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Secrets to Bridging Legacy and Innovation through Integration

White Paper

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Secrets to Bridging Legacy and Innovation via Integration

For some, the perceived "generation gap" between legacy systems and mobile computing solutions can seem almost unbridgeable. Spanning the gulf is incredibly important these days as companies are increasingly looking to IT groups to provide strategic advantages in competitive markets.

Unfortunately, many IT organizations blame their inability to support evolving business needs on the limitations inherent in the legacy systems - whether they are mainframes or midranges. Current statistics appear to support that argument. Today only 18% of IBM i users have enabled mobile access to their data, 39% still use a "green screen" interface for their main applications and 58% consider modernizing applications to be a top concern over the next five to ten years.[1]

In today's fast-paced, competitive landscape, "technical difficulties" can no longer be used as an excuse for lack of innovation, agility or responsiveness. Luckily, the claim that legacy modernization is too risky, expensive, difficult and time consuming is no longer valid. Technology has moved forward to enable true interoperability between even the most diverse systems.

In this paper, we'll examine the preconceptions that prevent IT groups from moving forward with key modernization efforts and outline a technical blueprint that eliminates the technical barriers to innovation. When a viable bridge between old and new is constructed, companies can begin innovating business processes, capitalizing on new business opportunities and serving customers more efficiently.

Outdated Constructs are the Biggest Barrier to Innovation Today

As companies look to draw innovation from legacy investments, many groups are still haunted by previous failures. Certainly technology issues did hamper IT progress in the past, however, most of the traditional methodologies and boundaries between legacy and next-gen solutions have actually replaced:

- **Complex middleware schemes:** Since the birth of the open computing movement in the late 1990s, IT organizations have tried to extend functionality and accessibility by integrating legacy investments with next-gen applications and communication channels. With no native interoperability options, companies were forced to develop custom integrations that coded system-to-system communication protocols as well as data-to-application functions on a one-to-one basis. Due to the sheer amount of work and lack of standards, these projects invariably went over budget and many were abandoned after years of effort because they never lived up to their design specifications.

[1] *2015 IBM i Marketplace Survey Results http://static.helpsystems.com/hs/pdfs/hs-marketplace-survey-results.pdf?_ga=1.84304281.1420375493.1427794962*

Designed prior to the "anytime, anywhere" movement, mainframes and other legacy systems have no extensions for web, mobile and cloud-based services – mobile computing simply didn't exist when these critical systems were first deployed.

- **Risky re-platforming options:** Many IT groups that could not overcome their integration issues actually considered replacing their mainframes and database systems to gain more flexibility. However, migrating the core of a company's IT infrastructure to another platform – regardless of how advanced it may be – is not without risk. The loss of mission critical business systems is costly when it lasts an hour and no company can afford the loss of service for a whole day. These projects tended to be extremely time-consuming as companies had to build out and test a whole new IT infrastructure and application set before cutting over to the new environment.

- **Dwindling skill sets:** While programming additional features on a legacy mainframe or an IBM i system isn't the answer to every IT challenge, it does help companies extend basic functionality, meet additional data storage needs and update certain workloads. Unfortunately, these projects require a working knowledge of legacy languages like COBOL, a perceived outdated language which very few programmers study today. Lack of dedicated expertise has made it difficult for companies to quickly development new capabilities and keep up with evolving corporate needs.

- **Lack of mobility:** Designed prior to the "anytime, anywhere" movement, mainframes and other legacy systems have no extensions for web, mobile and cloud-based services – mobile computing simply didn't exist when these critical systems were first deployed. While some companies have utilized HTML web emulation techniques to create online services, these limited approaches are not necessarily accessible via today's mobile devices or cloud-computing models. Lack of mobility is probably the biggest barrier to for today's innovation projects – preventing companies from providing customers with key services and outfitting employees with advanced productivity tools.

- **Fear of wasting investments:** Even though companies value their legacy systems for their extreme reliability and stability, they often fear being accused of throwing good money after bad. With so much industry press focused on new technologies, companies often feel that any resources allocated to enhancing legacy systems are wasted – even when the ROI and business benefits are clear.

