The Ultimate Guide to Modernizing Your Mainframe and Legacy Apps
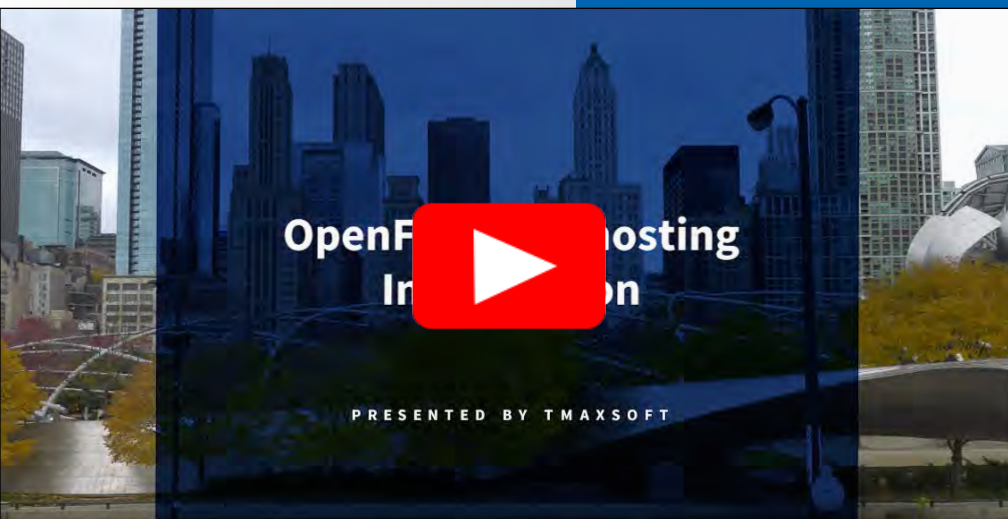
TmaxSoft

WHAT'S INSIDE*:

Featured eBook: Lift, Shift and Modernize: Proven Mainframe Modernization Strategies that Enable Digital Transformation

Article: The 3 Paths to Mainframe Modernization Through Rehosting

Article: 5 Reasons to Rehost Your Mainframe

Case Study: SC Data Center, Inc., an affiliate of Colony Brands, increases innovation, business agility and ROI with OpenFrame

*follow links to navigate kit contents

PLUS: An Introduction to OpenFrame video that walks you through the concept of rehosting and explains why OpenFrame is the best mainframe modernization choice for your organization.

Lift, shift and modernize:
proven mainframe
modernization strategies
that enable digital
transformation

The business case for OpenFrame

TmaxSoft

OpenFrame from TmaxSoft is the most complete mainframe rehosting solution in the market.

It enables you to move mainframe workloads to open system environments, with little or no change to existing legacy program business logic. You save on costly mainframe contracts, more effectively leverage critical data, and gain a more flexible, modern and transparent environment.

**Accelerate your IT transformation with OpenFrame.**

The case for change

For decades, most large-scale companies have used mainframes to host and run the software applications that make up their legacy systems. Often these mainframe computers and their applications are inherited from mergers and acquisitions, or from deferred IT investments. Today, it is estimated that more than half of core business processes may still run on a mainframe system. But maintaining and relying on these often-antiquated applications pose cost and modernization challenges.

Organizations are torn between the need to manage costs while maximizing the value of their mainframe. This leads them to ask, "If our system is not broken, why fix it?" But these companies are finding the status quo increasingly challenging to maintain, and are merely putting off the inevitable. Failure to modernize an obsolete system becomes an increasing liability over time, leading to ever-escalating costs and the inability to take advantage of newer technologies. This puts an organization at a competitive disadvantage—a disadvantage that will only continue to grow.
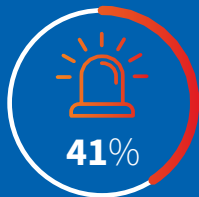
Digital transformation facts

The time is now to digitally transform your mainframe applications and stay ahead of the competition.
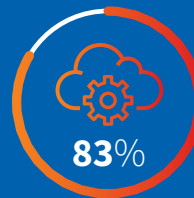
$140 Billion
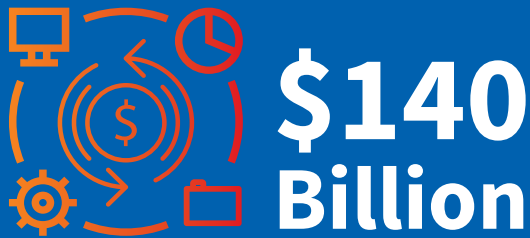
Estimated costs to the U.S. and U.K. economies based on outdated IT systems, and of which mainframes are the biggest component.

