



IBM Software Group

# Application Modernization using TXSeries

## Case Studies



Available now:

**TXSeries V7.1**

--> [LEARN MORE](#)

**TXSeries V7.1 for Multiplatforms**  
**The Next Generation of Distributed CICS**  
**[www.ibm.com/CICS](http://www.ibm.com/CICS)**

# Agenda

- What do we hear from customers?
- What are customers key considerations?
- Modernization using TXSeries
  - What is TXSeries?
  - How to?
- Case Studies
- Solution approach for a case study

# What do we hear from customers?

- *“Retain Business Logic and Extend capability”*
- *“Retain Data Model”*
- *“Improve Integration to Web technologies”*
- *“Ensure Transaction and Data Integrity”*
- *“Co-existence approach”*
- *“Enhance Scalability of the architecture to be able to handle more users and data as the demand grows”*
- *“Sustaining performance after migration”*
- *“Robust clustering technologies for high availability and fail-over capabilities”*
- ...
- *“Three More Reasons”...*

# What are customers key considerations?

- Business Logic Change / Code reuse – Retain business logic with minimal code re-write
- Software requirements
- Modernization capability
- Co-existence – Incremental transition from flat-files to RDBMS
- Minimal risk in migration – Time and Effort
- Long-term support/viability – Robust, flexible and future-proof platform
- Performance overheads (or RASP)
- Reference and case studies
- Support eco-system
- Overall TCO



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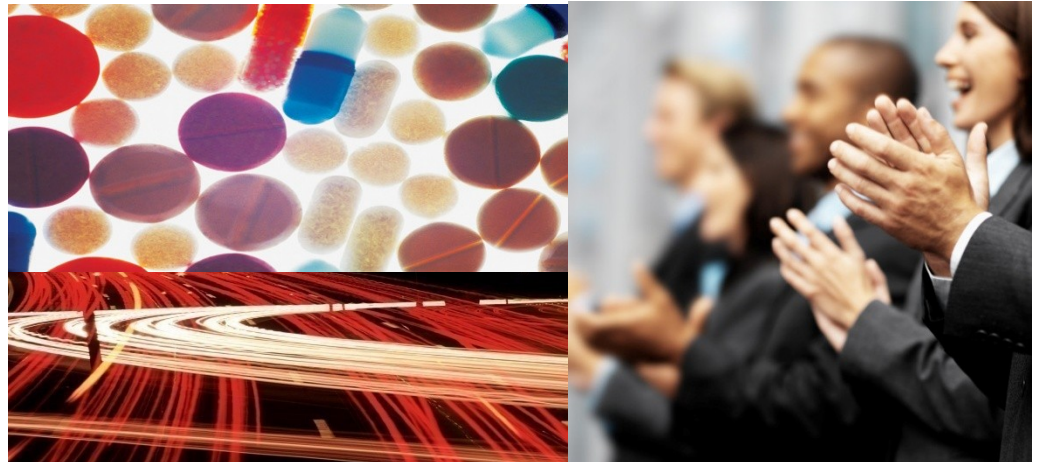
# Modernization Using TXSeries – What is TXSeries?

**TXSeries V7.1 for Multiplatforms**  
**The Next Generation of Distributed CICS**  
**[www.ibm.com/CICS](http://www.ibm.com/CICS)**

# What is TXSeries and What does it do?

- IBM's premier distributed transaction processing monitor for mixed languages
  - Provides transaction capabilities for applications written in COBOL, C, C++, Java and PL/I
  - Supports AIX, Solaris, HP-UX PA-RISC & Itanium, and Windows
- Part of IBM's CICS family of products - \$1B+ portfolio
- Provides business critical transaction management and integration capabilities
- Proven for close to two decades to deliver modern, reusable, business critical applications
- Widely used in stand-alone and in support of IBM System z and IBM WebSphere deployments

TXSeries for Multiplatforms enables you to scale up to CICS Transaction Server on System z if the needs of your business evolve (no other distributed TPM designed to allow this)



# TXSeries – The Ecosystem

- Vibrant and thriving eco-system
  - 1000+ active customers worldwide
  - Flourishing Business partner/ISV network with extensive integration support available from GSI/RSIs
  - Existing customers significantly reposing faith with active expansion programs contributing greater than 50% of new licenses WW
  - New customers building enterprise solutions with TXSeries as a core component
  - World-wide deployments across all geographic regions and across industry sectors
  - Most running mission-critical business applications requiring high level of SLAs
  - Widely used across a variety of industries
    - Banking, Finance, Transport, Insurance, Telecom, Manufacturing, Health Care, Government

**Actively Developed and Maintained at  
India Software Labs**



# Deployment of TXSeries - World Wide

TXSeries is commonly used in many small, medium and large business enterprises world-wide across sectors, including:

- **Banking**

- Many banks around the world including 8 out of 10 major banks in China

- **Finance**

- Large investment institutions in Americas, Europe and other parts of world

- **Transport**

- A major global transportation company serving EMEA region

- **Insurance**

- Large insurance companies in Europe, Americas, and AP including two large insurance companies in

- **Telecom**

- Major mobile telecom operators in UK, Americas, China

- **Manufacturing**

- Many manufacturing companies around the world including second largest steel producer in China

