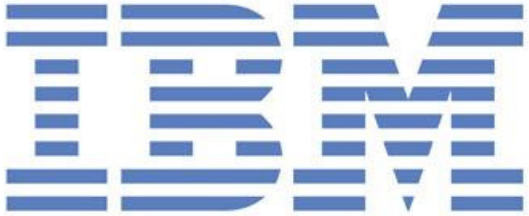
Right Fit for Purpose - z Systems



Jointly Developed With:

1 Understanding the RF4P Whiteboard

When to use this Whiteboard? -- Use this **Right Fit for Purpose - z Systems** whiteboard if your customer is struggling to determine which of their hardware platforms, mainframe or distributed, to run applications for best performance and cost and they need a better understanding of the characteristics to consider in making this decision, addressing the question "**When z Systems**?"

Step 1 - Set the **Specific Objectives** for this customer discussion.

Step 2 - Discuss **Challenges** the customer is experiencing and gain their agreement on the challenges.

Steps 3-4 -Documenting the types of **Application Platforms** in IT shops and **The Journey** many customer share.

Steps 5-6 - Highlight the **Enterprise Application Environments** and specific **Requirements and Characteristics** of these applications.

Step 7 Discuss how the application characteristics affect the **Trade-off of TCA vs TCO.**

Steps 8-9 - Show when to use z Systems to address the environment challenges and application characteristics.

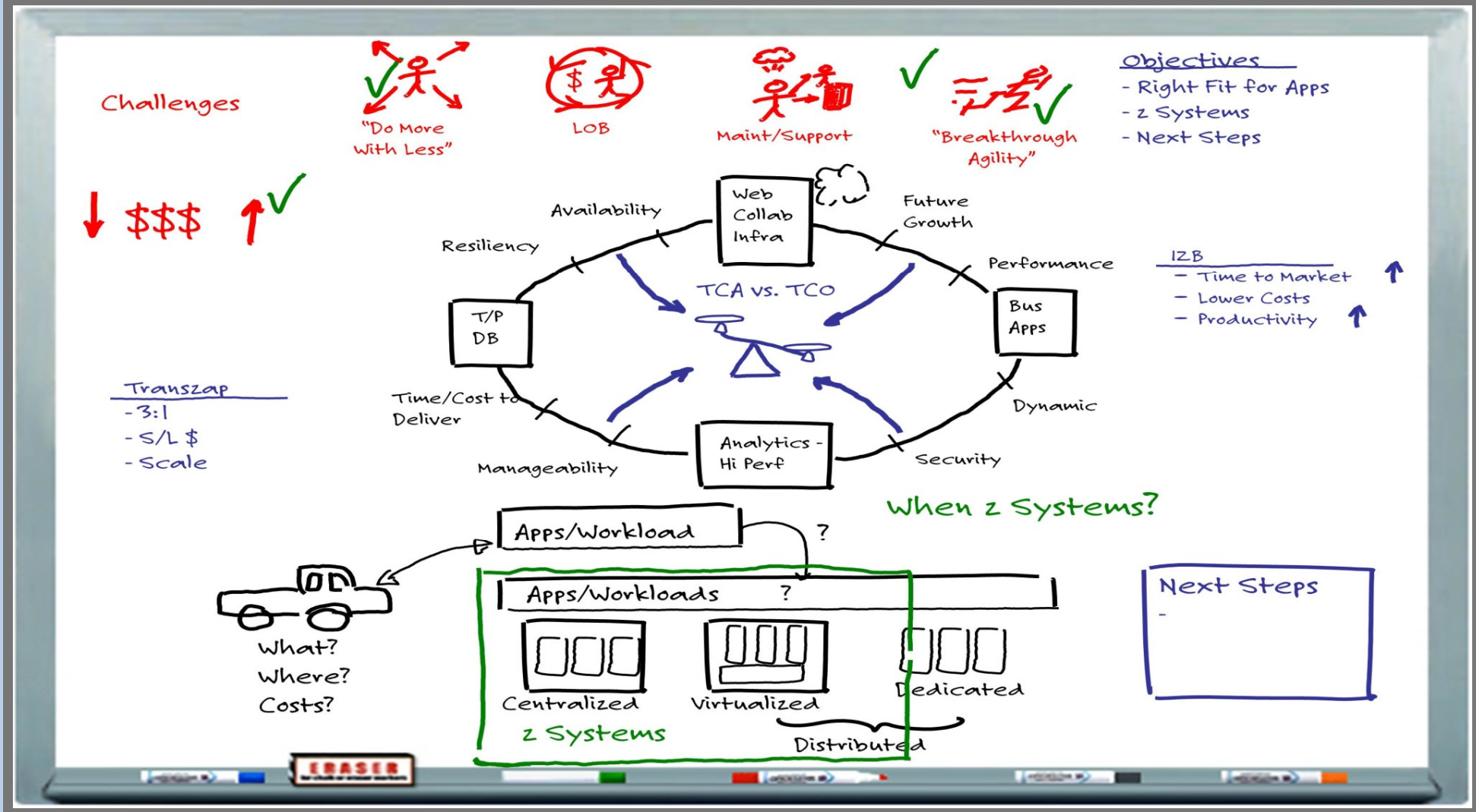
Steps 10-11 - Provide **Customer Examples** of success with "Right Fit" analysis and gain commitment from customer for next steps like bringing in the right resources to help them better understand the **Right Fit for their application onto z Systems.**

The use of color in this whiteboard:

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 business or IT challenges

1 Understanding the RF4P Whiteboard



Step 1: Objectives

[Some pointers on using this Whiteboard: Make this Whiteboard more meaningful to your customer by using examples/references that are in the same industry, geography, etc.]

This Whiteboard is intended to assist you in discussing the concepts related to Right Fit For Purpose and if appropriate introduce z Systems from a Right Fit For Purpose perspective and NOT a technology perspective.

NOTE: There are two additional Whiteboards related to System z - The Value of IBM z13 focusing on "**Why**" **IBM z13** is a viable platform today that addresses their IT needs; and How to talk IT TOC which focuses on Total Cost of Ownership.

