Monitoring Heterogeneous Applications on System z With ITCAM

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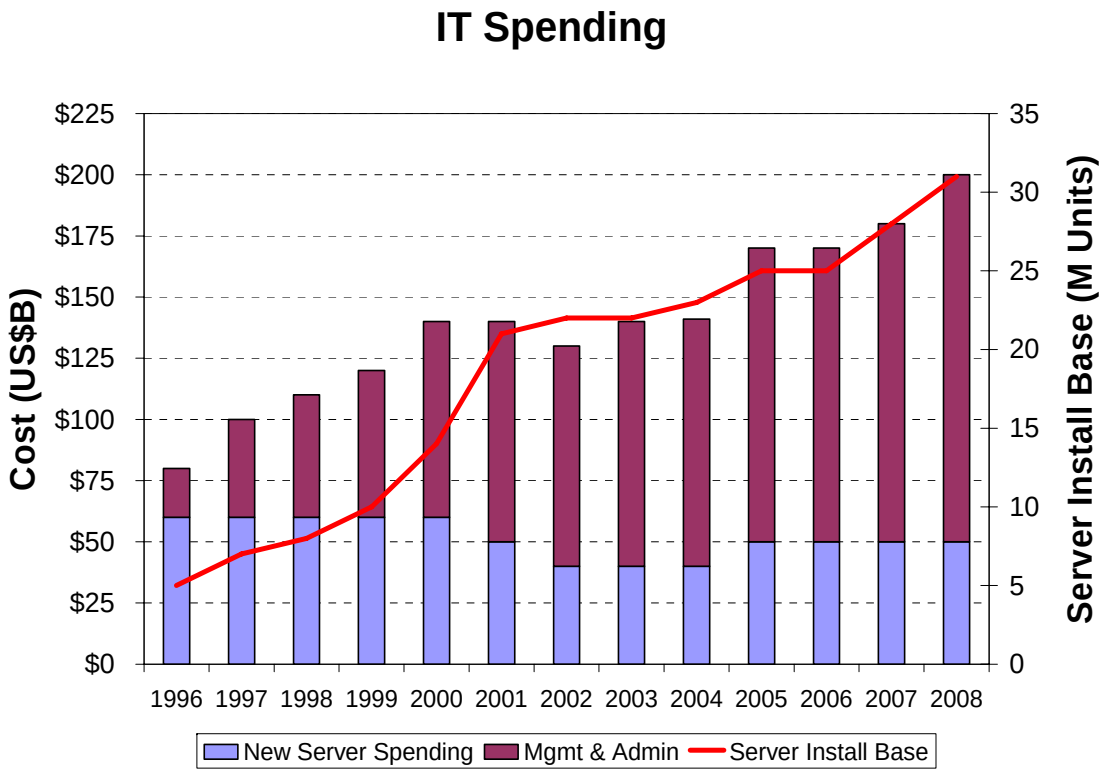
Agenda

- What Is The SMCz Vision?
- Transaction Tracking On System z
- DEMO

What Our Customers Are Facing Today

IT Complexity Drives Hidden Costs

- Managing today's mixed IT platform environments can be complex and costly
  - Thousands of servers
  - Thousands of software licenses
  - Thousands of distributed control points
  - Underutilized assets
  - Ineffective costing methodologies
- The Result
  - Massive complexity
  - Spiraling people costs
  - Increased availability and downtime costs
  - Increased security breach costs
  - Sub-optimal investment choices



Many infrastructure management initiatives are focused on changing this direction but adoption & IMPLEMENTATION has been slow & difficult!!