- **Health Care**

- Many Hospital Information System (HIS) implementations

- **Government**

- Many government housing funds and social bureau in China



# Roadmap

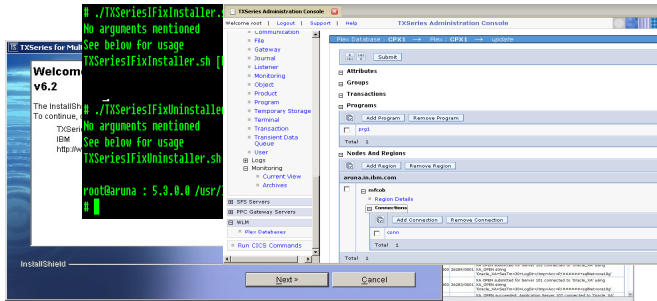
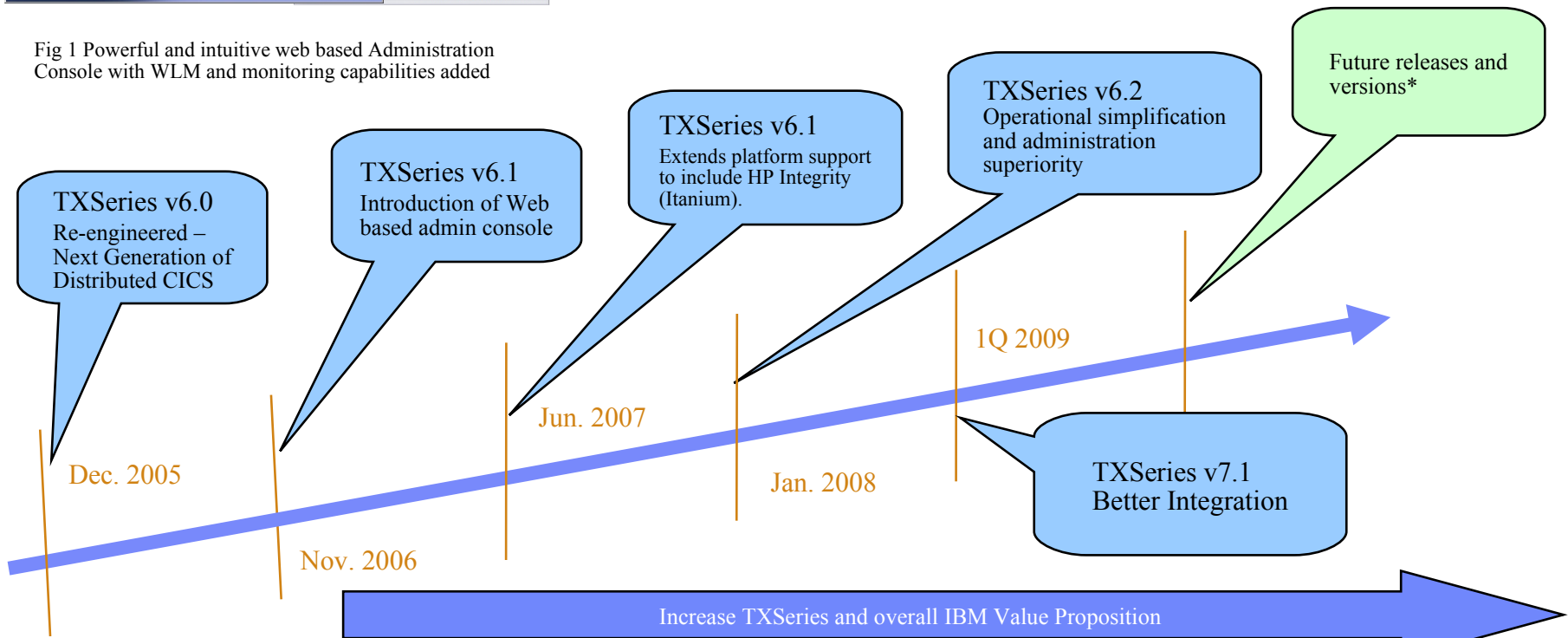


Fig 1 Powerful and intuitive web based Administration Console with WLM and monitoring capabilities added

- Been in the market for close to two decades
- V5.x – Better capability
- V6.x – Simplification and ease of use
- V7.x – Better Integration



*\* All statements regarding IBM's plans, directions, and intent are subject to change or withdrawal without notice.*

# Support ecosystem

- Support Activities:
  - Product actively developed and maintained in India Software Labs
  - Technical support extended through team in India, UK and USA
  - Support through Lab Advocacy Programme and Technical consultants



- Enablement support:
  - Residency programme
  - Technical workshops
  - In-depth technical training programme
  - Education offerings



