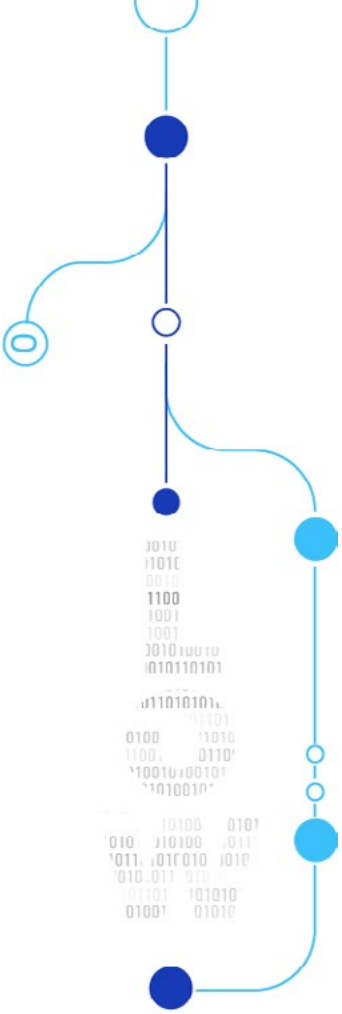
AMZUR TECHNOLOGIES

WHITEPAPER

Leveraging Low-Code For Continuous Modernization



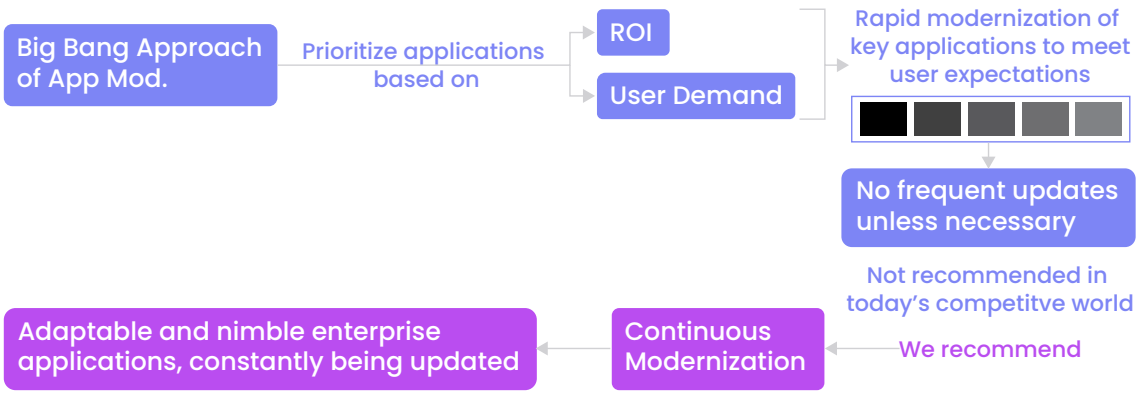
Introduction

With legacy applications, it is very common to see operational rigidity and workflow disruptions. Furthermore, legacy applications may also require the use of manual processes for integration between the front, middle, and back offices, resulting in poor customer experiences or business growth. Organizations may be spending more time and energy on application maintenance rather than delivering business value. In today's business scenario, organizations that do not continuously invest in innovation are more than likely to witness gaps between market demands and the capabilities of their business.

Gartner predicts that by 2025, 90% of applications currently used today will still be in use, and lagging due to the lack of funding for modernization initiatives and that 40% of IT budgets will be spent simply maintaining technical debt.

Application Modernization Approach

One of the most common approaches followed by organizations is a "Big-bang" process where leaders prefer to prioritize applications based on the value they deliver or even the volume of demands from users, then focus the majority of dev. resources on rapidly modernizing the said app (or apps). This helps rapidly modernize and deliver key applications, meet user expectations, and the dev. resources are now free to move on to other pressing projects. The new shiny application is no longer a focus area, and will only get any attention if it breaks down or needs major rehauling at some point in the distant future.



