Welcome to the IMS Overview and Business Value for SOA Webcast

IMS Business Value!

Unlock the Power of SOA and reuse your existing IMS resources!

Speakers:

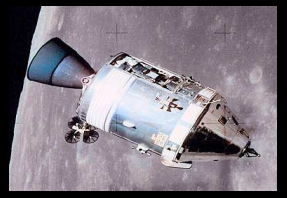
Barbara Klein

Senior IMS Strategic & Brand Manager

Don Streicher

IMS Planning, Field & Education Manager

Agenda



- What is IMS and the Business Value it Offers
- SOA and IMS
- IMS Strategy and Solutions
- Customers use of IMS today
- Next Steps

15 MG
Production Data managed by IMS

50B
Transactions a day through IMS

200M
Users a day served by IMS

3M
MIPS running IMS

The World Depends on IMS

IMS is a part of everyday life. When you:

Turn on a light	Get a business loan
Make a telephone call	Process accounting records
Use your ATM card	Control inventories
Put money in a bank	Process payroll
Rent a car	Update personnel records
Purchase life insurance	Control an assembly line
Travel	Control a railroad
Send a package	Use corporate data bases
Track in-transit packages	Run a government agency
Trade stocks	Conduct international business/banking

And more...

... you are likely using IMS!

Core Business Systems are changing

- **New interface requirements** – From client/server to Web Services
- **Modernization** to extend useful life of existing applications
- **Reduction** of maintenance and operations costs of existing applications

IMS On Demand Vision

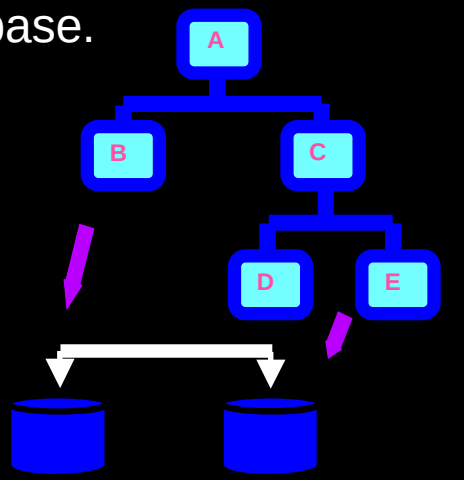
Complement the ***rock-solid foundation*** of IMS by **continually adapting** to and providing industry standard accessibility, programming paradigms, and state-of-the-art tooling support

"Successfully proven in large, Web-based applications. **IMS is** still a viable, even ***unmatched***, platform to implement very large OLTP systems, and, in combination with Web Application Server technology, it can be a ***foundation for a new generation of Web-based, high-workload applications***."

– **Gartner Group**

IMS is a Database Management System

- A Database is a collection of interrelated data items, stored once and organized in a form for easy retrieval.
- A Database Management System is a collection of programs for storing organizing, selecting, modifying, and extracting data from a database.



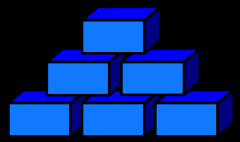
IMS Databases are organized hierarchically to

- Optimize storage and retrieval
- Ensure integrity and recovery
- Efficiently manage
- Ease access from other environments
- Provide Enterprise-class technology that is robust, secure, high performance, scalable, available, and manageable
- Offer choice and flexibility in programming styles and languages
- Integrate well with existing and new investments in hardware, software and skills

Database Manager Positioning

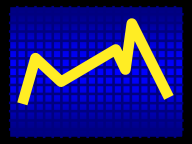
Operational Data

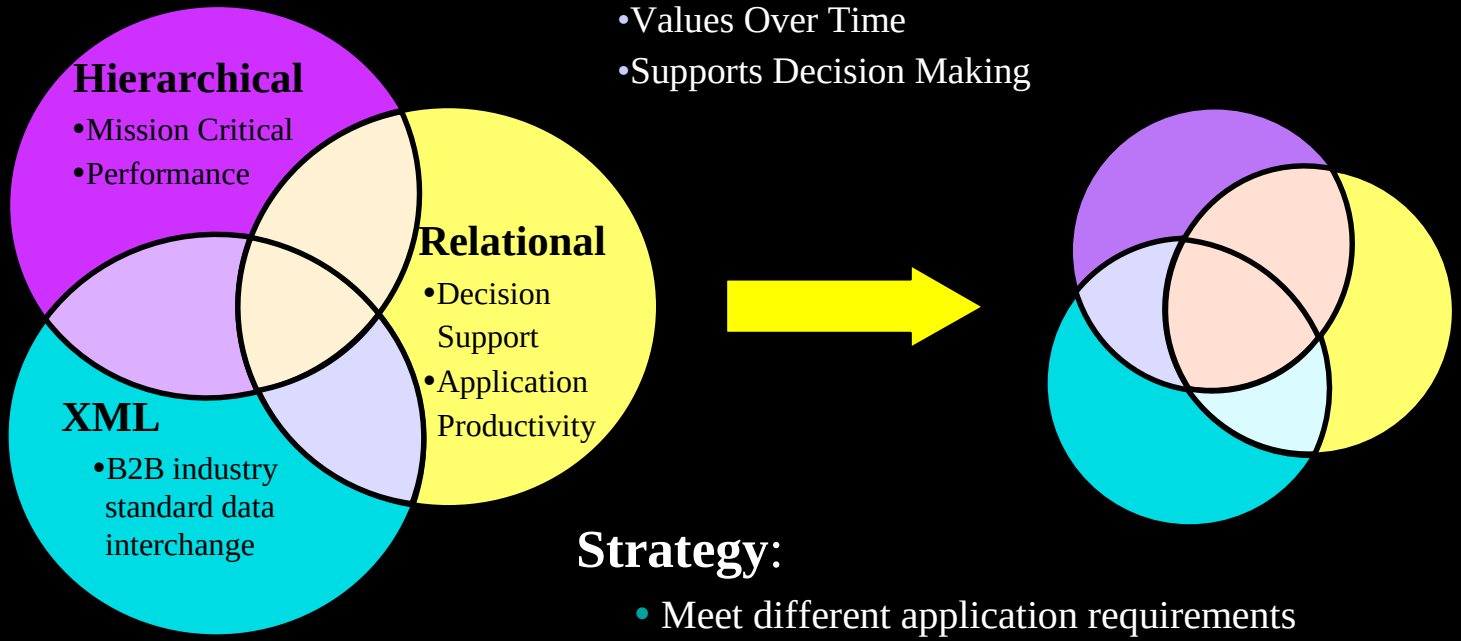
- Application Oriented
- Limited Integration
- Constantly Updated
- Current Values Only
- Supports Daily Operations



Informational Data

- Subject Oriented
- Integrated
- Non-volatile
- Values Over Time
- Supports Decision Making



