Digital Transformation:
Changing the Way We Act, Interact and Transact

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Vice President and Business Line Executive, z Systems

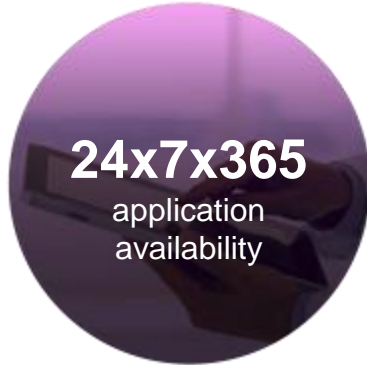# Mobile is changing everything

2004

Transforming how we act, interact and transact.

2014

2004-2014:
37x increase
in mobile transactions
per day per user

The new imperatives for digital business

Availability

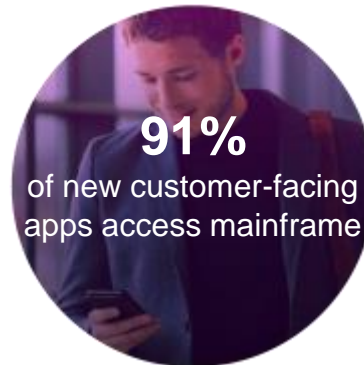**24x7x365**
application
availability

Response Time

Users expect
<1 second
app utility

Personalization

80%
of Marketers send
the same content to
all subscribers

Trust

70%
lack confidence in
data security

Integration

91%
of new customer-facing
apps access mainframe

Scale

35%
mobile transaction
growth annually

Organizations are exploiting the fundamental strengths of the mainframe today

- Transaction Processing

- Data Serving

- Mixed Workloads

- Operational Efficiency

- Trusted and Secure Computing

- Reliable, Available, Resilient

- Virtually Limitless Scale

Compelling economics:

68 for 6

Mainframes account for 68% of production workloads, but only 6% of IT spend

The all new
IBM z13

Redefining enterprise IT for digital
business and mobile app economy

Over $1 billion investment with
more than 5000 developers

Co-created with clients

Extending **core strengths**
of the mainframe

Transact at the scale and
speed of
mobile

Deliver insights at the point of
engagement with integrated
analytics

Ensure highest levels of
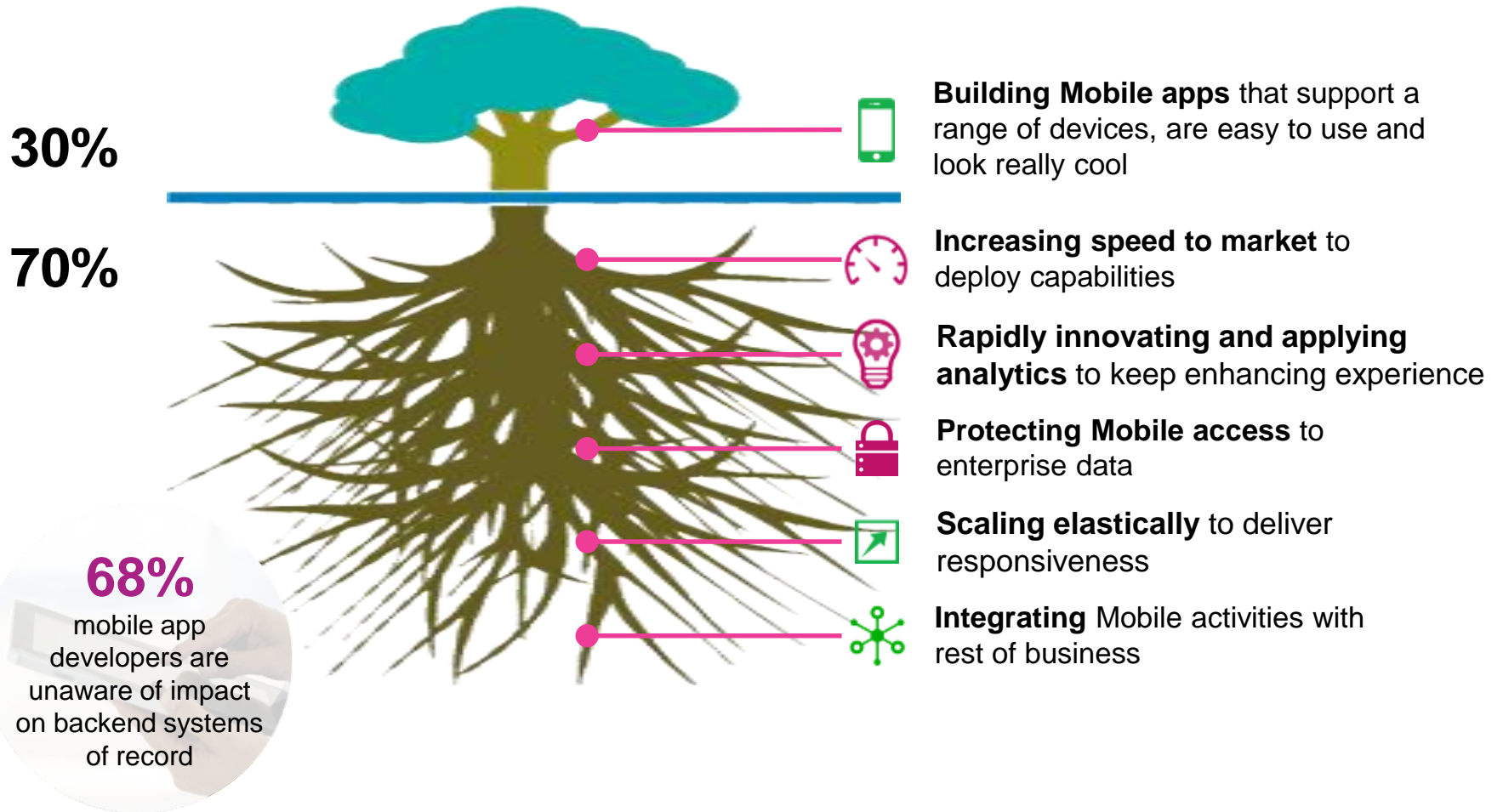security and trust through
cloud

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The Starburst Effect

Each consumer transaction triggers a "starburst effect" of 4 to 100 system interactions across the network.

FULFILLMENT

CUSTOMER

Weather and logistics analysis conducted

Analytics conducted for best shipping method

Retailer sends orderstatus number tocustomer

Request status Info from shipper to customer

Automatically generated confirmation is sent to customer

The pack return labelorder is issued

Customer info sent to retail customer database

30 day follow up

Shipping info is sent to shipper

Special offers and coupons codes are made

Order infosent to retail fulfillment center

Ask for review of product

Warehouse "pick and pack" orders are issued

Order confirmation automatically generated

Clearance and settlement carried out

Customer bank approval conducted

A payment request is sent

Product info sent to retailers inventory database

Payment is sent to retailer

Inventory order is sent to the supplier

Payment confirmation sent to customer

Analytics for acquiring insurance

Customer checks out shopping cart from retailer on mobile app

CHECKOUT

PAYMENT

PRODUCT

Rethinking Infrastructure for Mobile Moments

30%

Building Mobile apps that support a range of devices, are easy to use and look really cool

70%

Increasing speed to market to deploy capabilities

Rapidly innovating and applying analytics to keep enhancing experience

Protecting Mobile access to enterprise data

Scaling elastically to deliver responsiveness

Integrating Mobile activities with rest of business

68% mobile app developers are unaware of impact on backend systems of record

The world's premier data and transaction server

Now empowering the mobile generation

141 high performance cores delivering 40% more capacity

Simultaneous multi-threading for up to 30% more throughput

10TB memory to eliminate I/Os for up to 70% faster response time

320 Separate channels of dedicated I/O

2x The Cache and I/O Bandwidth

DS8000 flash enclosures for 3x increase in z Systems database performance

IBM z Systems bridge Systems of Record with Systems of Engagement for optimized service delivery

