# Selling the WebSphere Portfolio on System z
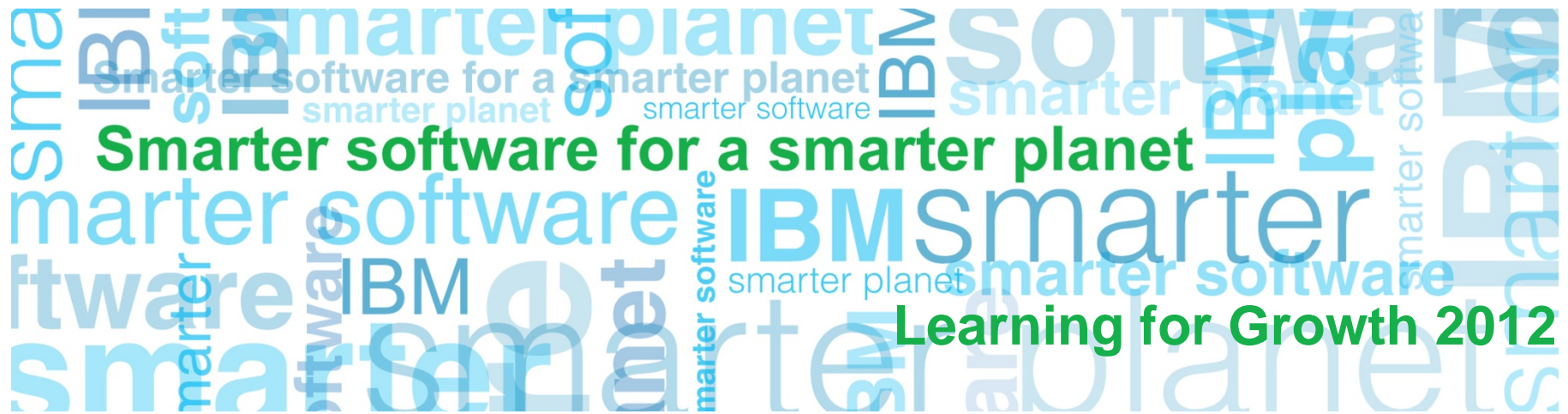
Presenter: Al Grega, WW Sales Executive – WebSphere on System z

**Smarter software for a smarter planet**

**Learning for Growth 2012**

# Learning objectives:

After completing this Web lecture, you will :

- Have a better understanding of the System z platform

- Understand the benefits of running WebSphere workloads on System z

- Learn the advantages that WebSphere products have on System z

# Agenda

**Understanding the System z Platform**

Why WebSphere on z/OS?

Where to start selling?

Resources

# First and Foremost… The Mainframe is NOT Dead!

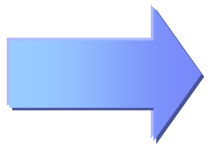"*I predict that the last mainframe will be unplugged on March 15, 1996.*"

–   Stewart Alsop, former InfoWorld columnist (now at Fortune Magazine), March, 1991



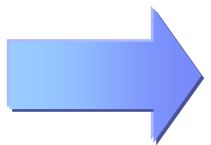*But there are other nasty myths out there….*

# Why customers stay on their Mainframes?
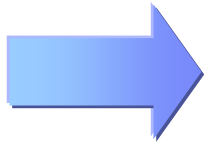
Availability → System z has 99.999% availability… unscheduled downtime for a large WW retailer, bank, etc. means Millions of dollars lost each minute

Security → z/OS has NO* security vulnerabilities and is secure enough for the US Government (EAL5** rating)

System z is **Green!** → Today's System z requires: less floor space, fewer software licenses, fewer administrators and requires less electricity (operating and cooling)

IBM's Commitment to the Platform → IBM has continually updated the Mainframe since its introduction in 1964 including today's versatile System z Enterprise Systems
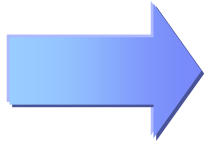
*Source: http://www.securityfocus.com/
**Common Criteria Evaluation Assurance Level 5 (EAL5) awarded by International Standards Organization

# By the Way... Goodbye Green Screens!



- **IBM z/OS Management Facility**
  - Web-based Management console for z/OS
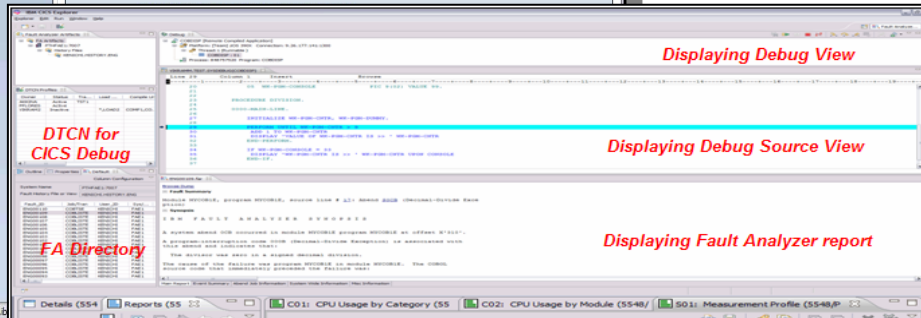  - Zero priced feature of z/OS
  - Helps new System Programmers and Administrators manage z/OS more easily
  - **Attracts new talent!**

