The Power of IMS SOA Solutions

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Interesting Facts about IMS

* A viable, thriving business

* Development capacity is growing!

* Customers are increasing their IMS usage

* IMS growth keeping pace with CICS and DB2 for z/OS

* Many customers are modernizing IMS applications – with IMS!

IMS Supports the World

Performance When it Counts

"*Hundreds of thousands of customers are late as servers slow to a crawl…*"

"*Meltdown – computers are over-whelmed at deadline…*"

"*Our IMS systems help BNP Paribas process 24 million banking transactions a day for our web users and our branch offices. IMS has provided the speed we need to run our business!*"

Sylvie Nicpon
Mainframe Architect Group Mgr
BNP Paribas

IMS Runs the World...

> *A large and loyal IMS installed base. Rock-solid reputation of a transactional workhorse for very large workloads. 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*

3M
MIPS running IMS

15M GB
Production Data managed by IMS

50B
Transactions/day through IMS

200M
Users a day served by IMS

>100M
IMS Transactions/day by one customer on single system

Customer Outlook for Mainframe Industry

Annual Worldwide Mainframe Industry Survey

1,000+ large mainframe customers

Highlights of the survey include:

* **Respondents consider mainframes as critical to service oriented architecture and web services initiatives as a data hub and transaction server**

* **74% of respondents do not believe they can successfully move mission critical workloads to a distributed platform at any cost**

Survey conducted by BMC Software, as reported in Business Wire on 8/28/07

Factors Driving Transaction Growth

* Global economy

* Proliferation of web-based applications

* Affordability of increasingly powerful technology

* Mergers and acquisitions

* Modernization of IT infrastructure – huge TCP/IP networks

* Increased customer expectations for response time and availability

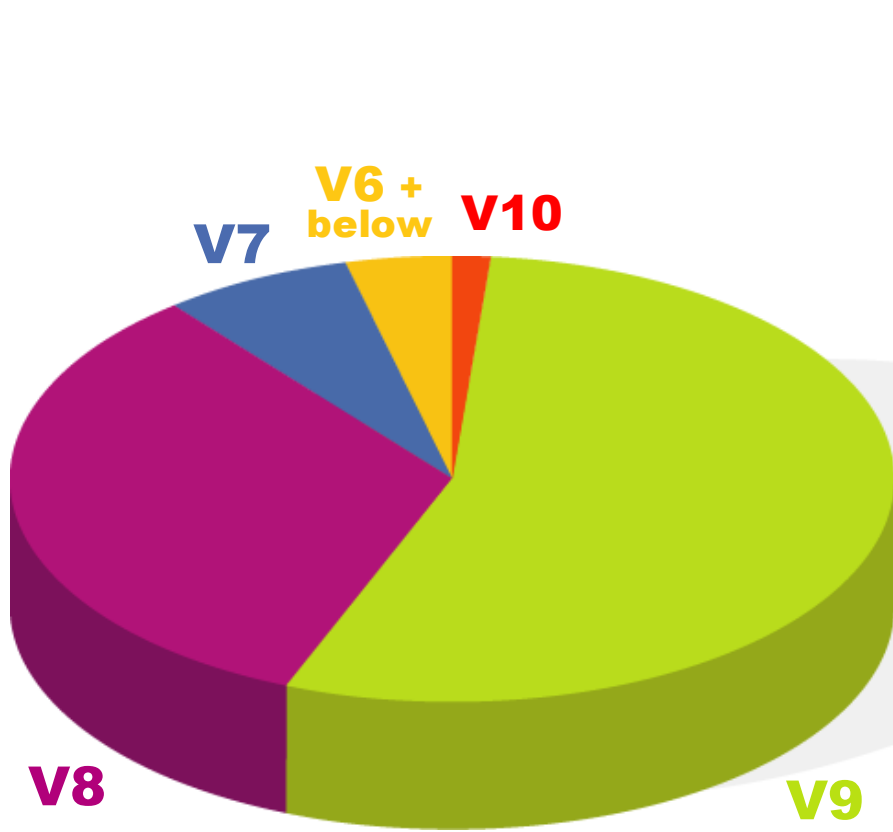* Modernization of IMS applications

Major Corporations Depend on IMS

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

* **Most large package tracking companies run IMS**

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

* **Most large insurance companies in the US and EMEA run IMS for policy billing and claims**

