

Application Modernization:

Opportunity

OR

Compulsion

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Overview:

No doubt that legacy applications continue to be the world class application servers with their proven robustness, scalability, reliability, security and low cost of ownership. However, in today's rapidly changing world with new technologies and devices, Digitalization and Globalization is the mantra and has become the need of hour for all businesses. In this whitepaper, we talk about the risks and challenges involved in application modernization along with its benefit and approaches.

Risks and Challenges:

Underestimated Costs:

Modernizing your application can be a financial challenge and trying to rush into it without really having a clear view of possible expenses can pose a serious problem. It is important to have a thorough understanding of the transformation processes that the business would possibly go through and anticipate the possible additional expenses.

Overlooked Requirements:

Modernizing a legacy application does not only involves data migration but also integrating both data and functionality to a new structure. In other words, application modernization is an overall redevelopment process that removes the outdated code in order to upgrade functionality and improve agility. The requirements of achieving true modernization can be daunting especially if you lack the expertise and skills in identifying the elements involved in the transition. For instance, analysis and planning are often the most overlooked elements when modernizing. A carefully planned roadmap with a timeline is needed for stages like before, during and after the process of redesigning software, as this is going to stay with the company for many years.

Appropriate Test Coverage:

Testing should be done to the highest standard and this is the reason why it requires the biggest single expense in the process of modernization. Typically, the coverage of tests range from 80% or 90% for the code to be considered sufficiently tested. Executing tests exposes the

system and functionality errors found in the new implementation. Tests on legacy applications often show omissions as well as errors in business rules and requirements.

Approaches: How it makes the difference

Business applications need to be seen in larger context of technology infrastructure along with the people who use and maintain them. Successful application modernization requires a shared vision and commitment among all stakeholders across departments. A well-defined, well-structured and disciplined management processes ensures results.

Step 1: Assessment:

Application modernization decisions have infrastructure impacts and vice versa with infrastructure decisions increasingly having an impact on how your application is delivered. Before making any decision, it is critical to perform a thorough assessment of your IT environment.

Legacy applications and related workflow processes can span multiple decades. Taking time to perform a detailed inventory of your infrastructure and applications will enable you to understand how IT is impacting your business and will allow you to make informed decisions based on real costs, inherent risks and value to the business. It's vital that both the business and IT stakeholders are in agreement with regard to how value and costs are determined.

Some factors to consider include:

- Evaluating applications based on current and future business needs.
- Determining continuing operating, maintenance and replacement costs.
- Identifying the operational risks and unexpected cost of application failure.
- Exploring the use of managed or shared cloud services.

Step 2: Strategic Planning:

It's very important to define your business goals and how IT can support opportunities for growth, cost savings and process efficiencies. Once you have assessed the running cost of your application, now it's important to identify whether the business value justify that cost?

Overlaying the results of your assessment against your business goals will help you to prioritize your efforts enabling you to:

- Identify applications that require a replacement or upgrade.
- Plan to eliminate overly expensive, obsolete applications.
- Consolidate applications that might duplicate functions.
- Simplify applications that are too complex
- Acquire applications that meet your requirement without the extra bloat.

Step 3: Specify, Design and Build (Buy):

The overall strategic plan should allow you to prioritize application projects to be addressed through legacy modernization. There are multiple traditions approaches including:

- **Maintain-As-Is** with full awareness of potential risks and rewards.
- **Re-Hosting**, consisting of taking legacy system that lives within a mainframe machine and moving it wholesale to another platform – typically a more flexible cost effective open system.
- **Automated Code Transformation**, powerful software technologies deployed to analyze, de-construct, document and re-construct legacy code into a new language automatically while maintaining the customer’s specific business logic, data and naming conventions.
- **Service Oriented Architecture (SOA) Enablement**, leaving the legacy application as is while data is exposed and consumed for use by a more modern application layer.
- **Commercial-Off-The-Shelf (COTS) Software**, pre-built software usually from a third party vendor through purchase, lease or license method.
- **Custom, Re-Write**, taking into account the cost, timing and long term maintenance implications.
- **Private/Public Cloud** can be a COTS solution such as Salesforce which is a leased service. It can also be a delivery method or outsourced IT infrastructure options such as Amazon Web Services.

Evaluating and adopting new tools and methodologies that support an agile, iterative approach can allow your organization to adapt and evolve to current and future conditions. They will

change the way you conceptualize and support the application life cycle. Applications designed and developed to enhance your organization's ability to be responsive to change are optimal.

Step 4: QA, Training and Deployment:

Quality Assurance is an important phase in any legacy modernization project. Plan to give this phase sufficient time and resources. Essentially you are testing to ensure that the new application fulfills its technical requirements. Depending upon the approach used to address the legacy modernization, QA process could include use case testing, stress/load testing and user acceptance testing among others. QA 'paper mock-ups' can also be used in the project to generate end user feedback before anything is built. In case of buying a COTS solution, devote time and resources to a demo to see if your most of your use-cases are met.

One of the challenges with any modernization project is that involves change. It is important to keep stakeholders in the loop throughout the process and allow them to become comfortable with the new application. Plan on formal training sessions with end users and other stakeholders. A period of built-in support after deployment is also a good idea.

Step 5: Maintenance and Support:

As with any technology implementation, legacy modernization is not a 'once-and-done' process. Understanding that applications have a life cycle and adopting a pro-active application life-cycle management philosophy will positively impact application performance and ensure on-going success.

Benefits: Business Drivers for Application Modernization

- Reduce costs and improve solution delivery by service-enabling.
- Improve business user productivity, effectiveness and satisfaction through
 - Modern UX
 - Desktop Integration
- Streamline and automate business process
- Improve access to applications

- Anytime and anywhere access
- Extend access to customers and partners
- Improve business performance by making application integration easy
- Move applications to pure web architectures
- Improve the user experience
- Reduce costs and complexity
- Reduce maintenance costs
- Improve agility and delivery times
- Consolidate IT infrastructure and reduce costs
- Encourage reuse of IT assets

Conclusion: Taking the next step

Evaluating the hidden true costs and risks of an existing legacy application and determining sound business reasons for finally addressing the problem head on should help offset some of the apprehensions about ‘opening the can of worms’ that legacy applications are perceived to be.

If you choose an outside resource with specific expertise in modernizing legacy applications, be sure to review examples of their processes and technology experience as well as references from past projects. If you choose to attack the issue on your own, be sure to document and justify your plan in detail and gain consensus from the affected business and technical associates within the organization.

With the right approach, you will sleep more soundly knowing that the potential ticking time bomb of an archaic legacy application is finally being de-fused.