



The Gold Standard for Enterprise Computing

The Enterprise Server for the 21st Century

Over the last 50 years, System z has become established as a platform for critical large-scale enterprise transaction workloads

70%

of top 500 System z customers run CICS

21 of top 25

insurance organizations use System z

67%

of top 500 System z customers run CICS and DB2

23 of top 25

retailers use System z



Today

IBM zEC12

25 of top 25

world's banks use System z

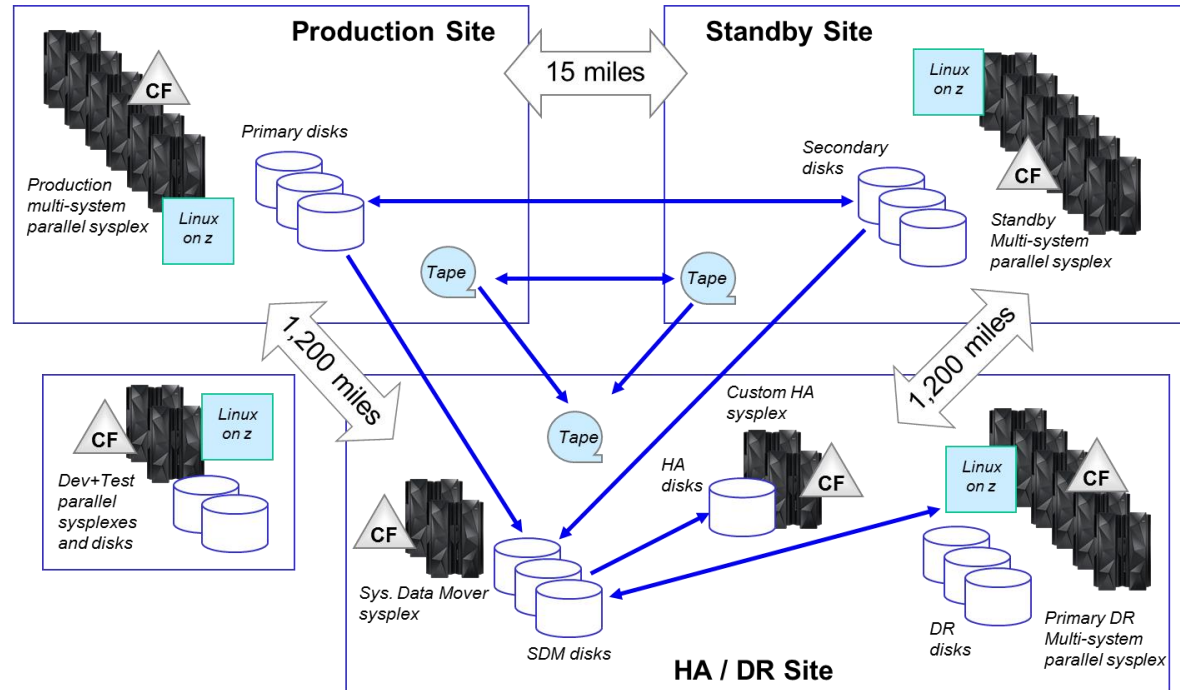
1964



IBM S/360

Only System z can provide state-of-the-art global scale transaction processing capability for many enterprise businesses

- 1B CICS trans/day
- 4,000 IMS trans/sec
- 5.6M ACH transactions/hr
- 6-way sysplex
 - 30ms response time
 - 216 processing cores at primary site
- Just under 1M MIPS total



- Highest levels of availability: zero outages, zero downtime...
 - ...meaning zero customer impact
- Ultimate security: *“Crazy about security overall, and the z system has a fortress around it”*

But the world is continuing to change...

Today, customers expect more than ever before

They are always connected, on a multitude of different, smart devices

They are better informed, and more socially networked

They expect immediate results, but want personalized service



...Today's forward-thinking businesses have to not only keep pace, but also lead the way

System z is well positioned as the premier platform for the onslaught of new business challenges

Highly virtualized high-end server, supporting large numbers of workloads at very high utilization, with ultimate security and highest levels of reliability and availability...



