"Winning with New Enterprise Workloads" Whiteboard

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Jointly Developed With:

WhiteBoard Selling®

1 "Winning with New Enterprise Workloads" Whiteboard

The purpose of this whiteboard is to facilitate a discussion with a new or existing customer on the value of z Systems, in particular, why they should consider z Systems as their platform for new workloads or applications (Cloud, Analytics, Mobile and Security projects). This could be a means to consolidate existing Linux workloads or as a means to provide a "better" platform for business critical applications.

When to use this whiteboard:
  - Proposing new workloads for z Systems.
  - There is reluctance on the customer part to deploying new workloads (Linux) on z Systems.
  - Customer is considering moving workloads off z Systems
  - The IBM Account team is not convinced that they should sell the solution with z Systems.

NOTE to Presenter: You should always check the Whiteboard Media Library http://w3.tap.ibm.com/medialibrary/media_set_view?id=23980 In preparing to learn and give this whiteboard in particular to make sure that you have relevant and appropriate reference/customer stories and that you are prepared to cover the areas that may be important to the audience.

Discussion Steps in the whiteboard are:
- **1** Today's Critical Workload
- **2** Changing Requirements for Workloads
- **3** Infrastructure Requirement
- **4** System Cost Effective
- **5** z Systems - Availability - Perform
- **6** z Systems - Secure
- **7** z Systems - Efficient
- **8** Customer - Proof Point
- **9** Next Steps

The use of color in this Whiteboard:
**Black** - Either FACTS or subjects which frame the discussion.
Blue - Topics which we want to emphasize - typically Action-oriented, i.e., someone is going to do something (outlining what we will discuss for example) or has done something (customer story).
Red - Challenges or items which most people do not take into account in developing TCO.
Green - Action or activity which either overcomes an issue or provides a positive outcome.
Items you should draw on the board are shown in [] and BOLD in the color to be used.
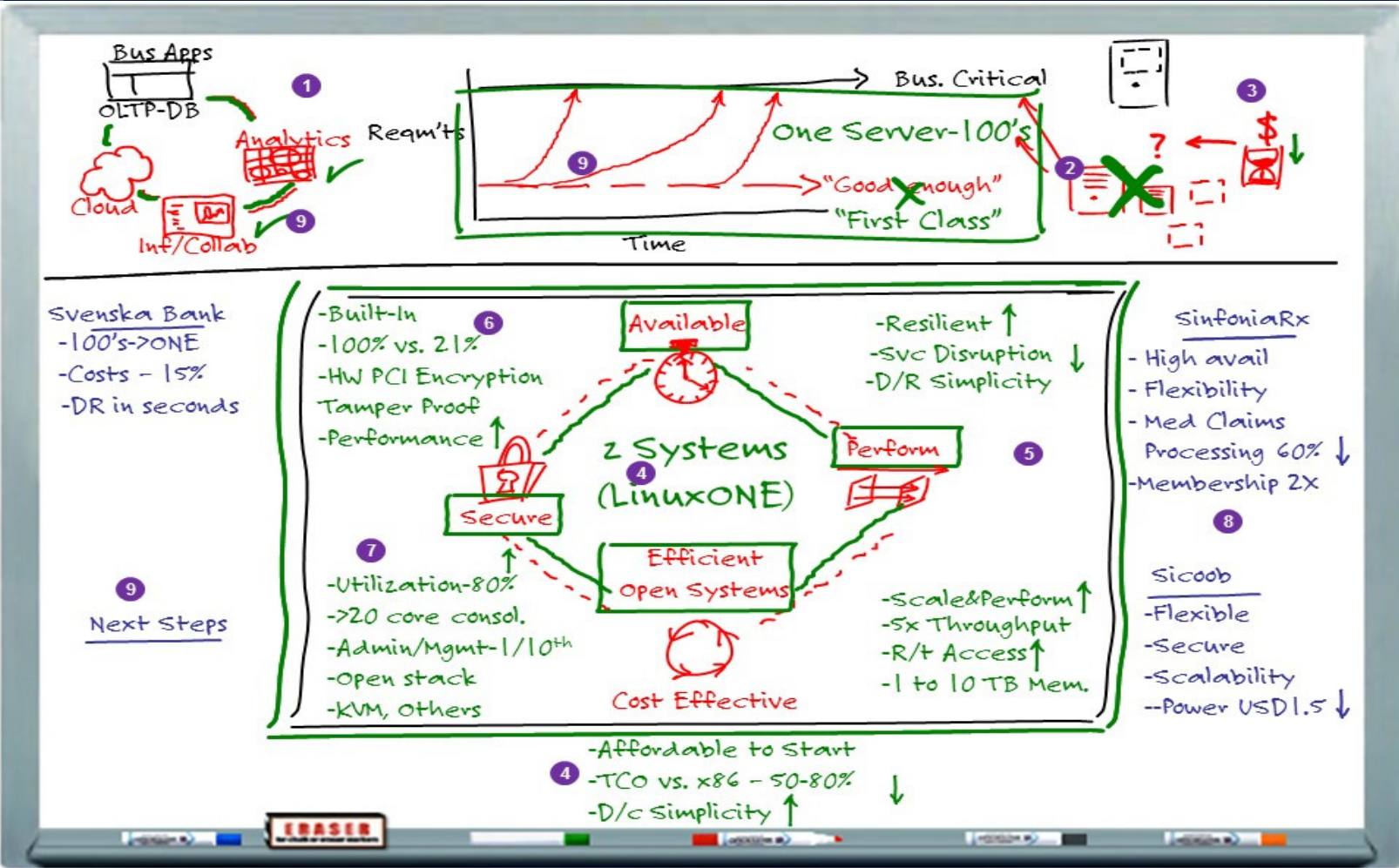
Step 1 - Today's Business Critical Workloads

Thanks for taking the time to get together today. What I'd like to accomplish during this brief discussion is to make sure I have a better sense of what applications or workloads are most important to you going forward and how we can help you to put in place an infrastructure which could provide you with not only exceptional workload support but also surprisingly competitive cost advantages. Make sense? Interested?

1 **[Bus App - OLTP-DB]** When you think about the mix of application that you have in place today - there are a set of business related applications, characterized as On-line Transaction Processing (OLTP) or Database applications...

2 **[DRAW: X/Y axis]** .. that have to meet a certain of requirements ...

3 **[DRAW: Arrow - Business Critical]** ... they need to incorporate excellent performance, be available and resilient to failure, they need to be able to scale both up and down dependent on demand, they need to incorporate application and data security - in essence - meet the requirements of workloads or application which people consider Business Critical

4 **[Server]** These applications need to run on an infrastructure which enables you to meet those requirements in a cost effective manner.

5 **[Cloud]** But these are not the only workloads or applications which are in your portfolio. Today, you may have or may be considering Cloud-enabled workloads.

6 **[Infrastructure/Collaboration]** There are those workloads or application which support the workforce either internally or their interaction with customers or partners.

7 **[Analytics]** Analytic oriented workloads are becoming increasingly important as organizations find that the use of business intelligence, advanced reporting or analytic tools can improve their ability to compete.

