

**GLOBAL
TECHNOLOGY
SOLUTIONS
GROUP**

**GETTING THE
MAINFRAME
RIGHT**



SUMMARY

This short update will reflect discussions with industry experts as well as a survey of recent industry news and literature, organized as:

- **The Right Perspective:** the mainframe endures- and grows its importance in the world
- **The Right Agenda:** based on a BMC survey and our own experience, observations, and conversations with industry experts
- **The Right Solutions:** the right workloads, cost, performance, and team

THE RIGHT PERSPECTIVE:

It's a new dawn for the mainframe — for the right reasons

Mainframes still aren't dead. On the contrary, mainframe use is increasing, and not to run COBOL, either. Mainframes are being eyed for modern technologies including blockchain and containers.¹

Mainframe predictions: a dangerous business. In March 1991, Stewart Alsop predicted that “the last IBM mainframe will be unplugged on March 15, 1996.” Nearly three full decades later, IBM reported in Q4 2019 the highest level of mainframe MIPS shipped in history. One of our observers estimates that the worldwide installed base is now above 45 million MIPS.

And in BMC's mainframe survey², an increased percentage of executives up - to 59% recognize the mainframe as a platform for growth — up eight percentage points over the prior year.

Linux is a key to success. Over half of the zOS installed base has at least one IFL. This statement is even more true outside the US where zOS skills are less plentiful, but the demand for security, encryption and availability are just as strong.

Illustrations include a bank experiencing rapid growth in the Vietnam which consolidated from a distributed environment to a centralized LinuxONE based platform.

Much — if not most — of the “easy” workload has been migrated. Occasionally there is a well-publicized decommissioning, which upon closer inspection reflects a smaller or simpler workload than one normally associates with the platform.

The rest of the workload placement analysis is complex: sometimes a function which may ordinarily lend itself to a distributed solution relies on mainframe data such that the chattiness of the application erases the benefits of migration.

The platform retains an enduring relevance to our daily lives. One of our observers noted that if we woke up tomorrow morning with all the world's mainframes shut down, the impact would render tame any Hollywood treatment of a “zombie apocalypse.”

More specifically: *over 30 billion transactions would stop.*

The increased value of the platform to protect. IBM continues to build on its strength in security, limiting the access of bad actors both internal and external, with regulatory and compliance pressures continuing to mount.

Nonetheless, concerns persist. Recently, BMC conducted a survey which while optimistic, also points out the areas of focus for mainframe shops and the challenge for those of us who seek to serve them.

We shipped the highest MIPS in history this quarter, driven by growth in new workloads³

THE RIGHT AGENDA:

Addressing Executive and Technical Concerns

PROTECT, ENABLE, AND POWER

IT in general, and mainframe shops in particular, have traditionally been terrific at **protecting** the business from outside intruders (and from itself), particularly in the **systems of record** for which the mainframe is historically responsible. Going forward, we need to do more.

Gartner (and others) tell us that infrastructure & operations must now define its role equally as **protectors** and **enablers** of the business. Where IT fails to provide “new, better and more” capability to the business that funds it, IT will be circumvented.

The BMC survey indicates that executives and technical professionals share concerns which fall under each of these two priorities... to which we'll add a third.

- **Enable** the Business: Modernization and Cloud
- **Protect** the Business: Security and Operational Excellence
- **Power** the Business: Talent

ENABLE

First, let's acknowledge that the modernization marketplace is huge. Yet industry insiders tell us that there is a change — perhaps even a sea change in the conversation, from

- “how do we get off the mainframe altogether“ to
- “what's the right workload to leave there, and how do I manage it — and cost-effectively so.”

“What should come off the mainframe” is a particularly complex conversation, given that

- Many replatforming technologies are more advertised than proven; one observer told us that the market as hot as he's seen it, but sometimes it's hard to see the facts underneath the color
- Much of the easier workload has been removed; and mainframe shops will struggle with what remains.
- The particular challenge of the mainframe cost structure: i.e., a unit of workload removed does not necessarily mean a unit of cost removed

So the question is, first and foremost, what is the business case for change?

The global application modernization tools market — at \$8B in 2018 — is expected to grow at a CAGR of 18.7% to \$36.9B by 2027⁴

PROTECT

In the BMC survey, both management and technical personnel listed cost reduction, compliance/security, and application availability as the top three priorities. This is no surprise, of course; some estimate that up to 50% of the world's MIPS are in financial services and insurance clients.