MobileFirst Platform (on-prem)

MobileFirst Platforms run either on-prem (using Linux on z Systems) **or in the cloud** (via Bluemix)

MobileFirst Platform (cloud)

BLUEMIX

z/OS Connect

CICS

IMS

WebSphere

DB2

Analytics

Analytics run on SoR system for optimal performance and security
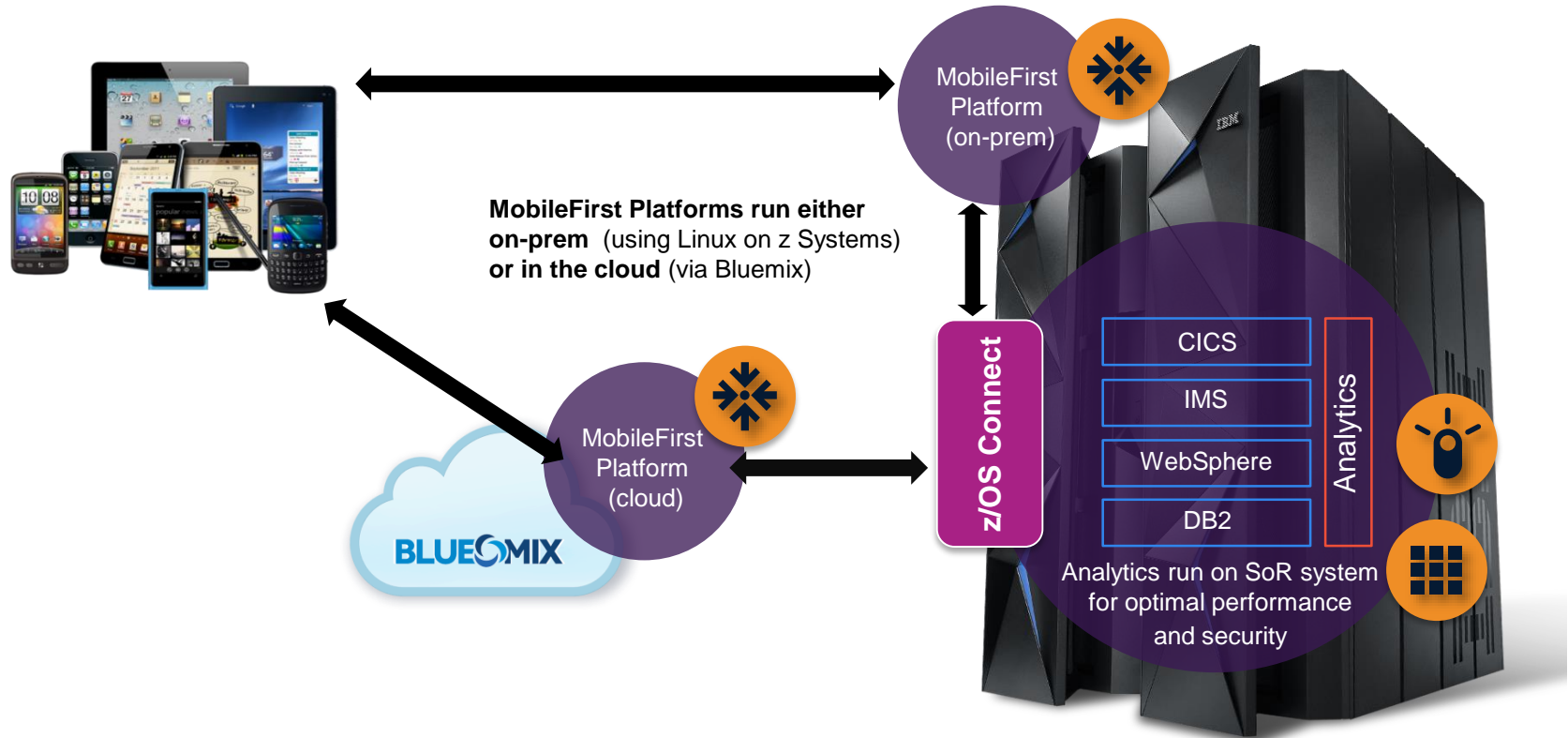
Serving mobile data directly from z/OS is 40% less expensive than exporting to a system of engagement