- **CICS Explorer**
  - Manage CICS Regions with Eclipse based Graphical User Interface
  - CICS/PD Tools plug-ins available for CICS Explorer (Plug-ins for RDz available too!)
  - CICS Agility and Modernization is **HOT!** Averages >$2M/year for mainframe users
  - **Attracts new talent!**
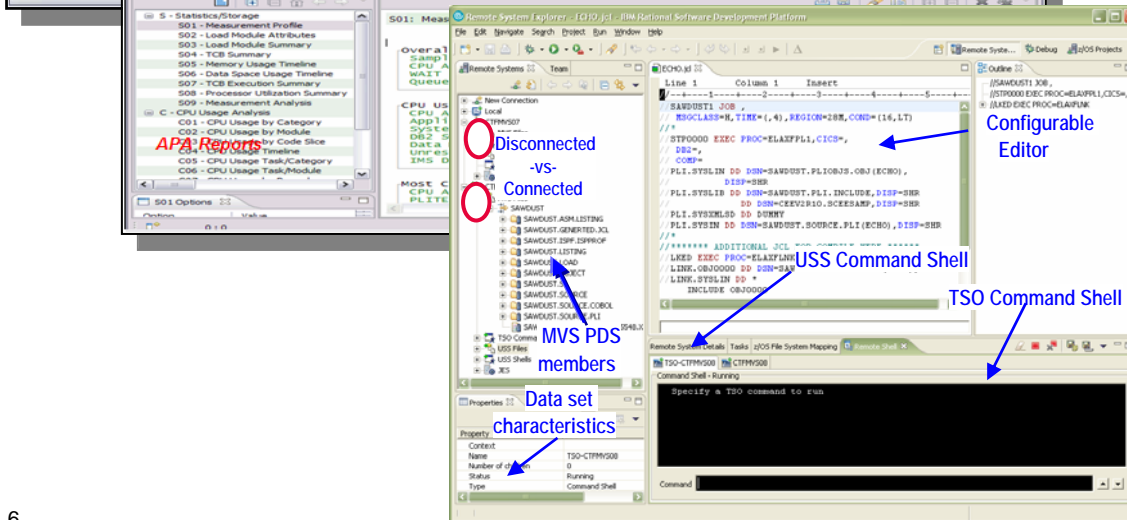
- **Rational Developer for z (RDz)**
  - Code and Debug COBOL, PL/1 and Basic Assembler Language with same tool as Java
  - Eclipse based development tool - same User Interface for all development teams
  - **Attracts new talent!**

# Why care about selling the WebSphere Portfolio on System z

**WebSphere Portfolio, WebSphere System z and BPM Sales reps get paid on <u>ALL</u> AIM software on System z <u>except for MLC</u> products (i.e. CICS)**

> 1. **You get paid on it!**
> 2. **When z doesn't make its number no one does!**

*AIX, Linux or Windows*

*z/VM*

*z/OS*

*Power or Intel Blade*

*Sysplex, LPAR, etc.*

*z BladeCenter Extension (zBX)*

*System z 196 (or 114)*
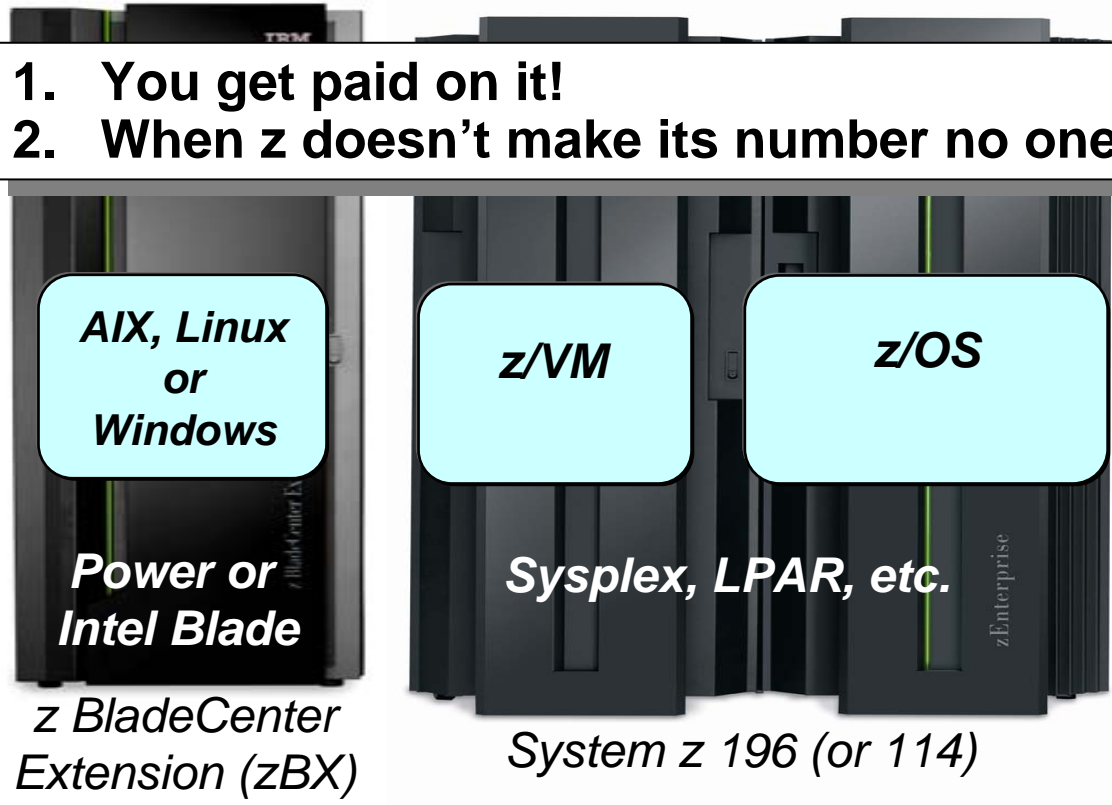
**zBX**
- PVU Pricing
- Based on the type and # of processors used

**zLinux**
- PVU Pricing
- Based on the type and # of processors used

**z/OS**
- OTC – VU Pricing
- Size of the system/CEC/LPARs
- Other licensing options available for customers that are IPLA subcap eligible
- **Contact your zWebSphere Geo Leader for assistance**

# A quick word about MLC and why it's important to IBM, SWG and You

**Revenue**

- MLC revenue for CICS/IMS/DB2 Runtimes and Mainframe Compilers accounts for substantial income every year for IBM and SWG. From a senior executive : **'It keeps the lights on'**

**Currency**

- System z has 38.8% of the market share of 250K+ Server Market in the latest IDC Report

- System z MLC Software has the highest profitability of all software, funding tremendous amounts of research and product development.

- Current ***MLC Software fuels OTC purchases*** putting IBM in a unique position to provide OTC Tooling on 1st Day of Announce, giving us a significant competitive edge.

# Agenda

Understanding the System z Platform

**Why WebSphere on z/OS?**

Where to start selling?