IBM zEnterprise EC12



IBM zEnterprise BC12



An integrated platform for Data & Analytics



An efficient foundation for Cloud Computing



Sophisticated for Mobile Computing

Sicoob – Brazilian credit union consolidates and exploits technologies to meet today’s business challenges

Business Challenge:

- New customer requirements for **24/7 service** and **mobile access** to information
- Business strategy for implementation of **analytics**
- *Existing distributed infrastructure not scalable to meet performance, availability or data consolidation requirements*

Solution:

- Consolidated and virtualized distributed servers on Linux on IBM zEnterprise
- Today: 300+ virtual servers, DB2 supporting 50 major databases, IBM Cognos software running business analytics

Results:

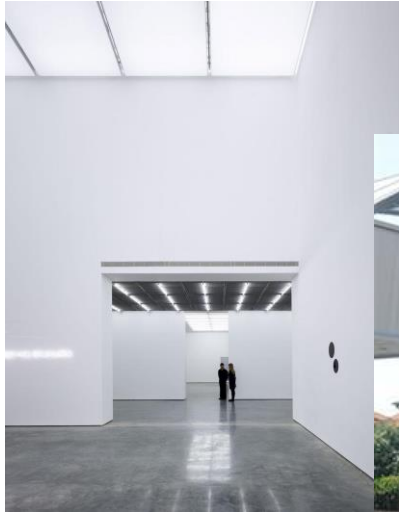
- **600% growth in mobile solutions, and 200% growth in internet banking**
- 60% increase in in-branch transactions, while avoiding \$1.5M a year in electricity costs
- Transformed the speed, reliability and efficiency of service delivery to members

“Compared with databases on our previous distributed landscape, DB2 running on Linux on the IBM System z platform offers more reliability and performance, and better integration with our backup, monitoring and ETL tools.”

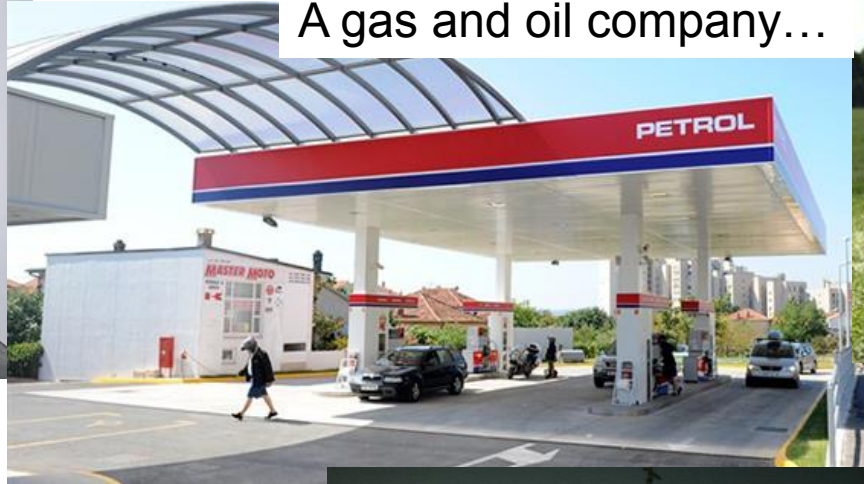
—Paulo Nassar, IT Processing and Storage Infrastructure Manager, Sicoob



What do these have in common?



An art gallery...



A gas and oil company...



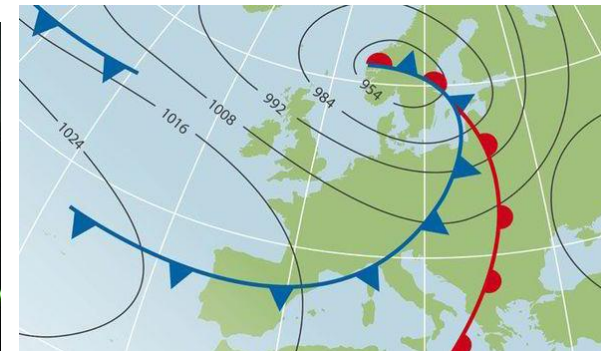
A Brazilian telecom...



A US healthcare program...



A city in China...



The UK weather office...

White Cube (London, UK)

Focused on establishing lasting relationships with artists, as well as providing a richer experience for clients, artists and the public...

- Recently expanded internationally, opening new galleries in Hong Kong and Sao Paulo

Business challenge:

- Provide real-time inventory access and continuous **availability** in worldwide context, with options for **growth**

“We have suddenly transformed from a U.K.-centric business to a truly global organization, operating in three different time-zones. From an IT perspective, this posed some real challenges: our existing systems landscape was never designed for 24/7 operations and having a much smaller maintenance window made it more difficult to ensure availability.”

