



# Improved Transaction Processing Capabilities

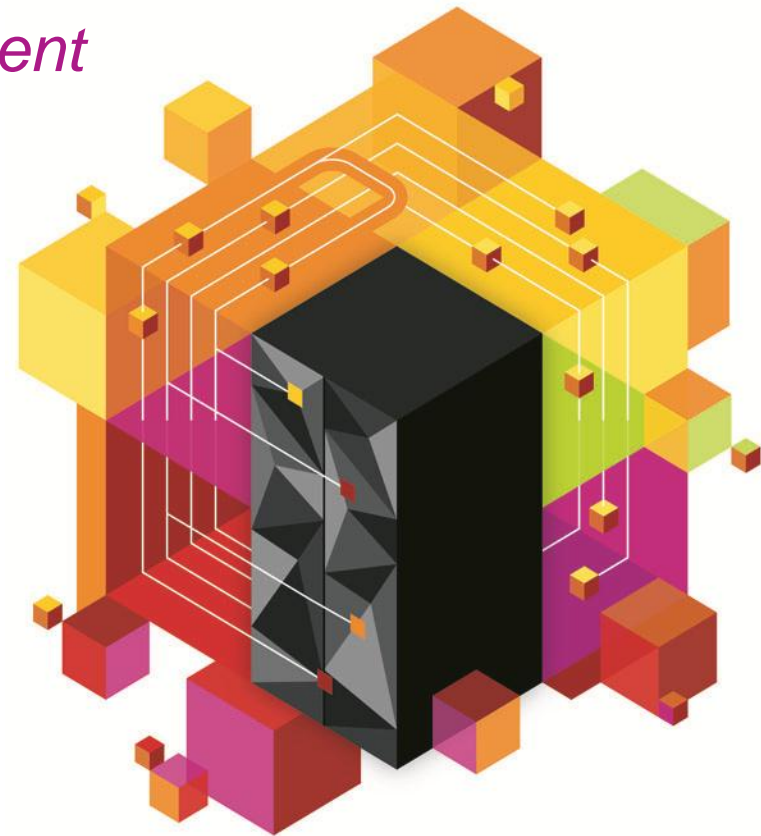
*Offering Operational Efficiency and Service Agility with Cloud Enablement*

**Michael Perera**

Vice President

CICS®, TPF, and WebSphere® on System z

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## Agenda

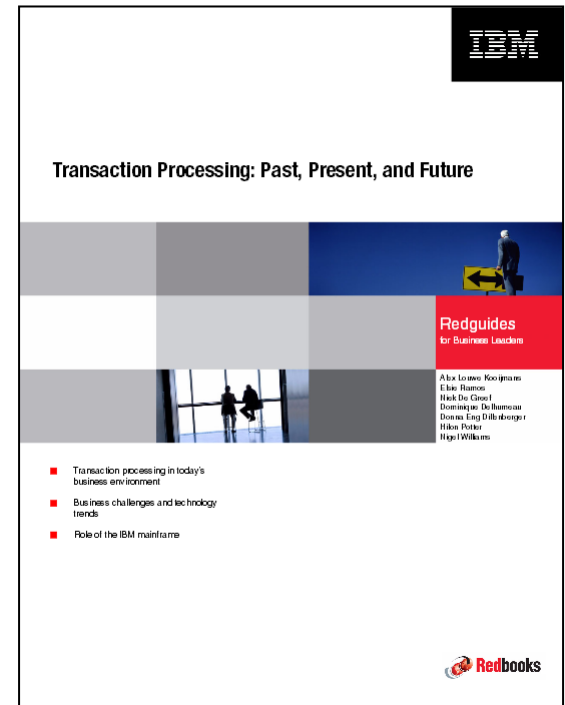
- The changing face of Transaction Processing
- Operational Efficiency
- Service Agility
- Transaction Processing - Where Next?

# Thriving in the Era of Ubiquitous Transactions

“I am absolutely obsessed with the concept of Transaction Processing because it is the very essence of every company on earth. **A business is not in business unless it is successfully processing transactions of some kind.** IBM has been investing in, leading, and inventing Transaction Processing technology for as long as there has been programmable computing. It is no coincidence that **the world’s economic infrastructure largely rests on IBM technology**, such as mainframes, and fundamental financial activity occurs through CICS, IMS, and WebSphere transaction engines.”

Steve Mills

IBM Senior Vice President and Group Executive,  
Software and Systems



<http://www.redbooks.ibm.com/abstracts/redp4854.html>

# What is Transaction Processing?

Courtesy of Webster's, Wikipedia & Perera...

