Optim™

Information Infrastructure Foundations:
Managing Data Growth

Dieting is Not Just for People,
It's for Databases Too!

Roger TS Lim

Enterprise Data Management, IBM ASEAN

limtsr@sg.ibm.com

IBM Information Infrastructure
Innovative, Integrated, Available Today

Manage information more effectively and *mitigate information risks* with a *dynamic infrastructure* that efficiently and securely stores, protects and optimizes access to information

Protect, manage and *gain insight* from your information with IBM's leading-edge storage and data management products, services and integrated solutions; supported by world-class expertise and proven experience

Information Compliance	Information Availability	Information Retention	Information Security
Mitigate information risks	*Deliver continuous access to trusted information*	*Support information retention policies*	*Securely share information*

Agenda

- **Companies' Data Explosion**

- **Dieting - people to databases/Impact**

- **Solutions To Data Growth**

  – Common approaches to managing data growth

  – Enterprise data management alternatives

  – Capabilities of a comprehensive solution

- **IBM Optim™**

- **Client successes**

- **Q/A**

The Data Growth Phenomenon

## Scenario - Growth is great … or is it?

- **Increase in Revenue**

- **Sales Book is full**

- **New branches added every month**

But then reality sets in …

- **Additional disk storage capacity purchased 3 months ago is full AGAIN**

- **CRM data grew by 65% last year**

- **Hold times are up 50%**

- **Call center reps complain that it takes too long to resolve customer inquiries**

Your Data is growing and cannot be stopped!

- **Between 2006 and 2010, the information added from 161 exabytes to 988 exabytes. (6X) ***
  - 1 exabyte = 1,000 PB or 1,000,000 TB or 1,000,000,000 GB
- **In 2007, the amount of information created > storage capacity available ***

The Digital Universe
Information Versus Available Storage
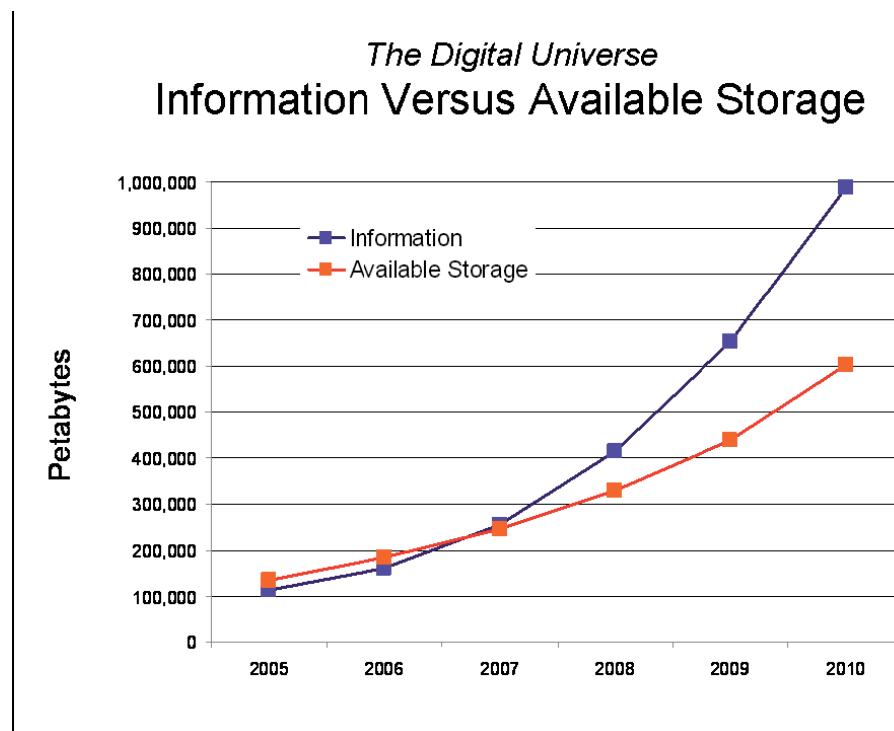
* Source: IDC 2007

The Data Explosion?

- **Mergers & acquisitions**

- **Organic business growth**
  - eCommerce
  - ERP/CRM
- **Records retention**
  - HIPAA
  - SOX
- **Data multiplier effect**

 # According to industry analysts, annual compound growth rates for databases will exceed 125%

Structured Data Growth Research

FIGURE 4: Projected Growth in Storage Needs (Changes over the next 12 months)

	Structured(1)	Unstructured(2)
Increase by more than 100%	8%	5%
Increase by 50-100%	12%	12%
Increase by 25-50%	26%	17%
Increase by 10-25%	28%	20%
Increase by 5-10%	13%	10%
Increase by 1-5%	5%	7%
Stay the same	3%	7%
Decrease	0.3%	0.5%
Don't know/unsure	3%	19%

(1) Traditional relational database files   (2) Email, images, video, other unstructured data

According to a survey recently conducted by the Independent Oracle Users Group (IOUG):

Structured Data Growth Research

- **Structured Data need for storage > unstructured data**

- **46% of participants said: to increase storage capacity by at least 25% over the next 12 months**

