Positioning Your Enterprise for Cloud, Analytics and Mobile Computing

Building the Business Case
for Cloud, Analytics and Mobile Computing on z Systems

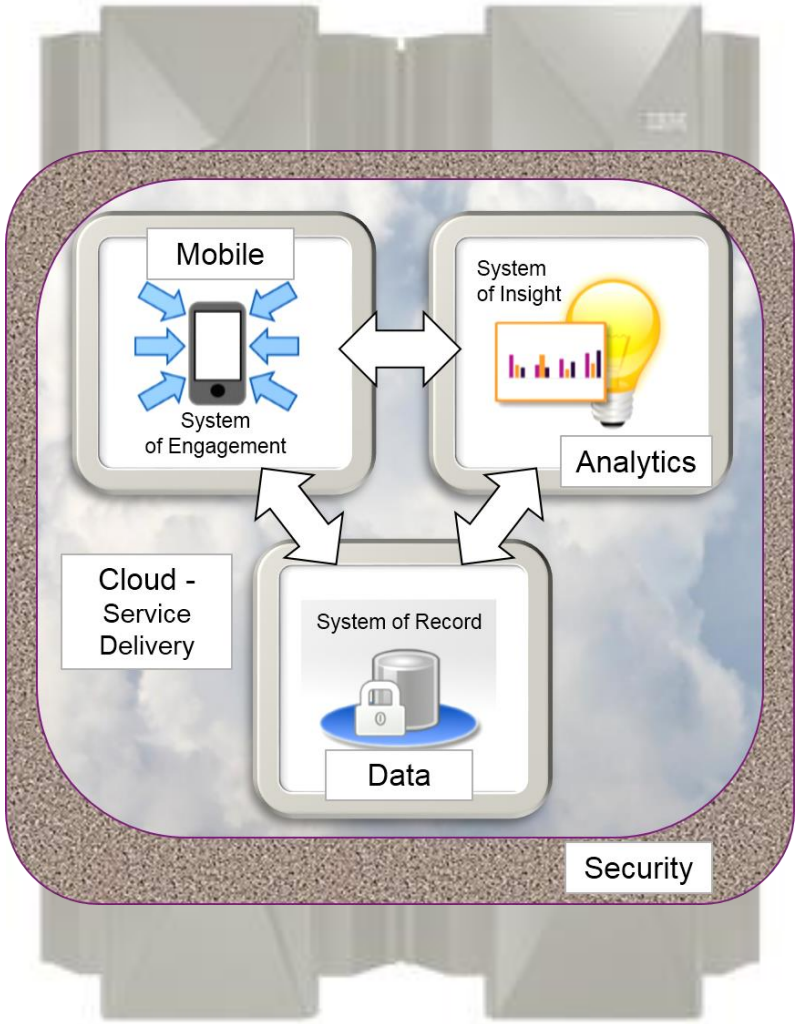
We've covered a lot of information today about digital business and IBM z Systems…

Up to **40%** more capacity…

2x faster I/O bandwidth…

3x more memory…

38% improvement for zIIPs with SMT…



60% reduction in costs with Mobile Workload Pricing…

94% lower cost per throughput with BigInsights on z…

32% lower cost for z Systems private cloud than x86

The challenge for you when creating a business case is to relate *IT value* to *business value*

"IBM has shown us several use cases for cloud, analytics and mobile computing on z Systems…"

IT Department

"Okay, but what about our specific initiatives? Show me a business case!"

Executives

When planning strategy, businesses first and foremost look at the financials

Balanced Scorecard
(Kaplan and Norton)*

- Increase operating margin
- Grow shareholder value
- Reduce expenses
- Increase revenue

The best way to examine financials is to use **Cost per Unit of Work** metric

Kaplan, Robert S; Norton, D. P. (1992). "The Balanced Scorecard - Measures That Drive Performance". *Harvard Business Review*

