

White Paper: Modernize Your Legacy Systems *AND* Cut Costs?

Fujitsu can support your legacy modernization efforts through a combination of applied technology and world-class services, which are backed by MacroScope®, Fujitsu's industry-leading project and software development methodology.

Time for a Status Check

Today's businesses are challenged to stay ahead of the competition – and innovations must be better, faster and more cost effective. The job of the CIO has become a balancing act, meeting the needs and expectations of the business while staying within the operating budget and avoiding the risk of failure.

If these challenges aren't testing enough, business conditions and technologies are changing quickly. Typical scenarios include:

- The business needs new features and functionality to be delivered as soon as possible in order to remain competitive.
- Demands for additional capacity are growing annually
- Reducing operations and maintenance costs is imperative
- Many applications are obsolescent, written 20 or more years ago, and no longer meet business needs
- Applications no longer meet Federal or State compliance standards

Any of these requirements can place a heavy burden on existing IT resources. But what if these resources are at the end of their lifecycles, are expensive to operate and maintain, and the skills needed to add functionality or capacity are not readily available?

The legacy systems that have played a significant role in your previous successes may now be dragging you down. They may no longer be able to keep up; even if they can, they will eventually become unaffordable, unmaintainable, unextendable and non-compliant. Modernization of these legacy systems is prescribed—now or later—but critical decisions remain: For example, should there be a complete replacement of legacy mainframes and applications? Or would it be more cost-effective to retain existing legacy code? Or should another option be pursued?

This white paper describes business drivers for legacy modernization, explores various modernization options and suggests partnering with Fujitsu to implement an end-to-end legacy modernization solution.

Why Modernize?

There are compelling reasons for legacy modernization, notably cost, competition, regulatory compliance and consolidation.

Business Driver 1: Cost

Driving the need for change is the high—sometimes staggering—cost of operating and maintaining legacy systems. These costs typically eat up a large percentage of the IT budget, diverting funds that could otherwise be used for new projects.

Adding to the cost is the expense of maintaining code. The original designers, programmers and users have long since left the organization; levels of specialized skills and knowledge have decreased as the systems themselves have aged. Lack of planning inevitably means that there is redundancy in systems, applications, data and reporting.

It can be very expensive to maintain these systems while keeping their functionality intact.

Business Driver 2: Competition

Agility is essential in a competitive world. Your IT systems must be able to respond rapidly to changing requirements by supporting new features and functionality.

However, legacy applications are notoriously difficult to scale or adapt; as a result, your systems may lack the capacity or computing power to accommodate your business needs.

Business Driver 3: Regulatory Compliance

Regulatory compliance – imposed by Sarbanes-Oxley (SOX), Health Insurance Portability and Accounting Act (HIPAA), Securities and Exchange Commission (SEC) 17a4, Gramm-Leach-Bliley and others – may force the introduction of new IT capabilities, such as control point automation or records management. Just one lawsuit requiring a cycle of electronic discovery can justify the implementation of an enhanced content management system.

Business Driver 4: Consolidation

In recent years, large numbers of mergers, acquisitions and reorganizations have combined to create complex IT infrastructures consisting of loose configurations of disparate hardware and software. New initiatives (such as ERP, CRM and ECM) mean functionality and capacity must be added to or subtracted from this aging hodge-podge. The high costs involved in integrating or consolidating these diverse systems often triggers a legacy modernization initiative.

Why Not modernize?