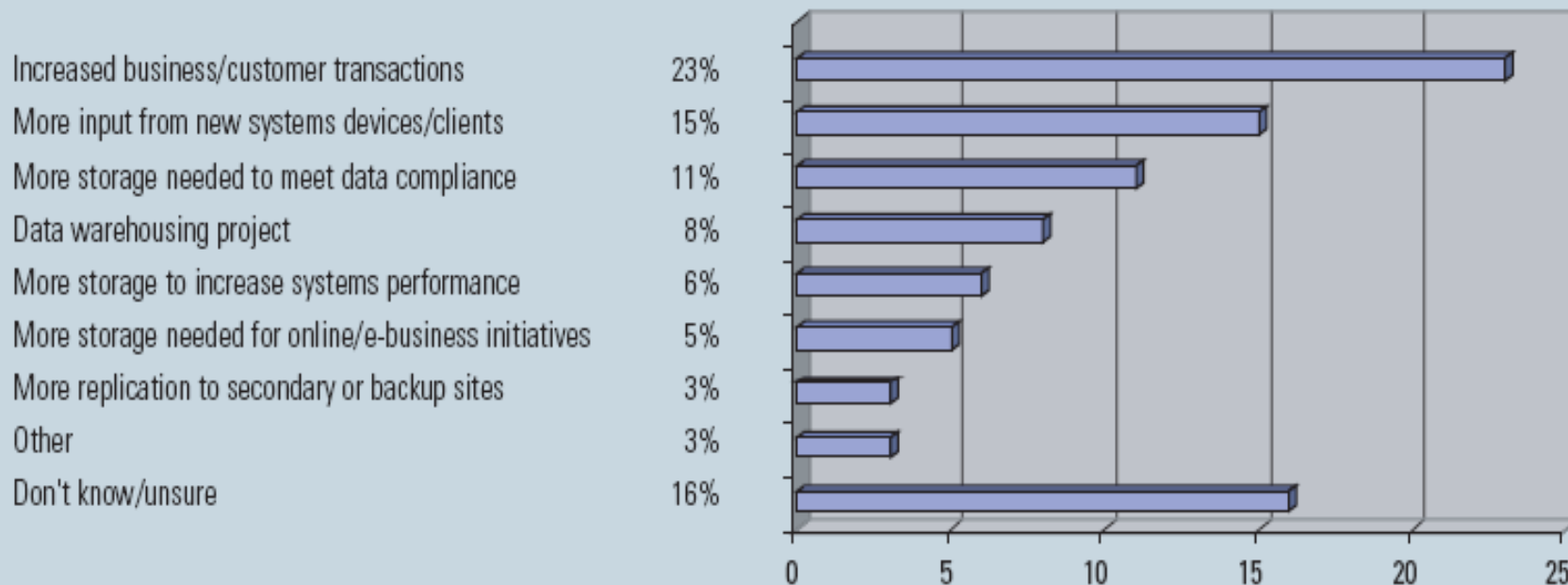- **8% of participants said: to increase storage capacity by 100% over the next 12 months!!**

According to a survey recently conducted by the Independent Oracle Users Group (IOUG):

Why Data Growth?

- **Banks – Customer Transactions, Service Calls, AML, Basel II**

- **Telcos – CDRs, CRM**

- **Governments – Constituents Case Management**

- **FMCG/Durables- Customer, Logistics, Procurement Transactions**

Why Data Growth?

**FIGURE 6: What's Driving Demand for Increased Storage?**

Increased business/customer transactions	23%
More input from new systems devices/clients	15%
More storage needed to meet data compliance	11%
Data warehousing project	8%
More storage to increase systems performance	6%
More storage needed for online/e-business initiatives	5%
More replication to secondary or backup sites	3%
Other	3%
Don't know/unsure	16%

According to a survey recently conducted by the Independent Oracle Users Group (IOUG):

Information Compliance

The Digital Universe

The Information "Compliance" Market

(Spending on Infrastructure to Support Regulatory Compliance Initiatives)

$ Millions Worldwide

Legend:
- Software
- Hardware
- Services
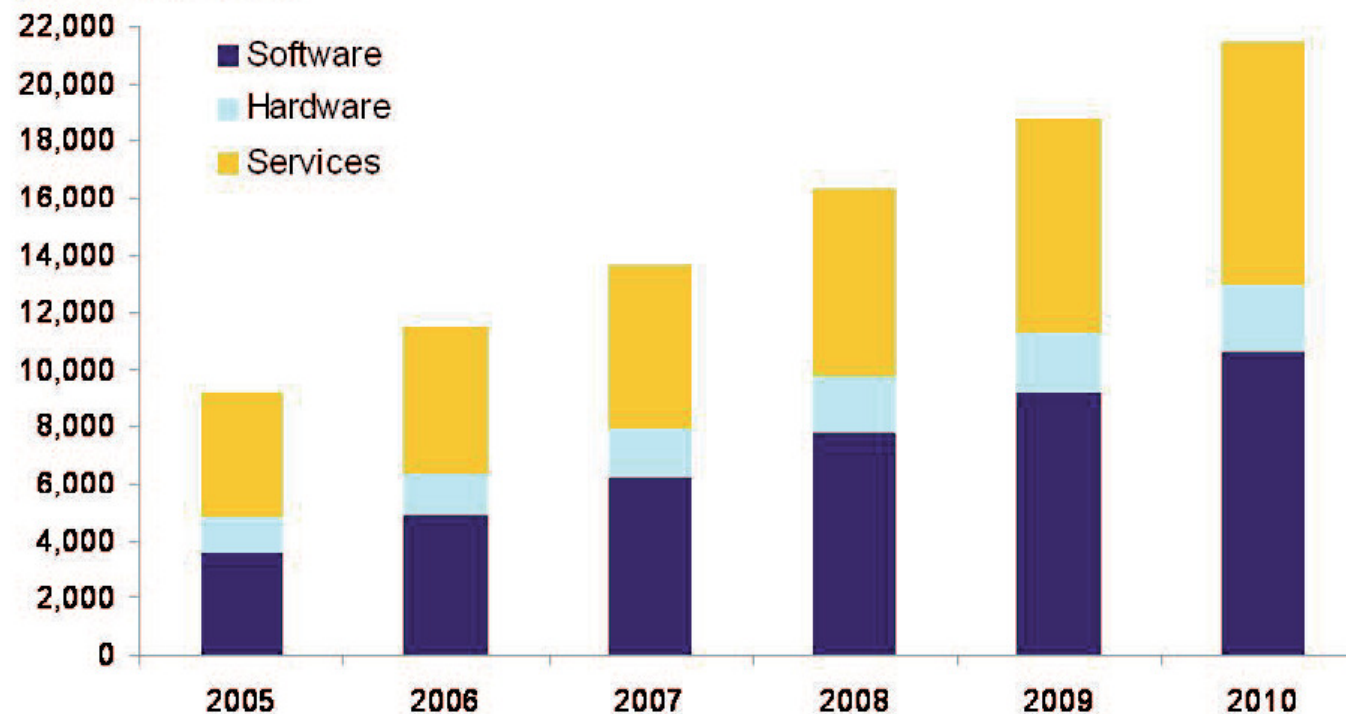
* Source: IDC 2007