— James Meara, IT manager at White Cube

IT challenge:

- Replace the 12 aging x86-based Sun servers
 - Supporting their core systems - including file servers, warehousing and logistics system, and traditional email and back-office systems



Larry Bell
Mirage Collage and the Light Knots

16 October 2013 – 12 January 2014
North Galleries, Inside the White Cube

White Cube (London, UK)

Solution:

Consolidate distributed servers onto IBM zEnterprise 114 running Linux

- Recognized benefits of a mainframe platform
 - Proven track record in traditional industries, offering reliability, performance, and flexibility
 - A single backbone for their entire IT landscape
- Would enable close integration of databases, repositories and email systems with new Cognos analytics platform

Benefits:

- Noticeable improvement in user response times for warehousing and logistics systems
- Overall improved performance
 - Leading to introduction of several new systems – including an iPad-based application giving sales team real-time information access
- Can now *confidently* scale up seamlessly to meet the needs of the business

*“We wanted to find a platform that was built for **high availability**, that was **versatile** enough to handle all of our diverse workloads and that could **scale** up to meet new demands such as business intelligence. Running Linux operating system on the System z114 server was the best solution to meet all of our requirements.”*

*“In all honesty, **managing a Linux environment on System zEnterprise platform is hardly any different from managing a Linux environment anywhere else**. We still use the same monitoring and administration tools, and our network and storage specialists have not needed to learn any mainframe-specific skills at all.”*

— James Meara, IT manager at White Cube

Petrol d.d. (Ljubljana, Slovenia)

Offers a broad range of automotive goods and services and a wide selection of household items, food products and other merchandise

- Over the years, has collected a significant amount of historical and transactional information from all aspects of its business

Business challenge:

- Analyze the data and subsequently transform it into actionable, timely intelligence

*“Our goal at retail was to deliver, to the cashier at the store, the information they would need to **suggest-sell specific products to those loyalty customers**, as well as walk-in customers at the point of sale, in seconds... And keep in mind, this type of transaction happens **two or three hundred thousand times per day** across all our stores.”*

— Pavol Batista, CIO at Petrol

IT challenge:

- Existing intelligence model was not sustainable
 - Database was already 20TB and continuing to expand
 - Queries were too slow to support desire for deep analysis



Petrol d.d. (Ljubljana, Slovenia)

Solution:

Deployed the IBM DB2 Analytics Accelerator on a zEnterprise platform

- Basis for their smarter commerce initiative
 - Speed up and automate their Cognos BI data-mining capability
 - Ensured reliability and data security
 - Laid groundwork for implementation of SPSS Modeler after 6 months – adding another dimension to business intelligence capability

Benefits:

- Dramatically reduced analytical query times
 - Suggest-sell information received in seconds
- Provided company personnel with valuable, focused brand trend information
- Developed a new dynamic with customer base
 - Providing an optimal product mix, and individualizing the presales messaging to the greatest extent possible

“Smarter commerce is about transforming near-real-time analytics into personalized messages and offers for our customers. “

“IBM provides us with tools that align with smarter commerce, enabling us to deliver the right message to the right person at the right time, to understand product affinities and intelligently drive the sale, all in a customer-centric way.”

— Pavol Batista, CIO at Petrol

Algar Telecom (Uberlândia, Brazil)

Provides more than 800,000 customers with mobile and fixed voice telephone and broadband, as well as corporate communications and pay-tv

- Business expansion occurring against a backdrop of rising operational costs and increasing competition

Business challenge:

- As customer base grew, concern about keeping up with increased demand for services

“In the past, we did not take a very strategic approach when it came to expanding our IT infrastructure, we just added new servers as demand increased... The result was an environment that was not efficient or sustainable: we suffered from poor performance, with frequent service interruptions, and the complexity and cost of maintaining everything was starting to get out of control”

— Rogério Okada, IT manager of Algar Telecom

IT challenge:

- Upgrade the IT infrastructure to a solution that offered simpler maintenance, lower cost of ownership and greater flexibility



Algar Telecom (Uberlândia, Brazil)

Solution:

Consolidated 90+ distributed servers into a zEnterprise server with 24 IFLs...