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renfe

Speeding transportation with a mobile ticket application

ABK Systeme GmbH
the green company

Processing a surging tide of mobile payments quickly and securely

USmobile

Providing the highest level of protection for classified communications

10

Data is the newest resource for competitive advantage

7.6%
boost

to customer lifetime value for firms using engagement analytics

$13
for every dollar spent

nucleus estimate of analytics payback; 1.2 X more than 3 years ago

But, Today's

implementations

add Complexity

add Cost

add Latency

Bring analytics to where the data and transactions originate for greatest value

Transactions
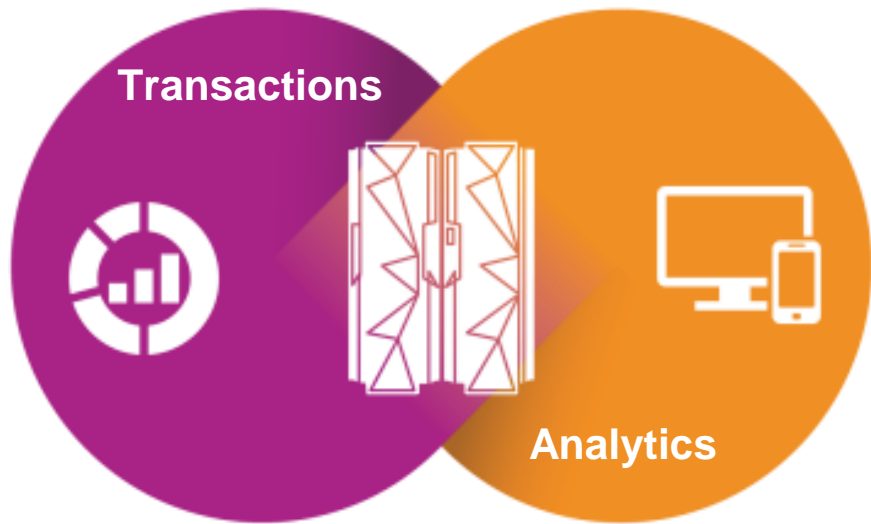
Analytics

- Deliver right-time insights at the point of impact

- Manage data lifecycle and governance

- Eliminate redundancy and avoid ETL

100% **of transactions scored without impact of service**

z Analytics delivers the breadth of capabilities

Streamlined **decision** process

Act

Analyze

Faster, more accurate **modeling**

Transact

Faster **transactions**

Faster, more accurate **scores**

Real-Time Data

Predictive Models

Innovative Insight

Historical Data

Report

Faster, more accurate **reporting**

Integrate

Transform

Faster **transformation** of data

