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Why the Mainframe Should Be Part of Your Digital Business Ecosystem

Seventy percent of critical customer data and mission-essential apps are on the mainframe.[1]

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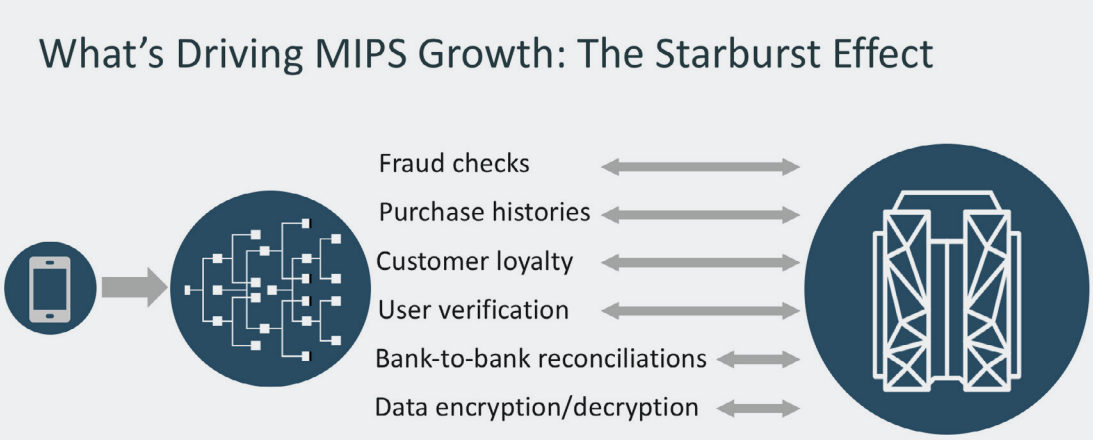
The race is on when it comes to innovation in financial services. Whether these companies are introducing a new fintech payments app or advisory app for millennials—traditional and new entrants in financial services need to digitally transform their organizations to compete in a highly volatile application economy.

Digital disrupters who fully embrace agile and DevOps practices experience two times more revenue growth and two and a half times profit growth than their peers.[2] The ones that succeed understand how to quickly harness insights from big data, empower mobile and self-service, and create new ecosystems. But culture, infrastructure, security and capital allocation remain barriers between ideas and outcomes—and ultimately, success.

Power Your Customer Interactions With Scalability and Trust

Mainframes host mission-essential applications that support thousands of applications and devices simultaneously for thousands of users. In the last five years, the mainframe has evolved to become an integral part of today's hybrid data center—used in combination with distributed servers and in dynamically reconfiguring software resources, all while applications are running. Mainframes support 70 percent of corporate data, including languages such as Java™ and Linux®, and recently, Docker containers. The new IBM® z13™ machine is proof positive that organizations continue to invest in mainframe computing; the server can process 2.5B daily transactions—the equivalent of 100 Cyber Mondays every single day.[3]

Figure 1: Starburst effect of Mobile Transactions on Mainframe



The debate about mainframe vs. cloud is irrelevant when it comes to delivering mission-essential services. Financial services companies are becoming software organizations where IT dependability and trust form the foundation for mission-essential service and customer expectations. Dependability has key attributes—reliability, security, availability and continuity—and each poses a cost vs. risk tolerance trade-off decision for IT leaders.

The revenue impact of availability

Consider how many applications and millions of transactions are interdependent with mainframe applications. Mission-essential services need the 99.999 percent, gold-standard uptime that mainframes deliver—not the good-enough cloud SLA of 99.5 percent. With downtime costs of $1.15M per hour, the difference of 1.15 percent of uptime amounts to almost $20 million in revenue for a bank with $300 billion in assets.[4]

Impact of reliable service performance

Beyond uptime, when customers use apps, they expect the service to respond instantaneously, with a fraction of a second delay at most. How many times will your customers attempt using Apple Pay instead of a traditional credit card? That's lost business and possibly a permanently lost customer.