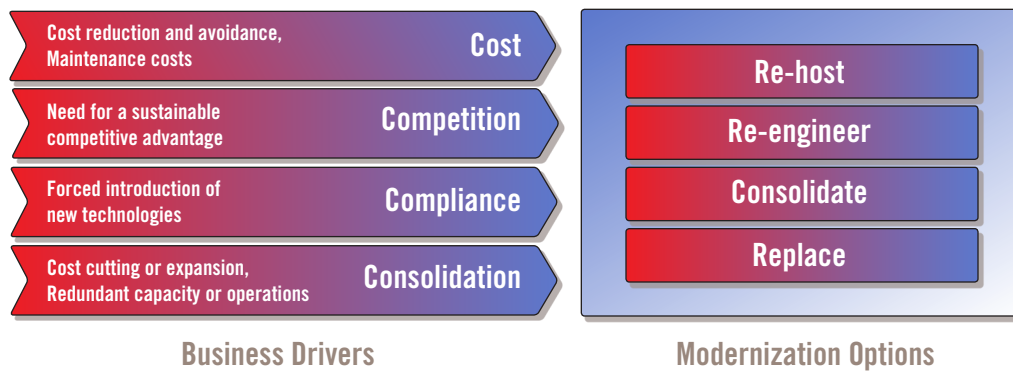
The day you put a new system into production, it becomes a legacy system—that is a reality of business. And, unless you dispose of it, one day you will face the challenge of modernizing this system to meet new business or technology needs.

However, this effort can deliver a broad range of benefits, such as:

- Reducing management and support costs by standardizing IT platforms
- Embracing change by better aligning IT and your business processes
- Enhancing and leveraging processes and technologies enterprise-wide
- Taking advantage of the capabilities and functionality delivered by new technologies

What are my options?

Many organizations are looking for low-risk opportunities to extend and transform legacy systems; others are maintaining the status quo – often a conscious decision. Other legacy modernization options include re-hosting, re-engineering, consolidation and replacement, each of which is explored in this paper.



Option 1 – Maintain current systems

Many organizations maintain their current legacy systems, believing in the old saying, “If it isn’t broken, why fix it?”

Let’s look at why doing nothing might make sense:

- You may not need new functionality or capacity
- Your legacy system is providing value
- You believe there is too much technical risk

However, the costs associated with not modernizing may make an investment in change a compelling alternative. These costs include:

- Recurring license charges
- Hardware maintenance
- Facilities costs – floor space in the data center is expensive; facilities costs for a mainframe are typically 10 percent or more, while costs in a server environment (such as Microsoft .NET or Java) are usually lower
- Operating expenses such as maintenance programming and capacity testing and planning
- The intangible costs associated with lost opportunities

If you are planning to maintain your legacy system in its current state, you accept that your system will be slow to meet changing business needs. As a result, you should consider reevaluating its capacity and performance once or twice a year.

Option 2 – Re-host

The fastest and least-expensive upgrade option is re-hosting—porting from a mainframe to industry-standard servers, for example—to enhance the capacity and performance of a legacy application.

The two billion of lines of COBOL code running on today’s mainframes constitute a storehouse of value. They contain the business rules and workflow controls that help organizations process and manage thousands of key processes. Recovering this business logic and constructing replacement applications can be complex, time-consuming and expensive; however, re-hosting allows you to continue using the same COBOL code and the same business logic you rely on today.

Re-hosting preserves your investment in code, business logic and associated staff skills; there is no need to fund a major training and development effort. In fact, the value of the legacy application increases, as does the value of your COBOL programmers, who are now able to deliver enhancements in the new environment.

These benefits do come with a cost—the software and hardware required for the migration—but, by migrating from mainframes to industry-standard platforms, your IT organization becomes more efficient, more agile and better able to take advantage of future technological developments.

This fast, cost-effective legacy modernization option makes the most sense for many of today’s businesses.

Option 3 – Re-engineer

Re-engineering requires a more significant effort than re-hosting but allows you to modernize your aging mainframe code to take advantage of modern programming languages and innovations such as Service Oriented Architecture (SOA) and web services.

