



An IMS Overview

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The World Depends on IMS

IMS is a part of everyday life. When you:

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

And more...

... you are likely using IMS!



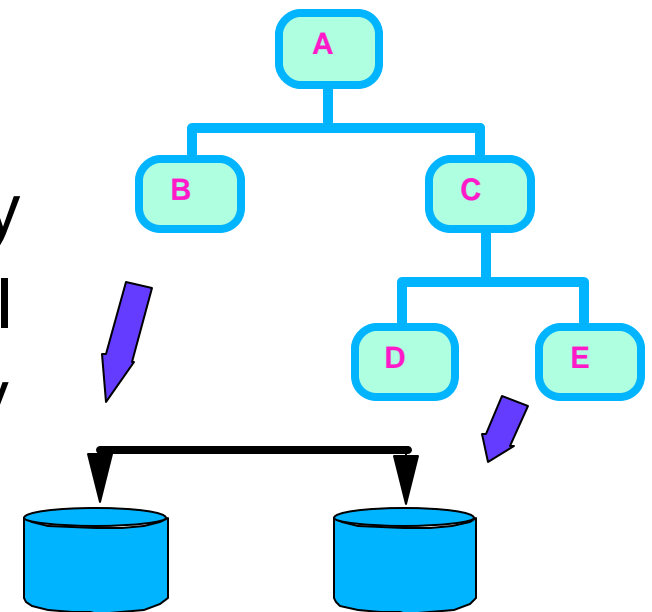


IMS is a Database Management System

- 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 DB is organized hierarchically

- To optimize storage and retrieval
- To ensure integrity and recovery

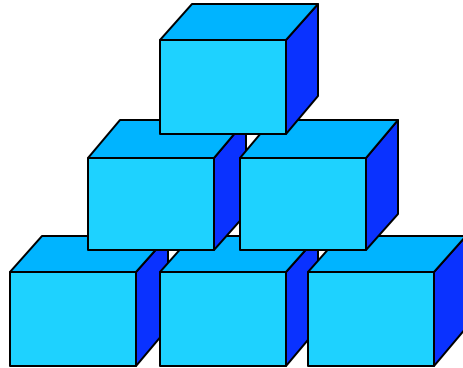




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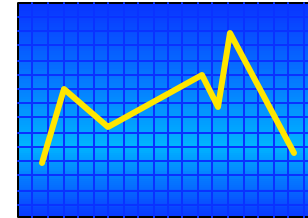
Data Characteristics

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

Operational and Informational Data Fundamentally Different

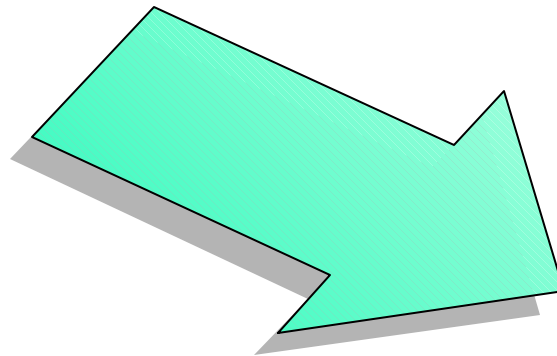




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IMS In An Information Warehouse

- **Direct Access to IMS Data**
- **IMS Data Propagation and Replication**
 - Decode, summarize and enhance data
 - Time-related values and cyclic update for reproducible results
 - Isolate from Operational system