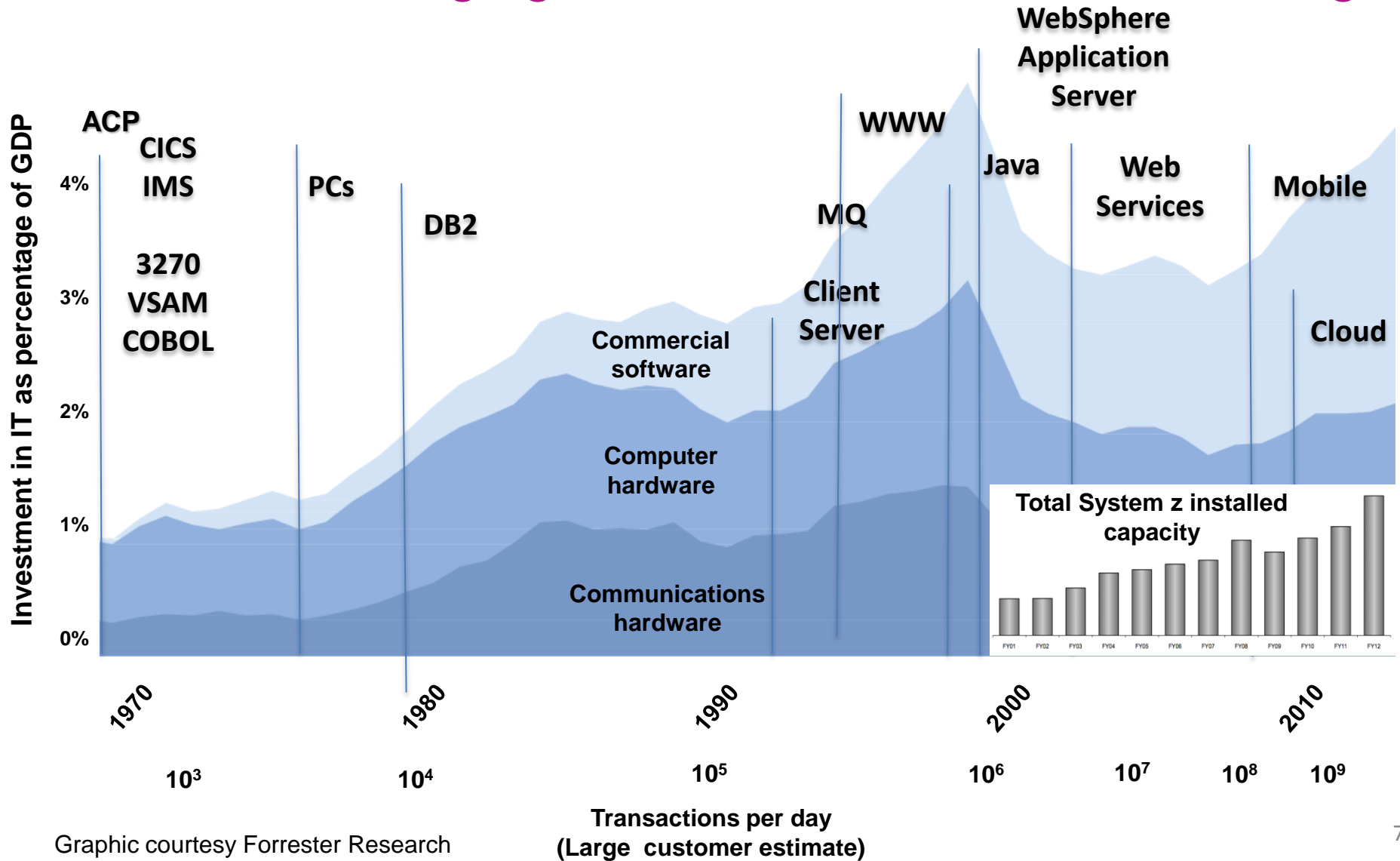
**Transactions** - (in general computing) the transmission and processing of **an item of data**

**Traditional Transaction Processing** - information processing that is divided into individual, **indivisible operations...which must succeed or fail.**

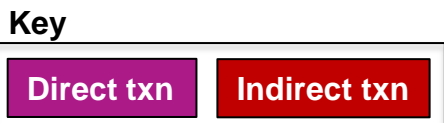
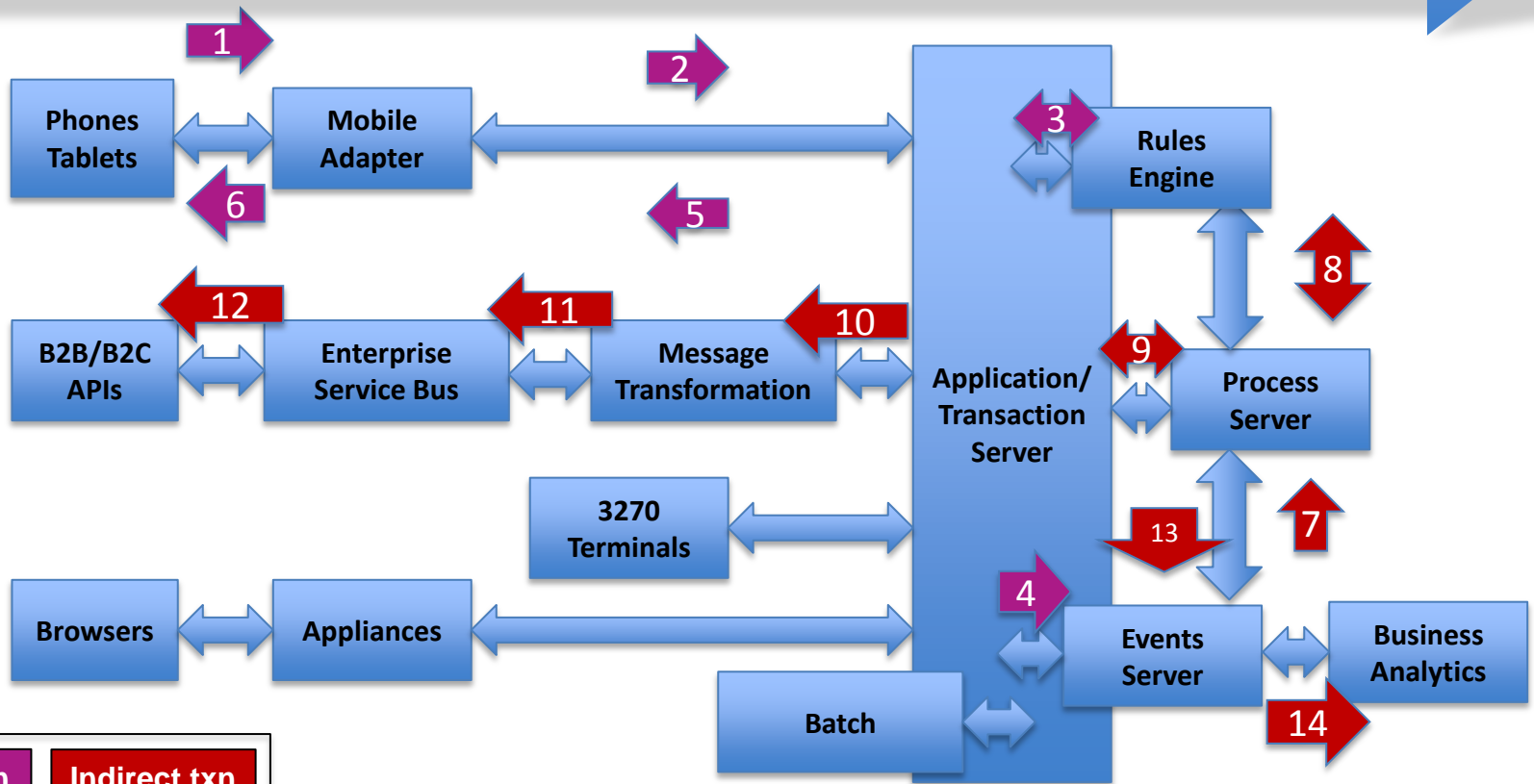
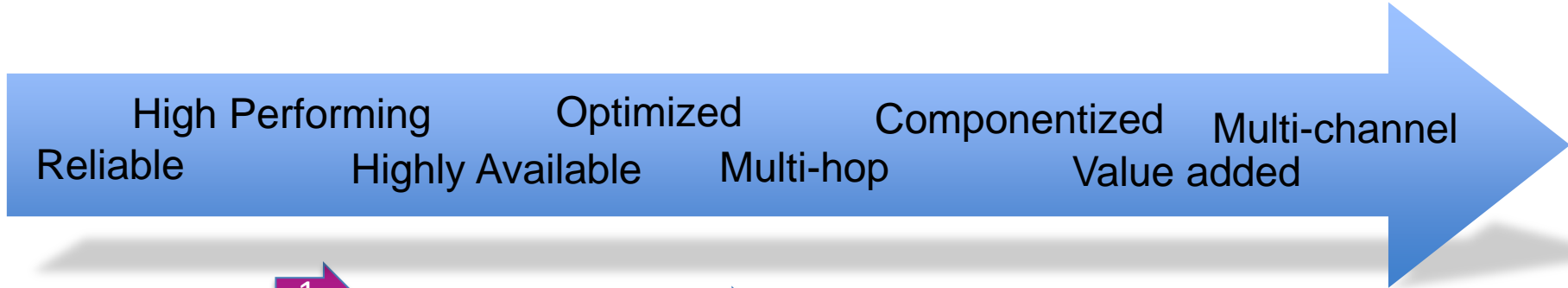
**Transaction Processors** – application environments designed to manage **high volume updates to shared data** (e.g. WebSphere Application Server, CICS, IMS, TPF)