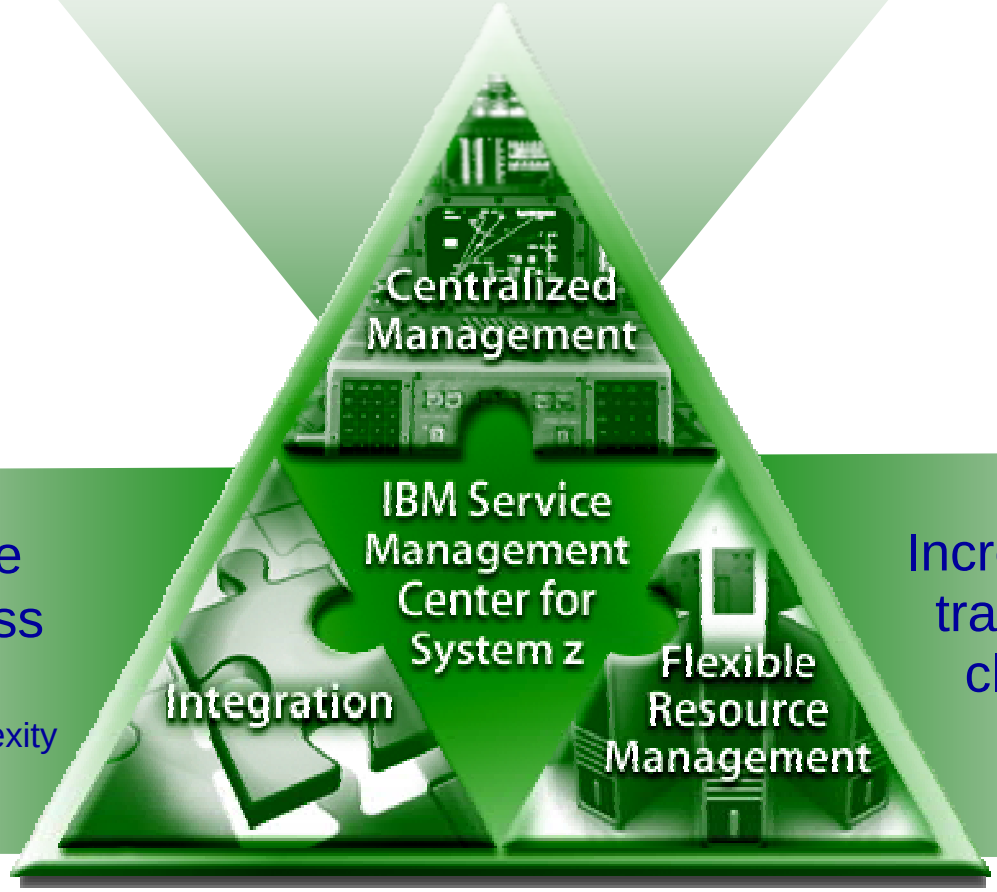
Source: IDC

IBM Service Management Center for System z

A Service Management and Best Practices Model for System z Clients

Manage your enterprise from System z

Enables System z as the Strategic Platform of Choice for managing the enterprise



Integrate across service management & business delivery processes

– Improve visibility, reduces complexity and cost, increases efficiency

Incremental roadmap to transform to a green and cloud infrastructure

– Further realize cost savings, Increase flexibility and efficiency

The Problem Of Management Islands

"There's a lesson to be learned from IBM and others among the best-run enterprise organizations … The integrated enterprise is a more efficient, globally positioned enterprise."

- Susan Eustis, Wintergreen Research

Integration of Service Management is a critical success factor

New Initiatives to gain……these advantages

- ✓ *Consolidate workloads and mission critical workloads on System z*
- ✓ *Centralize management of business services and IT Infrastructure*
- ✓ *Consolidate and Improve Storage management on System z*
- ✓ *Improve Security – Audit, compliance, access mgmt etc on System z*

✓ **Grow Faster than their competition**

- ❖Organizations with extensive integration of business & technology **grew 5% faster** than their peers[1]

✓ **Reduce Costs**

- ❖**63% of clients** expect SOA-based applications to impact their service management investments[2]
- ❖**Downtime** costs can amount to up to **16% of revenue.** The majority of downtime is attributable to infrastructure outages and human error[3]
- ❖The cost of **power consumption** by data centers doubled between 2000 and 2006, to $4.5 billion, and could double again by 2011[4]

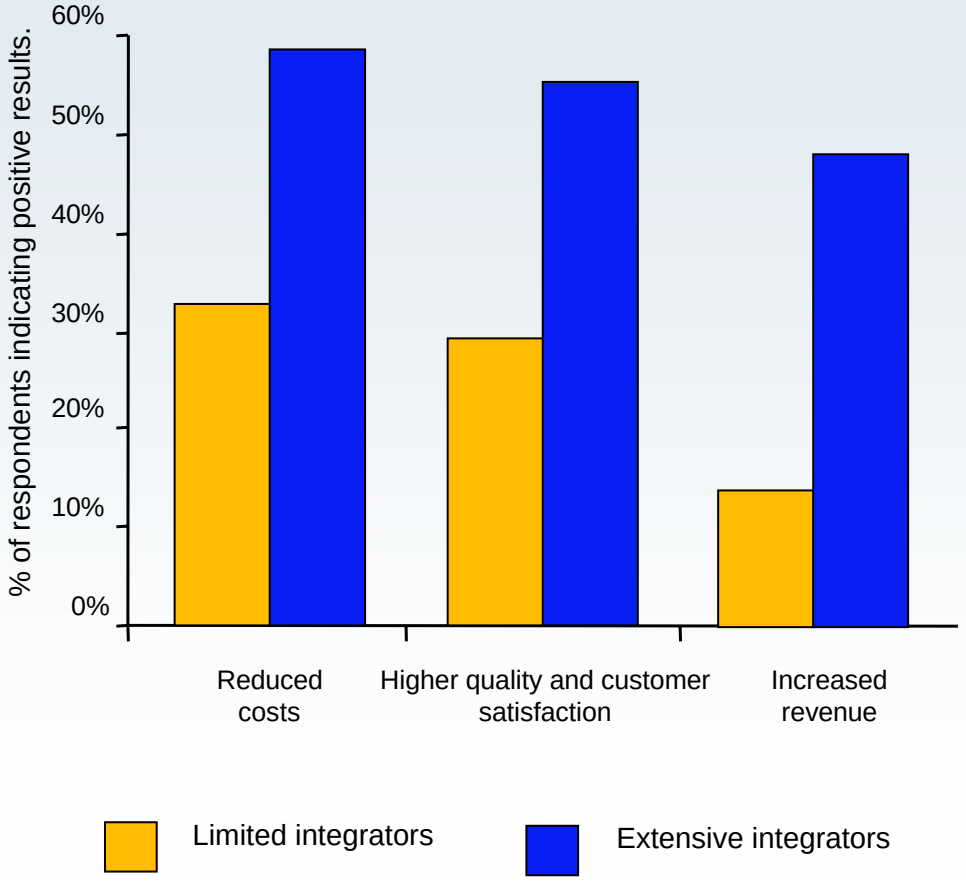
78% of CEOs believe integrating business and technology is fundamental for innovation[1]

1 - Source: IBM Global CEO Study 2006
2 - 2008 IT Service & Infrastructure Management Survey: Uncovering the Business Value of IT Management Automation and Best Practices, Enterprise Strategy Group
3 - Wilson, Jeff, et al. "The Costs of Enterprise Downtime: North American Vertical Markets 2005." Infonetics Research. January, 2005
4 - Business Week 'It's Too Darn Hot: The huge cost of powering—and cooling—data centers has the tech industry scrambling for energy efficiency' 3/25/08