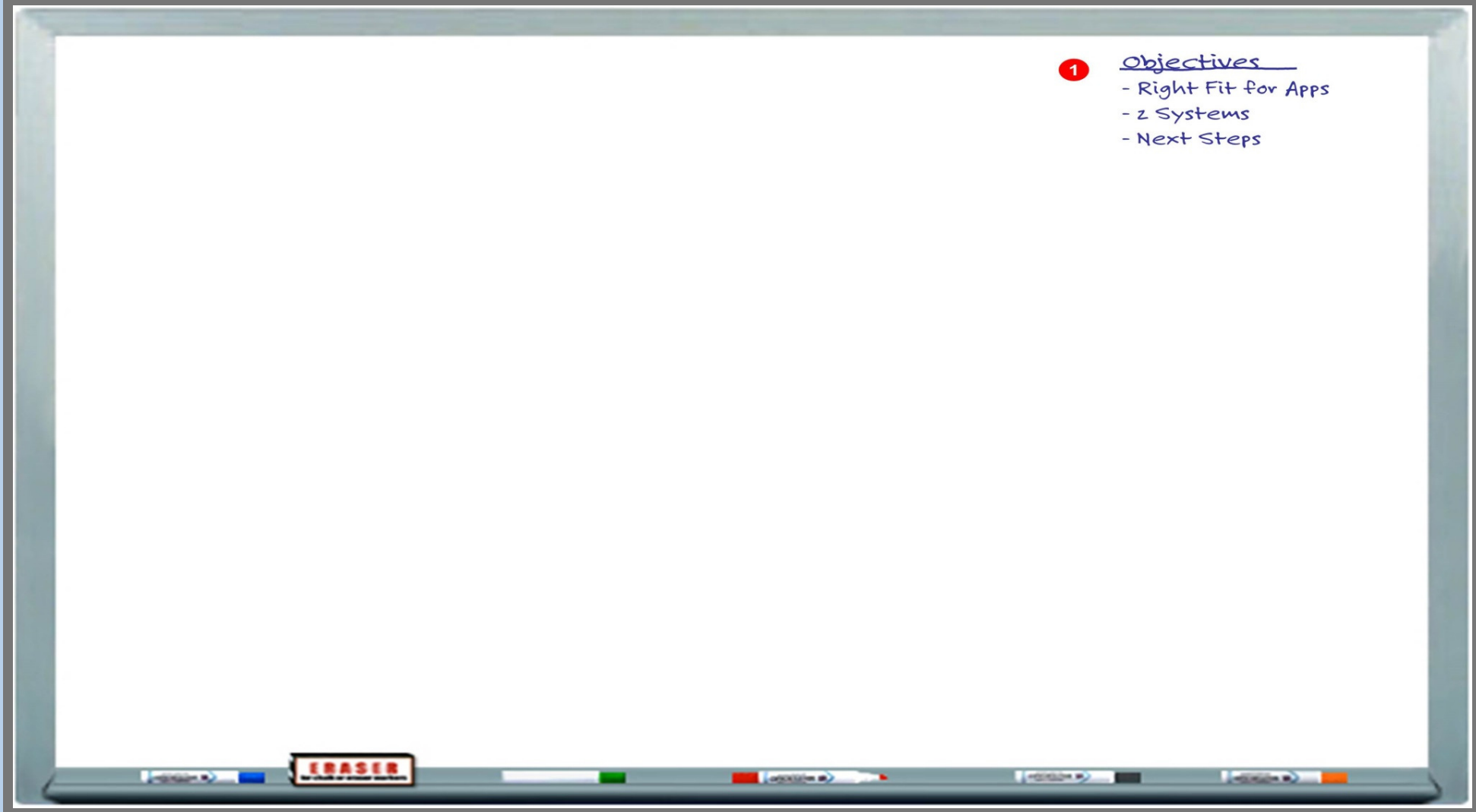
1 **OBJECTIVES (use BLUE pen)**

Thanks for taking the time to meet with us. As we discussed in setting up this meeting, what I would like to do during our time together is share with you what we have learned from our experiences with customers and our own IT operations about the relationship between applications and platforms. We'll talk about how selecting a deployment infrastructure using a right fit for purpose approach can yield significant advantages to your organization in terms of operational efficiencies and long-term reduction in cost of operations, whether we are talking about new or existing applications.

As part of our discussion, I'll include how z Systems - the new IBM z13 - dramatically changes the idea of right fit for purpose selection.

I'd like to begin by reviewing some of the business and IT challenges that other customers indicate are impacting the deployment, delivery, and ongoing support of their business applications.

Step 1: Objectives



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Step 2: Challenges

1 **Challenges (use RED pen)** There is a lot of on CAMSs today, but the base challenges remain the same.

2 **Applications-Related Challenges for the Business:** It is all about identifying, deploying, and maintaining applications and infrastructures that deliver real monetary value, meet key business challenges, drive new or incremental revenues, increase customer satisfaction, or, on the other side of the "ledger," help the organization increase efficiency in business operations to better contain operational costs or risks. The reality is that IT organizations face a number of deployment challenges as they consider delivering and supporting new and existing applications.

3 **Do More with Less:** Almost every IT organization we talk to is being asked to do more with less. This means reducing operating costs and capital expenditures while still providing quality service with current or reduced resources.

4 **LOB (Line of Business):** LOB IT organizations are finding that they lack resources and expertise to support the applications and associated infrastructure they originally acquired. So they are turning to centralized IT to take on operational responsibility for those applications. This sets up increased pressure and challenges for IT organizations that often were not involved in the original decisions.

5 **Maintenance and Support:** Customers are telling us that they face more challenges in dealing with the hidden costs of maintaining and supporting distributed or aging IT environments - do they have the right people, the right tools, and the right processes to deal with those environments. The challenge is how to reduce the 70%-80% being spent on this effort and funnel resources to the last challenge…

6 **Breakthrough Agility:** Users are demanding more agile and responsive applications. **Building a Smarter Planet** is IBM's global point of view on how innovative applications and infrastructure can literally change the way the world works. As part of this, IT organizations are being challenged to ensure that they are putting in place the right applications that are leveraging the right technology to enable a smarter enterprise.

QUESTIONS TO ASK

Are you facing similar challenges? Are there other more pressing challenges you face? What are they?

3 Step 2: Challenges

4

Step 3: Application Platforms

1 Applications and Workloads: (use BLACK pen)

If we look at a typical application and workload portfolio, we find that workloads and applications are more diverse and complex, the volume of data is unprecedented, the requirements for security and resiliency is increasing. In most organizations, the infrastructure that supports these applications is a multi-platform environment that has "emerged" as new platforms are brought in or extended to provide the optimum support for a specific application or workload.

Just to be clear, when we talk about platform, we are referring to the combination of hardware, OS, systems, and software – everything required to host an app effectively and efficiently.

This complex multi-platform environment is…

2 Centralized – Distributed (Virtualized – Dedicated): (use BLACK pen)

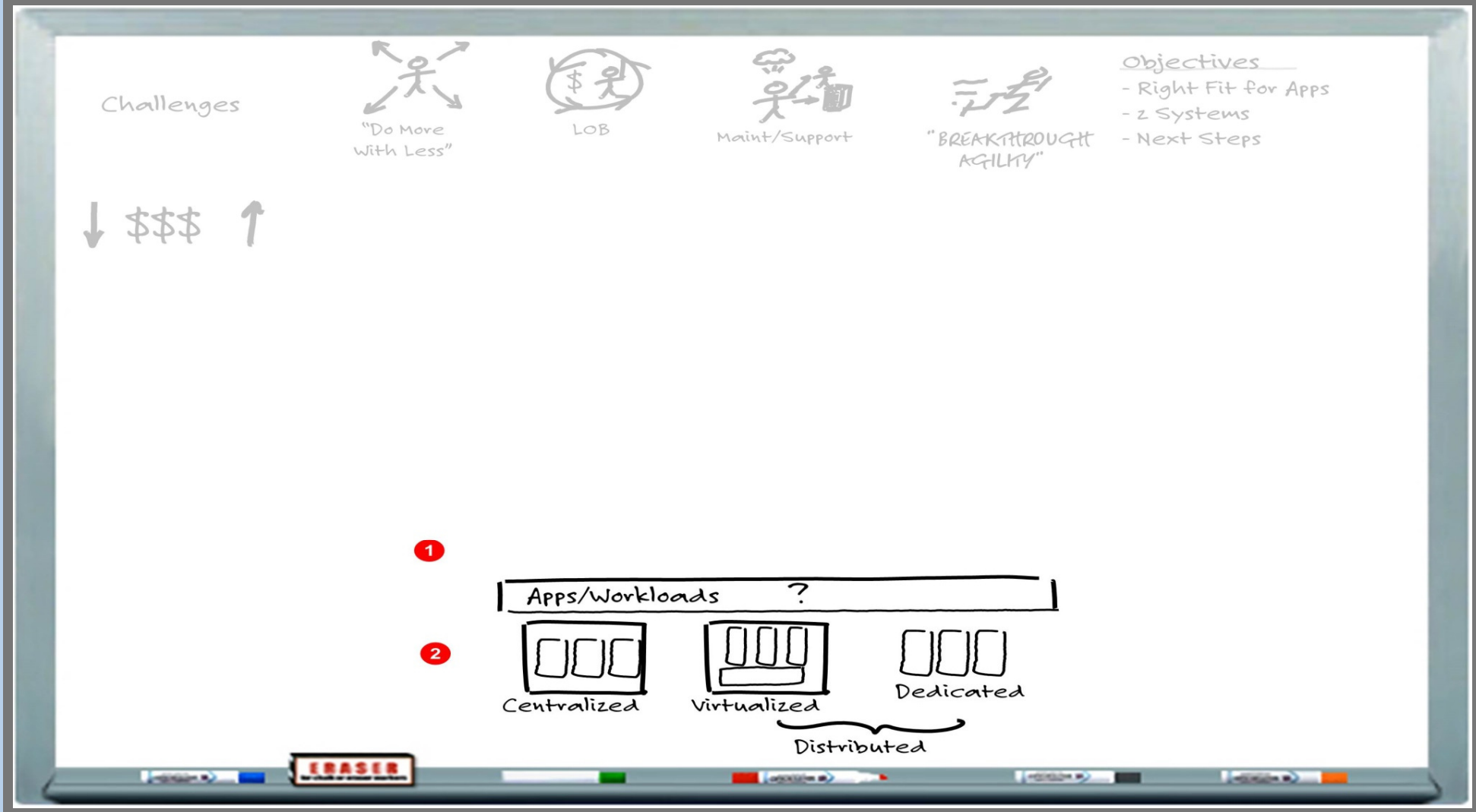
… a mix of centralized and distributed servers. In many cases, the distributed servers are running either in virtualized or dedicated fashion. And across this infrastructure, they have a mix of operating environments, including z/OS, Linux, UNIX, Windows, and others, which support various applications. What the infrastructure looks like is based on a number of factors, including the type and age of the applications, the strategy of the organization, the skills of the IT team, how the infrastructure evolved (mergers and acquisitions vs. organic), and others.

QUESTIONS TO ASK

What does your infrastructure look like? [You can draw out their environment]

Who is making the call on where new applications are being deployed? IT or Line of Business?