8 **[Connect Workloads]** What we have seen in working with organizations like yours is that these (and other workloads) are becoming increasingly interconnected - Business Apps take advantage of the Cloud, Collaboration applications incorporate analytics, etc.

[Transition][Draw Solid Black Line below current drawings] We have also found that these applications ...

QUESTIONS TO ASK
1. What are your key business critical workloads or applications? Are you seeing that these workloads are becoming more "inter-connected" as we just described?
2. What's changing, e.g. getting more importance, being asked for more frequently from LOB? What workloads or QoS are most challenging for your to deploy/operate? What additional workloads do you see yourself adding in the next months?
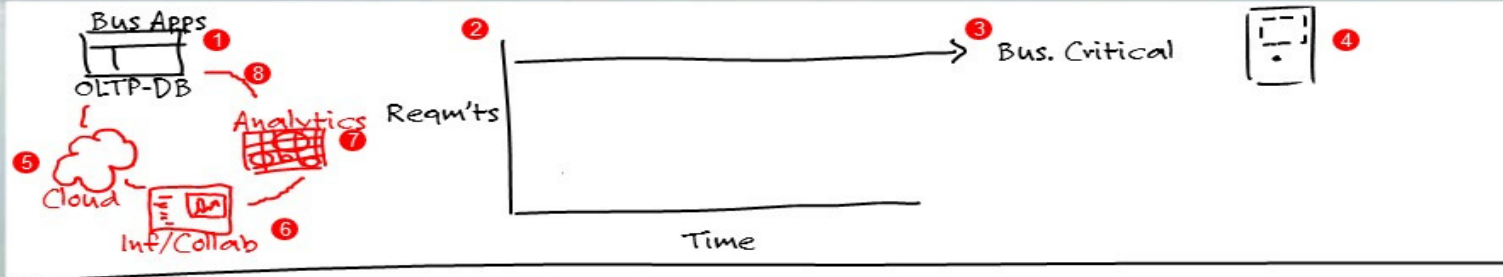
Step 2 - Changing Requirements for Workloads

1 **[Arrow]**

2 **["Good Enough"]** and many workloads such as print, file, email, network services, web and many new Java-based apps have not had to meet the same Business Critical (QOS) requirements to drive revenue or reduce cost until recently….

3 **[Servers]** … have been running on "good enough" servers that might be in the data center or out "on the edge" in local operations.

4 **[Up Arrows]** … What we have seen is that some of these services and applications, in particular Web services and new Java applications ARE NOW more important and have to meet more stringent operational requirements. Where "good enough" is no longer "good enough".

5 **[Arrows]** We also are seeing situations where IT is consolidating various workloads and standardizing on platforms in data centers to reduce cost and complexity and deliver these applications with higher quality and security. What this often means is that "good enough systems " have to support more users, increased traffic and data and higher QOS requirements – where again "good enough" may not be "good enough".

6 **[? - $ - Hour Glass - Arrow]** The question then is what will it cost in terms of $$ and time to enable the current environment to meet these expanding requirements and can your business (organization) afford either?

[Transition] If I could sketch out a way for you to more effectively deal with this - would you be interested?

QUESTIONS TO ASK
1. Are any of your workloads changing in importance? Where are those workloads or applications running today? Have you or do you foresee any issues with your current infrastructure supporting those workloads going forward?
2. Are you considering consolidating any of your data center operations? What about consolidating systems? What impact do think that will have on the key workloads?
3. How did you move 'good enough' workloads to 'business critical state' so far? What are your experiences/challenges?
4. What's the biggest challenge for your infrastructure / for your team?

Step 2 - Changing Requirements for Workloads
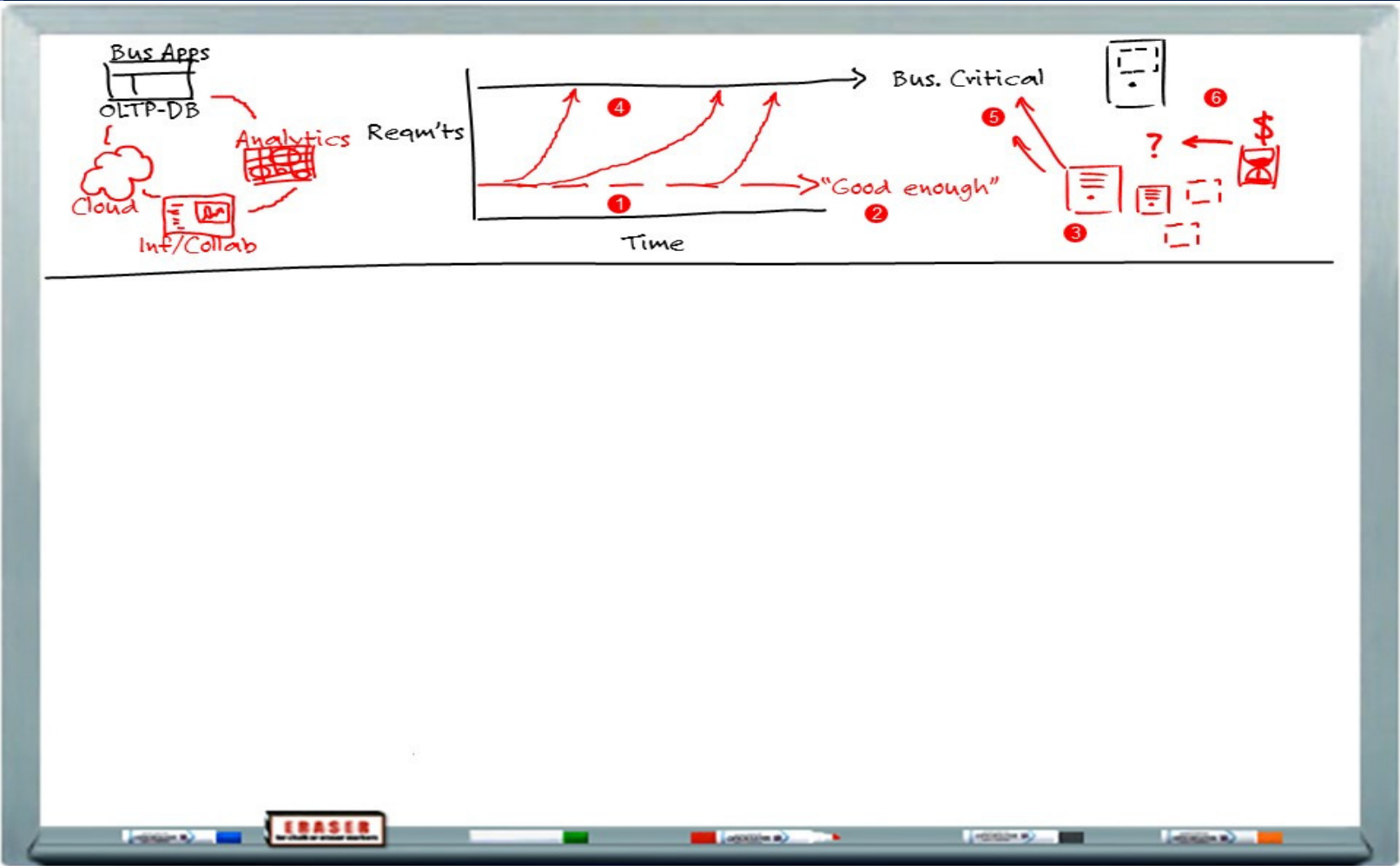
Step 3 - Infrastructure Requirements

1 [**DRAW: BIG Rectangle**] If you consider the infrastructure that needs to be in place to support the wide-range of workloads, it needs to incorporate several key characteristics.