* **Most telecommunications companies use IMS**

Customer Workload by Version

IMS Workload by Version

* **V10** already running production systems

* **V9** (GA Oct 2004) is predominant version in current customer use

* **V9** (odd release) DB focused

* **V8** (even release) systems focused

* **V8** end of service is Nov 2008

* IMS allows skip version upgrade

IMS Roadmap

Most new releases every 2-3 years

- IMS V9 GA October 2004, IMS V8 GA October 2002
- IMS V10 QPP started Jan 2007
- IMS V10 GA October 2007
- IMS V10+1 now in development/test
- IMS V10+2 "on the drawing board"

Two current supported field releases

- N-2 release out of service 1 year after current release GA

Key focus areas for new versions

- Scalability, performance, throughput, RAS
- Ease of use, automation, lessen skill requirement
- SOA application integration, standards, compliance

IMS 10 Quality Partnership Program (QPP)

Advisory Group

* Guide content of future releases
* Feedback on design
* Product readiness

Early Testing

* More complex environments
* Functional, stress, and performance testing
* Production experiences
  * Testimonials

IMS 10: Providing a Competitive Advantage

Over the years, upgrading to new versions of IMS has gone smoothly and without any application impact. Now, with IMS 10, we expect to further simplify our development environment which will help us reduce time-to-market for new services.

Wang Chen, Manager, Database Technical Services
TD Bank Financial Group

To extend our IMS applications, we are eagerly looking forward to IMS 10 for use with the IMS SOAP Gateway to call web services from an IMS application. We expect this improvement can help us create new business.

Romain Capron, manager, System Engineers Group
MATMUT, a French Insurance Company

IMS 10 allows Capitalia to quickly dispatch and satisfy any urgent request to generate and update IMS resources in much less time than previously required. The new features of IMS 10 are allowing Capitalia to reduce errors and resources needed to process information and has sped up the flow of business.

Santino Di Liberti , DB/DC Manager
Capitalia

Our primary requirements from IMS are data integrity, product stability (availability) and performance. IMS V10 continues to deliver all 3 for our environment of over 80 IMS FP subsystems. With more than 30 IMS Fast Path subsystems already converted to V10 we have experienced no production or pre-production Sev 1 or 2 issues related to IMS supporting our data integrity and product stability requirements. Enhancements such as DRD and MOLC provide much needed support for our High Availability initiatives.

a large US financial processing company

Announcing:

General Availability of

IMS 10

on October 26th!

IMS 10: Press/Analysts and Blogs

The new version of IMS is a great example of one of the things IBM does best: leverage its deep technical expertise to develop and deliver solutions for customers' fundamental business challenges. In most large enterprises, heterogeneous I.T. infra-structures are the rule, not the exception.

Charles King
Principal analyst at Pund-IT

IMS is one of the fine things to stick with.

Curt Monash
database analyst

ComputerWorld

eWeek

CIO Today

PC Magazine

Sci-Tech Today

IBM Introduces New Version of IMS

IBM Readies New Database Manage-ment Software for Launch

IBM's IMS 10 Takes Next Step in SOA

IBM IMS, 40 yrs Strong

InfoWorld

Addict 3D

CNNMoney.com

EarthTimes.org

NewsFactor Network

Web Services Journal

IMS 10 Key Themes

* **Support high transaction growth rates through performance, capacity and RAS enhancements**

* **Ease of administration and deployment, automation, reduce skill level**

* **Facilitate modernization of IMS applications, compliance, standards**

IMS SOA Strategy

* **Protect customer investments by making it easy and cost efficient to reuse and modernize IMS applications and data**

* **Fully integrate with WebSphere/Rational servers and tooling in a service-oriented architecture (SOA) environment**

* **Encourage new application development by supporting standards – e.g. XML, SOAP, Java, JDBC, etc.**

