EBOOK

Three Approaches to Modernization

Plus, what to consider when planning a modernization project

Introduction

When IT professionals talk about modernization, you'll find that the definition varies across both companies and individuals. There's no single definition across the industry; modernization in finance might mean one thing, while to healthcare professionals it's something else. However, at its highest level, modernization has one purpose: to evaluate your IT infrastructure and make the ongoing changes necessary to allow it to support the evolving expectations of today's business. What many companies struggle with isn't recognizing the need to modernize, but rather the best way to go about it. In this eBook, we'll discuss three different approaches to IT modernization and the implications of each.

FACT:
Each year, IBM Mainframes handle $23 billion worth of ATM transactions and $6 trillion in credit and debit card transactions.

Approach #1: Moving off a host-based platform[1,2]

Many organizations that computerized before the internet era rely on midrange and mainframe systems to run their critical business applications and data, but need the ability to create the digital experiences that users want and need today. Often the modernization conversation begins with complaints about the aging appearance and inconvenience of green-screen and command-line interfaces. It's a problem many younger hires face as they're brought in to work on systems they've never been trained on, and many new CIOs find mainframe and midrange technology unfamiliar.

Other complaints may focus on the ability to access data from critical systems quickly and easily. Business users may want to use transactional data from midrange and mainframe systems to deliver real-time promotions to online shoppers to drive incremental revenue, or leverage in business intelligence and analytics tools. They can't wait 24 hours (or more) for extract-transform-load (ETL) operations to run—they need the data now to stay competitive.

Simply moving to new applications on an x86 server-based environment sounds efficient and cost effective, but of all modernization methods, this often proves to be the riskiest. What many organizations don't realize when they start considering a migration to new hardware is how unexpectedly integral their midrange and mainframe systems are to the life of their business.

Stories abound of companies who spent years—and millions of dollars—in an attempt to make the transition, but ended up falling back to their original technology

Approach**1**

because it was impossible to replicate the decades of business and domain logic, or implement a solution that could process transactions at comparable speed and scale. What they realize all too late is what they really needed was the ability to build new applications on top of their proven technology and connect to their enterprise data in a way that was easy for digital natives to understand.

So what do organizations that take a rip-and-replace approach to modernization have to look forward to? As the proud owner of hundreds (or thousands) of brand-new X86 servers, you can be certain you'll never have problems integrating the latest applications and features your business— and most importantly your customers— require.

That is, until the next "modern" technology becomes available; then who can say for sure if your investment will still be top-of-the-line? We use modern here in quotations because it asks the question: is the recency of development all that makes something modern? Or is it a measure of the technology's ability to handle present-day demands?

And of course, there are some major downsides to this approach, many of which can't always be predicted. But what we can predict is that even the most coordinated efforts will disrupt business to some degree, whether thats 30 seconds of downtime, or days of outages.

Approach #2: Extending and connecting existing systems[3,4]

As mentioned earlier, one of the biggest struggles for organizations built on midrange and mainframe technology is they require the use of green-screen and command-line interfaces that are not always intuitive. While experienced users may be fine working in this kind of environment, these interfaces are foreign to new hires fresh out of school.

Starting a modernization project by rewriting or replacing the core code is backwards. The process should begin by determining what the desired user experience should be. Once you've done that, you can start restructuring the code. However, building the right user experience is an iterative process—you need to work closely with your users and present them with potential options.

By modernizing your existing applications, you can rapidly begin prototyping new user interfaces without trying to replace everything at once.

Rather than ripping out proven infrastructure to accommodate the next generation of operators, investing in modernization solutions that make systems, applications and real-time data available via attractive GUIs, web interfaces, and APIs can save millions while preserving decades of investment—plus offer competitive advantages.

Approach

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Layering modernization solutions on top of complex mainframe or midrange systems may sound like a headache, but that's not the case. Solutions such as Rocket API and LegaSuite Web require no new coding, or even knowledge of where the original source code even lives, and tools such as Rocket Data Virtualization make it possible to work with mainframe data for use in real-time marketing and analytics without writing one line of mainframe code.

With a well-thought-out investment in modernization solutions, a company can continue to succeed on their host-based systems, while empowering users with modern interfaces and digital experiences.

For example,

- Brick-and-mortar retailers can give customers access to inventory at other locations via in-store kiosks.
- Automobile insurance companies can offer mobile apps that allow customers to initiate claims from the scene of a collision.
- Online retailers can easily integrate third-party payment systems from companies such as Amazon or PayPal

The advantages of this option are clear: MONEY, TIME, EFFORT. We're talking millions in savings potential, months of time saved in planning and implementation, and only existing staff needed to get things up and running instead of hiring dozens of new consultants and staffers.

