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CEO'S GUIDE TO APPLICATION MODERNIZATION

Discover application modernization, its benefits and challenges, and how you can get started.



AN INTRODUCTION TO APPLICATION MODERNIZATION

You may have seen a phrase sneaking into technology discussions over the past couple of years: **modern application development**. Industry leaders like Amazon and Microsoft have both been promoting it. An online search reveals corporate ads and voluminous blog posts promoting services around modern applications too. But what is modern application development, and why do we care? Simply stated, it's a revolution that's been brewing for years, and if you haven't fully embraced it yet, you should keep reading...

Application modernization services include the transfer of legacy applications and platforms to new ones, with integration of new functionality based on new technology. You can choose from a range of modernization options, such as lift & shift, replatforming, rearchitecting, replacement, and retirement.

New technologies and architectural patterns are emerging all the time. Web and mobile interfaces enable delivering an outstanding user experience on many devices. Catching up outdated systems to leverage these developments is a noteworthy trend. Gartner predicts the global application modernization market to have a compound annual growth rate of over 16% by 2025.

CORNERSTONES OF MODERN APPLICATIONS

To truly be a modern application, five cornerstones should be in place.



CLOUD COMPUTING

For nearly 20 years, we've witnessed explosive growth in cloud computing. We have public, private, and hybrid clouds all around our organizations. We have freedom of choice on where to host our environments in order to maximize security, performance, compliance, and flexibility. The cloud is the foundation of application modernization.



MICROSERVICES

One of the goals of modern application development is agility. Monolithic systems preclude being able to move quickly, which has led to the emergence of microservices architectures. We're able to develop APIs that can be easily repurposed in a variety of new services and deployed on new platforms.



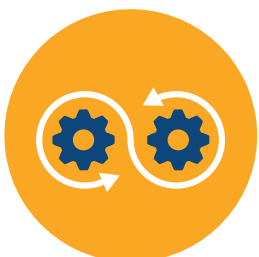
SERVERLESS ENVIRONMENTS

In serverless computing services, developers can execute code without the complexity of building and maintaining infrastructure. As described previously, modern application development means building software in small chunks that can be incrementally programmed, tested, and deployed. Running serverless is attractive because it can autoscale and you only pay for what you use.



AGILE TEAMS

Agile teams can find problems and deliver solutions quickly. An agile development framework enables teams to observe customer reactions and efficiently iterate on the product. Nearly every successful SaaS company in the world relies on agile methodologies to serve their customers.



DEVOPS

Over the past few years, we've grown to be huge fans of DevOps. Leveraging the cloud and agile frameworks, it enables us to continuously and efficiently develop, test, and launch products and features that exceed customer expectations. DevOps is a powerful cog in modern development, offering ways to innovate faster, reach critical milestones, and deliver a better user experience.

ADVANTAGES OF A MODERN APPLICATION STRATEGY

Legacy systems are often monolithic, which makes them difficult to update and expensive to scale.

Monolithic application components ship as a unit making it harder to add features and integrate with other systems. In addition, scaling means for the whole system, not just busy elements of the system. A microservices architecture includes smaller components that can be deployed & scaled independently.



YOU CAN MOVE FASTER TO MEET NEEDS

Automating IT operations reduces the risks of human error. Regular automated updates & patches throughout the stack reduce downtime and improve user experience.



YOUR BUSINESS BECOMES MORE AGILE

Cloud providers offer a growing array of powerful services at reasonable costs. With cloud modern application development, organizations can build cutting-edge applications that run in dynamic environments without modification.



YOU CREATE COMPETITIVE ADVANTAGES

Modern application development entails switching from minimizing IT expenses to investing in the cloud as an engine for innovation and growth. Businesses that embrace the cloud can deliver applications that serve emerging customer needs faster than ever before. Listen, design, build, test, deliver, listen, iterate, repeat...



YOUR SYSTEMS (AND BUSINESS) BECOME MORE RESILIENT

Cloud native development employs resilient, flexible architecture. System architects, application developers, and operations teams can design systems that maximize uptime and simplify recovery when issues arise. With DevOps, delivery pipelines can deliver more functionality of higher quality in less time. As an AWS Partner, we live & breathe the tools that make it possible

GETTING STARTED

Consider these steps in your journey to application modernization.

1. ASSESS THE SCOPE

An important first step is to inventory your applications and environment. You'll identify your core applications, product owners, and infrastructure. This "state of the nation" helps identify what you can reuse and what you must rebuild.

2. MAKE THE BUSINESS CASE

With a baseline of understanding, you need to determine if modernizing the existing applications reduces complexity, improves efficiency, and lowers costs. Decide if you should modernize systems now, how you can measure the benefits, and can identify any new opportunities it provides.

3. SET THE STAGE, PART 1

Review the legacy ecosystem and see what you're going to have to replace. Consider messaging what you're hoping to achieve with a modernization strategy to your organization. "It's time for change. Our competitive advantage is in peril as time passes. Using ten year old software holds our customers back."