Source: Data Economy

83% Enterprise workloads that will be in the cloud by 2020.
Source: Forbes

More than **50%** Global enterprises already using the cloud in some capacity that plan to adopt an all-in cloud strategy by 2021.
Source: Gartner

90% Businesses using a mainframe that struggle to deliver applications as quickly as they're required.
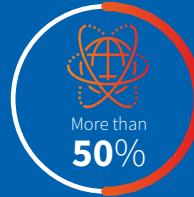Source: Forrester

41% Businesses with mainframe systems that cite the need to regularly work around their limitations, incurring higher costs, duplicate tooling and increased security risks.
Source: Forrester

45% Organizations that list "application modernization of installed on-premises core enterprise applications" in their top five IT project priorities.
Source: Gartner

What is OpenFrame?

Rewriting applications can not only be costly but risky—redevelopment of code that has been optimized for older hardware can introduce bugs and inconsistencies. New applications may demand steep learning curves that can be time-consuming to master.

But OpenFrame is, as the name implies, open. This rehosting solution is not limited by code or vendor, application or language. It doesn't jeopardize data or demand new training or the learning of new tools. Instead, OpenFrame reuses configurations, recompiles applications and migrates and modernizes data, including batch systems, online systems and security systems, without any change to the business logic. Because applications are not being rewritten, there is no change in interface or function.

It's simple. By lifting and shifting existing applications, there is no change to the end-user experience. Everything functions as it did before, but in an open, distributed environment.

It's reliable. With no change to the business logic, OpenFrame eliminates the primary risks involved in recoding.

It improves performance. Rehosted applications often see improvements in performance with less space, power and cooling requirements.

It's secure. Mainframe application security levels remain in place and can even be enhanced.

It saves you money. An open environment means reduced licensing costs, less expensive equipment upgrades, more vendor choice and more affordable support services.

It's scalable. Mainframe systems are limited in scalability due to tightly coupled architecture (UI, application, data). OpenFrame has no such limitations.

OpenFrame rehosting vs. rewriting or upgrading

Upgrading

Merely adding system hardware or upgrading to a higher-capacity mainframe may seem like an attractive option. This will boost capacity and possibly performance, but it will also increase maintenance and licensing costs. It also fails to solve the bigger issues of inflexibility, diminishing the ability to modernize. This is not a long-term solution at all.

Rewriting

Moving mainframe applications through a complete code conversion to an open, cloud environment may be considered a wise, forward-thinking choice by many. But rewriting a business application necessitates proper interpretation of existing application logic (business processes) and rewriting them in a new code base. Differences in hardware and operating systems can create a number of challenges and obstacles. As a result, full-scale rewriting of the application source code can take years, and then extensive and lengthy user testing will still be necessary. The chances of extensive delays, data loss, cost overruns or errors are high.

Rehosting

OpenFrame rehosting, on the other hand, delivers the benefits of rewriting but for substantially less money and time, and without the high risk of business logic errors. OpenFrame provides a set of proven and established tools that recompile mainframe applications and migrate data. Your applications will work just as they always have, but in an open, distributed environment. The end result of this innovative solution is complete data modernization but with no change in user functionality, no change in business logic and no need for user training. Your systems can now adapt quickly to evolving customer and employee demands including instantaneous, highly personalized experiences like those from mobile devices.

Digital transformation strategies: reduce, re-platform, replace

When it comes to OpenFrame, modernizing the mainframe does not have to be an "all or nothing" strategy. OpenFrame allows for multiple approaches to support your IT transformation goals, including:

Reducing mainframe costs (MIPS reduction)

A mainframe consumes an extraordinary amount of processing power, and this can lead to substantial and continually increasing operating costs such as usage-based fees from 3rd party software licensing. To avoid these escalating costs, an organization can reduce its MIPS (a measurement of CPU resource consumption) by shifting certain legacy applications from the mainframe to the cloud or a modern on-premise environment. These actions may not only decrease MIPS-related costs, but also improve mainframe performance and modernize high usage applications.

WHY REDUCE?

Some of your applications or programs are using an abundance of MIPS, resulting in continually high and increasing costs plus system inefficiencies, especially during high peak usage. Your batch programs, for example, are often resource-intensive and can be lifted from the mainframe to reduce its burden.

Re-platforming legacy apps

Some applications on the mainframe may be 20 years old or older, and the original owners or details of these apps may be unknown. These outdated applications may be infrequently used but are still a drag on mainframe performance, and supporting them can be costly. Re-platforming them to a less expensive, open system environment improves mainframe performance until these outdated applications can be replaced with newer, better options.

WHY RE-PLATFORM?

Some of your mainframe leases are expiring, but some of the applications are not used frequently enough to rewrite. These apps can be archived in OpenFrame to increase mainframe efficiency until better, more cost-effective options are found.

Replacing the mainframe

Decades-old legacy systems can hinder your organization's ability to compete with nimbler companies that take advantage of more modern systems and processes. Your company can keep patching, fixing and working around limitations. Or, the best solution may be phasing out the mainframe completely by lifting and shifting all the applications residing in a single mainframe box to the OpenFrame environment. As a result, the full value of mainframe apps can be unlocked and exposed to mobile and digital applications.

WHY REPLACE?

