

Integration
Mobilization
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Migration

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Save Expense and Increase Agility for Today's Fluid Business Climate: Migrate from the Mainframe



White Paper

Executive Overview

Whether an organization has custom code dating back to the 1950s, or mainframe applications created in the current millennium, mainframe migration can have a formidable impact on the bottom line. Migration not only creates more agility, but better positions the company for profitable growth.

In the end, it comes down to these factors:

- Total cost of ownership (TCO): A distributed environment can reap substantial savings, sometimes cutting overall IT expense by more than 70%.
- Agility for future growth: Newer technologies offer more flexibility and speed to market, as well as combine mainframe and modern programming skills to work more efficiently.
- Reducing risk: With the right project assessment, structure and tools, mainframe migration can be accomplished without jeopardizing existing business logic and operational performance.

If these factors can be realized in a favorable manner, it's clear that mainframe migration offers modern organizations a scalable investment alternative to successfully meet the demands of an ever-changing business climate.

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Overcoming Mainframe Obstacles

Modern organizations require modern solutions to remain relevant, competitive and profitable. Market sentiment and consumer demand are more fluid than ever. It's those organizations that can react quickly and embrace business climate changes that will thrive in the coming decades.

Cost

Getting ahead of challenges and cost-effectively converting them to opportunities is where many businesses struggle, particularly those that are mainframe-dependent. Expanding the mainframe's capability to quickly adjust to market fluctuations is very limited. Even if technically possible, the expense can keep upgrades out of reach. For these organizations, mainframe migration is not only a practical solution for future-proofing the enterprise from technical challenges, it is a very attractive solution that can add millions to the bottom line.

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Agility

Staying competitive comes from wisely investing resources to gain the greatest return on investment. For companies that have the majority of their business-critical operations residing on a mainframe this isn't possible. In addition to the rising costs associated with the physical data center, other expenses such as the increased need for processing power, system maintenance and expensive, scarce mainframe programming skills, add to the mainframe's cost-prohibitive nature.

Risk

The shrinking talent pool of mainframe expertise is not only expensive, it should also be a grave concern and high priority. As most experienced mainframe programmers near retirement age, the loss of intellectual capital threatens to significantly impact business operations. Years of coding and interdependencies of business-critical applications only increase this risk. To mitigate future problems, companies must look to newer and more flexible technologies to remain innovative and relevant.

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Why Mainframe Migration Holds the Key to Corporate Success

The pace of modern business demands unparalleled agility for creating applications, accessing data for real-time decision-making, and speeding products to market. It's for these reasons mainframes are being increasingly outclassed by faster, agile and inexpensive distributed systems – web servers offer the same, or better, flexibility, efficiency and innovation at a fraction of the cost.

Corporations that successfully migrate mainframe applications and data to distributed systems can take advantage of cost-effective open-standards platforms that boost performance and increase productivity. In turn, they are better prepared to develop new business solutions and can respond quickly to changing markets, ultimately improving the ability to surpass competition.



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In addition, migration helps businesses overcome the burden of data and application silos often present in mainframe systems. By migrating to a more adaptable environment like the Microsoft®.NET Framework, organizations can easily share relational databases, as well as mine data and create business intelligence, fostering greater analytics with real-time response to business demands.



The Added Benefits of Embracing .NET

In regard to mainframe migration, .NET is where the 'agility rubber' meets the 'programming road.' As the business climate changes and the skills of programming resources evolve, organizations can course-adjust without disruption to operations. That's because IT can pull pieces of application functionality, originally built in legacy COBOL, and effortlessly replace it with logic developed using one of more than 40 .NET languages, including C# and VB.NET. Today's new application development talent is intimately familiar with these newer languages, bringing agility to the organization.

This means that the application code upon which operations are dependent will remain stable in the face of ever-changing business and regulatory conditions. Over any given period of time, the flexibility to leverage current .NET technologies will allow application and business processes to be in sync. This translates into operational applications ready for mobile deployment or Web service utilization, further supporting innovation and competitive advantage.

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The Advantages of Using a .NET Framework:



Increased Agility: .NET supports multiple programming languages, making it infinitely more flexible than other systems and more intuitive for IT staff to navigate.



