

A decorative graphic in the top left corner consists of several overlapping semi-circles of various colors, including shades of orange, yellow, purple, and blue, arranged in a cluster.

The Gold Standard for Enterprise Computing

Innovative Workloads for zEnterprise

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

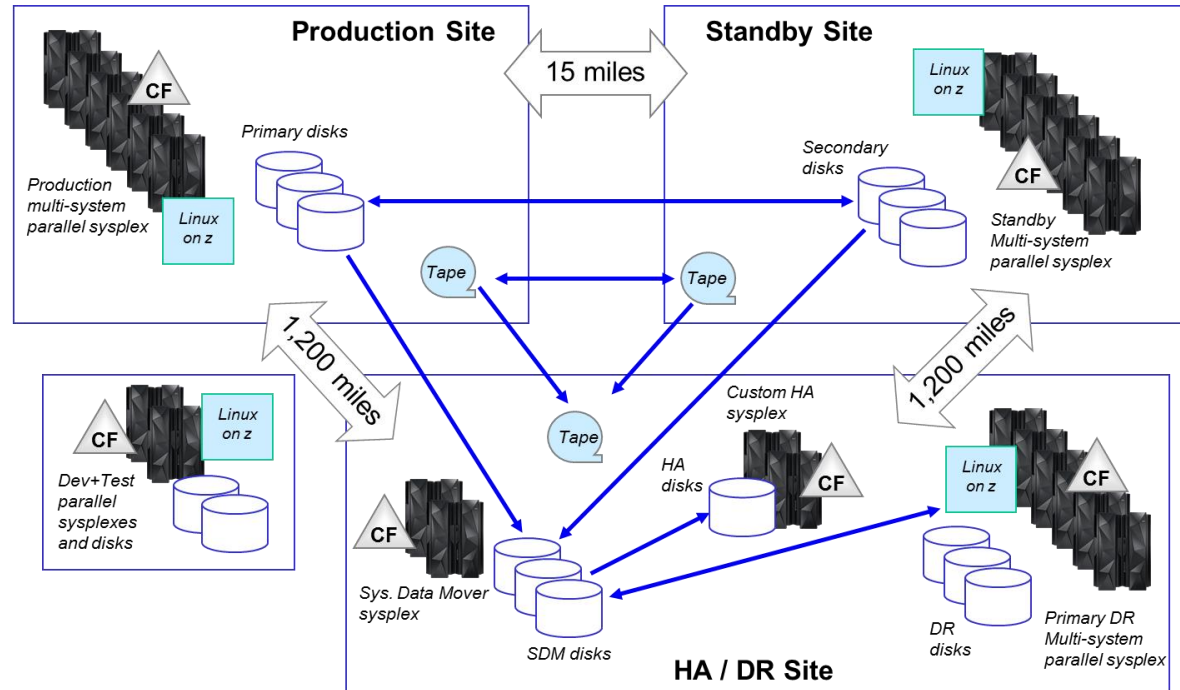
1964



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

New and existing customers reap the benefits of innovative workloads running on System z

Long time customers who choose to *stay* on the platform ...

1

Třinecké Železárny
Renfe Operadora
Brodosplit

New IBM customers who choose to *move* to the platform ...

2

White Cube
Met Office
SinphoniaRX

A few “Smarter” applications ...

3

Zhuhai Social Security
BMW Group
Project E+
Nanjing

Třinecké Železářny (Czech Republic)

Rising competitive pressures lead to upgrades and enhancements of their System z platform