Your costs are growing out of control and the inability to modernize your system is troubling. Replacing your mainframe allows you to use your mainframe legacy applications but for far less than mainframe maintenance prices. You are also well-positioned for future scalability. Mainframe replacement could align with a lease renewal or a general modernization project.

What are the risks of doing nothing?

You can likely expect the expense of digital services to increase significantly over the next few years, but those costs can be greatly softened by addressing mainframe limitations now.

If you still rely on your mainframe, you need to ask these six crucial questions:

1. How much of my budget is tied up in maintaining an older mainframe instead of being used on innovation and differentiation?

2. Is any of the software on my mainframe authored by a company no longer in existence?

3. What is the true cost of maintaining my existing mainframe in terms of purchase, install, cooling, power and support?

4. Can I modernize my existing mainframe to meet newer needs like those of mobile users?

5. Is the data in my mainframe available to my distributed applications economically?

6. How well are my mainframe systems documented? Are there personnel with the knowledge and skill set to adequately support and maintain our mainframe in the future?

How OpenFrame works

OpenFrame provides all the technology required to implement a multi-tiered technology stack. Once completed, OpenFrame has the ability to allow you to integrate applications and data more easily with the rehosted applications. Existing distributed applications including data analytics tools can more easily be integrated. Mobile support and access can be enabled. Security is also enhanced because the existing mainframe security is retained, and additional security provided by modern SQL databases (Tibero) can now be employed.

TmaxSoft has successfully provided mainframe migrations across a myriad of industries. Typically, after a detailed assessment of the source system and anomalies are identified and addressed, the mainframe workload is rehosted, breaking free from their previously outdated mainframe environment. Rehosting also unlocks the value of mainframe apps by exposing them to web services for mobile and digital applications. Because the operating systems are open with multiple database and utilities options, they integrate well with the newer technology required.

OpenFrame step-by-step

STEP 1
Begin discovery phase
Analyze current mainframe hardware and software environment.

STEP 2
On-site workshop
Gather insights into high-level application architecture, use cases and data flow.

STEP 3
Detailed assessment
Analyze the process, provide recommendations and identify any potential gaps.
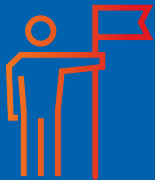
STEP 4
Technical validation
Technical validation of selected legacy applications in the OpenFrame environment.

STEP 5
Implement OpenFrame

OpenFrame at a glance

100%
Project success rate

>**100,000**
MIPS capacity

0
Change in business logic or end-user experience

6-12 months
Average time of deployment

50-75%
Reduction in annual costs

Infinite
Flexibility to meet digital transformation goals

OpenFrame delivers results

GE Capital reduced costs by 66%

GE Capital, the financial services unit of General Electric, provides commercial lending and leasing, as well as financial services to consumers. They were hindered by their inefficient mainframe environment. What had started as a homegrown system built out of necessity had expanded to become the central nervous system of both GE Capital's direct and indirect business units. But the aging hardware demanded high maintenance and procurement costs, and its excessive complexity slowed GE Capital's ability to innovate.

Using such a legacy system was also risky. Their system processed five million account schedules, 382 interfaces, 1,700 concurrent users and 3.5 million transactions per day. If the system went down, so would their business.

GE Capital selected TmaxSoft to deliver the solution. They wanted to move fast, so testing was implemented almost immediately. Says Marc Rubel, the Executive Director of Application Development at GE Capital, "We spent a very little amount of time and money. And we completed a proof of concept within a month."

GE was certain they had made the right choice. So, TmaxSoft got right to work moving GE Capital's legacy applications to OpenFrame. The modernization of their system took around a year to compete, which is a fraction of the time it would have taken to move the massive 71 million lines-of-code from its ancient mainframe environment using another, and likely a substantially riskier, option. As a result, GE Capital lowered their annual maintenance costs by 66%, reduced the time it would take for the system to recover from disaster by 240% and moved to a platform that integrated with the rest of the business and supported growth and innovation.

The results included:

- Moving to a more reliable, flexible and automated platform without the need to redevelop or modify applications

- Reducing 71 million lines of code to only 16 million

- Improving employee user experience and increasing agility

- Establishing the foundation for building the next generation portfolio management system

How long does it take to deploy OpenFrame?

Unlike recoding, which can take years, OpenFrame can often be completed in 6-12 months, depending on the size and complexity of the existing system.

Industry	Mainframe Environment	TCO Savings	Project Duration (including testing)
Insurance	CICS, COBOL, PL/I, DB2, JES, 7500 MIPS	$30M savings over four years	12 Months
Insurance	CICS, DB2, JES, 2300 MIPS	$35M savings over four years	11 Months
Securities	IDMS, DC/DB, COBOL, 970 MIPS	66% annual TCO reduction	18 Months
Securities	CICS, PL/I, JES, IMS, DB, VSAM, 163 MIPS	50% cost reduction	9 Months
Manufacturing	IMS-DB/DC, PL/I, 250 MIPS	83% cost reduction	12 Months
Retail	IMS-DB/DC, COBOL, Quikjob, Assembler, VSAM, 200 MIPS	50% reduction in TCO within 48 months	12 Months

The unlimited scalability of OpenFrame

As demand and MIPS increase, mainframes are ill-equipped to scale up easily or affordably. More equipment, more costs and more fragmentation are likely the result.

