

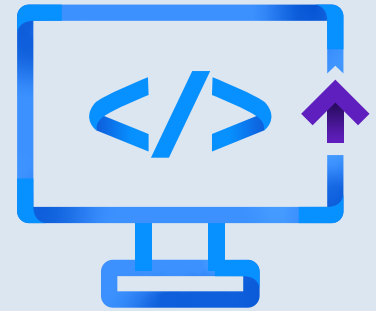
# From legacy to leading-edge: HCLTech's **app modernization** framework



# Overview

If you've ever watched one of the many home makeover reality shows on TV, you're likely well-versed in this premise: Homeowners must come to grips with the fact that their home – once a symbol of innovation and style – now seems woefully outdated, with run-down appliances, inefficient layouts and a constant need for repairs. Making matters worse, the homeowners' small, inconsistent attempts at renovations over the years only seem to have uncovered more issues, leaving them wondering if the home they once loved will ever meet modern standards.

Such is the predicament for many IT departments when it comes to regarding legacy applications. Systems that once drove growth and efficiency have now become heavy burdens due to old technologies, broken code and the constant struggle to integrate with modern solutions. These outdated systems stifle innovation and create significant technical debt – the accumulated cost of deferred maintenance and necessary updates – increasing operational and security risks, as well as maintenance costs.



The challenge for IT departments, like homeowners, is to build a long-term plan to renovate and modernize their environments that leverages the best of the original architecture. As much as it might feel good, tearing everything to the ground likely doesn't make sense. Many legacy applications are deeply ingrained in a corporate tech stack and also likely still have value, as long as there's a well-considered strategy for what to modernize and how. That could mean moving apps to the cloud, modifying code or completely rebuilding them – or a combination of the three. The result is a more scalable, secure, high-performing application ecosystem that once again becomes a source for innovation and growth.



Legacy application modernization, however, can be a complex process because it involves updating outdated technologies and code, ensuring compatibility with current systems, maintaining data integrity and minimizing downtime. Most importantly, app modernization also requires a strategic approach that aligns with business goals, addresses security concerns and effectively manages change across the business.

In many cases, companies will look for a strategic app modernization partner. HCLTech is a leading global technology company that has established itself as a trusted partner for enterprises seeking to modernize their applications and leverage the power of the cloud. As a strategic partner of Microsoft, HCLTech simplifies and streamlines the process of transitioning legacy workloads to Microsoft Power Platform and Dynamics 365 and then continually monitors and modernizes customers' application suites. This whitepaper provides an overview of app modernization and outlines how HCLTech approaches the process to help companies undergo an application makeover.

# App modernization: An overview

Application modernization is a detailed process that requires careful planning and execution, especially when it comes to critical processes, such as integration and data migration. If not handled carefully, app modernization can cause significant disruptions to business operations, increased costs and potential security vulnerabilities. Here are the four critical steps in the application modernization process.

## 1. Comprehensive assessment:

The first step in modernizing legacy apps is to comprehensively assess the existing system architecture, codebase, dependencies and integration points – engaging stakeholders, including developers, business analysts and end users, in the process. Techniques such as code analysis, system profiling and dependency mapping are critical in this phase. It's also important to assess data structures and technical debt to guide prioritization and data migration strategies.

## 2. Prioritization and planning:

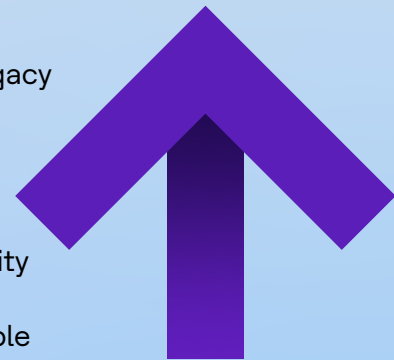
The next step involves collaboration among key stakeholders to identify and prioritize systems with the greatest risks or bottlenecks, considering factors like system age, maintenance costs, security vulnerabilities and integration challenges. After identifying critical systems, a detailed modernization roadmap should be developed, outlining phases, timelines, resource allocation and risk mitigation strategies.

## 3. Determining modernization approaches:

Determining the appropriate legacy app modernization approach should be based on the prioritization and planning stage results, considering technical debt, business criticality and integration requirements. Companies often explore multiple strategies, including rehosting, refactoring, re-platforming, rearchitecting or replacing apps. Pilot projects or proof-of-concept implementations can validate the chosen path before committing to a full-scale effort.

## 4. Modernizing applications:

Once the modernization approach is selected, the actual modernization work begins. This involves updating or rewriting code, migrating data and integrating new technologies as outlined in the roadmap. Companies typically form cross-functional teams to manage the implementation, ensuring close coordination between IT and business units. Continuous testing and iterative development practices help address issues quickly to keep up with changing requirements.