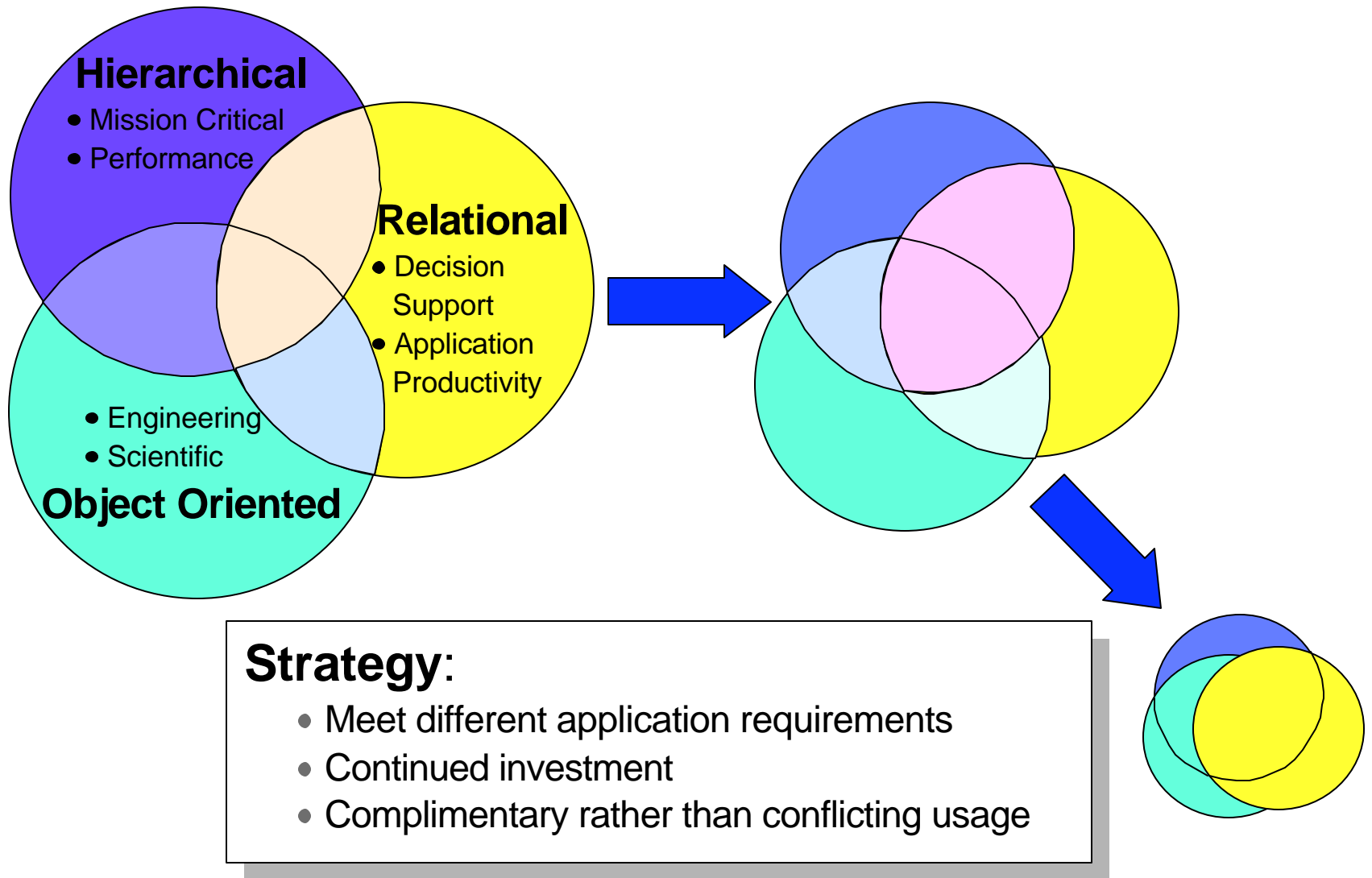
**Showing New Ways
of Exploiting
IMS Data**





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Database Manager Positioning





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Database Management Systems - Differentiation

Hierarchical

Navigation done apriori by database design & application logic

Price: Longer development cycle

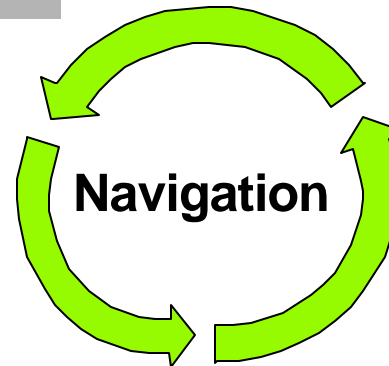
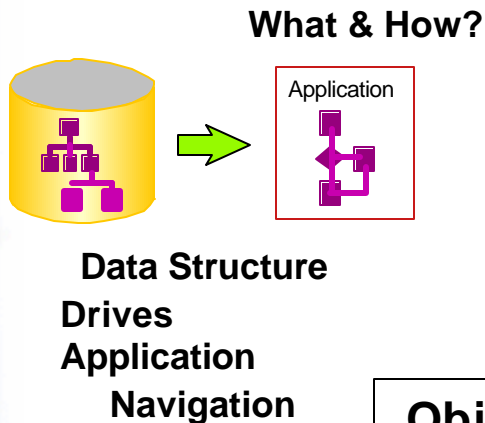
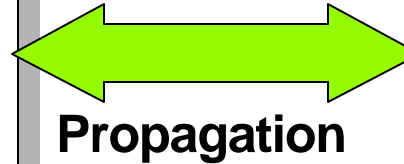
Benefit: Performance