Data Growth Impact

Impact Of Data Growth

- **Increased Costs**

- **Poor Data Governance**

Means Poor Leverage of Data as an Enterprise Asset and Issues

……IT Complexity

……Compliance

……Business Intelligence

……Alignment of IT and Business

Impact Of Data Growth - Banking

- **Compliance with Regulations like Basel II, AML**

- **Risk Portfolio Management**

- **Fraud Patterns Detection/Management**

Impact Of Data Growth - Telco

- **Analysis of Customer Data like CDR**

- **Customer retention, Segmentation, Cross Sell/Up sell**
- **Planning of News Products and services**

…..ARPU. AMPU, CPGA reporting, monitoring and Analysis

……Customer Care

……Regulatory Compliance

……Payments/Revenue Leaks

# Growth for People and Databases – Similarities? Issues?

- **People:** Without proper dieting, people tend to perform more slowly.

- **Databases:** Without maintaining capacity controls on your database ==PERFORMANCE==

- **People:** Weight growth requires unnecessary new wardrobes.

- **Databases:** Database grow ==COSTS== necessary purchase of new storage.

- **People:** Weight growth can lead to Risks - Health

- **Databases:** Data Growth can lead to ==RISKS== covery and Compliance
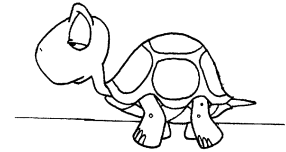
==C== ==P== ==R==

Growth for People and Databases – Similarities/Impact

- **People:** Without proper dieting, people tend to perform more slowly.

- **Database**: Without maintaining capacity controls on your database ==PERFORMANCE==

- **People:** Weight growth requires unnecessary new wardrobes.

- **Databases:** Database grow ==COSTS== necessary purchase of new storage.

- **People:** Weight growth can lead to Risks - Health

- **Databases:** Data Growth can lead to ==RISKS== covery and Compliance
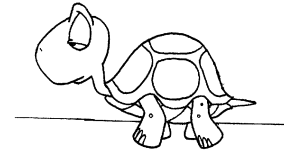
==**C P R**==

Observations: Data Multiplier Effect
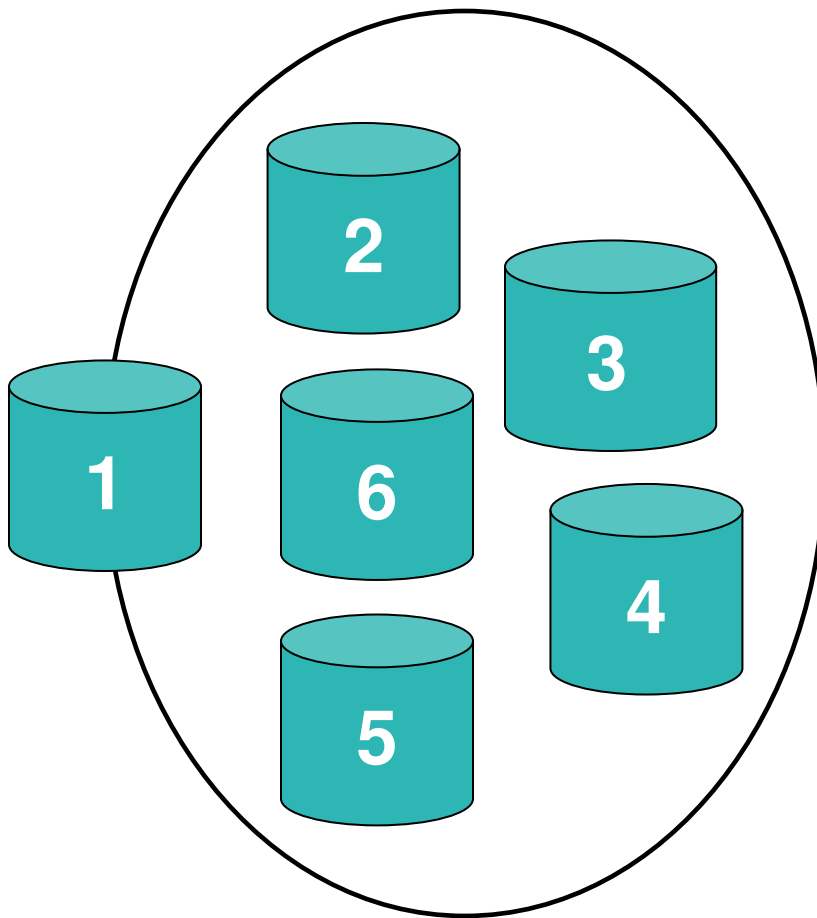
Production	200 GB
Backup	200
Disaster Recovery	200
Development	200
Test	200
Quality Control	200
Total Size	1200 GB

Observations: Storage Resources

FIGURE 8: Has Database Growth Ever Exceeded Available Storage Resources?