Resources

# WebSphere products run in every System z environment!

**System z is the Ultimate Server consolidation platform**

| WebSphere |
| z/Linux |
| z/VM |

**WebSphere**

**AIX, Linux or Windows**

**Power or Intel Blade**

**WebSphere**

**z/OS**

**Sysplex, LPAR, etc.**

*z Blade eXtension*    *System z 196 (or 114)*

**Security**   Safe → Safer → Safest

**Data Access**   Fast → Faster → Fastest
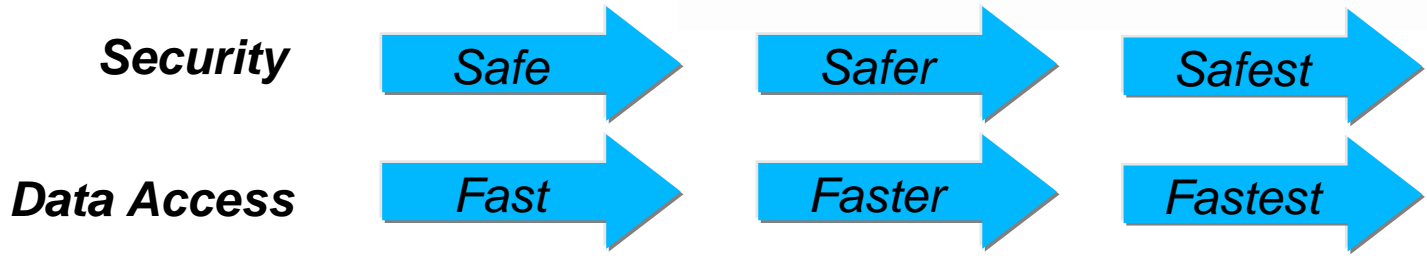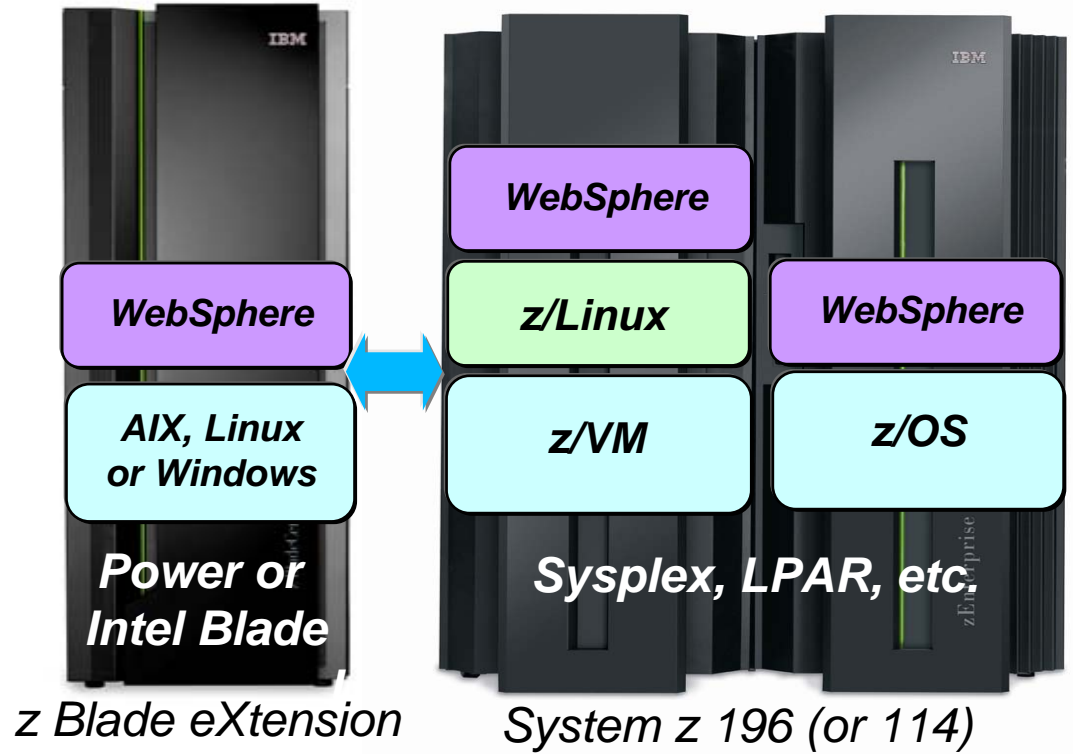
# What's so special about WebSphere Solutions on z/OS? **Co-location!**

- **Performance & Efficiency**

  - Fastest data access
    - WebSphere Optimized Local Adapters (WOLA)
    - Cross Memory Data Transfer vs. Web Services
  - Reduced Latency
    - Not restricted by network speed
  - Reduced CPU Utilization
    - CPU doesn't have to handle network traffic

- **Operational Benefits**

  - Highest Security
    - No passing of security credentials across networks
  - Single Thread of Execution
    - Reduces over head and increases scalability
  - Easier Workload Management
    - Managed within an single Work Load Manager (WLM) classification

WebSphere

CICS TS, IMS, Batch COBOL

WODM, BPM, WMB, etc.

z/OS
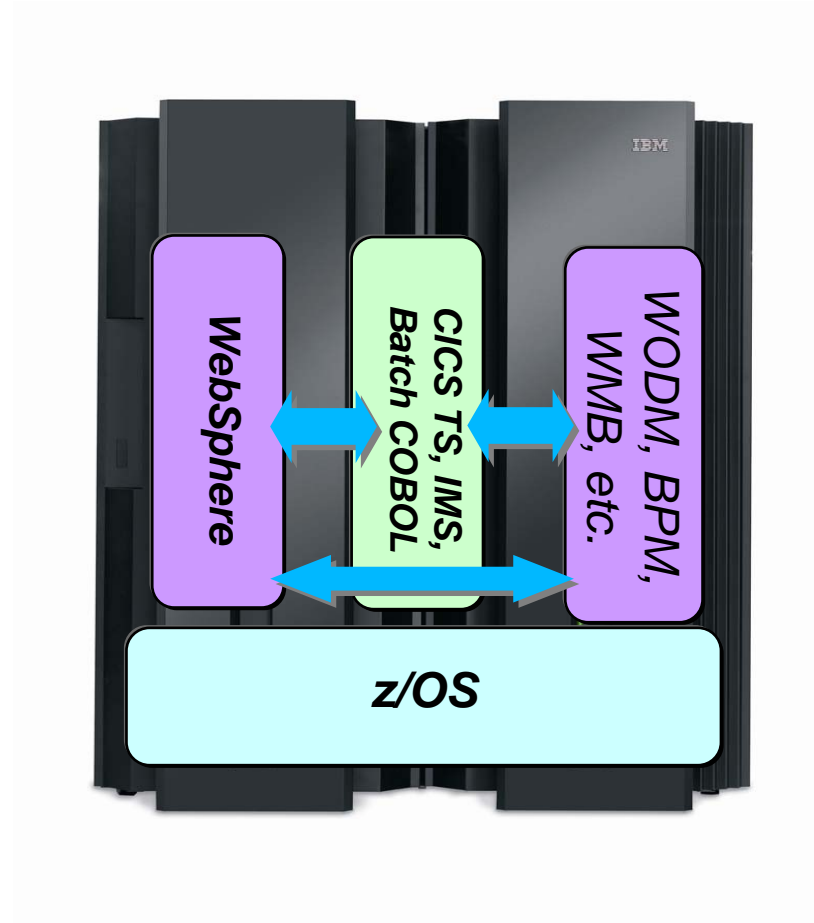
*White Paper:  ftp://public.dhe.ibm.com/itsolutions/SOA/ValueofCoLocation_WP101476.pdf*