Relational

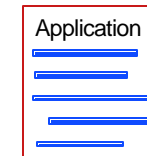
Navigation done at run time by 'SQL' engine

Price: Performance

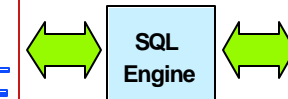
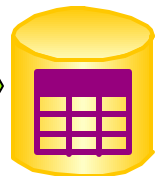
Benefit: Shorter development cycle
decision support



What



How



SQL Engine Provides Independence

Object Oriented

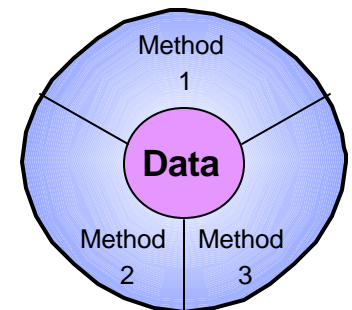
Navigation is not an issue

Object method is responsible for navigation -

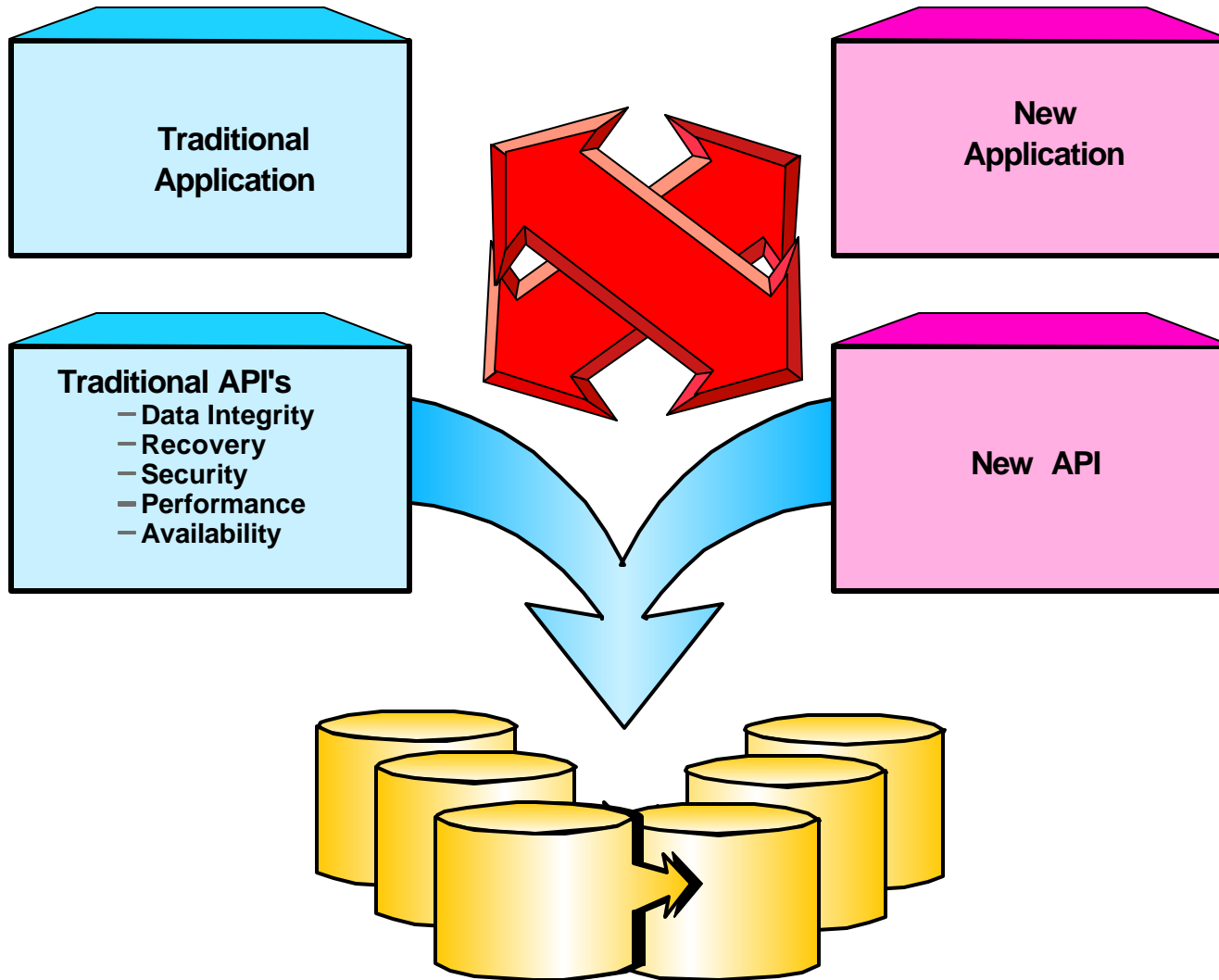
Application sends message to object's method to manage navigation