- ...for top levels of performance, stability and scalability

...and added zEnterprise BladeCenter Extension

- ...extending mainframe environment across zBX HX5 servers
 - IT staff easily manages multi-architecture resources across hybrid environment

Benefits:

- Massive simplification of IT infrastructure
 - Huge reduction in data center floor space and a 70% cut in energy and cooling expenses
- Operational risk has been reduced, including fewer single points of failure
- Systems can be recovered up to 90% faster

*“The IBM technology was completely new to us, but we clearly recognized the **huge value** that it could bring to our operations.”*

*“We have completely transformed our infrastructure and the way in which we manage it... We estimate that our **operational efficiency** has increased by at least 30% as a result. With our core business applications running on the **most reliable and secure platform in the marketplace**, we can deliver better service to more customers and focus on growing a better business.”*

— Rogério Okada, IT manager of
Algar Telecom

University of Arizona College of Pharmacy (Tucson, Arizona)

One of the top 10 colleges of pharmacy in the US,
providing a pharmacists call center and medication management service

- Used an Intel-based Apple Mac Pro and MySQL database
- Processing information for more than 2.5M members



Business challenge:

- Anticipated astronomical growth – to 10M patients and millions of volumes of claims data in coming years

IT challenge:

- Major I/O bottlenecks caused delayed analysis of patient data
- Hardware reliability – Apple was not planning an upgrade for the Mac Pro system

University of Arizona College of Pharmacy (Tucson, Arizona)

Solution:

Replaced their Mac servers with a zEnterprise 114 server with four IFLs, and replaced MySQL with DB2

- The full environment was migrated over a weekend
 - The mainframe was installed on Friday, the software was all loaded and tested on Saturday, and the entire environment went live on Sunday...
 - ...with no hiccups or problems!

Benefits:

- Reduced data load times by 1/3
- Improved I/O performance for better data analysis
- Batch processes run during normal business hours without disrupting operations
- Today, their system is being run by a single Linux programmer on a part-time basis

“One of the reasons we went with the [System] z114 [server] was the ability to enhance the box almost infinitely. We can add more processors, memory, and a lot more I/O without reconfiguring”

“My DBAs have been playing with DB2 [software] and they're blown away. I've got two guys who have a lot of experience with Oracle and SQL server and they were a little leery about DB2[software] when I hired them. But they're very happy with the capabilities and functionality so far.”

— Kevin Barber, director, data systems, UA College of Pharmacy

People's government of a city in China

With a population of 8.1M people, the city is the second-largest commercial center in the region and a transportation hub

- Buses and taxis are the predominant modes of travel, and traffic congestion was becoming a serious problem
- Traffic speeds on arterial roads were slowing each year
 - During rush hours, nearly 20% of roads and intersections were in total gridlock



Business challenge:

- Analyze and model traffic patterns, identify areas prone to congestion, optimize bus routes and effectively manage the urban transport system

IT challenge:

- Infrastructure lacked informative data to give a comprehensive view of the city's traffic issues and tools to analyze accordingly

People's government of a city in China

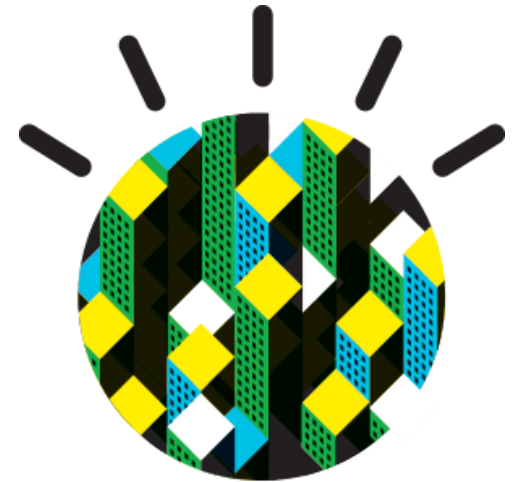
Solution:

Implemented an Intelligent Operations Center Smarter City Project running on 2 IBM zEnterprise servers running Linux

- All city buses and 8,000+ taxis fitted with GPS devices, 300+ traffic monitoring cameras installed, and residents voluntarily installing RFID tags on vehicles
- Data processed by IBM InfoSphere software, and stored on DB2
- SPSS Modeler used for data mining

Benefits:

- Unprecedented insight into city conditions
 - A single command center collects and analyzes traffic, vehicle and operational information
 - Use advanced data analysis and modeling to identify traffic patterns, predict congestion and assess public transit needs
- Drivers access web portal to assess traffic and adjust routes accordingly