**Next Generation Transaction Processing** – end-to-end processing of an aggregation of atomic transactions including business analysis & decisions across multiple channels in a **scalable, efficient** and **agile** manner

# The Changing Face of Transaction Processing



# The Growing Lifecycle of Modern Transactions







## Transaction Processing on System z Powers the Planet

- Drives the world's enterprise class transaction processing
- Enables customers to create and maintain competitive advantage
- Delivers innovative and essential new technologies

*TPF can handle 100's of thousands of moderate/complex transactions per second*

*95% of Fortune 1000 companies use IMS*

*CICS runs up to 100 Billion transactions every day*

*“Our use of technology is what keeps us ahead of the competition in attracting and retaining customers—and IBM System z Is at the heart of that.”*

*—Tufan Alatan, Executive Vice President, Garanti Technology*



# Operational Efficiency

*Do you need to drive down costs and improve efficiency?*



**What if you could self-provision environments in seconds?**

“The creation of a private cloud enables the rapid, seamless deployment of new computing resources

**Handelsbanken**

**What if you could achieve cost savings through consolidation?**

“Amazed System z was so small quiet – unlike our Intel® installation”

**Swiss Re**



**What if you could reduce cost and risk through automation?**

“WebSphere software enables us to modernize our batch application landscape”

**Major Chinese Bank**

**What if you could reduce the need for planned downtime?**

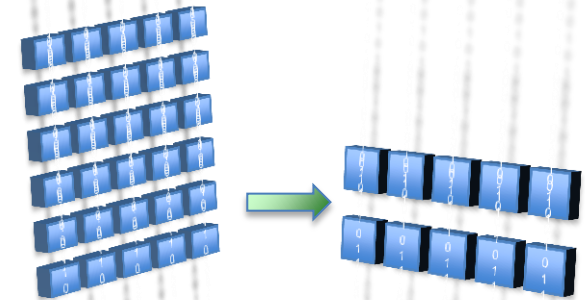
“Lifeline reduced planned outage from 6 hours to 20 minutes”

## Greater Capacity

*Achieve cost savings through automation & consolidation*

### CICS TS V5.1 region consolidation

- Up to **3x** Fewer regions
- Up to **10%** Less CPU usage
- Up to **66%** Reduced management burden
- 100%** Workload and SLAs



### WAS server consolidation

- Up to **80%** Less energy consumption
- Up to **90%** Less floor space
- Up to **90%** Reduction in S/W costs
- Up to **70%** Reduction in total cost of ownership