# Continuous Price Performance Improvements of BPM on z/OS

## Average Cost* of 10K Transactions

■ General Purpose Processors ■ Specialty Processors ■ MLC & OS (Linux + z/VM and/or z/OS) ■ WPS

**$2.24**

- $0.32
- $0.73
- $0.48
- $0.71

**~1%**

**$2.27**

- $0.44
- $0.58
- $0.31
- $0.94

WPS V7.0 Linux on System z accessing DB2 V10 on z/OS LPAR

WPS V7.0/DB2 V10 Collocated on z/OS LPAR
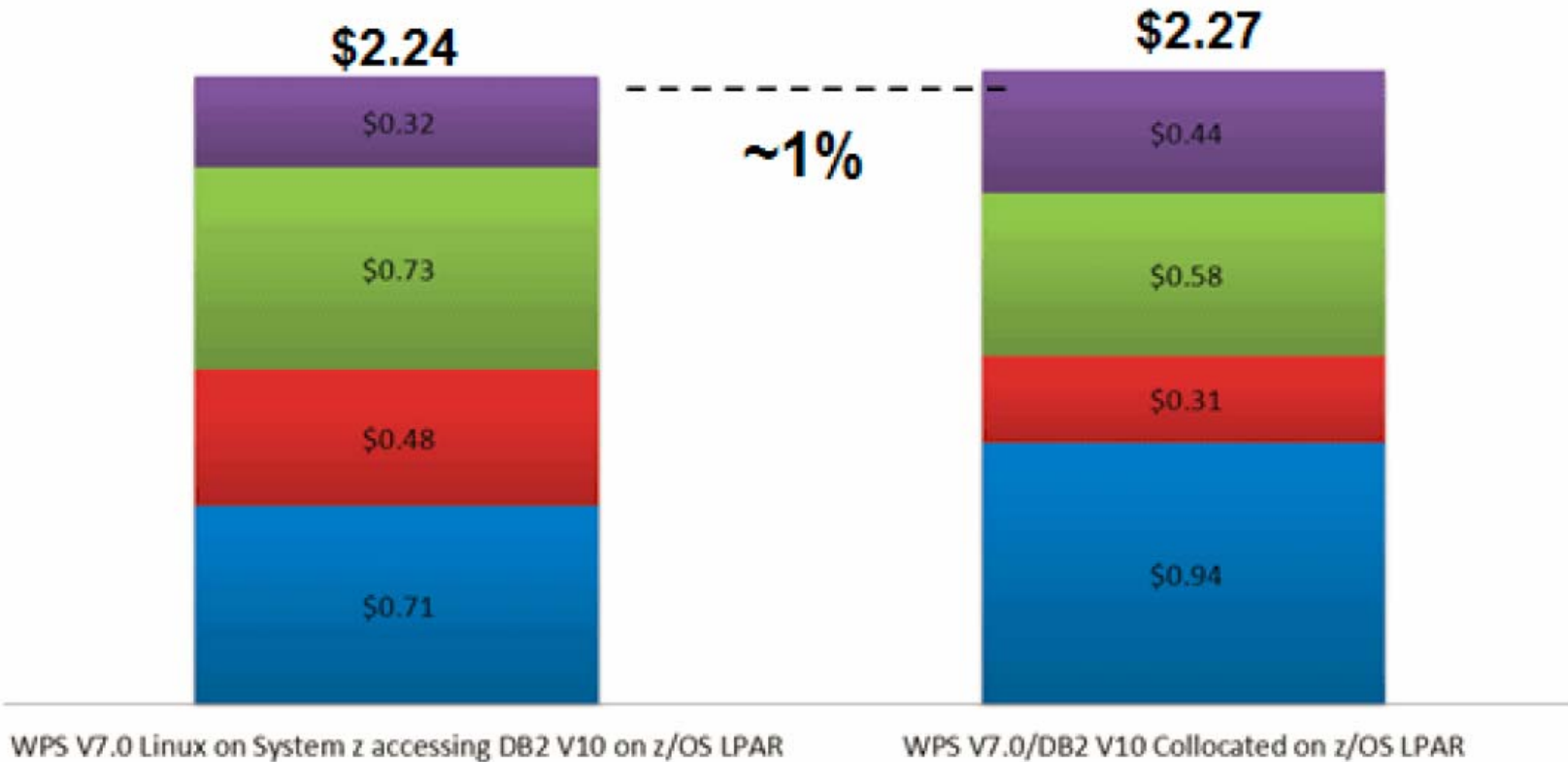
*Based on measurements of 176,000, 262,000, 352,000 business services per hour.

**Source:** *https://w3-connections.ibm.com/files/app?lang=en_US#/file/2325b394-9025-44ae-9789-2f17d2e8146c*

# Software on z/OS doesn't have to be expensive



Specialty processors like the **System z Application Assist Processor (zAAP)** offload traditional Java/WAS workloads reducing customers overall software costs.

