

Readying Enterprise for **the Cloud Era**

Critical Steps to Application Modernization

White Paper

INTRODUCTION

The capabilities of technology are awe-inspiring, but the rapid pace of digital transformation can have negative implications. Enterprises often scramble to reinvent their systems to keep up with the latest standards and innovations. While keeping systems up to date is critical, constant upgrades can result in a short shelf-life for many applications and create a prohibitive amount of technical debt. Enterprises are often tethered to their legacy systems, unable to contend with technological disruption.

The traditional “lift-and-shift” approach is obsolete. It isn’t enough to simply uproot enterprise applications from their existing environments and superimpose them over new systems – dependencies and the long-term impact must be considered. Application modernization must now follow a grounds-up approach, one that anticipates these dependencies. Additionally, the process of modernization must help applications work natively in the new environment, not create a friction that hinders efficiency. Undoubtedly, updating an existing system is a complex process, necessitating the deployment of dedicated application modernization services, a field that is growing. A report by Research and Markets projects a 19.4% compound annual growth rate between 2017 and 2022 for the global application services market, which will exceed US \$16 billion by the end of the forecast period.

Large enterprises will form the lion’s share of the application modernization market due to the sizable amount of legacy dependencies they have accumulated over the years. Application modernization is available to enterprises in every economic sector, whether it’s manufacturing, retail, banking, financial services or insurance. It is also compatible with technologies such as cloud computing, blockchain, augmented reality, virtual reality, and artificial intelligence (AI).



KEY DRIVERS FOR MODERNIZATION

▲ Rising Cost

Legacy applications will become increasingly more expensive to maintain and operate with each passing day. A homegrown application built on decades-old software protocols, for example, will become difficult to maintain as it will be nearly impossible to find fresh, expert developers with proficiency in these dated technologies. Additionally, as the original development team leaves the enterprise, there will be new training requirements and added cost with that training. Finally, today's software engineers are eager to master new technology, not waste time developing skills that are near-obsolete. In contrast, it is relatively easy to hire new developers when an enterprise has modernized applications in an updated setting.

▲ Decreased Value

As the enterprise expands into new areas of business, its technology is expected to keep pace. Unfortunately, this isn't always the case. Many applications only generate the value originally projected while expectation and demand to support new business processes continue to grow. In cases where the value is decreasing, application modernization can help an enterprise maintain performance levels and even get ahead of the competition.

▲ Risk

Older systems are likely to run afoul of regulatory requirements, and the price of correction can far outweigh the cost of compliance. Companies moving into new geographies must meet the requirements of those regions when conducting business or be exposed to penalties. Furthermore, growing cyber threats demand proactive security measures, which can only be supported by an up-to-date application environment.

▲ Complex Requirements

Many legacy systems were created before businesses understood how quickly technology would change. As application architecture requirements become more complex, the quality of user experience starts to dip. Moreover, it becomes difficult to on-board new digital applications when they are incompatible with legacy-era architectures. As a result, the enterprise struggles to achieve the agility that matches the industry standard (and that is in use by its competitors).



THE SIX Rs OF APPLICATION MODERNIZATION

The reason companies embrace application modernization varies from business to business. No single factor compels c-suite leaders and decision-makers to abandon legacy systems and seek out new technologies. Legacy technology may make the case itself by impeding business performance and eroding the bottom line. For example, a manufacturing company that clings to legacy-era applications will not be able to scale or adopt state-of-the-art warehouse management systems hosted on the cloud, putting the company at a disadvantage.

Enterprises that commit to application modernization can take any of the following paths when moving to a new environment.

- ▲ **Refactor** code without changing its functional attributes. Some amount of refactoring is inevitable in any modernization project.
- ▲ **Re-host or Re-platform**, which involves moving the application to new infrastructure. To rehost, enterprises can lift-and-shift the application as is. To replatform, businesses must adjust and reconfigure.
- ▲ **Rewrite** the entire application code from scratch to meet the specifications of the new infrastructure (for example, cloud-native development for a legacy application). This involves a complete re-build of the legacy enterprise application.

