zEnterprise_Whiteboard

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Bill: Good day everyone, my name is Bill Reader(?). We're going to talk through a Whiteboard exercise on how to talk to a customer about the value of zEnterprise, both the EC and the BC box. We're going to use Whiteboard as kind of a mechanism to tie all of this together, go through – figure out what the customer's objectives are, what some of the capabilities are of System z with regard to the rest of the enterprise, tie then that all together into what it is we offer, how that all comes together and then give some examples. Now it's real critical when you go through those examples, you don't need to use the same ones we're using in this particular presentation, if you have other ones that are also z customers that you're aware of or that you know very well go ahead and use those, but tie them back into the rest of the objectives. Finally, one of the things I've found that makes doing Whiteboard conversations a lot easier is to practice, practice, practice, practice. Now if you've got a Whiteboard in your office, great, if you don't go to the printer room, get a stack of paper and run through this a couple times, do it with another person, talk to yourself – go to one of the quiet rooms and do that, tell it to your spouse, tell it to your kids. But go through this exercise so that it feels and it flows fairly easily. With that, we're going to go ahead and get started and I'm just going to switch into a mode where this is how I would present it to a customer.

Thanks for taking the time to see me, we're going to talk about some of the things that I think we can do to help you from IBM as some of the high-end server capabilities that you have. I'm going to start off by just kind of going through the objectives, what are some of the challenges that you have? So with that, let's just look at that, what are the objectives and challenges that you have in your business? Do have any initiatives that you're trying to work your way through? Do you have issues with trying to right-fit? A lot of us have looked at just one architecture to handle of our workloads. Is it a one architecture decision? Is it a multi-architecture decision? If you have an existing zEnterprise, an older machine or a new one, where does it fit in the overall schema? If you don't have one, is it something you should be considering in your schema and how you run your business? And finally, at the end, let's get to the next steps and what we could do together to go forward and try to actually make this work for your business.

So, Jim, looking at the objectives that we've set out here and these challenges, do these match what you'd like to talk about today?

Jim: Absolutely, I think these are right on target with what we talked about.

Bill: Great. So let's look at your existing infrastructure. So what you really have is really silos of computing, you've got – in this particular diagram on the left I've got the mainframe and it's a tenant storage, I've got a variety of distributer architectures, everything from X86, X86 on Virtualization, I got Power, I got Spark(?), I got some PA risk, I've got a variety of things. And we have applications hosted pretty well in different places at real-time, but when you look at that, what are some of the challenges that you're being face with right now?

Some of the stuff you have is just data, where are you going with your data? Right now, your data is probably explosive. It's gone from silos of information to growing – the demands on that data are becoming fairly severe and frankly, in some cases, it's becoming fairly costly. What services are you needing to provide and are those also growing? How efficient is it? Are you running standalone servers that are running at maybe 20 percent? Are you doing a good job virtualizing? Maybe you're sitting there at 55-63 percent, but how important is that efficiency in your business? You think about efficiency, if you're running at 20 percent, you're basically giving away a lot of money in floor space, energy, software costs. So trying to get that under control is fairly important for most of our business. And finally, risks and the risks come in several different flavors. They come in security, knowing that I'm in an environment that is the best of breed of security throughout any of the IT industry, it's risks in knowing that I'm available 24 by 7 and won't suffer the outages that are frequently seen in some of the different computing models, it's risks knowing that my data is secure and that I can maintain a good business posture at all times. So of those, which ones are important to you?

