

White Paper

# Secrets of Successful Modernization



## Contents

IBM i – the ultimate application platform .....	3
Getting started - the modernization big picture .....	4
Amazing applications - what are they?.....	4
3 characteristics of amazing applications .....	5
The importance of understanding the business drivers .....	5
Don't reinvent the wheel - the value of reuse .....	6
Don't underestimate the user experience (UX) .....	7
Top 5 tips for modernization success .....	8



## Abstract

In order to succeed with modernization of IBM i applications, it is essential to build on a foundation of lessons learned from both previous successes and failures. In this report we cover the critical areas when initiating a project to ensure that you deliver applications that solve common business challenges. In addition, learn how to deliver applications that will delight your end-users, whether they are internal, out in the field, or external customers.

## IBM i - the ultimate application platform

There is no doubt the IBM i continues to be a world-class application server with its proven robustness, scalability, reliability, security and low cost of ownership. The need to modernize and transform these 5250 applications is greater than ever. Not just improving the way these applications look, but the way they work.

Successful modernization of your IBM i applications can deliver a rapid return on investment (ROI) and long-term benefits. Getting it wrong, however, can be disastrous! A failed modernization project can be the last straw for some companies that seem to have forgotten the business value the IBM i has been delivering for years. A successful project, on the other hand, can be the first step to guaranteeing a bright future for IBM i applications and increased success for your business.

One of the key factors to success is the importance and value of leveraging your existing source code and database. If the existing application is supporting the business effectively from a functional perspective, then there are numerous benefits in reusing that foundation wherever possible. By reusing existing source code you reduce cost, risk, and time required to deliver the modernized application.

We've also seen modernization suites mature to include integrated development support. This is crucial when new functionality needs to be rapidly delivered, and seamlessly connected with existing applications. Modern solution delivery is about reusing where sensible and generating new code where required, within a services architecture, so that you create a foundation that meets your current requirements while providing a platform for future development and requirements.

## Getting started - the modernization big picture

Application Modernization means different things to different people. Improving the value of legacy application assets is one, simple definition. But rather than using the term legacy, we'll call these core applications, because they typically support the core business processes.

Regardless of the many definitions of modernization floating around, the one characteristic that we should be striving for is to ensure our applications do an outstanding job of supporting the users and the business in the most effective and efficient manner possible. Applications should deliver the right experience to the user on the right device for the task at hand. Applications should be responsive, secure, self evident & intuitive. In short, we want our applications to be amazing.

### Amazing applications – what are they?

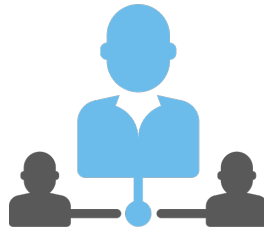
- Extending 5250-based applications to extend application reach through mobile devices such as smartphones and tablets
- Integrating with the Windows desktop to improve information worker productivity and decision making
- Web-enabling applications to improve customer service and cut costs
- Extending application functionality to meet new and changed requirements
- Integrating back-end applications with desktop applications
- Connecting back-end applications with new technologies to streamline workflows, reduce costs and improve service levels
- Multi-platform integration, inside and outside your company, to streamline supply chains
- Service-enabling existing applications to allow flexible reuse of key functions
- Restructuring your code to be more agile and service oriented



## 3 characteristics of amazing applications



**Modern**



**Connected**



**Open**

**A modern application** isn't just an application that is graphical and looks more modern, it needs to work better. For example, extending the reach of the application to support external users via the web and mobile devices, and also improving the workflow and integration so that users can work more efficiently.

**A connected application** is one that integrates seamlessly with other applications and services used by the end user. For example, integration with Microsoft Excel, Word, Outlook and other popular desktop productivity tools today, which are typically utilized completely independently to their corresponding 5250 counterparts. Reaching further, being connected means integrating to the enterprise through back-end services, so that other applications on different platforms can be seamlessly integrated with the IBM i applications, both within the organization, and by working more seamlessly with 3rd party vendors and partners. Web services provide a foundation for connectedness beyond the enterprise.

**An open application** is one that is architected to leverage both the investment in existing applications, as well as supporting new development. The requirement to learn a number of new skills in order to significantly enhance applications has proved to be a barrier to progress for many IBM i organizations. Technologies such as RPG OA address this issue through enabling development teams to create modern applications in RPG, therefore using their existing skill set.

## The importance of identifying the business drivers

It is critical that you identify and understand how the modernized solution is beneficial to the business it is supporting. If there will be no business benefit then there will be no success.

To identify the appropriate business drivers, you should start with understanding the company's business strategy. From there, you can identify how IT can support that strategy by solving known business issues.

## Business drivers for application modernization

- Reduce costs and improve solution delivery by service-enabling
- Improve business user productivity, effectiveness and satisfaction through:
  - Modern UX
  - Desktop integration
- Streamline and automate business processes
- Reduce training costs
- Improve access to applications:
  - Anytime, anywhere access
  - Extend access to customers/ partners
- Improve business performance by making application integration easy
- Company mandates:
  - move all applications to pure web architectures
  - move to a new platform
- Improve the user experience
- Reduce costs and complexity
- Reduce maintenance costs
- Improve agility and delivery times
- Consolidate IT infrastructure and reduce costs
- Encourage reuse of IT assets

Whatever the identified reasons, make sure you have a clear understanding of the business needs and the expected benefits and the expected return on investment (ROI).

You should clearly define exactly what business benefits your modernization efforts should deliver, as well as an understanding of which potential projects will deliver the most benefit.