OpenFrame, however, has no limitations on size, or costly capital expenditures associated with that scalability. Agile and flexible, it provides both horizontal and vertical expansion that can be dynamically invoked as needed. OpenFrame is comprised of multiple nodes linked together. So in high load situations, more nodes can simply be added. OpenFrame has powerful balancing features that distribute transaction requests among the nodes to ensure a continuous, full and efficient use of system resources.

OpenFrame post-migration tools

OpenFrame includes a comprehensive and robust set of developer tools, such as OFStudio, to develop, control, manage and debug applications. Minimal developer training is needed. OFManager provides a set of online tools to monitor and manage your batch and online workloads as well as your security environment.

End-users will see a familiar interface that is now additionally accessible via web browser technology. No productivity is lost through retraining or relearning a new workflow. In fact, with a higher resolution view, the end-user experience is improved.

OpenFrame supports the following platforms:

Platform Options	CLOUD	ON PREMISE
vmware	✓	✓
docker	✓	✓
Linux	✓	✓
amazon web services	✓	
Microsoft Azure	✓	
Google Cloud	✓	

Case closed: OpenFrame

Companies that choose to ignore mainframe modernization will continue to experience higher costs and may be unable to innovate quickly.

But while organizations have numerous mainframe modernization strategy options, only OpenFrame consistently delivers the advantages of reduced costs and labor, eliminating full-scale system retraining and providing the freedom to reduce, re-platform or replace. With OpenFrame, companies can not only modernize their environment today, but are poised to keep pace with the innovation demands of tomorrow.

OpenFrame delivers multiple ways to achieve mainframe transformation and freedom.
To learn more about how TmaxSoft can help you modernize your legacy systems, please contact us to schedule a discussion and demo.

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The 3 paths to mainframe modernization through rehosting

How can your organization reliably extend the ROI of its IT systems? Of the options available, modernizing your mainframe, which also improves strategic services in marketing, finance, sales and other areas of the enterprise, is the most dependable. It can quickly pay off with cost savings and greater flexibility and adaptability to quickly changing demands from employees and customers who expect instantaneous, highly personalized experiences similar to those on their mobile devices.

By contrast, rehosting moves existing mainframe applications unchanged to a modern open system, such as an x86 environment on premises or in the cloud.

The adoption of mainframe modernization as an approach for updating decades-old legacy systems and applications is growing. In fact, BMC reports that more than two-thirds of mainframe-driven enterprises either are using or are in the process of starting to use modernization to increase capacity to support modern demands. It is seen as a statistically lower risk option compared with ripping the system out and starting all over again.

Why are so many organizations embracing modernization? For one, modernization builds on the value a system already provides—often a heritage of functionality that has lasted for decades and possibly differentiates you from competitors—

protects it, and maintains it for the future. Also, reusing IT applications to support a digital strategy rather than replacing core systems reduces the effort involved and the expense. And, finally, mainframe modernization allows enterprises to take advantage of new, flexible technology such as reusable components, microservices, and containers that can improve strategic services in all areas of the business.

Mainframe modernization through rehosting moves existing mainframe applications unchanged to a modern open system, such as an x86 environment on premises or in the cloud. Three paths exist for enterprises embarking on this journey, depending on the maturity level they plan to reach: reducing MIPS, retiring legacy orphan apps and replacing the mainframe. This brief describes each and explains the benefits so you can discover which path is best for your business and IT organization.

1

Reducing MIPS

A unit of computing speed equivalent to a million instructions per second, MIPS is a measurement of CPU resource consumption most often associated with batch processing and online transaction processing. When you consider how long your mainframe and its applications have been running, it is highly likely that your MIPS measure in the thousands and perhaps in the tens of thousands. Think of the processing power used, the effect thousands of MIPS have on performance and the operational costs they incur.

A 2015 Science of Computer Programming article reported that the amount of MIPS used by the average IT organization is rising significantly, and most large organizations should expect an annual increase of up to 20%. The financial effects are staggering. Each additional MIPS costs $3,285. So, if a company running 5,000 MIPS has an increase of just 10%, the incremental cost will be well over $1.3 million a year.

So, what is to be done? The obvious answer is to reduce MIPS, and this is the first path to mainframe modernization through rehosting. Organizations can drastically reduce MIPS consumption by identifying high consumption workloads in their existing environments and offloading these workloads onto less costly open systems—or the cloud. For example, a Korean insurance agency saw a substantial improvement in performance and reduction in costs and MIPS when it moved 4,000 batch programs and 3,000 online programs from its mainframe to a UNIX server.

