



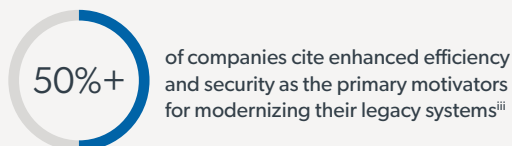
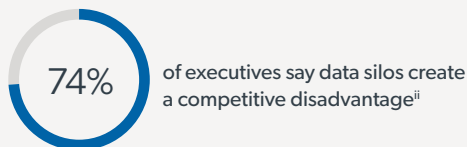
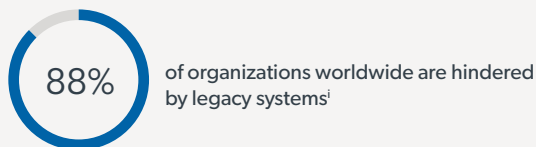
Tech Industry

Harnessing AI to Accelerate Legacy Application Modernization



As the gap between legacy IT systems and new technologies continues to widen, modernizing these outdated systems becomes increasingly urgent. Outdated systems aggravate inefficiencies, exacerbate security and compliance risks, increase maintenance costs, and limit an organization's ability to serve customers. And the longer modernization is delayed, the more these issues compound, making the eventual transition more complex, costly, and disruptive. *But modernize you must!*

The data is simply too overwhelming to ignore.



Dismantling data silos, optimizing workflows, and integrating new technology truly is the best way to shake off the cobwebs and achieve operational excellence in the digital age.

The question, then, is not whether to modernize, but how to do so swiftly and effectively.



Challenges of Legacy Systems

Aging IT systems plague organizations across industries, causing a cascade of problems, including:

-  Siloed data that is difficult, if not impossible, to effectively connect, organize, analyze, and make actionable
-  Limited scalability, flexibility, and agility due to incompatible applications, unsupported hardware and software formats, and maxed out storage space
-  High maintenance costs caused by licensing fees, operational inadequacies, and the need for specialized expertise
-  Poor performance stemming from a combination of substandard application design, slow software, and outdated hardware

Modernization is the most effective solution to these challenges.

More than just a technology update, modernization offers a rare opportunity to truly transform your operations and lay the groundwork for future success.

And accelerating the process is essential to gain a competitive edge before the technology gap widens further.

Organizations ready for this change must seize this opportunity and execute it correctly, as the stakes are too high to squander.



Using AI Pragmatically to Accelerate Modernization


The traditional modernization process can be time-consuming and arduous, yet AI presents a game-changing opportunity. However, like any powerful tool, its effectiveness hinges on how it's implemented. To accelerate modernization, it must be used deliberately, thoughtfully, and in combination with human expertise.


A common method for speeding up modernization is 'code conversion,' which typically involves using AI to auto-translate legacy code into a newer language. Though this seems like a quick fix, it often falls short. Here's why.

Preserving Inefficiencies: Converting the code on a monolithic system without changing the system itself merely updates that monolithic system to new technology. It doesn't fix inefficiencies or bottlenecks, it just converts them into new code.

Missed Opportunities: Without the necessary element of human architectural thinking, an AI-powered code converter isn't going to identify opportunities to integrate new technologies and development approaches like microservices, cloud-native architectures services, modern software frameworks, containerization tech, microservices architectures, and DevOps toolchains.

Instead of pressing "convert" and letting AI rewrite your code in a vacuum, quality modernization should leverage AI to understand the context in which your code was written. This empowers your modernization team to:

 Prioritize what code to rewrite based on functionality, usefulness, and relevance

 Identify opportunities to optimize business processes and workflows, integrate new technologies, and adopt new development approaches



The LegacyLift™ Approach

LegacyLift, a CapTech solution, employs AI to accelerate legacy system modernization with the precision of an exhaustive manual effort, but at the cost of code conversion. Let's delve into the key aspects of the approach.

Understanding the Legacy System

Modernization (well, good modernization) is not simply rewriting old code in a new language. It is updating your technology, processes, and approaches to fundamentally transform your operations for the digital age. To achieve this, developers must understand these systems at a root level.

That's where AI comes into play. By leveraging it to analyze the existing system from the bottom-up, we can accelerate and scale our ability to extract historical context and business logic traditionally gleaned through expensive manual review.

These insights help us create a "pedigree of code," which is essential for identifying obsolete architecture and patterns, pinpointing vulnerabilities, and understanding the intent of the legacy system. Drawing on this pedigree of code, analysts and engineers can then design a modern solution that meets the original intent, and dramatically improves upon efficiency, scalability, and user experience.