Now, what we're seeing is of these new objectives, new workloads that people are trying to put out, there seems to be three that are coming up over and over and over. Analytics, analytics is really important to most of our customers, they're starting to not just do analytics on just individual silos of data, but integrating those silos of data. Having for example human resources data, actually talking to payroll data and doing that with tooling in between and if possible on the same platform. Mobile computing has gone from something – it was just an idea to the way that we're doing business, I find myself it in my own life, my interfaces with my bank, with my financial institutions, with my airlines, all of that's on mobile computing. And where do we fit into that? How does that fit into this picture? And finally cloud computing. Now cloud computing is probably one of the – to me more interesting, to me it is a mechanism to actually deliver all of these services that we're talking about already. If you're going to tests and development for your analytics deploy it with a cloud so that you have things that are run the same. If you're going to do mobile collaboration work, again, having servers that are the same as you go forward makes a huge amount of difference. Having that cloud model will really make things a lot easier. So all of these pieces that we have, having that consistency model is really very _____ to how we want to go forward.

So if you'll look at these ideas and which ones are important to you in your business, I'm just going to start off with scalability. We're all trying to basically scale and hit our demands on time and on schedule, I talked about mobile computing for example or mobile in collaboration. What starts off as an internet application on maybe Android and Apple iPhones, all of the sudden becomes the way the business – the portal is, how all of that comes in. Can I scale that? If I go from 2,000 users to 200,000 users and I do that in a two month period and it takes off, can I accomplish that? Or am I not going to make that objective and lose

business as well. Jim, are there any other objectives that you can think of that are important to you?

Jim: Well, you know the performance always comes up, particularly when you're talking about a distributing platform because distributed is faster than what the z is and then manageability is often a concern, how do I manage these systems? Particularly with the grand workforce retiring, etcetera.

Bill: That's the same thing that I'm seeing across the board. And on top of that, some of what we talked about just briefly, again security and being able to handle that workload dynamically. Is it ordering a machine and waiting six weeks or is it being able to scale up? And just as importantly as the ability to scale up, can I scale back down? Can I shrink my workload? If this is no longer the way I'm doing business, if for example – if I have a workload that was sending off an email report once a month on a customer's access or capabilities or maybe their points on an airline, can I change that and just make a dynamic where it's available to them all the time in real-time and change that model of doing business? So can I handle that dynamic, can I keep it secure? We've all had our own personal stories of credit card issues and other security issues, it's on the internet continuously. We don't normally see any of that from System z. And can it be manageable? Can it go forward in such a way that makes a lot of sense? And with that, what would that look like?

It's a scale, on one side it's affordability. Can I hit all of these objectives below affordably and can I maintain the quality of service? Quality of service, frequently when people are testing they simply look at a response time, I kind of look at it a little differently. Take a look at the service level – at the service levels, is my response time of let's say a 120 milliseconds what the customers are really looking for? Me as in a business, what I want to do is do the most number of transactions I can, fulfilling all of the requirements down below and still keep it affordable. So bottom line is what we've been calling this with IBM and it's really become adopted by the industry is right-fit, in other words what is the right platform to deploy. And it's also looking at that end-to-end, it's looking at – if we talk about some of the aspects above analytics, mobile, cloud, that has applications, that has databases, looking at that end-to-end flow, again, is that right-fit of what it is we're trying to do going forward.

We take a look then at where does zEnterprises or where does zEnterprise(?) fit into that model? It really can go across all this, a lot of the workloads on the right-hand side that we talked about initially that were on the distributed servers, that were running off with workload that may have actually come initially from the mainframe or was started there on its own and having that work with then the classic mainframe. Could it be working with the Legacy types of applications or is it modern applications that are strictly have always been on the mainframe or were distributed and built here, how do I make all of those work together? And

really zEnterprise helps fit that model and it does it in a way that is just not normally seen in other architectures.