To calculate Cost per Unit of Work, focus on two key areas

2 Costs

*Know the difference between **TCO and TCA***

÷ *(Do the math)* =

Cost per Unit of Work

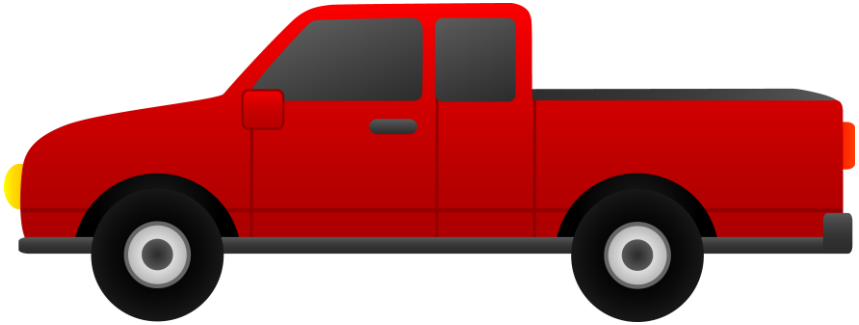
1 Measurements

***Establish equivalence** between options for comparison – then take measurements*

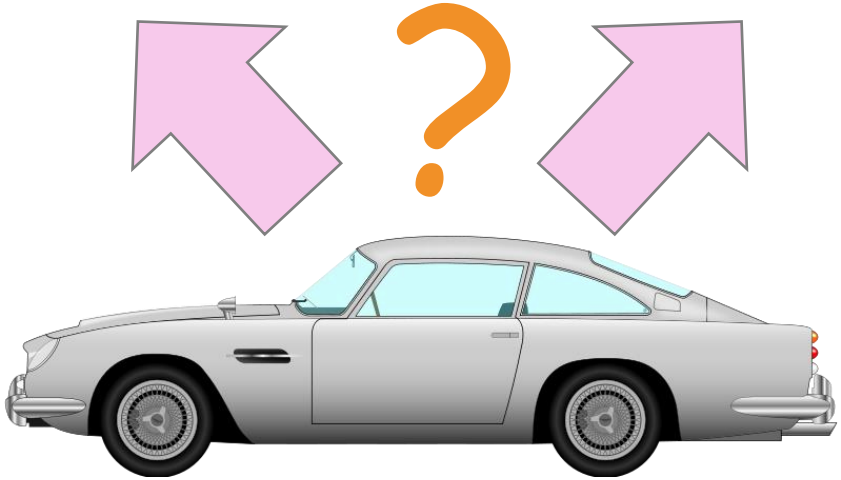
*Understand and calculate the **Cost per workload** metric*

Establishing equivalence, step 1: Determine type of system needed to run the test

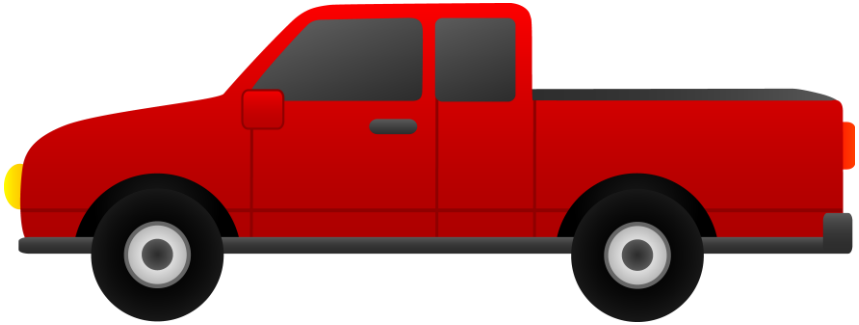
1



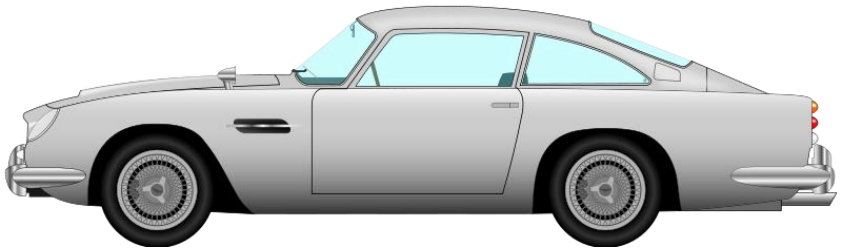
If we want to compare vehicles, then it makes more sense to choose the truck…



Establishing equivalence, step 2: Make sure each system has the same *capabilities*