IBM continues to make the mainframe the strongest fortress for secure processing; the architecture provides availability that is second to none. Cost can be a challenge, particularly as workloads are rationalized. As noted, proportional cost reduction is a challenge.

POWER: TALENT

Even in shops with plans to sunset the platform, realizing these plans can take a decade longer than expected. In the BMC survey, executives are more sanguine about talent than are the technologists themselves.

THE RIGHT SOLUTIONS

GTSG: OVER 30 YEARS OF DELIGHTING MAINFRAME CLIENTS.

The mainframe landscape was very different in 1988, although observers recognized even then that there were alternatives to it.⁵

Over these decades, GTSG has grown in a number of ways:

- While we'll never get away from our mainframe roots, over half of our business is from other platforms, whether on-prem, in cololoa or in cloud.
- We've developed a Gartner-recognized competency in data center migration — and are recognized specifically for mainframe migrations
- We've developed a Gartner-recognized competency in **Hybrid Cloud Workload Placement Strategy**.

This helps us express to customers why we can help them with “what should run where,” from a holistic perspective, considering

- the available, proven, alternatives,
- the required performance characteristics,
- the actual costs given the nature of the mainframe pricing structure, and
- the risks of migration.

Let's talk about modernization a bit more.

On Cloud

For most organizations, there are many good reasons to go to the cloud. The best of these reasons come from the desire to support the business: agility, access to new technologies, increased scalability, or geographic reach. **Cost is generally not regarded as a primary reason.** In Gartner's view, cost rates above only "data center consolidation" and "the CIO said so" as justification to move workload to the cloud.

One shop told us they were considering the cloud for an entirely different reason: stability. Bluntly, the cloud doesn't solve that problem. If your environment is unstable on-prem, relocation won't help — not to mention introducing an inherently risky event (the migration).

On Modernization Strategy

As discussed, much of the dialogue has shifted from platform exit to workload placement strategy. We assisted one client who called their effort the "Mainframe Decommissioning Study." Even in a stable industry with a seven year planning horizon, at the conclusion of the study, some 23% of the current workload remained unassigned to a future platform.

The right mix of urgency, or business case, with readiness, or a mature target platform which fulfilled performance requirements, just wasn't there.

The market seems to have accepted that modernization is not a "big bang" project. Some organizations have invested for years and spent enormous amounts of money on the discovery process alone, which itself can be so complex that by the time there is approval to move forward, discovery needs to be redone.

The right way to modernize is in measured, manageable projects, adding function in a way provides benefit while mitigating risk. Doing so while managing cost is a challenge, as it is also with any cloud migration. The answer, as always, is in the details: the workload placement analysis.

PROTECT

IBM mainframes have earned their place among the most difficult machines to compromise in the world. There are no guarantees, however; it takes the right people with the right skills and experience to properly configure the utilities (RACF, et al) which protect the platform. If it's core mainframe security, GTSG can help.

Cost and Performance

For well over 30 years, GTSG has been refining cost and performance optimization methods. We optimize hardware — for both cost and performance — using the complementary techniques of performance, workload and capacity management to enable our clients to avoid upgrades, achieve SLAs, or even downgrade a processor in a sunset scenario.

In one of our favorite engagements, we justified a client's faith in us by helping them avoid an expensive engine upgrade pressed by their outsourcer. Even though the environment was quite well run, our work effort was far less expensive than one might think.

Software is the most significant cost for most mainframe environments. We utilize a four-step process to look for opportunity:

- **Elimination** of tools used by a small audience. Survey all the tools; quantify the audience size; assess the impact of possible elimination; propose alternatives if the impact cost trumps the tool cost.
- **Replacement** of a product with an existing feature. z/OS has numerous features now that might not have been available when you purchased a specific-function product. We exploit all these inherent features, particularly in a cost-pressured environment.
- **Competitive displacement of a low-use product.** For an expensive product used by a small group within your organization, if you can't do without the product (Step One) and can't replace it with a built-in z/OS feature (Step Two), consider a swap of Vendor A for Vendor B with locked in pricing for the term you feel is most appropriate for you. Then do the math on the training and migration required.
- **Competitive displacement of a high-use product.** This is tough sell to the audience of the product — but if the financials support the acquisition of the tool, the implementation of the tool, and the training required can be justified — the research is certainly warranted.