If your enterprise chooses this path, it becomes proactive, able to identify and address problems before they happen. By re-platforming your high MIPS consuming workloads, you can reuse the original business logic and other assets from your current mainframe system. The outcome is a functionally equivalent operating environment that decreases total cost of ownership and adds flexibility to infrastructure and underlying software. In addition, the mainframe can better function in today's modernized IT world.

2

Retiring orphaned apps

Although some of the systems and applications on your mainframe have been developed in the last few years, the majority can be as much as 20 years old—or even older. Among these are "orphaned apps," whose original owners and operating details might not be known. They also are likely to rely on old, outdated infrastructure that has since outlived its original vendor support contract. Such apps are often based on old database software, an old operating system or an outdated product or platform that is no longer available. In some cases, mergers and acquisitions have subsumed the original vendors or they have gone out of business.

With orphaned apps, organizations are on borrowed time. These outdated components can become a major drag on the overall performance of your mainframe and affect the ROI of any major IT upgrade. Supporting them is difficult, costly and risky because it is likely that those with the expertise to do so are dwindling in number or are long since gone. *(cont.)*

(cont.) Also, a once-useful orphaned application may now run in the background and traverse multiple servers and therefore be overlooked as a source of performance or cost issues or even problematic in an infrastructure upgrade.

The second path to mainframe modernization through rehosting enables you to migrate the orphaned apps to a new open platform cost-effectively. You can continue taking advantage of the orphaned apps' unique functionality not found in commercial packages and without trying to force it into an existing product. The process of moving many of these applications is fairly straightforward. Automated tools convert the applications, and the data structures are mirrored onto a UNIX-based, x86 or cloud platform. The programs are then compiled, the sequential files are translated, and a new environment is installed and configured. Your mainframe is freed from the burden of running these apps, and they get a new lease on life.

The ROI of this method is remarkable. Organizations that have taken this path have seen a reduction in run costs—as much as a 78%—in the size of the application footprint. In the case of a global financial services company, 71 million lines of code was reduced to 16 million lines. In addition, when you migrate orphan apps off the mainframe, you are better able to support the future growth and innovation of your enterprise.

3

Replacing the mainframe

Sometimes an organization's mainframe has been around for so long that its apps and systems are draining resources and slowing software and application performance. The IT teams know that inaction could leave them vulnerable to more nimble competitors with modern systems and processes. Yet, the MIPS, the leftover applications, the custom programming, the patches, and the fixes have created a convoluted infrastructure that is difficult to untangle so that parts can be moved off the mainframe to open systems. Meanwhile, costs are rising, and the threat of possible extended downtime is looming.

The options at this point are to rewrite the applications on the mainframe, keep patching and fixing while incrementally updating what you can, or the third path: replacement. Since we stated clearly that mainframe modernization through rehosting was an alternative to ripping out and replacing a mainframe, this path might seem confusing. However, this replacement is not about investing in a new mainframe and rewriting applications for it.

This final path of mainframe modernization through rehosting moves the mainframe as-is to an open system where it provides services equivalent to those of the mainframe. There are no changes to the underlying business logic or user interface. There is no negative impact on the enterprise, and it requires minimal training.

Like the other two modernization paths, replacing the mainframe ends the frustration of slow or no response. *(cont.)*

(cont.) It delivers a secure, high-performance and flexible environment that dynamically scales based on business demand so that your end users experience maximum service and reliability even during peak processing. In the case of a multi-billion-dollar Korean financial services firm, for example, their re-hosted solution provided a modern infrastructure that uses UNIX servers to ensure better performance and reliability than the mainframe it replaced. Administration tools and enhanced system integration functions simplify the operation and management of the system.

Mainframe modernization through rehosting can even transform user experiences and unlock the value of your mainframe apps by exposing those apps to web services for mobile and digital applications. Because the operating systems are open with multiple database and utilities options, they integrate well with the newer technology required.

Choosing your path

Now that you know the three paths to mainframe modernization through rehosting, you might be wondering which is right for you. The answer depends on your apps, your systems, your infrastructure and your mainframe. For some enterprises, reduction in MIPS by offloading them brings needed relief and the flexibility to modernize applications and systems. For others, when leftover applications that have lost their owners and their support are moved off the mainframe onto an open system, performance improves and costs savings are realized. And finally, replacing your mainframe through rehosting may be the best path for you in order to move the mainframe as-is to open systems to prevent lengthy downtimes which keeps your business reputation intact and provides the flexibility needed for modern apps and technology.

5 reasons to rehost your mainframe

How well does your mainframe meet increasing and ever-changing demands for new business applications and processes, digital transformation, innovation and reduced costs?

Your mainframe has supported the major events in your enterprise for years. However, maintaining, fixing and patching it to meet today's agile workload demands can quickly drain your core business systems and resources while having a major impact on software and application performance. You know you need to do something, because doing nothing will leave you vulnerable to more nimble competitors with modern systems and processes.