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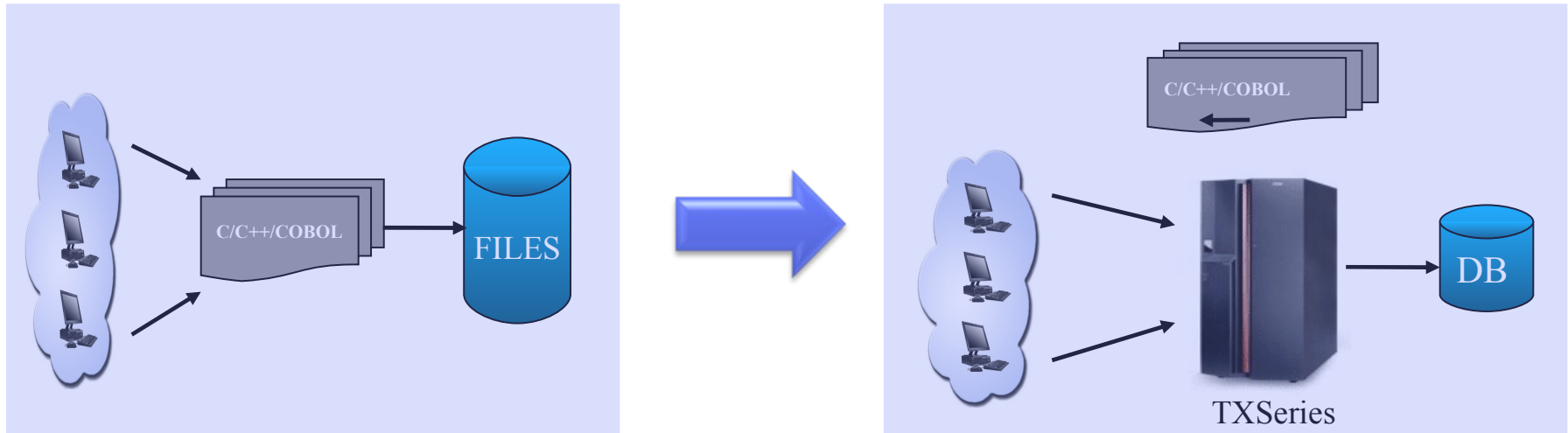
# Modernization Using TXSeries – How?

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# TXSeries – As an Application Modernization platform

## Modernize your standalone COBOL/C/C++ applications by hosting on to TXSeries

Extend the life of applications by providing transactional capability and ability to expose them into the SOA architecture by leveraging the capability of TXSeries



- Only Retain core business logic within application and leverage TXSeries for all other enterprise scale requirements

- Leverage TXSeries to:

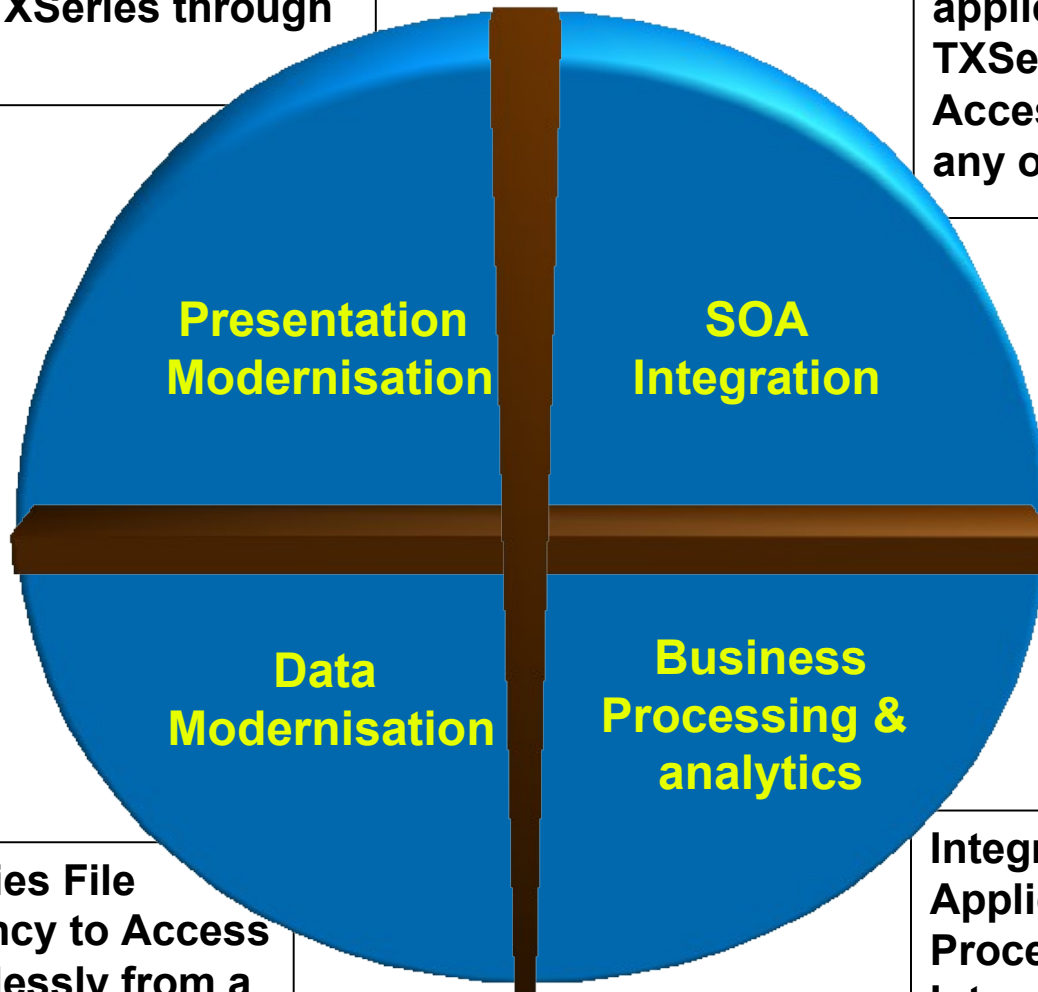
- Improve the reliability, and availability of your mission critical applications
- Create a highly scalable environment using Work Load Manager (WLM) to handle future business growth
- Expose existing applications into a SOA environment
- Support data integrity, transaction recovery, and a host of other TPM functionality
- Extend enterprise data to the web

