

evolveIT™

Application Modernization Services and Solutions

White Paper

The “Incremental” Approach to Application Modernization.

Enhance and extend existing systems to meet new business challenges...



Situational Overview

Application Modernization is a hot topic. Critical systems (hardware and software) need to adapt to evolving business models and stay ahead of emerging business challenges. In many cases, it is a firm organizational requirement that existing, mature software applications continue to be leveraged. These core systems have been developed over many years and feature highly customized, specific logic and functionality.

Application Modernization means different things to different people. ERP vendors, for example, often tout their software as the modernization solution, while middleware vendors talk about using integration technologies. In addition to legacy technologies, such as RPG and COBOL, companies have a myriad of languages, scripting tools, and frameworks from which to choose.

Various demands—from both internal and external sources—placed on a business can force changes to its critical business systems. Internal sources can be a lack of IT skills, missing functionality, a change of corporate direction or management initiative, or the cost of maintaining existing systems.

The external sources are typically customers, suppliers, and governmental regulatory agencies. Certain events can force a complete replacement of core systems, e.g., the obsolescence of a hardware platform or operating system.

Sometimes, an extraordinary event such as Y2K will force a replacement. In addition, it is becoming a requirement that applications be able to communicate with other systems running both inside and outside of the organization.

The Benefits of Application Modernization

Application Modernization offers many benefits:

- Reduced total cost of ownership (TCO) by leveraging existing systems
- Better data integrity and quality
- Better security and control
- The ability to better adapt to changing business requirements
- Agility to quickly adapt to new business
- Better customer service
- Better integration with partners and vendors
- Improved operational efficiency

The core application software, however, typically needs to be enhanced in some way in order to achieve the desired results. Simply upgrading hardware systems to faster processors and increased capacities does have a positive impact, but it is not a solution on its own. It is important to emphasize that enhancing an organization's mature software applications does not mean replacing or rewriting them. These changes can be done incrementally while transforming a core system into new components.

Doing It “Incrementally”

The complete replacement of core applications can be very traumatic to an organization. While each situation is different, companies should consider Incremental Application Modernization as a means to avoid the rip-and-replace methodology, which often means installing new hardware and software. It also means extensive changes in the existing skill sets of the support staff, as well as a significant investment in time and resources to retrain the user community.

Key attributes of “Incremental Application Modernization”:

- A unique and proven methodology
- Modernizes one key business function at a time
- Minimizes risk
- Avoids large expenditures and business disruptions associated with wholesale upgrades/migrations
- Offers rapid, measurable improvements

As opposed to the *revolutionary* approach, Incremental Application Modernization offers an *evolutionary* approach to enhancing and extending the core legacy applications, which have been modified over the years to allow the company to gain or maintain competitive advantages. It also allows the organization to focus on the areas that need improvement and leave the other parts alone. The most effective way to do this is to use an incremental modernization approach, because it will keep the system fully functional at all times while minimizing risk.

In any case, several factors will play a role in determining whether to implement potential changes identified as part of your Application Modernization initiative. Among them are cost, return on investment (ROI), and the internal and external capabilities made available to the business as a result of implementing the changes.

Assessing Your Current Capabilities

The first step in Application Modernization is for the company to assess its current capabilities. This step is crucial, regardless of the modernization approach, and includes a review of the current legacy application. It's mandatory to determine what parts of the core legacy application work and what parts do not.

Is the database fundamentally sound? Does the company have the necessary in-house skills to maintain and improve the application? If not, are the skills available outside of the organization? How much capital is available for this project? What is the ROI? What is the time frame for achieving the goals? Are there demands being placed on the organization by outside entities with firm deadlines for compliance?

The second step is to define the target architecture for implementing your enhancements and extensions. The target architecture can be considered the end-point system.

To accomplish your goal, the resulting architecture will be a hybrid using one or more technologies. Some examples are Web-enabled services, databases, and the existing application.

Regardless of the specific technology, the architecture should be standards-based to support interoperability. If possible, you should utilize a service-oriented architecture (SOA) methodology. With SOA, the service and calling applications are independent and loosely coupled by the interface, thereby modularizing the end system.

The third step is to identify and segregate business rule processes. Segregating business rules from the presentation layer and transaction processing allows each to become more independent of the other. An example of this would be a pricing routine. The business rules and calculations would be written into one program (the service program), while the presentation layer would be written into one or more programs (the calling application), depending on the method of presentation (browser, terminal, etc.).

Intermediary Architecture

In between the legacy system and the target architecture is the intermediary architecture—a blend of the current legacy applications and the new applications to be implemented. It is important to maintain the quality of the intermediate architecture and applications.

Given the length of time for a large-scale modernization effort to occur, it is vital that each phase of the effort stands on its own and brings incremental value to the organization. Because of new and changing business processes and priorities, it is very possible that each phase could be the last.

As part of the modernization effort, new applications may be bolted onto the legacy applications. In this instance, Application Modernization occurs in two places, if done correctly. As an example, a business may decide to implement an online store because the business has traditionally received its orders via telephone through a customer-service department.

The online store could then be viewed as an extension of the existing order-entry system. Both systems would share many of the same elements, such as pricing, contracts, and inventory. Additional functionality designed into the online store, such as credit-card processing, could be used for other purposes. As a result, the legacy application could be enhanced to support credit-card processing using redesigned interfaces.

Again, this is merely one example of how long-term investments in core, legacy systems and processes can be enhanced and extended to serve new purposes for the business and its user community – both internally and externally.

Incremental Application Modernization: Faster and More Cost-Effective

What we've highlighted in this white paper is how a company's legacy applications still have value in today's world. In most cases, as long as the underlying architecture is carefully planned, Application Modernization can be the solution for meeting the organization's budget and timeline, and it can be done in an *incremental, phased* manner—an approach that is far more cost-effective and much less time-consuming than other *wholesale change* methods.

The *incremental* approach utilizes the company's existing mature software application core as a key part of the strategy to respond quickly to changes in the business or to pursue new initiatives while leveraging the known strengths of its legacy applications.

For more information on “Incremental Application Modernization” services and solutions offered by evolveIT, Inc. or to schedule a FREE “Application Modernization Review” to discuss your specific environment and challenges, please contact us:

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