Modernizing IMS Applications

> > > > >

* **Web-enable mission critical applications**
* **Create new applications which use IMS data**
* **Reuse existing assets**
  * **Huge investment in applications programs and data**
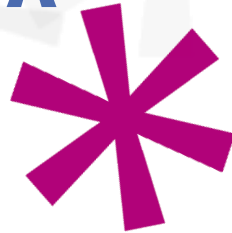* **Little to no IMS skill required**

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**

Web Services

* A technology that allows applications to communicate with each other in a **platform-independent** and **programming language-independent** manner

* Published and made available to applications

IMS, Web Services & SOA

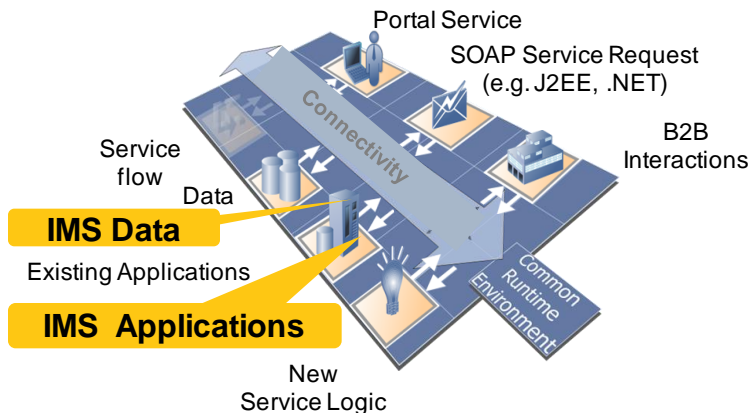> > > > > ✳ **Unchanged IMS transactions and data can be exposed as web services**

✳ **Benefits:**

Portal Service
SOAP Service Request
(e.g. J2EE, .NET)
B2B Interactions
Connectivity
Service flow
Data
IMS Data
Existing Applications
IMS Applications
Common Runtime Environment
New Service Logic

✳ **Leveraging past investments**

✳ **Reducing new programming efforts**
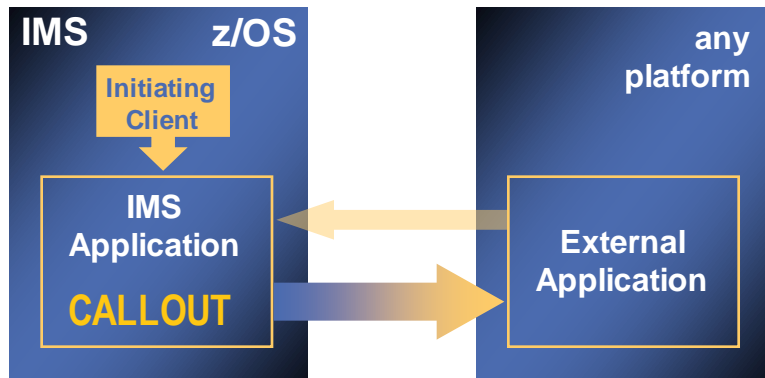
✳ **Aiding business process transformation**