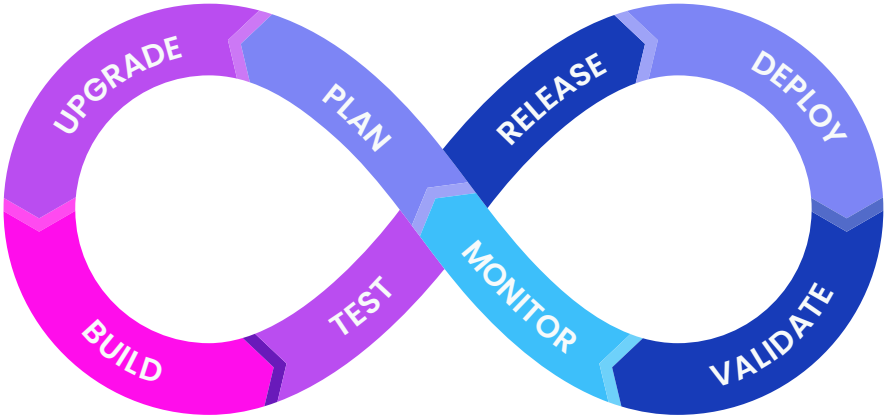
As you may have already guessed - the big bang approach is very well-suited for organizations that do not need applications to be frequently updated. But in today's hyper-connected world, a vast majority of businesses require their enterprise applications to be nimble and adaptable to constantly evolving customer requirements, regulatory environments, new business models, etc.

For example, consider a procurement application that needs to allow suppliers to go paperless, and just a few months later needs to be converted to a marketplace that accommodates competitive bidding processes, and so on. In short, modern enterprise applications usually need constant evolution and upgrade to ensure that the speed of doing business is constantly increased!

This whitepaper discusses how a continuous application modernization approach combined with low-code development methodologies can allow you to continuously innovate, deliver rapidly, and stay ahead of the competition by incorporating modern features in just hours at a relatively low cost and in a controlled manner.

Continuous Application Modernization

As the name suggests, Continuous Application Modernization requires continuous focus on upgrading enterprise applications to stay ahead of evolving business needs, anticipate user expectations, and most of all - take advantage of emerging technologies.



According to Gartner, continuous modernization is a gradual approach focusing on providing digital business support and value on time. This is a conscious effort to manage technical debt before it becomes a business pain. Incorporated with DevOps and QA, Continuous Application Modernization helps businesses develop, deploy, test, and upgrade features faster than any other processes, ensuring up to a **40% reduction in development cost**.

Benefits Of Continuous Enterprise Application Modernization

- **Incorporation of DevOps and CI/ CD Methodologies**
  - Faster time-to-market
  - Automated Testing
  - Improved monitoring and feedback
- **Improved Agility**
  - Rapid response to business needs
  - Faster time-to-market
  - Higher customer satisfaction
  - Reduce the risk of failure
- **Enables Composability**
- **Reduced Cost**

01 Incorporation of DevOps and CI/ CD methodologies:

Continuous Modernization is a modern approach that can synergize the capabilities of DevOps and CI/ CD methodologies.

DevOps is a set of practices that emphasize collaboration between development and operation teams, facilitating an improved quality of application modernization by streamlining the development and deployment processes. By incorporating DevOps and CI/CD, teams can ensure that they are consistently delivering high-quality software that meets evolving customer needs.

Together, DevOps and CI/CD practices provide several benefits for application modernization, including

FASTER TIME-TO-MARKET:
In DevOps, CI/CD automates the process of developing, testing, and deploying code changes by continuously integrating code changes into a shared code repository. With this, development teams can identify and fix defects early, allowing teams to deploy updates faster and with more precision.

AUTOMATED TESTING:
DevOps and CI/CD practices emphasize the use of automated testing to ensure that modernized applications meet performance, functionality, and security requirements. With automated testing, dev teams can quickly catch defects in the early stages before they become a significant risk in production.

IMPROVED MONITORING AND FEEDBACK:
DevOps and CI/CD practices enable real-time monitoring of modernized applications in the production environment. With this practice, teams can quickly identify and fix issues, improving application quality and reliability.