4. PLAN THE PROJECT

We recommend making comprehensive plans and using strong processes to drive migrations. Your plan may include a variety of paths:



Cloud migration

Using public, private, or a hybrid, what must be added, replaced, or removed.



Monolith to microservices

A major factor of modernization is replacing monolithic systems with more nimble and manageable microservices architectures.



Expose APIs

If feasible and necessary, you can keep legacy applications in place, but expose their functionalities as APIs.



Automate business processes

Where possible, use automation (e.g., DevOps) to streamline and reduce errors.



5. IDENTIFY SKILLS GAPS

Determine if your current IT staff has the necessary expertise to begin restructuring or moving infrastructure and applications. Research viable options like hiring or outsourcing.

6. ASSESS RISKS

Because applications can support mission-critical business functions, conduct a risk assessment of each area.

7. SET THE STAGE, PART 2

Choose which metrics will be used to measure your modernization success. Communicate the value, priority, timeline, feedback methods, and need for patience.

8. EXECUTE

When it's time for the rubber to meet the road, application modernization can be disruptive and distracting. It's an investment. Stay focused and execute the plan. Adapt as needed.

9. ASSESS SUCCESS

When the migration is complete, start looking at your success metrics. Are systems functioning properly? Has the customer experience improved? Are you meeting your new targets?

10. PLAN FOR ONGOING MODERNIZATION

Modernization provides a platform for ongoing optimization. The digital transformation should continue!

5 PILLARS OF APPLICATION MODERNIZATION TECHNOLOGY



ORGANIZE FOR VALUE

Modernization opens the door to leveraging the value of technology to address the most pressing and advantageous needs of your organization. Don't sweat the small stuff – focus on delivering more value over the long term. There are areas to add value now, and many more later.



BUILD BETTER DEVELOPER WORKFLOWS

Business agility means being able to respond to change quickly. Whether it's an emerging customer requirement or a bug in a legacy application, developers need to update in hours, not weeks. DevOps, microservices, and cloud computing all contribute to faster turnaround times. Continuous improvement delivers continuous advantage.



EVOLVE ARCHITECTURE

Migrate away from outdated monolithic application architectures and support your business with independent scalable modules that give your developers room to innovate and evolve systems faster.



ENABLE SELF-SERVICE ACCESS TO DATA

By decentralizing your data, you enable more access via microservices. Microservice can then be independently scaled with minimal schema changes. Previously, a typical architectural approach modeled all user requirements in one relational database that was used by a monolithic application, leading to slower response to change requests.



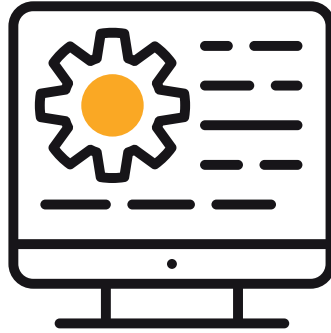
AUTOMATE REPEATABLE PROCESSES

Automate frequently used infrastructure components to free up developers to focus on other more innovative projects. Infrastructure as Code (IAC) and DevOps go hand-in-hand to reduce errors, improve morale, and deliver a better customer experience. Automation works best with repeatable processes, not ones requiring many human inputs.

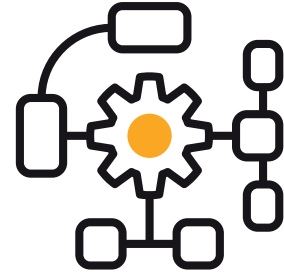
WINNING WITH MODERN APPLICATION STRATEGY



Assess



Modernize



Manage

We've seen the advantages of modern application strategy firsthand. As an AWS partner, cloud computing is in our DNA, and with it comes the experience of developing solutions for a broad range of industries using these techniques. From time to time, we've also felt the pain of not having them in place, either due to limited budgets, legacy requirements, or management preference. The companies that embrace modern application development methods perform at a higher level. Their systems are more robust. Their teams are more agile. Their businesses grow. Those that don't spend so much time fighting fires, waste time troubleshooting and take longer to deliver updates. The customer experience of "the old way" is not the same experience.

- Evaluating existing applications for modernization readiness
- Mapping a phased approach to modernizing your applications
- Migrating monolithic systems to microservices architectures
- Integrating microservices into your development workflows
- Developing higher data availability through microservices

WEBAPPER BRINGS **EXPERIENCE & INSIGHT** TO MODERN APPLICATION DEVELOPMENT.

Our comprehensive application development process means you get SaaS products that can convert, scale, and thrive. When you need additional development resources, it can be more efficient to use an outsourced development team. We've designed our application development service specifically for businesses like yours. You'll work with a dedicated team of modern application development professionals who are experts in cloud native development.



PRODUCT MINDSET

We have already built products that delight users around the world.



BROAD TECHNOLOGY EXPERTISE

We bring full-stack expertise to every system we design and develop.



INNOVATIVE THINKING

We drive digital innovation with design thinking, rapid prototyping, and iterative development.



EXCEPTIONAL TALENT

Our team can capture your product ideas and build the best possible product for you.



COST EFFECTIVE

Save valuable time and money by outsourcing. Scale your team to meet changing needs

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