



DCE Evolution On Demand
A Manager's Introduction

Reducing risk, increasing ROI and embracing change:
Addressing legacy Distributed Computing Environment assets

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DCE Evolution on Demand

Reducing risk, increasing ROI and embracing change in a risk adverse environment

Observing human nature, the 19th-century writer Thomas Carlyle noted that people are fatally inclined to resist change. Even when facing disaster, Carlyle said, most people could not be convinced to take action, despite the consequences.

Today, it's still difficult to fight human nature. But clearly, doing nothing is rarely a sound, long-term solution. And in today's competitive business world, the same is often true for the short-term. So why are most IT organizations reluctant to change and modernize older distributed computing systems, even as reduced productivity, increased operational cost and lost opportunities become chronic?

One reason is the perceived cost. Many CIO's calculate that re-engineering or purchasing (and customizing) a COTS solution will require too much of their limited IT budget. They wager that the costs, risks and complexity of modernizing their aging systems are greater than that of doing nothing. The result? Precious IT resources are devoted to putting out fires and high operational maintenance costs, while the lack innovation and agility hit the company's bottom line.

Of course, a strong case can be made for doing nothing. Given most companies' insatiable appetite for competitive advantage and IT's never ending obligation to deliver it, legacy re-engineering projects -- with no guarantee of success -- often fall to the bottom of the priority list.

One thing is certain: failing to address legacy systems, such as the Distributed Computing Environment (DCE) and their cost of operation will ultimately have a negative impact on productivity and the funds available for new development.

A Better Way: Evolution on Demand

Clearly, today's environment calls for an alternative, one that removes risk and cost - a "just-in-time" modernization that enables a systematic and modular approach to change. William Ulrich, President, Tactical Strategy Group, Inc., and a legacy modernization expert, believes that, "An incremental approach to modernizing existing systems tends to be the most effective, least risk prone strategy - particularly when compared to the big bang approach that has failed so many times in the past."

This strategic model, called Evolution on Demand, is especially attractive to companies using DCE. The model enables companies to systematically transform the individual segments of their legacy applications that provide the greatest ROI. Rather than re-engineer entire applications, Evolution on Demand makes it possible to identify technical processes that correspond to valued business functions and to immediately

- Integrate what you actually need
- Modernize the application segments that provide the greatest ROI
- Continue to be productive while you transform



Using Evolution on Demand, managers can replace expensive “Big Bang” modernization projects with a succession of manageable independent projects, each delivering immediate return on investment. Evolution on Demand attacks modernization at the functional level, mapping legacy systems to agile contemporary business services – while the original system remains intact or evolves and is transformed at a pace dictated by utility and business benefit.

Evolution on Demand changes the cost/risk calculation and gives managers alternative to expensive all-or-nothing re-engineering projects and the expensive customization of commercial enterprise products.

Evolution on Demand: Use Case

Consider a 15 year old ERP system, the backbone of a large manufacturing business build on HP/UX and DEC. After years of modifications, additions and the eventual disappearance of experienced DEC application developers, the system became a static legacy system. However, with the retirement of engineering resources, the need to make these service more flexible and available, some type of change was essential -- despite a limited budget.

This project would normally take more than 16 to 24 months to complete and provide value using a “big bang” approach, with a high risk of running over budget. Using Evolution on Demand, the project is analyzed and broken out into incremental phases that target the greatest benefit. Here, the 80/20 rule applies – 20% of all modernization functions provide 80% of the total benefit. Evolution on Demand makes it possible to identify and capture those benefits immediately.

The process begins with an application portfolio assessment. The assessment identifies the application’s constituent parts (business and technical) and stores them in a repository. The application is represented in a model for in depth analysis, to model changes, define legacy interfaces and propose modernized versions.

The assessment also models the DCE environment itself, capturing the DCE service and security models. These tightly-coupled fine-grained DCE services are capture so they can be mapped to the large-grained business services that overly them.

Once this analysis is complete, incremental transformation of the backend application logic can begin. The models in the repository are then used as a basis of the modernization. New logic is generated and created based on the model and remediation that may be required. (See eCube document: Enterprise Evolution and Modernization: The Remediation Process.) Simultaneously, client application or web developers define and implement the new modernized presentation layer. This is usually completed in a fraction of the time it takes to convert the backend components.

While work on application logic components continues, scalable Evolution On Demand integration technology is used to expose legacy processes with modern interfaces as services in a service oriented architecture (.Net, J2EE, SOAP, JMS, ESB, etc.). Using those interfaces, the



presentation layer is loosely-coupled to the existing legacy backend processes via an intermediating services layer that can manage DCE services and deliver modern interfaces -- thus providing immediate ROI. When a new application component is completed, its matching interfaces allow it to replace the legacy version with zero coding.