Several solutions to these issues are available: incremental replacement, a new front-end (user interface), a complete rewrite and rehosting. The front-end and replacement options simply prolong the life of your mainframe without addressing business challenges. Eventually, there will be a return to square one as snazzy-looking user interfaces churn away but don't deliver data. You also risk a disconnect between the replaced components and those that haven't been updated.

That leaves the options of rewriting or rehosting. Rewriting is doable, but it's a full-scale reengineering effort that includes rearchitecting for database and application tiers. By contrast, rehosting moves existing mainframe applications unchanged to a modern open system, such as an x86 environment on premises or in the cloud.

TmaxSoft

1

Rehosting your mainframe is fast and practically risk-free

A quick search of "mainframe rewrite risks" results in numerous articles that say that it's the riskiest solution. Developed business logic needs to be completely redeveloped and databases need to be translated, so that increases the margin for error, not to mention the need for testing. All of that involves a significant amount of programming resources and effort, and it can take years. There will be business disruption and issues with the mainframe during the rewrite process. If a mainframe has been in operation for a quarter of a century or more (and most have), an overhaul of this magnitude can have a major negative impact on the business, and there is no assurance that the rewrite will even be successful.

Rehosting is much less risky than rewriting. The process simply moves the mainframe as-is to open systems where it provides services equivalent to those of the mainframe. Less time is lost, because the process can take as little as nine months instead of three to five years. More importantly, there are no changes to the underlying business logic or user interface and no negative impact on the enterprise. It requires minimal training, and the system operates exactly the same.

For example, Kela, a European government agency, reports that rehosting its mainframe had no negative impacts on its business. This was critical to Kela because its Customer Information Control System programs process high volumes of online transactions. Moving smoothly into the new environment meant that citizens could continue to access Kela's web services and their benefits.

2

Rehosting your mainframe helps fund innovation by dramatically reducing costs

A mainframe rewrite is expensive on so many levels (infrastructure, resources, time, effort and spend) and is not guaranteed to lower costs over the long term. It's estimated that the expenses of maintaining a mainframe can run in the millions annually for large firms, and that's before factoring in the costs of redeveloping, rearchitecting, translating, testing and so on. For example, 10 years ago, according to Capers Jones, the cost of rewriting just one mainframe program could be as high as $495,000. Basically, massive investment is going into maintaining and rewriting. Little is left over for innovation.

Rehosting, on the other hand, has been proven to dramatically reduce infrastructure and operating costs. These funds then can be reallocated to innovation, such as gradually rewriting legacy apps so they are more flexible, reusable and able to deliver new ways of exploiting data. GE Capital is an excellent example. After it rehosted its mainframe environment, the costs of running its portfolio management system fell by 66%. However, GE Capital's Executive Director of Application Management says the biggest benefit of moving to a platform that integrated easily with the rest of the business was the innovation it enabled. In addition, Markku Suominen, ICT Director of Kela, says that when their rehosting is complete, "This will take our costs down considerably, from around €8 million a year today to €2 million. That enables us to take some of that money that we save, to make it into the change budget."

3

Rehosting your mainframe opens the door to modernization

Investment in maintaining legacy UNIX, mainframes and other proprietary systems is at historically low levels. Quite frankly, they are just not in high demand. And companies looking over their balance sheets and trying to reduce capital expenditures are not willing to invest in new ones or major upgrades. One of the main reasons for this, besides cost, is that their proprietary architecture and infrastructure are not designed for all the business changes brought about by big data, IoT, streaming, artificial intelligence, voice recognition and the cloud.

By contrast, rehosting allows for a fast, flexible foundation for quickly responding to market change and future integration requirements. Open operating systems with multiple database and utilities options offer more opportunities for modernizing your legacy software because they can integrate with newer technology. Organizations can quickly take advantage of new, flexible technology such as reusable components, microservices and containers that can improve strategic services across all areas of the business. The mainframe gets a new lease on life, and companies, customers and employees can benefit from up-to-date, nimble and responsive applications.

GE Capital is one company that benefited. "Our platform now supports all the growth and innovation that the rest of our business wants. All the new applications can move forward with what they want to do, now that we are in a relational database. I can make that data available and I can make it SOA enabled," says Mark Rubel, Executive Director, Application Development.

4

You can rehost your mainframe with the resources and skills you currently have

A mainframe rewrite or reengineering project is likely to require additional resources who are skilled in the modern languages, technology and coding required to meet the demands of a disruptive business landscape. The process requires replacing hundreds of complex COBOL or PL/I applications, each of which can be 20,000 lines of code long, with applications written in languages like Java, Ruby, PHP and a host of new technology for mobile. And that's just the source code portion; there will be rearchitecting, database work and more. Because businesses who rely on mainframes have COBOL and other experts in IT, the overhead for the project can get out of control as the different groups work to make the rewrite happen—all with no guarantees of success.

With rehosting, IT departments can take advantage of their existing skilled mainframe resources as well as those of open systems and modern technology teams. In fact, Kela reported that they were able to rehost their mainframe without adding even one additional resource. Eventually, business needs for more modern applications will require the services of developers versed in the technology needed to deliver them, but you can integrate them into your teams over time and put their skills to much better use than rewriting source code.