# HCLTech's app modernization methodology

HCLTech's app modernization services span the entire lifecycle, from initial assessment and planning to execution and optimization. This end-to-end approach ensures that companies achieve their modernization goals smoothly and effectively, minimizing risks and maximizing the benefits of cloud computing. Let's look at how HCLTech approaches the app modernization process outlined above. The four steps in the HCLTech approach are covered in the following three phases.

## 1. Comprehensive assessment

The modernization process begins with HCLTech's comprehensive analysis of a customer's application portfolio, which aims to identify the best candidates for modernization based on their business value, risks, complexity and technical fit. The HCLTech assessment methodology gauges the most suitable cloud architectures and target states for applications so they align with a company's strategic goals. This structured approach includes the following key phases.

### Classification

Apps are classified by technology, process and functionality, which creates a clear structure for further assessment. For example, legacy systems that handle financial transactions are grouped separately from those that manage customer interactions.

### Criticality assessment

Usage and criticality are analyzed based on surveys and workshops. The applications are ranked by process priority through engagement with IT and business teams. For instance, an application used daily by customer service staff might be prioritized differently from one used quarterly for financial reporting.

### Complexity assessment

HCLTech leverages data from assessment tools, design analysis and manual expert evaluations to determine the complexity of modernizing each application. These tools enable and accelerate the processing of this data and provides decisive intelligence for digital transformation projects. HCLTech helped a leading French multinational integrated oil, gas and energy company assess over 1,000 applications across multiple business domains. The result was a 360-degree view of application health regarding modernization and technology standardization, risk assessment and portfolio rationalization opportunities.

### Assessment report outputs

Detailed roadmaps and implementation plans are developed in a final assessment to guide the modernization process. For example, a roadmap might outline steps for re-platforming a customer relationship management (CRM) system to a cloud-native architecture.

HCLTech's assessment process is highly collaborative, bringing together all stakeholders, including IT staff, business leaders and end users, to ensure that the app modernization strategy is well aligned with organizational objectives and has broad support. The methodology produces clear and actionable outputs, such as classification reports and modernization roadmaps, which provide a solid foundation for decision-making. These data-driven recommendations keep modernization efforts focused on the most impactful applications.

The methodology also involves the use of various tools and technologies. HCLTech often uses third-party assessment tools along with cloud platforms, such as Microsoft Azure. Collaboration tools, including Microsoft Teams and SharePoint, also improve stakeholder communication and coordination.

## 2. Prioritization and planning

At the heart of HCLTech's approach to prioritization are four key workstreams: lift and shift, consolidation, transformation, and retain and surround. Each workstream targets specific aspects of the modernization process. Determining which apps fall into which category is based on a combination of factors, including value to the business and time-to-market requirements.

### Lift and shift

Lift and shift app candidates have lower business value but high time-to-market requirements, making them ripe for rehosting in cloud environments. This workstream is primarily IT-led and involves minimal changes to business processes. This approach, also known as rehosting or re-platforming, aims to optimize performance, security and license spending while speeding time to market due to it involving minimal changes to code. For example, a company might move its on-prem email system to a cloud-based solution like Microsoft Exchange Online, gaining scalability and security improvements with minimal disruption to daily operations.

### Consolidation

The consolidation workstream focuses on bringing together redundant and siloed workloads and applications. By grouping them by function, eliminating unnecessary integrations and automating manual processes, HCLTech streamlines operations and builds efficiency. For example, a company with multiple legacy systems for financial transactions can consolidate these into a unified platform, reducing complexity and improving manageability. Candidates for consolidation have high value to the business but lower time-to-market requirements. Some apps in this category might be retired and replaced with a single comprehensive system; others might be refactored, which involves more significant code modifications than lift-and-shift scenarios. Some could, ultimately, be candidates for more extensive modernization (more on this below).

### Transformation

Apps ripe for transformation have high business value and high time-to-market requirements. These apps are often candidates for rearchitecting, which involves significantly modifying an application's code and architecture. The transformation workstream is about differentiating business processes. This approach involves heavy engagement with business subject matter experts to align modernization efforts with business needs. The primary goals here include optimizing the user experience, enhancing performance and improving security.

### Retain and surround

Apps in this category have lower business value and low time-to-market needs. These often include non-differentiated back-office processes, such as administrative task-management tools. Heavily customized apps with lots of data and integration requirements, such as custom reporting tools or specialized data processing apps, also fall into this category. These apps are often candidates for refactoring, which tweaks code to add greater capabilities. Retain and surround optimizes these applications by surrounding them with modern solutions. This might involve improving user interfaces using Microsoft Power Apps front-ends running on the Microsoft Power Platform as an interim step before a full strategic rearchitecting or replacement.

HCLTech's prioritization and planning framework helps companies define and sequence modernization initiatives by carefully evaluating each application's business value, technical complexity and urgency. In doing so, high-impact projects with immediate benefits are addressed first, while more complex or lower-priority projects are scheduled accordingly. This prioritization maximizes business value and uses resources in the most efficient way possible.