The Met Office (UK) – Forecasting a bright outlook for Linux on zEnterprise

12-fold

reduction in Oracle licensing costs

17 IFLs

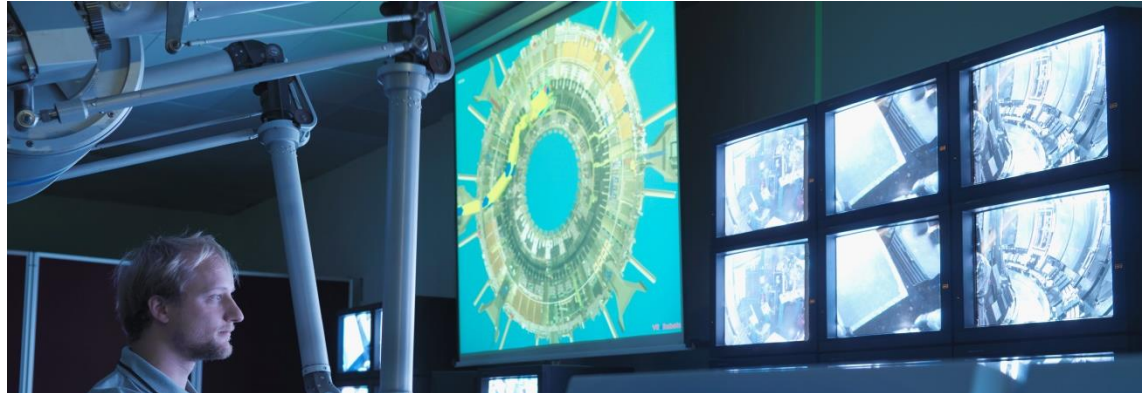
now handle workload that previously required 204 x86 processor cores

Major simplification

of the distributed server landscape achieved



Met Office



The transformation:

The Met Office was using **Oracle-based systems**, mostly running on **distributed Linux servers**, to handle the post-processing of data from its weather supercomputer.