Don't know/unsure 5%

Yes, often 6%

Never 37%

Yes, occasionally 51%
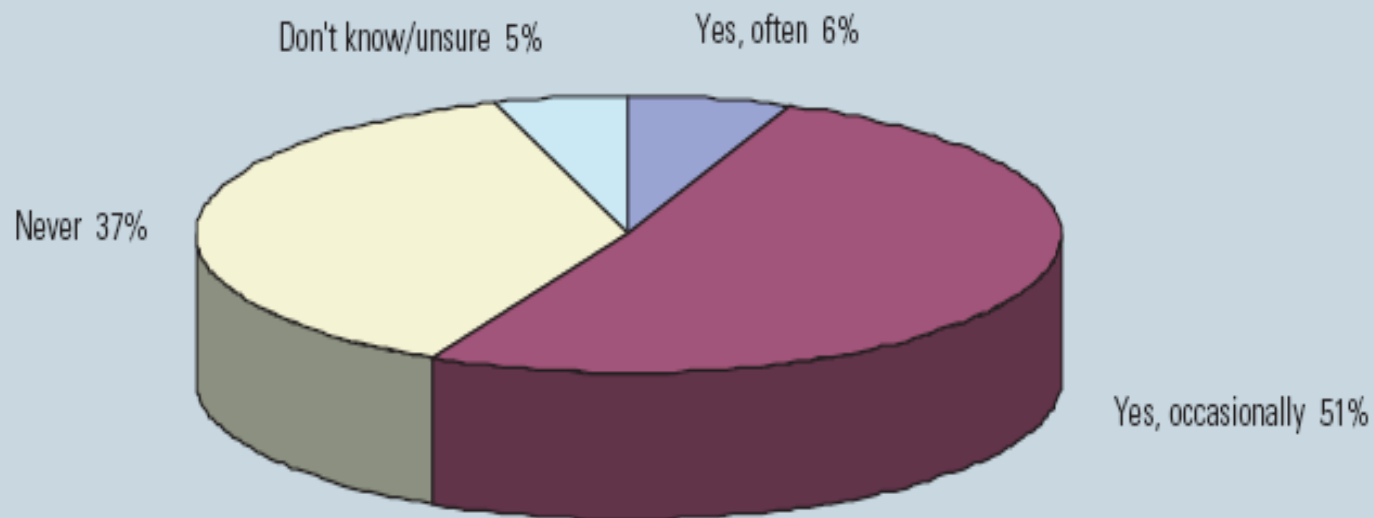
Observations: Database Performance and Availability

FIGURE 9: Have Storage Capacity Issues Impacted Database Performance?

Don't know/unsure 4%
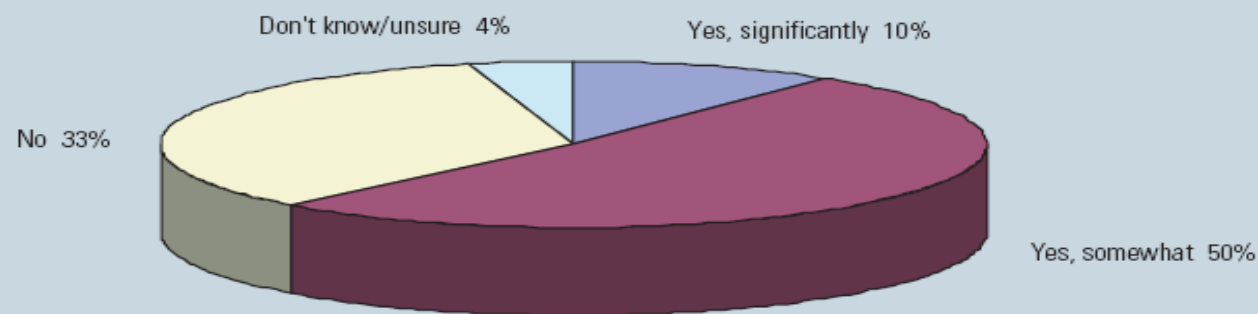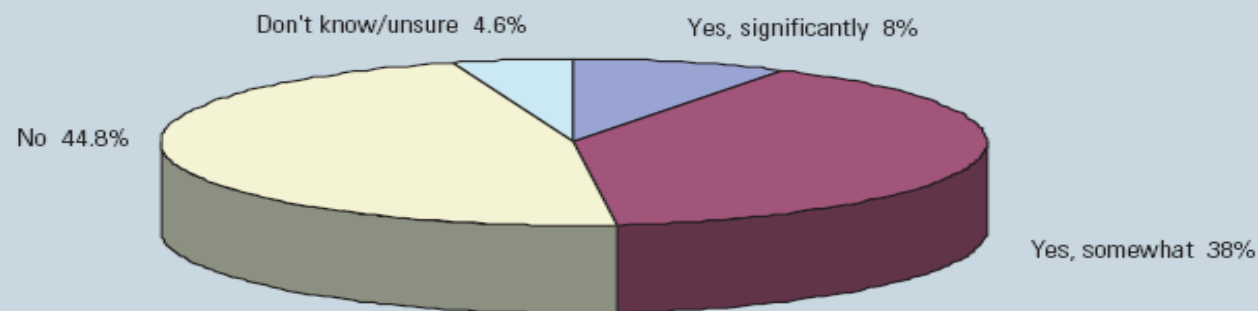
Yes, significantly 10%

No 33%

Yes, somewhat 50%

FIGURE 10: Have Storage Capacity Issues Impacted Database Availability?

Don't know/unsure 4.6%

Yes, significantly 8%

No 44.8%

Yes, somewhat 38%

Data Growth Solutions

Common Solutions to Data Growth

- **Back up the database**

  but …

  – *No Direct Access*

  – *Media Rot*

  – *Version Compatibility*

  RESULT: BUSINESS RISKS!!!

Common Solutions to Data Growth

- **Tune or partition the database**

- **Add capacity**
  - Processors, storage

- **Purge data**

Temporary Solution but …

  – *High Operational Costs*

  – *High Information Risks*

  – *No Data Visibility*

What is a Comprehensive Solution for Data Growth?

