Oracle Modernization

Oracle IT Modernization Series

Why Modernize in Public Sector?

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EXECUTIVE OVERVIEW

In today's market, public sector IT is looking to reduce total cost of ownership, improve service to both the public and other departments, and minimize reliance on legacy skill sets - all the while insuring that they are meeting ongoing changes in legislative requirements.

Public sector IT modernization that supports the migration and transformation of legacy applications to an open systems UNIX/Linux environment allows public sector organizations to take advantage of new technology while preserving the business content of their existing applications.

INTRODUCTION

Modernization reduces cost of ownership, improves public and cross department service, avoids retiring skill sets, and allows improved reaction to ongoing legislation without having to starting over.

One aspect of information technology that has always been a problem is the introduction of new technology environments without any consideration of how to get to them from where you are. In the early days of computing, this was not a big problem because it was possible—and usually worthwhile—to start from scratch.

Today, this is no longer true. Public sector organizations can no longer afford to discard what they have and just start over, a fact made even more apparent when one realizes that many of these organizations are not even sure of exactly what they have. Existing applications have become more than just computer systems; they are true assets that incorporate government policy. No government department can afford to throw them away. However, the pressure to move to new, lower-cost, and more-agile environments is clearly there.

WHY MOVE TO NEWER TECHOLOGY?

Government IT organizations are considering the move to new technologies and architectures for a number of reasons, including reducing total cost of ownership, creating more agile application environments that support today's need for public and cross-department access, improving their ability to react quickly to legislative change, and lessening the risk of reliance on unsupported technologies and dwindling legacy skill sets.

Reduction in Total Cost of Ownership

"If this trend continues, many experts believe that IT organizations will begin to experience a "legacy crisis" with fewer and fewer IT resources devoted to the development of new systems."

Modernizing Legacy Systems
Boston, MA: Addison-Wesley

Public sector IT is already spending a large percentage of its IT budget on maintaining legacy applications, and if anything, this cost is increasing. Historically - in part due to the public sector bidding process - many public sector IT organizations have acquired "one of everything," and this has become a very expensive environment to maintain.

Today, public sector IT is facing budgets that are either frozen or decreasing. In order to free up funds to address ongoing requirements, these IT organizations need to reduce the amount of their budgets spent on legacy applications and environments. This reduction is generally accomplished in two ways.

First, public sector IT must use lower-cost hardware and software platforms. These computing platforms, based on more-modern hardware, UNIX/Linux operating systems, and software technology such as Oracle Database, Oracle Fusion Middleware, and Oracle process management engines, form a cost effective application server and grid infrastructure—an interlocking grid of hardware, operating system, database, application server, and process management resources that act as a single, highly scalable unit.

These grid computing platforms in turn are combined with service-oriented architectures (SOA) to create the next generation IT environment in which orchestrated customer developed and packaged application components with computing resources in multiple locations to form a virtual environment with a single point of management, control, and access. Oracle supports exactly such an architecture – an architecture that is product independent and can be instantiated with both Oracle and non-Oracle products.

Second, public sector IT must consolidate their technologies and technology providers. They can do this by taking advantage of modernization techniques, such as SOA integration, re-hosting, automated migration, COTS replacement, and re-architecting, to transform legacy applications into next generation IT environments based on open, standard platforms. Each IT organization can choose the best combination of modernization techniques for each application, depending on specific organizational needs. (For more information about the various types of modernization techniques and when to use them, see the Oracle white paper *Oracle IT Modernization Series: The Types of Modernization*.)

Increased Agility in Reacting to Ongoing Demands

"The number of CIOs citing IT backlog as an issue grew from 47 percent in 2003 to 62 percent in 2004."

CIO Magazine

Legacy applications are not agile when it comes to adapting to change – whether that change is legislative or needed in order to improve customer service in today's Internet driven world. The architectural concepts that were used to develop legacy applications do not reflect the way business works today. Processes that are easy to change in business are often hard and costly to change in legacy computer applications.

As public sector IT organizations work to transform themselves into organizations that are more aligned with public demand and legislative changes, they are finding that they need to move more toward process driven SOA.

Process driven SOA allows individual application components to be used as services, that is, they are located and accessed only when needed at execution time. This allows applications components to be executed on different platforms as the need arises, increasing flexibility.

In addition, using SOA services in combination with process-orchestration engines capable of driving services such as Oracle BPEL Process Manager enables the creation of applications that more closely reflect the public service process flow and procedures. Such process-driven applications are also easier to enhance and maintain because process and work flow changes are removed from the individual services and incorporated into an easier-to-change orchestration layer that utilizes reusable SOA components.

All of this is required to increase the agility of applications – to be able to react to a public that is more and more Internet savvy and more and more used to being able to interact directly with "self service" applications.

Reduced Reliance on Legacy Skill Sets

"As many as 60% of government workforces will be eligible for retirement in the next five years, resulting in a major exodus of talent and experience."

Accenture Study, 2005

People with skill sets in legacy technologies are getting harder and harder to find. Knowledge of languages such as ADSO, Natural, or IDEAL and expertise with databases such as ADABAS, IDMS, or Datacom is increasingly rare and expensive. Even skills in languages such as COBOL, once predominant, are becoming harder to find.

Programmers no longer learn COBOL in school, and even if they were trained in it, they no longer want to work in legacy environments that do not support the latest in technological concepts. IT organizations need only check with their HR department regarding the retirement dates of current COBOL-trained personnel to determine when COBOL will become a problem. This lack of skills creates an ongoing and every increasing risk for any government department.

And within the public sector – with many employees having options for retirement at earlier ages – the problem is compounded even further.

Reacting More Quickly to Legislative Change

"Application portfolio management initiatives will support IT governance and investment in 40 percent of Global 2000 enterprises and large government IT shops within the next two years."

Gartner Predicts, 2006

The issue of compliance has grown in importance for all of IT. For the public sector, this has always been a major issue as a significant part of what public sector IT does is react to ongoing government legislated changes.

As part of the need to react to these legislated changes, government departments need to take advantage of process driven SOA, creating applications that reflect and implement the needed processes thus making it much easier to track what the current processes are as well as when and how they need to change in reaction to legislative changes.

Today public sector CIOs are learning that they must move forward. They are also realizing that in so doing they must reuse the business content of their current applications. They must extend the ROI of these applications by incorporating current application content and value in the decision-making and transformation/migration process—this is what modernization is all about.

THE OPEN SYSTEMS MODERNIZATION ANSWER

In contrast to historic development techniques, modernization uses an organization's current applications as an important source of specification information when transforming applications to a next generation IT environment. These techniques maximize the reuse of existing legacy artifacts to minimize the risk, increase the quality, and lower the cost of modernization compared to new development.

Indeed, in some cases, such as the programmatic translation (or automated migration) of legacy fourth-generation computer languages to a modern language such as Java, the existing source code may be the only source of information needed. In other cases, such as the re-architecting of an application, the legacy application may be mined for its content while leaving legacy dependent code behind.

CONCLUSION

Every government department needs to develop a modernization road map in order to achieve an open systems service-oriented enterprise based on industry standard architectures.

Public IT organizations are under increasing pressure to reduce costs and increase their ability to react to ongoing public and legislative demands. To achieve this, they need to take advantage of an open systems service-oriented environment that combines a high-powered service-oriented infrastructure. This infrastructure should combine of a grid of computer hardware, operating systems, databases, and application servers with custom created and package based SOA application components to reduce TCO, increase agility, and eliminate reliance on legacy skill sets.

In order to transform to the next generation IT environment, public sector organizations will have to reuse the content of existing applications – and modernization is the approach that allows this to happen.

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