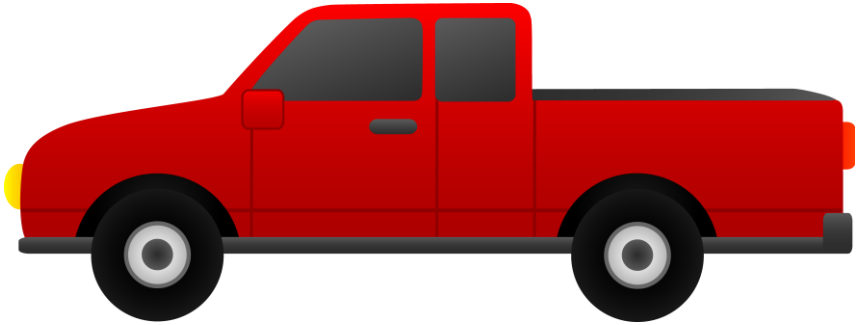


Is it an apples to apples comparison yet?



Establishing equivalence, step 2: Make sure each system has the same *capabilities*

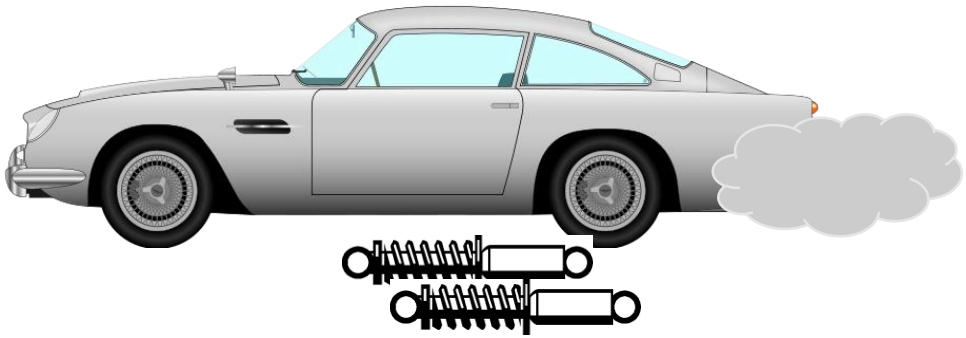
Number of passengers



SPEED!

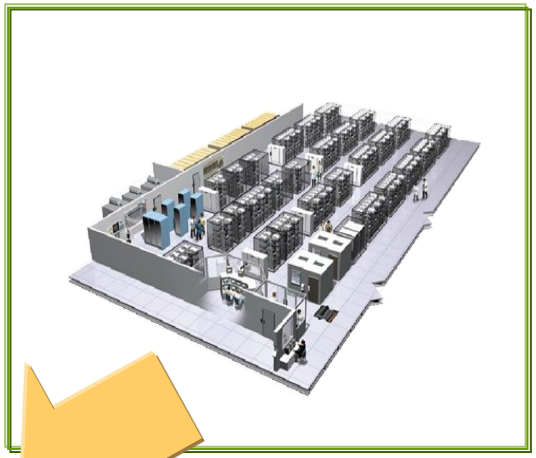
Hauling capacity

Engine horsepower

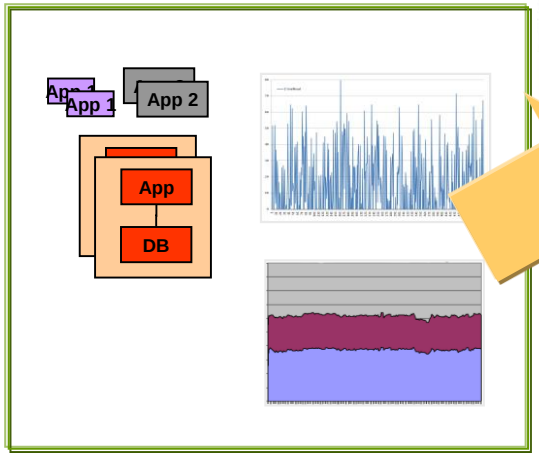


Establishing equivalence is critically important to making valid measurements

We are often asked to compare x86 to z Systems…



Atomic benchmarks and measures, analysts evaluations



Customer experience, real-world use cases

Consider all appropriate capabilities when making a comparison…

Does 1 z core equal 1 x86 core?

	z Systems core	x86 cores (range)	
		Low end	High end
Chip architecture	1	1.3	1.3
I/O subsystem	1	1.25	1.67
Networking	1	1.11	2
High availability	1	1.2	1.7
Compiler efficiency	1	2	4.5
Workload consolidation	1	3.5	6
Disaster recovery	1	1	2
Totals (Multiply columns)	1	15	398

1 z core **=** **15-398** x86 core

Establishing equivalence, step 3: Do the measurements! Collect the data!