### 3. Determining and implementing modernization strategies

Once the assessment and planning phases are complete, organizations face the daunting task of transforming outdated systems into modern, efficient solutions. The next step in HCLTech's app modernization framework takes the prioritization analysis from the previous phase and finalizes specific modernization approaches. Then, HCLTech implements tailored strategies to navigate technical complexities, build seamless integrations and manage significant changes in technology and business processes. Here's how HCLTech approaches options for modernization.

#### Cloud re-platforming or rehosting

HCLTech uses Microsoft Power Platform to help organizations re-platform their legacy applications and leverage the native capabilities of cloud platforms, such as scalability, elasticity and resilience. Using proven methodologies and best practices, HCLTech ensures minimal code changes while seamlessly integrating applications with the cloud ecosystem.

#### Cloud re-platforming or rehosting

HCLTech's cloud re-engineering services help companies improve their legacy applications' functionality, performance, usability and maintainability. Leveraging its deep knowledge and experience in various technologies and domains, HCLTech re-engineers applications using modern languages, such as JavaScript and TypeScript for front-end development, Python and Java for back-end service and frameworks and standards that provide high-quality delivery through rigorous testing and validation.

#### Cloud rearchitecting

For businesses seeking greater agility and flexibility, HCLTech offers cloud rearchitecting services. This approach involves rearchitecting monolithic applications into microservices-based, serverless or containerized architectures. By tapping into its domain expertise and technical skills, HCLTech designs and develops cloud-native applications that are modular, loosely coupled and highly responsive.

#### Specialized offerings

In addition to its core modernization services, HCLTech provides specialized offerings for .NET and Java application modernization, SAP application migration and container migration. For example, HCLTech leverages its proficiency in .NET and Java technologies to modernize applications to the latest versions, frameworks and best practices. Similarly, HCLTech's SAP application migration services guarantee seamless migration and optimization of SAP applications to Microsoft Azure-certified infrastructure and tools.

## The benefits of HCLTech's approach

HCLTech's end-to-end application modernization services cover every phase, from initial assessment to final execution. This comprehensive approach to modernization emphasizes careful planning and seamless implementation in every aspect to reduce the chance of disruptions. A key advantage of HCLTech's approach is its partnership with Microsoft, which gives customers access to the latest tools, technologies and best practices in cloud computing. In addition, HCLTech's partner delivery orchestration centers serve as strategic hubs where HCLTech's experts collaborate closely with Microsoft staffers to ensure that customers can fully take advantage of Azure's scalability, reliability and security features, as well as several Microsoft application tools, including Power Platform for low-code and no-code app development. Here's a look at the top benefits HCLTech customers experience.

**Operational efficiency and reduced risk:**

HCLTech takes a cloud-first approach to modernization that maximizes benefits and minimizes risks. Customers can take advantage of greater scalability, reliability and security by migrating applications to robust cloud platforms like Microsoft Azure. This improves operational efficiency and reduces the risk of downtime and data breaches.

**Automated processes:**

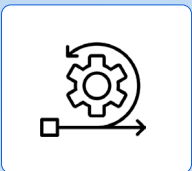
Another significant advantage is HCLTech's automation of processes and consolidation of redundant applications. The company's automated assessment processes and proprietary tools identify and eliminate duplicate systems to simplify operations and reduce maintenance costs.

**Optimized portfolios and reduced costs:**

HCLTech's thorough assessment methodology determines the best approach for each application, whether that's rehosting, refactoring or retiring outdated systems. This targeted strategy enhances the application portfolio's performance and functionality and helps manage and reduce licensing expenses.

**Improved application performance:**

HCLTech's modernization methodology leads to applications that boast improved user experiences, performance and scalability. Re-engineering applications using modern languages and frameworks means systems are more responsive, user-friendly and capable of handling increased workloads. For example, modernizing a CRM system can lead to faster response times and a more intuitive interface, boosting user satisfaction and productivity.

**Business agility:**

By adopting modern cloud architectures and integrating advanced technologies, such as AI artificial intelligence (AI) and machine learning, HCLTech helps businesses innovate faster and adapt to market shifts, which is a crucial competitive advantage.

**Analysis and reporting:**

Tools such as Microsoft Power BI are integral to HCLTech's services. They provide detailed insights into application performance and usage and help businesses make data-driven decisions. For instance, HCLTech builds Power BI dashboards to monitor the effectiveness of newly modernized applications and identify areas for further improvement and optimization.

**Training and change management:**

HCLTech emphasizes comprehensive training programs and change management strategies to help employees adapt to new technologies and processes. This focus on user adoption is critical for realizing the full benefits of application modernization initiatives.



## Conclusion

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Much like home renovations, legacy application modernization is a project that requires experienced hands with deep expertise to overcome the complexities and potential pitfalls of such an ambitious endeavor. HCLTech's meticulous planning, skilled execution and careful management offer a proven app modernization framework to ensure updated systems improve functionality, efficiency and value without causing disruptions.

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