The Industry is Focused on Process…

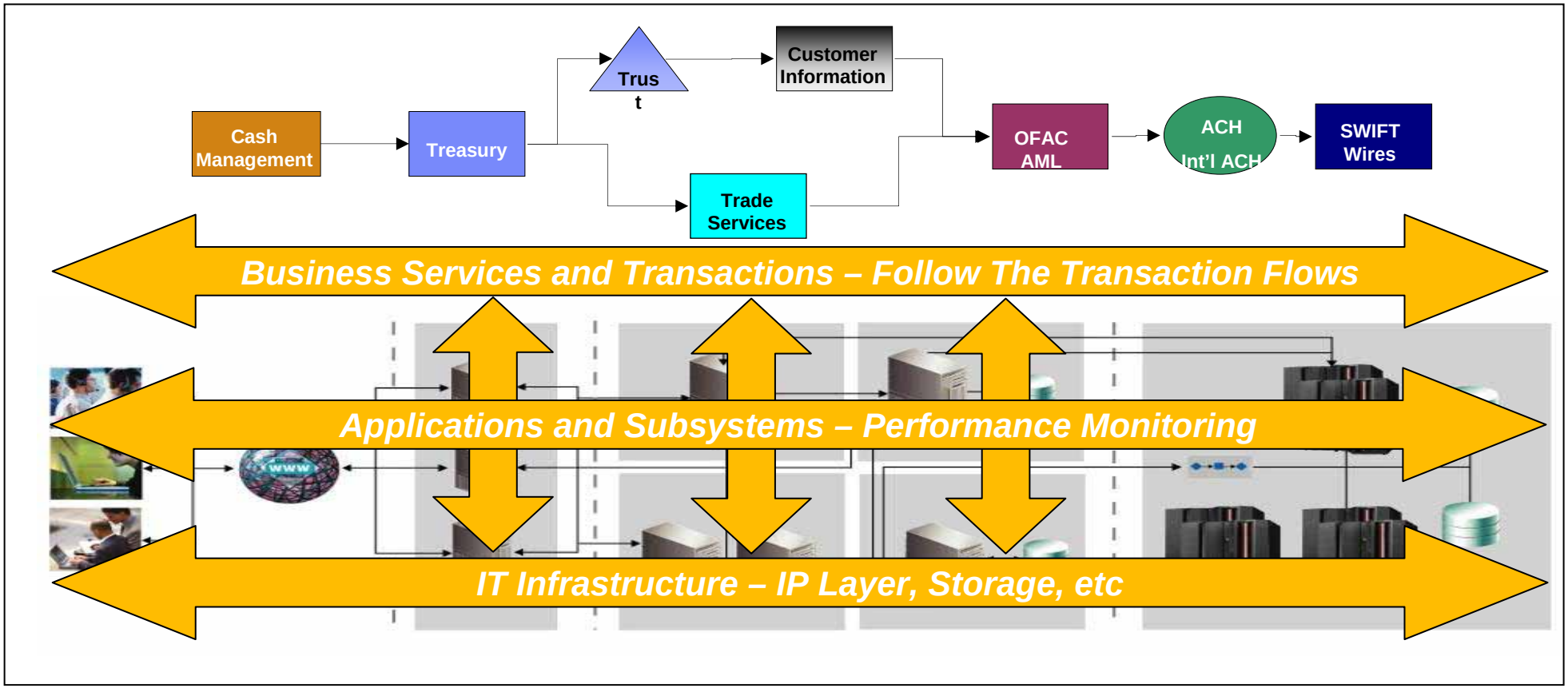
…because Integrating Processes has Huge Benefits

- Process integration has a major impact on quality, customer satisfaction and revenues
- Today most businesses approach process integration in IT and in the business separately
- If businesses could bring <u>all</u> their process together, the benefits could be even greater