✳ **Aiding application integration with partners, suppliers, and customers**
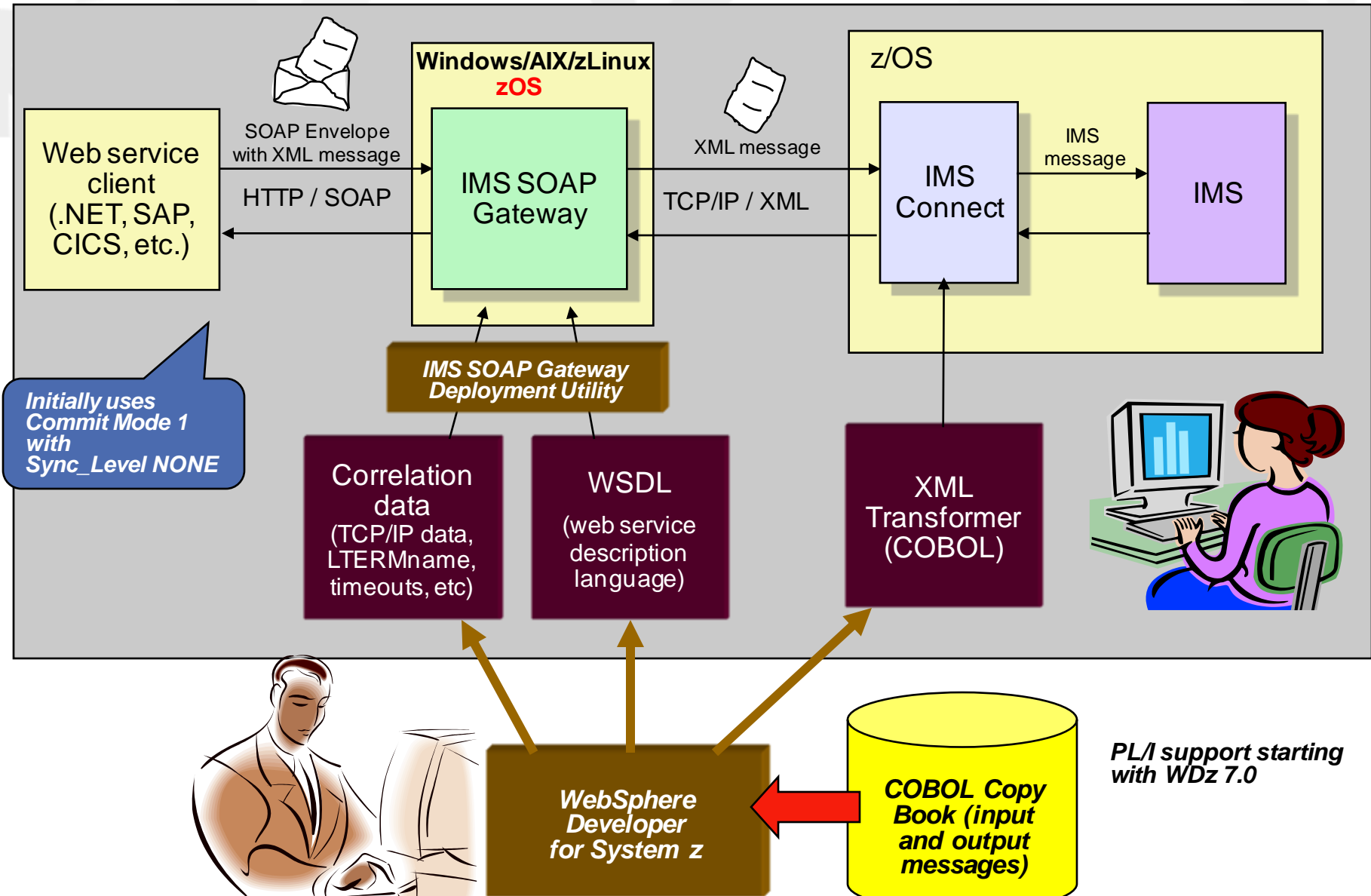
IMS as Web Services Client

- **IMS applications can access other environments and data**

- **IMS 10 enables IMS applications as clients to interoperate with web services outside IMS**

  - **Better integration of IMS applications for SOA**

- **IMS 10 enhances integration of IMS transactions as Web services for conversational composite business applications**