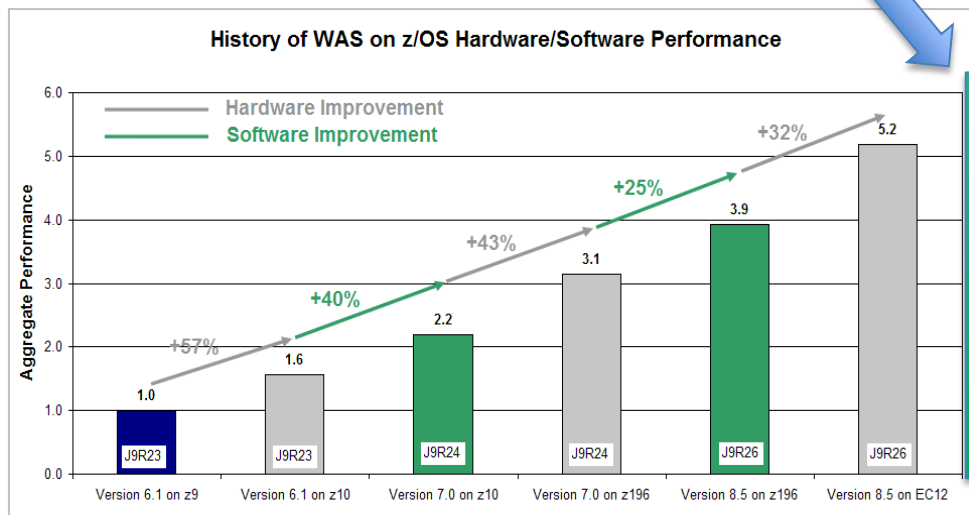
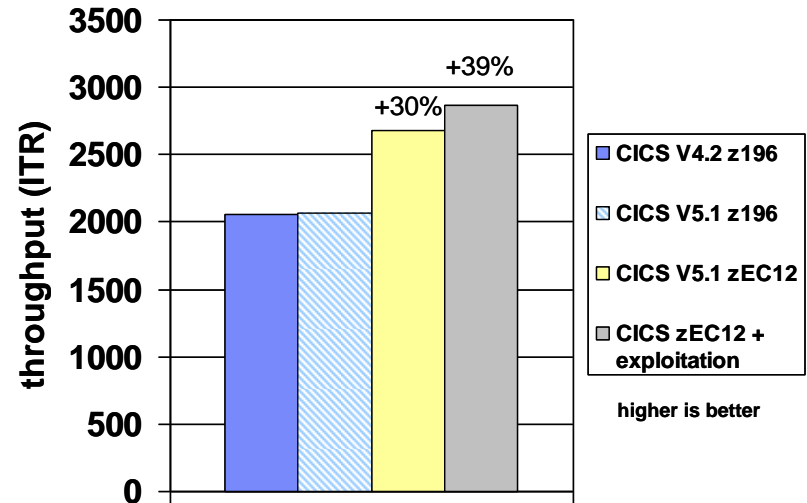
*“By moving workload from **thousands** of distributed processors to a very small number of powerful mainframe processors, we have made **enormous savings** in software licensing costs”*  
 Nationwide Insurance

# Greater Capacity

*Performance keeps getting better*

## zEC12 – More Hardware for Java

- CICS +39%
- ODM +38%
- Java +60%
- WAS with Liberty Profile +71%

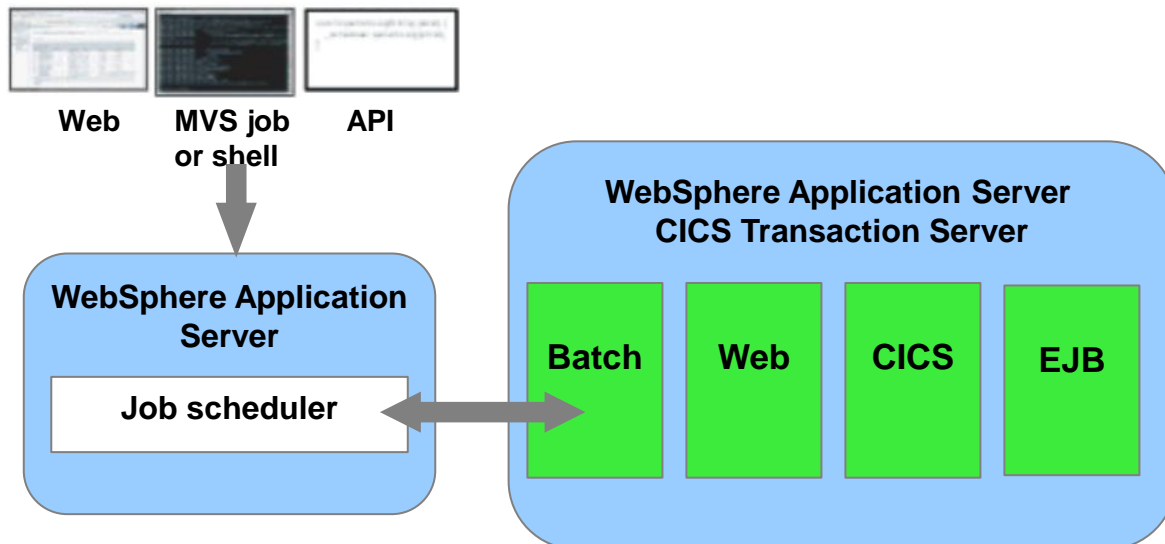
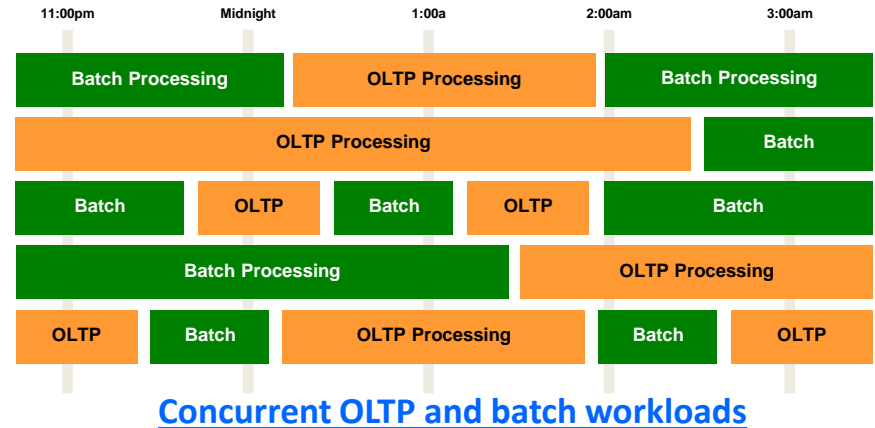


“We have seen **20% to 30% growth** in our WebSphere workload each year, but thanks to the zAAP, we are able to **lower the cost about 15% each year.**”  
 - Svenska Handelsbanken