FACT:

89% of mainframe customers planned to keep their mainframes for at least five more years, with more than a third of them intending to keep their mainframes for 10-20 or more years.

What modernization software solutions don't address, however, is the very real skills gap between experienced IT veterans and their younger counterparts. Mainframe and midrange systems still need to be maintained by staff who understand them, even as business users log in from simplified interfaces. But as this issue becomes more acute, more solutions are being developed to tackle it.

For example, new open source languages and tools for IBM z/OS give younger developers the ability to code for mainframes without having to learn COBOL or other languages that are no longer taught in universities. These solutions allow the titans of industry to stay competitive with the modern Silicon Valley giants when it comes to hiring the best and brightest graduates.

> **"***It often makes more sense to keep the core system that does its job really well and find exceptional technologies like Rocket API to wrap around it. Rocket has allowed us to breathe new life into our legacy system by allowing for the latest web-based user experience technologies.***"**
>
> – Kurt Bonigut
> CIO, Frontline Insurance

Approach #3: Modernizing for scalability[5]

Unlike the first two approaches, businesses that were founded in the early 90s or later generally have infrastructure based on X86 server technology, and have different perspectives on modernization. Generally, these businesses think about modernization in terms of APIs, changes in industry standards, and scalability.

For the Silicon Valley and eCommerce giants, modernization concerns center on the ability to scale up as consumers demand better user experiences across continents, across platforms, and over time. Technology isn't a direct concern for these companies, but as they compete with one another, risk of inoperability and obsolescence become a major threat. "Staying current" is a constant process as

they adapt to new and evolving standards, global trends, and changing business models. For these companies, there are no cut-and-dry solutions when it comes to modernization.

FACT:
Every second, 1.1 million high-volume customer transactions occur on mainframes. To put this in perspective, Google experiences almost 60,000 searches per second.
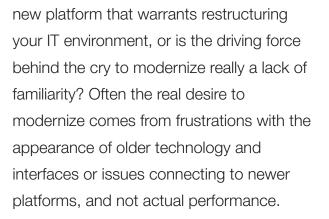
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Points to consider when thinking about modernization

1. What is the potential disruption to your business? When planning a modernization project, ask yourself a few questions. How much time will it take to implement? How long to return to peak performance? How will it affect employees—will there be a need to reduce or increase headcount? How long will it take to reach positive ROI?

Disruption can encompass not just the technology processes, but the culture of your company. When considering any modernization fallout, ask yourself what the worst and best-case scenarios might be, and whether the risk is acceptable.

2. What is the real driver to modernize?[6] Are you trying to improve user experiences, or harness (truly) new technology? Is there some specific feature only available on a

new platform that warrants restructuring your IT environment, or is the driving force behind the cry to modernize really a lack of familiarity? Often the real desire to modernize comes from frustrations with the appearance of older technology and interfaces or issues connecting to newer platforms, and not actual performance.

3. Who is affected? It's important to remember that it won't be just the IT department that feels the effects of modernization. Be sure you thoroughly understand how all areas of your workforce will be affected, even if they aren't working with IT infrastructure directly.

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- Most directly impacted will, of course, be the IT department—they will be tasked with the implementation of whatever modernization solution you select. It's important that they're well versed on the technology, and are confident enough to implement it error-free. IT staff will be impacted not just during installation, but ultimately they will be the ones working full-time with the new solution.

- The sales and ecommerce departments will also feel the effects of modernization, and without a measurable increase in sales revenue, there is quite literally no point to making any business decision. How your sales organization is impacted by modernizing is the most important consideration second only to the IT department. If back-end systems go down, what is the likelihood of revenue loss? Are the losses manageable, or unacceptable?

- Marketing, too, needs to be considered. If a modernization product goes wrong, marketing may lose years of the customer data they rely on for planning new products, organizing marketing campaigns, and a maintaining the public voice of the company.

- And not to sound like Chicken Little, but it's no exaggeration that rare, business-critical effects may occur and be felt at the highest levels of management. Imagine the impact of a total system failure resulting in a blackout for customers. C-level executive concerns include not only revenue, but reputational issues that can affect both brand equity and changes in stock price. Before embarking on any modernization venture, become fully versed on the possible challenges (even the extremely unlikely ones,) and conduct a risk assessment.

FACT:
62% of data center organizations recognize that they will have a skills shortage within the next five years.