Price: Development paradigm shift

Benefit: High reuse, high programmer productivity



Data Access - Favorite Tool on Favorite Platform

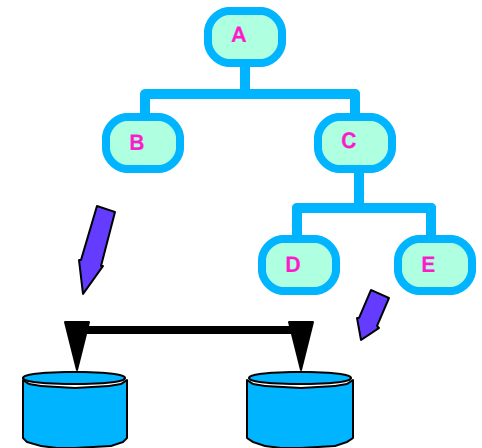
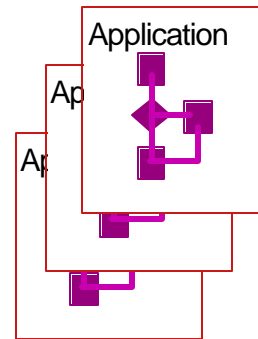




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IMS is a Transaction Management System

- 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 TM continues providing leadership

- To efficiently manage network, message, application, and data processing
- To ensure high performance, availability, security, and recovery





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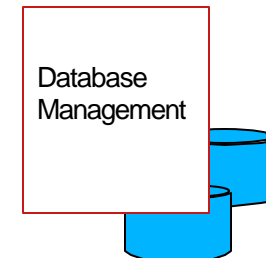
Why not just Data Systems

2-tiered (client and database mgmt) architectures are ideal for applications with

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

Enterprise-class systems require

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





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Why Transaction Management

2-tiered Stored-Procedural Data Systems offer

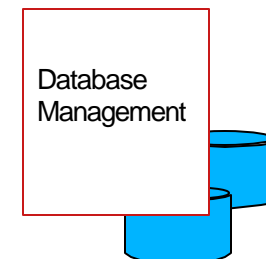
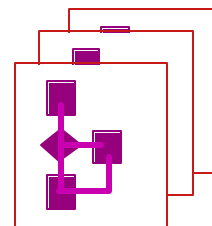
- Management of data resources
- Efficient processing of large queries
- Integrity of one resource
- Limited application scope
- Proprietary language
- Data-oriented decision support

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

Both offer Online access to Data

Transaction Management





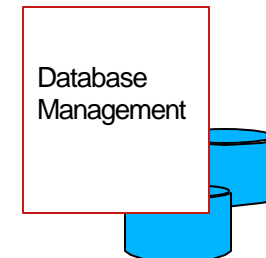
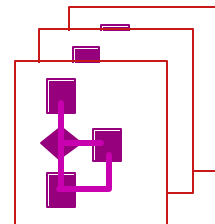
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Why IMS Transaction Management

IMS Transaction Management Systems

- Integrate key servers. such as database, message queuing, communications, and Internet access
- Provide Enterprise-class technology that is robust, secure, high performance, scalable, and manageable
- Offers choice and flexibility in networks, programming styles and languages
- Integrates well with existing investments in hardware, software, applications, and skills
- Interoperability and provides portability with other platforms

IMS Transaction Management





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IMS Then and Now

	An Original Environment in 1969	A Large Customer in 2001
Number of Terminals	139 on 110 Lines	Tens of Thousands
Number of Data Bases	30	Thousands
DASD used to hold Data Bases	4 - 2314 DASD	Terabytes of DASD
Number of Transactions per Day	17,000 - 20,000	Over 50 Million
Number of Transaction Codes	260	Thousands
Number of Applications	8	Thousands
System Availability	Less Than 24 Hours	2-3 Hours of Planned and Unplanned Outages per Year
Response Time	2-5 Seconds	Sub-Second