# What does TXSeries offer?

- Terminal or client or database consolidation
- As a development platform for CICS TS applications
- For scalability and manageability of applications
- File transparency layers

**Modernize applications  
hosted on TXSeries through  
CTG/WAS**

**Expose COBOL  
applications running on  
TXSeries as Web Services.  
Access them through ESB or  
any other SOA framework**



**Use TXSeries File  
Transparency to Access  
Data seamlessly from a  
Relational database**

**Integrate SOA enabled  
Applications to Business  
Process management.  
Integrate data with  
warehousing and analytics**



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## Case Studies

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# Enterprise Application Modernization – A Case Study

How an ISV modernized their COBOL based comprehensive insurance policy administration system using TXSeries

Industry :

**Insurance**

## CHALLENGE

- Modernization existing COBOL based solution without re-write
- Reuse the application assets to integrate into a modern solutions architecture like SOA
- Integrate with Business Process management and Analytics solutions.

## SOLUTION

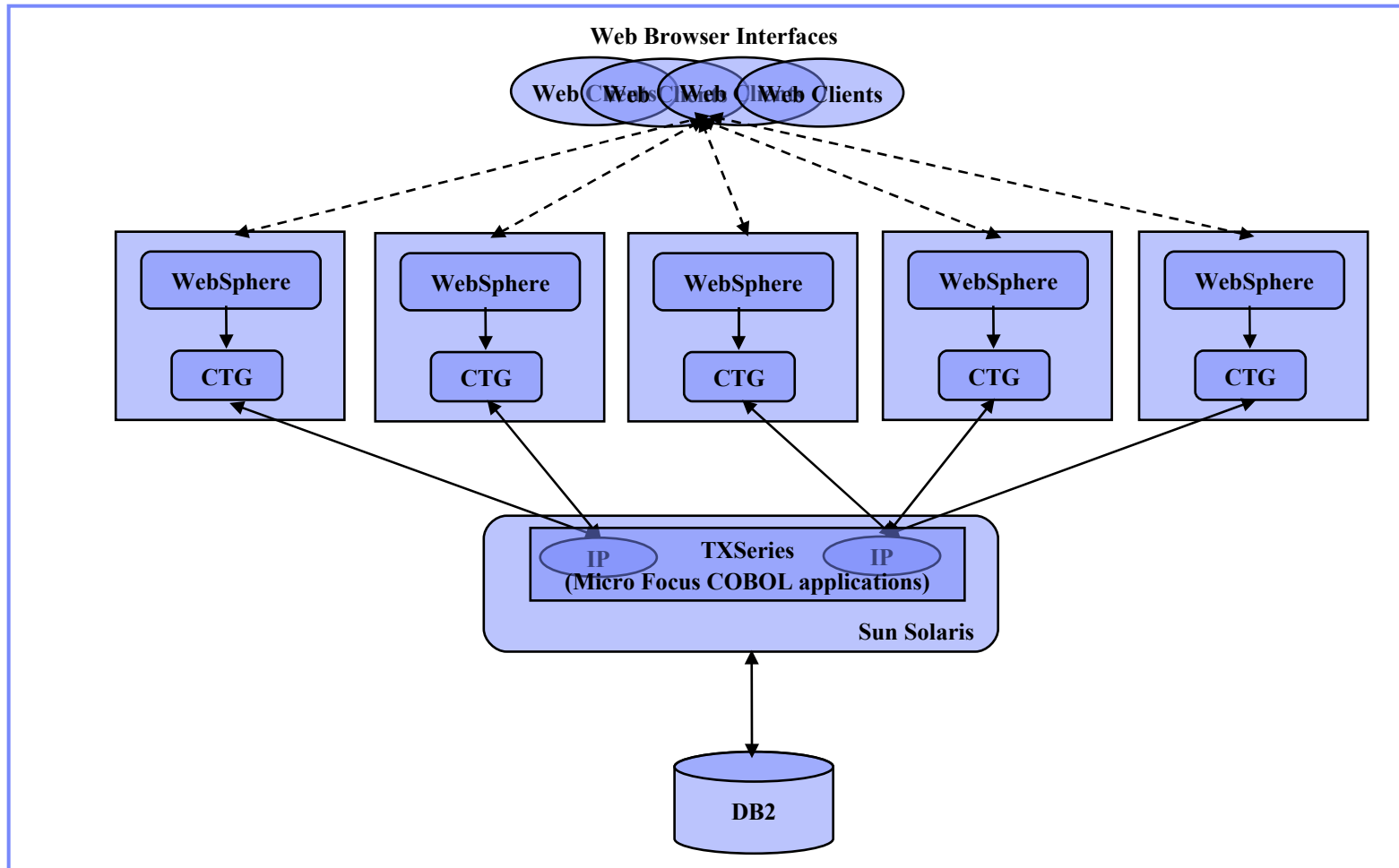
- Deployed existing COBOL application on TXSeries using Micro Focus COBOL
- Modernized the applications using CTG/WAS to provide web interfaces
- Integrated with BPM stack through services exposition using CTG/WAS