02 Improved agility:

Continuous application modernization enables organizations to respond quickly to changing business needs, improving collaboration and ensuring scalability, and resiliency.

Here are the numerous factors that help organizations become more agile.

RAPID RESPONSE TO BUSINESS NEEDS:
By continuously modernizing applications, development teams can incorporate modern features quickly and efficiently, ensuring that the organization becomes competitive and responsive.

FASTER TIME-TO-MARKET:
By releasing new functionalities and features more often and much more quickly, organizations can reduce the time-to-fix issues and time-to-market.

HIGHER CUSTOMER SATISFACTION:
With continuous feedback from users, organizations can incorporate DevOps and CI/CD practices to resolve issues immediately and improve customer satisfaction.

REDUCE THE RISK OF FAILURE:
With continuous modernization, your applications remain resilient and can recover quickly from disruptions since micro-projects that fail will impact only small portions of the application rather than the entire app.

03 Enables composability:

Composability is a design approach that enables systems to be made 'modular' even within the application, making it easy to swap services or subroutines without having to modify the entire application.

This approach not only enhances the support for business capabilities but also emphasizes the reuse of functions that the application is already well-suited for.

04 Reduced cost:

Even today, more than 80% of the IT budget goes toward ongoing operations and keeping the lights on. However, if you can save the operational budget by at least 30%, the surplus can be reinvested into innovation to drive digital transformation efforts.

The capital expenditure (CAPEX) in Continuous Modernization is comparatively low compared to the big bang approach. Organizations can start small and scale the project based on ongoing needs.

Difference Between Traditional And Continuous Modernization

	Traditional Modernization AKA Big Bang Approach	Continuous Modernization
Modernization Approach	Involves a complete overhaul of a product in a single, large-scale project	Involves an iterative approach to modernizing a product in smaller, more manageable increments
Time	Typically takes several months or years to complete	Typically involves short development cycles that can be completed in a matter of weeks or months
Risk Involved	Involves a higher level of risk due to the complexity of the project and the potential for disruption to business operations	Involves lower risk since changes are made smaller parts of the application and can be rolled back if required
Investment & Resources	Requires committed investments upfront along with resources	Requires a lower initial investment since changes can be made in smaller, more manageable increments
Downtime	May result in a long period of downtime during the transition period	Significantly reduces the downtime since changes are made incrementally
Development Methodology	Generally involves a waterfall development methodology with a linear progression from requirements gathering to design, development, testing, and deployment	Typically involves an agile development methodology with a focus on collaboration, flexibility, and continuous improvement
Optimization	Opportunity to optimize the overall system is available only at the design phase	Offers ongoing optimization of the product and its features as changes are made incrementally and continuously
Cost Saving	Realization of ROI only starts after the deployment of the final product	ROI starts immediately on deployment of submodules and doesn't have to wait for the full deployment of the product thus giving an opportunity to respond to changing customer needs and markets

Steps To Achieve Continuous Application Modernization

With our two decades of digital transformation experience, we've compiled modernization best practices into a customizable roadmap to bring enhanced digital experience and ROI. Our holistic approach ensures an agile, flexible, and resilient digital landscape.

01 Setting up goals:

Before initiating the modernization project, it's vital to determine the specific goals of your modernization efforts. Because every application serves a different purpose, it must have unique goals aligning with the overall modernization strategy.

Rather than considering modernization as a process of shifting applications to the cloud, it's more effective to align modernization efforts with measurable business and IT objectives such as improved agility, modern features, and quicker time-to-market. This approach enables you to continuously track the ongoing progress and success of your modernization efforts.

Though application modernization has become a mandate, it's not necessary to modernize every application that you use. A feasible way to initiate the continuous modernization process is to identify the most crucial business applications and assess how they could benefit from improved performance, re-platforming, rehosting, and cloud migration.

Application modernization goals vary depending on the industry and services you offer. For example, if you are in the retail business, modernizing a billing application and integrating it with the existing e-Commerce platform could enhance your billing process, reduce the customer waiting time, and thus enhance customer experience.