Extracting and Organizing


The LegacyLift approach leverages a powerful combination of advanced large language models, AI-enhanced search, and specialized AI agents to:

- **Extract** functional requirements, business rules, and compliance constraints from the codebase, documentation, database schema, and live system behavior.
- **Enhance** codebase and documentation searchability, enabling developers and analysts to quickly locate relevant information and understand system architecture and code design.
- **Organize** extracted information into logical Agile epics, features, and user stories, and suggest a prioritized order based on business capability dependencies.

Armed with accelerated insights and a structured approach, teams can efficiently navigate the complexities of the legacy application and drive the modernization effort forward with confidence.

Benefits of LegacyLift

Using AI to accelerate the modernization process offers numerous advantages:

-  Accelerates modernization efforts
-  Reduces the risk of overlooking critical functionalities or launching an incomplete system
-  Reduces cost by shortening the time necessary for requirements analysis and reverse engineering efforts
-  Enables organizations to better attract, develop, and retain talent by providing a cutting-edge technology environment
-  Increases understanding and documentation of legacy code
-  Democratizes systems knowledge so everyone across the organization has access



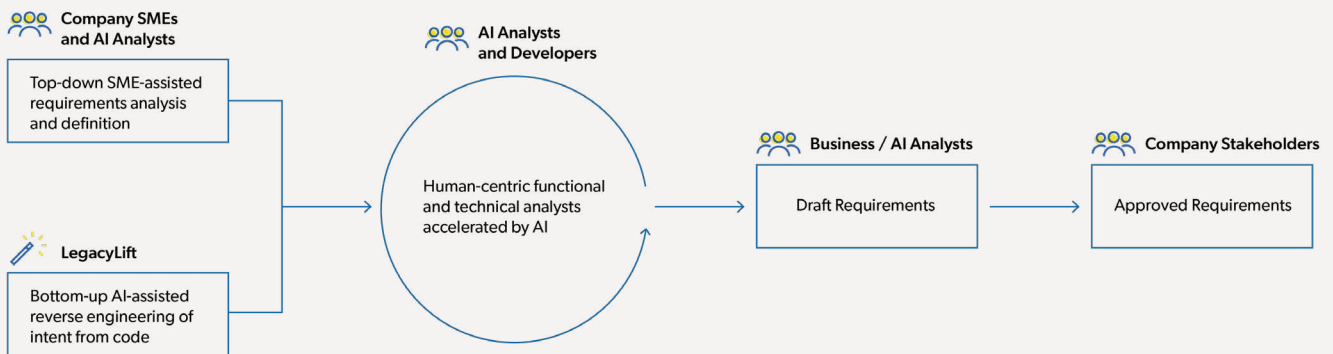
Accelerating modernization through AI offers organizations a powerful way to bridge their technology gap and unlock new levels of efficiency and innovation.

LegacyLift in Practice

Curious how LegacyLift tackles real-world challenges? Let's examine a typical scenario: a state agency grappling with a large outdated system. A frequent challenge that agencies like this encounter is with missing knowledge. Since most of the people who knew the original system, its rules, and its code dependencies no longer work there, how can they modernize these systems?

With the LegacyLift Approach, AI can quickly and comprehensively analyze the source code, test cases, relevant legal statutes, and other sources of embedded requirements. This enables us to surface the intent of the system design and architecture, including business rules, logic, workflows, data schemas, constraints, and inter-component dependencies.

We can also compile all official policies, procedures, and administrative code to ensure the extracted requirements align with and do not conflict with official regulations and statutes.



Understanding the Past to Build for the Future

Accelerating modernization through AI offers organizations a powerful way to bridge their technology gap and unlock new levels of efficiency and innovation. LegacyLift's unique approach supercharges this transformation.

By employing a pragmatic and precise use of AI, LegacyLift takes a wider and deeper view of a system's history, context, and intent to plan and build for a successful future state. By addressing the underlying design of your system, LegacyLift highlights areas

in which performance and user experience can be improved, and ensures the updated system remains flexible and adaptable enough to sail untouched through any internal or external changes.

From state agencies to multi-national corporations, all organizations should prioritize accelerating the modernization process. Investing in innovative solutions, like LegacyLift or similar approaches, will empower you to move forward.

¹Most organizations are hindered by legacy tech," Edge, Feb. 10, 2022, <https://www.edgemiddleeast.com/business/nearly-90-of-businesses-are-hindered-by-their-legacy-technologies>.

²Most executives say data silos are a competitive disadvantage," XPLM, 2023, <https://www.xplm.com/news/press/industry-study-2023-companies-cannot-control-their-data-silos/>.

³Enhanced security and efficiency are the key drivers for modernization," Acropolium, March 24, 2024, <https://acropolium.com/blog/what-are-legacy-systems-8-signs-its-time-to-modernize-your-software/>.



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