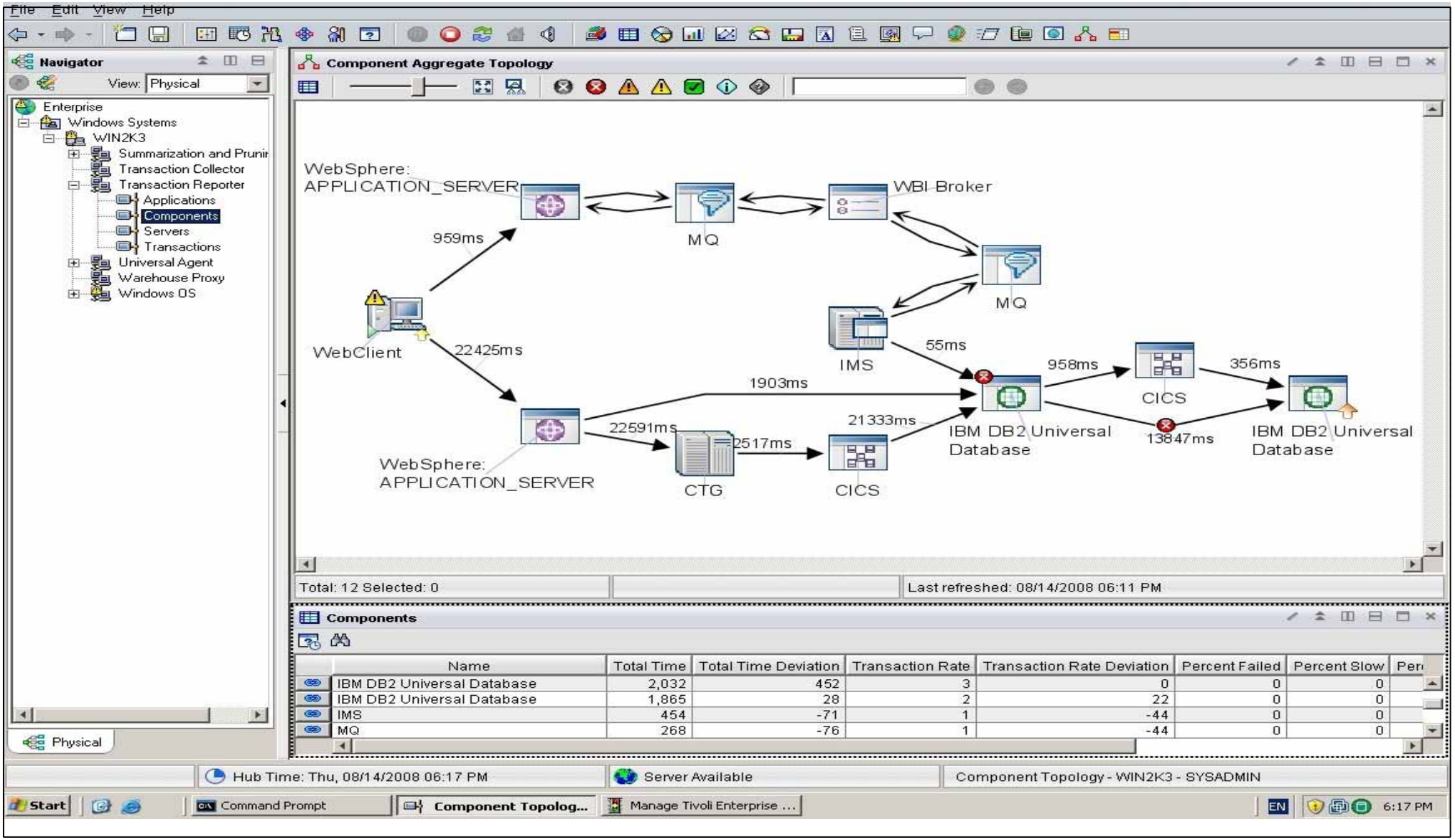
Source: IBM Global CEO Study 2006

Integration that enables multi-dimensional performance management across end-to-end service



- Proactively optimize the health of business entities by **elevating Service Management from a system focus to a line of business focus**
  - **View** – **see the health of business** entities and critical services and applications
  - **Control** – **standardize responses** when the business health deteriorates
  - **Automate** – **proactively** isolate, prioritize, diagnose root cause, and initiate corrective action

Identify Problems As The User Sees Them With Transaction Tracking



Managing the Consolidated Workload

Enterprise Service Bus

Business Intelligence

Business Logic

Process Server

System z Application Workload

Business Data Server

Application Server

OLTP Transactions

Business Continuity

Storage

Provisioning

Performance

Capacity

Security

Service Management Requirements

Financial

Automation

Scheduling

Delivery and Support

Change and Configuration

IBM System z Platform

Server

Network

DIsk

Tape

OS (z/OS, z/VM. Linux)

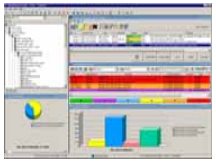
Centrally Manage Your Enterprise from System z

4 Optionally add ITIL best practice process management

Change and Configuration Database

Enterprise-wide Service Management from System z

Operational Management **



3 Centralize operational management tools

1 Leverage existing sources

Visualize, Control & Automate *

2 Add new sources

Visualize, Control& Automate *

Visualize, Control& Automate *

1 Leverage existing sources

Distributed Servers

... physical servers

Workload

Management

System z Server

Linux workload

Linux Mgmt

z/VM Mgmt

... virtualized resources

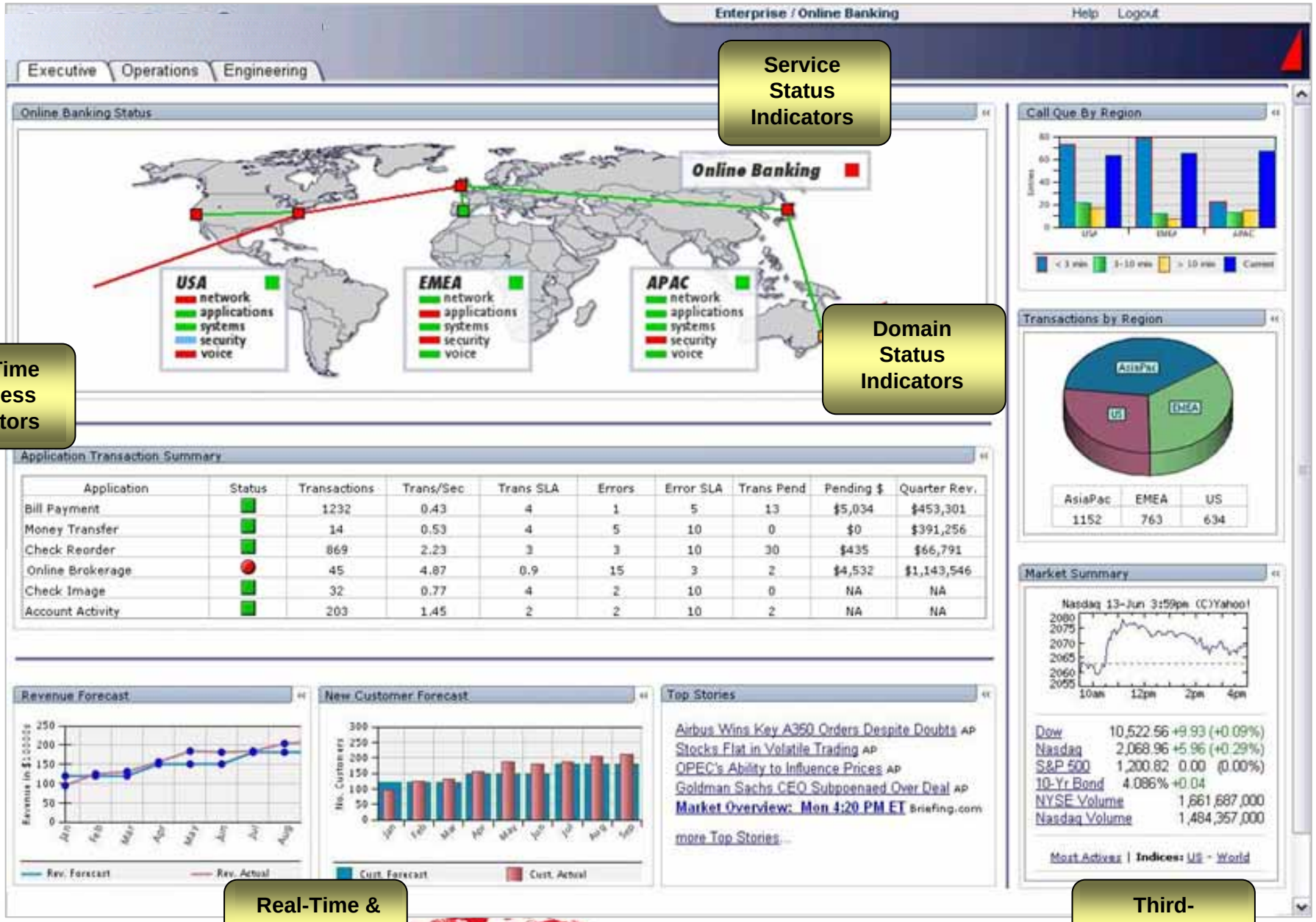
Disk / Tape Mgmt

z/OS Workload

z/OS Mgmt

Virtualization, Operating Systems, Hardware: Specialty Processors, Memory, Hipersocket Network IO