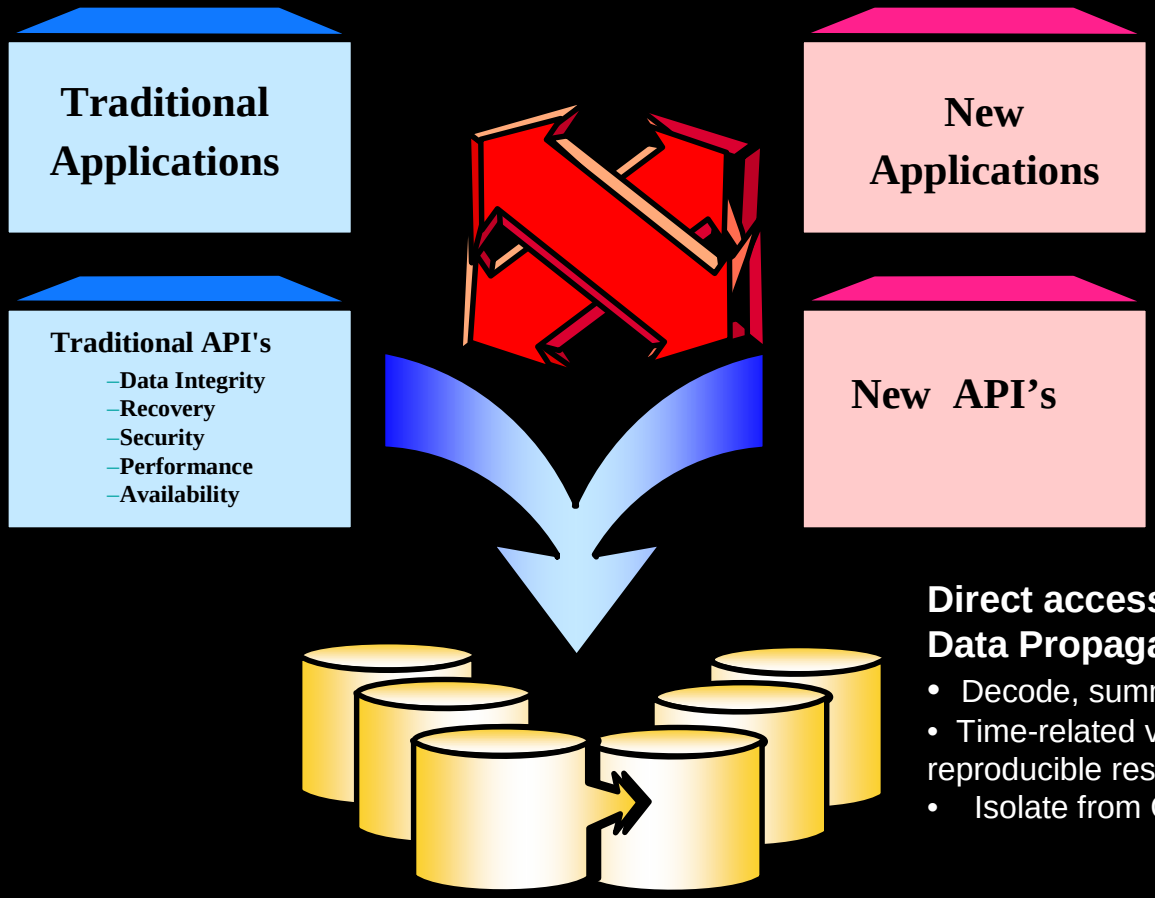


Strategy:

- Meet different application requirements
- Continued investment
- Complimentary rather than conflicting usage

Data Access Solutions Provide:

Favorite Tools on Favorite Platforms
New Ways to Reuse Existing Data

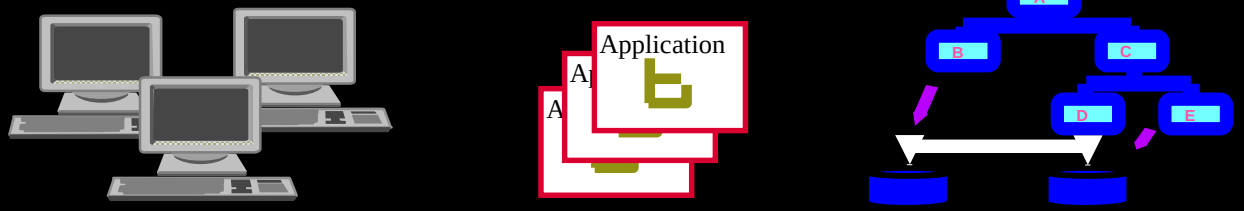


Direct access to Data
Data Propagation and Replication

- Decode, summarize and enhance data
- Time-related values and cyclic update for reproducible results
- Isolate from Operational system

IMS is a Transaction Management System

- A Transaction is the request and execution of a set of programs, performing administrative functions and accessing a shared database on behalf of a user
- A Transaction Management System creates, executes, and manages Transaction Processing Applications for scalability to high transaction loads



IMS Transaction Managers provide technological leadership to

- Efficiently manage network, message, application, and data processing
- Integrate database, message queuing, communications, and Internet access
- Provide Enterprise-class technology that is robust, secure, high performance, scalable, available, and manageable
- Offer choice and flexibility in networks, programming styles and languages
- Integrate well with existing and new investments in hardware, software, applications and skills
- Interoperate and provide portability with other platforms

Why Transaction Management

2-tiered Stored-Procedural Data Systems Offer

- Management of data resources
- Efficient processing of large queries
- Integrity of one resource
- Limited application scope
- Proprietary language
- Data-oriented decision support

Ideal for applications with

- <100 clients
- 1 source of data
- LAN-based network connectivity
- Low security requirements

Transaction Management Systems Offer

- Access to multiple data resources
- Efficient processing of small units
- Integrity across heterogeneous resources
- General application scope
- Standard languages
- Process-oriented, Mission-critical

Ideal for Enterprise-class systems

- Production quality factors - high availability, performance, scalability, security, manageability
- Supporting factors -- support/consulting, tools/applications, training, service

Both offer Online access to Data

Why Transaction Management

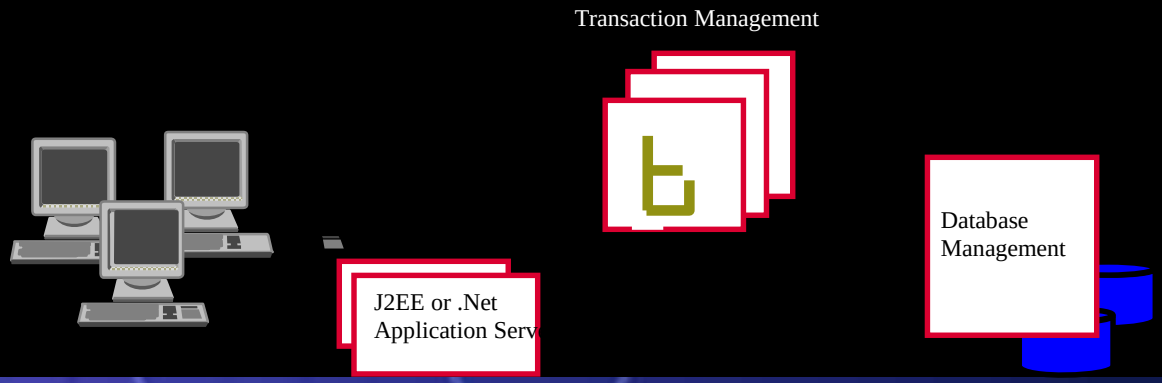
J2EE or .Net Application Servers Offer

- Integration/interoperability focus through support of some newer devices, interfaces and protocols
- Portal capabilities
- Advanced Technology
- Tools to help assemble services through composition of existing and/or packaged applications