We are sometimes engaged to assist with mainframe software negotiations: on some occasions “in the room” with the vendor, at other times, in the background.

New pricing structures have been released recently. It's early to judge either their efficacy or level of adoption. It does appear that the cost of growth on the platform has been somewhat reduced.

Powering the Mainframe: Talent

We help our clients to protect the business — cost, performance and security — in four distinct models:

- Staff Augmentation
- Project Services
- Hybrid Managed Model
- Managed Services

We help manage cost by looking at which skills may be more effectively provided from a pool — in other words, taking advantage of the economics of a fractional resource model.

For example: In most shops, with CICS, DB2, and maybe some IMS mixed in, it's not uncommon to have a specialist for each. In some cases, the CICS expert might be able to support IMS or DB2 from a Systems Programming level but comes up short for DBA support.

Rather than provide our clients three resources in the example above, we right-size the time requirement to the size of the environment. CICS might need only 20 hours, IMS 15, and DB2 20-25 — so this is what we provide.

No more staffing with a fully burdened 40-hour-per-week resource — we give you what you need yet let you have more when you need it.

In a workload reduction scenario, we contract to a gradual decrease in monthly charges relative to the rate of re-platforming away from the mainframe.

“We have a particular set of skills.”⁶

Automation has been a tremendous boon to the mainframe. Units of workload today are managed with a fraction of the human intervention required in the past. But as with any complex operation, automation takes us up to a point. As analyst said to us:

“Think about surgery. You're obviously happy about all the monitors in the room — and even with the robotics that lend precision to the operation. But you certainly wouldn't go forward without the skilled surgeon in the room.”

GTSG. For over 30 years, getting the mainframe right.

Why GTSG? Tenacious, focused and determined. Easy to work with, relentless and deep. They will not ever let anything get in the way.”

— Transportation Firm

SOURCES

1 <https://www.fool.com/earnings/call-transcripts/2020/01/21/international-business-machines-corp-ibm-q4-2019-e.aspx> Retrieved 25 February 2020.

2 <http://documents.bmc.com/products/documents/56/16/515616/515616.pdf> Retrieved 25 February 2020

3 <https://www.networkworld.com/article/3446140/enterprises-find-a-new-use-for-mainframes-blockchain-and-containerized-apps.html> Retrieved 25 February 2020

4 <https://ibmsystemsmag.com/IBM-Z/09/2019/fintech-ibm-z-linuxone>

5 <https://www.nytimes.com/1988/08/05/business/market-place-computer-stocks-network-factor.html>

6 With acknowledgement to Liam Neeson.

Thanks for reading through our summary. At GTSG, we make it our business to understand what Gartner is saying about the important challenges confronting our clients.

**GLOBAL TECHNOLOGY
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If you'd like to discuss any of these topics further, please reach out to PARTNERS@GTSG.com.

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HYBRID CLOUD STRATEGY AND MIGRATION

Strategic Approach

- Business case development
- Transition planning
- Technical modeling
- Non-disruptive execution

Application Analysis Methodology and Tools

- Decomposition
- Affinities
- Wave planning

Project Leadership

Implementation Subject Matter Expertise

INFRASTRUCTURE SUPPORT SERVICES

Managed Services

- Multi-platform including DB & MW
- Service-level based or FTE-based
- Architecture, administration, programming, systems management
- Remote or Onsite

Project Based Services

- Platform upgrades
- Workload migrations
- Implementation services
- Consulting and Assessment (performance, DR, HA....)
- Project Management

“The difference between sales and what happens on the ground; sometimes it’s like a huge bait & switch. With GTSG there’s no difference between what’s promised and the execution stage. They know the individual, not just the resume.”

— Major Automobile Manufacturer

INFRASTRUCTURE TRANSFORMATION

Transition Services

- Insourcing/Outsourcing
- Knowledge transfer and interim support
- Application migration
- Service management design

Disaster Recovery Design and Implementation

High Availability Design and Implementation

Application Assessment and Deployment

- Reference Architecture
- Infrastructure Alternatives/Recommendations
- Implementation/Migration

INFRASTRUCTURE OPTIMIZATION

Architecture Assessment and Design

Server Virtualization/Consolidation

Storage Optimization

Data life-cycle management

- Tiering
- Standardization/Automation

Application Decomposition Application

Re-design/Remediation Performance

Management and Tuning Latency

Analysis and Consulting