Application modernization – a path to business transformation

Benefits and RoI from modernizing business-critical technology and infrastructure
EXECUTIVE SUMMARY

BUSINESS TRANSFORMATION OPPORTUNITIES FROM APPLICATION MODERNIZATION

Most organizations have economized considerably during the last two years, and recognize that this approach must continue for the foreseeable future as the economic environment remains volatile, and keener competition for revenues dictates the need to be lean and mean. At the same time, it is broadly accepted that strategic needs in the next economic phase dictate the earliest possible organizational transformation, in order to be best positioned for the more intense competition that is fully expected in recovering markets.

Ovum believes that there are increasing expectations of the role of IT to support and enable the recovery, through accelerating business transformation and increasing business agility. The most mature areas of business-critical technology and IT infrastructure are often those in which opportunities for transformation remain untapped – despite deep understanding typically being available of the risks and architectural disadvantages entailed in their continued use, as well as the readily evident cost issues. Modernizing these technologies would unlock funding that can be used to strengthen and grow the organization, and overcome any disadvantage relative to competitors who might already be achieving the benefits of more cost-effective and productive operating models.

This White Paper explores a number of practical ways to achieve this, including optimizing mainframe development and testing processes, platform migration, and process modernization. It also looks at the benefits, return on investment (RoI), and relative risk factors for these options, and includes real case studies of the results of modernization programs as experienced by practitioners.

KEY FINDINGS

- The need to make the IT function dramatically more productive, and use IT more effectively to meet larger company goals, is on the urgent ‘to do list’ for CIOs.
- Modernizing key IT resources is a highly fruitful approach in terms of delivering operational savings and competitive advantage.
- Selection of appropriate approaches to application modernization should recognize and preserve the value of past investments in IT assets.
- Using automated tools, application modernization can be undertaken rapidly and reliably, and does not incur the risk of losing the business value entrenched within existing resources.
- Typical delivery timescales of months rather than years show RoI rapidly, meeting executive investment criteria.
- Application modernization can deliver three stages of business transformation:
  - Quickly collapse cost structures in existing operations.
  - Readily enable further achievable opportunities to be unlocked from technology integration.
  - Generate funding for innovation projects from savings in current operational costs.
IT MODERNIZATION IS AN IMPORTANT PART OF TRANSFORMING THE ORGANIZATION, AND THE ROLE OF CORPORATE IT

THE CORPORATE TRANSFORMATION AGENDA

Many of the measures that organizations have undertaken to cater for cyclical market pressures comprised upgrading a set of baseline capabilities and characteristics. Well-known examples of such initiatives that organizations would be expected to have addressed include the development of flexibility to accommodate more and inevitable change as well as to seize competitive advantage more readily. Others will have focused on reduction of all cost fundamentals; improving and simplifying customer service; and changing fixed spend commitments to be variable and linked to business dynamics.

While times remain difficult economically, being in step with such aspects of business-driven change is likely even more crucial to the organization, as well as for its perception of its IT capabilities being business-aligned. Stating current imperatives simply and strongly in late 2009, McKinsey advised “CIOs will have to make fundamental changes in the way IT operates and campaign for technological improvements that will transform cost structures and operating models throughout the enterprise… they will have to make the IT function dramatically more productive, use IT more effectively to meet larger company goals…”.

MODERNIZATION HELPS IT FUNCTIONS ALIGN WITH CORPORATE TRANSFORMATION PROGRAMS

In the current economic climate a key success factor of any business-aligned IT function is to maximize the efficiency of existing operations. However, corporate transformation objectives aim longer term, and for much higher-value outcomes, targeting innovation to deliver ways to differentiate or uniquely enable the organization. The crunch comes in that organizations are finding it very difficult to commit resources to transformational programs, but here the IT function can often provide ideas and practical solutions for innovation which dovetail with that cost-led imperative, by generating funding for innovation projects from savings in current operational costs.

Modernizing key IT resources is a highly fruitful approach in terms of delivering operational savings. In some of its many flavors, such as that which is process-related, the TCO reduction brought about by modernization work itself can directly deliver transformational change, as well as the more general, less direct effect of cost savings regenerating as potential funding for innovative transformation. Recognizing this allows proactive IT functions to be seen as key resources in defining potentially advantageous solutions that enable innovation.

Modernization of applications often eliminates or reduces usage of out-of-date computing platforms, contributing to better scope for efficiency in the organizational procurement of IT, as advantage can be gained by consolidating the number of platform types in order to improve the corporate negotiating position in matters such as licensing, where higher usage can attract discounts. Additionally, savings can be made from not having to maintain access to the skills necessary to manage older varieties of technology. Generally, modern platforms are better able to incorporate techniques such as virtualization which equip variable demand to be more directly reflected in terms of resource costs.