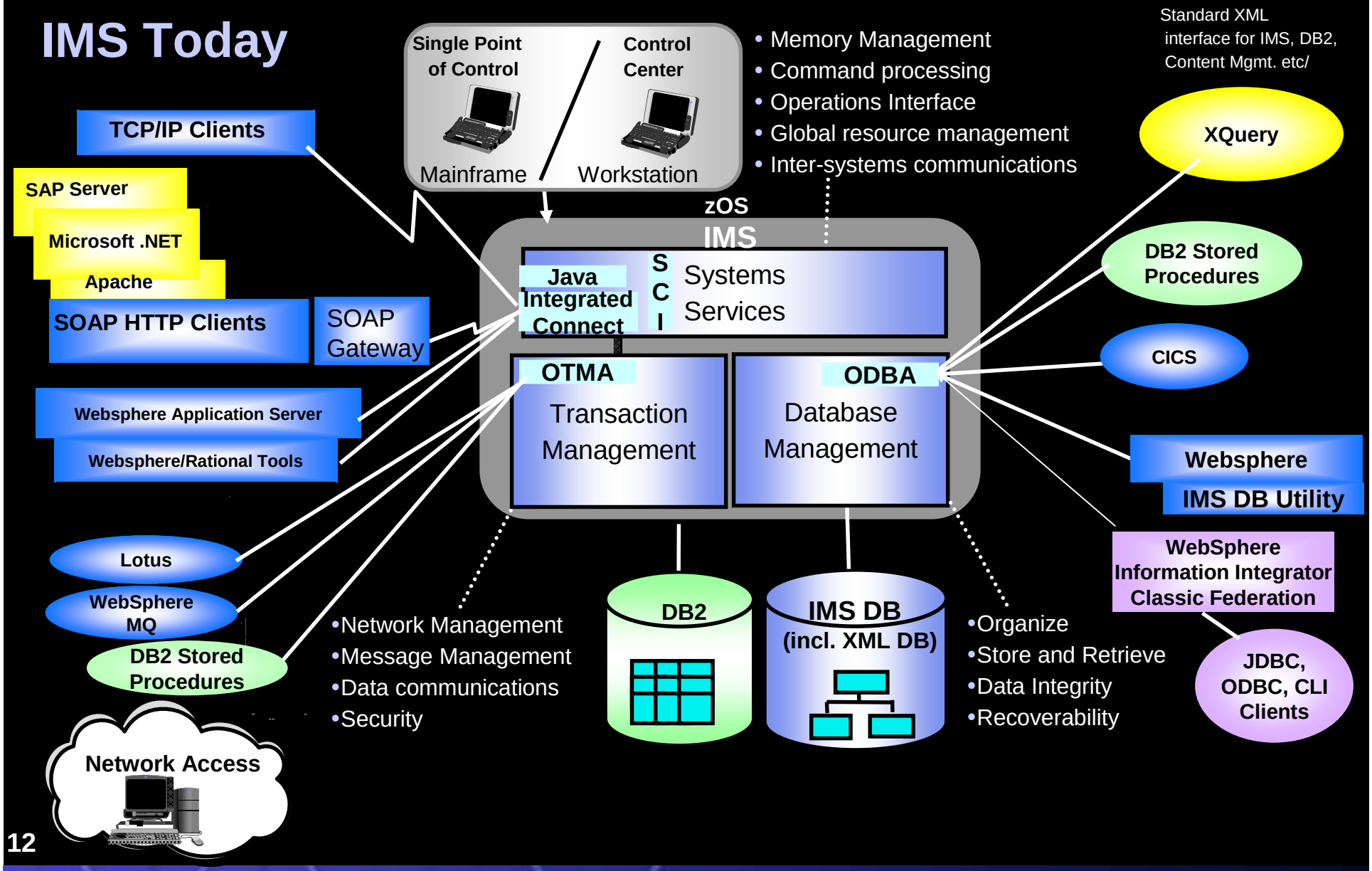
Transaction Management Systems Offer

- Efficient processing of small units
- Integrity across heterogeneous resources
- General application scope
- Standard languages
- Process-oriented, Mission-critical
- Enterprise level QOS (manageability, availability, performance, security)
- Proven track record of support for large business-critical OLTP applications

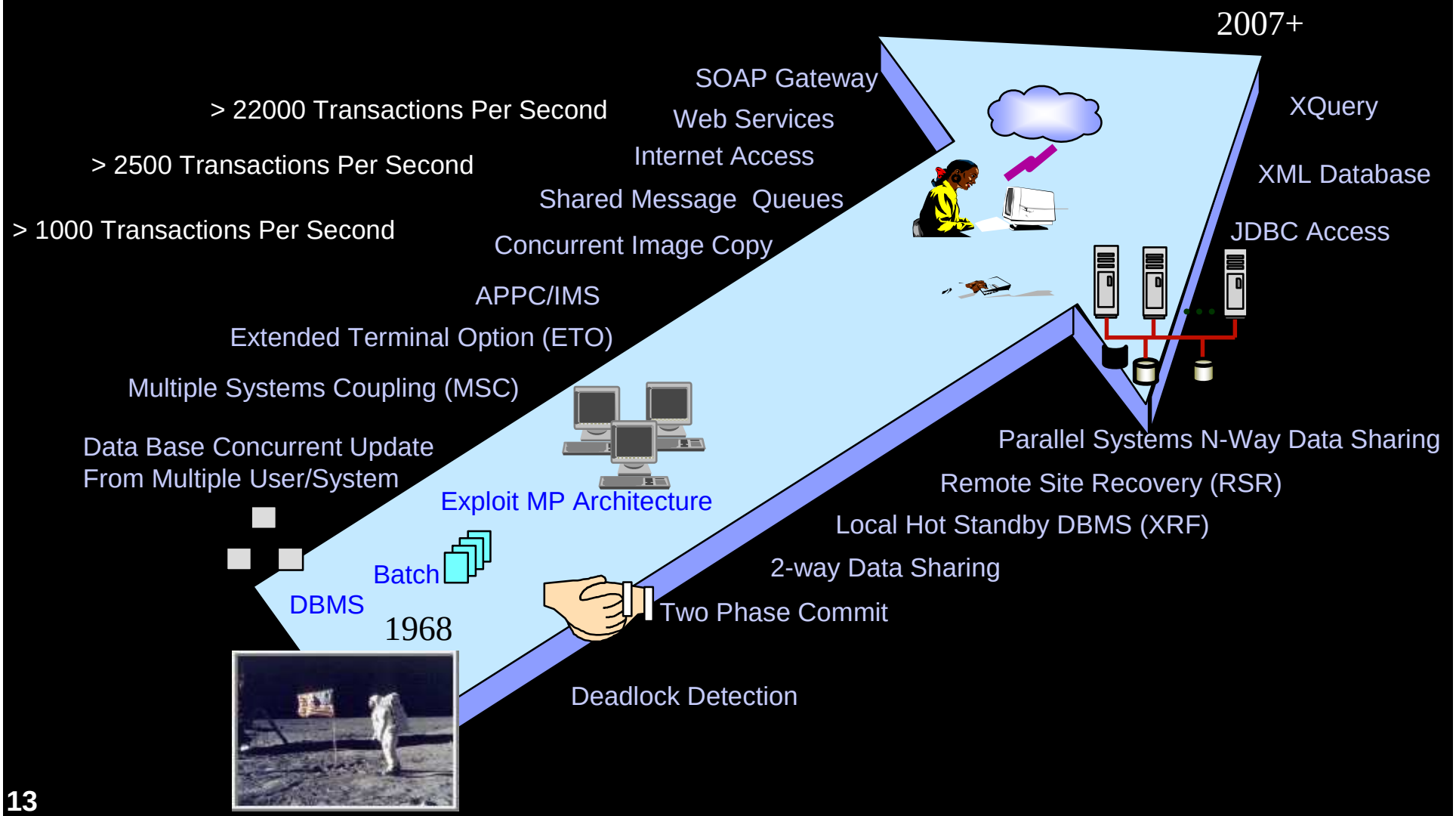
Both offer Online access to Data



IMS Today



39+ Years and still leading the industry!!!