# Managed Operations

## *Batch Modernization with WebSphere and CICS*

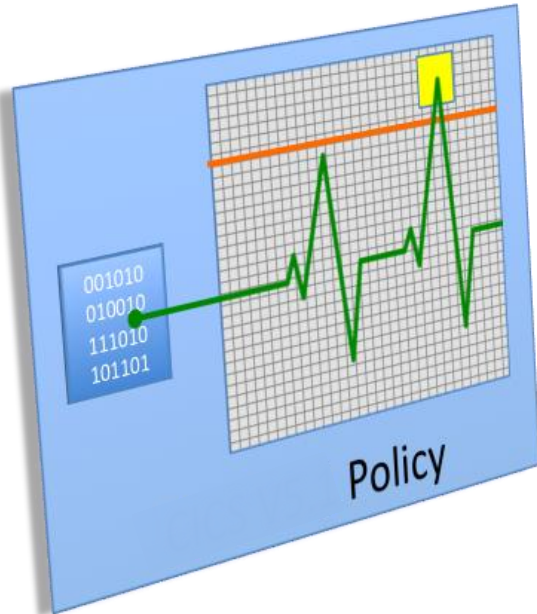
- Batch modernization at your pace
- Leverage existing assets
- Integrate with current batch processes
- Concurrent OLTP and batch workloads on a common infrastructure.



***“Enables us to modernize our batch application landscape ... integrate existing applications ... smooth migration path ... reliable and scalable platform.” Swiss Re***

# Managed Operations

*Policies reduce cost and risk through automation*



## Features

CICS TS V5.1 and WebSphere Application Server health **Policies**

Customizable **health conditions** (CPU and Storage, SQL or file access, links, etc)

Customizable **health actions** Issue message, abend a task, or emit an event on policy breaches

**Workload** management policies

## Benefits

Sense and respond to problems **before users suffer an outage**

**Critical resource protection**

**Automatic response** to undesired behavior

Prioritize **critical business workloads** and **manage service-level agreements**

# Increased Availability

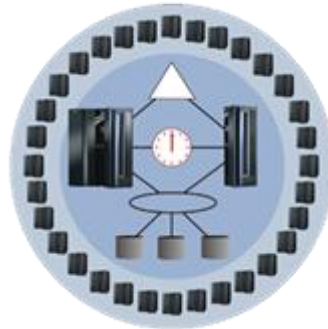
*Delivering continuous availability at the application level*

## Single System z



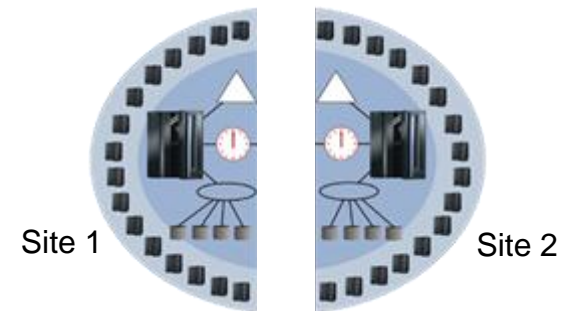
Where mean time between failure is measured in decades

## Multiple System



Designed for application availability of 99.999%

## Multiple Data Centers



Industry-leading solution for disaster recovery

### CICS Transaction Server V5.1

*Reduces planned and unplanned outages, & prepares for GDPS Active/Standby operations*

### WebSphere Application Server for z/OS V8.5

*Enhanced resiliency reduces planned outages, and responds to problems before end users suffer outage*

### IBM Multi-site Workload Lifeline V1.1

*Major Chinese bank reduces planned outage from 6 hours to 20 minutes*

# Increased Availability

*Problem Determination Tools find and resolve abends*

## How much do your outages cost?

**\$90K per hour – Media**

**\$6.5M per hour – Brokerage**

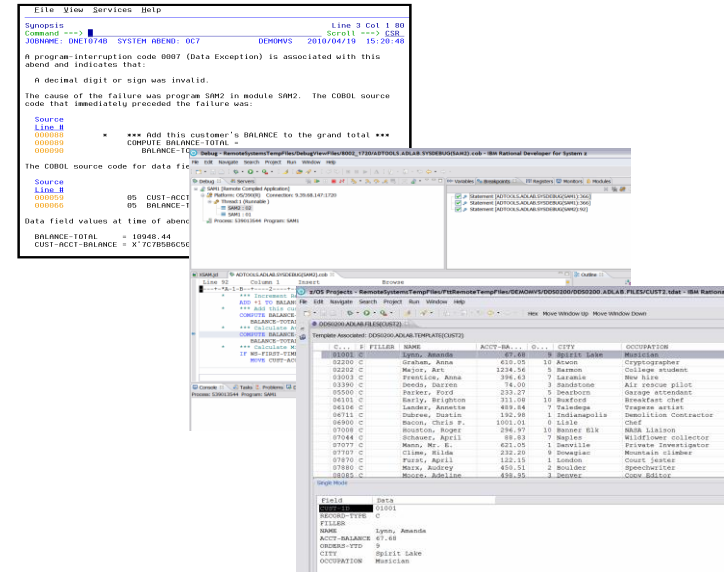
**\$? per hour – Your business?**

## How long does it take you to find and fix a problem?

**IBM Fault Analyzer captures mini dump and analyzes it**

**IBM Debug Tool pinpoints the fault - bad data**

**IBM File Manager identifies and updates data**



**"We've increased programmer productivity by 10 percent and cut development costs...we've experienced significant decreases in the number of transaction failures."**

- Roberto L De Hoz, manager mainframe support, HSBC



# Deeper Insight

## CICS Tools show you what's going on in and around CICS

### How much does poor insight cost?

**“CICS DA discovery reduces learning times from weeks to hours.”** *Jean Paul Caron, Independent CICS Consultant*

**“By making only one major application threadsafe we were able to save 700 MIPS”** *Major US Bank*

**“CICS Performance Analyzer reduced the time to resolve even the most major issue by 75%”** *Managed Healthcare Company*