Easier **integration** of other data sources
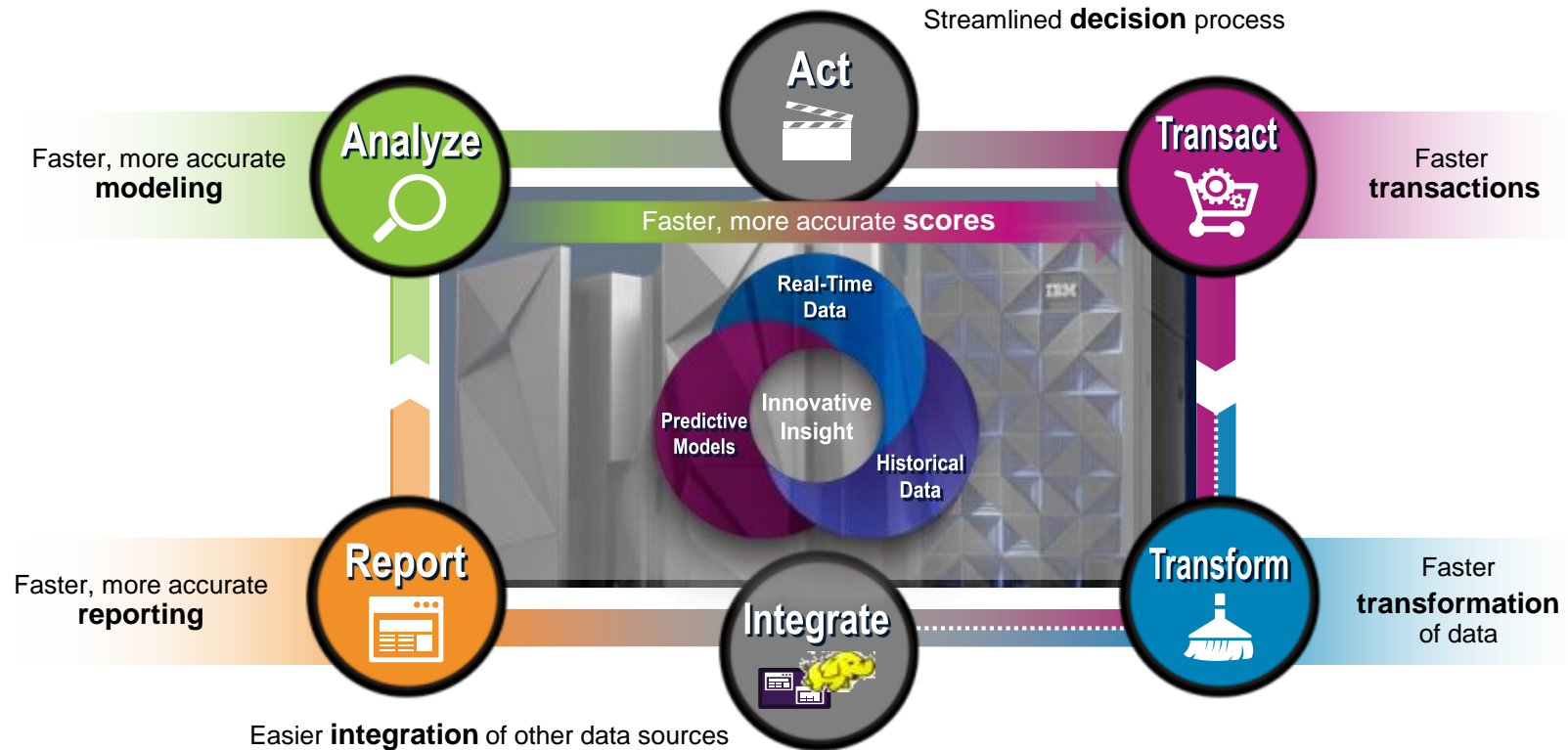
Best of class integrated data and analytics life cycle management for: Generating customer insights, fighting fraud and financial crimes, …

An integrated transaction and analytics system

For right-time insights at the point of impact

DB2 Analytics Accelerator
delivering in-database transformation and advanced predictive analytics

DB2 BLU Acceleration
speeds analytics and reporting for DB2 on Linux

HADOOP
support for InfoSphere BigInsights with new connector technology

SIMD
speeding complex mathematical queries up to 80% with single instruction multiple dataset

zEDC
accelerated data compression to reduce data transfer volumes & storage costs by up to 75%

PETROL

Increased retail sales revenue through point-of-sale suggest-sell insight

Swiss Mobiliar
Insurance & Pensions

Delivers most timely, accurate data for improved customer satisfaction

BANCA CARIGE
Cassa di Risparmio di Genova e Imperia

Reduced time from months to weeks to develop and release new marketing campaigns

self-service

Businesses of all sizes deploy Cloud for service delivery in the digital era

Cloud deployment has grown **92%** since 2012[1]

Approximately **70%** of enterprises will pursue hybrid cloud by 2015[2]