Just-in-time manufacture

of specialty steel helps TZ compete better on quality and speed

Reliable 24/7 production

and logistics

Low operational costs

and rapid data access

Solution components

Hardware

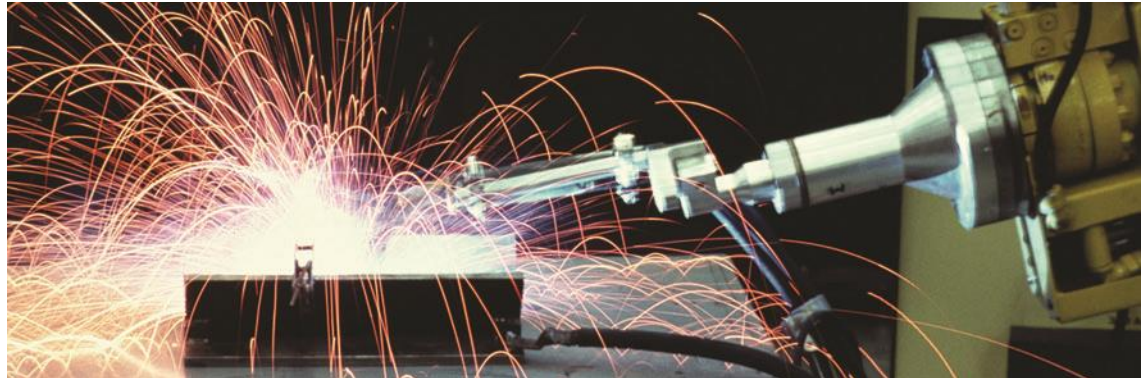
- IBM® DS8870
- IBM System z10®

Software

- IBM DB2® for z/OS®

Applications

- SAP ERP on z/OS



The transformation: TZ was seeing increased requirement to keep its advanced planning systems from SAP running optimally at all times. Enhanced data storage solutions have improved speed and reliability of access to production, scheduling and logistics production data, leading to better planning, lower costs and improved customer service.

“In all our years working with IBM System z and storage solutions, we have never experienced an unplanned outage.”

— Petr Popelář, CFO, Třinecké Železářny



TŘINECKÉ ŽELEZÁŘNY

SPP03214-WWEN-02

Renfe Operadora (Spain)

Railway operator challenged to retain leading market position

Before:

- A 30-year IBM customer, facing restructuring and unprecedented competition following the privatization of railway services
- To maintain advantage, wanted to create a secure and highly available online ticketing application for its customers.
- Also, required a platform capable of scaling to support future demand.

The Solution:

- Upgraded to the IBM zEnterprise 196 (z196) mainframe solution to support its new online ticketing system
- In addition to running z/OS, added 7 IFLs to run Linux environments. Continues to use DB2 to store ever increasing volumes of data from its online ticketing service

After:

- 33% more capacity, with 24/7 availability and 20% lower costs
- 11% increase in online ticket sales, with € 6M in sales each day
- Customers benefit from access to real-time information regarding train schedules, seat availability and fares



Optimized Systems

- IBM zEnterprise™ 196
- Integrated Facility for Linux (IFL) processors.
- IBM System z Application Assist Processors (zIIP)
- IBM System z Integrated Information Processors (zAAP)

Big Data and Information Integration

- IBM DB2®
- IBM® InfoSphere™ Change Data Capture

Brodosplit (Croatia)

Shipbuilder must improve performance and reduce costs to maintain competitive advantage



Before:

- Aging z890 mainframe not sufficient for changes and challenges of today – looking for more powerful technology without increasing costs
- Additionally, software licensing costs on separate distributed platform were unsustainable

The Solution:

- Replaced mainframe with a z114; updated DB2 for z/OS, Enterprise PL/1, and z/OS tools
- Added IFLs to the same z114; consolidated Oracle, print servers, document management and CRM applications from distributed platform onto Linux on z

Benefits:

- 300% improvement in platform performance
- 12% reduction in overall software costs – 50% reduction in Oracle license costs
- Eliminated 2 racks of distributed servers, yielding 20% reduction in electricity consumption

White Cube (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 (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

The Met Office (UK)