Visualizing service management using TBSM



Service Status Indicators

Domain Status Indicators

Real-Time Business Indicators

Real-Time & Historical Reports

Third-Party Data

Transaction Tracking

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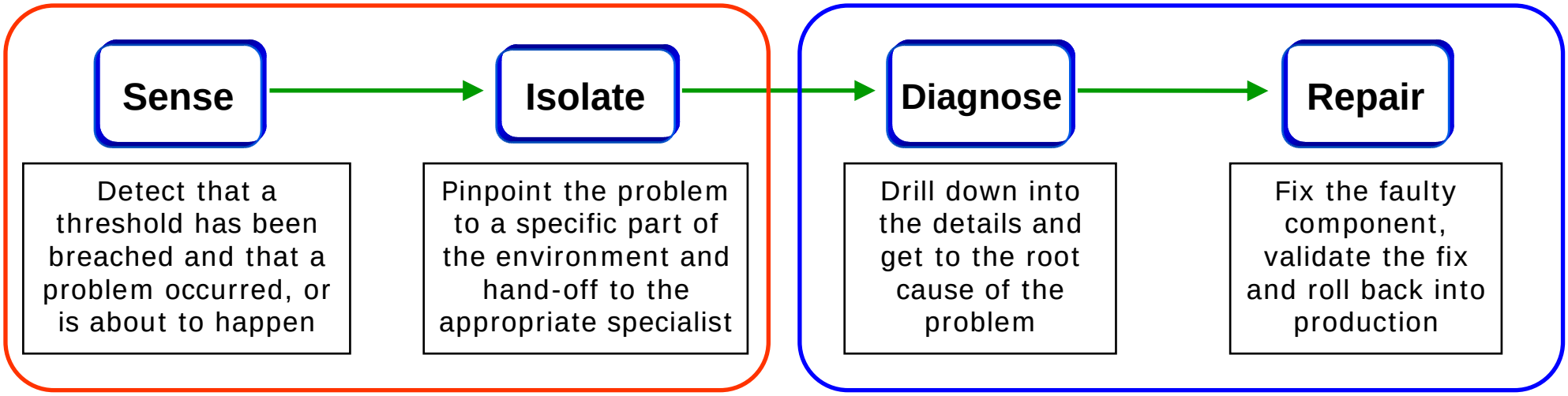
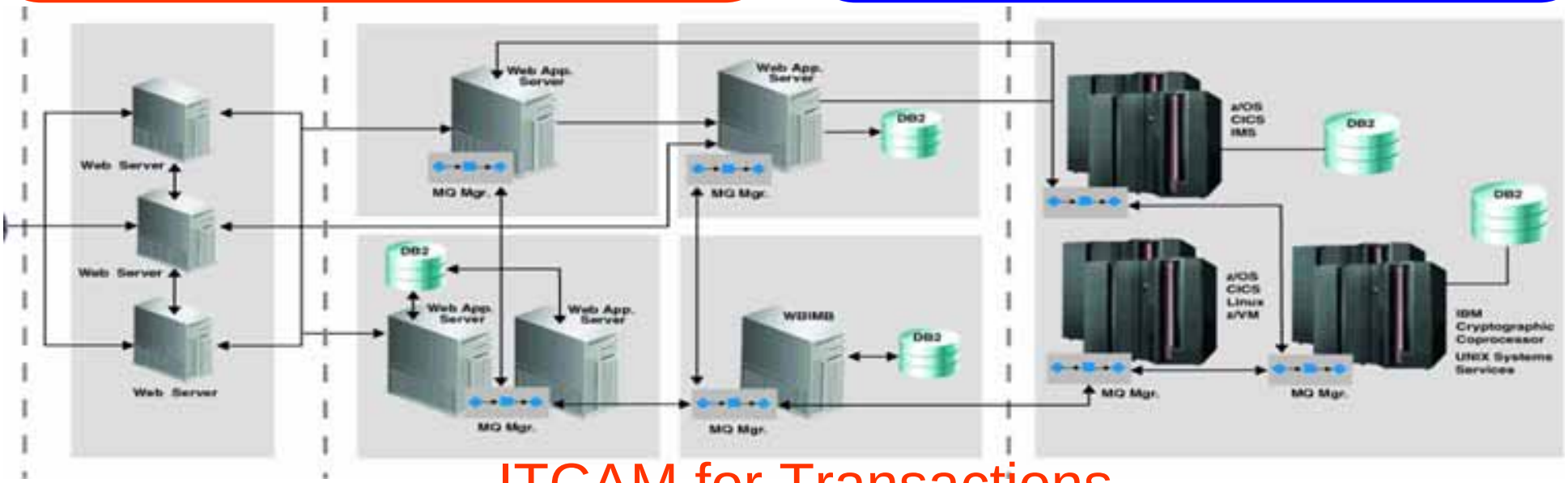
Workflow for Managing Composite Applications Problems





ITCAM for Transactions
OMEGAMON CICS & IMS Integration

Customer Pain – Isolating a Problem Today

Response time is terrible; more than one minute.