So when you look at availability on a platform, you can argue whether it's four 9s or five 9s, those are numbers, the reality of it is the customers that run here run 24 by 7 and they don't usually experience any of the outages they do at other places. Some really good customer examples where they've moved the workload here in order to achieve actually(?) availability and I'll talk about one of those in just a minute. When you look at the capabilities of the processor, the Enterprise box right now at 5.6 gigahertz is the fastest commercial processor in production. Now what's interesting about that, is not more than six years that the clocks via the mainframe was actually about half that of a laptop, yet that's what was still running major governments, major banks, so all of those capabilities that are baked into the operating environment, both the hardware and the software of the mainframe, those exist and they existed at a slow clock speed. Guess what, it also exists at 5.6 gigahertz and those capabilities to do that have actually improved dramatically, we've added over 120 instructions, we've added things like out of memory execution of code that has improved the efficiency really quite a bit. It's really pretty much the safest box you can run on your enterprise, I don't know of any customer that thinks of a mainframe or a zEnterprise box as any less than that. Frequently when I'm talking to customers, that's one of the questions I ask, what is your most secure environment? The answer is my z. We don't then need to really talk about the others, but knowing that it is secure, knowing that it's the safest place to run and that it's a trusted machine that you know will be there. You also know that the data you put there, when an upgrade eventually happens, you'll be able to move that data along. We've been doing binary code migrations for 40 years, I can't do that on any other architecture, frankly, that I'm aware.

So when you look at where we're at on zEnterprise, we're able to achieve all of these goals and we've added an addition – a couple of other features on the new – on both the EC and the BC box, one of them Flash Express. What Flash Express allows me to do is actually have a fairly large SSD drive in the machine as a cache or as a flash environment to allow the ability to hit that cache close to the processor rather than out into the spinning media out further into the enterprise. When you look at what that does in a performance, anytime I can move that type of caching, we're talking fairly large caching capabilities. Again, your performance for things DB2, for WebSphere, for Java code, improve dramatically, so in addition to the other things that we just talked about I get that. If you take a look at zAware, what zAware does is it is running intelligently in the background analyzing your workloads, your workflows, looking to see what's going on, if there are things that might be causing hindrance and might be causing you operational issues, making you aware of those so that we can operate with you proactively to prevent those from going any further. So, with all of these put together I have increased availability, I have better performance in through put. The new machines are 50 percent faster than just the generation before, just in clock speed and capabilities.

So from a scalability standpoint, we can scale from just a few virtual servers or, in the case of z/OS, into a few work units on up to thousands, a huge degree of difference. Or if you're looking at it from the aspect of virtual machines, I can go from just hundreds maybe with a couple of Linux Guest on up to thousands, depending again on the workloads and capacity capabilities that you want with the box. Dynamic, I have the ability to bring resources online in real-time, I have more memory than I had before, I have concurrent sharing of resources like memory, like IO channels to the disk. I can put all those things together – again, bringing them on dynamically and enabling me to have a better work with my box. As far as manageability goes, Unified Resource Manager allows me to not only take advantage of managing the zEnterprise or a cluster of zEnterprises, but as well as managing to another box, that we really haven't covered in this conversation and that's one we call the zBX(?). The zBX or the zBX is another physical machine with cabinets in there that have the capability of running either Power Blades or X86 Blades, the Power Blades can run AIX, the X86 Blades can run either Linux – either flavor of Linux, Red Hat or SUSE, they can also run Windows applications, Windows Server applications, things like SQLServer. So I can create a manageable, tightly fit application environment where I would I have that end-to-end flow of maybe it's a .NET application talking to DB2 z/OS with some links into Cognos, all of that can be integrated onto just this one platform and very tightly managed.

So let's talk about a couple of customers. Swiss Re, Swiss Re was growing – is growing fairly dynamically, what they needed – what they were able to do is increase their availability and their size tremendously, they're processing over 2.6 billion transactions on an annual basis and they were able to reduce their operating costs by over 75 percent. So if you look at what we're doing here, their data has increased – their data demands have increased quite a bit, the services have increased quite a bit, in order to hit the objectives of growth and lowering the cost, they had to basically hit the efficiency models that we talked about over here on the left. Another interesting example is the University of di Bari, University di Bari is on the coast of Italy, they were doing a cloud model and what that cloud model was is a supply chain application basically to the fishing markets as well as the local markets and restaurants, so if you think about it, why would you do a cloud model to fishermen? Think about it this way, if this village in Italy can consume let's say 1,200 pounds of mackerel a day and the fishermen have caught 1,800 pounds of mackerel a day, they've over fished by 600 pounds. That means the market price is going to go down, there will be more spoilage and there will be less mackerel tomorrow. So they're able to optimize the supply chain within the village and move things forward, so the product quality's gone up, again, less spoilage and they're able to get to market quicker because a lot of these guys when they're finished now they're coming in and they're moving forward. So this has been fairly important to them. And finally IBM, we started actually running our meetings, in fact the meeting that I recorded this session in is a Smart Cloud meeting, it's being run on a zEnterprise. We have over 500 million