Tighter Security Support: The .NET Framework lets developers and system administrators specify security at every level of program interaction and makes distributed computing more secure. This provides tighter overall system security and greater protection of data assets.



Faster Application Development: .NET makes it easy to design and implement flexible, scalable architectures rapidly, separating presentation and business logic where appropriate.



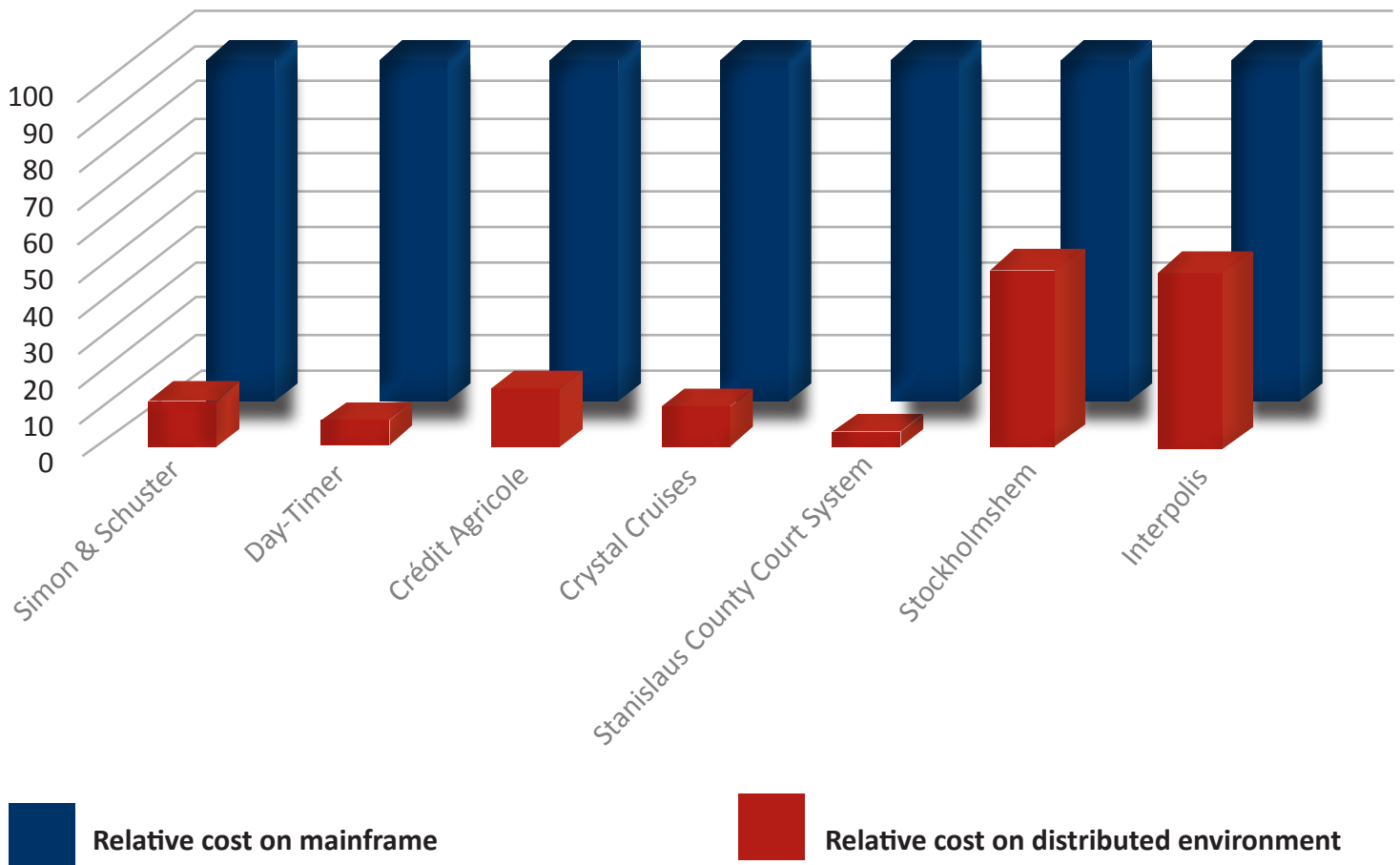
Reduced Human Resource Expense: Deploying applications in the .NET Framework is simple and straightforward, which means it doesn't require a special skill set and can make the most of limited IT resources.