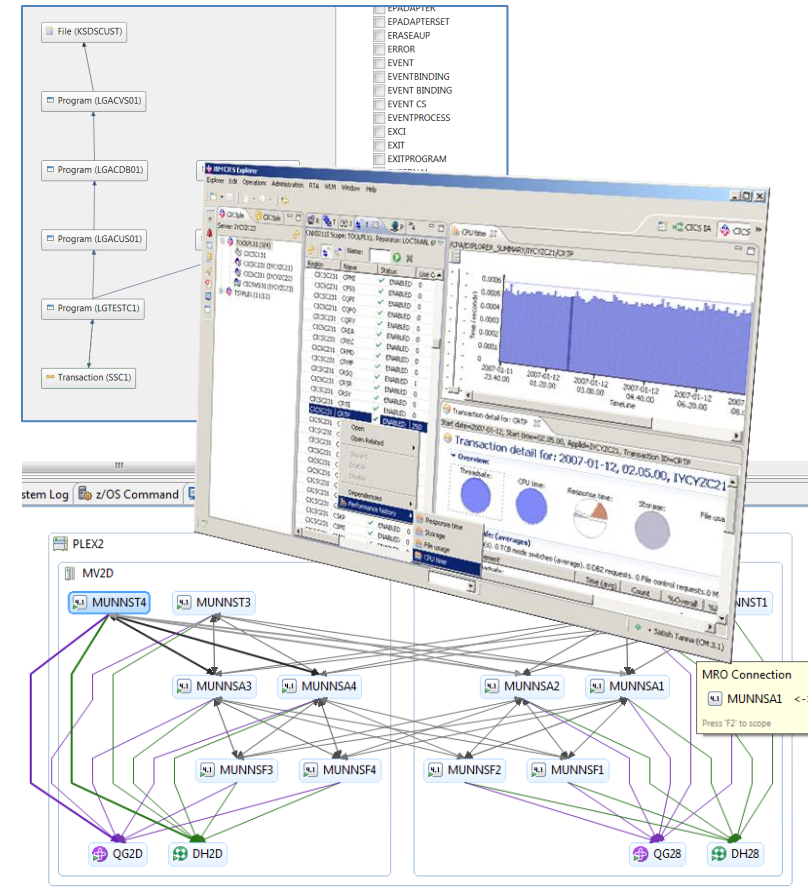
### How well do you know your environment?

**CICS Deployment Assistant** discovers and visualizes your real CICS environment

**CICS Interdependency Analyzer** identifies application relationships

**CICS Performance Analyzer** will get to the root cause of performance issues

**CICS Configuration Manager** shows what was changed



# Service Agility

*Do you need to deliver faster and with greater agility?*



IMMIGRATION & CHECKPOINTS AUTHORITY

**What if you could adapt agile services in hours?**

*Decision Management improves visibility and gives back control to the business domain*