4 Step 3: Application Platforms



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Step 4: The Journey

1 Deploying or Redeploying Applications and Workloads: (use BLACK Pen)

Most IT organizations are continually being asked to enhance the functionality of applications or introduce new applications, or find ways to improve application performance. In going through this process, one of the approaches we hear quite often these days for selecting a deployment infrastructure is: "Let's run it on the least expensive platform." The issue with this approach is that it often fails to take into account the breadth of real factors that should be considered.

I'd like to use an analogy to illustrate what I mean.

2 Making a significant personal purchasing decision **(USE AN ANALOGY THAT WORKS FOR YOUR CUSTOMER – HOUSE, BOAT, CAR, TV, OR CAMERA, ETC.) (use BLACK Pen)**

In this example, we will use a vehicle (or car):

First, **What** features and functions are most important to you today, and will they still be important to you a few years from now? - What do you intend to carry in the car (people, cargo, etc.)? - What are your priorities for how this car functions: Safety? Gas mileage? Efficiency? Speed and acceleration? Or, are you just looking for the cheapest way to get from Point A to Point B?

Second, **Where** will you operate the vehicle? Will you run it in town, on the open road, in the back country? The "where" will have a significant impact on many of the features of the vehicle that you can take advantage of.

Lastly, **Cost** must be considered. We can't always spend as much as we want. We have to decide whether we will buy or lease. We really should take into account all of the ongoing costs – gas, insurance, maintenance and repairs, etc., when we look at cost.

What this creates is a need for making a trade-off decision – often a tough political one. Based on our customer experience, this type of trade-off approach could be applied to the process of deciding how and where to deploy

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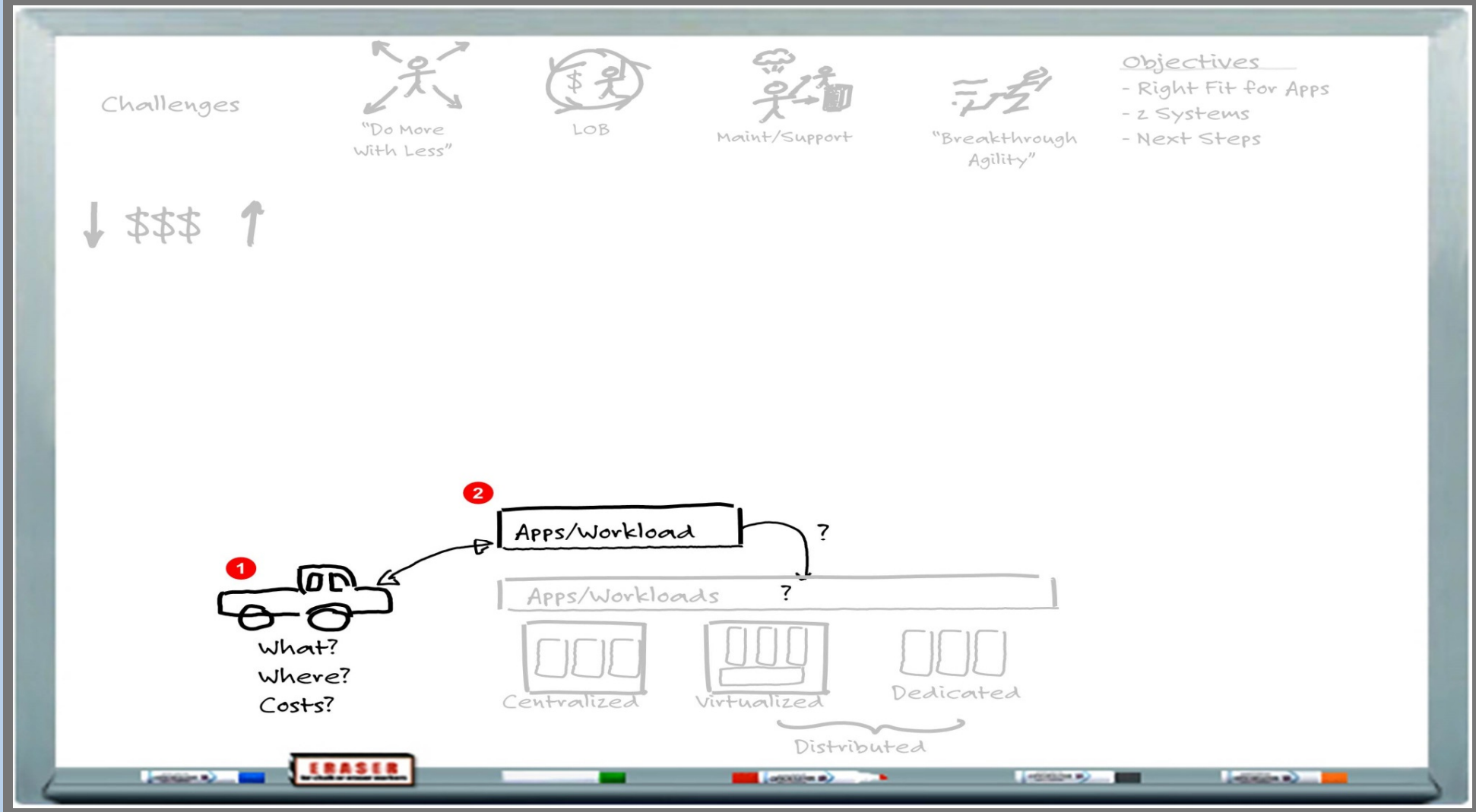
Step 4: The Journey



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Step 5: Enterprise Applications

I'd like to take our analogy and apply it to the world of IT workloads and applications. First, based on our work with customers and internally at IBM, if we look at application portfolios, we typically see four major app types. (YOU CAN GET YOUR CUSTOMER TO IDENTIFY APPLICATION TYPES OR A SPECIFIC APPLICATION.)

(use BLACK pen)

1. **TP – DB – Mixed:** This includes online transaction processing, or OLTP, applications, other large-scale, database-driven applications, as well those mixed-load applications that might share data.

2. **Web – Collaboration – Infrastructure:** Companies are building Web-based applications that are incorporating the latest Web 2.0, mobile, and SOA technologies. They are also putting in place applications and infrastructure to better enable collaboration among employees, customers, and Business Partners.

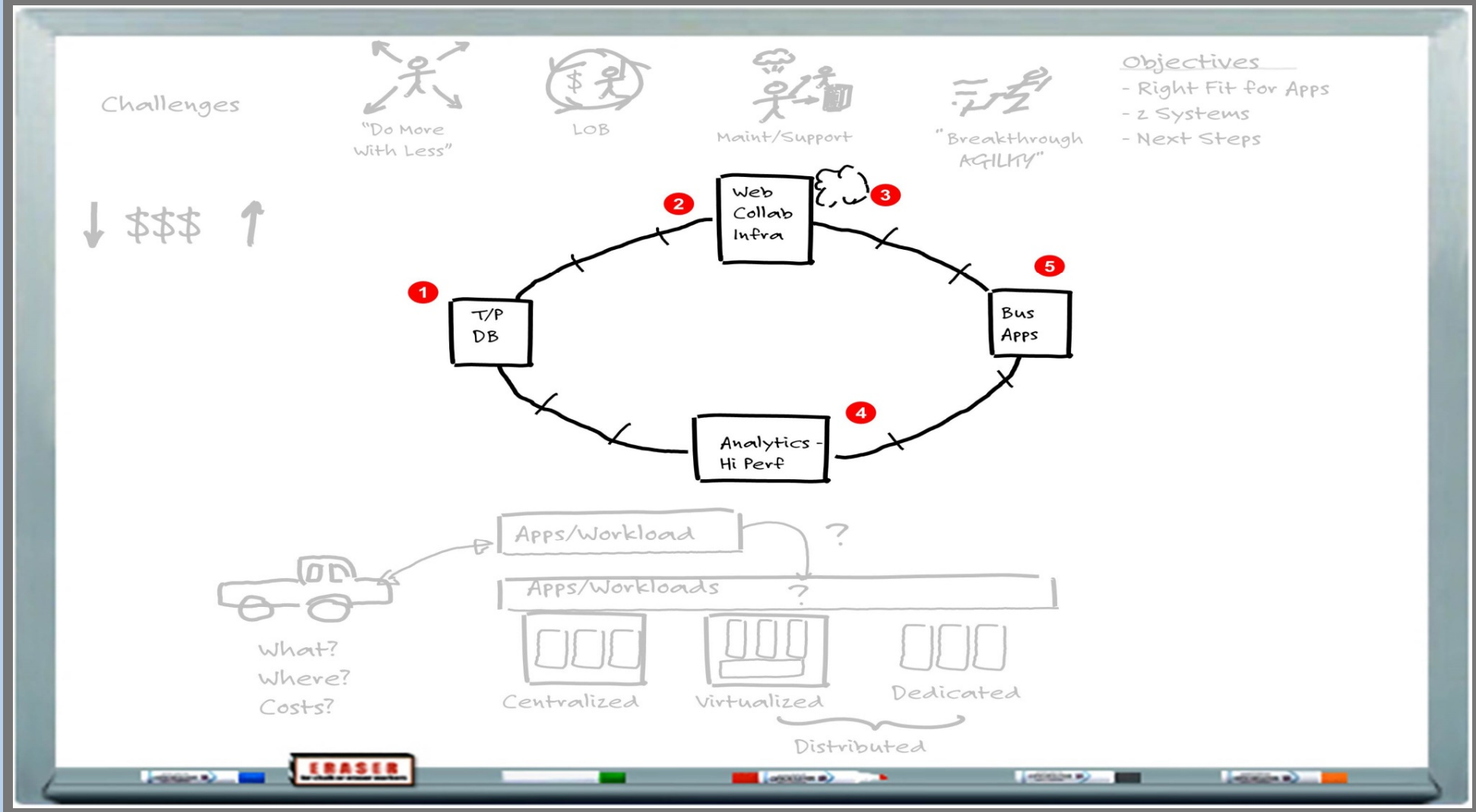
3. **Cloud:** Most companies are now actively incorporating cloud computing to meet these needs and others, such as self-service and rapid deployment, scalability, cost management by using infrastructure, or applications only when needed, etc.