2 [**DRAW: CLOCK - Available**] It needs to be available and resilient. Workloads in today's world are becoming increasingly 7x24 - analytic applications which were only running for a small group of people at HQ now need to be accessed around the world by a growing number of users.

3 [**DRAW: PANELS & ARROWS - Perform**] Delivering the right level of performance to more users, accessing more and differing types of data through a broader range of applications is important. Users today are NOT a patient lot.

4 [**DRAW: LOCK - Secure**] With the increasing number of threats that exist today - there are studies which indicate that enterprise IT infrastructures are attacked 60,000 times per day. With the increasing number of devices, users, Cloud-based workloads, the number of potential threats is certainly not getting smaller.

5 [**DRAW: CIRCLE W/ARROWS - Efficient**] How efficient is the infrastructure - what resources are required - can it efficiently scale to meet demands - does it support the idea of "Do More With Less". Do as much processing as possible in as few a number of systems as you can.

6 [**DRAW: dotted line between the previous 4 items**]
7 [**Cost Effective**] And in that way provide a cost effective environment. One that is cost effective from the beginning - from acquisition to on-going operations

QUESTIONS TO ASK
1. What's important to the workloads or applications that you have in place today? Is the infrastructure that you have meeting your requirements? In a cost effective way? What are the key problem areas? Which area would you consider most important to deal with?
2. What kind of SLAs do you have in place today, e.g. desired uptime levels, security certifications? How do you cope with increasing requirements, e.g. higher uptime needed? ... and so on ...

- NOTE to Presenter - Essentially you should be asking continuously, how does the client do it today, what challenges do they experience, and how would they quantify today vs the desired state.
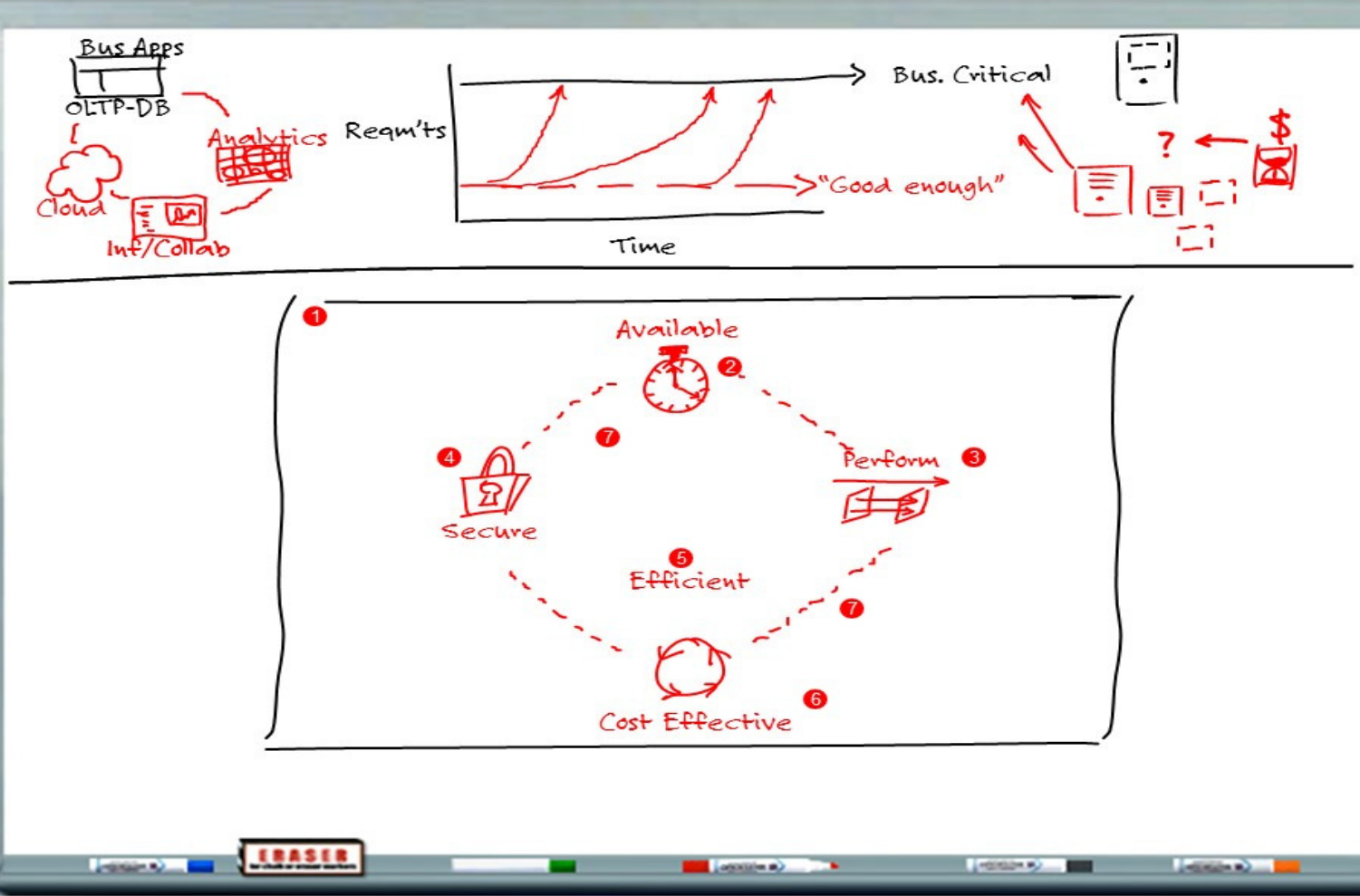
Step 4 - System - Cost Effective

1 [**Draw: BIG Rectangle**] Its against this backdrop where [**z Systems**] z Systems can make a significant difference to you and your organization.

For many organizations z Systems has not been on their radar because they felt they could not run their key applications in the z Systems environment. The reality is that Linux on z Systems IS THE SAME Linux that you have running in other server environments. The difference as we'll discuss is that Linux running on z Systems really is ENTERPRISE QUALITY Linux. Some people understand that z Systems can provide a more robust environment BUT cost is an issue - better stated - IS THE ISSUE. I'd like to set the record straight. (NOTE: z/OS can extend the benefits of Linux, especially for DB applications)

2 [**Affordable to Start**] You can put in place a z Systems environment for as little as $75K (USD) or clients can now even rent our latest Linux offering. NOTE TO PRESENTER - YOU SHOULD CHECK LOCAL PRICING - BE IN A POSITION TO MENTION THE LOWEST PRICE FOR z Systems IN YOUR REGION - IT WILL STILL BE A SURPRISE TO MOST IF NOT ALL AUDIENCES.