Legend: ☐ LPAR MIPS ■ ZAAP MIPS
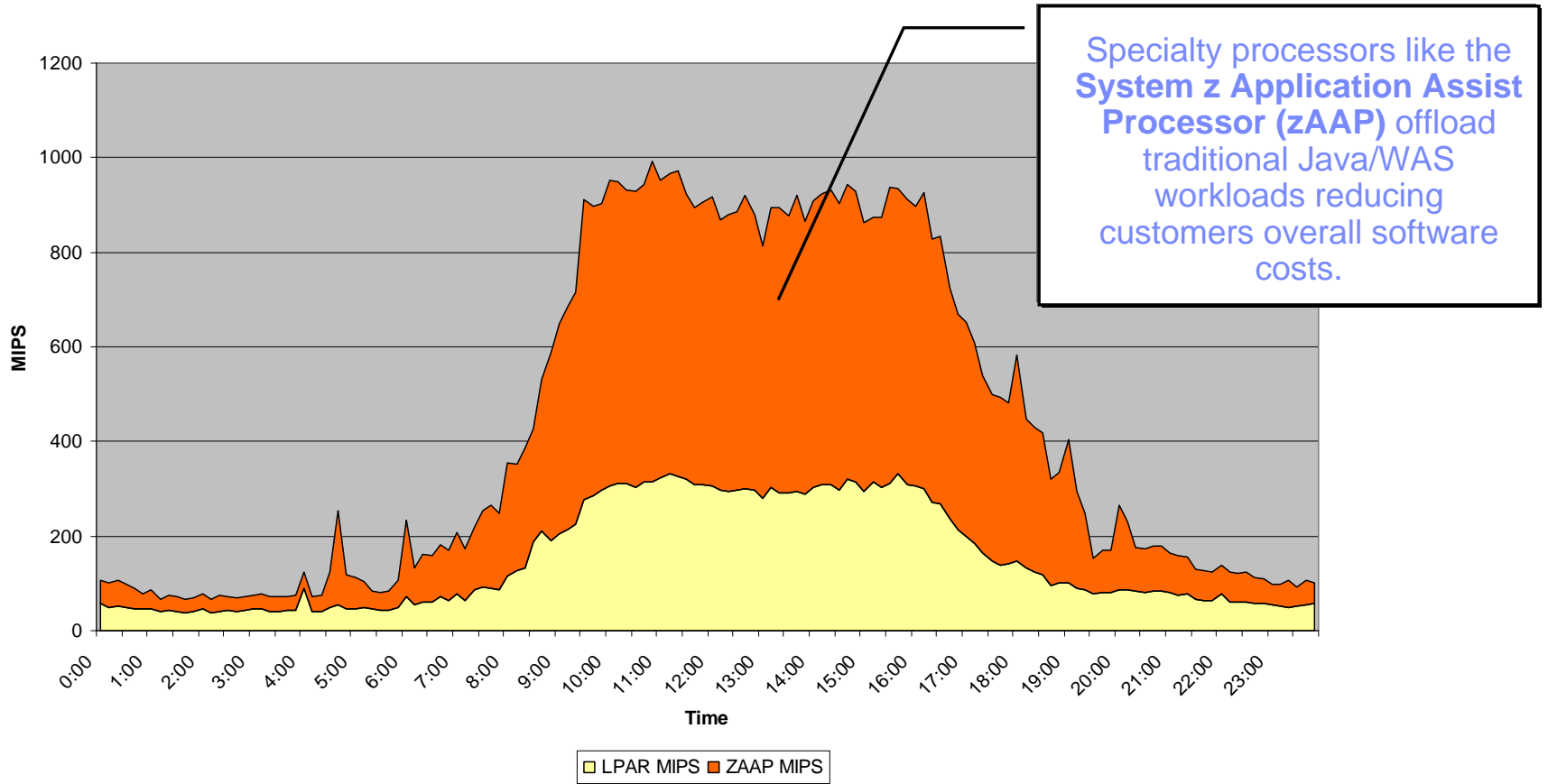
*"Costs reduced both by usage of zAAPs (66% offload achieved) and running Java on z10 (approx 8% reduction in CPU workload / NKS)"*

*Source: Large AP Bank*

# High Performance: Benefit of z196 and WAS z/OS V8

**Here we see the benefits of both the z196 hardware improvements as well as the WAS z/OS V8 improvements:**

An additional 15% with Version 8
$(164-143)/143 = 14.68\%$

43% due to z196 benefits

**Baseline for the relative throughput comparison**

64%

When z196 and V8 are combined

| | Version 7 z10 | Version 7 z196 | Version 8 z196 |
|---|---|---|---|
| Relative throughput | 100% | 143% | 164% |

**DayTrader 2.0 Workload**

14
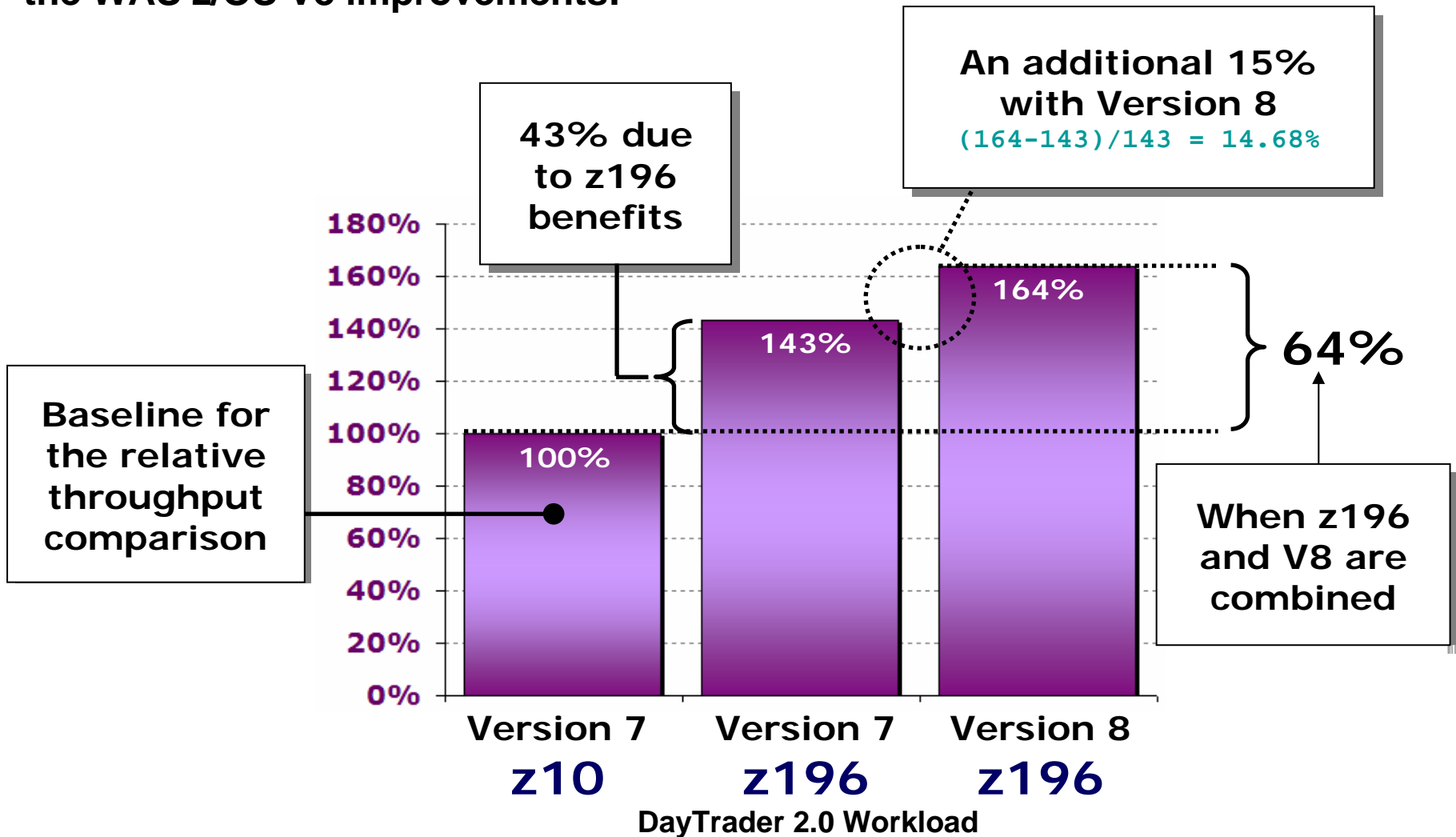
# So where does stuff run best?