Transactions

Acceleration speed

Weight

Transactions per second

Distance

Reports per minute

Response time

Queries per second

Capacity

Height

Energy consumed

To understand costs, it's important to know the difference between TCO and TCA

2

Components	Environments					Time
	Prod					
Hardware	$					
Software	$					

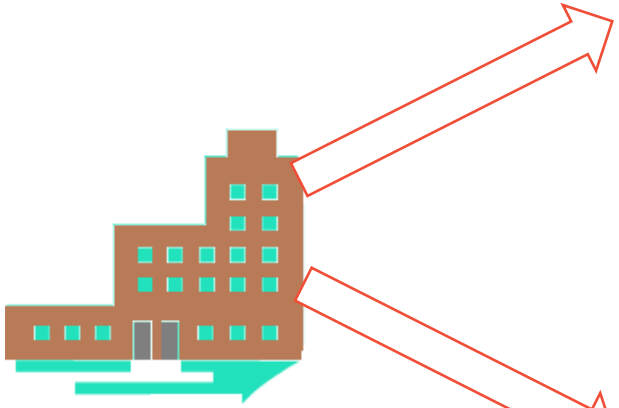
Total Cost of Acquisition = Hardware + Software costs (over 3 years)

To understand costs, it's important to know the difference between TCO and TCA

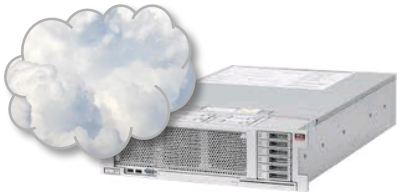
Components	Environments					Time
	Prod	Dev	Test	QA	DR	
Hardware	$	$	$	$	$	Planning
Software	$	$	$	$	$	Upgrades
People	$	$	$	$	$	Migration
Network	$	$	$	$	$	Growth
Storage	$	$	$	$	$	Parallel Costs
Facilities	$	$	$	$	$	Net Present Value
QoS – Availability, Reliability, Security and Scalability						

Total Cost of Ownership is much more than Total Cost of Acquisition!

Our Cloud study was a good example of a TCO comparison



Mixed business workloads
(64 light, 32 medium, 27 I/O intensive)



x86

264 cores

Percentage of total costs	
Infrastructure	8%
Middleware	80%
Environmentals	12%

z13

32 cores

Percentage of total costs	
Infrastructure	58%
Middleware	28%
Environmentals	14%

32% Lower TCO over 3 years

Source: IBM Internal Studies

Our Cloud TCO case used many different parameters to cover the full spectrum of costs

- **Three major categories**

Infrastructure

- **More than 30 cost variables**
  - System and IFL amount and costs
  - Memory amount and costs
  - Storage amount and costs
  - PVU counts
  - Cost of hypervisors
  - Cost of cloud management software
  - Cost of operating system
  - Cost of middleware
  - Cost of hypervisor maintenance
  - Cost of cloud management maintenance
  - Cost of operating system maintenance
  - Cost of middleware maintenance

Middleware

- Power consumption
- Cost of power
- Space taken
- Cost of space
- Admin rate
- Efficiency factors for labor
- Number of FTE
- Number and type of instances
- Cost of instances
- Amount of data out
- Cost of data out
- Enterprise support costs

Environmentals

Cost per workload is probably the single most important value on which to focus

Which is the better buy?