4. **Analytics – Hi Performance:** In many organizations, Analytics (or data warehouse) based applications have become increasingly important. Companies need to make quicker and smarter decisions to optimize business performance and are implementing Analytics, a lot of times using data marts. In certain industries, there is also a set of high performance or computationally intensive applications that are critical to business operations.

5. **Business applications:** These applications are important to core business

QUESTIONS TO ASK
Are these categories in line with your view?

Step 5: Enterprise Applications



Step 6: Application Requirements & Characteristics

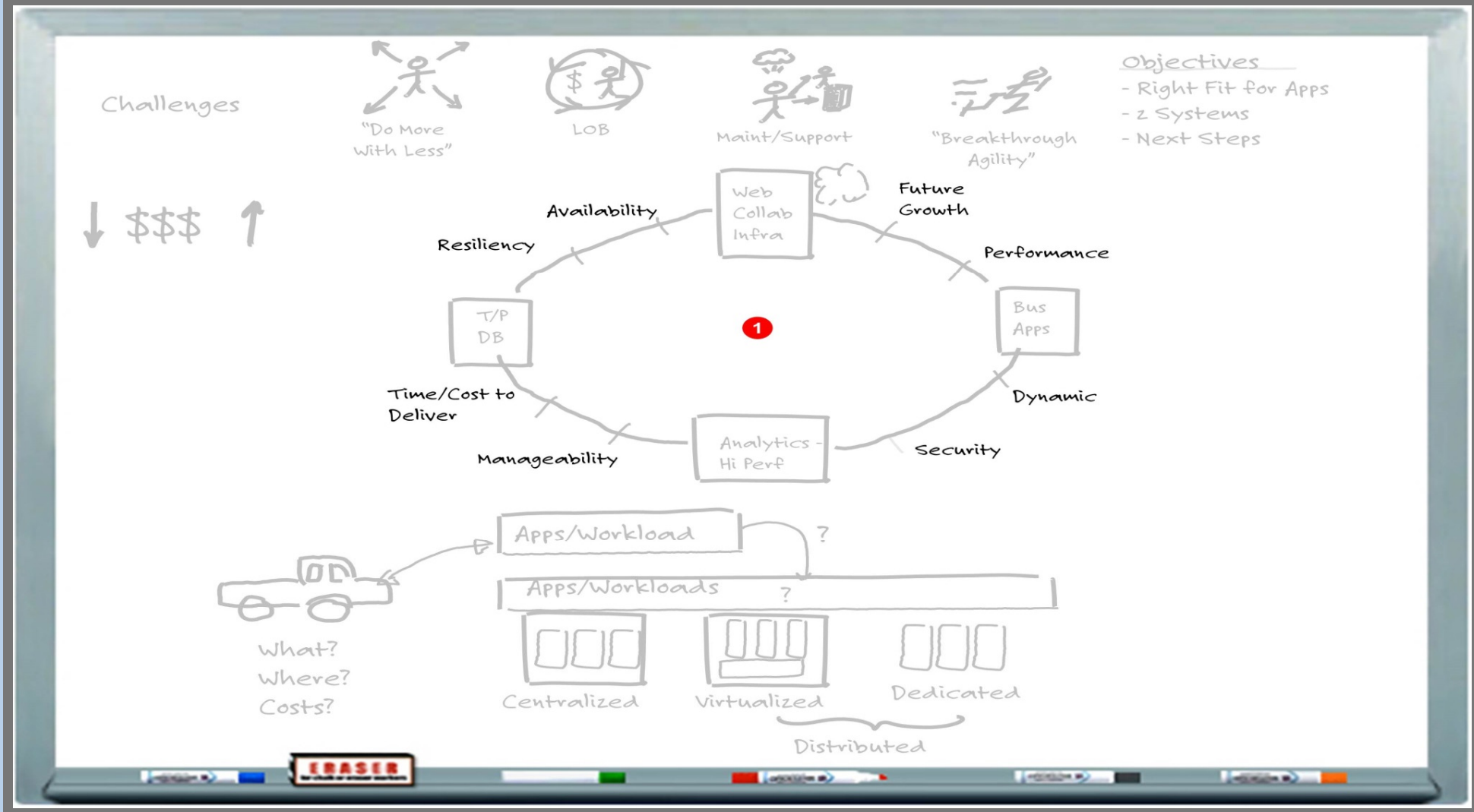
1 **Requirements & Characteristics:** What we find as we look across these app types is that each has set of requirements or characteristics – a purpose – that can ultimately drive what the right fit or choice should be when deploying the app.

Dynamic – How often and how much will the application potentially need to change based on business requirements? Will this require periodic provisioning or releasing new versions of the application? What effort will be required? Will all configurations of distributed servers be able run new versions? How will you test this? **Security** – What level of security does the specific app require? How much effort will be required to implement and maintain the right level of security? If it is operating in a distributed environment, will security be more difficult to ensure? **Performance** – How will you develop and deploy the app to optimize performance and throughput to support the SLAs required for the app? **Future Growth (Scalability)** – How easily and quickly can the app architecture scale up, scale out, and pull back (shrink) when required to meet demands? Is it a few minutes or hours, or will it take weeks or months to accomplish? Will you need additional hardware, software, and resources? **Availability** – Everyone would like to have all applications available all the time, but not every app has that requirement. If it is important, what is the development and infrastructure cost to provide that level of availability? **Resiliency** – Some applications must recover immediately, or there is a real impact on the business. How critical is DR for these applications? What is the cost to implement, maintain, and test this on a continual basis? **Time/Cost to Deliver** – What is the time horizon for delivering the app? What dev-test cycles will be needed? What skills are required? Can you integrate with other applications and data? Will you be duplicating or replicating data, and what will that take in terms of time and money? **Manageability** – What will it take to manage and operate the application? What will be the effort to manage the application along with the rest of the application portfolio? What types of changes will there be to SLAs and QoS requirements, and can these be dealt with efficiently?

QUESTIONS TO ASK

Are there other requirements you feel need to be taken into account as you look at deploying new or re-deploying existing applications?

7 Step 6: Application Requirements & Characteristics



Step 7: The Trade-off's

(Use BLUE Pen)

1 **[In blue, draw arrows pointing to a scale - TCA vs. TCO]:** The real challenge for IT organizations and LOBs is to consider and weigh all of the functional and non-functional factors associated with an application, as well as the specific IT challenges they face when evaluating the right fit platform on which to implement a new or existing application. Just like our vehicle analogy, TCA is only one factor. It is much more important to look both TCO and TCA. This is the only way to determine the real cost (and value) of the app (and the infrastructure) to the organization. Although TCA might look attractive, when you take into account the TCO, the story is often VERY different.

2 **[DISCUSSION ONLY] IBM Platform Guidelines:** Looking at the various characteristics or requirements, prioritizing them, and then selecting the most effective platform for deployment is a challenging process. We would all love to have a magic box make the right fit decisions for us, but it's not that simple. There are, however, some very general guidelines to consider for various IBM platforms. For example, for in the past applications that are compute intensive, require higher memory and bandwidth utilization, System P could be a more logical choice, but with the z13 and the 10 TB of memory, you should revisit this this. If the application has specific application functionality requirements, does not have significant QoS requirements, and cost really is the biggest issue, then x86 might be the right choice. For those applications that are I/O intensive, require high QoS, and/or the **data** for the app(s) resides on IBM z Systems, it makes sense to consider z Systems.