What is SOA?

… a service?

A **repeatable business task** – e.g., check customer credit; open new account

… service oriented architecture (SOA)?

An IT **architectural style** that supports integrating your business as linked services

"Anything that changes can do that much better if the system is architected in SOA."

Gartner

IMS & Reuse offer Greater Value through SOA

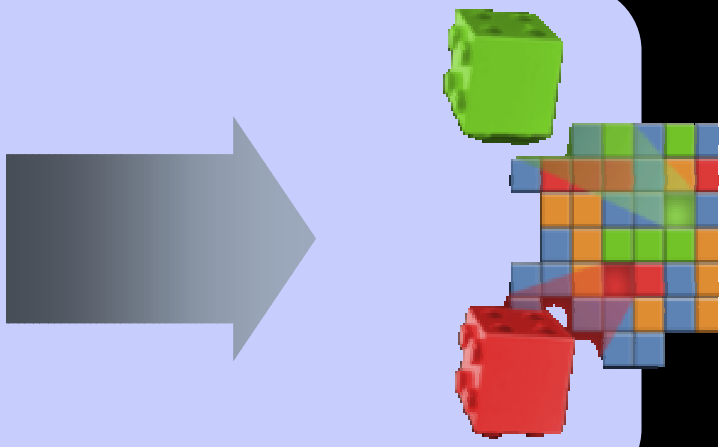
- **Reuse** customer investment in IMS applications/data using open, integrated technologies and modernized IMS Transactions/Data
- Reduces IT costs
- Increase Business Flexibility
- Increase competitiveness

Reuse Value

Flexibility and elimination of duplication for reduced cycle times

Expanded access to core applications

Consultant studies have found it 5X less expensive to re-use existing applications than to write new applications*



Providing Information On Demand Business Solutions Powered by IMS

Easing Integration with New Technology for a SOA

- Protect/Reuse customer investment in IMS applications/data using open, integrated technologies and modernized IMS transactions/data
- Ease new application development by enabling Tools and Standards
  - XML, SOAP, JAVA

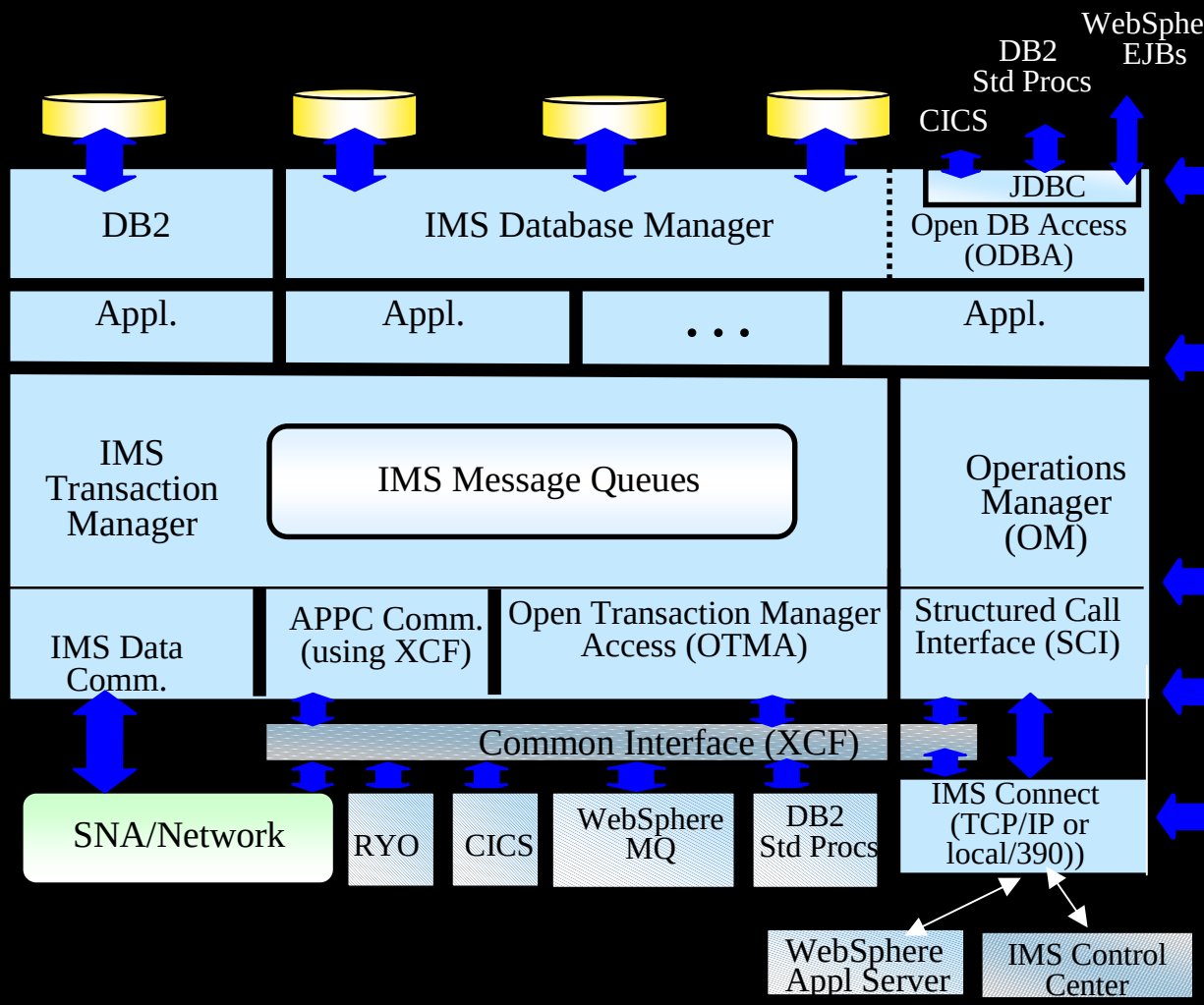
Simplifying Installation and Management

- Single Systems Image and Single Point of Operations Management with Dynamic Resource Definition
- Continually Improving Tools for easing and automating Systems Management

Providing high performance, scalable, available, reliable & secure solutions

- Network, Message, Data Sharing for ultra high performance/availability at lowest cost of computing
- Integrated High Availability Large Database Online Reorganization

Middleware Subsystem Access
-- Provides Open Database and Transaction access



Database Access
- ODBA for IMS DB access by non-IMS subsystems
- ESS for non-IMS DB access by IMS Applications

Industry Standard Appls
- Java/XML programming stds
- Using Visual tooling

Operations Access
- SCI for IMS Operations Mgmt access by non- IMS subsystems

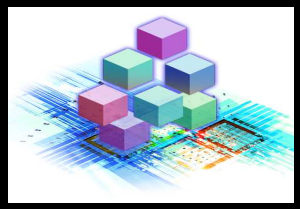
Transaction Access
- OTMA for IMS TM appl access

