritization. Once critical systems are identified, a detailed modernization roadmap should be developed, outlining phases, timelines, resource allocation and risk mitigation strategies. Engaging end users and subject matter experts throughout this process ensures that the modernized solutions meet business requirements and user expectations.



## 3. Modernization approaches

Determining the appropriate legacy app modernization approach should evolve from the results of the prioritization and planning stage. Based on the analysis of technical debt, business criticality and integration requirements, companies can explore the five app modernization approaches outlined below to determine which best aligns with their specific needs and constraints. Pilot projects or proof-of-concept implementations can help validate the chosen modernization path before committing to a full-scale effort.



# The roadmap to modernization

Armed with knowledge about strategies for legacy application modernization, it's time to build a comprehensive roadmap that builds stakeholder support and lays the groundwork for success. This requires a structured approach to overcoming the burdens discussed above, such as increased costs, security risks and stifled innovation. Here are the key steps for building a successful modernization plan.

## 1. Build a business case



To justify the investment in legacy application modernization and to adequately emphasize the urgency, stakeholders must understand the drawbacks of current systems, such as performance bottlenecks, high maintenance costs and security vulnerabilities. A cost-benefit analysis can detail initial investments and the current expenses of maintaining legacy systems while projecting the return on investment of modernization through potential cost savings, improved efficiency and new market opportunities. Using case studies of successful modernization efforts can help stakeholders envision the benefits, including enhanced customer experiences and operational efficiencies. Quantifying the financial impact of reduced downtime, lower maintenance costs and increased agility is important to demonstrate how modernization can drive long-term growth and competitive advantage.

## 3. Engage stakeholders



Engaging stakeholders in the modernization of legacy apps is crucial for three reasons: It aligns app modernization with business objectives, builds critical support and minimizes the possibility that teams will resist changes. Involving IT leaders, department managers, end users and external partners from the beginning serves multiple purposes. It helps identify potential issues and set practical expectations while also enabling companies to customize modernization efforts to the unique needs of specific teams. Most importantly, an inclusive approach fosters a sense of ownership with several benefits, including greater user acceptance and a higher likelihood that modernized applications will meet technical and business requirements. With stakeholders on board early, companies can expect smoother transitions, reduced project risks, higher adoption and improved overall satisfaction.

## 2. Implement and execute



Building a detailed implementation plan is key for ensuring a smooth and successful legacy application modernization effort. First, establish clear objectives, timelines and success metrics for the modernization initiative. Next, identify potential risks, such as data migration challenges or user adoption barriers and build mitigation strategies to overcome them should they occur. Rearchitecting or replacing apps can create stress for end users not accustomed to change. To overcome potential resistance, develop a comprehensive communication plan to keep stakeholders informed and engaged throughout the process. In addition, allocating adequate resources, including skilled personnel and appropriate budgets, will help ensure seamless execution with fewer disruptions, more efficient resource utilization and increased stakeholder confidence.

## 4. Monitor and evaluate



Embarking on app modernization is just the beginning of a journey that extends far beyond the initial decision to rebuild or replace legacy systems. It's essential for companies to consistently evaluate their applications, measure the impact of modernization against specific goals and adapt their systems to tackle new challenges. This involves setting performance baselines, defining key performance indicators that align with modernization objectives and implementing robust monitoring tools and processes. Regularly engaging with stakeholders is important for making data-driven decisions and any necessary adjustments. However, challenges, such as data quality issues and resistance to change, can become roadblocks to success. Companies that build a culture of continuous improvement, including implementing change management strategies and committing to ongoing training and support, will be best positioned to overcome these challenges.

# How HCLTech can help modernize legacy applications

HCLTech's methodical and technology-driven approach to app modernization enables businesses to overcome the complexities of legacy systems for a smoother transition to more efficient and scalable IT environments. The company's comprehensive application modernization services, including application assessment, rehosting, re-platforming, refactoring and rearchitecting, are tailored to each client's specific business needs. HCLTech's key solution for re-platforming legacy apps is Microsoft Power Platform, which provides the ideal low-code/no-code development environment with Microsoft Power Apps, and which lets HCLTech developers leverage the latest generative AI advances with Microsoft Copilot Studio.

Using a strategic, phased approach to modernization, HCLTech leverages advanced tools and frameworks for efficient code analysis, migration and optimization that reduce the risk of errors and minimize disruption to ongoing operations. HCLTech also boasts specialized expertise in integrating modern technologies, such as cloud computing and microservices, to help businesses improve scalability, performance and agility. The company also leverages automation and DevOps practices to streamline the modernization process, accelerating time-to-market for new features and improvements.



## Conclusion

HCLTech's methodical and technology-driven approach to app modernization enables businesses to overcome the complexities of legacy systems for a smoother transition to more efficient and scalable IT environments. The company's comprehensive application modernization services, including application assessment, rehosting, re-platforming, refactoring and rearchitecting, are tailored to each client's specific business needs. HCLTech's key solution for re-platforming legacy apps is Microsoft Power Platform, which provides the ideal low-code/no-code development environment with Microsoft Power Apps, and which lets HCLTech developers leverage the latest generative AI advances with Microsoft Copilot Studio.

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