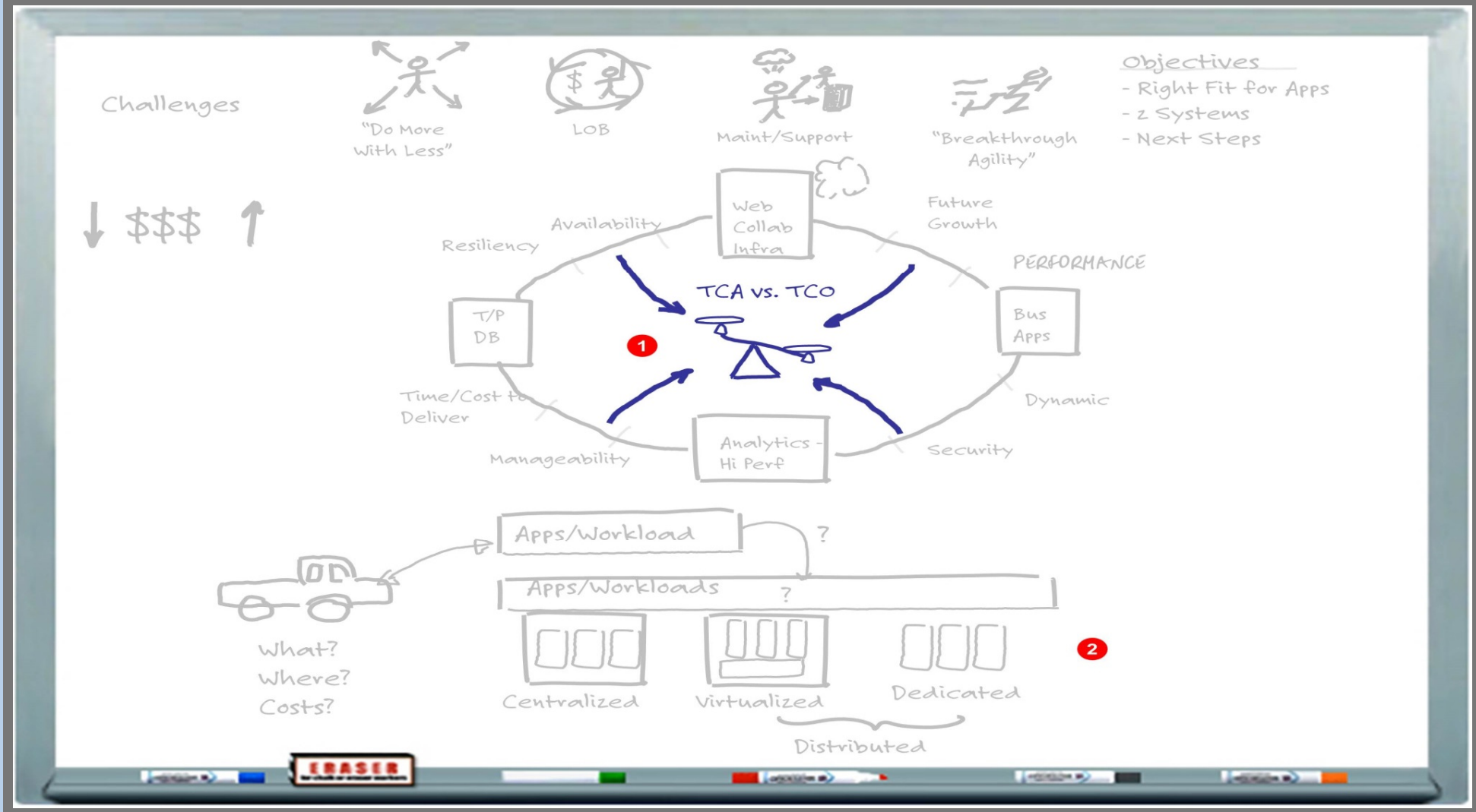
The issue for many customers is that, despite these guidelines, they continue to struggle with the trade-offs we just discussed. The good news is that there are things being done at the platform level. Let me give you an example of how the

QUESTIONS TO ASK

Do you have a formal or informal method for determining the trade-off between various requirements or characteristics?

How do you and your team look at the trade-off's? Do the Line of Business organizations do anything with respect to looking at trade-off's?

Step 7: The Trade-off's



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Step 8: z Systems - IBM z13

1 **[Draw green box around centralized-virtualized and two dedicated servers – include portion of applications rectangle] z Systems - DO NOT INCLUDE ALL DEDICATED SERVERS**

The z Systems and particularly the new z13 addresses the unique challenges of enterprise computing. With it, you can deploy a truly integrated hardware platform that spans your enterprise, integrating mainframe, Unix , and x86 technologies. You can effectively consolidate islands of computing, reduce complexity, improve security, and bring applications closer to the data they need.

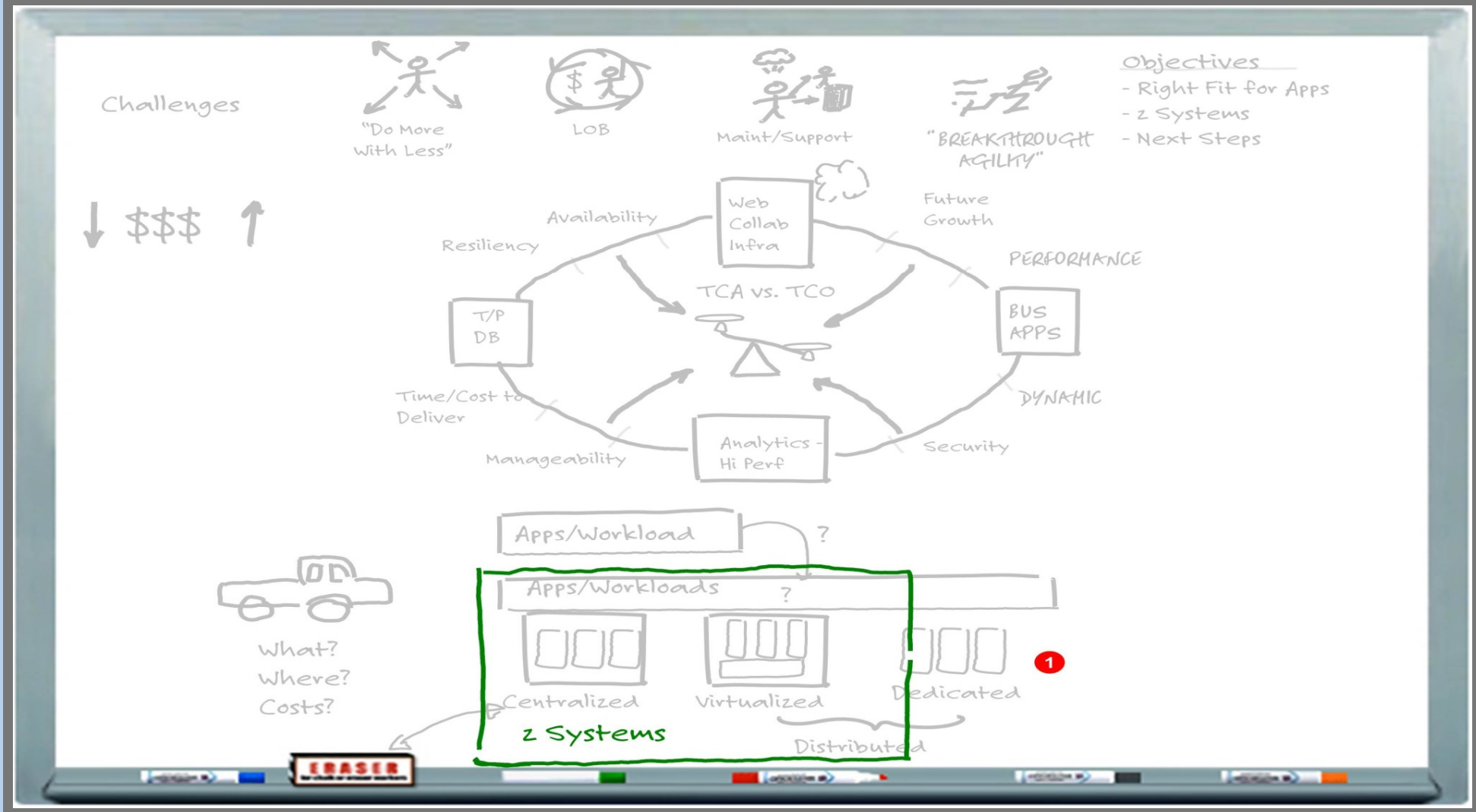
z Systems brings together the best attributes of Consolidation and centralization of IT resources, with a industry leading performance that delivers up to 111 Billion Instructions per second (40% > zEC12) for the most demanding workloads.

