

Oracle IT Modernization Series
Why Modernize?

An Oracle White Paper
December 2007

EXECUTIVE OVERVIEW

IT organizations want to reduce total cost of ownership, increase their ability to react to business demand, and minimize reliance on legacy skill sets – all the while insuring that they are meeting new compliance demands.

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

INTRODUCTION

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. 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 organizations are not even sure of exactly what they have. Existing applications have become more than just computer systems; they are true business assets that incorporate business policy. No organization can afford to throw them away. However, the pressure to move to new, lower-cost, and more-agile environments continues to grow.

WHY MOVE TO NEWER TECHNOLOGY?

Organizations are considering the move to new technologies and architectures for a number of reasons, including a reduction in total cost of ownership, the need for more agile applications, increasing compliance demands, and the need to lessen the risk of reliance on legacy skill sets.

Modernization reduces cost of ownership, increases agility, avoids dying skill sets, and improves compliance without having to starting over.

“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**

Reduction in Total Cost of Ownership

Organizations are already spending a large percentage of their IT budget on maintaining legacy applications, and if anything, this cost is increasing. Historically, many organizations have acquired “one of everything,” and this is becoming a very expensive environment to maintain.

Today, organizations are facing IT budgets that are either frozen or decreasing. In order to free up funds to address ongoing business needs, 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, organizations 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, together form an 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 application components and computing resources in multiple locations 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, organizations 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. Each organization can choose the best combination of modernization techniques for each application, depending on business need. (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

Legacy applications are not agile when it comes to adapting to business needs. Architectural concepts 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 computer applications.

As IT organizations work to transform themselves into organizations that are more aligned with business requirements, they are finding that they need to use move 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.

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

CIO Magazine

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 organization's process flow and business 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.

Reduced Reliance on Legacy Skill Sets

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. 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 organization.

Compliance

Government regulations such as Sarbanes-Oxley require that CEOs and CFOs sign off that their systems are doing what they claim they do. To do this, companies must understand and document their processes.

As part of the compliance process, many organizations need to take advantage of process driven SOA, creating applications that reflect and implement the processes as defined by the business, making it much easier to track what the current processes are as well as when and how they change.

Today 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 the current applications as an important source of specification information when updating applications to a next generation IT environment. These techniques maximize the

“Banks continue to rely on technologies installed 30 years ago—but the number of IT workers with the skills to keep them running are declining.”

***Banks Face Legacy IT Skills Gap Crisis
Financial Services, Silicon.com***

“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

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 business content while leaving legacy dependent code behind.

CONCLUSION

IT organizations are under increasing pressure to reduce costs and increase their ability to react to ongoing business demands. To achieve this they need to take advantage of an open systems service-oriented enterprise that combines a high-powered service-oriented infrastructure. This infrastructure should consist of a grid of computer hardware, an operating system, a database, and application servers with SOA applications to reduce TCO, increase agility, and eliminate reliance on legacy skill sets.

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

Every organization needs to develop a modernization road map to achieve an open systems service-oriented enterprise.



The Oracle IT Modernization Series: Why Modernize?

December 2007

Author: Ted Venema

Contact: modernization_ww@oracle.com

For more information: www.oracle.com/goto/modernization

Oracle Corporation

World Headquarters

500 Oracle Parkway

Redwood Shores, CA 94065

U.S.A.

Worldwide Inquiries:

Phone: +1.650.506.7000

Fax: +1.650.506.7200

oracle.com

Copyright © 2006, Oracle. All rights reserved.

This document is provided for information purposes only and the contents hereof are subject to change without notice.

This document is not warranted to be error-free, nor subject to any other warranties or conditions, whether expressed orally or implied in law, including implied warranties and conditions of merchantability or fitness for a particular purpose. We specifically disclaim any liability with respect to this document and no contractual obligations are formed either directly or indirectly by this document. This document may not be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose, without our prior written permission. Oracle, JD Edwards, PeopleSoft, and Siebel are registered trademarks of Oracle Corporation and/or its affiliates. Other names may be trademarks of their respective owners.