Importantly, any approach to application modernization should recognize the value of past investments in IT assets, and wherever possible enable business-critical resources to be preserved or re-used, and intellectual property (IP) to be efficiently harnessed, while delivering the business advantages of a modernized technical context.
MODERNIZATION PROGRAMS MATCH MULTIPLE EXECUTIVE INVESTMENT CRITERIA

Using automated tools, application modernization can be undertaken rapidly and reliably, and does not incur the risk of losing the business value entrenched within existing applications, which is directly transferred to the target environment. Alternatives to application modernization should of course be considered, but are less likely to be chosen in the context of today’s economic environment bringing a general aversion to lengthy or costly change programs, or any notable risk.

Generally, the option of adopting a packaged solution inevitably brings the need to adapt business processes to those that the new application supports. Any customization of the packaged application to support the organization’s needs also must be paid for. Both of these combine with the typically significant cost of licensing off-the-shelf software, and hence this option is characterized as having a high cost relative to others, as well as incurring a prolonged implementation.

Rewriting key applications can preserve parts of the organization’s existing IP (in terms of business rules and other logic that are bound up within the applications), and therefore any inherent competitive advantage. However, even when such undertakings use advanced (but somewhat high-risk) methods such as code translation, they often require specialist expertise with knowledge of multiple technology sets over an extended period, which escalates risk and cost factors.

The following sections discuss three relatively low-risk, low-cost, and rapidly delivered modernization approaches that retain existing applications’ IP and deliver transformational benefits. Further flexibility and potential advantage accrue from the possibilities of these being used in association with each other, or individually, according to each organization’s particular requirements.

REQUIREMENTS, RISKS, AND BENEFITS DRIVE THE CHOICE OF APPROPRIATE MODERNIZATION OPTIONS

MIGRATING OR RE-HOSTING APPLICATIONS TO NON-MAINFRAME PLATFORMS

This modernization approach enables organizations to move applications from mainframe environments to a Windows, Linux, or Unix platform, minimizing changes to underlying code (which would give rise to retesting costs, and risk). It is applicable in any circumstances where there are tools that can manage and run the same programming language/code base on the target platform as on the original mainframe. A typical example is applications written in COBOL, as this is a standards-based language that runs on many platform types, and as a result migration incurs less risk than would the transfer of code based on proprietary frameworks.

Major cost reductions can be achieved by migrating mainframe applications, especially if this results in the decommissioning of the mainframe. Significant cost-savings can also be achieved in migrating some of the applications from mainframe environments running many business-critical applications, as these inevitably will require additional resource in step with any expansion. By reducing the demand on the mainframe, costly upgrades can be avoided, and operational costs can release funding for more transformational programs. Migrated applications can also be more easily integrated with corporate IT programs such as security, access based on commonly-managed identity, and data management, or with tools that enable application data to be used more widely as corporate information – all of which save on management costs for the migrated application.
MODERNIZING APPLICATION DEVELOPMENT AND/OR TESTING

Application development and testing tools have been greatly enhanced over the last 15 years. However, many developers working in mainframe environments do not have access to the standard of facilities available from a typical Integrated Development Environment (IDE), sited on a system such as Windows. Modern IDEs and testing tools are instrumental in enhancing developers’ and testers’ productivity, and enable teams based in different locations to collaborate effectively, while ensuring that organizational standards are adhered to, and that management processes oversee efficiency within the development lifecycle. When tools are used that enable source code for mainframe applications to undergo development, maintenance, and testing within PC environments, before the code is moved back to the mainframe production environment, this will typically result in the achievement of cost savings, increased efficiency, and more rapid delivery from the use of an IDE.

Further to these benefits, many organizations find that the long-standing problem of sourcing mainframe development and testing skills is alleviated by adopting such tools. Typically, developers are more attracted to work in mainframe-related languages and technologies if they may use IDEs for productivity and to allow innovative contributions to be incorporated in application products. Integration with common tools on PCs enables developers to improve quality standards, thereby reducing both costs of ownership and implementation timescales.