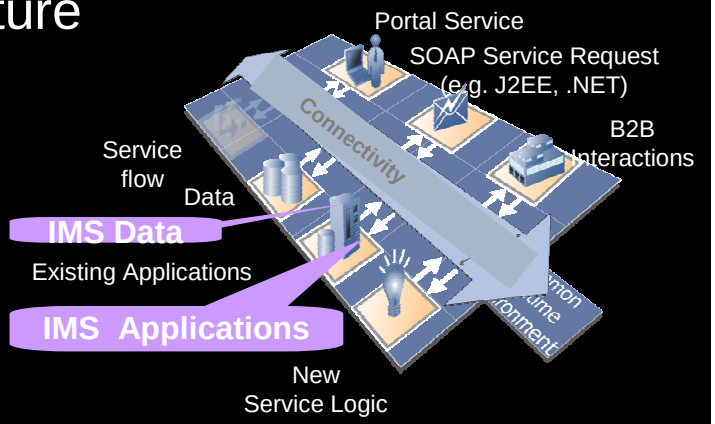
Distributed Access

IMS Connect
- OTMA or SCI to IMS
- XCF for cross-plex
- TCP/IP or local 390 to other subsystems

IMS Transaction and Data Integration with Web Services & SOA

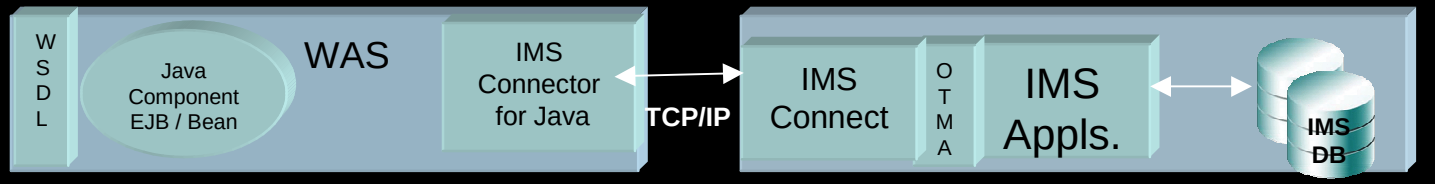
- Web services -- Next step in the evolution, allowing programmable elements be placed on sites for distributed web access across platforms
- Enabled as Web services, unchanged IMS Transactions and Data support a Services Oriented Architecture
  - Leveraging past investments
  - Reducing new programming efforts
  - Aiding business process transformation
  - Aiding application integration with partners, suppliers, and customers
- IMS C, Cobol, PL/I and MFS-based Transactions enabled as Web services via WebSphere/Rational Servers/Tooling
- IMS Transactions enabled as Web services via IMS SOAP Support