Re-engineering typically involves a two-pronged approach:

- Building a front end that can extend the capabilities of the legacy system
- Changing from a mainframe to a Service Oriented Architecture using either Microsoft .NET or Java 2 Platform, Enterprise Edition (J2EE)

Re-engineering your COBOL applications to run in a distributed, open environment delivers a broad range of benefits, including:

- Enhanced scalability, flexibility and efficiency
- Better alignment between the business, IT and modern and future technologies
- More agility to respond quickly to changing business needs
- Lower operating costs

In addition to hardware and software costs, re-engineering is typically associated with organizational changes. You may need to interface with new vendors to provide hardware, software and training; out-sourcing is often an attractive option. However, the resulting enhancements to efficiency and agility make this a very attractive legacy modernization option.

Changing to a Service Oriented Architecture (SOA)

A SOA is typically implemented using .NET or J2EE, which are extensible frameworks that simplify the processes for adding to, subtracting from or reorganizing an IT environment. As a result, change is accepted as a normal operating condition.

The selection of .NET or J2EE is subjective; Fujitsu is equally skilled at implementing both.

.NET

.NET is a set of software technologies for connecting information, systems and devices; a high level of software integration is possible through the use of web services.

With .NET, small, discrete software building-blocks can connect to each other and to other, larger applications over the Internet.

J2EE

J2EE is platform-independent, running on a variety of hardware and operating systems including Windows, UNIX and mainframe systems. It provides a Java-centric environment for developing, building and deploying web-based enterprise applications.

Advantages include cross-platform portability, the availability of open-source libraries, a large server-side deployment base and support for most W3C standards.

Option 4 – Consolidate

There are a number of scenarios where it makes sense to consolidate computer systems. You may be embarking on a complex project that requires a large data migration effort. Perhaps yours is one of the many organizations affected by mergers, acquisitions or other restructurings. Perhaps you are moving to a new system or technology platform.

Each of these scenarios requires you to integrate complex, disparate systems. But how can you create a cross-application architecture that supports your current systems, while at the same time accommodating changing business needs?

Consolidation allows you to eliminate duplication by moving data and functionality to a smaller number of systems. For example, you might consolidate five data centers to two, ten mainframes to three, and thirty applications to ten. In this way, you can retire old, expensive-to-maintain systems without the risk of costly retrofitting, while reducing application development and costs.

This legacy modernization option can provide the capacity to support additional workload but may lack the agility to respond quickly to business changes.

Option 5 – Replace

The fifth option for modernizing your legacy system is replacement. In some cases, this means replacing a legacy application but retaining the underlying mainframe; in others, both application and mainframe are replaced.

There are a number of cogent business reasons that may suggest replacement as a viable option:

- Frequent changes in the marketplace are making the value of further investment in your legacy system problematic
- Significant changes to code would be needed to address current limitations
- There is pressure to replace systems that do not support business or regulatory requirements

Many organizations go to great lengths to preserve their legacy systems – after all, these old mainframes are still good at what they were designed to do. However, their inability to provide the functionality needed in today's business environment is a growing concern.

You must also face the fact that your legacy systems may have become a repository for business knowledge that does not exist elsewhere in your organization. A replacement system must capture and implement this business knowledge.

Although deploying a new system from scratch is costly and resource-intensive, this seemingly drastic measure may be appropriate when your legacy systems can no longer accommodate your business needs.

When faced with this dilemma, you should consider conducting a detailed assessment of your overall IT portfolio (such as the Application Value Assessment described later in this white paper) to identify core systems that can be replaced and those that can be successfully modernized.

Once you have taken the leap of faith and replaced your legacy system, you should expect to derive significant benefits, such as reduced maintenance and staffing costs, and improved productivity. However, the high cost of replacement makes this legacy modernization option unattractive for many businesses. Moreover, if you are merely replacing a legacy application without replacing the underlying mainframe, your environment may still not be sufficiently agile to respond quickly to changes in the marketplace.