Cost per Workload is a Unit Price

- For computing, these measurements are often based on
  - Quantity
    - Cost per report, cost per transaction (long running)
  - Capacity / Rate
    - Cost per transaction per second (short running, high volumes)

We talked about Cost per Workload when we talked about Analytics

Standalone Pre-integrated Competitor V4

1a

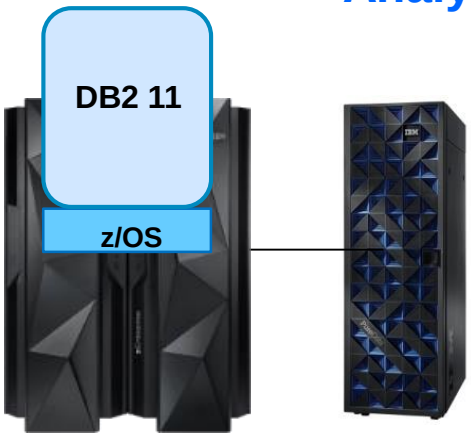
Eighth Unit

Cost	$2,746,000
Reports per Hour (RpH)	5,343
Cost per RpH	**$514**

2

1b

IBM zEnterprise Analytics System 9700



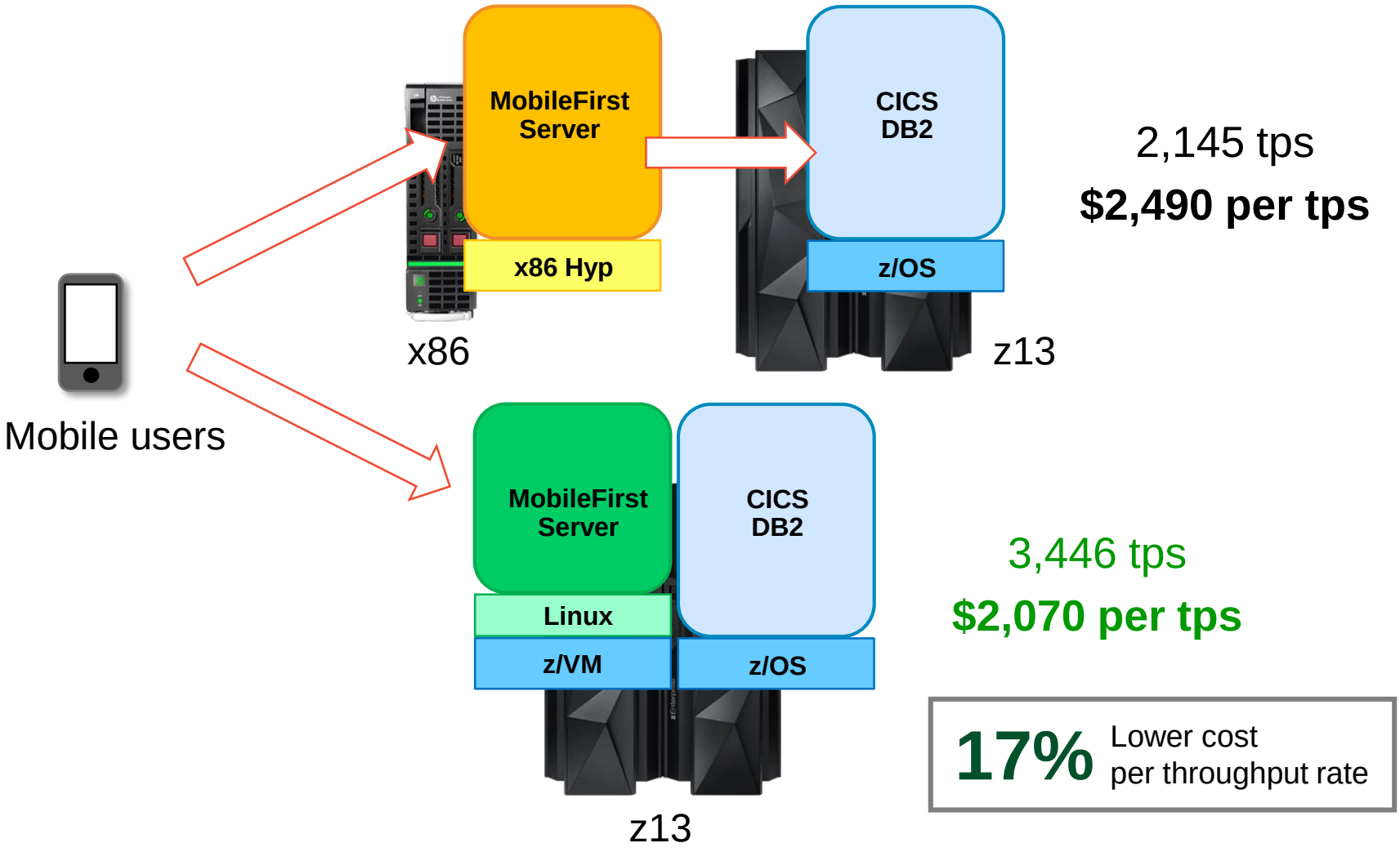
z13

IBM DB2 Analytics Accelerator

Cost	$3,652,131
Reports per Hour (RpH)	92,095