The ROI of Redeployment

Redeploying mainframe assets to a .NET platform is more cost effective and has a greater degree of architectural flexibility. Maintaining the mainframe is expensive. The economics of the software itself – from software fees to the associated licensing costs, are sizeable enough to account for significant budgetary expenses. Open systems platforms offer the same, or greater, capability at a lower overall cost.



Mainframe Migration Results in a Significant ROI



For most companies, it is far more fiscally beneficial to operate an open system platform than a mainframe environment. The actual cost savings that organizations realize after migrating off the mainframe can be remarkable. In the figure above, the graph shows the savings achieved from seven actual mainframe migrations. An accumulation of the results of these seven case studies show savings that average well above 60 percent.

Overall IT Savings Contributes Directly to the Bottom Line

The direct financial benefits of mainframe migration can best be visualized in terms of overall IT annual cost savings. Below, you'll see the same organizations mentioned in the graph, detailing overall IT cost savings and annual overall savings post-migration:

Company	Savings vs. Mainframe	Overall IT Cost Savings	Annual \$ Savings
Simon & Schuster	80%	11%	Not Given
Day-Timer	93%	93%	\$677,000
Crédit Agricole	74%	74%	\$1, 365,400
Crystal Cruises	80%	60%	Not Given
Stanislaus County Court System	97%	97%	\$700,000
Stockholmshem	50%	50%	\$1,000,000
Interpolis	50%	50%	Not Given
SDC	Not Given	Not Given	\$16,000,000

Indirect Financial Benefits

After making the migration move, organizations often discover additional aspects they can take advantage of with the new operating environment. These will vary by nature, and aren't necessarily quantified in terms of dollar savings. This chart highlights some of these indirect benefits realized by organizations now on a .NET platform:

Company	Indirect Benefit	Value
Simon & Schuster	Last minute orders go out on the day they are received; Regular batch window reduced by half; No batch overruns delaying start of morning operations; trouble tickets cut by 75%.	Grateful customers. Operations reduced from 2 night shifts to 1. Smoother operations. Happier customers. More effective processes and staff.
Day-Timer	Developers respond to updates 20% to 25% faster; Implemented paperless reports.	Greater productivity leading to more market opportunities. \$22,000 per year in paper costs saved.
Crédit Agricole	Queries checking for money-laundering sped up from 5 minutes to process 3 months, to 30 seconds to process 13 months; "Development prospects multiplied," Catherine Traversier, decision-making manager.	Better service. Better use of employees' time. Greater competitiveness.
Crystal Cruises	Improved graphical navigation of systems; Generation of graphical reports; Faster generation of reports.	Improved customer service (critical to maintain first place in cruise lines).

A cost-benefit analysis (CBA) to look at migration costs can help an organization determine whether mainframe migration makes sense and whether the enterprise can save money. CBAs typically collect information that spans online programs, batch programs, BMS files, and more to complete simple calculations to assess if migration is the right move.

COBOL Code – The Heartbeat of a Mainframe Organization

It is important to take into consideration that COBOL is the main programming language of the mainframe era, dating back more than 50 years. With mainframe-supported operations, a substantial amount of their “corporate karma” resides in this COBOL code. Preserving this investment, and maintaining the integrity of the business logic embedded within, is paramount to the organization.

By migrating off the mainframe to a .NET platform, companies can leverage more current technologies and mix them with existing COBOL code to preserve and fully utilize this cornerstone of their business. The truth is, when it comes to legacy mainframe applications, most organizations have well-established, complex business rules that have been built up over a period of time. These are not prone to change, and these applications are currently not structured to be leveraged for modern services like Web and mobile.