Similarly, continuously modernizing and incorporating new features into a supply chain application can help you to optimize inventory levels, reduce average delivery time, and reduce maintenance costs.

02 Understand your applications:

Continuous modernization isn't guesswork or a gut feeling. You must have data in hand to validate every application's performance and interdependencies. Therefore, it's crucial to understand each application by establishing a baseline measurement to assess the current performance and future expectations.

This further helps you prioritize which applications to modernize first and determine the most appropriate approach for them. To achieve this, you must establish an observability platform that provides a single source of truth across applications and infrastructure, supporting both pre- and post-modernization environments.

Once you have the observability platform, begin capturing data about your applications, including

1. How is the application performing?
2. What errors does the application currently have?
3. What are the dependencies?
4. How is the end-user experience?
5. How are resources being used?
6. Which resources are being used by this application?
7. How do performance and reliability impact revenue?
8. How often do users spend time on this application?
9. How does the application impact conversion rates?
10. Impact of downtimes on performance and customer experience.

Gaining a holistic view of all these characteristics can help you understand each application well and create a customized modernization roadmap.

03 Choosing a modernization approach for each application:

It's time to leverage the data you've collected so far. As mentioned above, modernization isn't necessary for every application. Therefore, it is recommended to develop an application-specific modernization strategy to ensure that your efforts result in maximum benefits.

Although there are 6 industry-recognized modernization strategies you can consider, we suggest you choose Retire, Rehost, and Refactor methods to ensure better modernization outcomes. Let's see how these modernization approaches help you achieve your goals.

RETIRE:
When your existing legacy applications are not adding any value to your business and customers, you can retire them instead of spending thousands of dollars on outdated systems.

REHOST:
The cloud-first strategy has become a mandate to create benefits such as cost savings, performance improvements, scalability, and ease of operations. In this scenario, moving your applications to the cloud, such as AWS, can make your business flexible and scalable while lowering maintenance costs.

REFACTOR/ REARCHITECT:
Refactoring or Re-architecting the application can help you take advantage of modern cloud services and architectures to improve the quality and enable rapid delivery of innovative solutions.

But this process would require code-level changes to improve performance, manageability, and frequent release of new features. In this case, adopting modern low-code/no-code platforms (LCNC) can help you develop applications rapidly and release features frequently.

Unlike traditional application development, LCNC platforms are a visual-based app development approach where you can simply drag and drop elements to build a few functionalities. This allows even your non-tech team to develop process-specific applications, saving time and cost.

By adopting LCNC platforms, your organization can save up to **40% of the development budget and 50% of the time**.

This further allows you to focus more on strategic growth instead of mundane activities.

04 Observe and optimize:

Before kickstarting app modernization, it's pivotal to understand how your applications perform, which applications need modernization, and the type of approach. This knowledge will help you in decision-making and provide a baseline for performance comparison during and after the modernization process. It will also help you identify and address challenges that need to be addressed before they become fatal.

Once you've completed the first iteration, you can assess an application's performance by comparing various factors like customer experience, usability, and robustness. This analysis can also assist you to understand areas where further modernization and optimization are needed.

Here are some KPIs you can track after the first iteration:

- Application responsiveness
- Database response time
- Page load time
- CPU and memory utilization
- The average load it can withstand
- Application error rates
- Cost to operate
- Lead time for changes
- Average time to resolve issues
- The average revenue per user

05 Repeat:

Remember, modernization is an ongoing process and not just a final step or activity. As you gradually modernize applications, you can incorporate new features and capabilities that potentially change the functionality and culture.

Repeating the above process till you get optimal results can help you make significant progress toward enabling digital transformation.

Benefits Of Low-code/ No-code Platforms

Innovation and faster time-to-market have become priorities for business owners. To meet these evolving requirements, low-code/no-code platforms allow organizations to rapidly develop applications with little to no manual code and minimum upfront investment.