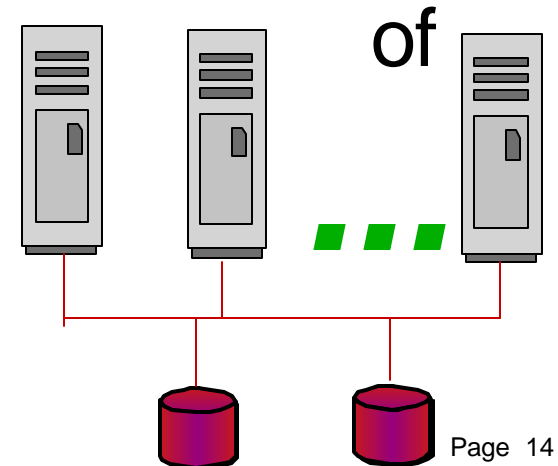


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Providing Strength for Parallel and Distributed Data with IBM Middleware

Data Management plays a key role:

- ▶ Delivery of leadership collaborative software for transaction, database, content management and mail systems
- ▶ Federated technologies for query, search, access, and management
- ▶ Integrated systems management utilities for management n-tiered architectures

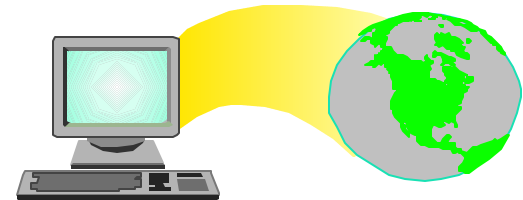




Creating Leadership with Open IBM Software Platforms for end-to-end 2- and 3-tier e-business Computing

Open solutions across the enterprise

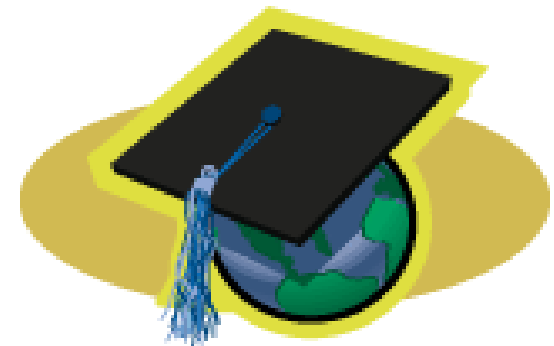
- ▶ Exploit native operating systems features and differentiators
- ▶ Enhance and integrate middleware to meet customer requirements for open connectivity, performance and usability
- ▶ Improve systems management and automation
- ▶ Deliver connectivity and interoperability with:
 - **Java**
 - **XML**
 - **WebSphere**





Providing Guidance with IBM Solutions and Services

- Using all of IBM's "arms and legs"
 - ▶ Global Services, Education & Training and Systems Centers for delivery of solutions, services, classes and benchmarks
 - ▶ Offering services engagements from IBM laboratories directly
 - ▶ Design Center for e-transaction processing





