

# The Mainframe's Relevance in the Digital World

You Don't Have to Own IT to Control IT<sup>SM</sup>

## Executive Summary

According to Robert Thompson of IBM, 68 percent of the world's production workloads run on mainframes, which process roughly 30 billion business transactions each day. Many companies with business critical applications on mainframes are moving to new mobile, social and other digital solutions. The key to achieving success in these new environments is to allow existing mainframe applications to support the new web services and application program interfaces. Information technology (IT) organizations that have invested years in building scalable, secure and complex transaction systems must continue to consider mainframes as part of their digital business ecosystem.

Companion Data Services, LLC (CDS) is experienced in taking legacy mainframe systems and enabling them to provide data to web applications and mobile applications for Big Data analytics and integrating with partner systems through modern interfaces like Representation State Transfer (REST) application programming interfaces (APIs) and web services. The goal of this paper is to explain how we feel the mainframe can and should continue to play into a company's strategic plans for current and future IT needs.

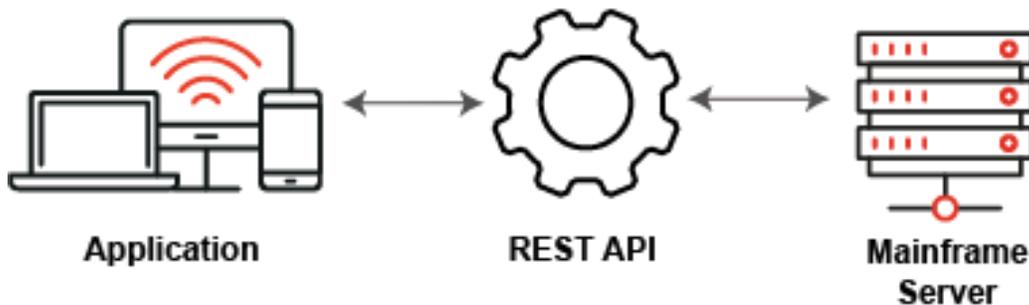
## Mainframes are Well-Positioned for the Digital Economy

The mainframes of the 1960s and 1970s are not the mainframes of today. While some companies have worked hard to retain backward compatibility to enable customers to leverage decades of investment in the mainframe platform, they have also continued to invest in the development of new mainframe technologies. As a result, many modern technological advancements like virtualization, Big Data, Blockchain, Linux and Java coexist alongside legacy technologies like customer information control systems (CICS), information management system (IMS), common business oriented language (COBOL) and job control language (JCL). Mainframes allow companies to bridge the past and present, and continue to provide business value from mature applications.

To change the perception of mainframes as being outdated technology, billions of dollars have been invested to provide enterprises with tools and technologies to fully embrace Agile software development and IT operations (DevOps) practices. These practices enable developers to build and host enterprise mobile applications close to where the data is and to make them available in a secure environment. During the last five years, the mainframe has evolved to become an integral part of hybrid data centers where distributed servers could host commercially available off-the-shelf (COTS) applications while interfacing with data on the mainframes.

## Where do Mainframes Fit in Today's World?

Several technologies are available that make the mainframe fully conversant with REST APIs. This enables them to provide data to web applications and mobile applications for Big Data analytics and integrate with partner systems. Mainframe platforms are at the heart of the API economy. Many companies now augment their mobile applications with third-party services, such as Google Maps, ESRI and others, to combine geolocation data and mapping tools that help the mobile user find the closest locations.



Mainframes communicate with REST APIs to provide data to web and mobile applications, making mainframes the heart of the API economy.

During the last few years, IBM has invested a significant amount of money in recruiting college graduates to work in its mainframe division in development, sales and marketing. Further, it is partnering with several universities to train students on modern technologies running on mainframes.

There are many other advantages to adopting a mainframe into your digital business strategy.

**Security** - Mainframes have a long history of security. Because mainframe systems typically service large businesses, it is relatively difficult for cybercriminals to gain an understanding of how they work and develop exploits for them. Many of the technologies used on the mainframe for security have been refined over decades deepening their strength. Core business data and applications stored on mainframes are provided with a high degree of security.