E Organize and retain business records generated from enterprise applications

- **Definition of D S ervice levels**
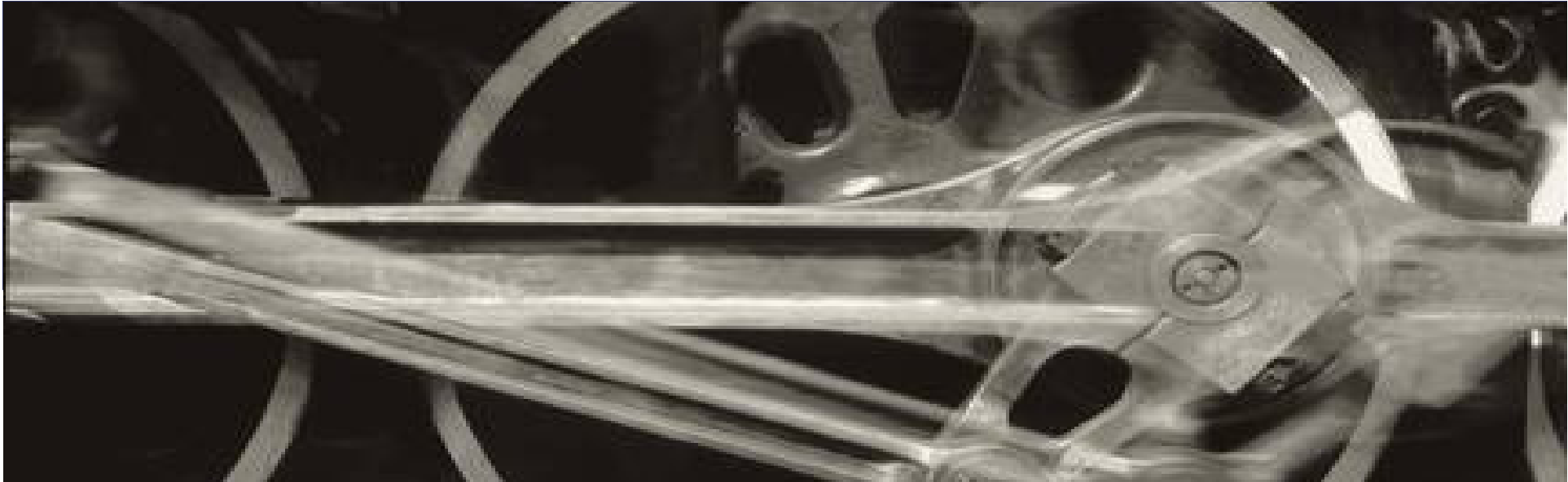
- **Secure and Cost-effective D S tore**

