Research Report

IBM's Mainframe 50: Letting the Customers Tell the Story

Introduction

At a recent event in New York City dubbed "Mainframe 50", IBM celebrated the 50th anniversary of its mainframe architecture. In the computer industry, 50 years of development on a single architecture is something to be extremely proud of – but in the technology world a technology that is two years old is sometimes considered obsolete. So as IBM relayed its 50th anniversary message, it faced an interesting challenge: how to laud half a century of mainframe achievements without making it look like old technology.

The way that IBM approached this challenge was two-fold: 1) getting customers to discuss their mainframe experiences over the years (demonstrating the longevity and business criticality of the mainframe platform); and, 2) showing how the System z mainframe will continue to be an "engine of progress" in the future.

To highlight its Mainframe50 messages IBM conducted an analyst-only event followed by a large gathering (of almost 500 mainframe users and business partners) at two venues in New York. This report describes what I learned in each venue.

The Research Analyst Forum

Typical research analyst briefings consist of vendor executives providing strategy and product information with case study and proof points mixed in. At IBM's Mainframe50 analyst forum, IBM System z executives shared their strategic goals and objectives but the company also brought in seven mainframe customers to personally describe how they were using mainframes to tackle difficult business problems such as addressing needs to handle large volumes of transactions while guaranteeing that data is always available and always secured. This analyst forum was unusual in that not only were many customers brought in to tell their mainframe success stories, but also teachers and students from various high schools and colleges were brought on stage to relay their mainframe experiences as well as to answer probing questions. The executive presentations included overviews of IBM's efforts to draw new workloads to the mainframe – as well as a technological overview of future mainframe developments. From a strategic perspective, IBM describes its mainframe CAMS strategy (cloud, analytics, mobile and social). And from a technology futures perspective IBM described its research and development efforts to increase and improve data input/output; grow the size of memory that can be addressed; increase core count, and more.

The CAMS Strategy

The highlight of IBM's CAMS strategy was the presentation on analytics. To date IBM's System z analytics message has largely been: "Our mainframe is a powerful server capable of processing a wide variety of analytics workloads using SPSS and Cognos tools – and the mainframe can also process complex analytics workloads (for which we offer a hybrid co-processor known as IBM DB2 Analytics Accelerator)"). To me, this message has been lacking to date in that it didn't clearly articulate why mainframe architecture should be chosen to process general analytics workloads – and didn't demonstrate that the company's broad mainframe portfolio for handling Big Data applications. IBM presenters in New York, however, addressed these shortcomings by noting:

1. IBM promoted the idea that if the mainframe owns the data, it makes no sense to move that data elsewhere (to distributed servers) for processing. The process of moving the data is known as extract/transform/load (ETL) – and it causes enterprises to create multiple duplicate copies of data that can be corrupted or can get out of synch with the master database – causing separate versions of data to evolve (not a good thing). By processing that data on the mainframe, ETL costs (which can run into several millions of dollars) can be avoided – and data can also be managed more efficiently and securely.
2. IBM's SPSS, Cognos, and other tools can be used to drive analytics on the mainframe. But new tools (such as VeriStorm's Linux Hadoop engine—zDoop) will take the mainframe into new areas of analytics processing.
3. Hybrid mainframe processors like the DB2 Analytics Accelerator as well as increased memory will also position the mainframe to expand its analytics portfolio by bringing real-time data analysis into the mainframe business analytics portfolio. And,
4. IBM is also expanding the use of predictive analytics on the mainframe. Last year, I discussed IBM's zAware environment that learns mainframe behavioral patterns and can thus quickly identify anomalies that impact efficient operational patterns. Several other IBM products including members of the OMEGAMON family and predictive analytics tools such as log analysis are now also available to perform predictive analytics and troubleshooting in mainframe environment.

In short, IBM is now telling a more comprehensive and integrated story when it comes to why it makes sense to use the System z for analytics. (I do, however, have one small criticism: I'd like IBM to more clearly articulate how a System z processes data as compared with POWER and x86 architectures – because System z uses a completely different approach known as "stacking" which may have certain competitive advantages for certain types of analytics workloads).

On the cloud front, the big news this year has been that IBM is moving its very successful SoftLayer cloud environment and its OpenStack cloud environments to the mainframe. IBM's analyst forum expanded on these themes – and introduced a new one: a program to promote the use of mainframes by cloud service providers (CSPs). Clabby Analytics has long argued the virtues of the mainframe as a "cloud-in-a-box" architecture – and we have also presented the ideas of the mainframe as a master cloud governance device as well as a "green" cloud (due to its high utilization rates and energy efficiency) to our reading audiences as well as in speeches in the

Middle East and North America. At the Mainframe50 analyst forum, IBM announced that it plans to focus strongly on capturing CSPs by touting the many virtues of the mainframe cloud (such as security, reliability, energy consumption, high-utilization rates, and so on). To do this, IBM has introduced a new packaged version of the mainframe-- Enterprise Cloud System—designed and priced attractively for CSPs. All I can say on this is: it's about time!