PROCESS MODERNIZATION

Modernization of the capabilities of an application’s user interface (UI), from those typically available in mainframe-based environments, can pave the way for significant efficiency improvements to the business process supported. Modern UIs incorporate powerful features that eliminate many of the wasteful user interactions with the underlying system that are necessary due to the typical screen characteristics of mainframe-based applications. Additionally, applications that have been repeatedly enhanced over a number of years typically benefit from a process-led reconsideration of the efficiency aspects of the user interaction they entail. In typical cases, multiple screens have to be accessed to view different data associated with a key entity such as a customer, asset, or transaction. Additionally, application-specific screen operations are often incorporated in mainframe applications that have been iteratively enhanced, resulting in users having to remember usage of non-intuitive facilities such as function keys.

These are real business issues, in the sense that they result in more complex training being necessary for staff required to use such applications, for example. This factor could adversely affect the feasibility of strategic options to the organization, such as the outsourcing of business operations. It is also important to consider that modernizing UI characteristics is a prerequisite to developing new revenue streams and customer service offerings by extending application availability to online or mobile platforms.

MICRO FOCUS CAN ILLUSTRATE THE SUCCESS OF DIFFERENT MODERNIZATION STRATEGIES VIA CUSTOMER RESULTS

MIGRATING CORE APPLICATIONS AND BUSINESS LOGIC, TO REPLICATE THEIR DELIVERY OF VALUE IN NEW REGIONS

Table 1 illustrates a comparison of the options available to the CIO of Tesco (one of the largest supermarket chains in the UK) in considering how to enable a transformational international expansion program to use a critical business system, but while having a firm requirement to change the underlying platform for the new implementation. Compared to installing a package, or re-writing the retailer’s Continuous Replenishment (CR) system (which housed years of in-house knowledge and competitive advantage), modernizing the CR system was found to be the option that would incur the lowest cost and risk, while maintaining the competitive advantage gained by the system, and enabling value to be delivered in the shortest time.
Tesco looked at buying an off-the-shelf application to replace the CR system but found that this approach would be very expensive, would take a long time to implement, and most importantly would lose the competitive advantage currently gained from the application’s capability. The alternative of rewriting the application in another language so that it would run on a Unix system was also found to be expensive and would take several years to complete. Micro Focus helped Tesco by migrating their application code from a mainframe environment to Unix, completing the undertaking in months rather than several years. This approach also entailed much less risk as no changes had to be made in migrating the application.

### MIGRATION FROM A MAINFRAME ENVIRONMENT TO FUND BUSINESS PROCESS IMPROVEMENTS AND ENABLE STRATEGIC CUSTOMER SERVICE ENHANCEMENTS

Owens & Minor, a healthcare supply chain management company and distributor in North America, needed to modernize its existing, business-critical enterprise application while retaining unique business logic. The critical driver for doing so was the achievement of reduced costs, with the savings to be used to fund re-investment in customer-led improvements. After an assessment of options to re-write the existing application, or adopt a package solution, they were discarded, primarily due to projected implementation costs of $100–200 million. Instead, migration to a Windows platform and a Microsoft SQL Server database delivered 77% infrastructure cost savings per year, which was used to fund an investment in UI modernization, with the migration and subsequent modernization both using tools from Micro Focus. This successfully improved business processes, enabling role-based operations to be established and reducing the portfolio of 30 different screens with which users might have to engage, to single figures.

As well as increasing efficiency and productivity by an initial 15%, this program paved the way for the desired strategic customer service improvements to be more easily achievable, and removed known capacity problems that would have limited business development. The program of change retained the value of the company’s investment in its differentiating business logic, while representing a low-risk, low-cost and rapidly delivered basis for future business plans that could not have been supported prior to the modernization taking place.

### PROCESS MODERNIZATION, ENABLED BY MORE UP-TO-DATE UI TECHNOLOGY

Comcast, the largest cable operator and home Internet service provider (ISP) in the US, suffered badly from its fulfillment of customer service requests being centered on a number of discrete business processes, rather than on meeting customer experience expectations.
For example, if customers calling to request a new service were unknown to Comcast the call center operative had to initiate a process that took ten days to establish the feasibility of providing the service to the customer. This had the effect of 90% of potential customers losing patience and doing business with competitors. Micro Focus tools were used to integrate call centre processes with the mainframe system that checks if service is available, and orders new service, with this exercise being completed in less than two months. As a result, Comcast was able to provide better customer service from its call center facility. As well as improving efficiency, the company captured $10 million per year in business that it had been losing.

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<th>Table 2: Contact Details</th>
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<tr>
<td><strong>Micro Focus Headquarters</strong></td>
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<tr>
<td>The Lawn</td>
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<tr>
<td>22–30 Old Bath Road</td>
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<td><a href="http://www.microfocus.com">www.microfocus.com</a></td>
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Source: Micro Focus