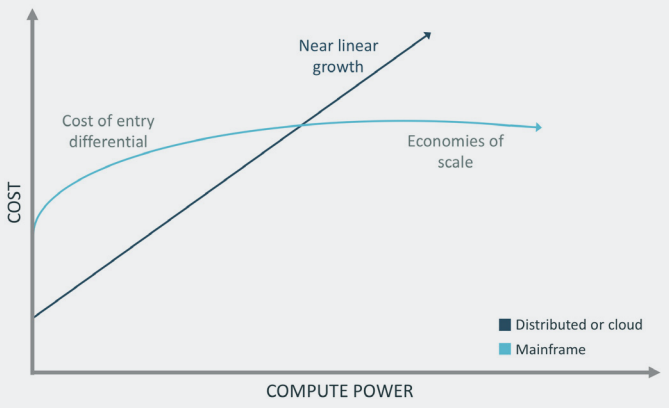
Mainframes eliminate the barrier between ideas and outcomes for mission-essential applications. As IT leaders start evaluating the costs and effort to achieve dependability, they're realizing that today's mainframes actually offer surprising opportunities in delivering economic and agility advantages—and in overcoming common mainframe perceptions.

Mainframe Licensing Costs Can Be Lower Than Cloud and Distributed Alternatives

Opportunity: Exploit a surprising cost-reduction curve with mainframe-scale economics

Output value vs. investment. For mission-essential workloads, you can calculate the ratio of compute services delivered to compute equipment in service and compare the same on cloud or x86 systems. Surprisingly, annual mainframe total cost per installed MIPS has steadily decreased from $5,517 to $3,057 in the last five years.[5] For example, the average cost per ATM machine in economic terms (TCO) in a server-heavy environment is $1,021 vs. $500–$700 on mainframe.[6] Mission-essential services dictate higher dependability, and with distributed systems, this typically drives the need for more expensive hardware, "active-active" infrastructure and rigorous testing and validation. Similarly, cloud offers enticing startup costs, but security and data movement costs add sticker shock for CFOs. For highly dependent, mission-essential services, the mainframe delivers on the cost model below—the incremental cost actually decreases with higher utilization and availability put on the system.

Figure 2: Comparing Compute Economics



Rationalization. Savvy IT leaders are always auditing their infrastructure to find efficiencies. Unfortunately, the history of inflexible licensing models, coupled with generations of well-meaning product decisions, lead to significant functional redundancies, skill overlaps and even overpayments—in some cases $17M over a three-year period. A rigorous approach of tool and process discovery and assessment is the first step to vendor consolidation and strategic rationalization across the data center. CA has partnered with over 300 customers to realize a 24 percent portfolio reduction and a 14 percent vendor reduction, resulting in an average of $1.4M OPEX savings.[7]

Increased Business Agility

Opportunity: Bring agile and DevOps practices to mainframe teams.

Tool unification and traceability. Single tools exist that unify views across a plethora of systems—enabling speed and collaboration across disparate teams while delivering a rigorous audit trail and traceability. Organizations who adopt DevOps across the enterprise, inclusive of mainframe apps, see process implementation time reduce from months to weeks and can achieve a 3X increase in release frequency.

Automating disaster recovery. Mainframes boast inherent architectural advantages to achieve near-zero MTTR. Mainframes deliver mean time between failure (MTBF) of 20–50 years, driven by design redundancies in memory, I/O, power and other subsystems features at the hardware level without the need for special application programming.[8] These same concepts are applied at secondary sites or frames separated by up to 100 kilometers in an IBM Geographically Dispersed Parallel Sysplex™—a set of mirroring, synchronous and asynchronous capabilities. Failure at one site automatically activates near-instantaneous data recovery from storage devices at secondary sites.

Automating performance monitoring. Mainframes now bring workload automation, predictive analytics and cross-platform monitoring, which are critical to orchestrating automation and visibility, to achieve near-zero mean time to resolution (MTTR). Case in point: a US$21.8 billion financial services company with 115 locations and 4,000 employees. While new, customer-facing applications are developed on distributed platforms, these applications still require data from and drive financial transactions on the mainframe. Traditional application performance solutions don't have visibility into transaction processing on the mainframe. By using cross-enterprise performance monitoring, the team saved $457,380 over three years through proactive incident detection and rapid triaging. Another financial services firm used predictive workload automation to improve readiness-to-trade completion rates from 82 percent to 99.5 percent.[9] CFOs and CEOs can translate that metric into real revenue—average day stock trade and increased velocity—to the tune of millions of additional dollars in revenue.