What you will find with z Systems is, it is Cost Comparable for the Value with other server environments whether this is x86 or various "flavors" of RISC platforms.

3 [**TCO vs x86 - 50-80% Down Arrow**] In 2012, studies by InterGlobal (see appendix for link to document) have found that the Total Cost of Ownership for z Systems can be 50-80% lower over a 3 year period versus x86 environments that were configured to meet the same workload requirements.

4 [**(LinuxONE)**] And with the latest price performance and the new Elastic Pricing Plans makes the new LinuxONE server even more price competitive.

5 [**Data Center Simplicity - Up Arrow**] z Systems can also enable you to simplify your data center operations. If you are looking at data center consolidations, if your data centers are "space-constrained' z Systems can help. It's ability to scale vertically versus the x86 alternative of scaling horizontally can make a big difference with space and associated costs.

QUESTIONS TO ASK
1. Can we put the question of cost aside for the remainder of this conversation? Are there any lingering questions about cost?

OBJECTIONS
It's still a mainframe and that means additional costs for skilled people.
RESPONSE: I can appreciate your concern - the fact is that Linux on z Systems is Linux - same skills that your people have today are transferrable to the Linux environment on z Systems. Also, with z Systems, it will mean you have less physical devices to manage and with IBM Systems Adminstration tools you have GUI environments NOT old "green screen" technologies.
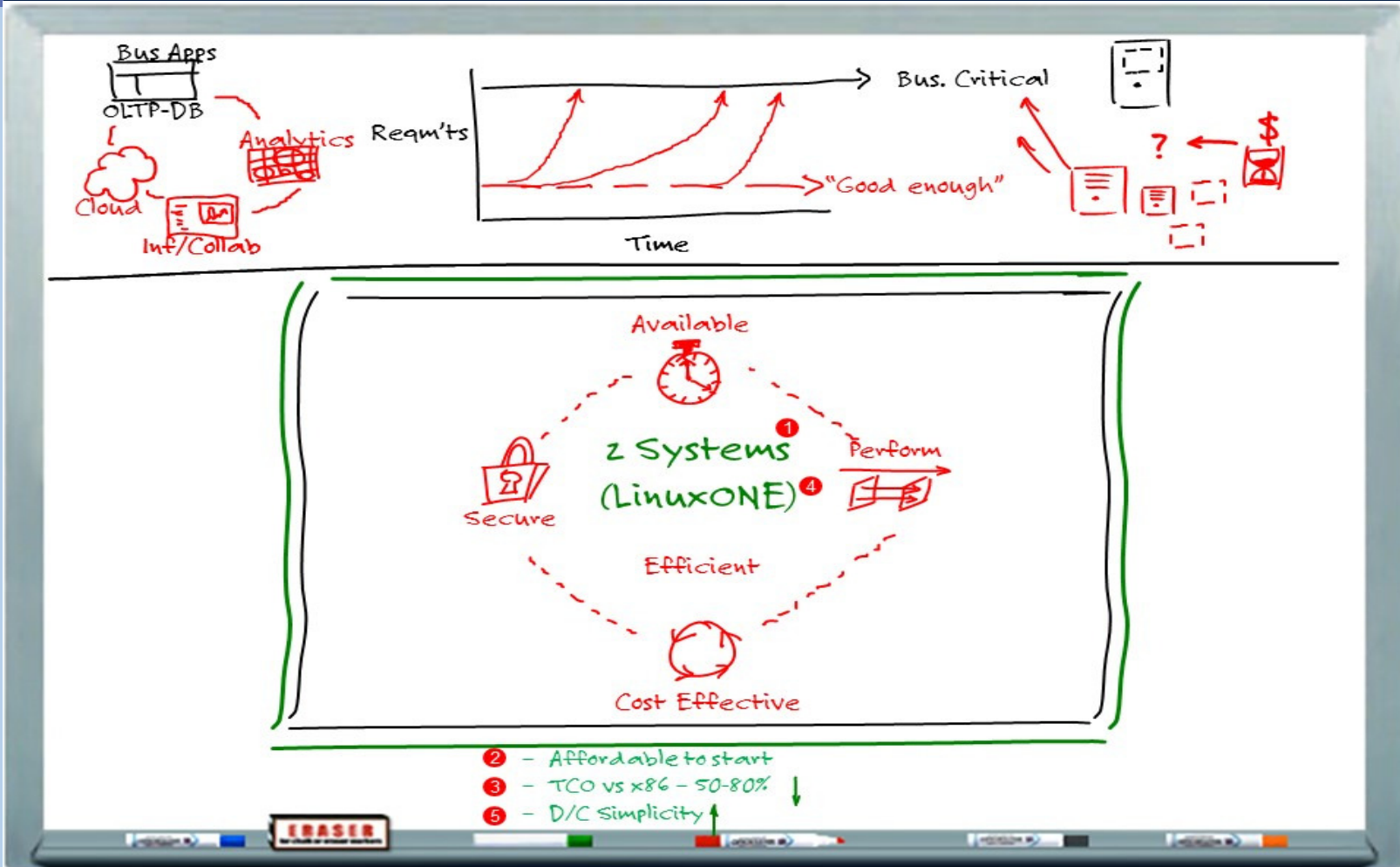
Step 5 – z Systems - Available - Perform

With the question of cost addressed (at least for the present moment), let me give you a sense of the other key advantages you get with z Systems (running your Linux workloads/applications)

1 [**Rectangle - Available**] Down-time or limited availability can impact many aspects of a business or operation - it can impact revenue, customer/user satisfaction, ability to respond to emergencies, staff productivity, manufacturing or processing efficiency, the list goes on.

2 [**Resilient - Up Arrow**] z Systems has demonstrated significantly higher resiliency over x86 platforms. Interglobal Studies of customers have shown that z Systems is 3X more resilient than other environments.

3 [**Service Disruption - Down Arrow**] With the ability to add memory and capacity without taking down a system, z Systems can ensure tnat key workloads can be up and running even as demands increase. By the way, all z Systems servers are shipped with extra cores, which you can dynamically turn on without an order which might take weeks to process, ship and install.

4 [**Disaster Recovery - Simplicity**] Recent events has further demonstrated the importance of having good (if not excellent) D/R operations in place. z Systems can dramatically simplify and enhance D/R operations. By being able to run substantially more on a single system back-up and recovery is simplified - dealing with the network and configuration issues on only ONE system versus the multiple systems associated with x86 environments.

5 [**Rectangle - Perform**] As we briefly mentioned earlier, with more users, more data, more applications going after the same data, they all put pressure on a system to deliver "great" performance.

6 [**Scale&Perform**] z Systems gives an organization the ability to scale to meet demand at the same time ensuring performance quality. Tests and benchmarks have shown that z Systems provides Linear Response Time as the System scales from 1 TB to 50 TB of data. (See Appendix for reference material)

7 [**5X Throughput**] z Systems incorporates the Fastest processors in the commercial systems market today. Its I/O design has demonstrated 5X throughput over x86 platforms.