- *Mixed Workloads (CICS, IMS, WAS, WODM, BPM, etc.)*

- *Unpredictable Workload Spikes (High Trans. Apps)*

- *Standalone Workloads (HTTP, File Serving, Web Services DP XI50z)*

- *Low Networking Latency (Backend Data/App Access)*

- *Speedy Deployment (ISP Packages, Department Systems, etc.)*

| z/OS | z/Linux | zBX |
|------|---------|-----|
| *Best* | *Better* | *Good* |
| *Best* | *Better* | *Good* |
| *Good* | *Better* | *Best* |
| *Best* | *Better* | *Good* |
| *Good* | *Best* | *Good* |

# Why Sell WAS on System z
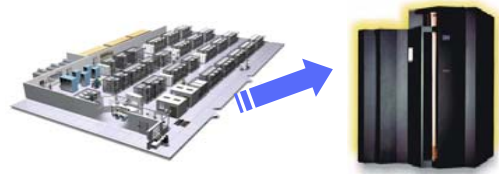
- Competitive Threat

    - Eliminate Threat of Open Source- Not targeting a Linux on z solution
    - Replace Competitive BEA- convert to WAS
    - Use the BEA TARGET "List of Accounts" and Customer IFL lists

- Soft $avings

    - Extreme Flexibility: faster server provisioning time (minutes instead of months)
    - Easy and "free" to upgrade servers
    - Simpler software maintenance disaster recovery

- Hard $avings

    - Reduced Competitive Threat of Open Source
    - Reduced space, power, and cooling
    - Reduced hardware acquisition and upgrade costs

> Why customer wants
> WebSphere solutions on
> z/OS and Linux on z?
> **Save Money.**
>
> Who cares?
> **The CIO**,
> not the techies

# Tools Opportunity at Large US Insurance Company

- The Deal:
  - 2010:
    - CICS $5-$6M
    - PD Tools $8-$12M
    - Roughly 20-25% of the full deal value of $73M
  - 2011 :
    - PD Tools $5M, basically 30% of full deal value of $17M+

- Opportunity Identification:
  - Focus: Customer had been trying to roll out Debug, this had features they wanted
  - Identified competitor weaknesses as customer wanted to move forward on CICS, IMS and other Z Tooling
    - Incumbent held up the migration because they couldn't support the newer versions of our Z Tooling
  - Partnered with Rational on RDz (Rational Developer for z) and RAA (Rational Asset Analyzer)
    - Customers wanted to reduce the amount of time on development, testing and support of legacy applications

# Tools Opportunity at Large US Insurance Company continued

- Closing the deal:
  - Focused on:
    - Engaging for full range of solution with Rational team
    - Taking out competition with cost savings and development improvement
    - Developing a conversion roadmap

- Resources utilized:
  - Pamela ( PJ) Baron- Americas Sales Lead
  - Dan Brown z Technical Manager
  - Jackie Davis- Tech Lead
  - Tamara Bettoni- Project Lead- Enablement
  - Dick Hatton- Z  SSR
  - Roy Decker- Rational Sales Specialist

# Agenda

Understanding the System z Platform

Why WebSphere on z/OS?

**Where to start selling?**

Resources

# Where to start selling:

- If they Don't have WebSphere Application Server on z/OS or zLinux start there… it lays the foundation for the rest of the WebSphere portfolio

  – **BPM:** Memory based adapters (WOLA) allow business processes to access legacy applications faster than any other method

  – **WODM:** Sell on System z when clients need to roll out automated decision Enterprise wide: higher availability and security helps meet any SLA plus CICS TS V4+ can act as an event source

  – **Messaging:** low or no network latency between WMB or WMQ on System z partitions.  MQ-FTE can be centrally managed without vulnerabilities of FTP

  – **Datapower:** runs in a zBX and lowers a customer's MLC costs for web services and XML parsing workloads

  – **CICS Tools & PD Tools:** increase application developers and system administrators productivity, these deals can be **Huge**!