Cost per RpH	**$40**

Source: IBM Internal Studies. List prices used.

We also had a Cost per Workload example in the mobile discussion

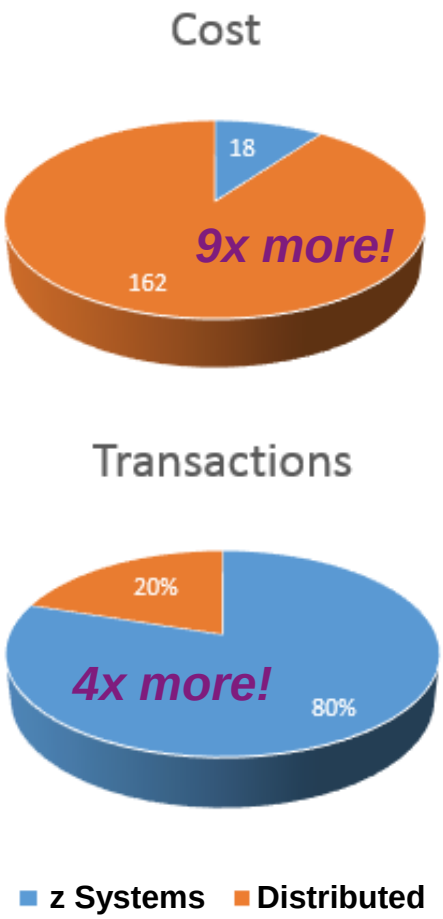


Source: IBM Internal Studies

A simple example can illustrate the full picture

A recent IT Economic Study:

- **Costs**
  - Total infrastructure coats - $180M
  - Mainframe costs - $18M
  - Distributed costs - $162M
- **Workload**
  - Mainframe
    - 70% of mission critical apps
    - 80% of business transactions
    - 80% of the data
  - Distributed
    - Remaining 30% of critical apps
    - Remaining 20% of business transactions
    - Remaining 20% of the data