Today, these issues are no longer relevant – information technology has progressed beyond these limitations. None of these limitations should prevent IT groups from extending legacy systems into next-gen mobile environments and/or integrating mainframe applications with other enterprise software programs and cloud services.

A New Approach to Integration

With 93% of users believing that their IBM i server provides a better ROI than other options,[2] most companies are looking to leverage their legacy assets as they evolve to meet new challenges. For these organizations, the most direct route to innovation lies in extending existing processes by securely exposing data and application business workflows for mobile access in a way that still allows them to be reliably managed within the mainframe/midrange structure.

For many, this description sounds no different than the system integration projects of the past. While the end goal may be the same, the methodology is radically different. Mainframe technology, mobile computing, lightweight development techniques and standards-based communications protocols may have evolved separately on parallel tracks, but they have all progressed to a point where legacy solutions are now fully compatible. Nowadays, IT groups can take the best elements from multiple technologies – cloud, mobile, enterprise, legacy, etc. – to create a new breed of innovative, hybrid solutions with radical capabilities.

Unlike the integration methods of the past, APIs are not a piece of software or a server. They are fully functional integration points that ensure interoperability on a broad scale.

The API Answer to Connectivity

Companies no longer have to pioneer their own communication schemes or commit to an expense middleware development project in order to connect mainframes and databases with other applications. Instead, they can use Application Programming Interface (APIs), code snippets that fully define how one application can communicate with another system and directly request services from it. Unlike the integration methods of the past, APIs are not a piece of software or a server. They are fully functional integration points that ensure interoperability on a broad scale.

Once the APIs are created for accessing legacy data and functionality, they can be used over and over again – to power new solutions developed in Java, PHP AJAX, .NET or XML and enrich existing mobile apps, cloud systems and enterprise software solutions. Efficiently bridging legacy and next-gen solutions via APIs eliminates the biggest challenge to any modernization project.

The Java-Mobility Connection

Java has become the universal language of the modern IT movement, enabling the "build once, deploy many" approach to application design. Highly portable, developers can program core functionality in one application and run it in almost any environment – web, mobile, cloud or enterprise.
As an added benefit, it is extremely lightweight – when compared to COBOL, it requires 80% less coding work which therefore lowers costs and speeds deployment time. Porting legacy artifacts (data, screen interactions, business process logic, programs, etc.) to Java APIs assures their viability in mobile, web and cloud environments.

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Auto-discovery & Rapid Development

The real secret to fast tracking innovation is leveraging key productivity-enabling tools wherever possible. Spending months manually defining and coding APIs for every green screen, business process and data field in a legacy system is an inefficient use of critical IT resources.

Instead, next-gen API integration and management software, such as OpenLegacy, communicates with the legacy system to automatically generate these APIs for all data elements, green screens, RPG business logic, COBOL programs and database calls. These APIs are then presented within an IDE whose robust drag-and-drop, point-and-click capabilities along with widgets and wizards allow users to finalize development in Java without having to be a programming expert.

Clearly, the true power of an auto-discovery/rapid development tool lies in its ability to effectively leverage the powerful business processes, user interactions and programs that support mission critical functions on a daily basis. Instead of taking months to develop a new app, this approach allows companies to create working, fully integrated prototypes in just 2-3 days.

Integration Breeds Innovation

Now that the technical barriers to modernization have been removed, companies can focus on the business of innovation. With most IT groups are facing a backlog of demand, workload prioritization is critical to aligning with corporate goals and delivering against key objectives.

Solutions that bridge legacy and next-gen capabilities are ideal for:

- **Revolutionizing mobile apps:** By removing the disconnects between long-held information and next-gen delivery channels, IT groups can quickly create solutions that leverage customer data, systems information (ERP, R&D, logistics), social media, cloud-services, push technology, beaconing and more. Companies now have a flexible infrastructure from which they can quickly launch innovative public-facing solutions.

- **Improving customer service/support centers:** Forcing callers to remain on the line while agents navigate a rigid set of green screens to answer questions and process requests can aggravate busy customers. Creating more flexible, web-based interfaces with shortcuts to frequently asked questions and workflow specific tabs will cut overall response time, reduce wait times and significantly lower average cost per call.