5

Great performance and reliability enable users to get the best experience

Customers and employees expect a super-fast, highly personalized experience that resembles what they get on their mobile devices. But, stopgap maintenance measures, workarounds, patches and the spaghetti architecture associated with an aging mainframe affect processing and performance. No matter how available the mainframe and systems are, when data is inaccessible or it takes a long time, frustration levels rise.

Rehosting ends the frustration of slow or no response. It delivers a secure, high-performance, and flexible environment that dynamically scales based on business demand so that your end users experience maximum service and reliability even during peak processing. Rehosting can even transform user experiences and unlock the value of your mainframe apps by exposing those apps to web services for mobile and digital applications.

Samsung Insurance, for example, says that since they rehosted their mainframe, online response time improved an average of one second, and application error rates dropped significantly. In the event of a system failure, database recovery can be completed within two hours. Overall system security improved with the implementation of a standard Public Key Infrastructure (PKI) system.

SC Data Center, Inc., an affiliate of Colony Brands, increases innovation, business agility and ROI with OpenFrame

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SC data center

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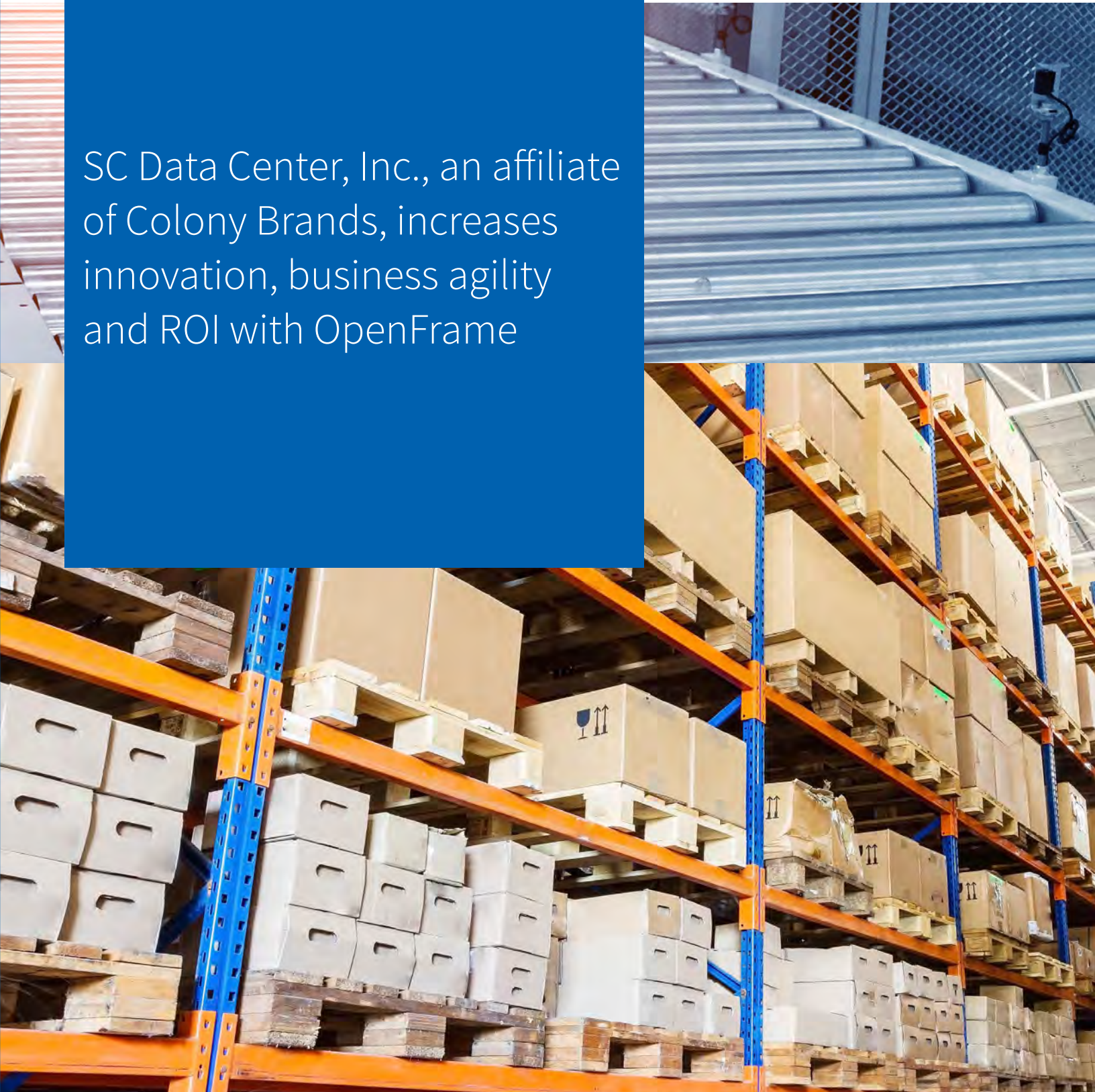
The Swiss Colony, Montgomery Ward, Seventh Avenue—these famous catalog brands are part of the 25 companies that make up Colony Brands and Affiliates. The company got its start selling cheese and other grocery items, but it has since grown tremendously and expanded to include several operational support companies and a portfolio of affiliate businesses.