Eliminate Mainframe Expense and Inflexibility, not Application Integrity

By moving to a new platform with Fujitsu NetCOBOL®, a business can maintain its existing COBOL applications without the risk of rewriting code. This opens the organization up to leverage new skills and technologies only possible in a .NET world. This leads to greater agility and competitive capability. Taking advantage of .NET skills is possible by virtue of the programming flexibility and simplicity of NetCOBOL's ability to maintain the business logic of legacy COBOL programs while incorporating the benefits of .NET languages. This is an important point, given that many companies are realizing that over the next five to ten years, the best skilled mainframe resources will either be retired or close to retirement.

The long-term question becomes: What should an organization do with mainframe applications in the face of this workforce challenge? Mainframe migration becomes the answer – moving applications to a platform with a larger pool of skilled programming resources. This allows an organization to take advantage of all programming talent, enabling a better use of all resources and programming skill sets.

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Insights for Meaningful Migration

It's clear that mainframe migration is beneficial. Once the decision is made to move forward on the migration path, it's important to keep in mind certain considerations:

1. There are multiple methods of successfully migrating mainframe business logic and data.

Re-hosting: This involves simply moving COBOL applications and mainframe data to a distributed system using a COBOL compiler such as Fujitsu NetCOBOL. This provides the greatest return on investment and productivity increase.

Rewriting: This involves complete recreation of mainframe applications in modern programming languages like C# or Java. This can create significant risk to operations and requires a great deal of time.

2. Whatever method is chosen, recognize that migration is a complex undertaking. Be sure to appropriately manage risk, evaluate the migration partner and the target technology – all are critical to a successful implementation.

3. Migration isn't necessarily "all or nothing." In some cases, it may be appropriate for certain applications to still reside on the host mainframe. For example, when it comes to processing large amounts of data, there might be a valid case for maintaining workload on the mainframe, or conducting a partial migration. Here, having a technology partner that can expertly advise as to best case scenarios and what makes the most business sense, is key.

4. Finally, stay focused on the end goal: in most cases that's to release the organization from the high cost of maintaining and running applications on the mainframe environment, while leveraging new technologies for more flexible business operations.

Mainframe Migration Best Practices

You get what you pay for. The IT industry is full of examples where the lowest price option for legacy migration services resulted in failed projects. Vendors often underestimate complexity and size of the system along with the technical difficulties of the migration. Sometimes they don't understand the complexity of the inter relationships between applications that are being migrated with the applications that have to remain on the host.



Whether partially or fully migrating off the mainframe, create a well-thought-out plan that supports business goals



Establish clearly defined, tangible benefits as an end goal
(Reduce MIPS – Cost Savings – Improved Agility)



To ensure success, base migration efforts on a proven application migration methodology



Conduct an analysis on the entire inventory of source code so that it accurately identifies the level of complexity across all interfaces



Ensure ample resource bandwidth to accomplish a successful migration



Give thoughtful consideration to the technology partner chosen to assist with migration

Migration Makes Sense

The pace of innovation in today's business climate demands that organizations keep up or risk becoming obsolete. For many business, that means reevaluating core operations and systems to ensure their performance exceeds expectations. Those whose corporate logic remains tied to the mainframe may find distinct value in migrating to a .NET platform, both in terms of reducing operating expenses and future-proofing their ability to remain relevant in the face of increased competition.

GT Software Can Help

GT Software can help organizations achieve cost savings and streamlined operations with the Neo Suite of migration products, which enable organizations to extend their reach beyond the mainframe and take advantage of new technologies like .NET and Microsoft® SQL.

Fujitsu NetCOBOL for .NET was the first COBOL compiler that worked with Microsoft .NET. Essentially, NetCOBOL takes the risk out of modernizing legacy applications by preserving original COBOL code. It gives organizations the ability to seamlessly interface with other .NET technologies by leveraging the .NET Framework. In addition, it is possible to interface with Microsoft development and server technologies that will support a successful migration.

Neo Suite



NetCOBOL





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For over 30 years, GT Software has helped enterprise organizations unify business information across platforms, data formats and programming languages — including the “hard to access” mainframe. More than 2,500 organizations across the globe trust GT Software to help them improve business intelligence, workforce productivity and customer experience.

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