8 [R/T Access - Up Arrow] With the increasing need to provide more users with Real-Time access to data, z Systems can provide significant advantages - with single system design and the co-location of data with applications, there are significantly fewer network hops to get to data than x86 environments - and that means faster access and improved ability to take ACTION.

9 [1 to 10 TB MEM] And to increase the speed even more, on z Systems z13 and LinuxONE, you have have up to 10TB of memory. This wii results in possible few access to the data stored on disk, resulting in faster performance. This can be of particularly help for Big Data and analytic applications.
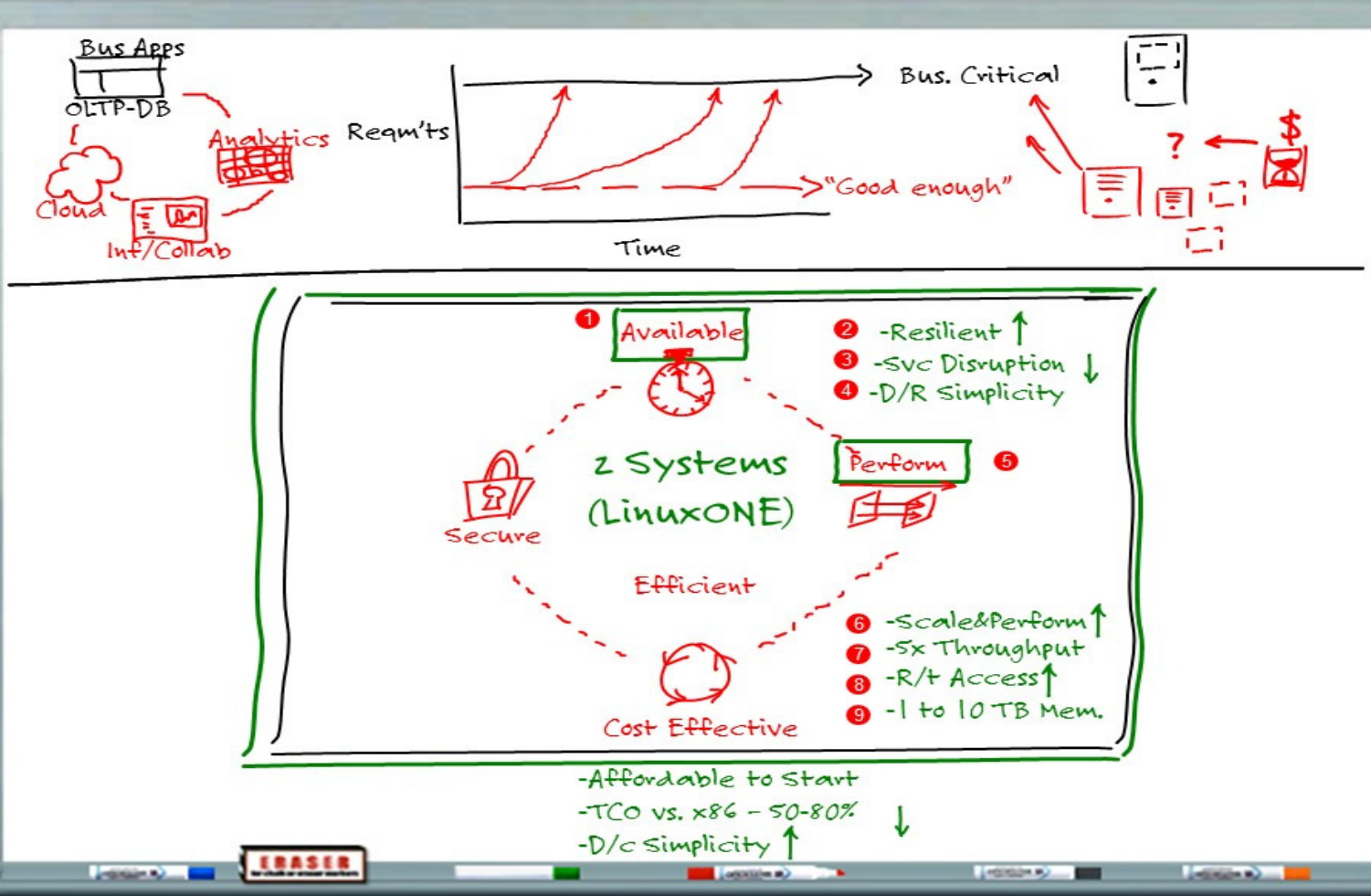
Step 6 – z Systems - Secure

1 [**Rectangle - Secure**] Having a secure and trusted infrastructure continues to be high on most IT manager's lists.

2 [**Built-in**] z Systems has been considered by most analyst firms and in most user surveys to be the "most secure" platform. What sets z Systems apart is that security is built-into the architecture. Unlike other environments where security is either treated as a software issue or as a "patch - correct - protect" issue, z Systems ...

3 [**100% vs 21%**] ... as demonstrated in a study by Interglobal in 2012, incorporates 100% of the Corporate Security features required versus 21% in x86 systems. For any organization exposure to sensitive data can be costly in many ways. z Systems closes down those exposures.

4 [**HW PCI Encryption Tamper Proof**] z Systems and LinuxONE servers have PCI Encryption cores. This serves multiple purposes. First of all, it provides tamper proof encryption. And this this encryption will follow the data to their backup sources which tends to be a weak point in most encryption processes.

5 [**Performance**] Because the encryption is done by one or more separate cores. It does not interfere with the business processing of an application. Therefore, clients tend to encrypt more data with z Systems than they would with x86.

Overall, what this means is that you can have confidence that your data, your systems and your applications are being "protected" in the most effective environment around and that can mean you can pass that confidence on to your users, customers and partners.