## KEY BENEFITS

- Solution was deployed at many large insurance companies in India and other parts of the world after moving to the TXSeries based stack.
- Core application logic unchanged and maintained as is in COBOL.
- Easy exposition to Web technologies
- Easy and seamless integration with SOA architecture.



# Solution Architecture – A Case Study

**Software Stack**

Sun Solaris 10

WebSphere 6.0

TXSeries 6.1

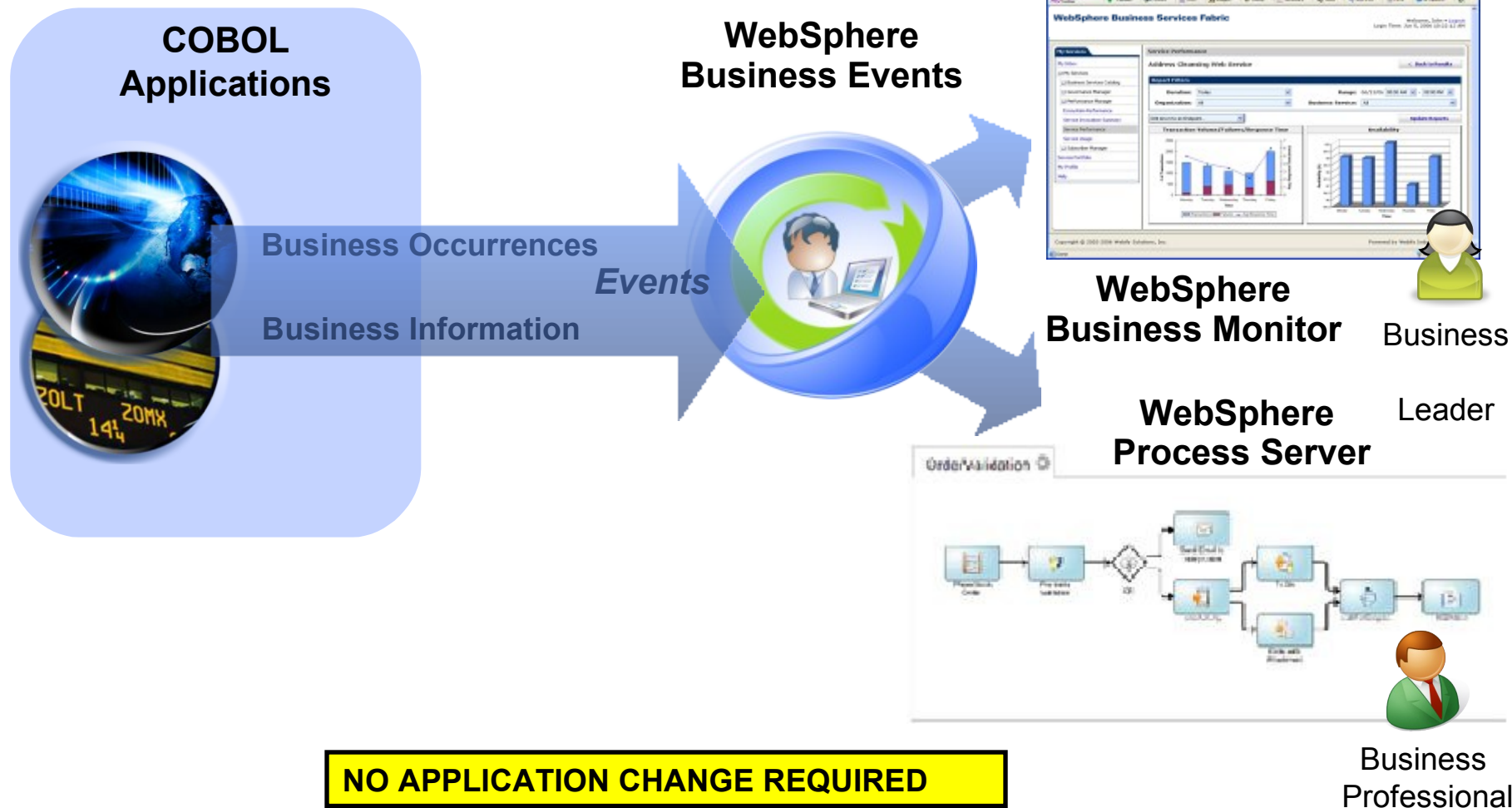
CTG 7.1

Oracle 10g

**Hardware Stack**

2 x SunFire – 8 CPU

# Solution Architecture – A Case Study



# An Investment Bank In Switzerland

Industry :

**Banking**

Application	Hardware (OS)	CPU	Memory
CICS Server	IBM P595 (AIX)	10	18 GB
Oracle	IBM P595 (AIX)	16	32 GB



**Modernize CICS/COBOL applications and migrate VSAM Indexed files to a RDBMS**

## CHALLENGE

- Modernize CICS/COBOL application by re-using business logic / code
  - Around 5 million lines of code
- Re-hosting large VSAM indexed files on to RDBMS
- Re use the presentation layer as is to minimize end user learning curve.