In mobile, IBM has long been promoting the idea that the mainframe is already the back-end data repository for many of the world's leading mobile applications. In its strategic overview, IBM again promoted this theme – but also added a new twist: very aggressive pricing (with savings of up to 60%) when using the mainframe back-end certain types of mobile transactions. This is an important development because mainframe mobile processing can get expensive when charged at full IBM MIPS (millions of instructions per second) rates – and IBM wants to capture more and more of the mobile market. Aggressive price reduction for processing certain mobile transactions on the mainframe makes strong sense if IBM wants to grow its mobile market presence.

Curiously, IBM did not discuss its mainframe social market strategy (the "S" in the CAMS strategy) in any detail at this meeting.

Customers, Customers, Customers

In the analyst forum we heard presentations from SCA and Marist on the New York municipalities cloud; from Steel Orca on its mainframe CSP cloud; from the University of California – San Diego on visualization; from Citizens Bank; from Blue Cross/Blue Shield of South Carolina; from First National Bank (based in Africa); and from numerous colleges and universities (about their mainframe skills programs).

As a research analyst, one of the most difficult challenges I face is getting information technology (IT) users to tell their story on the record in case studies and articles Some companies specifically forbid employees from providing vendor testimonials – fearing that endorsements create legal or competitive risks. But every once in a while I find an IT user who is willing to brave these challenges and share his or her experiences with my reading audience. So the fact that IBM got so many customers to step forward and laud their mainframe achievements truly impressed me.

The SCA/Marist cloud discussion focused on how mainframe architecture is being used to help provide efficient computing resources to municipalities – as well as to help standardize municipal workload processing (tax collection, public services, etc.). I've been down this road many times before at e-Government conferences over the past decade in the Middle East. What I was looking for in New York was whether IBM and its partners had found a way to build a resource sharing/service provisioning environment that could foster efficiency and collaboration amongst municipal departments (which often work as silos). I saw strong evidence that this was the case – and plan to keep a close eye on developments in this space.

As for Steel Orca – a net new mainframe customer and budding CSP – this was probably the highlight when it came to customer presentations. Princeton, New Jersey-based Steel Orca has recognized the many benefits that mainframe technology can deliver when it comes to green computing (high-utilization rates deliver great efficiency) – and the company has also come up

with an interesting mainframe overflow capacity model that may entice mainframe users to engage the company when additional capacity is needed (rather than buying more mainframe capacity). Like the cloud example above, this new environment is also worth tracking – and we have tentatively scheduled a follow-on case study with Steel Orca (timeframe: end of June).

Africa's First National Bank (FSB) was a brilliant example of using IBM's System z as a back-end for mobile computing. Banks around the world are all experiencing strong demand for mobile banking services – but FSC faces some interesting challenges when it comes to providing those services. The first is that in many African countries the communications infrastructure is lackluster and spotty – so providing mobile services can be technically difficult.
To help solve this problem, FSB channels some of its investments into building-up communications infrastructure (for preferred rates). Another challenge is cultural: workers in these areas often venture to remote locations where they earn money and send some of it back to their families. Pre-mobile computing, these workers would have to have money physically transported (with service rates as high as 25% of earnings). But now, using mobile facilities, money can be more easily transferred. So FSB needs to educate workers on how to use mobile devices in new ways to save money and also enjoy better services.

The University of California – San Diego presentation consisted of a brilliant discussion of how compute power is being used for advanced visualization purposes. The mainframe plays an important role in helping the university generate advanced visualization models.
A few years ago I did a case study on Blue Cross/Blue Shield of South Carolina (BCBS-SC) – an organization that understands very well which workloads belong on which platforms. The BCBSSC speaker made it clear that BSBS-SC has made the mainframe central to its massive transaction processing environment – and continues to place Cobol-based as well as modern workloads on the mainframe.

In the main tent event held at a different venue, Walmart, Visa and Citibank described how the mainframe is crucial to their businesses – both from a high transaction/great scalability perspective – as well as from a security and governance perspective. My key take away from these presentations was this: "naysayers who say that the mainframe is old technology and that the mainframe will someday fade away are not paying attention – the mainframe is running major economies throughout the world and continues to grow annually as demand for more services increases".

Summary Observations

IBM's Mainframe50 events highlighted many themes including engines-of-progress, trustworthy computing, architectural advancement, the CAMS strategy – and more. But, unlike many birthday parties that I've attended where people look back at their lives and achievements (and the mainframe has many, many achievements to be proud of) – IBM's event spent more time looking forward to where the mainframe is going over the next 50 years. In particular, the company presented a roadmap of some of the developments that we can expect in the near future with respect to mainframe architecture – and also emphasized some of the ideas that the company is investigating as part of its research and development efforts. Based upon what I saw, rest assured, IBM's System z is on a trajectory that ensures that it will be around for quite some time.

As a final note I have to point out that Hewlett-Packard (HP) placed two trucks across the street from IBM's main tent Mainframe50 event with billboards that suggested that mainframes customers should go to HP to "discover" something. My thought on this was simply: bad idea. IBM invested in mainframe architecture for over fifty years – constantly pushing-the-envelope in terms of innovation, performance, and management. In contrast, Hewlett-Packard can tout only fifteen years of development on its PA-RISC microprocessor architecture before they ended its life (they killed it to promote Itanium – which I expect will also go end-of-life soon). So, in a way, HP mistakenly emphasized IBM's point: fifty years of investment in a single architecture that has become the engine of change in the computer industry is a major achievement (while Hewlett-Packard's failure to do so emphasizes yet another problem for this troubled systems vendor)!

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