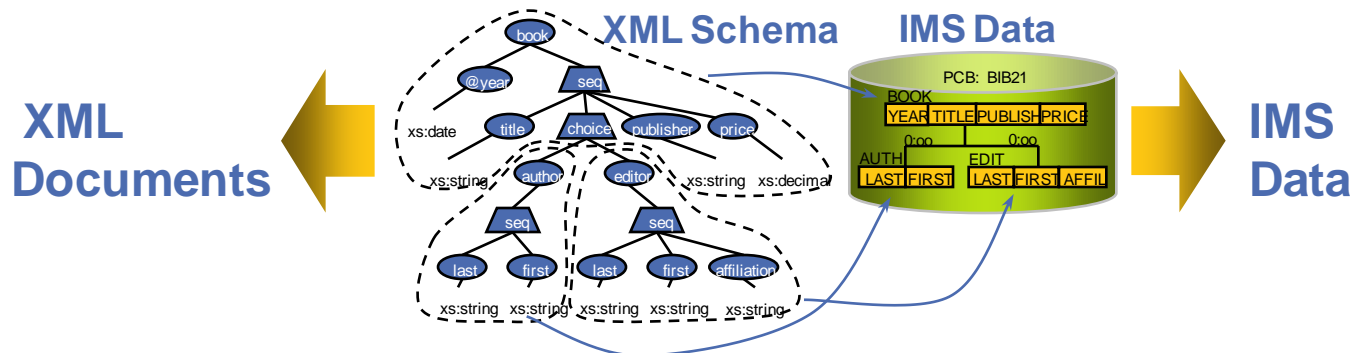 - **Maximizes re-use of IMS applications for rapid business innovation and reduced costs**

IMS   z/OS

Initiating Client

IMS Application

CALLOUT

any platform

External Application

IMS SOAP Gateway

• z/OS; Async Callout – Post IMS 10 GA

Windows/AIX/zLinux
zOS

z/OS

Web service client (.NET, SAP, CICS, etc.)

SOAP Envelope with XML message

HTTP / SOAP

IMS SOAP Gateway

XML message

TCP/IP / XML

IMS Connect

IMS message

IMS

Initially uses Commit Mode 1 with Sync_Level NONE

IMS SOAP Gateway Deployment Utility

Correlation data (TCP/IP data, LTERMname, timeouts, etc)

WSDL (web service description language)

XML Transformer (COBOL)

WebSphere Developer for System z

COBOL Copy Book (input and output messages)

PL/I support starting with WDz 7.0

IMS and XML

* **Hierarchical IMS offers a natural mapping for XML**
* **XML processing in IMS transactions available since 1999**
* **IMS Databases align with XML for storing XML data natively**
* **Retrieval and Storage of IMS records as XML documents require** *no change* **to existing IMS databases**
* **IMS 10 enables XQuery of IMS data**
  * **Enabling off-the-shelf, third-party tools**
  * **Offering standard, shareable integration of IMS with other industry databases**