57% of companies are using cloud to drive competitive and cost advantage[3]

85% of new SW is being built for the Cloud[4]

Customers with a clearly defined Cloud strategy enjoy almost 2x the revenue growth and nearly 2.5x higher gross profit than peers[5]

Source: [1] "Raising the game, The IBM Business Tech Trends Study,"
[2] "Private Cloud Matures, Hybrid Cloud is Next," Gartner G00255302, Sept 6, 2013

[3, 4, 5] IBM Global Cloud Study "Under Cloud Cover"

IBM z Systems provide the infrastructure to support all dimensions of cloud service delivery

Private Cloud

z/OS and Linux on System z as the foundation of the most secure, scalable private cloud infrastructure

Hybrid Cloud

Leveraging Bluemix and interoperability with SoftLayer, AWS and other public cloud offerings

Public Cloud

Enabling MSPs/CSPs to deliver differentiated mainframe-based service offerings

Elastic, virtually limitless expansion

Shared everything design for extreme utilization

Secure isolation of Virtual Servers

Built on open industry standards

The world's most efficient and trusted cloud system

Transforming the economics and agility of enterprise IT

8,000
virtual servers in a single system, more than 50 per core

85 LPARs
increasing flexibility in workload deployment

KVM
supports open virtualization with access to open source databases, tools & applications

zAware & GDPS
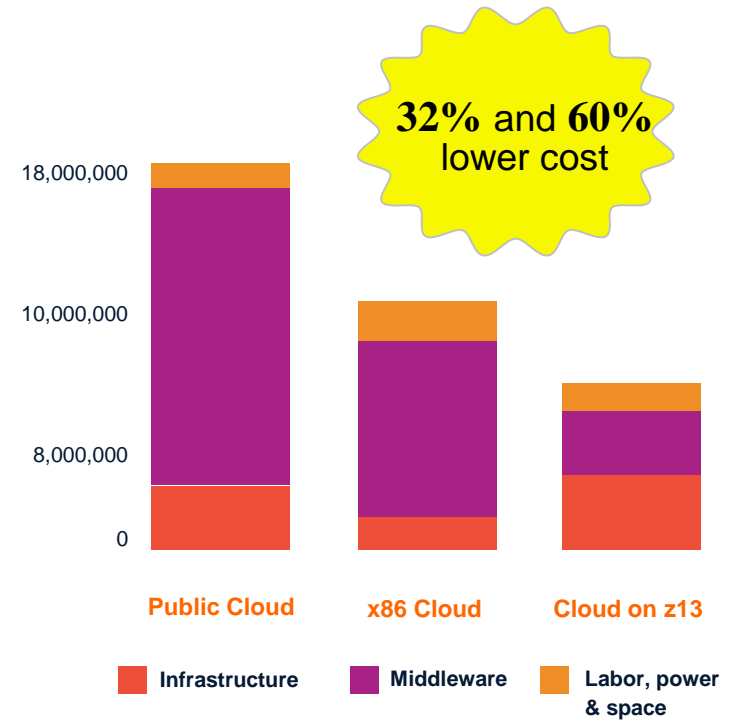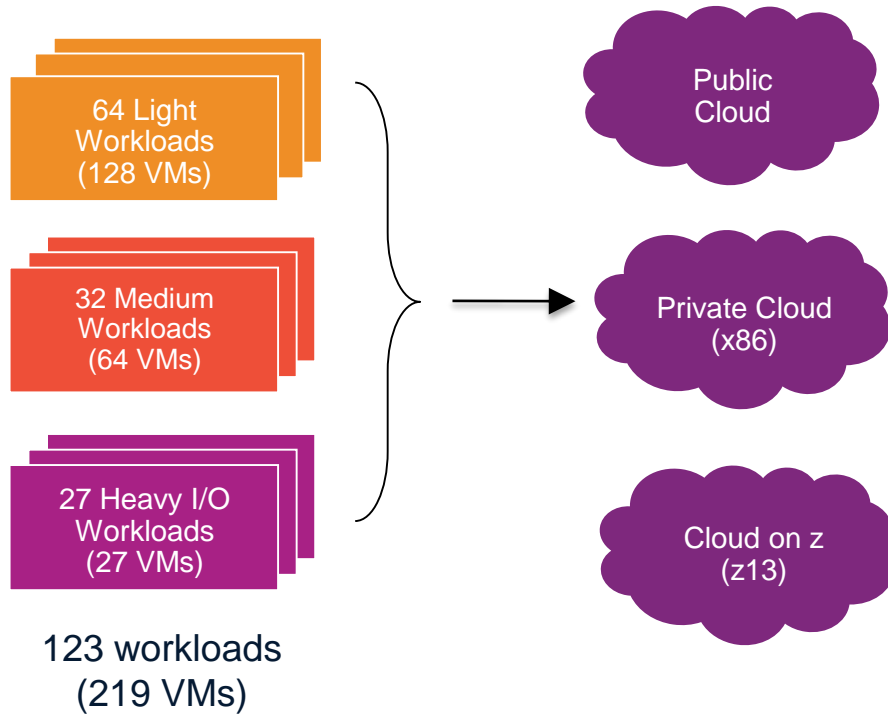for continuous business operations, now available for LINUX