A ccess to information by decision makers, when and how they need it

- **Segment and manage data at the complete busin O bject level**

- **App P olicies to manage data at each point of its lifecycle**

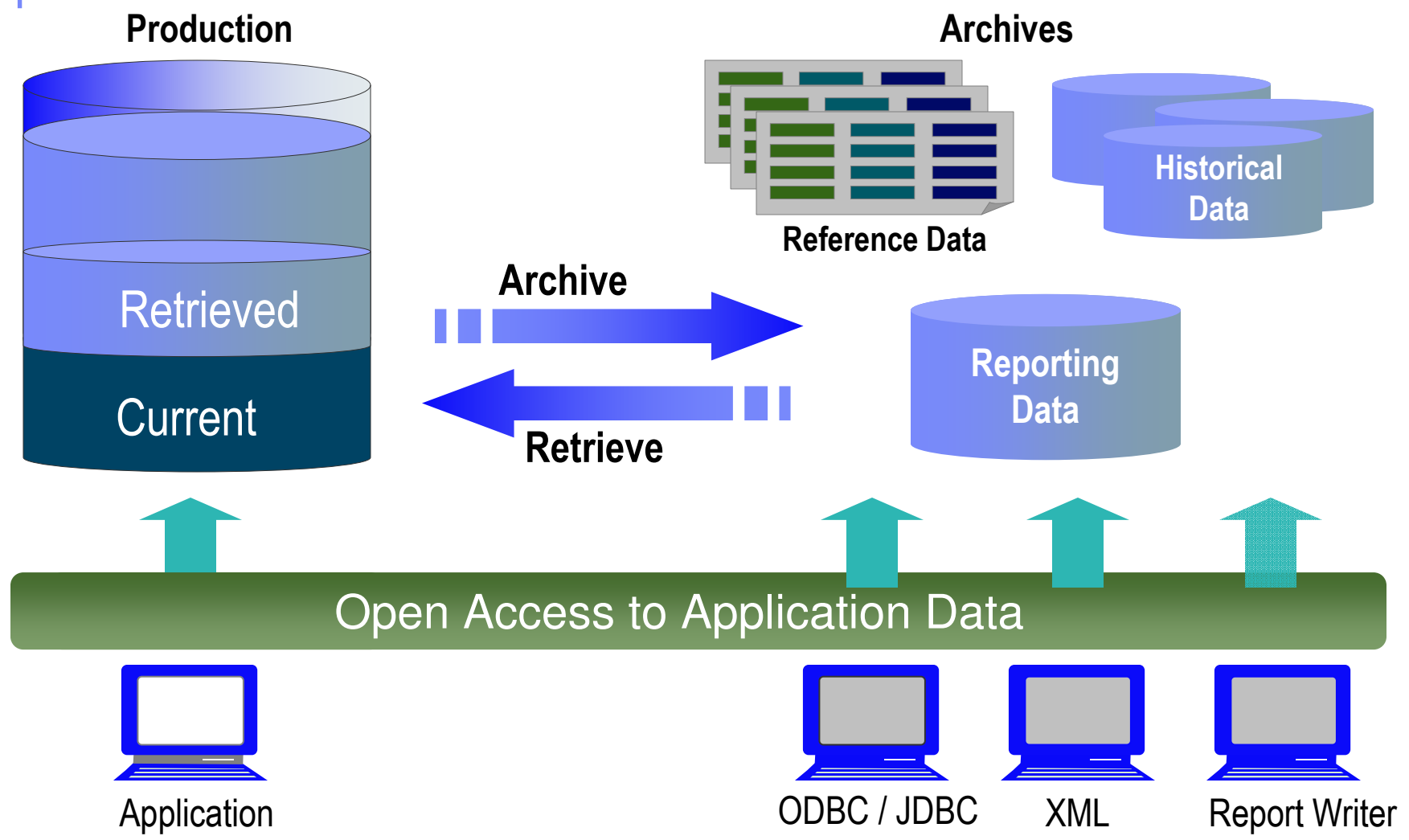**P A S S E O**

Optim, the Leader in Enterprise Data Management

IBM Optim Solutions: Policy-Driven Archiving

- **Manage data throughout the information lifecycle**

- **Apply business rules to archive and access data**

- **A single enterprise solution**

- **Optimize the business value of your IT infrastructure**

Optim: Universal Access

Production

Archives

Historical Data

Reference Data

Retrieved

Archive

Current

Retrieve

Reporting Data

Open Access to Application Data

Application
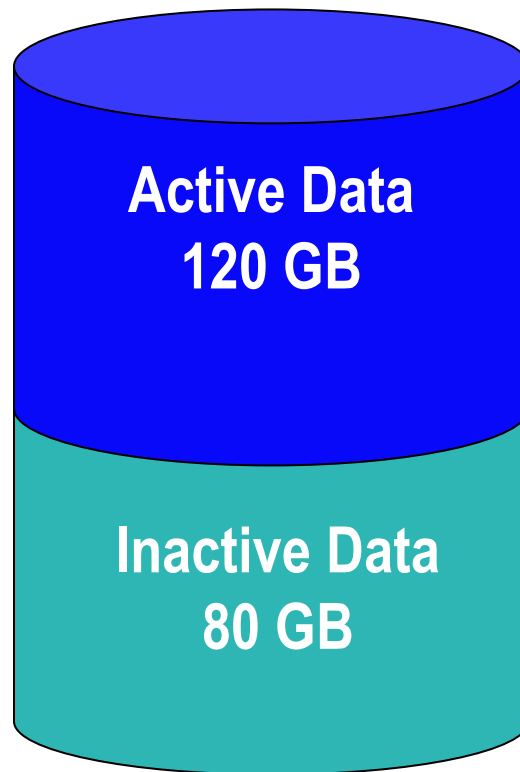
ODBC / JDBC

XML

Report Writer

Optim – Defining Data Service Levels

- **Segregate historical from current data**

- **Safely archive**
  - Retain convenient access

- **Convenient Access by service level**
  - Active data, reporting data and reference data