- ▲ **Replace** legacy applications altogether with commercial off-the-shelf software. This may appear to be the most expedient approach but isn't always possible due to multiple dependencies and intellectual property rights.
- ▲ **Retire** legacy applications as their functionalities become redundant.
- ▲ **Retain** applications that are deemed mission-critical or that have intricate dependencies. Some applications are likely to be retained as part of any modernization roadmap, but these must be integrated into the new environment without fragmentation.

Successful modernization will require a combination of the six Rs, based on the nature of the application, the business priority, and enterprise goals. An appropriate combination tailored to the enterprise is essential for successful application modernization.

We modernized contract administration application for a US-based global insurer by way of code re-factoring and APIfication resulting into 95% process automation and real-time integration.



FIVE CHALLENGES TO MODERNIZATION

▲ Transition Timelines

No single day can be assigned as the modernization deadline. When a business moves from legacy infrastructure to more modern technology such as the cloud, time must be allotted to ensure functionality, reliability, and success. Even after moving to the cloud, the outdated infrastructure cannot simply be “switched off.” Two different environments may need to run simultaneously, and data must retain its integrity. The decision surrounding which applications to migrate and which ones to retire also requires careful consideration. Transition timelines must be planned accordingly.

▲ Reliance on Legacy Documentation

Another challenge with homegrown applications and legacy systems is inadequate documentation, which can be problematic when conducting a knowledge transfer across teams. If the application landscape has changed multiple times, original performance levels are near-impossible to achieve. For this reason, it is vital to formalize the modernization process and consolidate the knowledge available.

▲ Drawn-out Buy-in and Funding Cycles

In the absence of a detailed roadmap, company executives and senior stakeholders aren't likely to be enthusiastic about modernization outcomes and may delay the buy-in process before it starts. It can also be difficult to obtain funding without a clear understanding of what to expect from the modernization. Lack of specifics in a transformation roadmap results in a confusing deployment plan that may look like a bad investment.

▲ Low Workforce Adoption

Any digital transformation initiative that struggles to gain acceptance among users can be deemed unsuccessful. This is why change management is so critical for application modernization, accounting for both the people and technical sides of the project. A workforce may require new hires, on-boarding, and training, and application modernization timelines must be in sync with employee expectations. This level of planning must be embedded into the modernization roadmap before the process even commences.

To address potential workforce challenges, it is vital to conduct a detailed "as-is" technology assessment, be specific when identifying modernization goals and perform due diligence in all areas.



THE APPLICATION MODERNIZATION PROCESS

When a company chooses to move its applications from a legacy environment to a modern environment like the cloud, the type of cloud must be taken into consideration. For example, a pure-play cloud environment will not be the right fit for every enterprise – options such as hybrid cloud, private cloud, and multi-cloud environments must be explored. Also, the cloud creates new opportunities to deploy software-as-a-service (SaaS) products. Therefore, the chosen technology must be able to integrate new cloud-based applications with the freshly-migrated application environment. A thorough assessment of the current environment must be performed to gain a deep understanding of the business drivers, goals, and existing underlying technology. This can be followed by a readiness report that maps application dependencies and analyzes the need to collect, cleanse, and migrate data.

Zensar accomplished successful Omni-Channel Customer Ordering (OCCO) integration with Mainframe applications having a mammoth-sized code for a leading UK retailer. As a result, the client witnessed reduced order cancellations, online sales uplift, improved customer satisfaction, and inventory management.