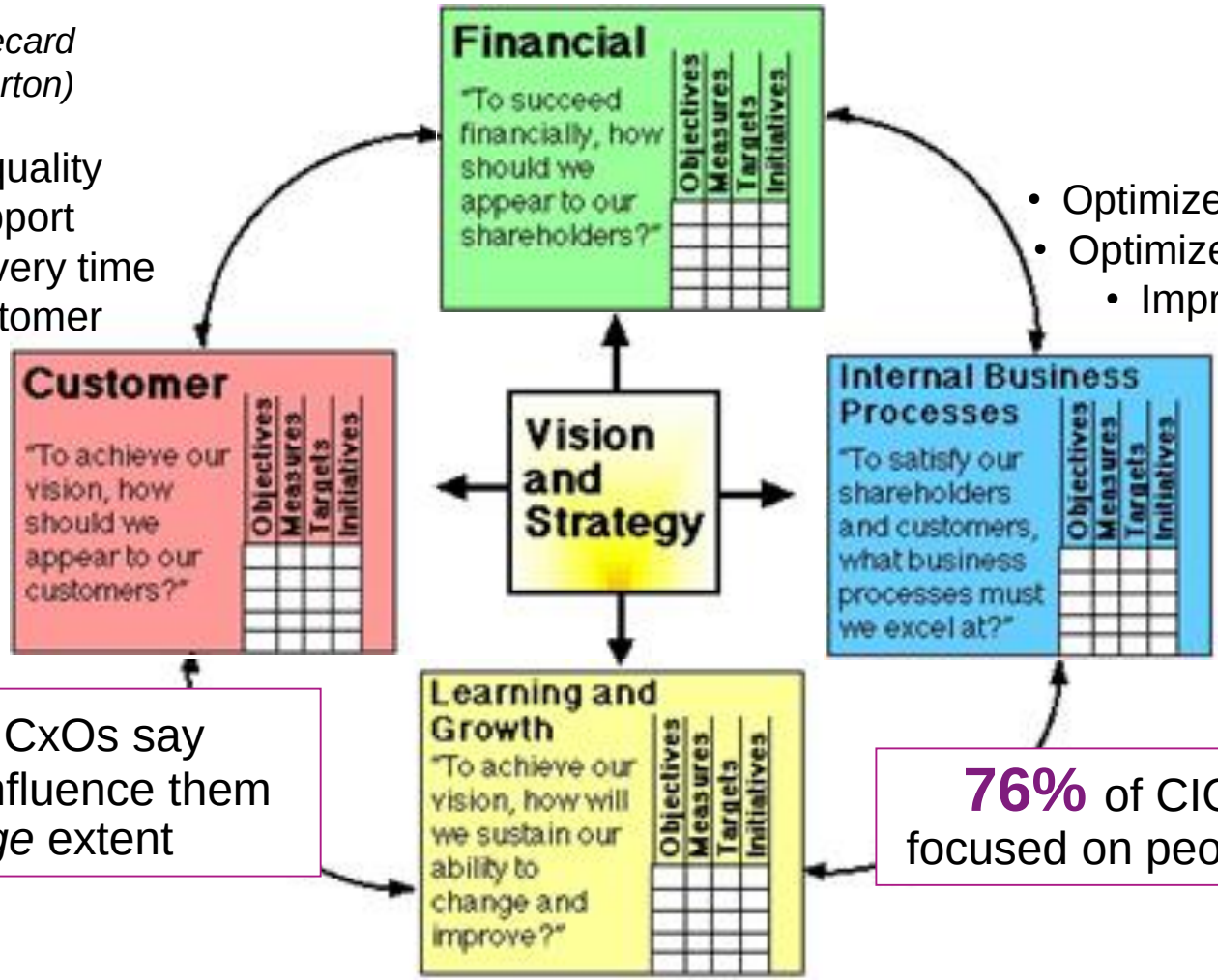


Cost per workload was **36x more** on distributed platform than on z platform

A compelling business case will also address *more* than just the financial aspect

Balanced Scorecard (Kaplan and Norton)

- Provide top quality technical support
- Improve delivery time
- Increase customer satisfaction



- Optimize inventory levels
- Optimize sales efficiency
- Improve supply price performance

54% of CxOs say customers influence them to a *large* extent

76% of CIOs are focused on people skills

*Source: IBM Institute for Business Value, "The Customer-activated Enterprise"

A solid business case will make a compelling argument about *business value*

A business case captures **the reasoning for initiating a project** or task…
The logic of the business case is that, whenever resources such as money or effort are consumed, they should be **in support of a specific business need.**
- *Wikipedia*

1 Understand
your specific corporate business targets

2 Collect
the appropriate **business metrics**

3 Package & Present
a meaningful, simple and straightforward report

- *Relevant business metrics point back to the business scorecard – give specific examples*
- *Solid business metrics will make understanding business value obvious*

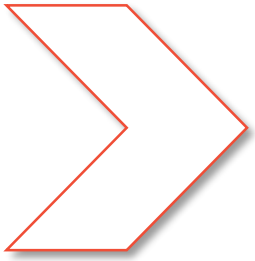
Mobile, analytics, and cloud top the list of CIOs' visionary plans*…

…so your challenge is to build a compelling case for z Systems as the platform of choice

IT data and metrics

The z Systems platform:

- High availability
- Reliability
- Scalability
- Security
- Performance
- Virtualization
- Consolidation
- Co-location



Relevant business metrics

Put it all together for a compelling business value argument for **Cloud, Analytics and Mobile** computing on z

What Business Value can be derived from the known IT Value?