XML Documents ← **XML Schema**   **IMS Data** → **IMS Data**
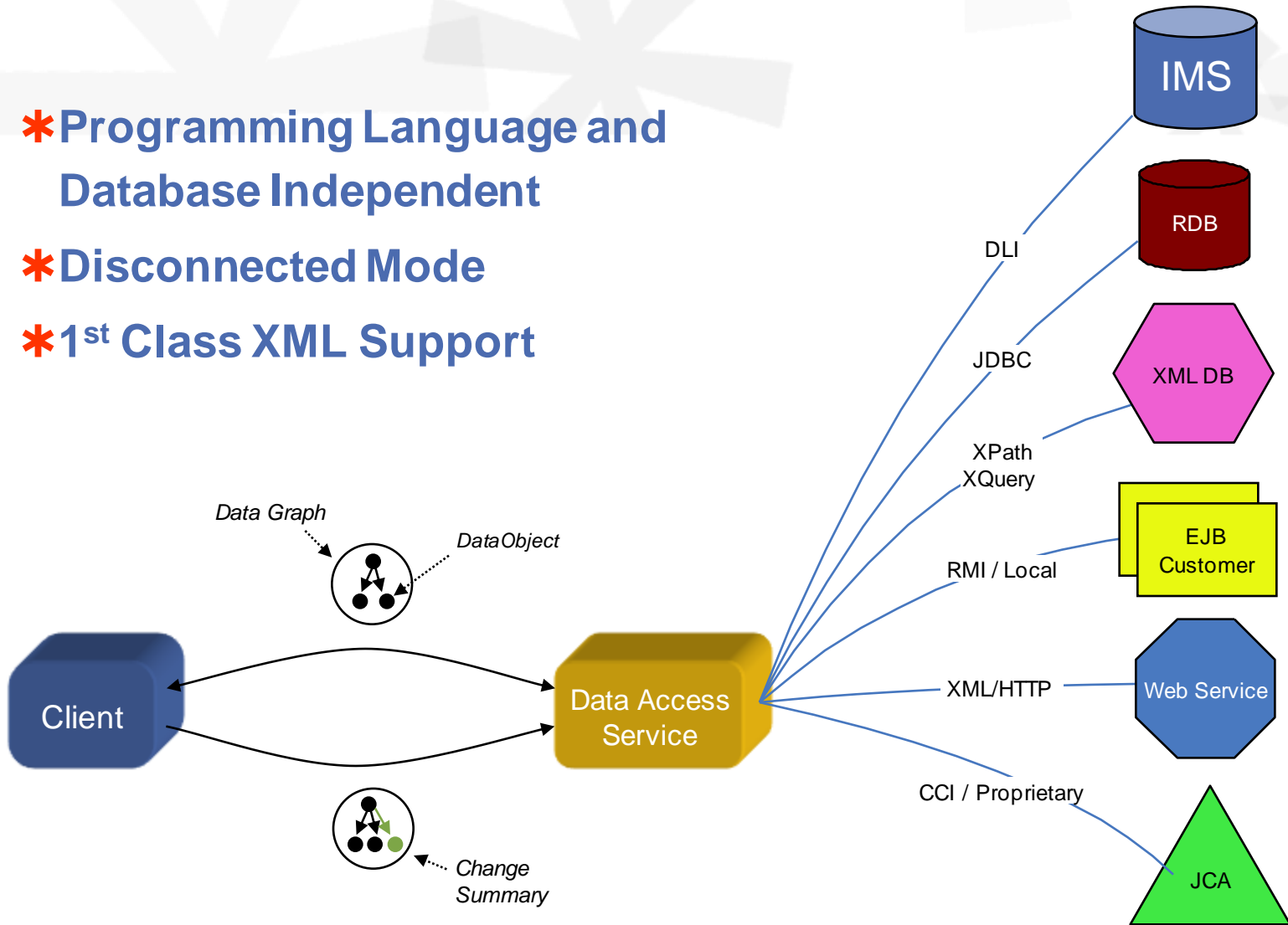
IMS Data in Web Services

* **IMS provides industry standard access to IMS data**

* **IMS 10 enables transparent integration of IMS data as web services for SOA**

* **IMS 10 provides a user-friendly interface for viewing and generating IMS data metadata**

  * **Rapid application development**

  * **Reduced cost of development and ownership**

Service Data Objects (SDO)

* **Programming Language and Database Independent**
* **Disconnected Mode**
* **1st Class XML Support**

Data Graph

DataObject

Client

Data Access Service

Change Summary

DLI — IMS

JDBC — RDB

XPath XQuery — XML DB

RMI / Local — EJB Customer
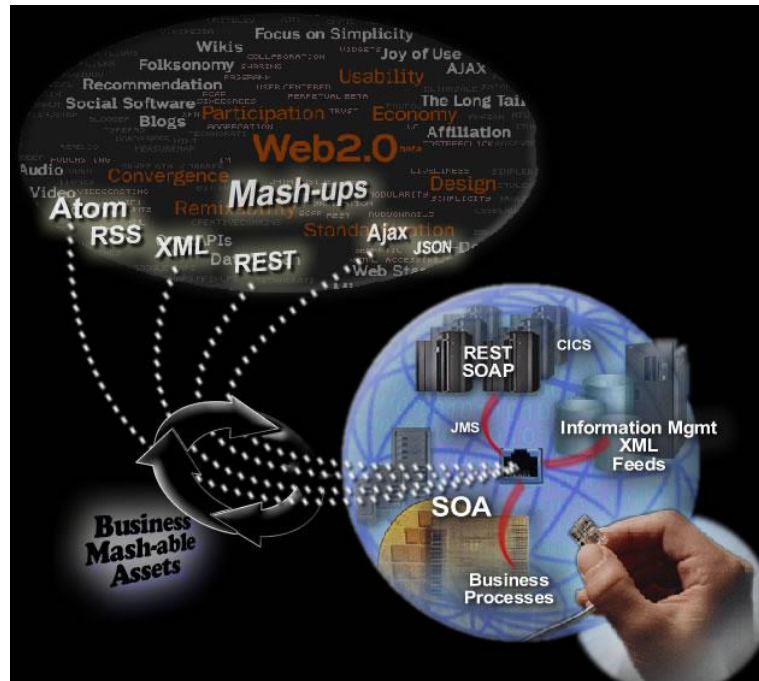
XML/HTTP — Web Service