  – **Icing Tools:** are crucial for synchronizing applications between systems helping System programmers be more productive

# Start Here and find out what your accounts are running today!

## Mind the Gap" Sales Tool

Customer has Message Broker or BPM or Enterprise COBOL but no ILOG Products on z

Microsoft Excel - WW_Mind_the_Gap_3-Jan-2012_IBM_Confidential.xls

Customer K

| | A | B | C | D | E | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | IBM Confidential | | Clip Level => | $ 100,000.00 | | | | | | | | | | | | | | | | |
| 2 | IOT | IMT | Country | MAP ID | MAP Acct Name | Expiring ELAs | 505 Data (Accts providing 80% of zHW Rev) | MQ FTE Oppty | WMQ Oppty | WMQ v7 Up-Sell Oppty | WMB for z/OS Oppty | WODM for z/OS Oppty | WODM Up-Sell Oppty | IBM BPM Oppty | IBM BPM Up-Sell Oppty | CICS Tools Oppty | CICS/PD Tools Oppty | CICS/PD Tools Icing Up-sell | PD Tools Oppty | CICS Up-Sell Oppty |
| 3 | | | | | | | | | Connectivity Opportunities | | | WODM Opps | | BPM Opps | | Tools Opportunities | | | | CICS Opps |
| 4 | | | | | | | | 896 | 815 | 411 | 855 | 693 | 26 | 565 | 153 | 1043 | 716 | 2 | 1004 | 1291 |
| 5 | Japan | Japan | Japan | 00000000001 | Customer A | | | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 6 | Growth Markets Unit | Latin America | Venezuela | 00000000002 | Customer B | | | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 7 | North America | US West | United States | 00000000003 | Customer C | | X | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 |
| 8 | North America | Canada | Canada | 00000000004 | Customer D | 1Q2012 | | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | North America | US East | United States | 00000000005 | Customer E | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | North America | US East | United States | 00000000006 | Customer F | | | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 |
| 11 | North America | US West | United States | 00000000007 | Customer G | 1Q2012 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | Growth Markets Unit | Latin America | Argentina | 00000000008 | Customer H | | | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 13 | Northeast Europe | Nordic | Denmark | 00000000009 | Customer I | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | North America | US East | United States | 00000000010 | Customer J | | | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 |
| 15 | North America | US East | United States | 00000000011 | Customer K | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

About the data / Opportunities / Whitespace / RationalTools / 2009 / 2010 / 2011

- Leverages Tech Blueprint Data from SWG Market Development Group

- Primary uses:
  – Increase pipeline clothing rate - identify AIM product gaps at our clients with System z installed
  – Geo OI - Prospect for product opportunities in a specific Geography
    • Clip level lets users filter out low opportunities and focus on top accounts
  – Build invitation lists for targeted marketing, webinars, seminars, and other events

- Contact your local WebSphere on System z leader or Al Grega (algrega@us.ibm.com )

# Call to Action

1. **Everyone needs to sell software on System z**
   - When the System z and IBM z Software doesn't make its number, the brand doesn't make its number
   - Why? These deals are huge!

2. **System z is not dead**
   - Stop talking about green screens:
     - Legacy applications are applications that work
     - Instead tell customers all they ways they can be modernized
   - And it doesn't have to be expensive:
     - The new Prescriptive Use Case V3.5 shows how we've lowered the cost of co-located applications on z/OS

3. **Engage your geography leaders for help**
   - Don't pass up huge opportunities just because you're a little uncertain about the platform
   - Leverage the "Mind the Gap" data for Opportunity Identification or to fine tune invitation lists for local events

# Summary

– Many industries couldn't exist without System z

- IBM is constantly enhancing the System z to support the latest technology
- System z has the highest security rating in the Industry
- System z is the Greenest platform on Earth: Energy Star Approved!
- System z is a huge source of IBM Software Revenue so sell with it and not against it

– WebSphere has unique benefits on System z

- WAS 8 and the System z Enterprise Systems is 64% better than before
- Specialty processors for WebSphere workloads that lower MLC costs
- Not all competitors support System z, Selling our software in System z keeps them out of your accounts

– The WebSphere Portfolio has many unique benefits on System z

- CICS and Application Development tools that out pace the competition
- Unique support features for IBM BPM and WODM solutions and faster Messaging
- And much more…

# Agenda

Understanding the System z Platform

Why WebSphere on z/OS?

Where to start selling?

**Resources**

# zWebSphere Geography Leaders

- **Worldwide**
  - Heather Johnson-Dunnings, hjd@us.ibm.com
  - Al Grega, algrega@us.ibm.com

- **North America:**
  - Dale Grossman, dgrossman@us.ibm.com
  - Frank Mongelluzzo, fmongell@us.ibm.com

- **Europe:**
  - Sylvie Gillespie, gillesps@fr.ibm.com
  - Olaf Hendrik Kappel, kappel@de.ibm.com

- **Japan** –Shigeto Kudo, KUDOS@jp.ibm.com

- **Asia Pacific** - Roger Braem, rbraem@nz1.ibm.com

- **CEE** – Peter Brabec, brabec_peter@at.ibm.com

- **MEA** – Open (contact Al Grega or Heather Johnson-Dunnings)

- **Latin America** –  Rita Figari Jordan, rita@pe.ibm.com

*If you have a WebSphere opportunity on System z and need help contact your local Geography Sales Leader*

# System z: Just the Facts

# In-depth Follow-on Sales Education

- WebSphere on z Community Site:
  - https://w3-connections.ibm.com/communities/service/html/communityview?communityUuid=7f34250c-1d97-4be4-b389-f230037e3235

- WebSphere on System z
  - Selling WebSphere on System z (75 minute deeper dive): http://w3.tap.ibm.com/medialibrary/media_set_view?id=13836
  - WebSphere on z114: http://w3.tap.ibm.com/medialibrary/media_view?id=123466

- Business Events and Rules on System z
  - WODM for z/OS: http://w3.tap.ibm.com/medialibrary/media_view?id=132755

- Messaging on System z
  - WebSphere MQ FTE: http://w3.tap.ibm.com/medialibrary/media_view?id=115985

- **Datapower on System z:**
  - XI50z: http://w3.tap.ibm.com/medialibrary/media_view?id=106946

# In-depth Follow-on Technical Sales Education

- **WebSphere on System z**
  - Selling WebSphere on System z (75 minute deeper dive)

  - Position WebSphere on System z (Alan Little)
    - http://w3.tap.ibm.com/medialibrary/media_view?id=136047
    - Elevator Pitch: http://w3.tap.ibm.com/medialibrary/media_view?id=136048

- **Business Agility on System z**
  - BPM for z/OS Update: http://w3.tap.ibm.com/medialibrary/media_view?id=135933
  - WODM for z/OS: http://w3.tap.ibm.com/medialibrary/media_view?id=136697
  - IBM Business Monitor: http://w3.tap.ibm.com/medialibrary/media_view?id=135929
  - WESB: http://w3.tap.ibm.com/medialibrary/media_view?id=136698
  - WSRR: http://w3.tap.ibm.com/medialibrary/media_view?id=135932

- **Messaging on System z**
  - WebSphere MQ Update: http://w3.tap.ibm.com/medialibrary/media_view?id=135943
  - WebSphere Message Broker: http://w3.tap.ibm.com/medialibrary/media_view?id=135937