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The Strategy of IMS

Providing e-business Solutions Powered by IMS

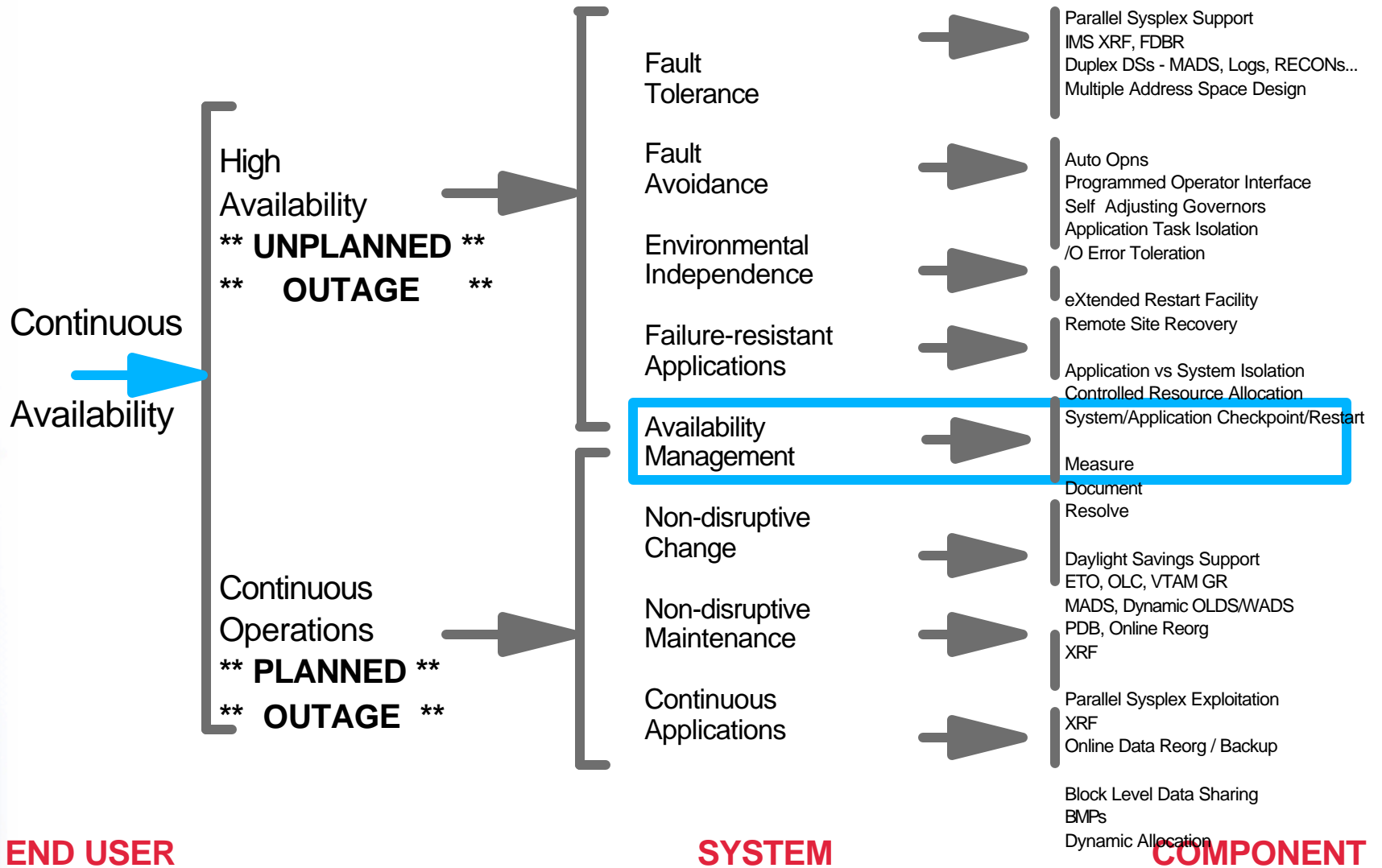
- **Sysplex Network, Message, & Data Sharing** for ultra high performance/availability at lowest cost of computing
- **Open Access** for Integration and Analysis
- **Leveraging Java** for Application Development
- **Continually Improving Tools** for Systems Management





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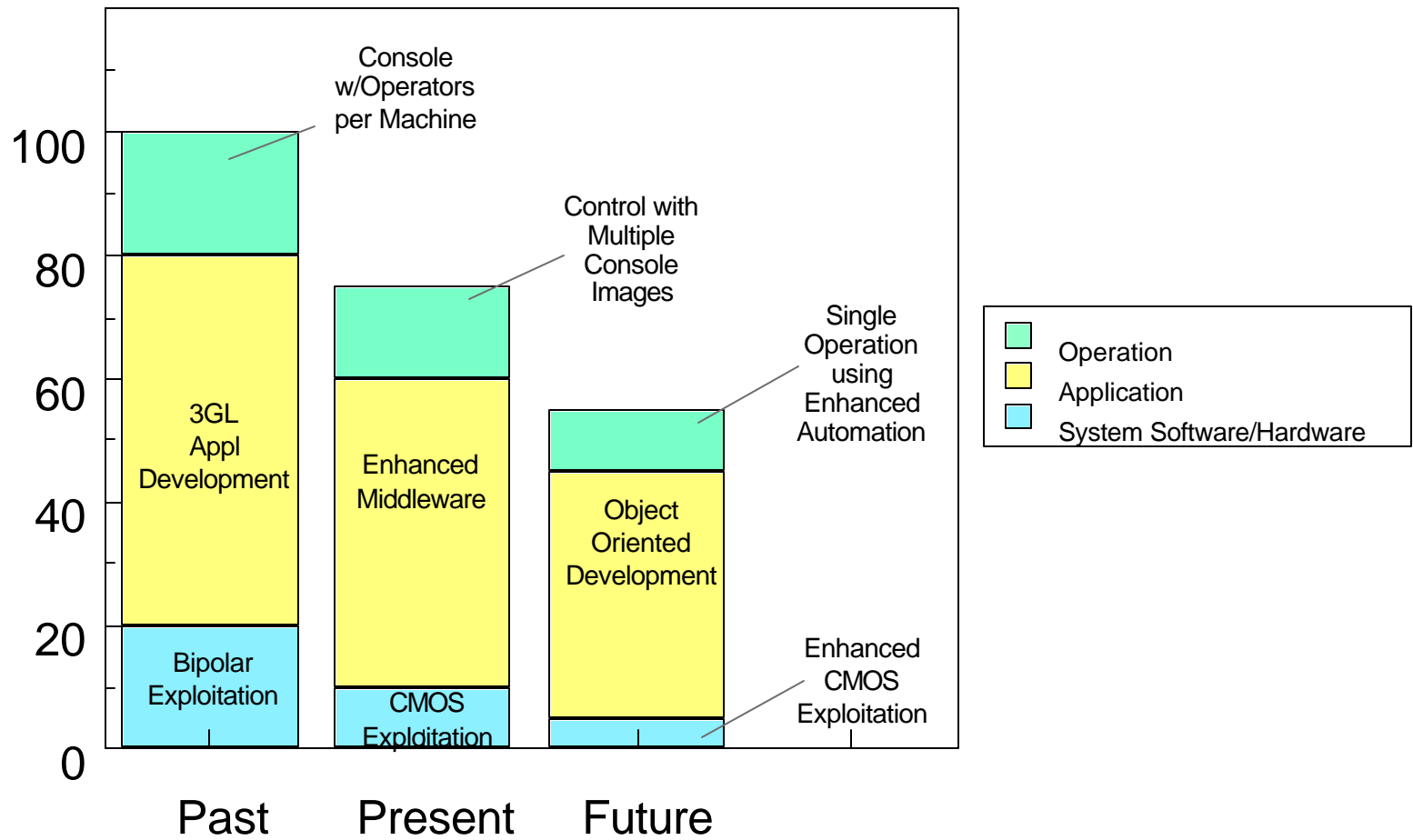
Availability Solutions in IMS