Outsourcing

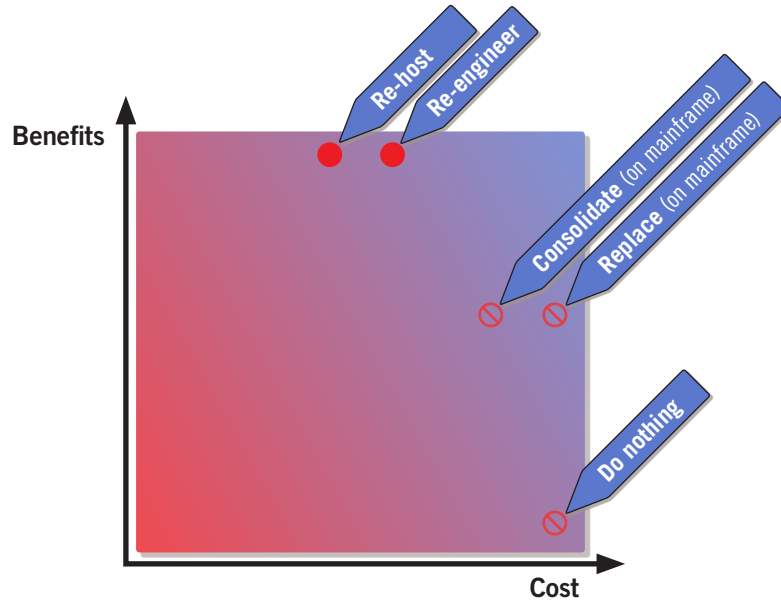
Fujitsu offers innovative outsourcing solutions, combining homeland, near-shore and offshore services to help our clients manage costs during legacy modernization.

Our tactical use of offshore resources combines with a dedicated onshore presence to deliver a cost-effective resource model while achieving the highest standards of quality.

Our offshore resources are strategically located – for example, in our ISO 9001:2000 and SEI CMMI Level 5 certified India-based Global Delivery Center.

Which option?

The following graphic characterizes the five legacy modernization options based on overall cost and benefits. While this characterization is idealized, Fujitsu has identified re-engineering and re-hosting as core offerings, giving clients the fastest, most cost-effective and most agile solutions.



Why Fujitsu?

Fujitsu brings years of experience, credibility, skills and tools to help you move forward with confidence and accelerate your legacy modernization efforts.

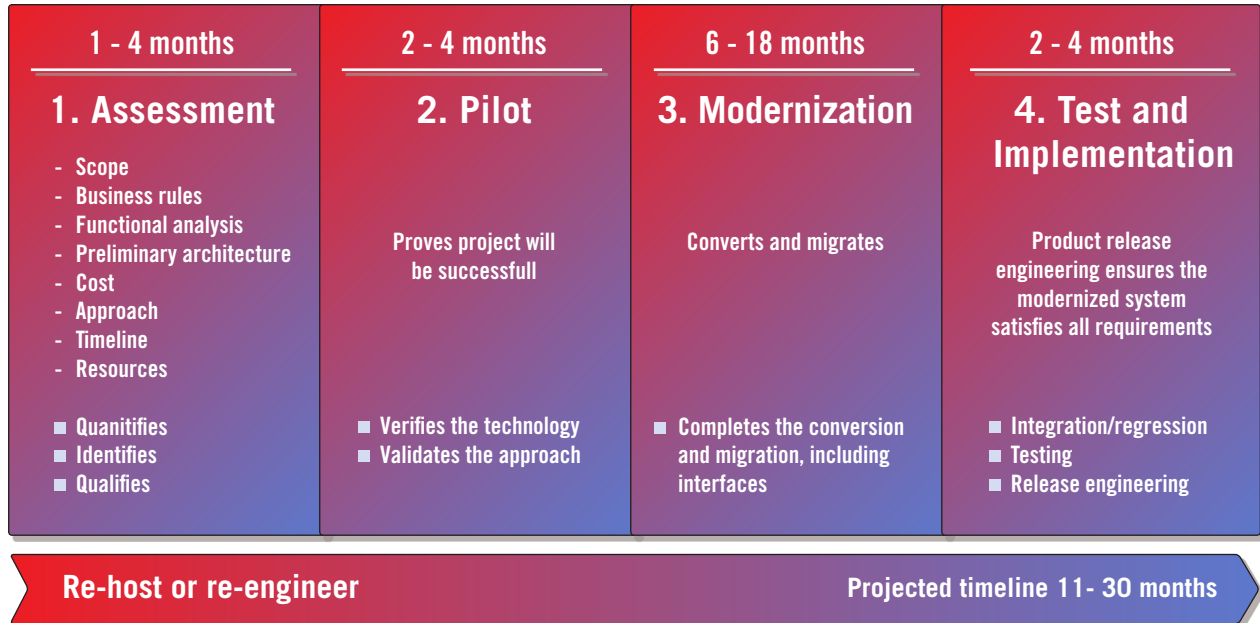
Fujitsu Modernization Services – We can help you develop a detailed roadmap for your modernization that includes the business scope, objectives and an implementation plan. By showing you the expected costs, benefits and ROI, we enable you to make informed decisions on legacy modernization strategy and planning.