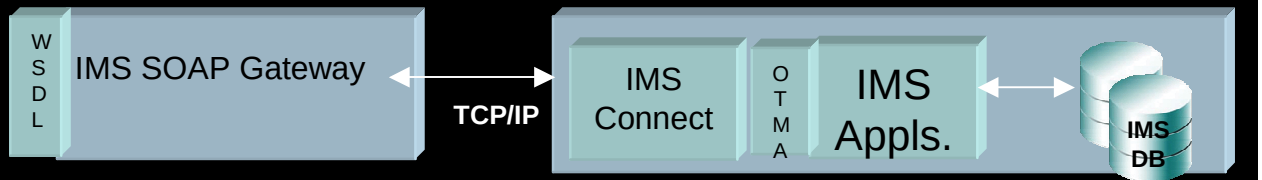


IMS Web Services Integration Approaches for SOA

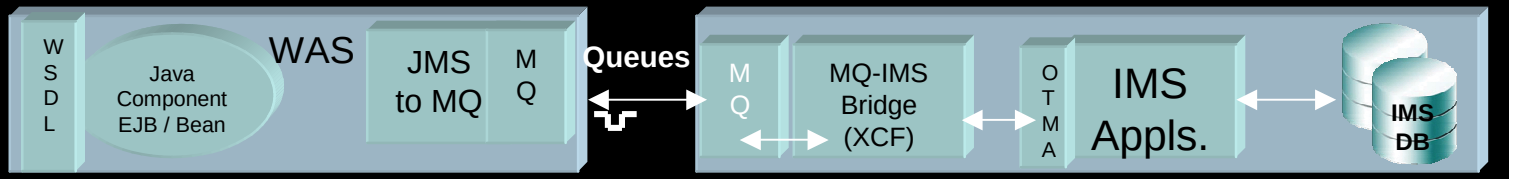
IMS Connect / IMS Connect Java Client



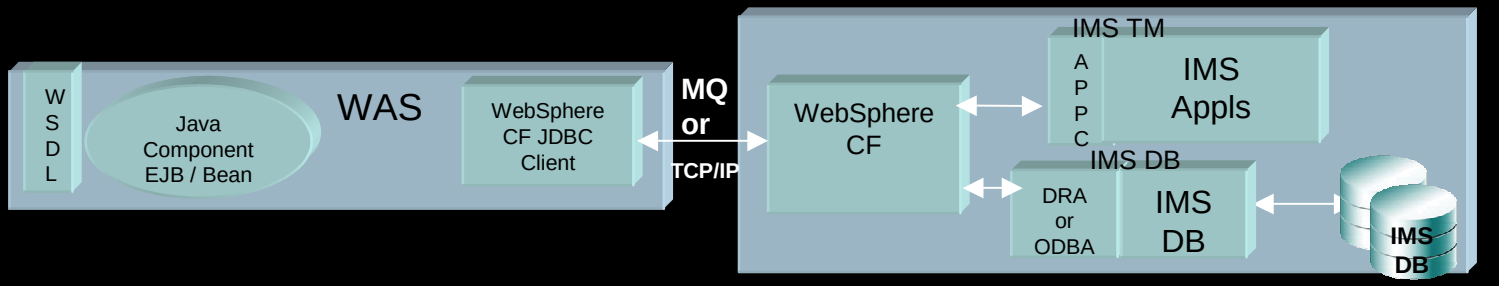
IMS SOAP Gateway



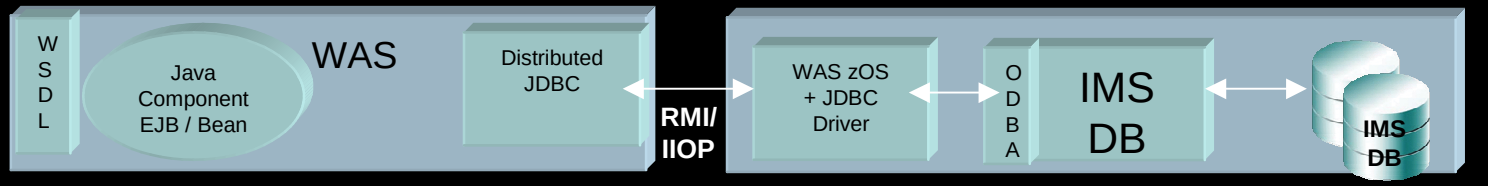
WebSphere MQ/ MQ/IMS Bridge



WebSphere CF



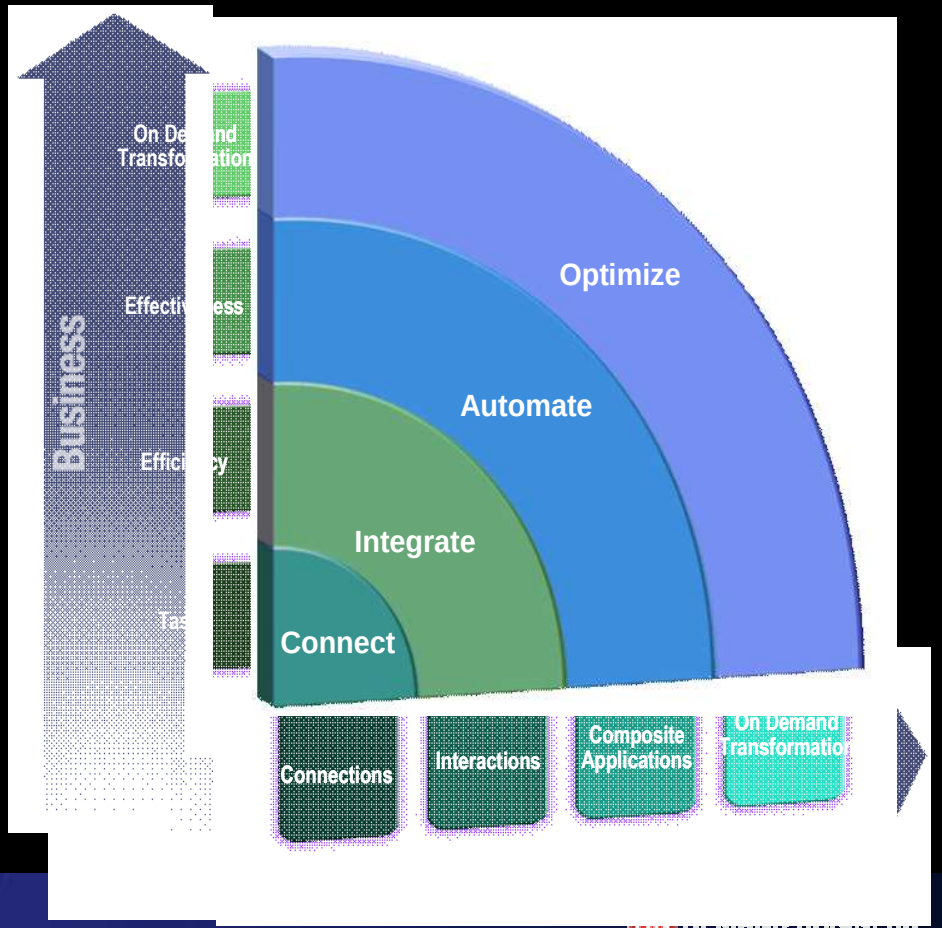
IMS Distributed JDBC



IMS Enhanced Tooling for On Demand SOA

IBM is providing a large number of WebSphere, Rational, Tivoli and other IMS Tools to simplify IMS Application Development/Enablement and Systems/Data Management

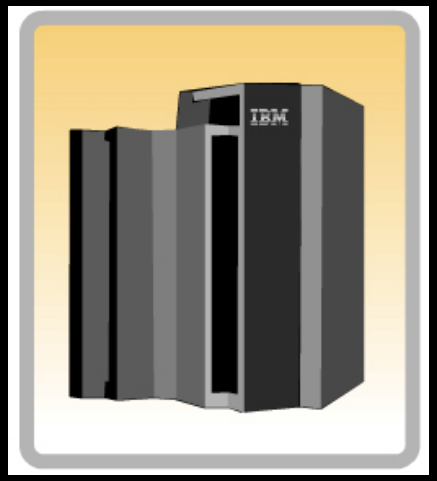
Since 2000 IBM has provided more than 40 brand new or significantly enhanced IMS Management Tools, supporting all aspects of IMS usage



IMS and zSeries are Breaking Barriers in Scalability

Benchmarked over 22,000 IMS Transactions/Second with Database Update on a SINGLE SYSTEM

Approximately 2 billion transactions/day



IMS V9 and V10 continue to leverage zSeries leadership capabilities offering a broad range of scalability and continually increasing performance/ capacity

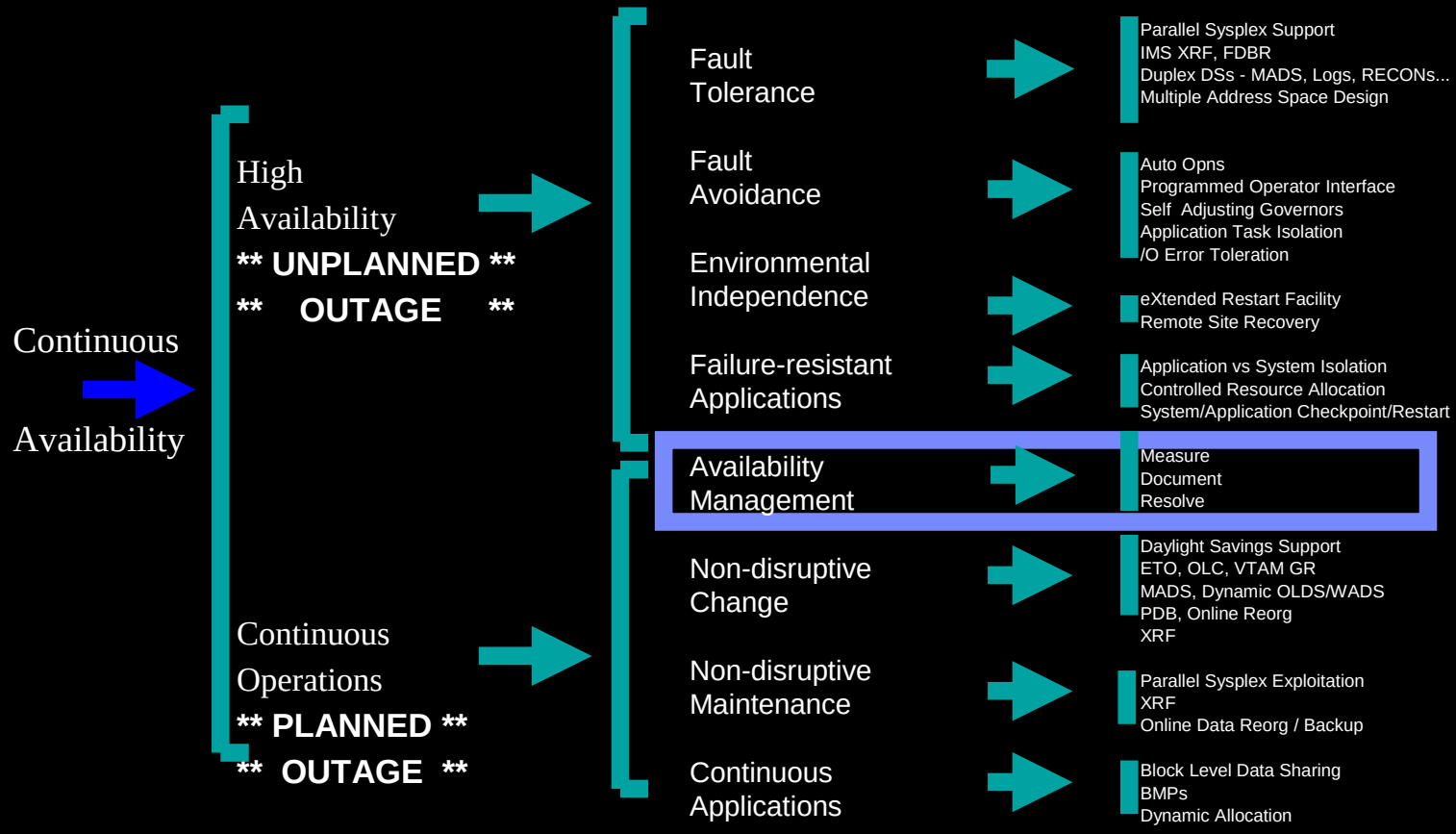
Significantly more transaction throughput