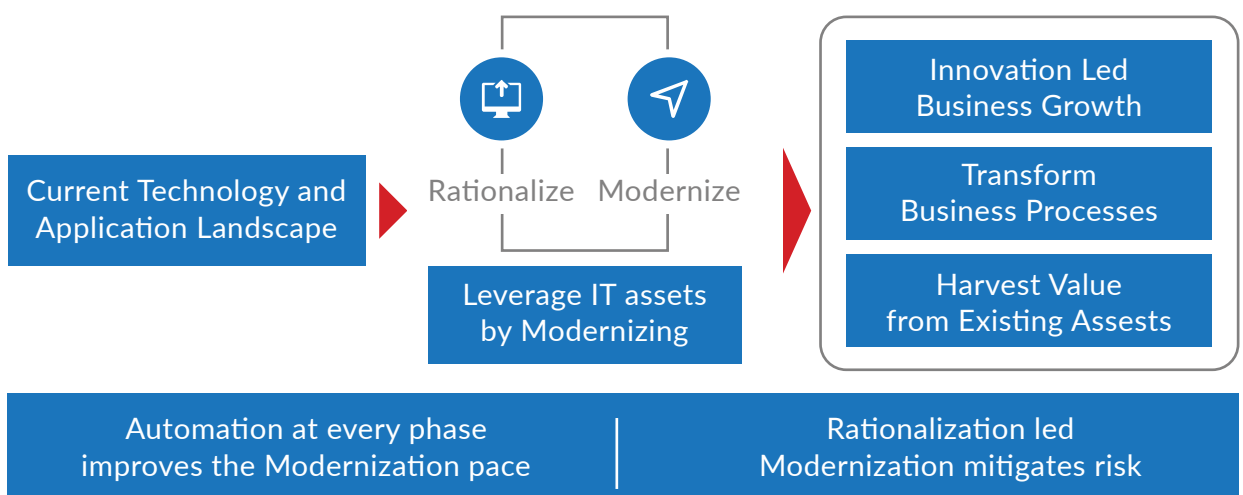
Next, a proof of concept must be implemented identifying a targeted modernization objective. Automation can play a significant role in defining key performance indicators for each service level agreement, reducing 50% of projected effort and time. With the right planning and execution, 50%–70% of migration and 30%–50% of the validation process can be automated. For best results, this process must include data recovery and a backup strategy. The proof of concept will also cover the integration of optimized or refactored applications into the technology landscape, streamlining the release of the latest features to users. Finally, the application modernization process helps achieve continuous improvement across the operating lifecycle, scaling as needed, and incrementally increasing efficiency.



HOW ZENSAR STREAMLINES MODERNIZATION

Successful application modernization is more complex than simply retiring old applications in favor of cutting-edge tools and technologies. The most popular public cloud environments may not be conducive to every enterprise application. Choosing the right application modernization partner requires thoughtful deliberation, and care must be taken in a marketplace that is becoming more crowded with providers each day.

Zensar's AI-enabled Rapid Risk Free Modernization Framework to 'Rationalize' & 'Modernize'



Our application modernization and cloud adoption solution has helped transform digital capabilities for multiple global enterprises.

A car leasing company's South Africa division dramatically cut down time-to-market and achieve on-demand scalability by moving its dated systems to the cloud.

At Zensar, we are committed to delivering comprehensive application modernization solutions to our clients. ZenCloudPro is our proprietary platform enabling modernization and migration on Azure Cloud as well as AWS. Proven to reduce the migration time by 60% and decrease the cost of operation, our Rapid Risk-Free Modernization (R2F) framework is a two-step solution that allows businesses to choose from the six Rs – refactor, rehost/replatform, rewrite, replace, retire and retain. With AI and automation ingrained in the experience, research, and decision aspects, the R2F framework reduces risk and accelerates delivery. We have also partnered with the world's leading cloud vendors and modernization product vendors to simplify application modernization in any target environment.

For more information about Application Modernization, please contact:

Durga Prasad Pulipati, Global Practice Head,
Application Modernization | durga.pulipati@zensar.com

Deepak Atre, Enterprise Architect,
Application Modernization | d.atre@zensar.com

Reference:

Application Modernization Services Market by Service (Application Portfolio Assessment, Cloud Application Migration, Application Replatforming, Application Integration, UI Modernization), Organization Size, Vertical & Region- Global Forecast to 2022, <https://www.researchandmarkets.com/reports/4415705/application-modernization-services-market-by>



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For more information please contact: marketing@zensar.com | www.zensar.com