With z Systems you can extend mainframe-like governance and qualities of service to special purpose workload optimizers and IBM® POWER7™ and IBM System x® Blades. The IBM z Systems Unified Resource Manager brings your heterogeneous environments together into a single system giving customers central management of all critical operational aspects including energy monitoring and management, goal-oriented policy management, increased security, virtual networks, and data management, consolidated in a single interface that can be tied to business requirements.

The bottom line is that by optimizing resource deployment across heterogeneous infrastructure, clients will be able to deliver on the promise of a dynamic infrastructure, providing the service the business needs while managing risk at the appropriate cost to the business.

In effect – A new Dimension in Computing: The first system built to optimize multi-platform workloads for the realities of a smarter planet.

Step 8: z Systems - IBM z13

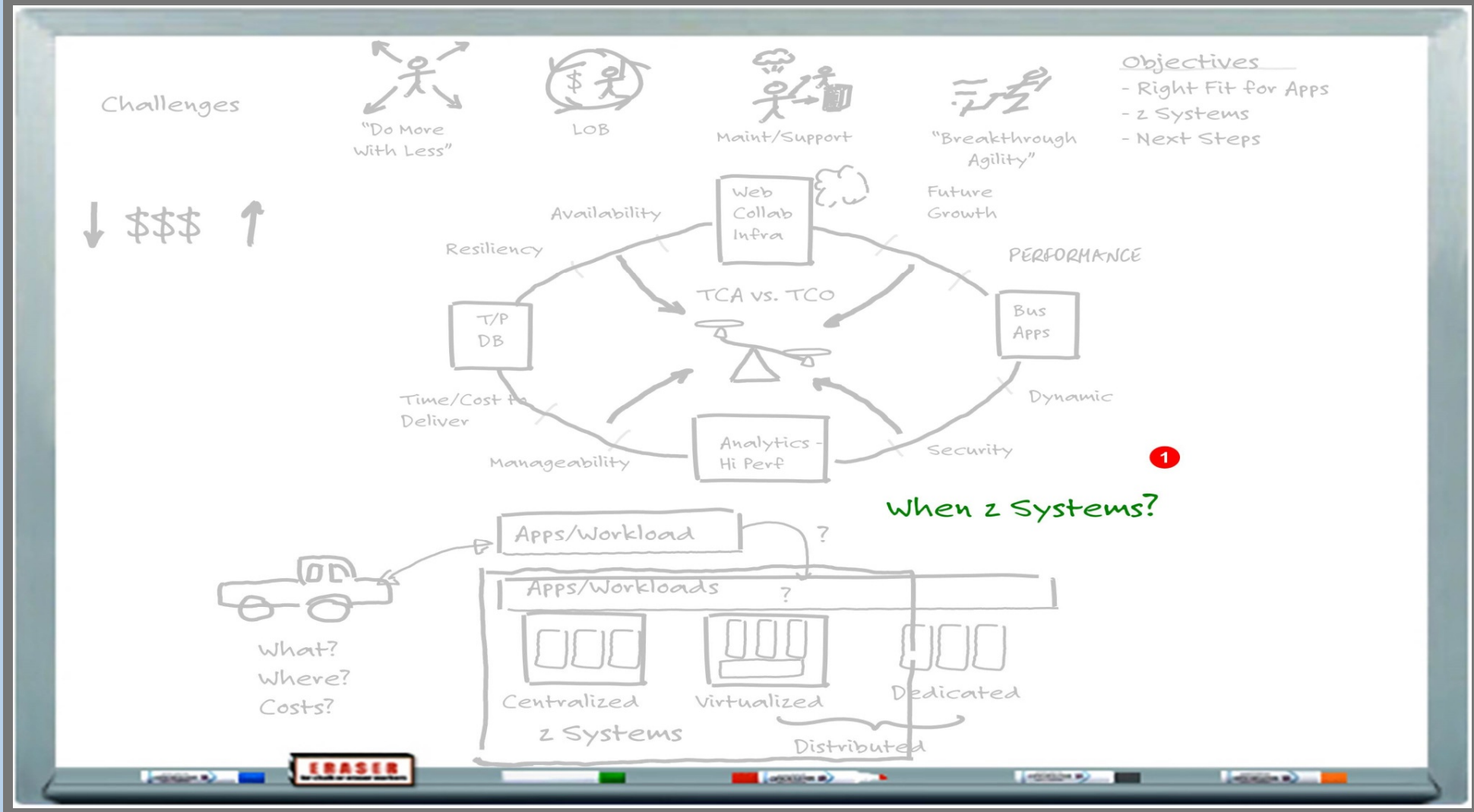


Step 9: When z Systems?

1 [In green] When z Systems?

Future Growth – If your application potentially will grow or have significant peaks and valleys, with its faster CPUs, greater number of CPUs, extended memory, and the Blade Center Extensions, z Systems scalability will be unmatched. **Security** – By consolidating applications in z Systems and taking advantage of the secure private network within z Systems, there will be "fewer" of everything (network devices, servers, switches, etc.) and therefore fewer access points and hence fewer security exposures. **Performance** – If performance & throughput is important, in addition to faster processors and faster networks with z Systems, you can achieve improved performance through co-location of data and application logic, and through new capabilities, such as DB2 Analytics Accelerator makes analytics solution even 10 times better at 1/12 the cost. **Availability & Resiliency** - the z13 extends the z Systems QoS across the "entire" infrastructure. This could be particularly useful for applications that have data on z, app logic on POWER Blades, and front-end on System x Blades. **Manageability** – Managing a hybrid infrastructure often taxes the best IT organizations. With Unified Resource Manager in z Systems, you will be able to manage application provisioning, performance, availability, and energy for physical and virtualized environments using a single integrated management solution to dramatically reduce the complexity of your environment. **Dynamic** – The key words for z Systems are consolidation and simplification. Being able to more efficiently provision resources with URM across a hybrid infrastructure as well as up to 8,000 Enterprise Linux's instances, means being better able to meet the changing needs of the organization. **Time & Cost to Deliver** – Applications for z Systems can be designed and developed using modern dev tools, such as the Rational Developer for System z, which enables rapid app dev. Built-in RAS capabilities eliminate much of the effort to develop enterprise-class capabilities. It supports the latest technologies, including Java, C/C++, XML, Linux, Web 2.0, and SOA.

Step 9: When z Systems?



Step 10: Customer Examples

We have worked with a number of customers to understand the real-world impact of z Systems in a few key areas.

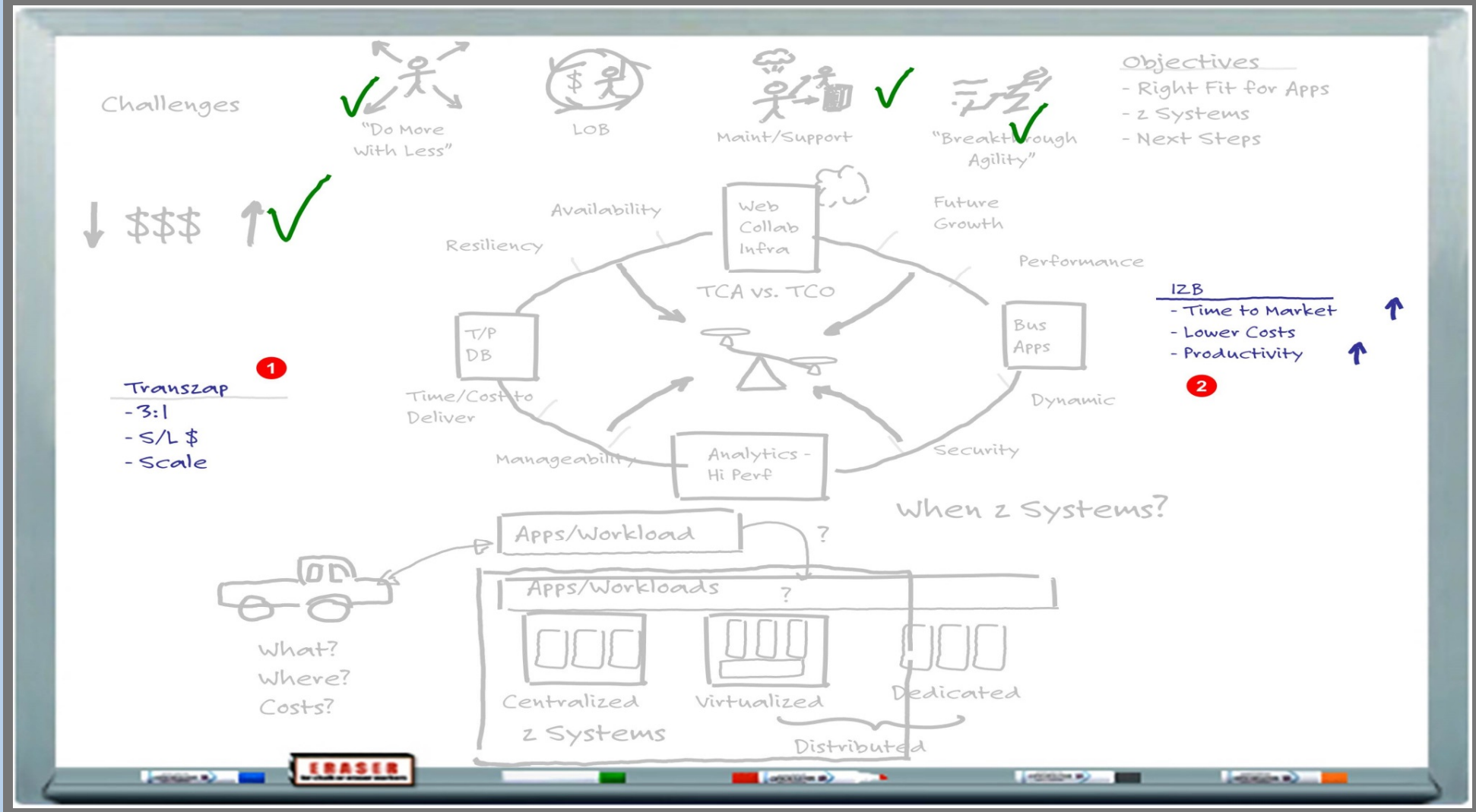
Below are two examples - there are additional examples in the Appendix which can be used in addition to or in place of these examples.