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Cost of Computing Evolution





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Total Cost of Ownership

Performance/Scalability

Availability

Education & Skills

Tools & Utilities

Systems Management





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IMS Information

- **IMS Information is available at <http://www.ibm.com/ims>**
- **IMS Redbooks available at <http://www.redbook.ibm.com>**
 - SG24-6123-00 IMS Version 7 and Java Application Programming
- **IMS Education available at <http://ww.ibm.com/services/learning/us>**
- **IMS Consulting Services for migration and skills transfer, and Customized Offerings available at dmservices@us.ibm.com**





IMS Today is Ideal for e-Business

Performance/Capacity

- ✓ Handling unpredictable volumes

Availability

- ✓ Continuous up time for applications

Systems Management

- ✓ High levels of security
- ✓ End-to-end transaction integrity
- ✓ Real time data currency

Connectivity

- ✓ Web
- ✓ Java
- ✓ Linux

New Application Development

- ✓ Java
- ✓ XML

e-business with IMS extends the investment





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IMS Runs the World...



■ Most Corporate Data is Managed by IMS

- Over 95% of Fortune 1000 Companies use IMS
- IMS Manages over 15 Billion GBs of Production Data
- \$2 Trillion/day transferred thru IMS by one customer

■ Over 50 Billion Transactions a Day run through IMS

- IMS Serves Close to 200 Million Users a Day
- Over 79 Million IMS Trans/Day Handled by One Customer on a Single Production Sysplex, 30 Million Trans/Day on a single CEC
- 120M IMS Trans/day, 7M per hour handled by one customer
- 4000 Trans/sec (250 Million/day) across TCP/IP to a single IMS
- 11,200 Trans/sec (nearly 1 Billion/day) with IMS Data/Queued sharing on a 2-CEC Sysplex
- Over 3000 days without an outage at one large customer

■ In Top Ten Largest Revenue Producing "Software Company"

■ Gartner Group Vendor Catalog entry

"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."