Step 1: Check Operations Center

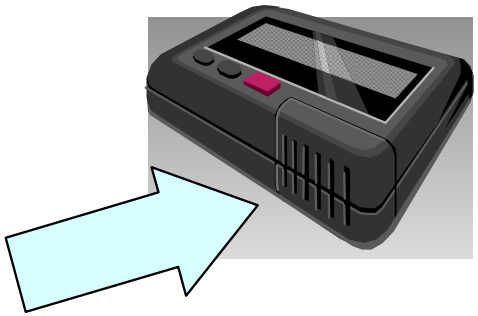
Network Problems:
- Alerts
- Health Monitors
- Excessive traffic
- Pings and Collisions

System Problems:
- System Alerts

Step 2: Call Applications Support

- Check change records
- Roll back application to old level

Step 3: Bridge Call with Tiger Team



Step 4: Check Everything

Multiple Vendor Monitoring tools:
- Hardware
- OS
- Applications
  - Logfiles
- Databases
  - Run Test SQL

Step 5: Locate Source of Problem

- Finger-pointing: "It's the network guy's fault"
- Recreating the problem is difficult
- Solutions by chance

Customer Value – Demonstrating ROI

Money wasted isolating problems

Sev 1 outages/slowdowns per year	12
Average time to isolate (hrs)	8
SME's involved in isolation	15
Avg. loaded hourly rate (/hr)	$75
Total direct costs	$108,000

Revenue lost during outages

Lost revenue / hr	$10,000
SLA penalties / hr	$5,000
Hours downtime / yr	96
Total indirect costs	$1,440,000

Total costs of poor problem isolation capability

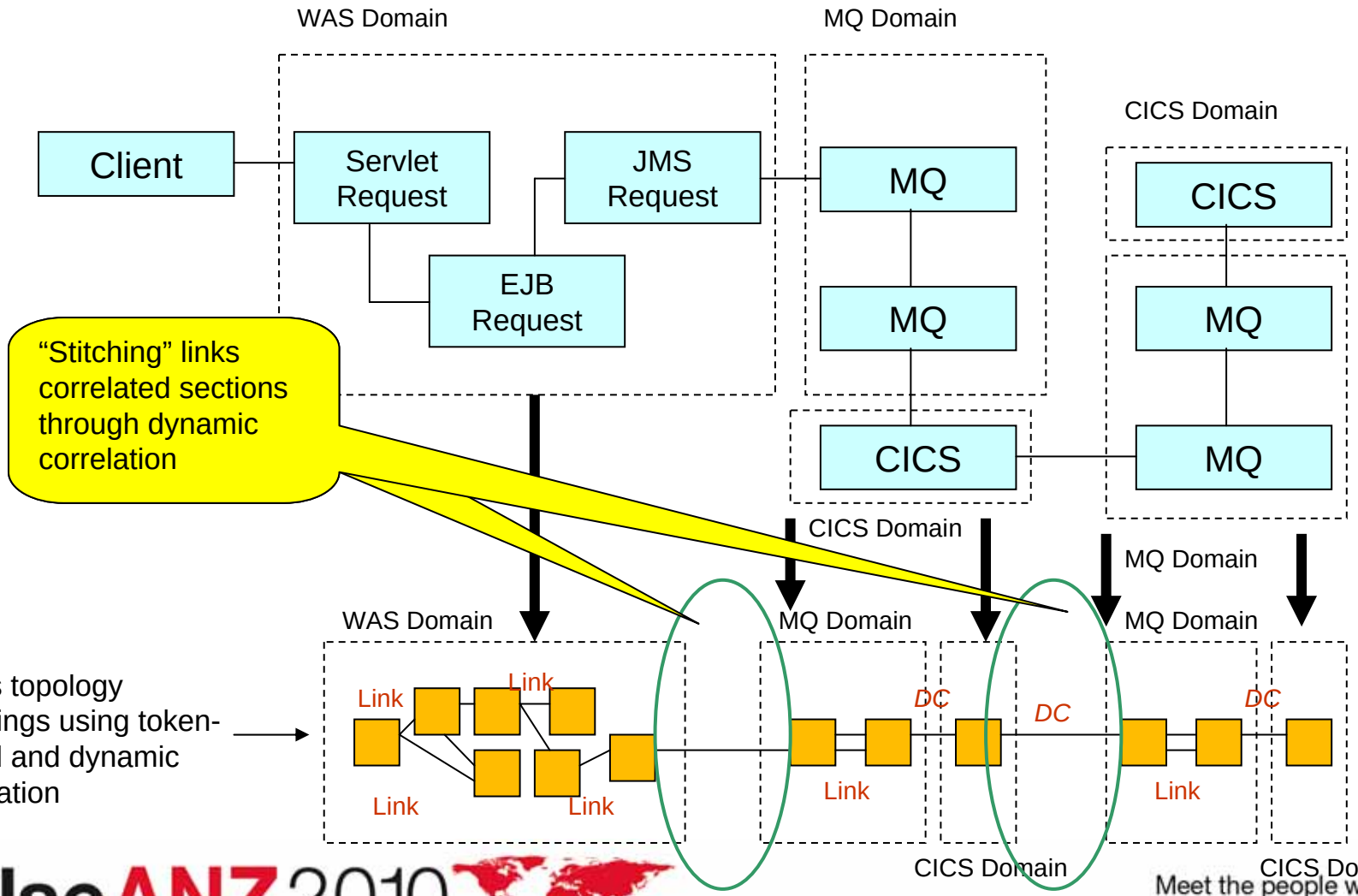
Total lost / yr	**$1,548,000**

Every customer case will be different …

*…what do **you** lose each year due to poor performance?*

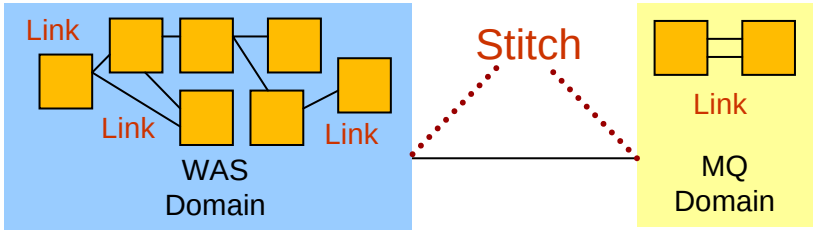
Solution To The Pain Is Enterprise-Wide Tracking

- Track inside domains with correlated techniques
- Track between domains through stitching



Dynamic Correlation

- Dynamic correlation is a technique for enabling transaction tracking from one application domain to another. A domain here refers to a section of a transaction that utilizes a similar tracking technology, E.g. WAS, or MQ, or a native customer application.
- “Stitching” is the term we use to define the way we apply the dynamic correlation technique within the tracking product to track an individual transaction between two domains.