- **Capitalizing on BYOD:** Every department has "standard processes and systems" that support day to day workloads. Redesigning those applications for use via smart devices – anytime, anywhere – will significantly enhance the productivity of each and every employee in a "bring your own device" world.

[3] *2015 IBM i Marketplace Survey Results http://static.helpsystems.com/hs/pdfs/hs-marketplace-survey-results.pdf?_ga=1.84304281.1420375493.1427794962*

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- **Expanding online service offerings:** Providing "self-service" access to key backend processes (account inquiry, order status, enrollment processing, trouble ticket status, etc,) will enhance customer satisfaction while reducing the burden on internal resources. Ensuring that all web services meet current browser and performance standards will yield higher engagement rates across the board.

- **Nurturing prospects:** Very few organizations are able to follow customers throughout the sales process and automate key touchpoints along the way. By knitting together information and functionality from legacy databases, CRM, CEM, lead generation and sales automation solutions, companies can create a 360 degree view of customer behavior to create engaging, customized offers that maximize conversion rates.

- **Shortcutting analytics projects:** Because most companies have disjointed systems, they often rely on time-consuming, manual techniques for collecting and reporting KPIs on a department by department basis. IT can help break this cycle by providing web-based dashboards that unite data across the company to give executives continuous access to real-time information from any laptop, tablet or smartphone.

Advancing internal objectives

For IT departments, innovation should begin at home. These groups are always being pulled in competing directions as corporate objectives change and individual department goals shift. This continuous barrage of short term deliverables often forces IT to neglect its own issues at the expense of others. Take the opportunity to think long term and align your innovation efforts with long term plans and objectives.

A recent survey of IBM i users showed a range of concerns for 2015-2020[3] :

Data growth	40.1%
High availability	50.9%
Modernizing applications	58.7%
Mobile access	40.4%
Better enterprise systems management tools	28.8%
Reduce IT spend	39.2%
IBM i skills depletion	49.1%
Going paperless	14.8%

About OpenLegacy

OpenLegacy helps organizations quickly launch innovative digital services by extending their core (legacy) systems to the web, mobile and cloud in days or weeks versus months. Our API software quickly reduces project backlog by automating and accelerating API creation, deployment, testing and management from core applications, mainframes and databases. Together, business and IT teams can quickly, easily and securely meet consumer, partner or employee demands for digital services without modernizing or replacing core systems, and without special programming skills or invasive changes to existing systems and architectures. Learn why leading companies choose OpenLegacy at www.openlegacy.com

Taking the time to define and rank internal objectives – and keeping them on hand – will help IT groups as a whole become more agile and productive as they strive to satisfy the business's increasing need for innovative IT solutions.

From Secrets to Success

In the past, the extreme gap between legacy and next-gen technology definitely hampered a company's ability to adapt IT to changing goals. In extreme cases, technical difficulties caused IT managers to cancel modernization efforts mid-project and even made some consider trading the reliability and stability of their mainframes for a riskier albeit more open platform.

By walking away from disconnected "modernization" techniques – and an outdated mindset – companies can leverage all their assets and human resources in the most productive way possible. Now that information technology has evolved to a point where the impediments between next-gen and legacy systems are gone, companies are free to innovate whenever and wherever needed.

Organizations can measure the benefits in increased productivity, reduced churn, higher conversion rates, shrinking expenses and faster time to market. As they extend existing assets and utilize them in new ways, IT groups will continuously lower their technology ownership costs. No matter how it is measured, there is no downside to improving a company's ability to innovate, adapt and quickly capitalize on new opportunities.

OpenLegacy
OPEN INNOVATION
www.openlegacy.com
sales@openlegacy.com

North America
11921 Freedom Drive,
Suite 550
Reston, Virginia, 20190

Israel
3 Mota Gur,
Olympia Park,
Petah Tikva, Israel

Mexico
Av. Insurgentes Sur #730,
Col. Del Valle,
Delegación Benito Juárez, Piso 2
México, DF. CP 03104

Switzerland (Europe)
Rue Etienne Dumont 1
Geneva, 1204
Switzerland