In cases where data must be transformed, the same loosely-couple process is applied between the new application logic and the legacy data.

Building Success with Evolution on Demand

Three capabilities are required to implement your own Evolution on Demand (EOD) project:

Application Portfolio Assessment

Good questions lead to better results. Your well-implemented EOD project will always employ some type of application assessment – whether done with a tool or manually.

Modernization requires an understanding of the target application’s topology:

- What are the services, interfaces and dependencies that make up this application?
- What do they do - are they consumers or providers?
- What business process do they support?
- What other parts of the application would their change impact?

A thorough assessment will provide you with answers to these questions and put in place a single repository of information for modeling decisions on what to modernize, consolidate or leave “as is.”

Systematic Transformation

Systematic Transformation is based on the assessment of legacy systems (outlined above), and a targeted remediation and modernization scheme. When combined, these processes break large modernization projects into small functional components that are then tied to measurable business value. Using the application portfolio developed in the assessment, you can map business processes to these components and prioritize their transformation and integration, based on their impact on your business.

Once the components are prioritized, you can remediate your business functions, if necessary. Then you or your transformation service provider will combine human know-how with a programmatic modernization tool that leverages the model stored in the repository. When used in conjunction with On Demand Integration technology, systematic transformation will help you quickly modernize the application functions that provide the greatest ROI.

On Demand Integration

On Demand Integration technology provides “just-in-time” integration of legacy systems with contemporary platforms at the function level. That means targeted legacy DCE based



functions (written in COBOL, and C/C++) and their corresponding legacy data are exposed as contemporary services in a loosely coupled fashion using NXTware Integrated Maintenance Environment for DCE. (*See Additional Information below for more details.*) This enables you to get value from these systems in contemporary environments until you decide to systematically transform them.

Embracing Change

This article outlines an open modernization methodology that delivers the benefits of large scale modernization projects at the cost, speed and risk of simpler projects. The skills required are a natural extension of the SOA development model, without the need for a great deal of additional training. The technology used can take the form of an enterprise service bus or a flexible application server. The key is that lightweight technology is used to aid the transition of DCE-based legacy assets from one phase of the evolution to another.

Market forces drive business requirements, but the limited agility of legacy IT systems' restricts the ability of most companies to respond and change. With Evolution on Demand, technological change becomes an approachable and welcome part of the business process.

Additional Information: NXTware Integrated Maintenance Environment (IME)

A Tool for Enterprise Evolution

NXTware IME for DCE is an Eclipse-based engineering environment that makes difficult legacy middleware to easier to manage and more cost effective to maintain, modernize and integrate. NXTware IME for DCE provides the tooling, configurations, engines and deployment tools for users of commercial and Open Source Distributed Computing (DCE) solutions such as those implemented for IBM, HP, Sun, and RedHat Linux.

NXTware IME's DCE Stack overlays existing DCE implementations, making the maintenance and development of command line DCE applications visual -- making it much easier for maintenance and integration engineers used to working in IDEs to be productive. NXTware IME for DCE includes 20 tools and Wizards that simplify the development, testing, deployment and maintenance of DCE-based applications. It enables DCE JAVA development and composite applications, while removing the need for engineers to understand DCE complex and verbose API.

Historically DCE complexity has forced IT organizations to make hard choices between using valuable resources to update and maintain systems and minimizing change in order to manage costs. Basic engineering processes and maintenance tasks that take up to 500 lines of code in DCE are reduced to 5 steps with NXTware IME for DCE. Now engineers who are not DCE specialist can accomplish important maintenance, modernization and integration task in minutes -- in fact generating services and clients for HTTP, JMS, J2EE or even a SOA enterprise service bus with a single button click.



Benefits of include:

- Simplified configuration and partitioning
- Develop, maintain, configure, test and deploy DCE services from the NXTware IME
- One button generation of DCE providers and consumers
- Automated generation of data independent service with configurable data poolers
- Federated DCE services
- One button generation of SOA Interfaces and integration services
- Support for JAVA DCE development

eCube Systems

eCube Systems offers a family of legacy evolution products and services that maximizes return on technology investment by leveraging existing technical equity to meet evolving business needs. Fortune 1000 companies turn to eCube Systems to reduce risk, extend ROI, and increase productivity as they consolidate legacy capabilities and evolve legacy systems to contemporary service oriented technology platforms, such as the SOA-based Enterprise Service Bus, advance messaging solutions and contemporary Web services.

eCube's offerings make possible the immediate interoperability with and phased transformation to contemporary platforms such as XML, SOAP, J2EE, .NET, for users of COBOL, RPG, OS400, IMS, VMS, MVS, COOL:Gen, Entera, DCE, EZ-RPC and many others.

eCube Systems partners with: IBM, HP, SUN and many other vendors.

For more information

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Enabling Enterprise Evolution

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