Faster shared queues and shared data

Increased I/O bandwidth

Practically limitless volumes of data

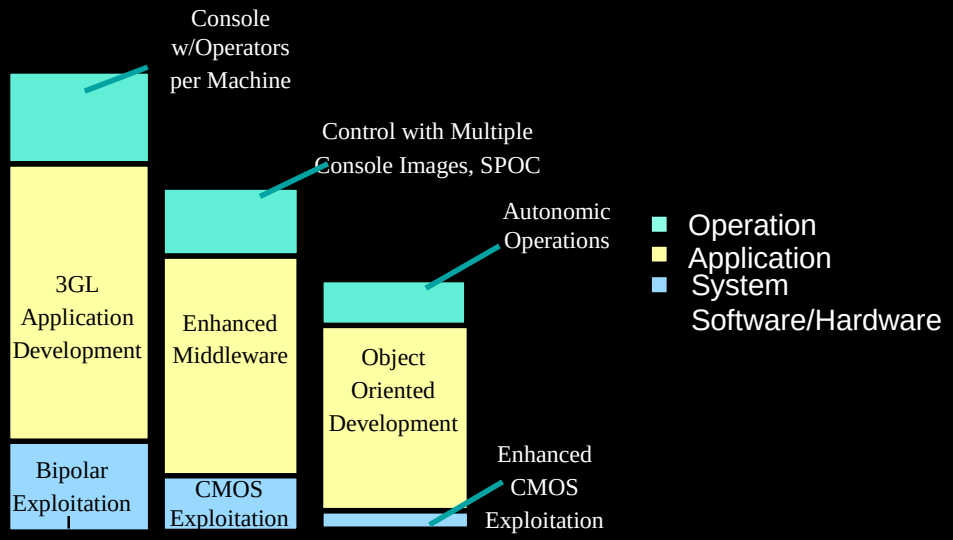
Ensuring Availability with IMS



Total Cost of Ownership

- Scalability in Performance/Availability
- Application Development/Enablement
- Systems Management
- Tools & Utilities
- Education and Skills

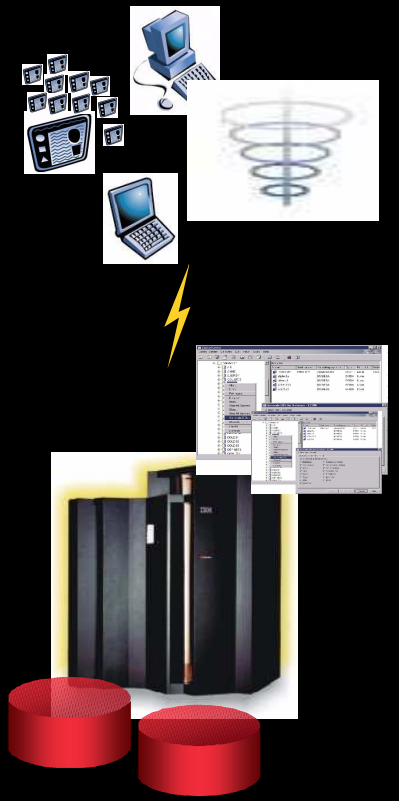
Cost of Computing Evolution



IMS Continues to Address Challenges of a Rapidly Changing World

Providing Quality through On-Demand SOA Solutions

- Information Integration and Open Access with New Application Development/Connectivity
  - ✓Ease/broaden user access
  - ✓Web, Java, XML and Linux access
  - ✓Ease application developer effort
  - ✓Auto-application-generation tools
- Manageability Ease with Autonomic Computing
  - ✓Ease installation and operations efforts
  - ✓High levels of security
  - ✓End-to-end transaction integrity
  - ✓Real time data currency
  - ✓Highest code quality
- System Scalability for Virtualization in Performance/Capacity/Availability/Recovery
  - ✓Handling increasing workload
  - ✓Handling unpredictable volumes
  - ✓More hours for workload
  - ✓Continuous up time for applications and user access
- On Demand business with IMS extends the investment



IMS Version 9
Enabling Information On Demand Business Transformation

Integrated Connect Function for High Performance Access

XML Database support for Universal Information Interchange

Integrated HALDB Online Reorganization for Scalable/Available Data

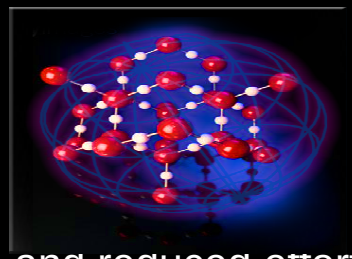
State-of-the-Art Tooling to Easily Develop/Deploy/Manage Applications at Low Cost

Publish IMS Transactions as Web Services for Better Business Process Integration

Generally available since October 2004

IMS Version 9: Enabling Information On Demand Business Transformation

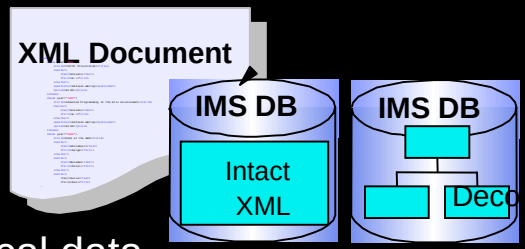
Rapid response across the web



Integrated IMS Connect function

- Connecting Customers, Partners, Suppliers, Employees
- Accessing IMS Applications, Operations, Data
- Providing Security and Management with better resource utilization and reduced efforts

Universal interchange of information



Store and retrieve native XML data

- Throughout the Enterprise with Partners and Customers
- Hierarchical -- a natural fit with no overhead
- Gaining Performance and Security of IMS for mission critical data

Continuous access with virtually unlimited capacity

IMS High Availability Large Database Online Reorganization

- Handling unpredictable volumes
- Non-disruptive, zero outage
- Administrative updates at any time

IMS Version 10
Meeting Challenges for the On Demand Operating Environment

Parallel Recon Access for High Performance/Capacity

XQuery for Universal Information Interchange

Dynamic Resource Definition to Simplify Change

Enhanced Tooling to ease Development and Data Access

Enhanced Web Services For Better Business Process Integration

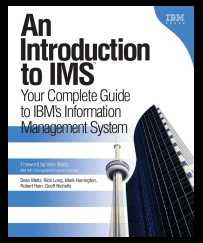
Began Early Customer Support January 2007

Easing IMS Installation and Management

IMS Information at http://www.ibm.com/ims

- Events, Presentations/Papers, Newsletters, Fact Sheets, Announce letters, Additional documentation, Samples/Examples, Roadmaps, Search, Links

An "Introduction to IMS" book available



Redbooks/Redpieces – Release, Sysplex, Java Guides, etc.