Forecasting a bright outlook for Linux on zEnterprise

75%

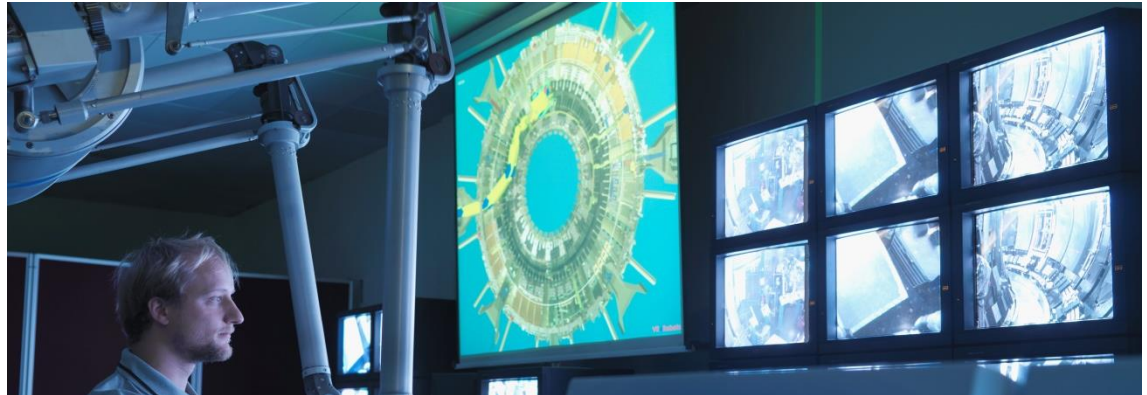
reduction in Oracle
licensing costs

17 IFLs

now handle workload that
previously required 204 x86
processor cores

Major simplification

of the distributed server
landscape achieved



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

SinphoniaRx (USA)

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



SinphoniaRx (USA)

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, SinphoniaRx

Zhuhai Social Security (China)

Challenge:

- Use human resources, employment and social security information collected over many years to provide a wealth of new services to 1.56 M Zhuhai citizens
- But as online services became available, increasing demand pushed existing servers and database to their limits
 - Running at full capacity, but with high failure rates
 - Multiple systems made data management and analysis very difficult

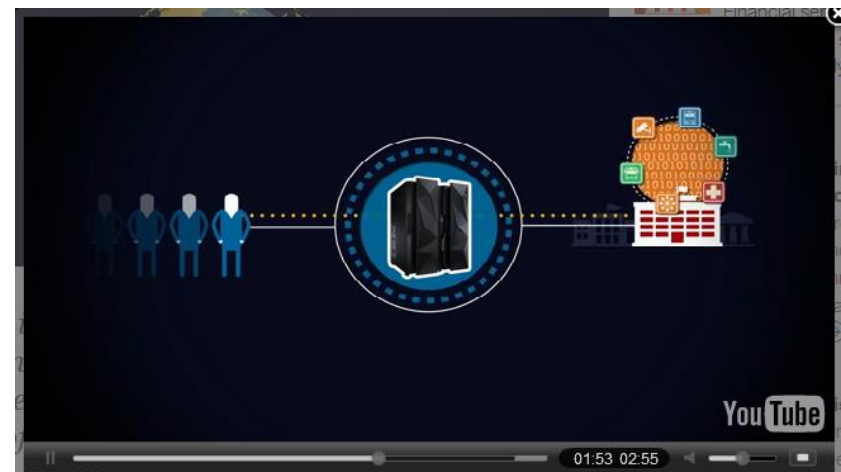
Solution:

- Migrate core databases and workloads from aging Unix-based servers to IBM System z

The upgrade can easily cope with the high concurrent online user requests, and provides the highest security, availability and stability. The unified information solution facilitates future analytics.

“Because we have the mainframe now, it has allowed us to grow and try new things.”

*-Zhong Zhi, director,
Zhuhai information center*



BMW Group (Germany)

Developing eco-friendly innovation for smart drivers with IBM

The need:

World-leading car manufacturer BMW Group wanted to develop sustainable and smarter driving strategies, in line with the market's pressing requests.

The company knew that any difficulties in managing the mountain of data created by these innovations would mean risking to lose business opportunities.

The solution:

- Upgraded to IBM DB2 11 for z/OS, and zEnterprise EC12
- Added SPSS Modeler

The benefit:

- Enhanced data compression resulted in optimized transaction processing, queries and data-sharing; reduced CPU usage by up to 15%, improving cost-efficiency
- Reduced complex data analysis from months to days, enabling rapid changes to product designs and processes to minimize recurring errors, and improving customer satisfaction



“IBM DB2 11 has helped us to eliminate the performance and throughput challenges associated with our business innovation plans, and we can now easily cope with our ever-growing workload.”