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4. What is your contingency plan if something goes wrong? Will you be able to immediately switch back to your older systems? Who can you contact if you need help during the process? Do your experts actually know what they're doing and have the experience to back it up?

We can help you on your modernization journey

If you're thinking about kicking off a modernization project and need help deciding which option is right for you, get in touch with the experts at Rocket Software. We'll talk about your goals, help assess your needs, and recommend the best solutions to help you get started on your digital transformation journey. For more information on how we can help you modernize, contact us at 1 877 577 4323.

FACT:

More than 70% of global Fortune 500 companies use the mainframe to run their core business functions.

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FOOTNOTES:

1. Hildebrand, J. D. Mainframes at 50: Where is the Industry Going? (2014, August 5). Retrieved from http://blog.syncsort.com/2014/08/mainframe/mainframes-50-industry-going/

2. Smith, B. (2014, December 12). How Do Banks Maintain Financial Data? Mainframes. Retrieved from http://www.banktech.com/infrastructure/how-do-banks-maintain-financial-data-mainframes/a/d-id/1318116

3. Vanson Bourne. (2014). The challenges of using mainframes: Racepoint Micro Focus Mainframe research results (pp. 1-22, Rep.). Vanson Bourne. https://dl.microfocus.com/_ex/External/Mainframe/Racepoint-Micro-Focus-mainframes-commentary-presentation.pdf
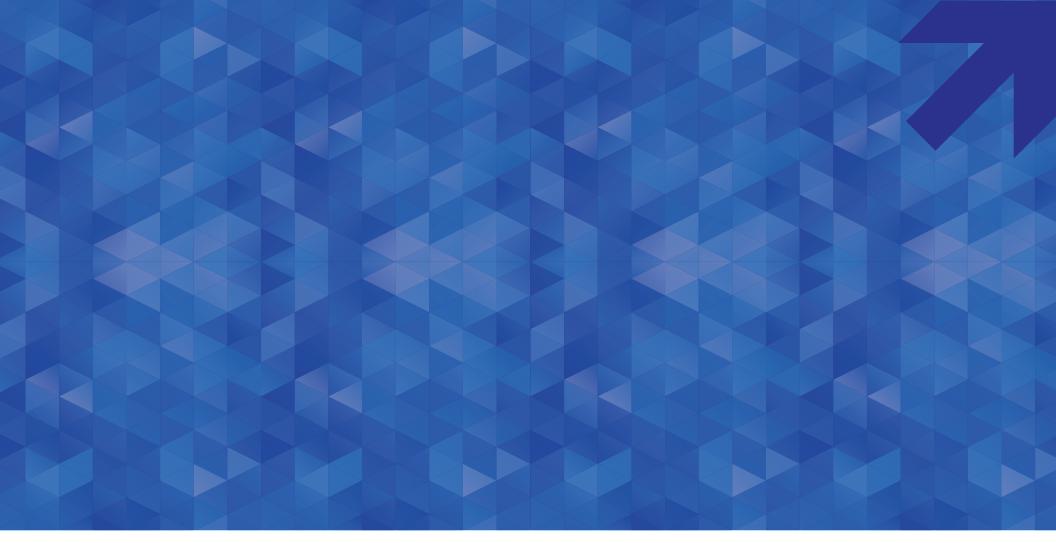
4. Farmer, E., & Casile, M. (2014). Mainframe Modernization and Skills: The Myth and the Reality (pp. 1-6, Rep.). IBM Redbooks. http://www.redbooks.ibm.com/redpapers/pdfs/redp5115.pdf

5. Lamb, R. (2014, March 24). Mainframe at 50: Why the mainframe keeps on going [Interview by C. Saran]. Retrieved from http://www.computerweekly.com/video/Mainframe-at-50-Why-the-mainframe-keeps-on-going

6. Sun, J. L. (2013, May 7). Don't Believe the Myth-information about the Mainframe: Part 1. Retrieved February 14, 2017, from http://www.share.org/p/bl/et/blogid=2&blogaid=234

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Rocket Software (www.rocketsoftware.com) is a technology company that helps organizations in the IBM ecosystem build solutions that meet today's needs while extending the value of their technology investments for the future. Thousands of companies depend on Rocket to solve their most challenging business problems by helping them run their existing infrastructure and data, as well as extend those assets to take advantage of cloud, mobile, analytics, and other future innovations. Founded in 1990, Rocket is based in Waltham, Massachusetts with locations in Europe, Asia, and Australia.

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