Step 6 – z Systems - Secure
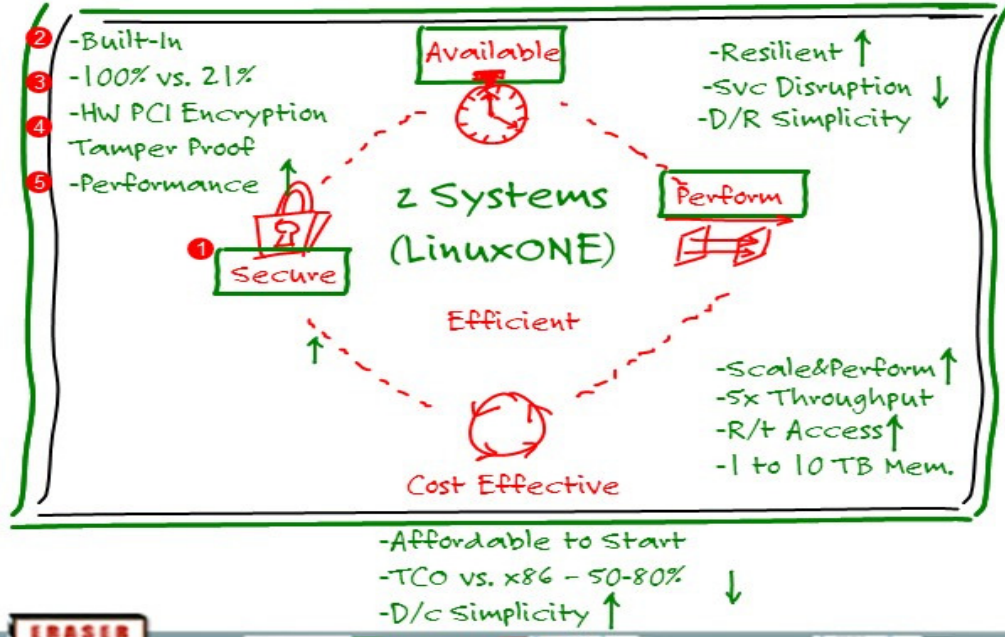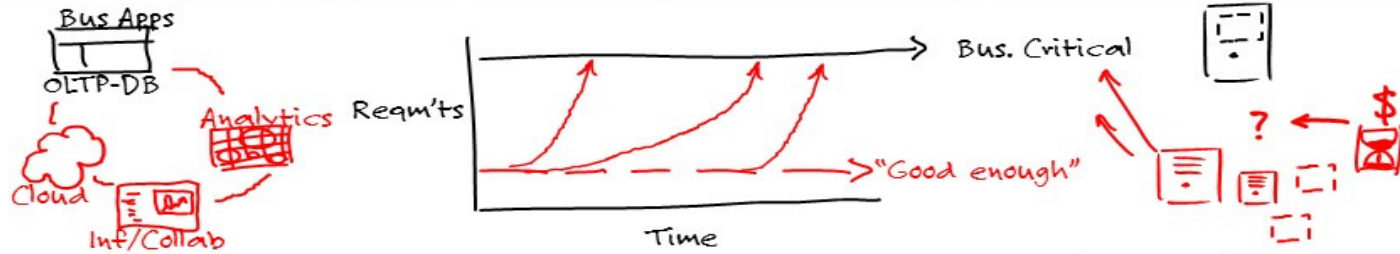
Step 7 – z Systems - Efficient

1 **[Rectangle - Efficient]** z Systems can provide you with one of if not THE most efficient environment to run Linux (and other workloads). Virtualization has been a key component of z Systems since the early 1970s. There are special instructions built into the hardware to make this virtualization more efficient.

2 **[Utilization -80% - Up Arrow]** A key measure of efficiency relates to Utilization - the higher the utilization espcially in virtualized environments the fewer the resources are required - the simpler the environment - and ultimately the lower the cost of operations. z Systems has demonstrated utilization rates that are typically greater than 80% that is more than 60% better than x86. There are customers who are running at 90% utilization 100% of the time.

3 **[>20 Cores Consol]** What this can mean - it means that with z Systems that you can consolidate 20-40 cores running Linux applications down to ONE (1) core on z Systems.

4 **[Admin-Mgmt 1/10th]** Fewer systems along with the right system administration and management tools can mean fewer staff resources to operate and manage the environment - studies have shown that z Systems can require 1/10th the number of staff resources versus x86. With Linux on z Systems - staff can leverage their current Linux skills WITHOUT change.

5 **[Open Systems]** z Systems and LinuxONE support Open Systems.

6 **[Open Stack]** Open Stack gives you access to the ubiquitous Open Source Cloud Computing platform that will meet the needs of public and private clouds regardless of size, by being simple to implement and massively scalable.

7 **[KVM, Others]** As you know, KVM is a open stack hypervisor available to customers today. z Systems and LinuxONE both support KVM as well as Open Stack DBMS, management tools and others, making your migration to z Systems or LinuxONE easier.
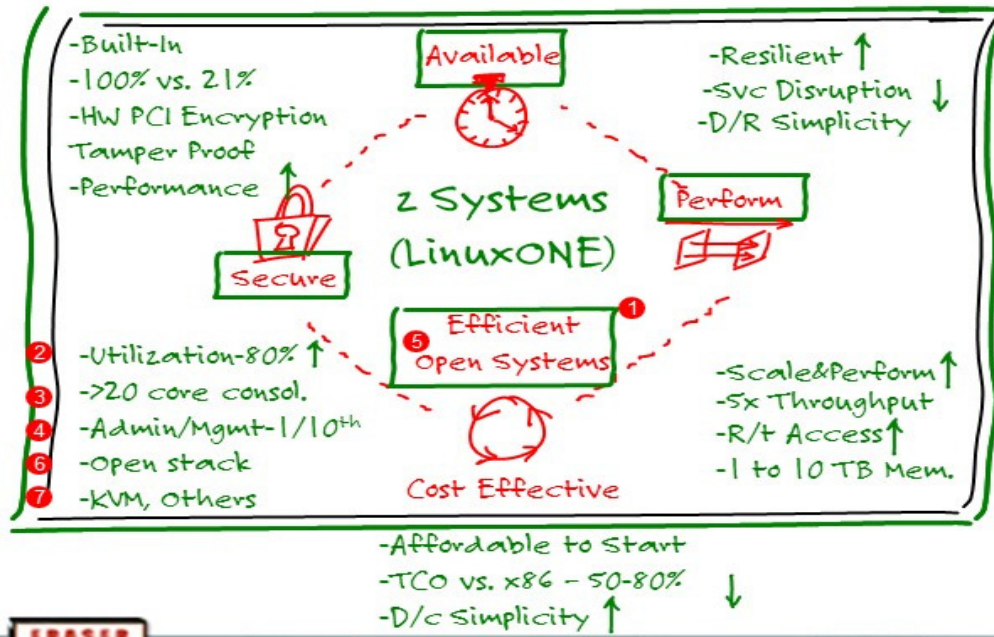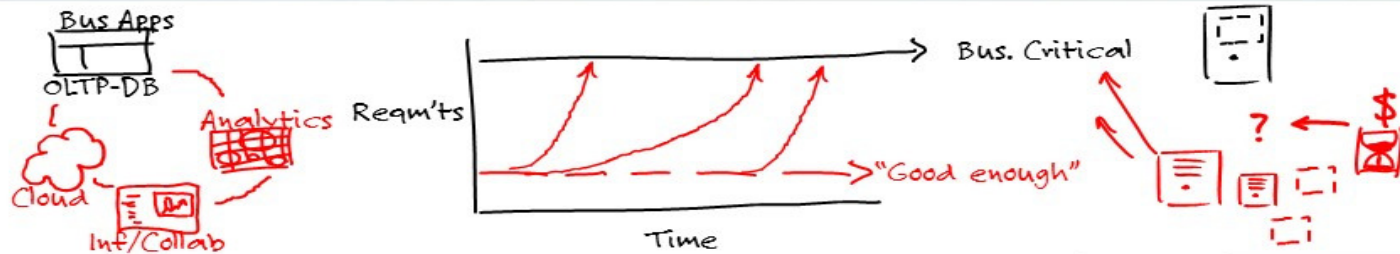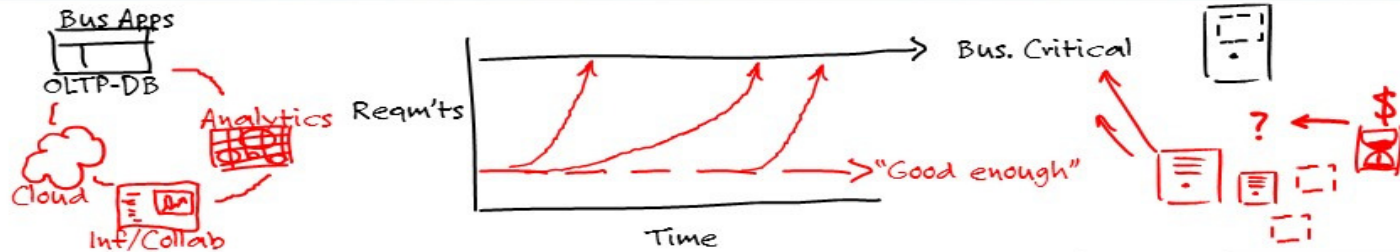
Step 8 - Customers - Proof Points