— Manager, BMW Group

Project E+ (Europe)

Laying the groundwork for energy efficiency with a commercially viable smart grid model

10% reduction

in consumer power bills expected as a result of less waste and more renewable energy

Meets demand

by striking an optimal balance between power generation and consumption

Reduces CO₂ emissions

by incorporating wind, solar and geothermal power, and by supporting electric vehicles

Solution Components

IBM® Connections®

IBM Intelligent Operations Center

IBM Maximo® Asset Management

IBM Rational® software

IBM System z® running z/VM and Linux

IBM TotalStorage® Enterprise Storage Server

IBM TotalStorage SAN Volume Controller

IBM Software Services



Business Challenge: Project E+ needed to find ways to reduce energy loss along power-distribution lines, minimize CO₂ emissions generated by power plants and optimize the integration of renewable energy into the grid.

The Smarter Solution: Project E+ is paving a path for energy-efficient cities across Europe with a distributed smart grid that captures and stores energy from multiple sources, increases generation capacity, streamlines transmission and facilitates more efficient consumption. Predictive models analyze grid sensor data in near-real time to project future energy supply and demand based on historical patterns. The grid dynamically compensates for fluctuations to help achieve a zero-energy balance.

By working together, utilities, governments, businesses and citizens can transform the traditional energy model to combat the threats of climate change and dwindling resources.

Nanjing (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:

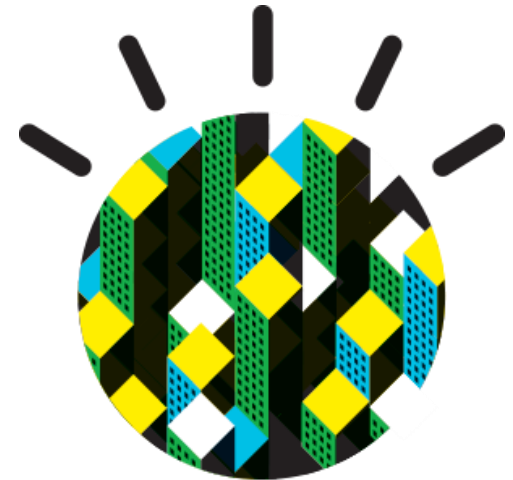
- Infrastructure lacked informative data to give a comprehensive view of the city's traffic issues and tools to analyze accordingly