Colony Brands is perhaps best known for offering a wide array of products through its direct mail catalogs, such as apparel, shoes, home décor and furnishings, outdoor, health and beauty, electronics, toys, and food and gifts. Direct mail and online orders generate 94% of its sales, which is due, in part, to offering instant and other credit options to their customers.

Retail

CHALLENGES

- Closed mainframe environment that prevented innovation and efficiency
- Legacy apps that were affecting performance
- High infrastructure and mainframe costs
- Reliability and availability concerns

TMAXSOFT SOLUTION

OpenFrame

Tibero

RESULTS

- 75% annual cost reduction
- Increase in ROI compared to mainframe
- Matched the historic performance delivered with the mainframe technology
- High availability and reliability

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The challenge

SC Data Center, Inc., an affiliate of Colony Brands, had six core business systems (700 MIPS) housed on an IBM mainframe. This closed environment was preventing the client from meeting the performance expectations of increasingly tech and mobile savvy consumers. The mainframe was also preventing the company from being nimble and responsive to market changes and customer demands. SC Data Center, Inc. wanted to be able to innovate and decided that a move to the cloud would be their best option. Moving to the cloud would also eliminate high mainframe and infrastructure costs. The long-term goal was to shut down the mainframe completely.

After weighing several options, including application rewriting, SC Data Center, Inc. decided that rehosting their mainframe was the best choice. It would allow them to move legacy apps to the cloud without a major rewrite that could affect business logic and code. It would set them up to re-architect and create new apps in the new cloud environment for the future. The company also needed reliability and availability for all the processing, especially the real-time credit approvals.

The solution

SC Data Center, Inc. chose TmaxSoft OpenFrame to rehost their mainframe. A deciding factor in their choice of OpenFrame was the Active-Active Cluster, which provided the reliability and availability SC Data Center, Inc. needs to deliver efficiency, performance and speed. Another factor in the company's decision was the OpenFrame business model.

The project scope for rehosting with OpenFrame involved moving all of the client's legacy applications to the AWS cloud. This included interpreting the mainframe's 3,685 COBOL applications and the 327 mainframe assembler programs, migrating the mainframe's 867 middleware and on-premises CICS transactions and 5,766 batch processes, modernizing 4,741 datasets and 400 datacom tables and installing OpenFrame operation and management functions in the new environment. One of the key applications that was required to move forward with the rehosting project was a packaged manufacturing suite. TmaxSoft teamed up with the customer and vendor and enabled the Assembler-based proprietary software to run flawlessly in production.

As a result of the project, all of the client's legacy apps are now on the AWS cloud. SC Data Center, Inc. reports an annual cost reduction of approximately 75%. Performance matched the expectations across their business operations, including for the online, real-time systems and the web service transactions. OpenFrame on the AWS cloud platform also provides high availability and reliability so that an interruption in the cloud does not affect online processing.

Most importantly, SC Data Center, Inc. now has the infrastructure for innovation and business agility. After the rehosting, the company's developers were able to build a fully integrated automation solution to streamline customer data management, achieving in days what had not been able to accomplish in the past. Future plans include making OpenFrame a hub of the company's technology infrastructure.

Rehosting legacy applications has helped SC Data Center, Inc. significantly reduce its dependence on the mainframe, gain the agility and efficiency needed to innovate, get its costs under control and improve application performance. Thanks to OpenFrame, this customer is seeing significant ROI.

"The operational cost improvements realized with TmaxSoft OpenFrame and the AWS cloud platform are remarkable. Our legacy environment now scales dynamically and economically."
- **Steve Cretney, VP/CITO, SC Data Center, Inc., an affiliate of Colony Brands**

TmaxSoft is a global software innovator focused on data management, middleware and mainframe modernization, with solutions that offer enterprise CIOs viable alternatives to support their global IT powerhouses and drive competitive advantage. TmaxSoft has based its growth on a strong foundation of research and development, along with a sustained commitment to innovation. Today, we work with over 2,000 customers around the world.

OpenFrame is a legacy rehosting solution that enables mainframe applications, resources and data to be migrated to a less expensive, high performance open system while reducing TCO, and minimizing risk of migration, all in very short timeframes.

Tibero is the best enterprise RDBMS for the Virtual Data Center. Our licensing model allows enterprises to fully maximize their virtualization investment by only licensing the cores associated to a given VM, resulting in drastically lower TCO.

TmaxSoft was founded in 1997, and today we have over 1,000 employees in 20 strategic centers around the world.

TmaxSoft

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