Let me share with you a few customers who have taken advantage of z Systems running Linux.

1 **[SifoniaRx. (underline SifonizRx)]** This enterprise develops and manages a full suite of medication therapy offerings. They were struggling to manage the Big Data growth. Their key requirements were **[- High Avail, - Flexibility]** Since installing z Systems running Linux their Medical Claims Processing cost was reduced 60% **[Med Claim Processing 60% Draw Down Arrow]** and they have doubled their membership. **[- Membership 2X]**

2 **[Sicoob (underline Sicoob)]** Sicoob is the largest Credit Union in Brazil. Their goal was to be the primary financial services for their clients. To be this, they had to have a system which could be **[-Flexible]**flexible, secure **[-Secure]**and to be able to scale **[-Scalable]** to meet the demand of their clients. z Systems allow enable them to experience a 600% growth in their mobile transactions, 200% on their internet transactions and 60% on their branch transactions. While reducing their electrical power cost by USD1.5M **[-Power USD1.5 (Draw Down Arrow)]**

3 **[Svenska Bank (Underline Svenska Bank)]** Svenska Handelsbanken (Sweden) had growth in both Internet banking and core banking systems. Wanted to consolidate as much as possible into a more simplified, consolidated infrastructure. Consolidated on z Systems with Linux running Java applications alongside their database and Core Banking system. **[-100's -> ONE]** Running 100's of systems on ONE physical machine. Cut Java workload costs by 15% **[-Costs -15% Down Arrow]** and have enable disaster recovery in seconds. **[-DR in Seconds]**

NOTE TO PRESENTER - YOU SHOULD USE CUSTOMER EXAMPLES WHICH ARE RELEVANT TO THE AUDIENCE. See Media Library for additional references.

Step 9 - Recap and Next Steps

What can this mean to you?

1 [**Connect Capabilities**] z Systems incorporates capabilities which help to ensure that your workloads are available; that they perform to meet end-user requirements, that they are secure and at the same time enable your IT team to be more efficient.

2 [**Put Check Marks on Apps**] These capabilities WILL help you to more effectively operate and manage your key workloads whether they are analytics, cloud, mobility, Big Data, etc.

3 [**Rectangle**] Enabling you to take the growing number of workloads (Linux) that were running on servers in closets, in remote locations, on desks or in data centers

4 [**"X"**] and eliminate the need to have those platforms,

5 [**One Server - 100's**] by doing what many of our customers are doing - running 100's of Linux workloads on ONE **Server.**

6 [**"X" - "First Class"**] and by getting the delivery advantages of z Systems move away from a "Good Enough" environment to a "First Class" infrastructure...

7 [**Down Arrow**] ... which can be put in place and run at a lower cost than alternatives

8 [**Rectangle**] but more importantly provide significant operational cost efficiencies over time.

What are your thoughts? I might suggest based on what you have said that we look at setting up as a Next Step:
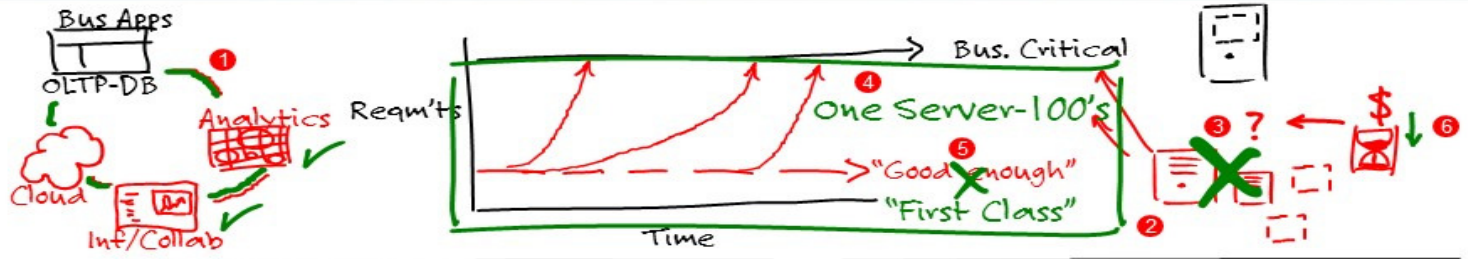
NOTE TO PRESENTER – IT IS IMPORTANT THAT YOU WORK WITH THE CUSTOMER TO SELECT AN APPRPRIATE NEXT STEP. THIS SHOULD BE ONE OR TWO APPROPRIATE ACTIVITIES BASED ON THE DISCUSSION ONLY WRITE ONE.
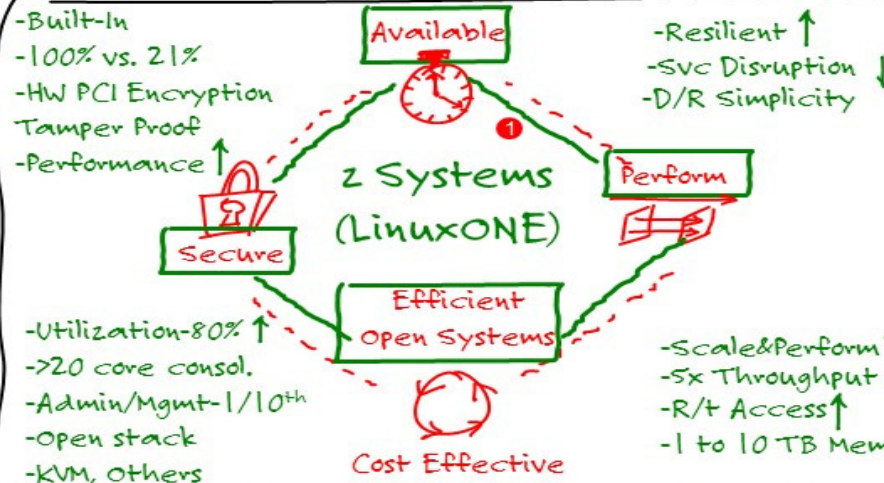**(Using Blue Pen)**
9 [**Next Steps**] - Fit For Purpose Workshop - A TCO Study

NOTE TO PRESENTER – SEE THE ADDENDUM FOR MORE INFORMATION ON THE VARIOUS WORKSHOPS AND STUDIES.