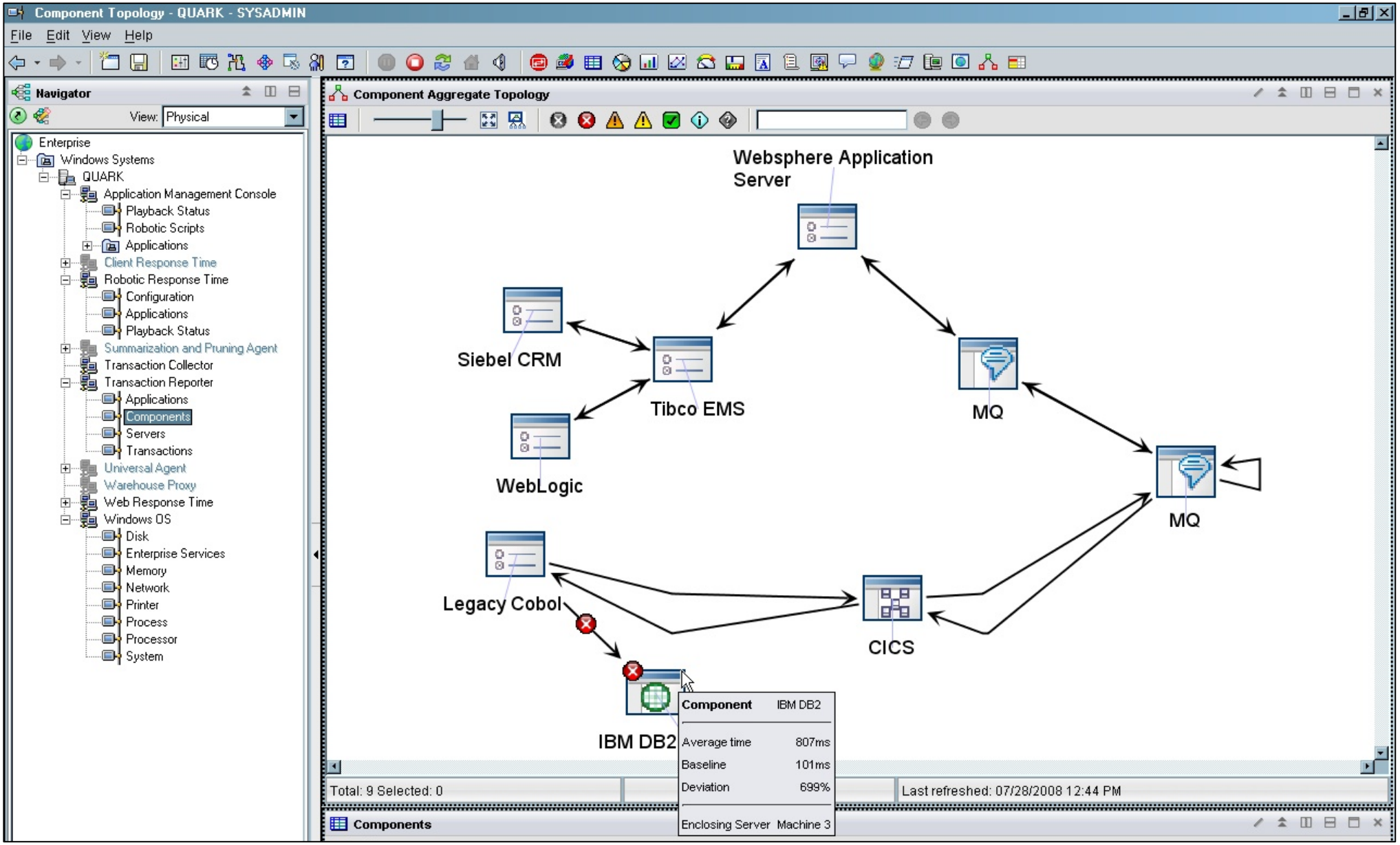


- The dynamic correlation will match configured attributes from each side of the domain boundary to create a “stitch”. For example, the set of common attributes between WAS and MQ may be of this form:

Outgoing WAS transaction attributes	Incoming MQ transaction attributes
Application Name	
Source Host	**Connecting Server name**
Thread ID	
Destination Queue Manager	**Connected Queue Manager**
Destination Queue	**Opened Queue**
	Message ID
etc.	etc.

Attributes in **red** show the common set of attributes that define a unique transaction instance.