## Don't reinvent the wheel – the value of reuse

Application Modernization traditionally refers to improving the value what you already have. Reuse-based modernization has been popular in the IBM community because applications are often robust, have been refined with years of use and enhancement, and continue to deliver significant business value. However when the business requirements have substantially changed or the technical health of the application has declined (making a reuse-based approach inappropriate), redevelopment or replacement with a standard package may be the best modernization path forward.



**Reduce costs**



**Increase productivity**



**Better time to value**



**Increase success rate**



**Make your life easier**



**Increase efficiency**

Modernization no longer simply refers to tactical improvements made to existing applications.

There are a few different ways to approach modernization, including:

- **Front-end modernization**, which includes modern GUIs like rich, thin and mobile devices, as well as integrating with popular UI's (like MS Outlook and Google) and desktop applications, to deliver streamlined business processes
- **Back-end modernization**, which starts with a service oriented approach, to deliver SOA compliant reusable components services from your existing applications, which can then be connected easily to modern UIs and other applications
- **Re-development**, where reuse-based modernization is not possible or practical
- **Replacement** with a package, where a 3rd party provided application meets your key functionality requirements

Most IBM i users already have most of the business rules in reliable and robust existing programs. Increased reuse of this time-tested application logic is a fundamental goal of modern solution delivery and makes projects smaller, simpler and more likely to succeed. Leverage existing tested application logic wherever possible for greater efficiency and productivity! Develop new service-oriented code where necessary and avoid duplication of code - particularly business logic.

Initiatives to improve the service orientation of your applications will improve your reuse potential, which will drive down costs and complexity.

## Don't underestimate the user experience (UX)

The depth of application functionality has been the long time strength of IBM i applications. Unless the User Experience (UX) is acceptable however, functionality may be irrelevant.

Remember, it is a multi-channel world – there are multiple audiences for your applications, and there is not one UI style or device that is the universal answer. One size does not fit all!

The more services-oriented your back-end applications are, the more easily they'll cope with delivering a multi-channel user experience.

Make sure mobility is considered in your plans - mobile access to applications has finally taken off and is rapidly becoming the preferred means of Web and application access. Also, consider what front-end application experiences your audiences currently use – if many use Outlook, Notes or SharePoint, why wouldn't you consider delivering your IBM back-end applications through this UX?

Designing modern graphical skins is not for the typical IBM i developer. It's so easy to get it wrong. Getting it right won't guarantee your success, but it will eliminate another potential reason for failure. So get help if you need it - a graphic designer with the right tools can deliver a customized skin in less than a day.



## Top 5 tips for modernization success

After you have assessed your existing applications, you may conclude that it's time to replace or outsource all or part of it. What's your sourcing strategy? What about architecture requirements, such as a mandating that all initiatives must be service-oriented. Most likely you'll find a mix of modernization approaches is required for your application portfolio.

### 1. Start simple

A simple, practical next step may be to leverage mobile technology to extend application reach. Perhaps a small project to service-enable key functions could improve ease of integration and streamline supply chain.



Pick a small project – your chances of success drop as your project size increases. The project should address a well-known business issue that can quickly deliver visible and clear business benefits. It could be reuse-based – like integrating a front-end application with a back-end application. Or it could be delivering new functionality – perhaps to extend a core application. The modern solution delivery environment will support methods and tools that provide integrated support for reuse and development. It will also be completely services compliant, to ensure easy integration with other applications.

Reuse-based projects are generally less risky. A project that impacts user experience can win business users' support, particularly if it looks and works as well as other new applications. Extending a new UI channel from an existing application to improve service to partners or customers could be a good candidate.

If you're ready to start with Web services, consuming a Web service from an existing application could deliver real value. An example could be hooking in a Web service for address validation in your customer maintenance function. This typically doesn't require significant changes to your application, whilst eliminating invalid address data can immediately save money and improve efficiency.

The goal is to ensure the first project delivers real value. Architecting and building a repository of services can wait until you've got some runs on the board! Don't be too aggressive and remember to involve the business – up and down the chain of command.

### 2. Get hands on

The best way to ensure you're making the right choice of tools is to test vendors' claims. You can do this by trying out their technologies yourself - by attempting to utilize them with your own applications. We've seen many customers waste tremendous amounts of time (and therefore money) by not satisfying themselves fully that the tools will meet their needs. If a vendor won't give you a hands-on free trial, what does that tell you about the potential complexity of their solution?

An application modernization survey conducted by Aberdeen Group (The Legacy Application Modernization Benchmark Report) found 76% of companies surveyed reported problems with the tools, including performance and stability. So, make sure you road test the tools for yourself. Getting hands-on is the only way to determine if the tools will work for you, your applications and your business users.



### 3. Embrace progress

It is true you can accomplish a lot by sticking to your RPG. RPG will rightly outlive some of us. There is no reason why your RPG-based business rules can't become services in an SOA world - as long as you're prepared to think openly and be ready to use other technologies when they make more sense. You really do need to get trained and start thinking modern! Yes, that does mean GUI and yes, that does mean services! But more important than both of these is thinking at the business level. So, commit to training - not learning low-level, complex new technologies, but thinking about business processes and how your RPG code can better support more flexible business processes.

### 4. Stay focused on the value you can deliver

If you think modernization is just about making your applications look pretty, you'll fail in the long term. Success is about delivering business value to your customers.

### 5. Find an internal champion

We also recommend that you find an internal champion who will be enthused about the opportunities offered by modernization, and who can be developed into your tools expert. If your team is a traditional IBM i RPG team, work with them to get them thinking more about business processes.



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