## SOLUTION

- Customer chose TXSeries on AIX platform to :
  - Host their COBOL applications using Micro Focus COBOL.
  - Migrated VSAM indexed files onto Oracle RDBMS.
  - Used TXSeries File Transparency layer to access data from the RDBMS in online & batch applications

## KEY BENEFITS

- Very minimal changes to the application code.
- Retained File I/O interface inspite of the data being stored in the RDBMS
- High availability of applications.

# Largest Insurance group in Europe

Industry :

**Insurance**

## Streamlines e-business processes with IBM distributed TP system

### CHALLENGE

- Integrate J2EE™ Web applications and back-office applications that are key for processing and updating customers' insurance policies
- streamline workflow and reduce delays and overhead costs
- provide flexible platform for growth

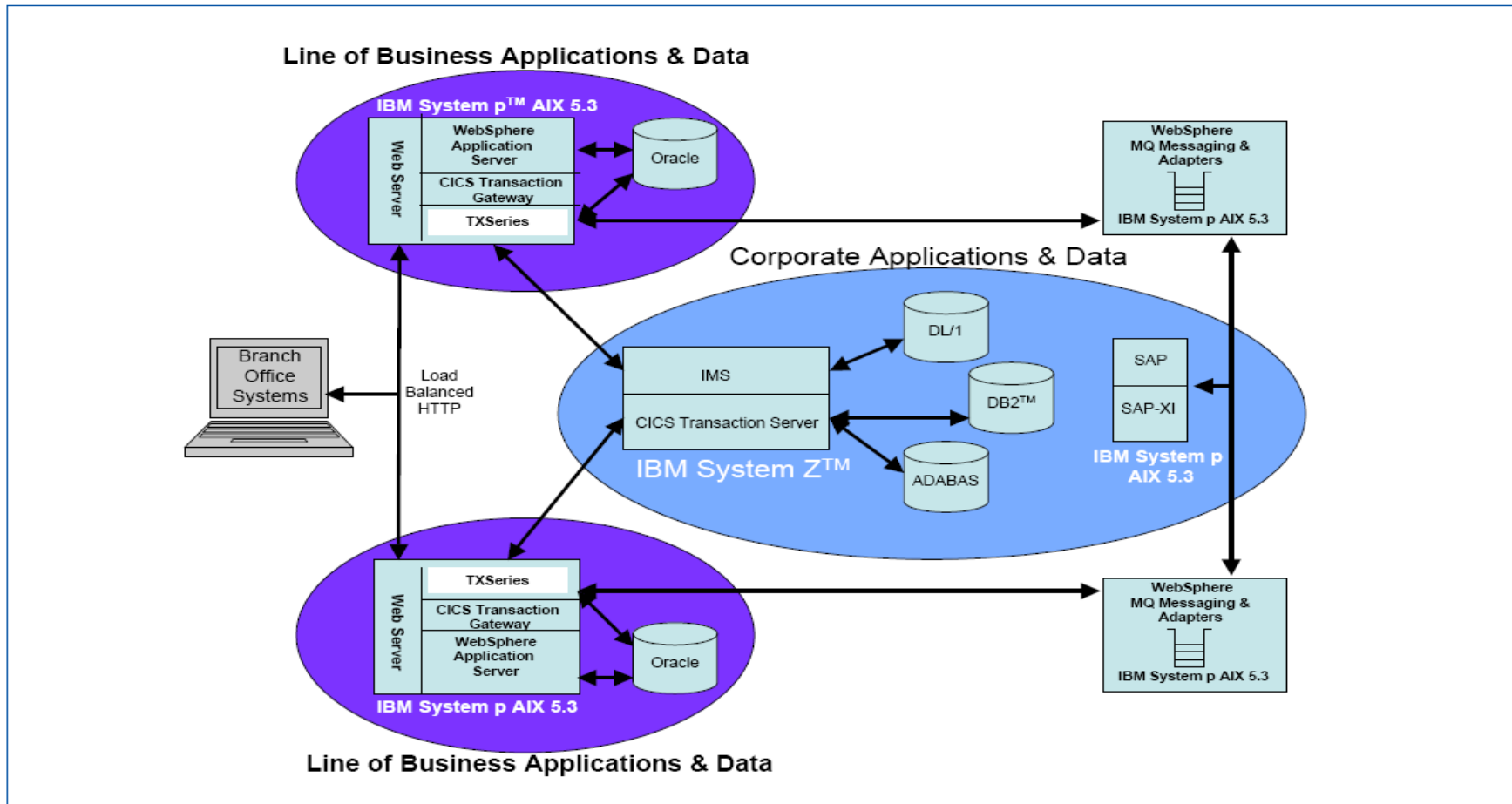
### SOLUTION

- Information gathered from various offices and the central data repository is automatically updated across systems in real time with IBM TXSeries® for Multiplatforms, eliminating the manual integration processes that used to hamper operations

### KEY BENEFITS

- IBM TXSeries for Multiplatforms provides an “intelligent” gateway linking the customer's Java/ WebSphere® Application Server Web environment with Oracle databases and ERP solutions and reusing COBOL-based core business applications.
- TXSeries is used to coordinate all information and application updates, both locally and remotely, for IBM CICS® and IBM IMS™ connections.