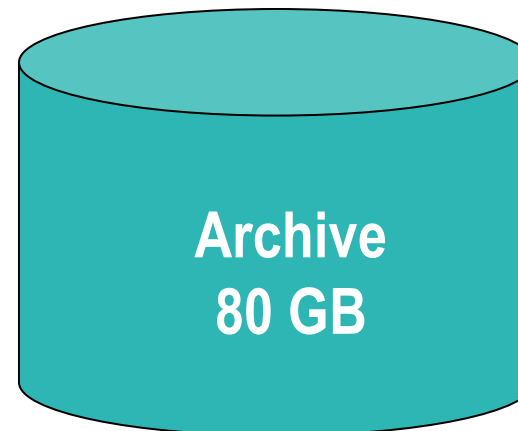- **Tiered storage strategies**

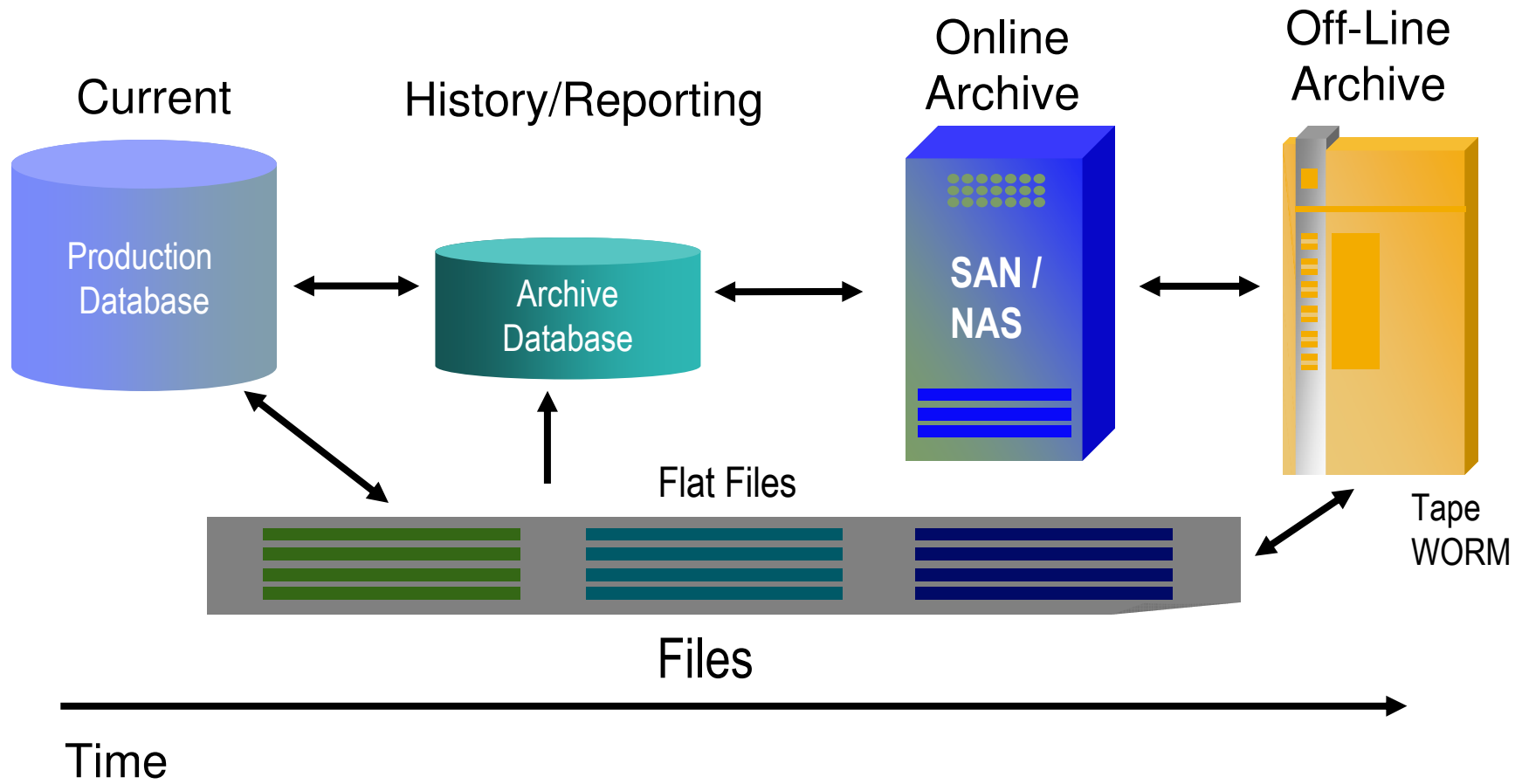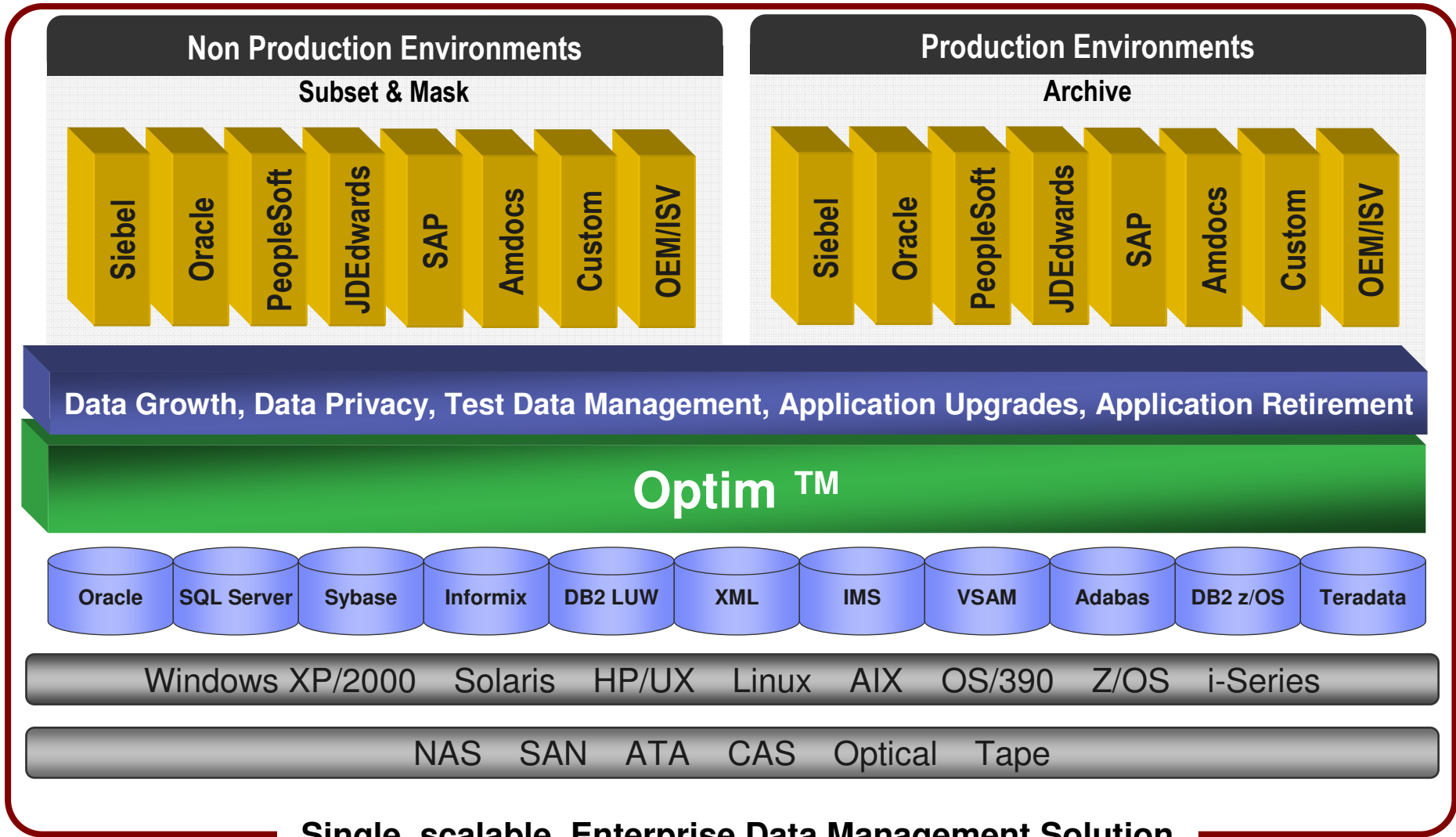# Optim – Cost Effective Data Growth

Reverse Multiplier

**Active Data
120 GB**

**Inactive Data
80 GB**

80 GB Archive
X 6 Environments

480 GB Reclaimed

**Archive
80 GB**

Data Store - Cost-Effective Tiered Storage

OPTIM at Enterprise Platform

Non Production Environments	Production Environments
Subset & Mask	**Archive**
Siebel · Oracle · PeopleSoft · JDEdwards · SAP · Amdocs · Custom · OEM/ISV	Siebel · Oracle · PeopleSoft · JDEdwards · SAP · Amdocs · Custom · OEM/ISV