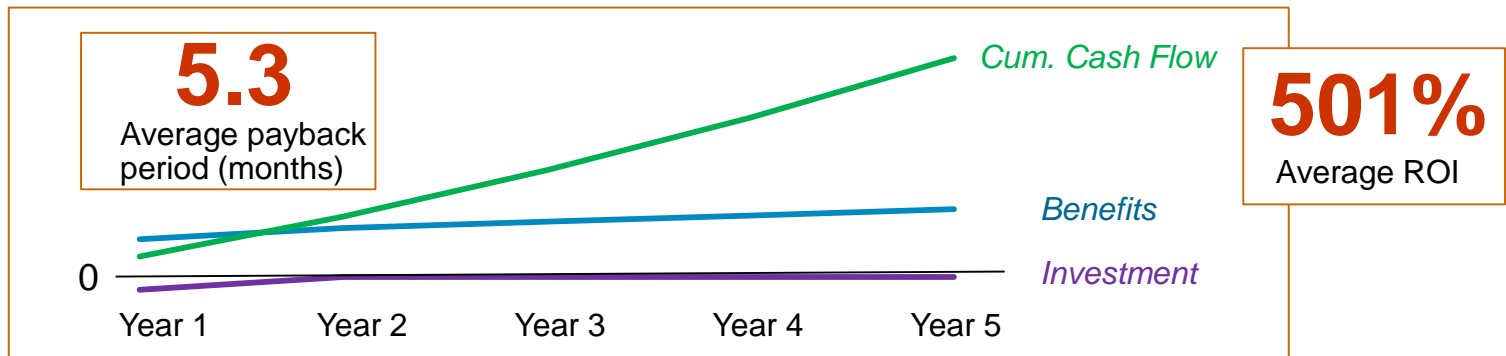
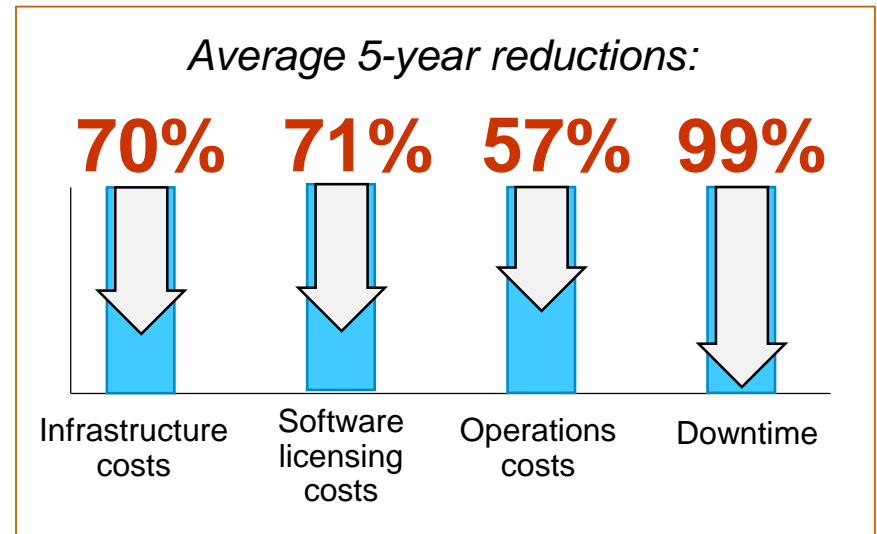
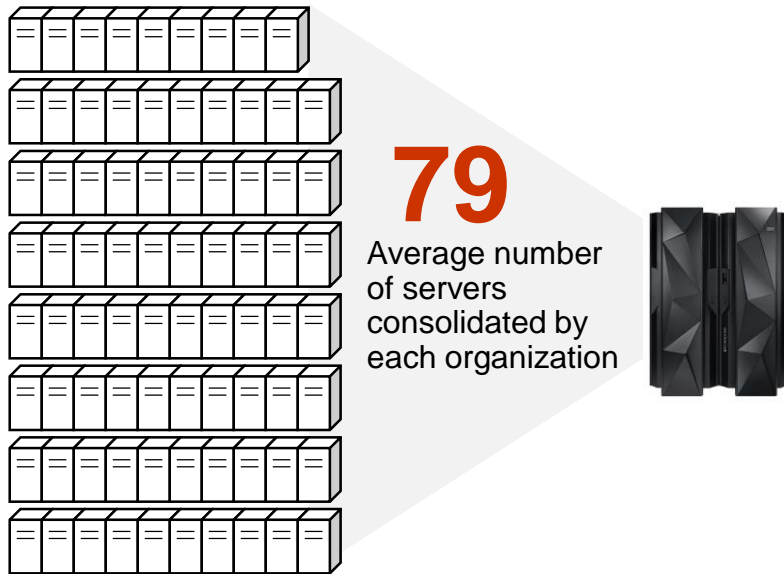
By consolidating all of these distributed database systems to the IBM zEnterprise 196, Oracle licensing costs have been cut by a factor of approximately 12.

"By consolidating distributed commodity servers you can save a great deal of money."

— *Martyn Catlow, portfolio lead for centralised IT infrastructure, the Met Office*