**Long-Standing Investment** - Many large enterprises have long-standing investments in mainframe systems. These systems often require companies to maintain expensive, complex infrastructure on-site and can be a barrier to closing data centers or migrating workloads to the cloud. Many have been developed and maintained over long periods of time and support core elements of business. Migrating these systems off the mainframe to modern platforms is a challenge that is costly, takes a long time and introduces significant risk to the business. Another approach is to wrap critical mainframe systems in modern interfaces allowing them to communicate while avoiding costly and risky rewrites or code conversions.

**Analysis** - Mainframes are capable of running new, cutting edge workloads like cognitive analytics and machine learning. This allows companies to analyze their data with the latest machine learning algorithms without moving the data or purchasing infrastructure. These machine learning models can be used to take intelligent action or draw new conclusions to drive business strategy from a company's existing data warehouses.

**Cloud Integration** - A key platform for delivering emerging digital services in the digital economy is the cloud. Many of the emerging digital applications and micro services that provide these innovative new capabilities are built to use the agility of cloud platforms such as IBM Bluemix. However, for the applications and services to function effectively, they must harness the application logic and business data that is held in enterprise systems such as IBM mainframe systems.

**Collaboration** - There is a shift in the market as traditional businesses realign to offer new value-added services by collaborating across multiple market segments. Many companies hold a significant amount of personal data and desire to tap into this information to offer more personalized, concierge-style services. These services offer convenience to the individual, brand loyalty and new revenue streams as they combine their own data with services from retailers, insurers, utility companies and social media providers. To create powerful and useful mobile applications, the use of APIs becomes essential. Although not exclusively built for the mobile world, APIs are becoming a significant part of mobile applications. It is estimated that by 2018, some 68 percent of all mobile applications will be powered by APIs.

**Flexibility** - New IT work approaches like Agile and DevOps fit seamlessly with mainframe technologies. Although the origin of these approaches is in distributed systems, the principles and business value realized from them can be applied to systems on the mainframe. Technologies that enable this system of work are available on mainframe systems and businesses can start to take advantage of them for existing workloads or for new development. They can even be used to develop and maintain hybrid systems where some components live on the mainframe and some on distributed systems.

**Scalability** - The scale of systems that can be delivered on the mainframe platform is almost unmatched. With the continued commitment from IBM and other vendors to innovate in both mainframe hardware and mainframe software, customers can produce some of the largest digital systems in the world. It is not uncommon for mainframe customers to process millions or billions of transactions each year on their mainframe systems. This capability is one reason why the mainframe has a pedigree of success over decades of IT innovation.

**Platform/Language Agnostic** - There may be times when it is not a fit for businesses to develop a new system in COBOL. Mainframe systems have supported development languages like Java for more than a decade and are continuing to be updated with other development languages like Python and Node.js. This allows customers to use the language that best fits their business situation to develop mainframe workloads and incorporate innovations from the open source community into their mainframe systems.

**Portability** - Linux has also seen large scale success on the mainframe. This movement started in the early 2000s and is now a popular way to leverage a company's mainframe investment. Using Linux, allows many existing, distributed applications to be ported to the mainframe platform without recoding and many popular distributed open source and commercial applications are available. This opens up a new avenue to create hybrid applications using traditional mainframe technologies and newer distributed technologies working together in the mainframe platform.

**Lower Operational Costs** - Other operational costs can also be lowered using the mainframe platform. Many companies see cost reductions through IT employee productivity gains, a reduction in environmental costs like power and cooling and the potential for a reduction in commercial software licensing costs. Many commercial applications have more favorable licensing costs for the mainframe platform as compared to distributed platforms.

**Increase Staffing Efficiency** - Mainframe systems, particularly for customers that have a history of success with the platform, offer unique opportunities to take control of IT system scale, cost and capabilities in a way that meets the need of our agile and flexible modern world. With hosting and managed services, the mainframe does not require a huge team of IT technicians from a business or data center.

## Companion Data Services is Your Partner

CDS provides expert mainframe hosting, elastic pricing, support staff and cloud integration capabilities. Taking advantage of these can help lower the cost of operating legacy mainframe systems and replace large capital expenditure investments with flexible operating expenses that scale with business needs. With ever-increasing demands for resources, responsiveness and reliability, it is essential that companies have the right business relationships in place. CDS understands the growing need to accomplish more with fewer dollars, more effective use of resources and time and effective innovative solutions.

Contact us to discuss how leveraging CDS' experience, expertise, scale and infrastructure can help your business to realize the full-benefits and capabilities of the mainframe.