- **Datapower on System z:**
  - Introduce & Position XI50z: http://w3.tap.ibm.com/medialibrary/media_view?id=136246

# System z isn't your father's Mainframe

| | Today's Mainframe | Yesterday |
|---|---|---|
| System Programming | **Metal "C"**<br>*C language* | Assembler Language |
| System Administration | **z/OS Management Facility**<br>*Graphical Systems Management* | 3270 System Console (text based interface) |
| CICS Administration and Operations | **CICS Explorer and CICS Tools**<br>*Graphical plug-ins for CICS application discovery, CICS configuration management, CICS region provisioning, CICS performance and terminal session management* | 3270 System Console (text based interface)<br><br>Competitive Products |
| Application Development | **PD Tools**<br>*Graphical plug-ins for Performance & Fault Analysis, Debugging code and File Management*<br><br>**Rational Developer for z**<br>*Graphical COBOL/PL1 development*<br><br>**Rational Asset Analyzer**<br>*Graphical Application Mapping/Documentation and Business Rules Mining*<br><br>**Rational Team Concert**<br>*Team Development, Change Management, Application Lifecycle Management* | ISPF (text based interface)<br><br>Competitive Products |

# Top 3 Reasons Why System z for Business Process Management?

- WOLA Adapters
  - Zero network latency: Access Batch and CICS Assembler, Cobol, PLI, C or C++ applications via memory

- Co-Location on z/OS with key Mainframe Transaction Applications
  - It's Faster and handles more throughput (see latest Prescriptive Use Case results)

- Availability
  - Business Processes are new age applications, they need to be available 99.999% of the time!

## OI Hints:

- Look for customers trying to consolidate data centers or Intel server farms

# Top 3 Reasons for Decision Management on System z?

- Rules Execution Server on z/OS
  - Natively deploy rules on z/OS or in a CICS Region

- Rule Mining Capabilities
  - Rational Asset Analyzer can mine for business rules in legacy COBOL and export to WODM

- COBOL Code Generation
  - Let's customer deploy rules as executable COBOL code

**OI Hints:**
  - Look for recent CICS v4.x upgrades
  - Look for customers using COBOL Code Generators
  - Look for customers running RAA today, or using RDz for COBOL development

# Top 3 Reasons for Connectivity/Messaging Solutions on System z

- **Shared Queues**
  - WMB and WMQ can access queues from any LPAR in a Sysplex

- **Asynchronous communications with CICS/IMS/Batch**
  - No network latency (WMQ and WMB)
  - Applications can leverage WMQ bridge queues in CICS and IMS

- **Highly Secure Auditable z/OS File Access and Transfer**
  - WMQ File Transfer Edition offers highly secured, centrally managed file transfer without the vulnerabilities of File Transfer Protocol (FTP)

**<u>OI Hints:</u>**
  - Customer needs to integrate distributed applications with Mainframe applications
  - Anybody that says "CICS" and wants to start CICS Transactions from a Web Application
  - When ESB functions are required between web based apps and CICS apps

# Top 3 Reasons for Datapower zXI50 on System z

- Offload processor intensive workloads
  - Easy and Highly secure handling of services reduces customers MLC charges

- Easier Workload Management
  - HMC Console Integration: Single point of control for everything running on System z including zXI50's running on a System z BladeCenter  Extension (zBX)

- Networking
  - Little or no network latency with the 10GB end-to-end internal network

**<u>OI Hints:</u>**
  - Customers with large server farms handling web services back to mainframe
  - Disgruntle MLC customers looking for ways to minimize costs but still stay on z

# Top 3 Reasons to sell CICS Tools on System z

- Investment protection - protects customer investments in their CICS applications and data through modernization
  - How can I discover what is running in production? Interdependency Analyzer
  - How can I modernize my VSAM applications? VSAM Transparency

- Business agility - quickly discover CICS assets, manage CICS definitions, uncover scalability issues for competitive advantages
  - What CICS resources can I reuse? Interdependency Analyzer
  - How can I better predict/trend performance levels? Performance Analyzer

- Security and compliance - supports highest levels of CICS security, enable audit trails of CICS resource changes with back-out capabilities
  - How to monitor configuration changes? Configuration Manager
  - How can I better limit application access/security? IBM Session Manager

- **OI Hint:**
  - *53% of customer spend in CICS shops is on application/infrastructure modernization*

# I ♥ PD/CICS Tools

# Top 3 Reasons to sell Problem Determination (PD) Tools on System z

**Business** (Vendor Issues)
- Pricing Issues
  - Upgrade fees
  - Rising maintenance fees
  - Unplanned budget overages
  - Long term contracts

**Technical** (Product Issues)
- Ongoing enhancements
  - Integration with other products and hardware

    Eclipse Plug-ins provide alternative/superior interface and integration capabilities

    Subsystem and Language toleration simultaneous with subsystem/language availability, exploitation within a few months
  - Product support
  - Administrative complexity

- **Application Development Environment**
  - Unable to deploy new applications on the platform that best meets business needs (z/OS)
  - Forced to consider other platforms for application hosting for affordable tools and utilities
  - Reuse traditional assets in the Internet world
  - Security and compliance - supports highest levels of security, enable audit trails


- **OI Hint:**
  - *Nearly 50% of z/OS customer base still uses Compuware related problem determination tools. Some others use Computer Associates or Macro 4 tools.*
  - *Customer needs to stay current with ever changing subsystem levels and language levels on System z*
  - Look for customers investing in Rational Developer for z (RDz) and RDz Unit Test

# I ♥ PD/CICS Tools

# Top 3 Reasons to sell Icing Tools on System z

- Icing Tools on System z Help Customers reduce their TCO
  - ISV Replacement with Icing tools can reduce customer operational cost
    - CA Easytrieve – IBM Migration Utility
    - CA Date Simulator, Compuware Xpediter Xchange - Hourglass
    - CA PDSMan (partial replacement) – ISPF Productivity Tool
    - MVS Thruput Manager - OSEM

- Icing Tools enhance operations
  - Business Process Synchronization on z/OS – Hourglass
  - z/OS JES exit upgrades, batch productivity, ISV "penalty box" – OSEM
  - 3270 development & system programmer productivity – ISPF Productivity Tool

- Icing Tools complement PD Tools
  - Useful complement for PD Tools and CICS Tools for productivity: Hourglass & ISPF Productivity Tool