# Architecture



This picture shows the enterprise environment and the different middleware roles. It illustrates the way the TXSeries coordinates with DB2 and ADABAS through CICS Transaction Server and with DL/1 through IMS. Transactions with SAP are coordinated through WebSphere MQ.

Case Study Material (a public reference): <ftp://ftp.software.ibm.com/common/ssi/pm/ab/r/lrginstxser/LRGINSTXSER.PDF>

# A Large Bank in China

Industry :

## Banking

Application	Hardware (OS)	CPU	Memory
CICS Server	IBM P595 (AIX)	8	16 GB
Oracle 10g	IBM P595 (AIX)	10	32 GB



## Building a highly scalable and manageable transaction processing environment

### CHALLENGE

- Existing TPE (Transaction Processing Environment) did not have functional capability and has gone out of support
- Retain and reuse 3000+ COBOL modules and business logic.
- Build new applications by reusing existing core business logic written in COBOL
- Create a solution that is scalable to the continued growth of users.

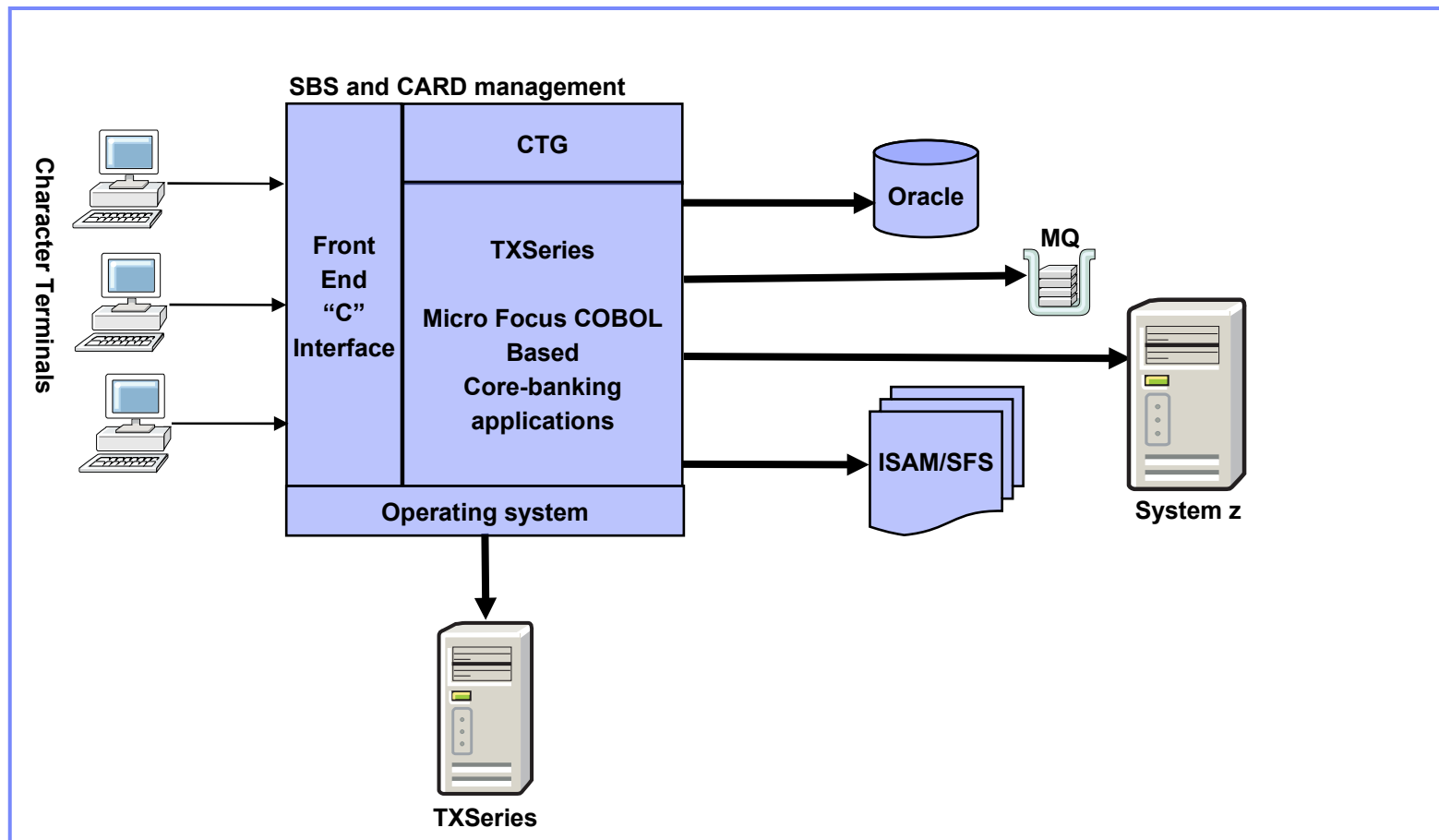
### SOLUTION

- Customer chose TXSeries as their transaction processing and development platform
  - Deployed existing COBOL applications using Micro Focus COBOL
  - Deployed TXSeries WLM for scalability and high availability