Data Growth, Data Privacy, Test Data Management, Application Upgrades, Application Retirement

Optim ™

Oracle	SQL Server	Sybase	Informix	DB2 LUW	XML	IMS	VSAM	Adabas	DB2 z/OS	Teradata

Windows XP/2000   Solaris   HP/UX   Linux   AIX   OS/390   Z/OS   i-Series

NAS   SAN   ATA   CAS   Optical   Tape

Single, scalable, Enterprise Data Management Solution

Archiving a Complete Business Object

Ledgers
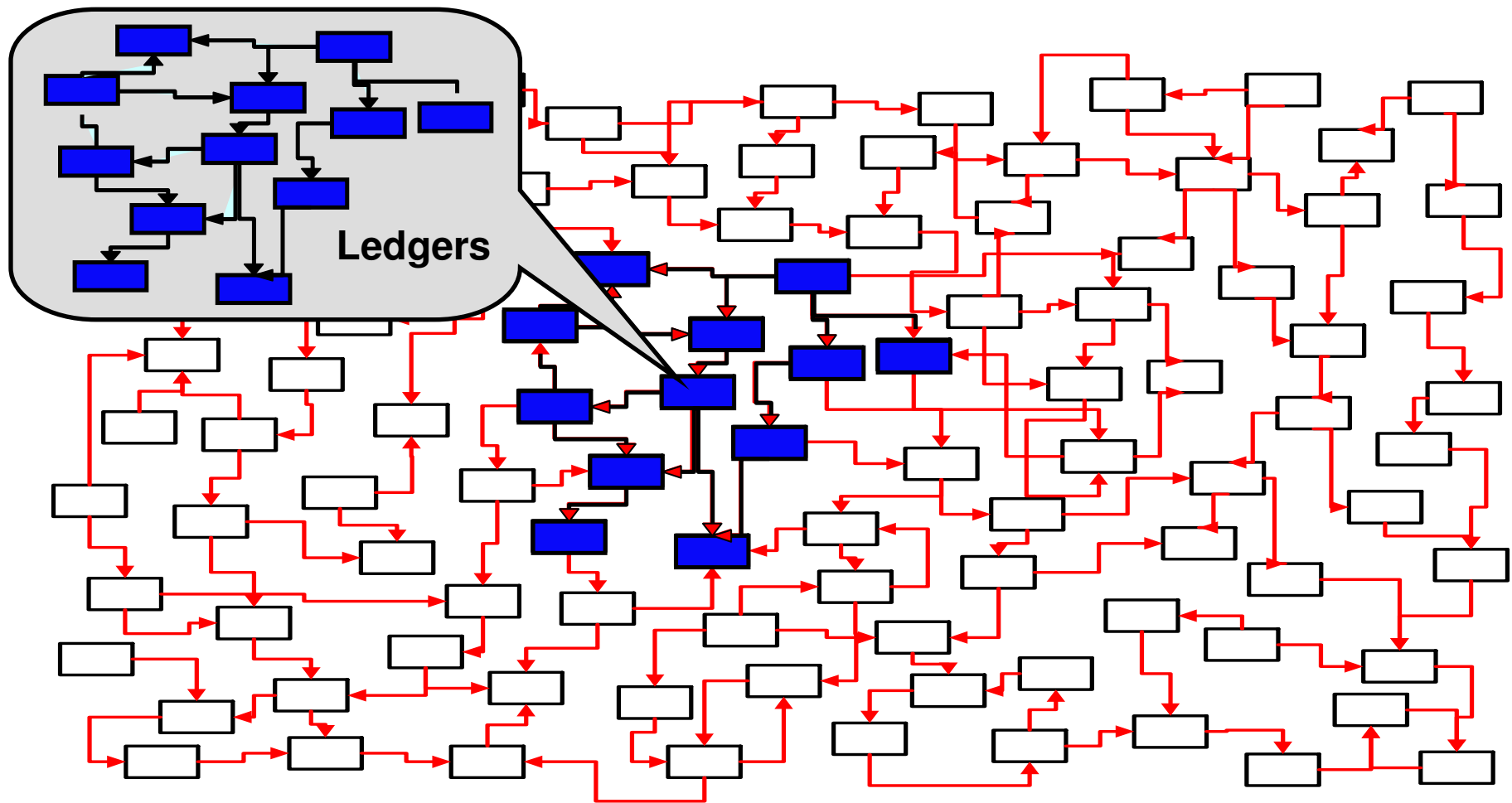
Success: Data Growth Management

- **Finlay Fine Jewelry, $900mm fine jewelry retailer**

- **55% data growth**
  - Slow response time for inventory replenishment; threatened sales during peak periods
  - DBA resources intensive tuning; increasing storage capacity

- **Optim Results**
  - 60% response time improvements
  - Increased "open for business" hours ensured inventory stocking levels, supported sales during holiday shopping season
  - Reclaimed 100 GB storage capacity at first pass; $1.8mm 5-year savings

Support that Scales the Enterprise

- **Custom & packaged applications**

- **ERP & CRM applications**
  - Oracle® E-Business Suite
  - PeopleSoft® Enterprise
  - JD Edwards® EnterpriseOne
  - Siebel®
  - Amdocs® CRM
  - SAP®

- **Databases: DB2, Oracle, Sybase, SQL Server, Informix, Adabas, VSAM, IMS, Teradata, XML**

- **Platforms: Windows, Unix, Linux, z/OS**

- **All storage environments**

Summary

- **The time to put your database on a diet is now**

- **Understand what data you have, why you have it, and make plans to do something with it.**

- **Look for a database archiving solution that works across your enterprise**

- **Optim solves data growth pains**

  – Archive historical records

  – Implement cost-effective tiered storage strategies

  – Improve performance and availability

  – Consistently achieve performance targets

  – Maintain ongoing access to audit-ready archived business objects