*Source: IBM Institute for Business Value, "The Customer-activated Enterprise"

IBM z Systems – The heart of digital business

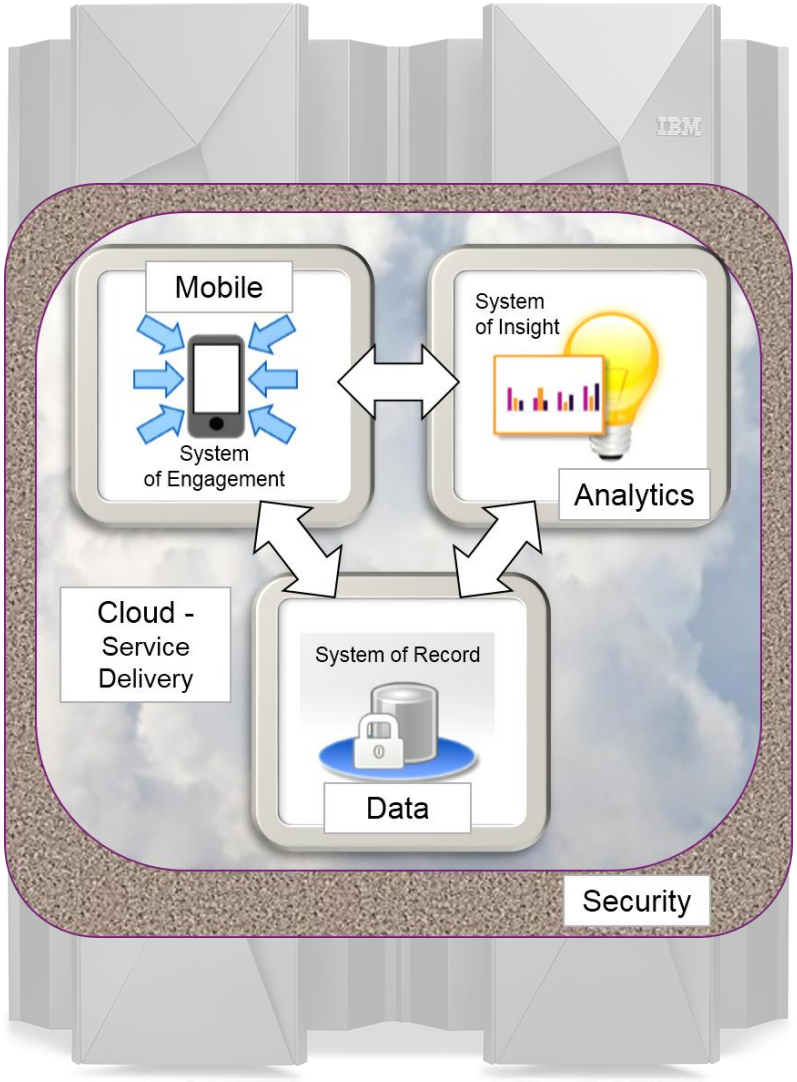
1.2M CICS tps *every day*

17% Lower cost per tps when MobileFirst runs on Linux on z

60% Reduction in costs with Mobile Workload Pricing

60+% zIIP offload for z13+DB2 11

39% Higher through-put for z13+DB2 11 than previous version



3.8x Better cost per workload for z13+ Analytics Accel. than competition

94% Lower cost per throughput with BigInsights on z

32% Lower TCO with z13 private cloud than x86 cloud

4,200+ z Systems job seekers

The new IBM z13

An IBM IT Economics Study provides a wealth of data supporting a z Systems business case – *at no charge*

An IT Economics study helps you build a business case for your enterprise

- Uses your information and costs
- Specifically tailored to your enterprise
- Shows your return on investment
- Allows you to make a financially based IT decision

Do you…

- Want to do more cloud?
- Need to simplify your IT environment?
- Want to reduce IT operating costs?
- Want to grow your business with open source applications?
- Have more than 25 x86, HP-UX or Sun servers running Oracle or Weblogic?
- Have more than three different platforms?

If the answer is yes to any one of these scenarios…

Use an IT Economics study to build a business case for your IT strategy

- Contact the IBM Eagle Team at eagletco@us.ibm.com

IBM z Systems – The heart of digital business…

- *The world's premier data and transaction engine enabled for the **mobile** generation*
- *The integrated transaction and **analytics** system for right-time insights at the point of impact*
- *The world's most efficient and trusted **cloud** system that transforms the economics of IT*