**What if you could enable new services leveraging existing assets?**

*Leverage SOA to rapidly enable new revenue streams & services*



**What if you could build rich web and mobile experiences for critical applications?**

**“CICS has helped us put timely information in front of the student in a mobile world.”**

# Agile Applications

*Create agile services from existing CICS assets*

## Features

New CICS TS V5.1 **Application** resource

**OSGi** bundles for CICS and WebSphere Application Server Java applications

## Benefits

Manage multiple resources as an **entity**

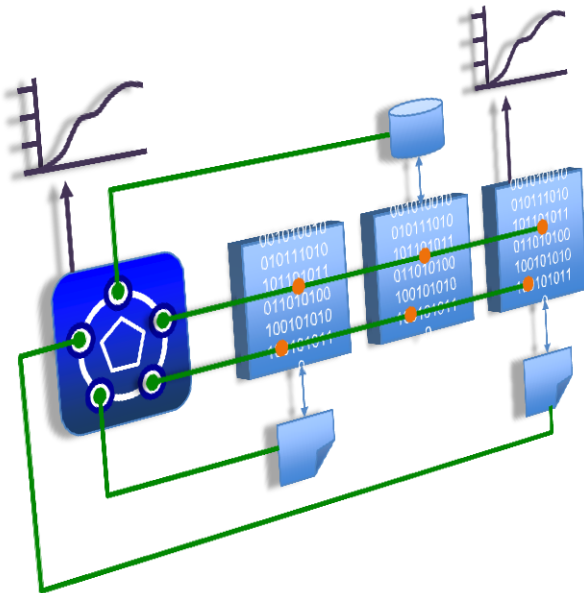
**Rapidly move** through lifecycle

**Automate** dependency management

**Rigorous yet flexible** provisioning

Measure **entire application** resource usage

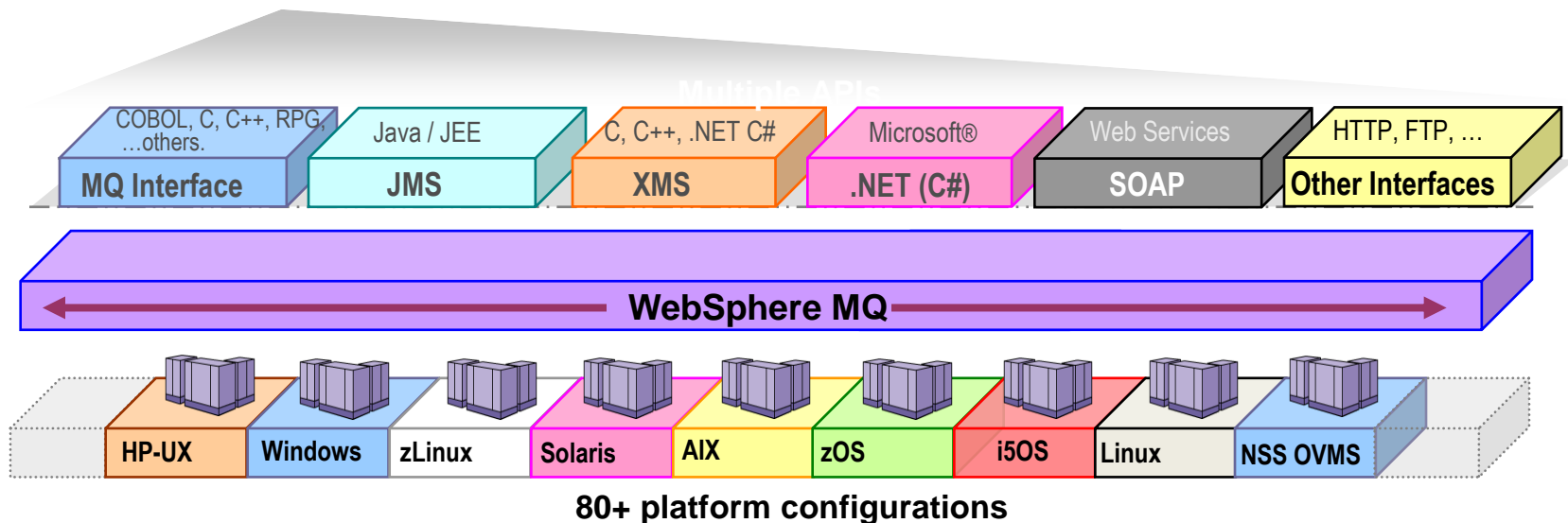
**Dynamically manage** with policies



# Agile Applications

*Reuse and enable application connectivity*

- Connect to **anything**
- Connect from **anywhere**
- Connect with **agility**



# Agile Applications

## Manage Decisions at the Speed of Business

1

- Customer searches for a price
- Insured members submit claims
- Brokers make trades

requests



response



Determine pricing & bundling



Approve filed claim



Detect fraudulent trades



Business Rules

### Why Decisions Change?

- Grow customer base
- Increase customer satisfaction
- Comply with regulatory changes

### Business Rule Updates



- New pricing promotion (*monthly*)
- Updated claims policies (*quarterly*)
- Tightened regulations on trading (*annually*)

2

Major system updates are not required for decision logic changes

# Agile Platforms

## *Simplified deployment with WebSphere Application Server Liberty Profile*

- Simplified and reduced configuration
- Dynamic server profile determined by application at a fine-grained level
- Dynamic runtime – add features without restart
- Small memory footprint (~75MB)
- Optional z/OS qualities of service
- **New:** CICS 5.1 Java web container

Up to **30%**  
improvement in  
throughput over WAS  
8.5 running light web  
apps

**< 5 seconds**  
for server startup time



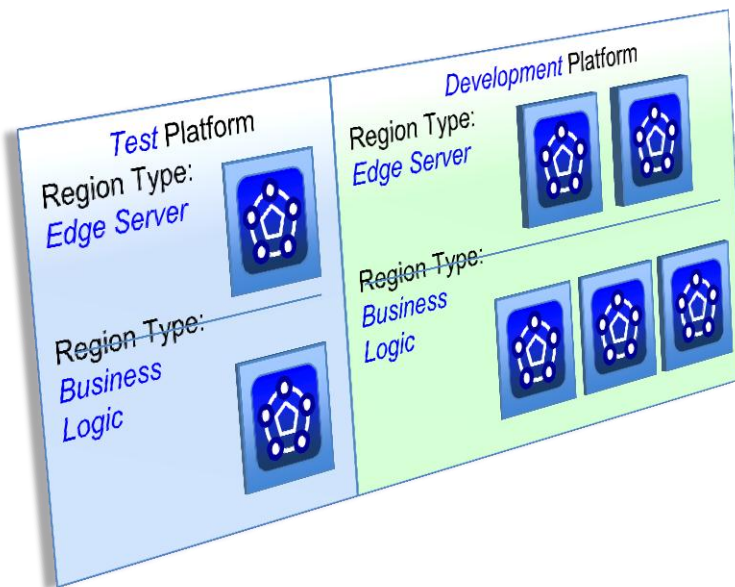
***"With Liberty profile, developers can develop, assemble, test and publish web applications to a lightweight runtime which has fidelity to the full WAS profile."*** Aviarc Global, Ltd

# Agile Platforms

*Create agile CICS service delivery platforms*

## CICS TS V5.1 Features

New first-class **Platform** resource



## Benefits

Group new and existing regions as platforms for **rapid application deployments**

**Increase flexibility**, by decoupling applications from the underlying CICS region topology

Increase reliability through **automatic resource deployment** and validation

Deploy and de-provision applications to started regions within a platform, without **no system administrator interaction**

**Dynamically manage platforms** by applying policies during runtime

# Modern Interfaces

*Build rich web experiences for critical CICS applications*

## CICS TS V5.1 Feature

Embedded web container

## Benefits

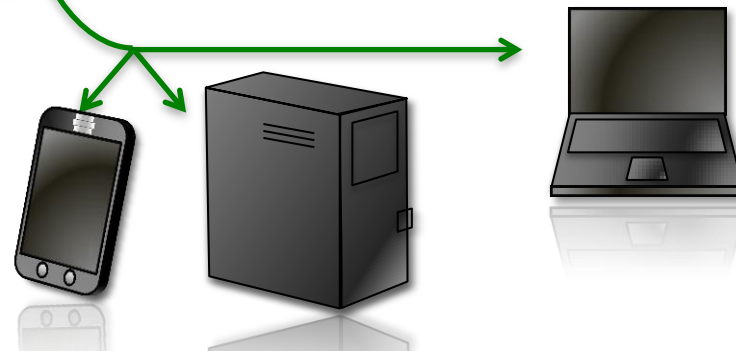
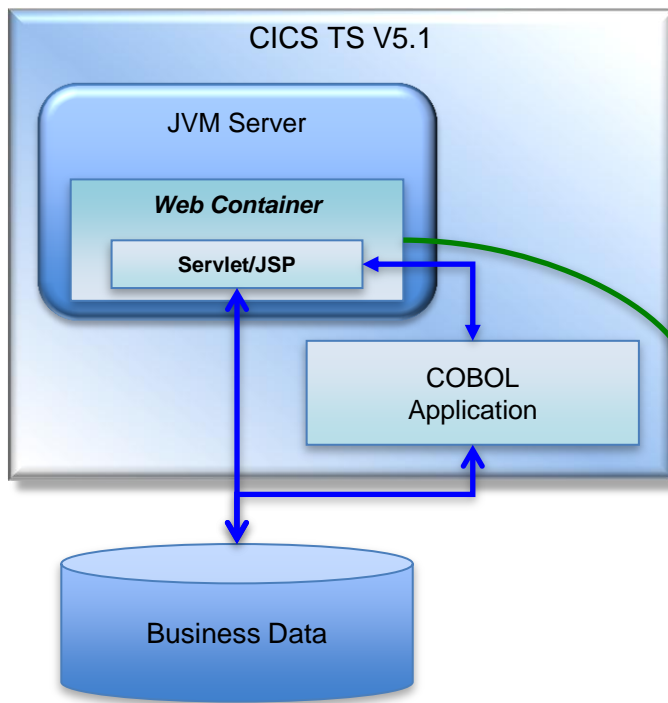
Deployment of lightweight Java **servlets** and Java Server Pages (**JSP**)