Nanjing (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

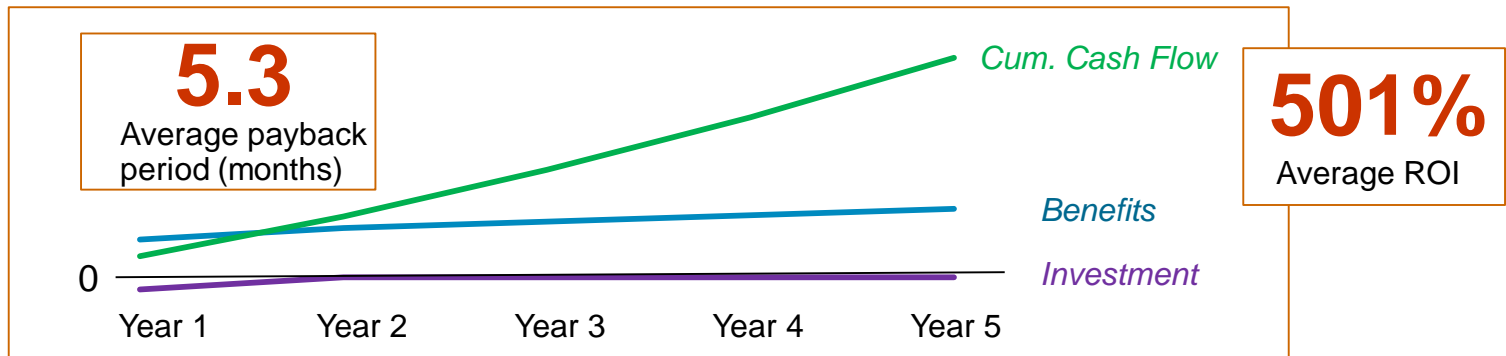
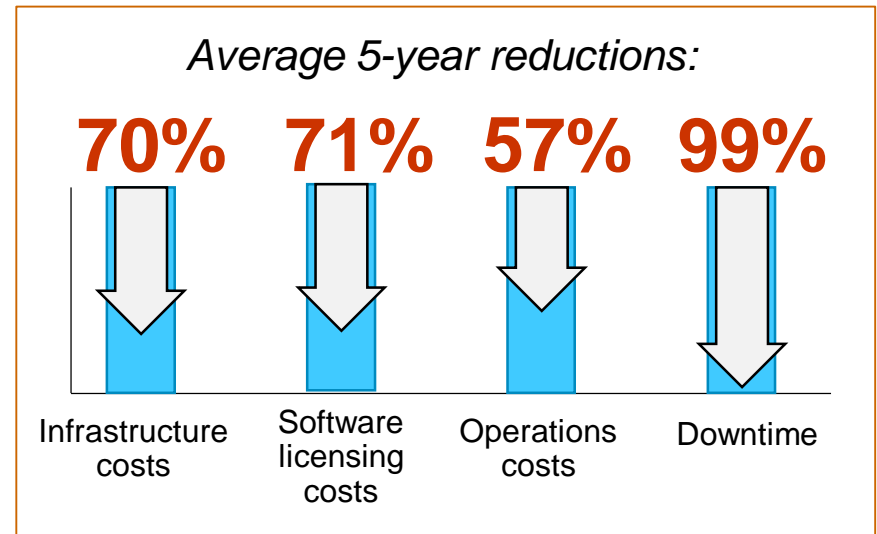
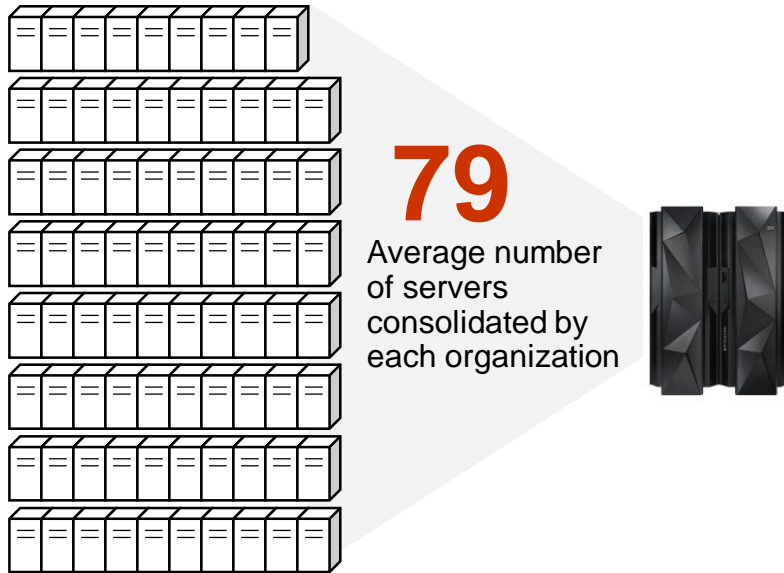


Benefits:

- 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

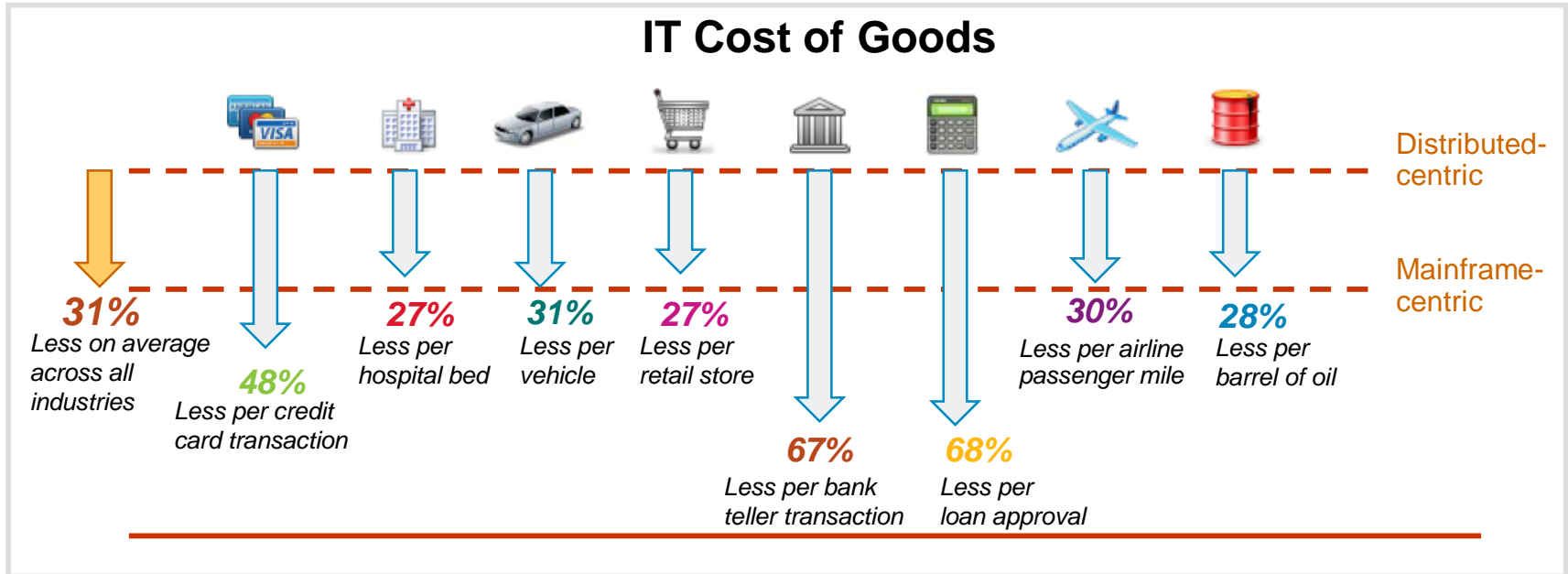
Customers highlight the value of consolidating onto System z

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



Source: IDC July 2013

Choice of technology is critical to success



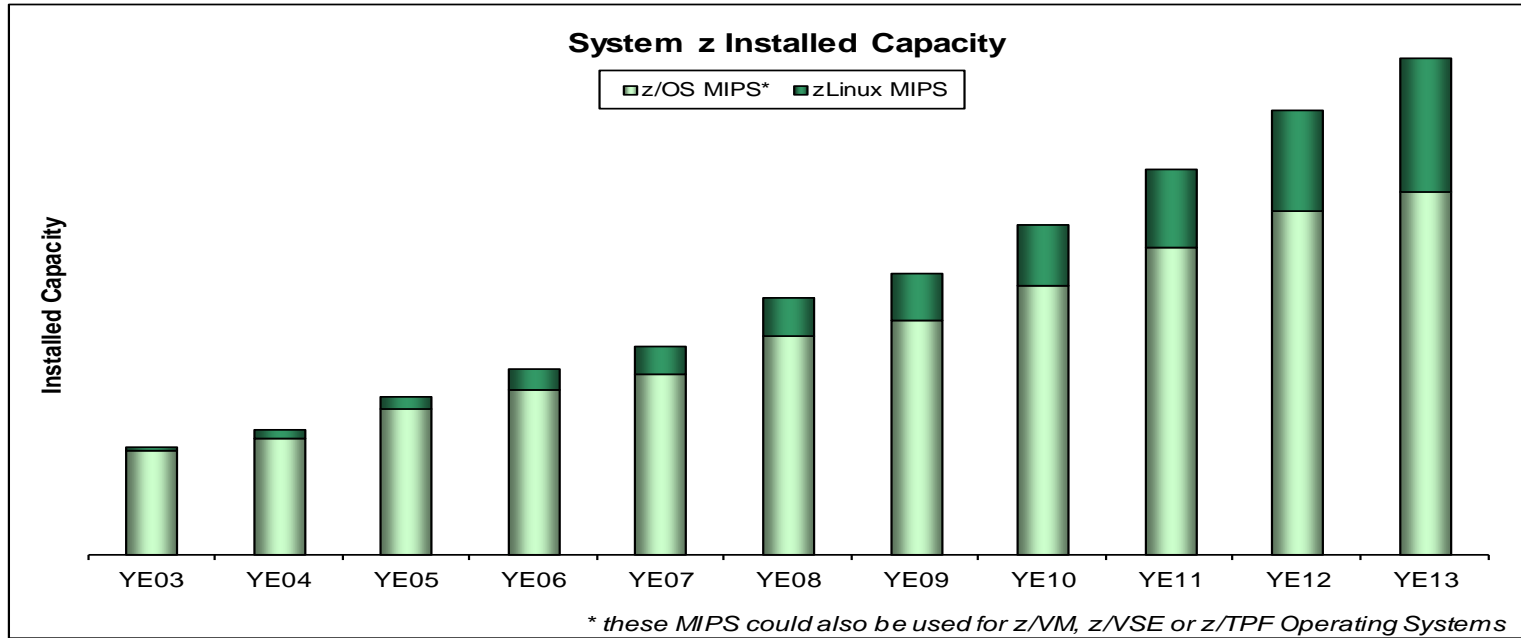
Across sectors, organizations with higher mainframe use demonstrate ...