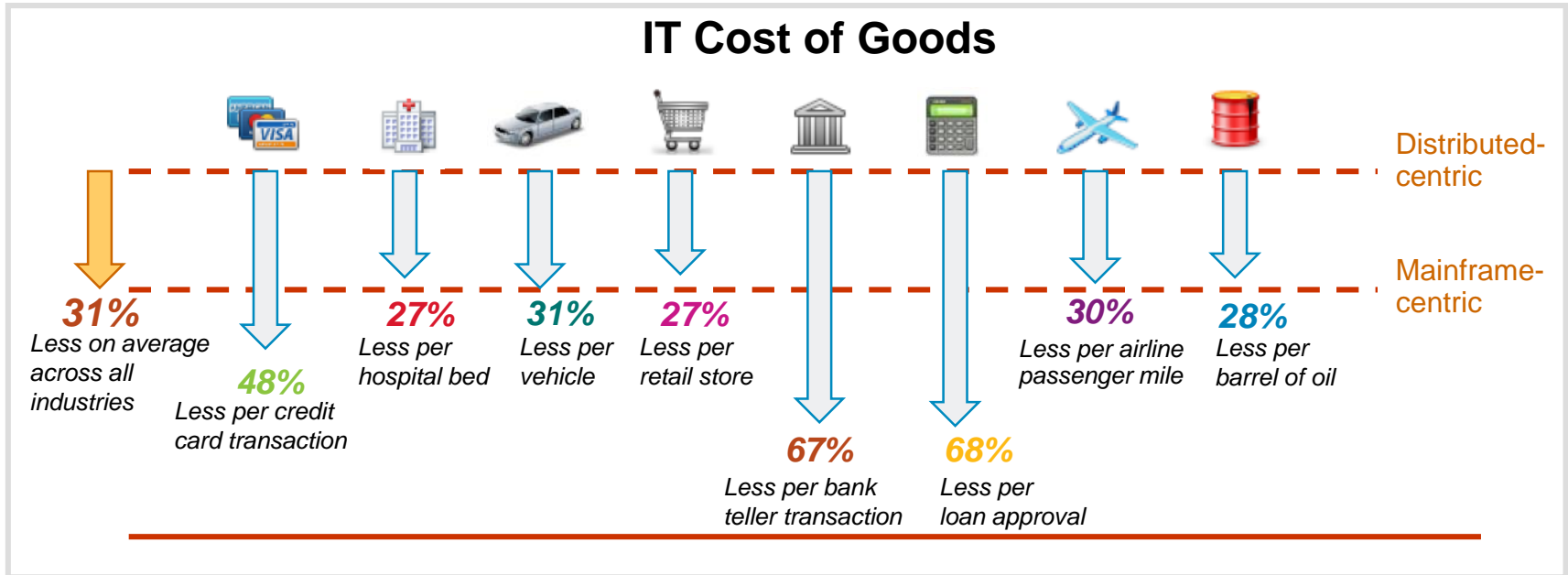
Customers highlight the value of consolidating onto System z

IDC study of 6 organizations that consolidated onto Linux on System z platform:



Source: IDC July 2013

Choice of technology is critical to success



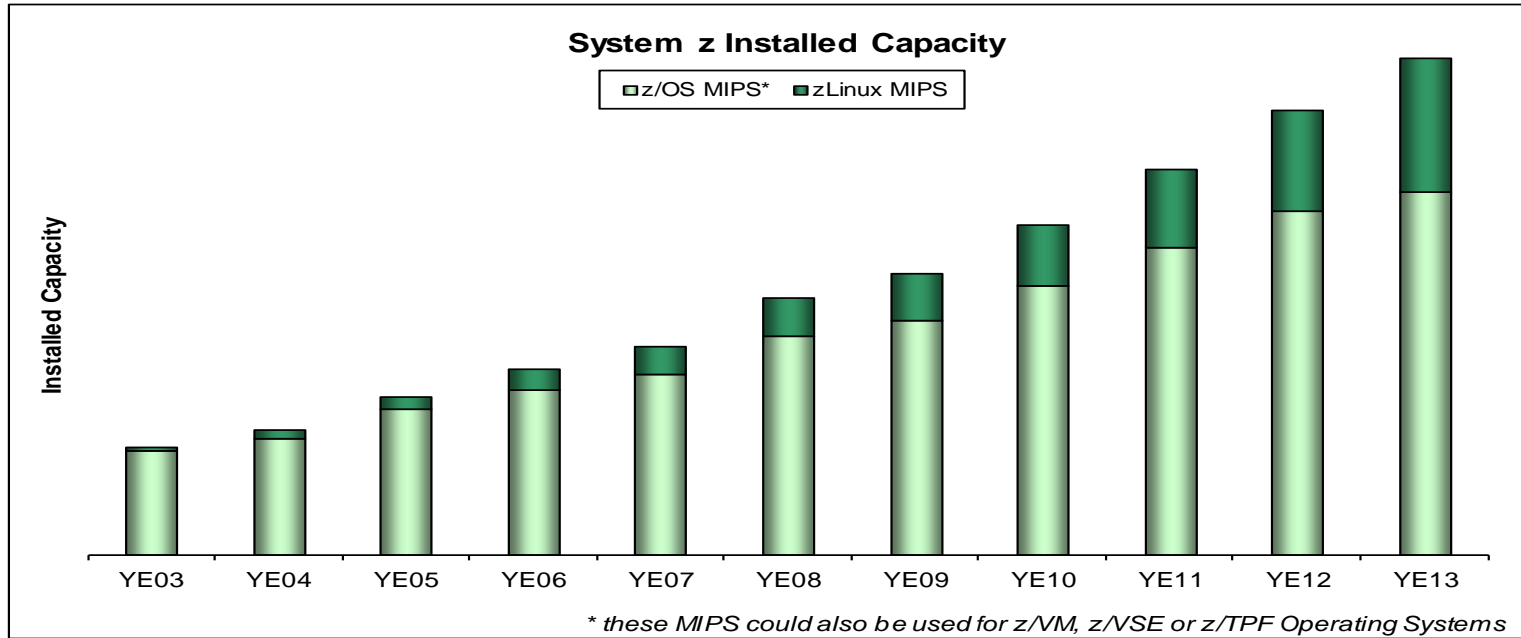
Across sectors, organizations with higher mainframe use demonstrate ...