1 **[In blue] Retailer:** We have been working with a large retail organization that is running SAP. With z Systems, they expect to be able to reduce the SAP network hops by a factor of 12 to 1 by removing the number of firewalls, routers, and switches. This has significant performance, management, and operating cost implications as the organization simplifies the operating environment. They will be better able to monitor and manage a critical application from end-to-end, they will be able to better manage server availability and handle business peaks with true application insulation. Additionally, they expect that they will see over a 60% reduction in energy consumption and floor space as they consolidate to a z Systems environment.

[In Green Check Mark by $$$; Maint/Support; 'Do More with Less"]

2 **[In blue] Banking** – A European banking client is looking at at more than an 80-fold improvement in query performance with the new DB2 Analytics Accelerator – some complex queries going from taking 30 minutes to 3 seconds. Additionally, with a more simplified and automated infrastructure, they expect to see lower costs when compared to their traditional data extraction, transformation and loading (ETL) process. **[In Green Check Mark by $$$; "Breakthrough Agility"]**

Step 10: Customer Examples



Step 11: Recap & Next Steps

1 – Recap the Objectives that were set out at the beginning of the discussion.

2 – In blue, write Next Steps and write the specific Next Steps - Based on our discussion today and the areas that you expressed interest in, I would like to outline some potential next steps.

SOME EXAMPLES OF POTENTIAL NEXT STEPS:

Architecture Workshop – Schedule a meeting with your architects to discuss your current IT architecture.

Application Assessment – Schedule a meeting with your architects and/or others to identify one (or two) app(s) or some mixed workloads that we could do a more in-depth analysis on in terms of the trade-offs to see how we might be able to better optimize these and save you money by deploying it or redeploying it on z Systems.

Eagle Study – Scorpion Study – Set up a study to analyze and produce some cost models that take into account the factors we discussed today. An Eagle Study, which is a total cost of ownership study, can help you examine the cost differences between alternative approaches you are considering, and it also provides recommendations to assist you in making a decision on your strategic IT infrastructure. Or, a Scorpion Study provides an assessment of your current infrastructures; offers tactical and strategic recommendations for improvement; and substantiates recommendations with business cases to justify their implementation.

z Systems Review – I would like to suggest that we set up a second meeting with

QUESTIONS TO ASK

Have we covered everything you expected to cover during this meeting?

Based on this discussion, what do you see as the most valuable starting point?

Have we addressed the key challenges you face?

How do you think the capabilities of z Systems could make a difference going forward in your organization?

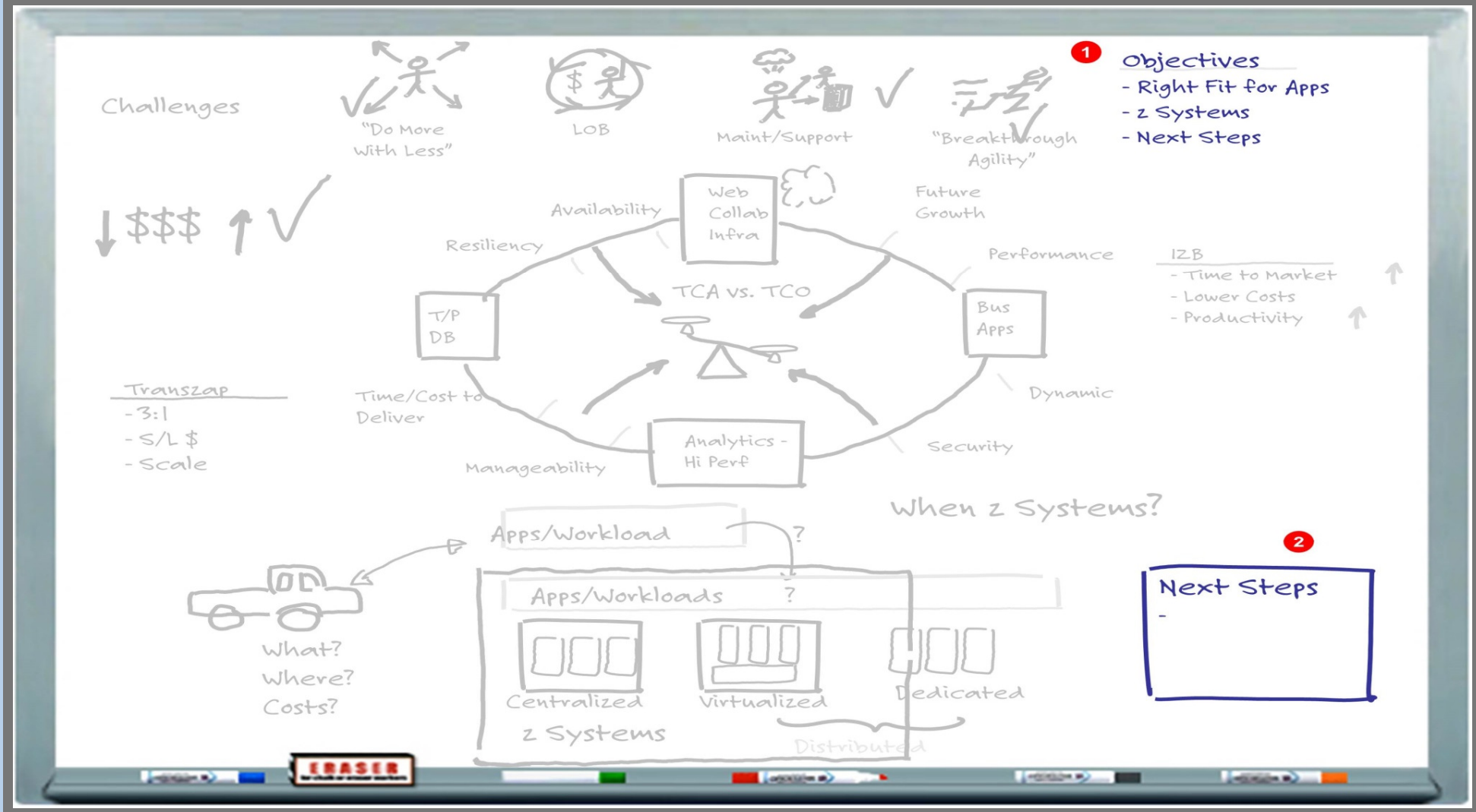
How do we get started?