We provide homeland, near-shore and offshore services to better manage your modernization costs.

Superior Methodologies, Tools, and Global Competency Centers – To mitigate risk and ensure success, we employ our proprietary, award-winning methodology, Macroscopic, that integrates service delivery throughout the entire engagement. Our top-rated methods clearly identify and mitigate the risks associated with modernization and manage modernization complexity to deliver on time and on budget.

Our goal is to seamlessly deliver the highest quality services from the best-suited global delivery centers with competitive and cost-effective pricing.

Legacy Modernization Delivery Framework



Our Legacy Modernization Delivery Framework focuses on value rather than technology. We help you identify a strategy that maximizes value, then apply our Benefits Realization methods to ensure that this value is achieved.

This framework includes services such as Application Value Assessment, which can help you evaluate your legacy system.

Application Value Assessment

An Application Value Assessment is just one of the services that Fujitsu can deliver. This assessment—often a prerequisite for minimizing risk—includes a portfolio analysis that evaluates each of your legacy systems and determines an appropriate strategy for modernizing that system. According to Gartner Research, “enterprises that implement a disciplined application portfolio management strategy can reduce IT expenses by at least 20 percent and future application transformation costs by 30 percent.”¹

Fujitsu Consulting has developed a framework of best practices for Application Value Assessment that takes a hard look at the alignment of your application portfolio with your business strategies, technical direction, market direction and spend strategies. These best practices also focus on identifying where an organization may be at risk with respect to legacy modernization – for example, are you too dependent on expensive skill sets or technologies that cannot respond quickly to changes in the marketplace?

Fujitsu's Application Value Assessment provides a proven method and toolset for evaluating the costs, risks and business impacts of legacy modernization. This information is invaluable in building a business case for modernization and in communicating the values of modernization to your executives and other affected groups.

¹ Gartner Research 23 July 2003/ID Number: SPA-20-0109

More Information

For more information on the legacy modernization services offered by Fujitsu, please refer to our solution brief, "Fujitsu Legacy Modernization services."

Alternatively, you may contact:

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About Fujitsu Consulting

A trusted provider of management and technology consulting to business and government, Fujitsu Consulting is the North American consulting and services arm of the \$43.2-billion Fujitsu group. Fujitsu Consulting integrates the core expertise of the Fujitsu companies and its partners to deliver complete solutions in the areas of enterprise information management, packaged application implementation, legacy systems modernization, IT governance, managed services and business process services. Through its full range of IT consulting, implementation and management services and its industry-recognized strategic approach, Macroscopic®, Fujitsu Consulting enables clients to build more value into their IT investments and drive their leadership in the marketplace.

We work with you to create solutions and produce results that drive your business.

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