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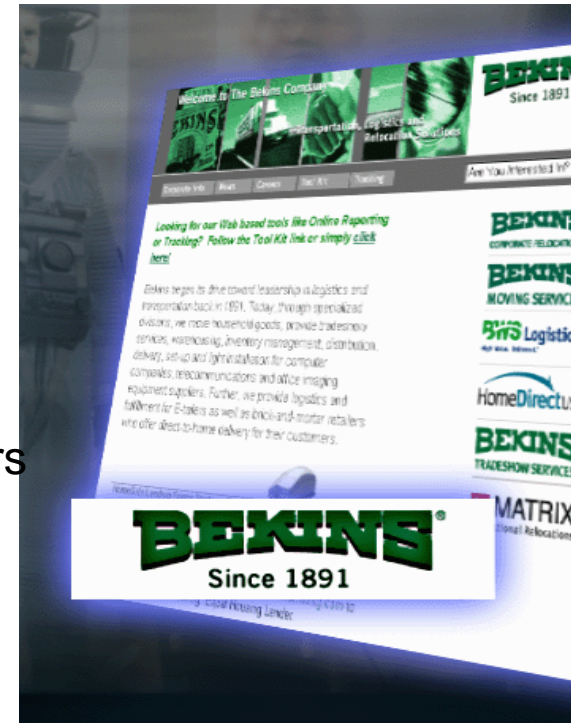
The Bekins Company

Challenge: Quickly develop new ways to provide services to customers and authorized agents

- **Solution:** Publish parts of Web-based shipping and tracking system as web services and integrate the services with existing workflow
 - ▶ Create private e-marketplace to broker shipping orders to authorized agents
 - ▶ Offer customers automated access to available capacity

Benefit: "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."

-- Randall Mowen, Director of Data Management & e-business Architecture



Caja Madrid

Developing a new banking application for deployment nationwide across 1600 bank branches

Challenge Build the new insurance and customer relationship management systems, deploy them on the branch network for over 9000 users

Solution VisualAge Pacbase and VisualAge for Java in conjunction with IMS and MQSeries

Benefits Investment protection
Smooth professional evolution of development staff



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PMU - French Horse Racing

■ PRIX D'AMERIQUE 2000

- ▶ This 79th edition has seen the victory of General du Pommeau driven by Jules Lepennetier at a record speed of 1'12"6.
- ▶ This 79th edition has seen the victory of the IMS Betting Application which reached 1100 transaction per second during half an hour!

■ IMS Betting Application Design

- ▶ 2 IMS subsystems without data sharing
 - designed for 1400 trans/sec
- ▶ Using IMS Fast Path TM
 - Expedited Message Handler
- ▶ Using IMS Fast Path DB
 - 3 VSO DEDBs with SDEPs



BETTING
Where to bet
How to bet

INFO
Forthcoming
race meetings
Programme
Results

DISCOVER
A day at the races
Live racing
The horse
French horseracing
institutions





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Arizona DMV

Arizona Department of Transportation, Motor Vehicle Division



**"Lose
Some
Wait"**

Challenge: Make vehicle registration fast and efficient for the public and the DMV.

Solution: Joint project with IBM Global Services

Benefits: Online vehicle registration without lines or waiting. IBM Global Services web front - end feeds into DMV's existing IMS.





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Blue Cross/Blue Shield



Challenge: Increase customer service and accelerate business by extending mission-critical IMS transactions to independent agents and customers over the Internet.

Solution: Deliver membership and claims information directly to Preferred Marketing representatives.

Benefits: Reduced time-to-market from 6 months to 1.5 days, required no changes to IMS applications, scales to meet future business requirements, economical server-based licensing, instant realization of ROI.





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Boeing Commercial Airplane Group

"The name of the game is just-in-time inventory, not just in case" ..Darce Lamb, Boeing VP



***Build Loyalty
Through
Customer
Service***

- Challenge:** Provide company's 500 customers means to locate, order and track shipment of parts
- Solution:** Internet access to Boeing IMS & DB2 mainframe data & hot links to United Parcel Service (UPS)
- Benefits:** Reduced costs to Boeing and customers, improved customer satisfaction





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SIS-West/Swest



Providing 24-hour Availability

Problem: 24-hour Home Banking required redesign into 24-hour database update with minor or no change to existing applications

Solution: New design of IMS Fast Path Data Entry Databases

Benefits: Legacy applications needed little or no change, to allow:

- Consistent reporting from on-line Databases
- Reporting on any historical information for the given time period
- Vertical view to the data (changes over time)
- 24 hour update of Databases





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Canadian National Railway

Providing Business Intelligence

Problem:

- Improve shipment scheduling

Solution:

- S/390
- Workload Manager

Benefits:

- Up-to-the minute changes
- Queries handled within seconds





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Volvo Group

*Volvo Group ... driven by imagination
and Internet access to IMS data*

VOLVO



**Connect
Extended
Teams**

Challenge: Provide secure and easy access to technical drawings, technical data and financial information

Solution:

Benefits: Internet / intranet access to existing IMS data

Maximize value of corporate data, maximize value of existing skills base and maximize value of existing S/390 investment to provide competitive advantage