OBJECTIONS

I am not sure that we are ready to upgrade our Systems at this point

RESPONSE: I can appreciate that. I might still suggest that we set up a meeting to do an applications assessment to see whether there are better ways to deploy your existing applications on your current

Step 11: Recap & Next Steps



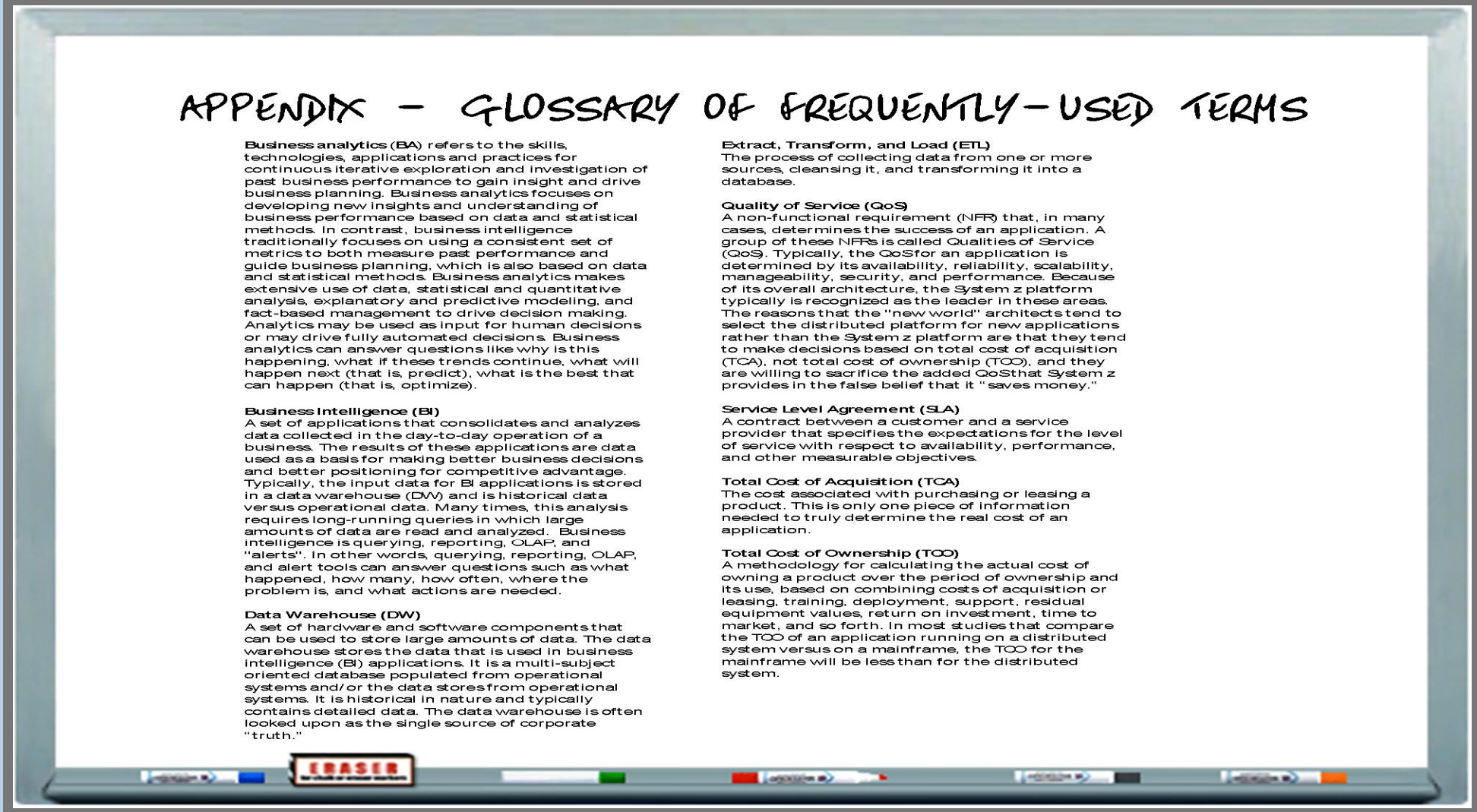
Appendix - Glossary of Frequently-Used Terms

Glossary of Terms used in the Whiteboard.

Various terms and additional information will be added to the Media Library:

http://w3.tap.ibm.com/medialibrary/media_set_view?id=11771

Appendix - Glossary of Frequently-Used Terms



APPENDIX – GLOSSARY OF FREQUENTLY-USED TERMS

Business analytics (BA) refers to the skills, technologies, applications and practices for continuous iterative exploration and investigation of past business performance to gain insight and drive business planning. Business analytics focuses on developing new insights and understanding of business performance based on data and statistical methods. In contrast, business intelligence traditionally focuses on using a consistent set of metrics to both measure past performance and guide business planning, which is also based on data and statistical methods. Business analytics makes extensive use of data, statistical and quantitative analysis, explanatory and predictive modeling, and fact-based management to drive decision making. Analytics may be used as input for human decisions or may drive fully automated decisions. Business analytics can answer questions like why is this happening, what if these trends continue, what will happen next (that is, predict), what is the best that can happen (that is, optimize).

Business Intelligence (BI)
A set of applications that consolidates and analyzes data collected in the day-to-day operation of a business. The results of these applications are data used as a basis for making better business decisions and better positioning for competitive advantage. Typically, the input data for BI applications is stored in a data warehouse (DW) and is historical data versus operational data. Many times, this analysis requires long-running queries in which large amounts of data are read and analyzed. Business intelligence is querying, reporting, OLAP, and "alerts". In other words, querying, reporting, OLAP, and alert tools can answer questions such as what happened, how many, how often, where the problem is, and what actions are needed.

Data Warehouse (DW)
A set of hardware and software components that can be used to store large amounts of data. The data warehouse stores the data that is used in business intelligence (BI) applications. It is a multi-subject oriented database populated from operational systems and/or the data stores from operational systems. It is historical in nature and typically contains detailed data. The data warehouse is often looked upon as the single source of corporate "truth."

Extract, Transform, and Load (ETL)
The process of collecting data from one or more sources, cleansing it, and transforming it into a database.

Quality of Service (QoS)
A non-functional requirement (NFR) that, in many cases, determines the success of an application. A group of these NFRs is called Qualities of Service (QoS). Typically, the QoS for an application is determined by its availability, reliability, scalability, manageability, security, and performance. Because of its overall architecture, the System z platform typically is recognized as the leader in these areas. The reasons that the "new world" architects tend to select the distributed platform for new applications rather than the System z platform are that they tend to make decisions based on total cost of acquisition (TCA), not total cost of ownership (TCO), and they are willing to sacrifice the added QoS that System z provides in the false belief that it "saves money."

Service Level Agreement (SLA)
A contract between a customer and a service provider that specifies the expectations for the level of service with respect to availability, performance, and other measurable objectives.

Total Cost of Acquisition (TCA)
The cost associated with purchasing or leasing a product. This is only one piece of information needed to truly determine the real cost of an application.

Total Cost of Ownership (TCO)
A methodology for calculating the actual cost of owning a product over the period of ownership and its use, based on combining costs of acquisition or leasing, training, deployment, support, residual equipment values, return on investment, time to market, and so forth. In most studies that compare the TCO of an application running on a distributed system versus on a mainframe, the TCO for the mainframe will be less than for the distributed system.

Appendix - Customer Examples

1 **US Healthcare Provider**. **Challenges.** Needed to standardize on platforms to reduce complexity in dev/test. Breadth of systems made it difficult to monitor end to end for bottlenecks. They also needed to support new industry mandates – compliance and regulations. **The Results with z Systems**. Application and Data Proximity – improved overall application performance. High-speed network 1GB to 10GB provided improved app performance. Consistency/standardization of OS/Middleware improved testing and Time To Market. They were able to consolidate servers reducing floor space and energy cost.

2 **European Public Sector. Challenges.** This customer provides an app that automates the tax processing of receipts for small bus ops on System z, CICS and DB2, WebSphere on Power, Windows on Intel. The challenges. Limited staff and complexity inhibits ability to respond to new function requests in a timely fashion. Also the pure cost of staff to maintain a multi-platform, complex infrastructure. **The Results with z Systems.** Improved app performance with increase in network speed by 10x. Reduced complexity and cost to monitor and manage the application from end to end.

3 **European Bank. Challenges.** Internet banking for a large European bank is structured across System z, Power and Intel within a complex Parallel Sysplex. The environment is extremely complex and has several, single points of failure. **The Results with z Systems.** Simplify and standardize their infrastructure. Lowering cost by instituting a single management and policy framework. The ability to 'right fit' application service components will provide them the ability to put greater focus on delivering new business function and enhancing the 'local bank' experience across multiple European countries.

4 **US Insurance Provider. Challenges.** Full SOA application integrating many different vendor packages on multiple systems - System z, Systems P, and Intel blades. Complexity in maintenance and day to day task like backups. Difficult to monitor to find bottlenecks. Ensuring intrusion protection for dozens of servers is labor intensive. **The Results with z Systems.** Operations greatly simplified; maintenance patches to windows applied automatically; physical and logical security enhanced; Back-up and recovery simplified and enhanced; locating performance bottlenecks centralized and automated.

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