- 31% average lower IT Cost of Goods
- ~3x more economic efficiency

... over distributed server heavy organizations

“...in the long run, the marketplace rewards those that make the optimum use of the right computing resources in the right way as evidenced by business performance”

zEnterprise continues to grow and shape the future



System z Total Installed Capacity

56%

MIPS growth and 6% revenue growth year-to-year

230+

new accounts since 3Q10 zEnterprise launch, with 38% in growth markets

290+

hybrid computing units shipped since 3Q10

80%+

of Top 100 clients have installed IFLs

7,400+

ISV apps run on IBM System z; 33 new ISVs added in 3Q13

zEnterprise – The enterprise server for the 21st century

- Years of innovation in virtualization, workload management and optimization, scalability, etc.
- The data “hub” for enterprise business and analytics
- Cloud-ready with Linux and z/VM
- Superior platform for the mobile revolution
- Highest levels of reliability and availability; ultimate security
- Low total cost of ownership





Next steps...

Ask yourself...

How can I stay ahead of my competitors?

Is the mainframe viable for my new applications?

How can I better understand the options I have?

Do I have a solid roadmap?

How do I generate a proper business case?

How can I use mobile to my advantage?



The Eagle team can help with cost justification

- **Worldwide** team of senior technical IT staff
- **Free of charge** cost and business case assessments
 - Help customers evaluate cost options among alternative approaches
 - Includes an on-site visit and report specifically tailored to a customer's enterprise
- Studies cover Power Systems, PureSystems, System z and Storage
- Over 300 customer studies completed
- Contact: eagleco@us.ibm.com

Fit For Purpose
Platform
Selection

Enterprise
Server
Economics

Private Cloud
Implementation



Consider a Portfolio Review and Analysis (PRA) to better understand your System z software assets

IBM's PRA team helps customers understand how to save money with IBM System z software

▪ A **Portfolio Review Analysis** provides:

- 1 A snapshot of a client's current System z software portfolio cost structure....
- 2 A mapping of the portfolio cost structure against multiple growth scenarios...
- 3 An analysis of cost effective equivalent products projected with customized growth scenarios



***Blue Cross Blue Shield
of Tennessee saved
millions with the help
of the Performance
Review and Analysis***

http://www-01.ibm.com/software/solutions/softwaremigration/BCBS_Final.exe

<http://www-3.ibm.com/software/solutions/softwaremigration/sps.html>
Or contact Linda Beckner at (614) 659-7192 or at Becknel@us.ibm.com.

Attend a System z Infrastructure Application Workshop (zIAW) to develop a vision and roadmap

A zIAW is a 1-2 day workshop aimed at maximizing the value of System z as a platform

- Engage in a consultative process to evaluate and recommend the best platform(s) for a specific workload
- Understand where a System z solution can help achieve competitive advantage
- Develop a future **VISION** for IT application architecture
- Develop a **ROADMAP** with recommended enhancements to the existing architecture



Contact:
Mike Benson (smb@us.ibm.com) or
Chris Norton (cnorton@us.ibm.com)

Meet and plan with IBM architects at a MobileFirst Workshop

A one day, no charge interactive workshop with an IBM Mobile expert to help enterprises plan and develop a customized roadmap for success

Workshop



For Line of business and IT leaders seeking expertise and experience in developing, enhancing, and/or executing their mobile enterprise strategy.

Client Value



- Industry expertise with top use cases and successes
- Capability assessment including identification of opportunities and gaps in mobile strategy
- A detailed client report and next steps

Highlights



- Interactive discussion to understand client business drivers, pains and requirements
- Overview of IBM MobileFirst Strategy, technology and POV's
- Industry trends and imperatives
- Structured working session to outline next steps

To schedule a workshop, email: ibmmobile@us.ibm.com

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