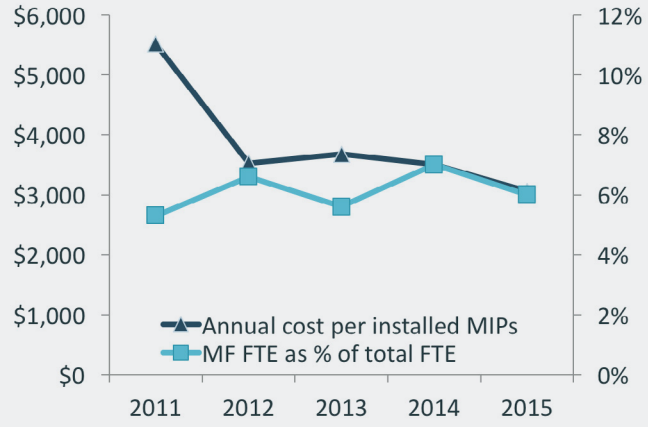
The War for Talent

Opportunity: Orchestrate skill-arbitrage in a tight IT labor market.

Team efficiency. IT leaders are rightfully concerned about the looming skill attrition as boomers retire. That said, mainframe full-time employees (FTEs) as a percent of total IT FTEs isn't shrinking and held steady at 5.5 percent in the past five years, while installed MIPS per FTE increased from 152 to 268.[10] This shows that mainframe teams are operating with lean IT, that is, delivering more compute and services with much leaner staffing.

Training and cross training. The ISV community is recruiting the next generation for modern development across platforms. Today, 51 percent of IT FTE is cross-platform.[11] Automation and availability of cross-platform tooling with modernized application and system programming interfaces, along with cross training, enable service-based organizations structures vs. teams organized by platform. The cost savings, too, are significant— imagine being able to deliver the same services with a generalist FTE at $150/hr. vs. specialists at $247/hour.[12]

Figure 3: Mainframe Team Efficiency – Lean IT in action



Outsourcing. Ensuring operational continuity and continued availability of expertise without full time personnel can be achieved with outsourcing and staff augmentation. For example, a hotel chain was able to create a team of two FTEs with complete data management offerings through staff-augmentation services that delivered monitoring and service alerts.

Safeguard Your Brand and Reputation

Opportunity: Mainframe security management for mission-essential data is a risk-mitigation investment.

Platform security: For financial services, the reputational risk of a breach is paramount. The average cost of a data breach is $3.79M and the cost per compromised record is $215 in financial services.[13] Nothing is 100-percent secure, but to date, there has been only one public breach involving the mainframe at Logica, a Swedish IT firm. The mainframe remains the most securable platform with layers of encryption and fine-grained access controls to protect data throughout its lifecycle, and different levels of isolation across the application and OS stack—capabilities that are simply not available in enterprise systems.

Security controls in a zero-trust world. One key advantage with mainframe is that security processing happens solely on the platform. With enterprise systems, copies of corporate data, such as information required for an analytics project, get sprinkled in various places. Having the peace of mind that you can say "nothing happened" is a positive result of your investment in security controls and needs to be quantified with your CEO and board.

Take the Next Step

Capturing customer loyalty and trust means disrupting the status quo and breaking up IT barriers across disparate teams, platforms and delivery models. In today's digital transformation environment, especially in the financial sector, there's a force awakening that requires cross-enterprise discussions to take place across all aspects of IT. The modern mainframe is a critical component that offers mission-essential services with the agility, dependability and security demanded by the line of business, and ultimately, by end users.

Find out the benefits your peers are realizing by making the mainframe part of their digital transformation strategy. Request an IT Transformation and Economics briefing from CA.

For more information, please visit **ca.com/ccsp**

To learn more, please visit **ca.com/mainframe**

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7 Findings extracted from CA Core Systems Consulting Program Executive Brief

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