Addendum - Workshops & TCO Studies

"Match Box" TCO – Small simulation models which can be completed within approximate 30 minutes

Smarter Computing Workload Simulator - You simply select industry and the number of 2, 4, and 8 core x86 servers your customer has installed. The model will give you a comparison of cost based on Smarter Computer Studies. Fairly simple and gives you good data to discuss with your customer's c-level executive, particularly if they still believe that z Systems is too expensive for them. A potential good lead into a TCO study such as an Eagle study. See next page. The URL for computing model is: http://www-03.ibm.com/systems/info/z/simulator.html

IBM Systems Consolidations Evaluation Tool by Alinea. – This tool is a little more comprehensive tool, in that you have to supply some additional customer data, such as cost of new application. This tool can be used for determining the server for a specific application. Takes more time, but the output is more tailored for your customer. Model can be downloaded by the customer and used in the future for a new proposed application. The URL for this model is: http://www-03.ibm.com/systems/tools/scon/
These 2 models support both z Systems and Power Systems. And the Alinean tool also supports x86 Blades. Familarize yourself with the data required for these models and try running them with as much customer data you have before you propose these as a next step. If the results are what you expect, then the natural next step might be a full blown TCO study, like an Eagle study if you need it to close the business.

Addendum - Workshops & TCO Studies

A Fit for Purpose Workshop focuses on determining the appropriate Platform for a specific workload based on the requirements that the customer has for that workload and others that may be associated with it.

The General focus of the TCO studies is outlined below:

    Customer has mentioned taking applications off the mainframe - Eagle Study

    Consolidate applications to the mainframe - Eagle or RACE Study

    Reduce mainframe software costs - PRA

    Study total costs of entire IT infrastructure - Scorpion

If your customer needs help with providing true IT cost transparency, aligning the elements of IT TCO to their true costs, usage and value, suggest a Financial Management Assessment (FMA) workshop.

[NOTE: More information regarding the Studies is available in the Media Library and eLearning - you may also want to contact a member of the TCO group prior to the meeting].

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Addendum - Common Objections

These are some of the common objections we have heard from the field.

Additional Background on some of the objections:
The Mainframe Doesn't Run My Application: All applications available on any Linux platform can be easily made available for other hardware platforms. IBM has a support program in place, IBM Systems Application Advantage for Linux – named Chiphopper – to simplify porting of C/C++ apps from x86 to Power Architecture and z Systems systems.
https://www.ibm.com/developerworks/linux/chiphopper
Difficult to Maintain - Can't find Skills: Do you have Linux skills in your company? If so, your Linux skills directly transfer to z Systems because Linux is Linux. Customers who have had similar initial impressions quickly realized that the Linux skills transfer to the mainframe is very straightforward and easy. You can get started with Linux in a LPAR, or z/VM. If you have no z/VM skill, IBM has services and training which offer the initial setup and configuration of z/VM and Linux. The ongoing operating skills are mostly Linux.

Old Technology, not for Modern Application: Open standards supported – Java, Linux, etc. More than 11 years Linux on z Systems is used for critical production workloads. Fastest processor in the world.

Objection	Role	Response
Too expensive- this is a whole another class and a "overkill". I don't need this.	▪ CIO	▪ Even small companies or departments in larger enterprises have seen 3 year TCO savings over 50% ▪ System z superior capabilities are cost competitive to x86 alternatives for installations as small as ½ rack of blades or rack mounted servers. ▪ IBM financing can help to structure capital expense to align with project progress.
Proprietary technology; Mainframe doesn't run my applications	▪ IT Architect ▪ IT Mgr ▪ LOB	▪ ELS supports industry standard Linux distributions (SUSE, RedHat), Applications, and programing languages, and interfaces ▪ Over 3000 ISVs support their applications on Linux on System z (eg. Oracle, SAP, LAMP stack, etc.)
VMWare is good enough	▪ IT Architect ▪ IT Operations	▪ Clients who have already virtualized using VMWare on x86 can still reduce their TCO up to 40% (charts 7,8 have proof points) ▪ Hidden costs of distributed IT infrastructure is often a barrier to IT delivery (excessive SW Costs, complexity, downtime, recovery)
Effort/Time needed for migration	▪ IT Architect	▪ Migrating Linux apps is easy – just a standard recompile ▪ Migrating ISV software is easy (eg. Oracle, SAP) (chart 9 has proof point) ▪ IBM's Migration Factory has years of experience to accelerate and dramatically reduce the risk of custom application migration
Difficult to Maintain; Can't find skills	▪ IT Operations	▪ Skills are standard Linux skills (Linux is Linux, Oracles DBs no change) ▪ Build Virtualization skills using z/VM – 3 day class available ▪ Growing skill base using Academic initiative
Old technology, not for Modern Applications	▪ IT Architect	▪ Industry standard Linux has been running on Linux for > 10 years ▪ Billions invested for modern applications ▪ Fastest processor on planet, Supports open standards and programing models, industry leading innovations to simplify and speed IT delivery

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Addendum - Common Objections

Additional Information

ISV and Application Availability: there are more than 3000 applications available today with a focus on business applications. Linux is Linux; please check out W3 to find the latest on ISV products recently added or upgraded, to support Linux running on z Systems. z Systems fully support Open Stack. And there are hundreds if not thousands of tools and applications free for the download to run on Linux on   z Systems.

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Addendum - Common Objections

Objection	Role	Response
Less support from ISVs for Linux on z relative to Linux on x86 (eg. Oracle)	• IT Architect • IT Operations • LOB	• >3000 enterprise applications are supported and more are being added every month. • Major ISVs, Linux OEM's, and most Linux Open Source enterprise software is available for Linux on system z • IBM's ChipHopper program has helped (hundreds?) of new ISV's quickly move their application to System z which is typically just a simple recompile. For example, Siebel CRM used ChipHopper to move to System z
A mainframe will add complexity to my IT architecture and complicate Integration issues	• IT Architect • IT Ops	• While a System z ELS may require some minimal additional skills for virtual image provisioning and management, the ELS's ability to reduce IT complexity is easily demonstrated • When compared a distributed scale out IT architecture, a single System z can run the workloads of hundreds of x86/Vmware servers, and reduce datacenter complexity, eliminating networking, floorspace, power, and cooling requirements. • ELS strong support for standard applications, interfaces, and programming languages, allows for easy integration in to most customers existing application or systems management infrastructure

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Appendix

Additional Information

Solitaire Interglobal Research Report:
http://www.ibm.com/common/ssi/cgi-bin/ssialias?subtype=WH&infotype=SA&appname=STGE_ZS_ZS_USEN&htmlfid=ZSL03192USEN&attachment=ZSL03192USEN.PDF

Linear Response Time Definition/Reference – On Page 35 in section for DB2
http://media.wiley.com/assets/7076/63/9781118501351_custom.pdf

The above items are available items are in this Whiteboard's Media Library:
http://w3.tap.ibm.com/medialibrary/media_set_view?id=23980