Crypto Express5S
accelerating speed of encryption up to 2x

Hybrid Cloud Connect Test Drive
to optimize integration with SoftLayer

Private cloud on z13 yields the lowest cost

64 Light Workloads (128 VMs)

32 Medium Workloads (64 VMs)

27 Heavy I/O Workloads (27 VMs)

123 workloads (219 VMs)

Public Cloud

Private Cloud (x86)

Cloud on z (z13)

32% and 60% lower cost

18,000,000

10,000,000

8,000,000

0

Public Cloud   **x86 Cloud**   **Cloud on z13**

■ **Infrastructure**   ■ **Middleware**   ■ **Labor, power & space**

IBM z Systems software pricing announcements
IBM continues to deliver software price/performance with latest hardware

IBM Collocated Application Pricing (ICAP)

Run your systems the way they were meant to be run

Integration of new applications priced as if in a dedicated environment
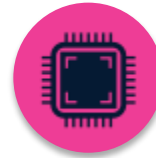
z/TPF Transformation Engine Offering

Supporting the growth of analytics, mobile and security

Special priced engines for new z/TPF workloads without impact to software charges

Country Multiplex Pricing

Evolution of Sysplex pricing, a shift to total flexibility and simplicity

Flexibility to move and run work anywhere within a multiplex

Mobile Workload Pricing for z/OS *(Announced in 2Q 2014)*

Enables IT investments to scale with growth & business returns of mobile

Up to 60% reduction in incremental growth from mobile transactions

LINUX ON Z - IBM LinuxONE ANNOUNCEMENTS

IBM LINUXONE SYSTEMS
THE MOST TRUSTED, EFFICIENT AND HIGH PERFORMANCE ENTERPRISE-GRADE LINUX PLATFORM

OPEN SOURCE & ISV ECOSYSTEM
LINUX YOUR WAY

IBM LINUXONE SOLUTIONS
DESIGNED FOR THE DIGITAL ECONOMY

Mobile   Cloud   Analytics   DevOps

NEW IBM LinuxONE Elastic Pricing

COMMUNITY COLLABORATIONS
COMMITMENT TO THE OPEN COMMUNITY

Open Mainframe Project

IBM LinuxONE Community Cloud

IBM zAware Source Code Contribution

Enabling the tech stars of the future

70
countries

1,400
universities

180,000
students

The **2016** z Systems
IBM Master the Mainframe
World Championship!

Online z courses available to anyone,
anywhere, anytime

MARIST   **SYRACUSE UNIVERSITY**   **THE LINUX FOUNDATION**

**IBM z Systems
Job Connector**
zjobconnector.com

A new generation of z Systems designed for the mobile generation

With the highest speeds, the most diverse workloads, and simply the best security on the planet