- 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

Contrary to predictions from the past, the mainframe continues to thrive today

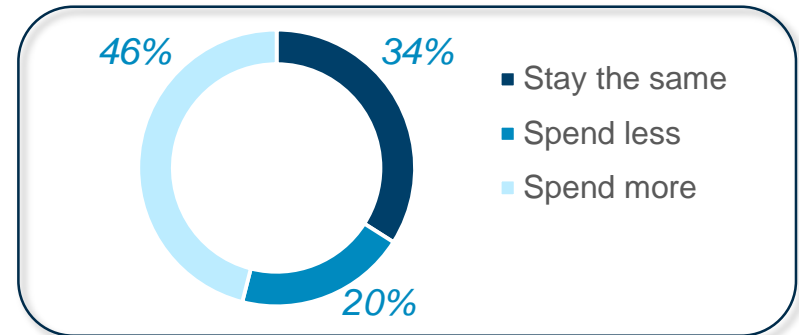
“The companies that draw the greatest benefits will be those that see the mainframe not for what it was but for what it is – an instrument of change that’s perfectly aligned with today’s IT priorities.”

“The mainframe is already a highly strategic part of our current and future IT strategy.”

81%

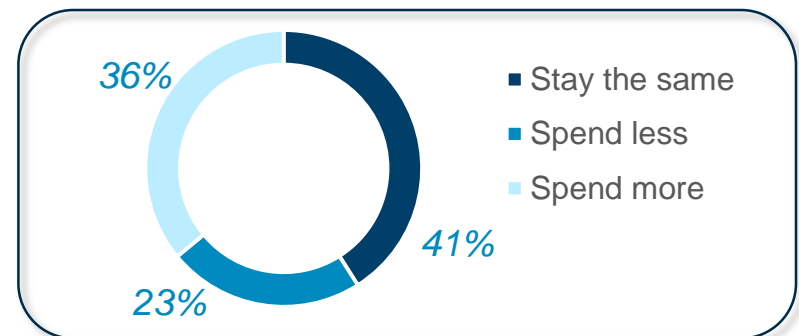


Mainframe Software



Projected financial outlay for mainframe software and hardware over next 12-18 months (global)

Mainframe Hardware



Source: “Mainframe as a Mainstay of the Enterprise 2012”, a comprehensive research initiative from CA Technologies, published in 2012. Survey consisted of 623 mainframe executives from around the world

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?



IBM Eagle Studies

Help clients choose the most effective platform for their workloads



A **No-Charge** study for clients to evaluate the best financial and technical fit for their workloads

- **TCO & Workload Placement**
 - **Cloud/Analytics/Mobile/Social**
 - **Chargeback Analysis**
-
- An Eagle study compares the costs and benefits of workloads on different platforms and is **specifically tailored to a customer's enterprise**

 - **Eagle studies** allow your client to make a **financially-based IT decision**
 - Define and analyze scenarios that interest your client
 - Leverage the client's data to provide specific findings for the account
 - Quantify which option can offer the lowest total cost of ownership

 - Eagle engagements are **quick yet highly impactful**
 - Overall duration is just four to five weeks with minimal customer effort
 - 10 minute call with the client's executive sponsor
 - Two hour no-charge on-site workshop with client
 - Report presentation and recommendations on-site with client

 - Use an Eagle study to win opportunities **this quarter**

Contact
eagletco@us.ibm.com

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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