### KEY BENEFITS

- Re-use of existing COBOL application code
- Scales to process around 200+ TPS during business peak hours
- Reduced application development <development tool used currently>

# Architecture



Software Stack	
	AIX 5.3
	WebSphere MQ 6.0
	<b>TXSeries 6.2</b>
	Micro Focus COBOL
	Oracle 10g
	SNA

Hardware Stack	
	2 x pSeries



# A Large Bank – Performance Benchmark

Industry :

**Banking**

Application	Hardware (OS)	CPU	Memory
CICS Server	IBM P595 (AIX)	8 * 4	30 * 2 GB
Oracle 10g	IBM P570 (AIX)	8 * 2	32 * 2 GB



**Performance benchmark for consolidating branch applications on to a centralized server**

## REQUIREMENTS

- Consolidate applications running in 32 Bank branches to a single location with provision for disaster recovery
  - Cater to transaction volume and load without compromising data integrity and disruptions
  - Support more than 500 TPS at peak load hours
  - Support applications written in “C” language
  - Access data stored in an Oracle RAC environment

## SOLUTION

- Deployed TXSeries on the centralised servers with WLM for load balancing and high availability

## RESULTS

- Customer achieved the following results:
  - READ operations: 886 TPS with a system utilization of 83%
  - UPDATE operations: 869 TPS with a system utilization of 85%



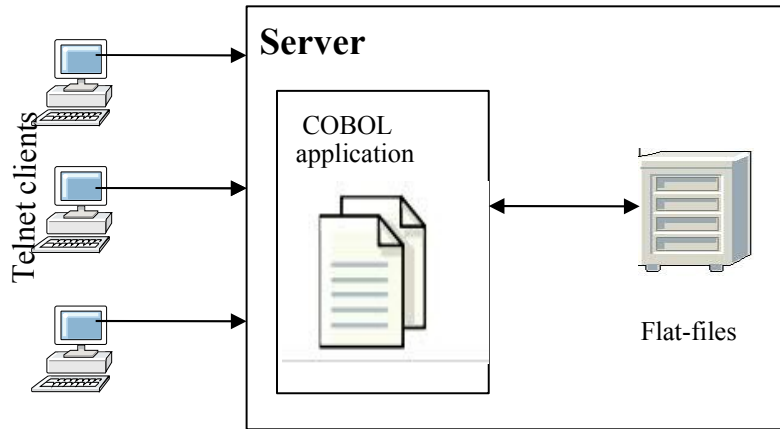


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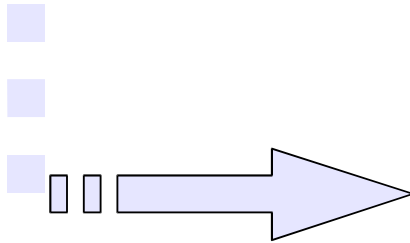
## Solution Approach using TXSeries

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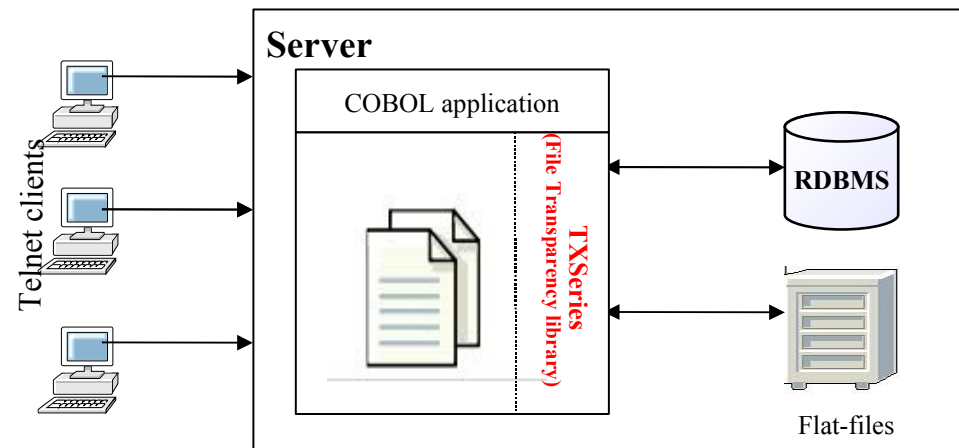
## Existing System



## Solution Approach Big Picture!



## Proposed System



# TXSeries File Transparency

- File Transparency is a facility available in TXSeries that allows COBOL applications to transparently use RDBMS such as DB2/Oracle for record storage
- Key Benefits of using file Transparency:
  - The COBOL application sees no apparent difference between a standard COBOL I/O and a database access
  - No changes to the COBOL application to access from the RDBMS instead of flat-files
    - Data access layer is transparent to the application
  - COBOL applications can continue to be maintained to access new flat-files without any additional configuration in the RDBMS



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**Thank You**

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