minutes of conversations, think of the scalability of that, think of the amount of data that's flowing through there. The efficiency is very important, IBM outsources to itself, we have the same SO that we would for a customer we use internally. They're cost conscious, if we can't reduce the cost, this isn't the platform they're going to go to. And again, productivity, when we ran the session right now that are recording this conversation on, this is run both inside and outside the IBM firewalls, as we recorded it. The productivity was tremendous, it had to be up, it needs to be up for you in the times you only work in, it needs to be up when we're meeting collaboratively and that's really how we're running a lot of our own business with IBM.

Let's recap where we're at, when you look at these customer examples or any others that you might want to look at, let's go back through, again, what the challenges were. The ability of your data to be able to do it cost effectively, to be able to run multiple data environments at the same time, to be able to better service the customer with all the other capabilities is increasingly important and that's what's actually been used by these customers. The services, being able to offer more services in a timely matter and very efficiently, whether I'm using cloud, whether I'm using hand-held devices, those are no longer just something that's starting, quality service of those has to be impeccable, this is where I most take advantage of some of the cloud services with Smart Cloud methodologies that we're using from IBM as well as applications that we're using to talk directly to the hand-held devices. The ones that I mention in here on the presentation so far have been pretty much Java-based devices, IOS, Android types, but we're also having – IBM has purchased a company called Worklight, Worklight is actually able to take APIs directly into the legacy environments on here, more quickly enabling those applications that you're used to running and having that data available in a secure manner onto those hand-held devices.

And finally, efficiency, being able to improve that efficiency, able to run at 95-98 percent CPU utilization, able to communicate back and forth, think about as well the communication between the application layer, the data base layer and more importantly the analytics that you're going to be doing in real-time. The expectations of customers is that those analytics are happening in real-time, we want fraud analysis whether it be for healthcare or for banking, we want that to happen now, not in four hours and we're expecting that to happen in real-time. So having that capability and that efficiency built in is very important. And finally, risks, being able to have an environment that is already the default platform for security, whether that – and it's not just security is small package, it's security in a big way, it's everything from user IDs to knowing that if I store my keys for my business I have a straight place to do it, I could do my own certificate authority, I can run distributer applications in Linux side-by-side with my other zed resources, whether they be legacy zOS or VSE or TPF and I can cohost those and make them run very, very efficiently. Again, keeping the risk of how I do that – the ability to _____ recovery, to be secure, all under control.

With that, I'd like to thank you for your time and want to know if we've hit the objectives that you had for this meeting?

Jim: Yes, we have met those objectives. Now, what you and I need to do is to figure out what the next step should be and I'll get my team involved in whatever the recommended next step should be.

Bill: Great. And let me give you a couple of ideas of how we could approach this. We have several different ways, we can head down the path of taking a look at things like total cost of ownership using tools like zErase(?) or we can do a very in depth Eagle Study to where we come in and we look at the existing environments that Eagle Study does not presuppose a specific answer, it's actually looking to see those efficiencies. So having those types of studies we can also do a fit for purpose, looking at an application, whether it be a new one or an already running application and see what makes, again, the most business sense as you go forward. So we're really happy to get with you and let's get started on that as soon as we can. Thanks for your time, Jim.

Jim: Sounds good to me.

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