CCI / Proprietary — JCA

IMS and Web 2.0: Unleash and Reshape IMS

"I want my IMS Assets to be mashable…

Enterprises will be *exposing* more services to the web, transforming the web into a platform…

…and *consuming* more services and feeds from the web

…what should I keep in mind?"

Mashup Scenarios:

* Compose services (data or function) into a composite service

* Compose widgets / HTML segments into a composite UI or an application template

* Binding service (data or function) to the composite UI

Reducing Skill Requirements and Maintenance Costs

Easing Use in

* **Installation**
* **Management**
* **Maintenance**
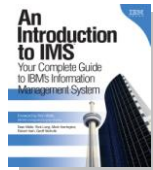
Providing Information and Education

Easing Use

* **IMS 10 eases installation by simplifying changes to IMS resources**

* **IMS 10 simplifies operations and systems management with broadened auditability and single point of operations control**

* **IMS 10 enhances automation and security**

* **IMS 10 enhances serviceability**
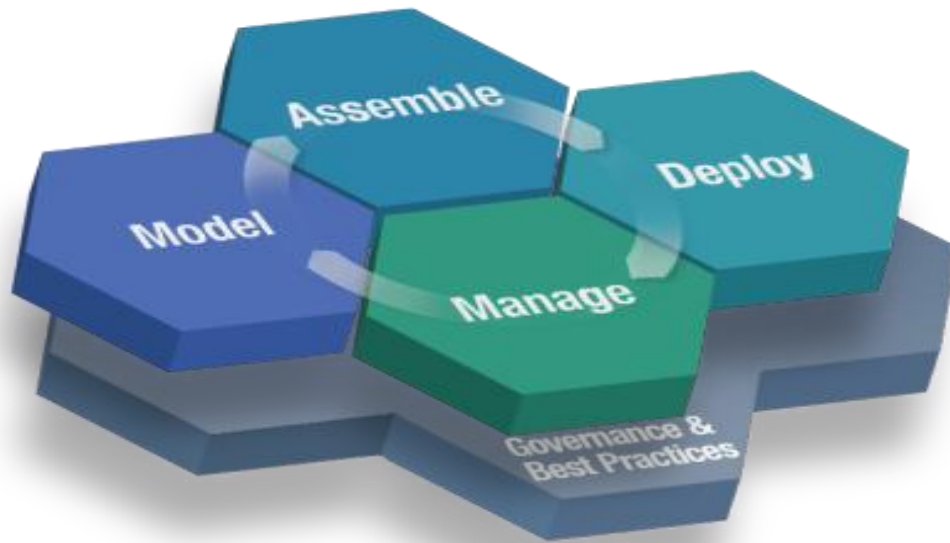
IMS Information and Education

* "*An Introduction to IMS*" book available
* IMS on the Web: *www.ibm.com/ims*
  * 2007 IMS education schedule
  * Presentations, papers, newsletters, fact sheets, announce letters, redbooks
* Schedule of seminars, webcasts and teleconferences
* Technical support info (search on IMS)
* Information center - enables search across IMS, DB2 and Tools documentation
* Migration, skills transfer, customized offerings at *ibmdds @us.ibm.com*

Conferences and Events

Supporting Application Modernization

- **IMS SOA seminars and workshops**

- **Awareness and education for application architects**

- **Demonstrate ease of modernizing IMS applications**

- **Implementation – how-to assistance available**

- **IMS SOA setup & getting started 1-on-1 --- schedule in the developer's den**

Enhancing Skills for IBM Mainframes

Today

* Training your "in-house" skills
* Road shows and workshops
* Skills vitality and certifications