**Improved performance** through local access to CICS applications and data

**Rapid roll-out** of interface updates through OSGi-packaged deployments

**Full integration** with first-class applications and platforms

Built on WebSphere Application Server **Liberty Profile**





# Modern Interfaces

*Extend the reach of enterprise applications and services*

**Create new business opportunity by mobile enabling core business service**

## CICS Worklight Scenario



JSON XML

Worklight Server

CICS COBOL, PL/I, C/C++,  
and Java Services

JSON or XML

Direct to CICS scenario



### Client Challenge

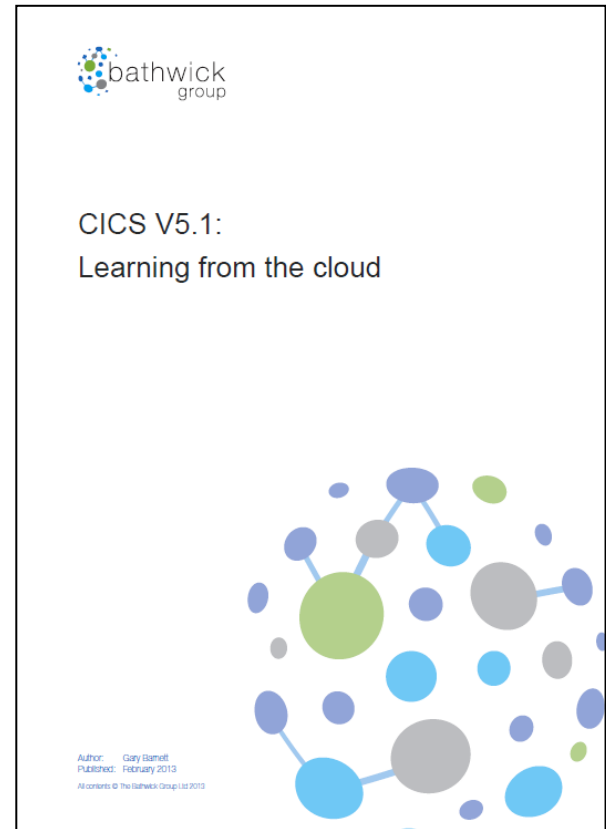
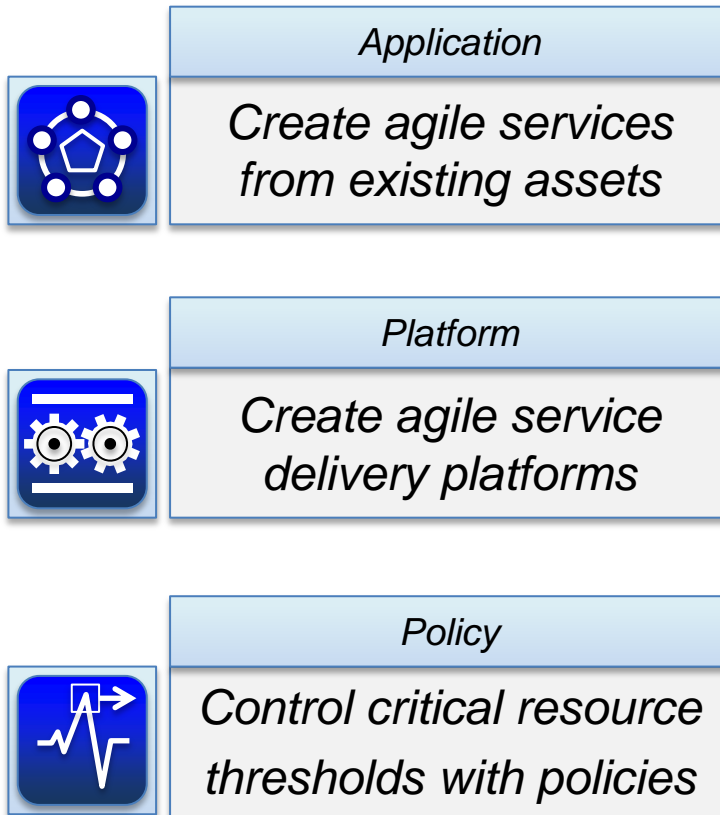
Reuse existing, or new, mainframe applications to deliver core business services to mobile devices without re-architecting/developing a parallel solution

### Key Capabilities

- CICS Web services provide access to **existing service enabled assets**
- Feature pack will provide **JSON data support** for easy consumption by mobile devices
- Support updates to shared data from **1000's of concurrent mobile devices**



# The Road to Cloud Enablement



*“CICS offers a highly reliable, extremely high-performance environment for the most demanding workloads. That said, by taking the best bits from the world of cloud computing IBM is bolstering the relevance of, and the business case for, CICS and z/OS.” - CICS V5.1: Learning from the Cloud, Bathwick Group <http://tinyurl.com/BathwickanalystpaperV5-1>*

# The Future of Transaction Processing

How will you think about your next new workload

Cloud

Agility

Flexibility

More workload

Connectivity

Mixed Language

Efficiency

Scalability

Mobile

Availability

Operational Decisions

ENVISIONING THE FUTURE IS NOT THE SAME AS BUILDING IT



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