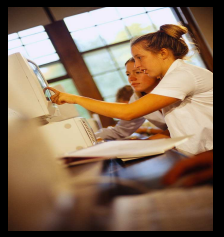
- IMS Connectivity In an On Demand Environment Redbook

IMS V9 Installation Workshop (U3759) available

- Perform actual installation and run IMS IVP in environment of choice
- Hints and tips for successful IMS system implementation/maintenance
- 3 day lecture lab

IMS Education can mostly be taken remotely

- Live instruction via Teleconference
- Live material, chats, and Labs using web conference tools



2007 IMS Education Schedule available under Training/Certification

- Classes, Seminars, Webcasts, Teleconferences, Roadshows
- IBM Information On Demand seminar, Las Vegas, Oct 15-19, 2007

Migration and skills transfer and customized offerings

- Available at ibmdds@us.ibm.com

IMS Runs the World...

Most Corporate Data is Managed by IMS

- Over 95% of top Fortune 1000 Companies use IMS
- IMS Manages over 15 Million GBs of Production Data
- $3 Trillion/day transferred through IMS by one customer

Over 50 Billion Transactions a Day run through IMS

- IMS Serves Close to 200 Million Users a Day
- Over 100 Million IMS Trans/Day Handled by One Customer on a single system
- Over 120M IMS Trans/Day, 7M per hour handled by another customer
- Over 10,000 Trans/Sec across TCP/IP to single IMS with a single Connect instance
- Over 21,000 Trans/Sec (2 Billion/day) with IMS Data/Queued sharing on a single processor

IMS is Banking in the World

Approximately 80% of the largest retail banks in the US, Germany, Japan, and Australia use IMS for their core banking

- **Royal Bank of Canada** based its mainframe business on IBM software for many years: IMS, DB2, MQSeries and CICS. The challenge was to transform these legacy systems to an online system for e-business...today RBC offers extensive online banking services to customers, supporting 4,500 ATMs with over 1.9 million Internet customers. In 1995 RBC became the first Canadian bank to offer services through the World Wide Web, in 1996 RBC launched its first Internet Banking Service.

- At **Barclays' PLC** there is a major dependency on the S/390 infrastructure. The impact of a failure in these systems is significant...customers expectations have changed in recent times to the point where "24 by 7" service must be realized. The current IMS configuration, operating with datasharing in a Parallel Sysplex environment, was essential to resolve capacity problems and is an essential stepping stone to meet future business and availability challenges

- **GAD** has used IMS as its banking base for more than a decade, running over 2000 trans/second. In terms of reliability, IMS is without competition. Anything that might unseat IMS as the central platform must prove that it is as reliable as IMS. "Nothing in the world is perfect, but IMS is the perfect base" for GAD's banking infrastructure

- **Handelsbanken** uses WAP with IMS for Internet banking. In a part of the world where most of the population have carried a cell phone for many years, Svenka Handelsbanken, in a strategic partnership with IBM, became the first bank to deliver a working wireless application

IMS Is How You Run 100 Million Transactions a Day

Most large package tracking and other transport companies run IMS

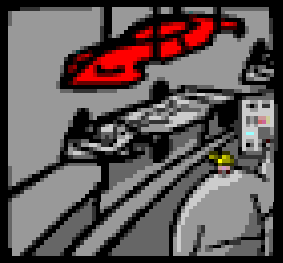
- **Large Package Delivery Company in US** has based its mainframe business on IBM software for many years. They were the first IMS company to break the 100 million transaction per day mark with IMS and one of the first to provide internet customer services for tracking packages. The customer uses XRF and Fast Path to provide the high availability required to keep packages moving

- **Bekins:** The potential benefits from extending our business capabilities through Web services will make the $10.3 million payback we attributed to our first B2B e-business application seem like a drop in the bucket.

  IMS systems are the workhorses for many of the jobs I work with because of its scalability, reliability and performance capabilities are second to none, and we now have the tools to web enable these systems with very little effort -- Randall Mowen, Director of Data Management & e-business Architecture

IMS is How You Build - Cars. Trucks, Tractors, and Airplanes

Most manufacturing companies use IMS to support the assembly lines (build lists, parts where used, parts)



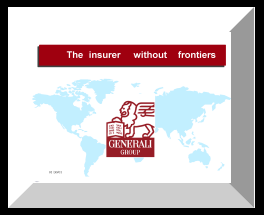
- **Volvo** One of the earliest users of IMS Version 9 for exploiting Java applications in their development environment and for exploiting the Integrated Connect function for access to IMS applications and data across the internet. Their next generation systems use IMS TM Java Message and Batch applications using JDBC, as well as traditional database calls, to access IMS databases (including XML and HALDB), DB2 and Oracle. The new IMS Java regions can also run the new Object Oriented COBOL.

- **Renault** IMS is getting "younger" with the JAVA transactions. We have a common language with "Open System" programmers.“ "We have greatly appreciated the RECON protection against DBRC commands - easy to use.“

- **Boeing** *provides* their customers a means to locate, order and track shipment of parts using Internet access to their IMS & DB2 mainframe data & hot links to United Parcel Service (UPS), offering reduced costs to Boeing and their customers and improved customer satisfaction *"The name of the game is just-in-time inventory, not just in case"* - Darce Lamb, Boeing VP

How Our Efficiency is Reflected in the World

Most large insurance companies in the US, Asia Pacific and EMEA run IMS for policy billing and claims



- **Assicurzioni Generali** in Mogliano, Veneto has used IMS in a key role in its datacenter operations for over 30 years. They have six IMS systems: three production, two pre-production one for testing. The production systems process over 600,000 complex transactions per day on 2.4 terabyte database, compressed to 600GB.

- **BlueCross BlueShield** of Montana (BCBSMT) extended their existing business-critical IMS environment to the Web without re-engineer their existing IMS applications and provided scaling to meet their current and future user demands.

- **Large US Insurance Company** was the first to use IMS N-way data sharing. They have IMS Sysplexes with up to 9 data sharing partners using IMS HALDB to support the high transaction volumes and large data stores that the insurance business requires

Where is IMS Unmatched

- **High Volume, Lowest Cost per Transaction**
  - IMS is still the high efficiency leader for transaction efficiency
  - Ideal Transaction/Data profiles
    - Transactions run billions of times a year
    - Transactions change infrequently
    - Large scalability required
    - Very high availability required
    - Highly structured data and access patterns
  - Optimized for use in critical business operations:
    - ATMs and Online Banking
    - Package Handling and Tracking
    - Product Ordering and Billing
    - Insurance Claims and Billing
    - Manufacturing Tools and Parts tracking
    - Telecommunications service and billing

IMS - Helping Customers Build their SOA

- Simplify access to existing backend systems
  - Seamlessly integrate distinct enterprises
- B2B data exchange
  - Modernizing IMS Transactions and data
  - XML, SOAP/Web Services to access IMS transactions
  - IMS XML data storage
  - Distributed access to IMS data
- Easing Integration
  - WebSphere and J2EE compliant application server
  - Designed to support open integration technologies
  - Support collaboration among IMS and other components, both within and beyond enterprise boundaries

XML, SOAP & Web Services = Open Integration Technologies
JDBC, ODBC = Interoperability for Application Developers

Next Steps

1. Contact IBM today !
   Have an IBM representative call me

2. Ready for IMS and SOA ?
   Register Today IMS seminars
   IBM Information On Demand seminar, Las Vegas, Oct 15-19, 2007

3. Migration and skills transfer and customized offerings
   Available at ibmdds@us.ibm.com

More Information: www.ibm.com/ims

Thank You for Joining Us today!

If you would take a moment to fill out the feedback form which will display on the next slide, it would be greatly appreciated. Your comments are very important to us.

Go to **www.ibm.com/software/systemz** to:

- Replay this webcast
- View previously broadcast webcasts
- Register for upcoming webcasts