Building 20,000 Skilled Mainframe Professionals by 2010

* IBM academic initiative for zSeries
* Educating university/college students worldwide
* New and updated courses

Simplifying Software Management for Next Generation

* Basics information
* Easy to use/learn portal
* Automated tasks and integrated software

IMS and z:
Lowering the Total Cost of Ownership
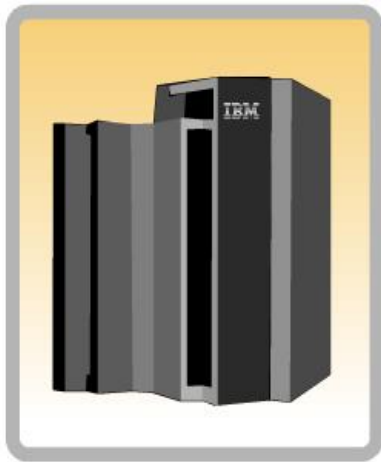
❯❯❯❯❯ IBM provides specialized processors

* **Strategic z/OS execution environment**

* **Increased system productivity, reducing general purpose processors demands and making capacity available for other workloads**

IMS takes advantage of z application assist processors (zAAPs) for Java workloads

* **Run at a lower total cost of ownership**

* **Transparently execute without application change**

IMS 10 utilizes z integrated information processors (zIIPs) to help with workload management

IMS and z: Breaking Barriers in Scalability

* **More transaction throughput**
* **Faster shared message and data handling**
* **Practically limitless volumes of data**
* **Increased bandwidth for I/O, logging, and MSC**

>2B
Transactions/day

>22,000
IMS transactions/second with database update on a SINGLE IMS

IMS V10 continues to leverage z leadership capabilities, offering a broad range of scalability and continually increasing performance/capacity

IMS and z: Eliminating Bottlenecks for Growth

> > > > >

* IMS 10 reduces recovery control contention

* IMS 10 improves multiple systems coupling bandwidth for improved efficiency, transaction performance, and output message response times

* IMS 10 removes buffer limits and sequential dataset size limits

* IMS 10 provides storage constraint relief

* IMS 10 improves recovery with fast replication support

IMS: Continuing to Deliver the Best into the Future

IMS V7
* Large DB
* High avail DB
* IMS Java
* Rapid restart
* IMS connect V1
* New IMS tools

DATABASE

IMS V8
* Extend DB connectivity
* Enh Sysplex operations
* Simplify install process
* IMS connect V2
* IMS connect V1
* Enh IMS tools

SYSTEMS

IMS V9
* On-line reorg
* Enh commands
* Reduced Sysgen efforts
* Fast path enh
* DBRC enh
* XML DB
* Integ IMS connect
* Enh IMS tools

DATABASE

IMS V10
* Systems enh
* Operations enh
* DBRC parallelism
* MSC bandwidth
* Incremental applic dynamic resource definition
* Enh connectivity
* XQUERY
* Enh IMS SOAP

SYSTEMS

IMS N
* Sysplex enh
* DBRC enh
* Enhanced dynamic resource definition
* HALDB/OLR extensions
* Fast Path extensions
* XML DB enh
* Enh dist DB connectivity
* Enh IMS Tools

DATABASE

IMS N+1
* Sysplex avail enh
* Autonomic mgt enh
* Enhanced dynamic resource definition
* Enh connectivity
* Improved Resiliency
* Enhanced Operation
* Enh IMS Tools

SYSTEMS

Also delivering service and enhancements, with periodic Service Update (SUP) refreshed deliverables, and new/enhanced tooling.

flexibility

highest load

Trust Your Business to IMS

reliability

performance

innovation

> > > > >   * Simplifying access and integration for reuse and reduced costs

   * Handling high transaction loads for growth

   * Ensuring quality and availability for industrial strength resiliency

   * Delivering innovation for business flexibility and competitiveness

   * Helping companies worldwide achieve business results

quality

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