LCNC platforms will bridge the gap between IT and stakeholders to design and configure business-specific applications, providing more time for exploration and innovation that can also help maximize business value. With LCNC platforms, you can continuously develop and deploy applications at a **40x faster pace with fewer maintenance costs**.

Faster development of MVP:

The less code a project requires, the faster it is built, tested, and released. With its drag-and-drop features, LCNC platforms allow you to develop MVPs and validate them quickly in just hours compared to traditional development methods.

Even small and regular delays with the traditional approach will negatively impact your team's productivity and performance. On the other hand, the LCNC platform expedites app development by **70%**, allowing your team to spend more time on innovation.

Cost efficiency:

Less coding and development time mean a significant reduction in overall maintenance costs. Since you don't need coding experts to build an application, you can save up to **60%** of development costs compared to traditional app development methods.

For SMBs looking for an economic app development approach, Low-code/ No-code platforms can help keep their budgets minimal.

Easy integrations:

Businesses are drawn to LCNC platforms not only for cost and time benefits but also due to the importance of integration when managing multiple applications across different platforms.

LCNC platforms are compatible and can be integrated easily with existing applications to avoid delays and leakages. Together with AI, LCNC platforms can make organizations intelligent and accelerate integration efforts.

Amzur's Approach For Leveraging LCNC For Continuous Modernization

Any business or organization with a 3-decade-old system and infrastructure would become obsolete today. This further imposes new challenges, including technical debt, high maintenance costs, and vendor dependency. In addition, businesses often fail to meet evolving needs due to inflexibility and ineffectiveness.

One of our USA clients from the education industry struggled with aged technology and systems and failed to modernize for years. Over the years, the introduction of multiple coding scripts and languages has resulted in a lack of functional flexibility and disconnection with emerging technology. This has led to insufficient support for evolving needs, data management, and missed deadlines, which in turn have caused a 300% increase in budgets, sub-optimal hosting and licensing costs, and high ongoing maintenance expenses.

These challenges have culminated in a loss of reputation and credibility of the institution and its programs.

After a thorough analysis and evaluation, the university collaborated with Amzur Technologies to adopt a Low Code Enterprise Application Hub to update and modernize its legacy systems.

Amzur's cloud-native low code platform, combined with a powerful workflow and process automation engine and superior data management capabilities, promised highly improved responsiveness and time-to-market.

The shift from a code-heavy to a configuration-based approach reduced upfront capital investment, technology debt, and vendor dependency by shifting the focus from feature delivery to value delivery.

WHAT WE DELIVERED:

1. **Within 4 months, the project for the complete transformation of the system was concluded, which included more than 50 requests for change that had been pending for several months.**
2. **The average time to incorporate change requests from program participants dropped from 5 months to 4 days.**
3. **Upfront CAPEX costs were slashed by 70% and ongoing maintenance costs were reduced by 30%.**
4. **There was a reduction of over 50 hours per week in management oversight and quality check times.**
5. **Improved satisfaction levels led to a significant uptick in the adoption and spread of the program across multiple agencies, states, and countries.**

Conclusion

Amzur can support you throughout each stage of the modernization process by providing data-driven insights that aid in smart decision-making. With Amzur, you can get a unified platform that enables a real-time view of all your operational data in one place, ensuring risk reduction, prioritization, faster decision-making, and optimizing the modernization approach. Synergizing Continuous Modernization and LCNC platforms can help your organization develop applications rapidly and incorporate new features that align with the ongoing business needs.

ABOUT US

Amzur Technologies, a pioneer in digital and technological transformation, is committed to bridging the gap between emerging technological advancements and their practical business applications. As an ISO 9001:2015, ISO 27001:2013, SOC 2 Type II certified, GDPR and HIPAA-compliant company, we are at the forefront of delivering on transformation objectives for businesses across various sectors. Our core mission is to accelerate the productivity, efficiency, and competitive edge of our clients in the dynamic digital landscape. By harnessing innovative IT solutions and sourcing elite global talent, we enable businesses of all sizes to leverage digital innovation for sustained progress and success.
Amzur democratizes access to state-of-the-art technologies, enabling seamless integration and growth at scale.

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