Tracking Topology



End-User Response Monitoring

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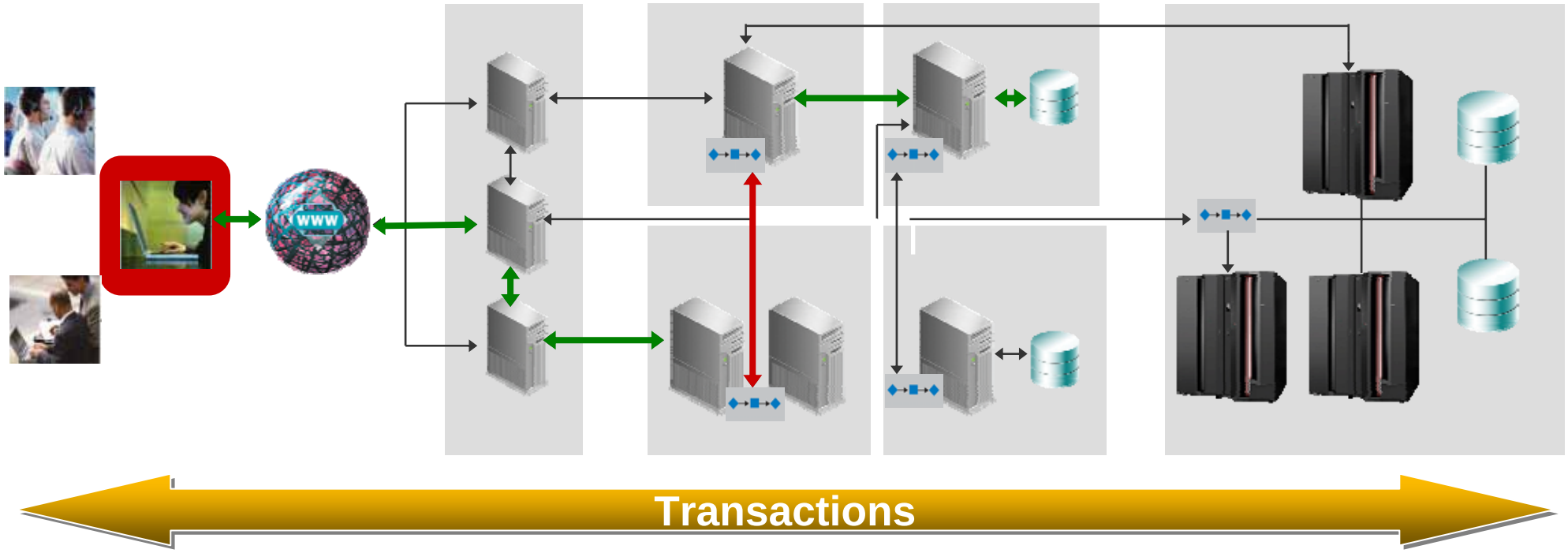
Why Monitor End-User Response?



- See what your users are experiencing
- Validate production system performance
- Identify problems before they affect SLA's
- **If you have a problem, find out about it *before* the customers start complaining**

A majority of IT problems are still being **identified by customer complaints**

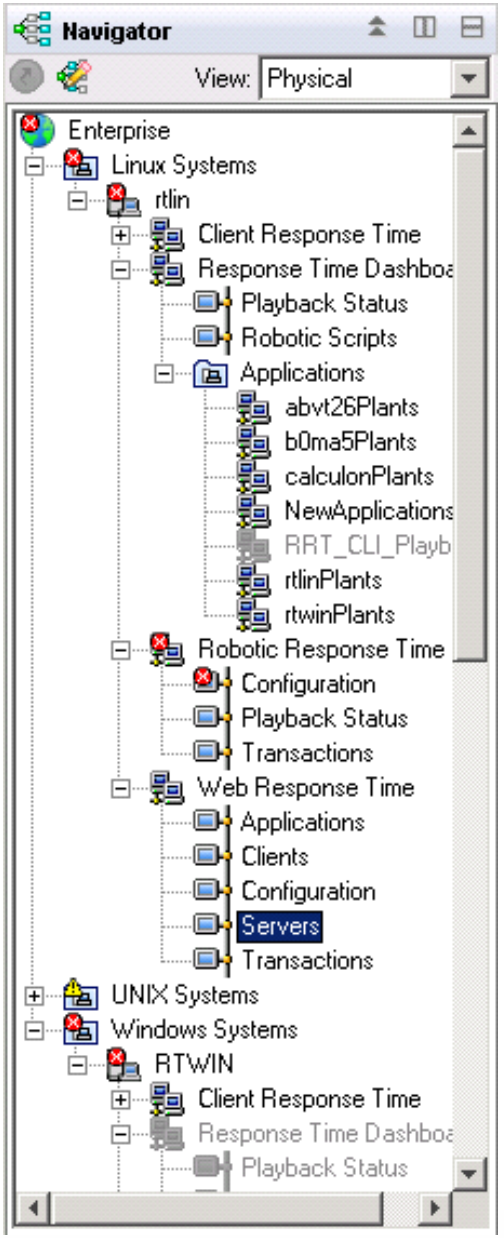
Two Approaches to Response Time Monitoring

Real End User Transactions

- **Web Response Time Monitoring**
  - Reports end user experience for web applications
  - Appliance mode eliminates overhead at the server
- **Client Response Time Monitoring**
  - Monitor real end user client Windows application transactions

Robotic Transactions

- **Robotic Response Time Monitoring**
  - Scheduled playback of robotic scripts
  - Optimized for Rational Performance Tester
  - Additional support for Rational Robot, LoadRunner, custom scripts



Transaction Tracking DEMO

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Cool New XE CICS 4.2 Features!

- Previous To This Enhancement ATF Traces Had A Limitation
  - Trace Facility Is Only Available For Tasks That Have ***Completed***
  - Application Trace Must Be Specifically Requested Via CUA Or Classic

- Enhancement Adds In-Flight Transaction Tracing & Viewing!!!
  - Via A Take Action Command From An XE Situation
    - CP:TRAC TASK=nnnnn | TRAN=NNNN USER=UUUU TERM=TTTT DURATION=mmmm
    - CP TRAC TRAN=&CICSplex_Transaction_Analysis.CICS_Transaction_ID DURATION=30
    - CP TRAC TASK=&CICSplex_Transaction_Analysis.Task_Number
  - RLIM Enhancement To Automatically Start Trace On A WARNED Transaction
    - RESOURCE_LIMITING_TRACE_WARNED=YES||NO

- These Enhancements Complement ITCAM TT CICS Tracking

To Wrap Up…

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धन्यवाद

Hindi

多謝

Traditional Chinese

ขอบคุณ

Thai

Спасибо

Russian

Gracias

Spanish

Thank

English

شكراً

Arabic

You

Obrigado

Brazilian Portuguese

Danke

German

多谢

Simplified Chinese

Grazie

Italian

Merci

French

நன்றி

Tamil

ありがとうございました

Japanese

감사합니다

Korean

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