Managing Data Growth

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

Information Management software

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Information Management

Agenda

- **Understanding the data explosion**
- **Common approaches to managing data growth**
- **Enterprise data management alternatives**
- **Capabilities of a comprehensive solution**
- **IBM Optim Data Growth Solution**
- **Client successes**
- **Q/A**

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Growth for People and Databases - Similarities

- **People:** Without a proper diet and regular exercise routine, people tend to perform more slowly.
- **Databases:** Without maintaining capacity controls on your database, its processing slows down.

- **People:** Weight gain requires people to invest in a new wardrobe.
- **Databases:** Database growth requires organizations to purchase new storage.

- **People:** Gaining weight can lead to health risks.
- **Databases:** Increasing in size can leads to Discovery and Compliance risks.

What to do?

Data is growing and cannot be stopped!

- **Between 2006 and 2010, the information added to the digital universe will increase more than six-fold in size from 161 exabytes to 988 exabytes. ***
  - 1 exabyte = 1,000 PB or 1,000,000 TB or 1,000,000,000 GB
- **In 2007, the amount of information created will surpass, for the first time, the storage capacity available ***

The Digital Universe
Information Versus Available Storage

* Source: IDC 2007

2
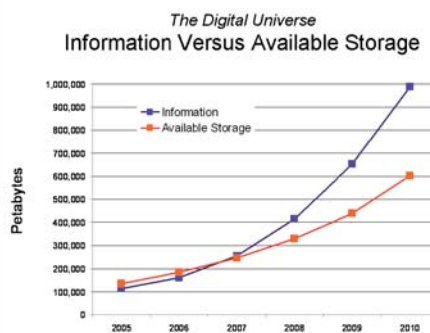
Growth is great … or is it?

- **Revenue jumped 25% last year**

- **Sales leads pipeline is full**

- **New call center opens next month**
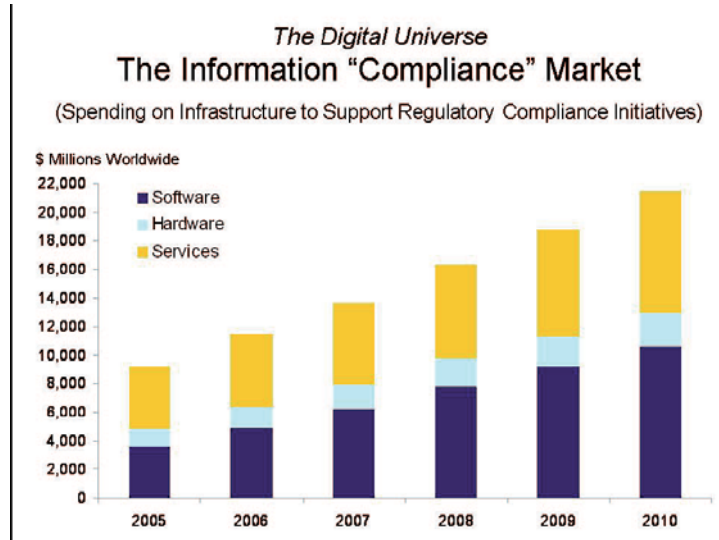
But then reality sets in …

- **The additional disk storage capacity that you purchased just 3 months ago is full AGAIN**

- **IT says 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**

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%**

Information Compliance

The Digital Universe
The Information "Compliance" Market
(Spending on Infrastructure to Support Regulatory Compliance Initiatives)

$ Millions Worldwide

Legend:
- Software
- Hardware
- Services

(Bar chart showing values for years 2005, 2006, 2007, 2008, 2009, 2010 with $ Millions Worldwide axis from 0 to 22,000)

* Source: IDC 2007

Structured Data Growth Research

- **Structured Data is driving the need for storage faster than the growth of unstructured data**

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

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

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

4

Structured Data Growth Research

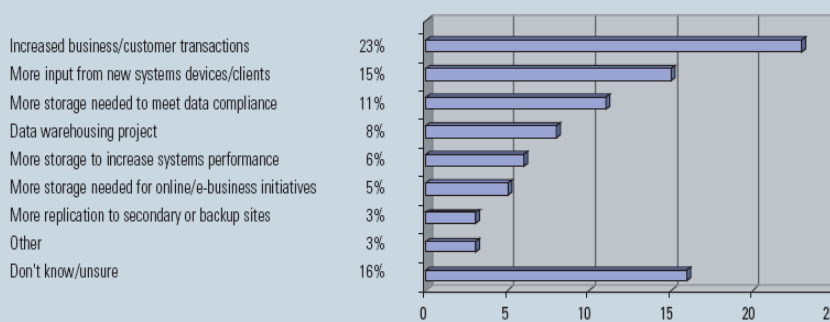| FIGURE 4: Projected Growth in Storage Needs (Changes over the next 12 months)		
	Structured(1)	Unstructured(2)
Increase by more than 100%	8%	5%
Increase by 50-100%	12%	12%
Increase by 25-50%	26%	17%
Increase by 10-25%	28%	20%
Increase by 5-10%	13%	10%
Increase by 1-5%	5%	7%
Stay the same	3%	7%
Decrease	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):

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What's Driving the Need?

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):

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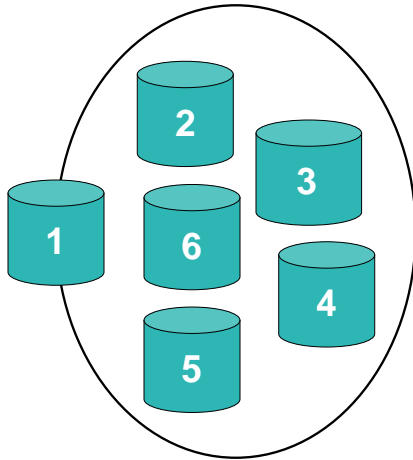
Production	200 GB
Backup	200
Disaster Recovery	200
Development	200
Test	200
Quality Control	200
Total Size	1200 GB

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%

6
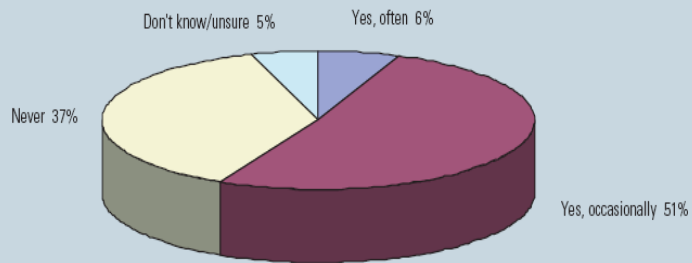
Database Performance and Availability

FIGURE 9: Have Storage Capacity Issues Impacted Database Performance?

Don't know/unsure 4%
Yes, significantly 10%
No 33%
Yes, somewhat 50%
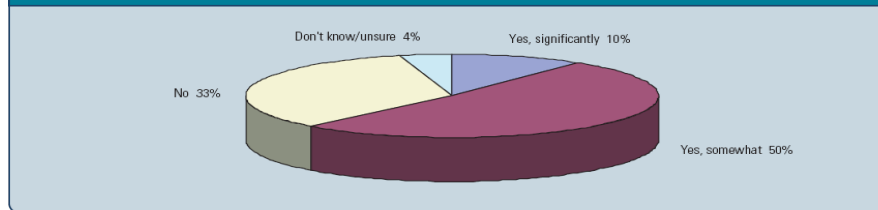
FIGURE 10: Have Storage Capacity Issues Impacted Database Availability?

Don't know/unsure 4.6%
Yes, significantly 8%
No 44.8%
Yes, somewhat 38%
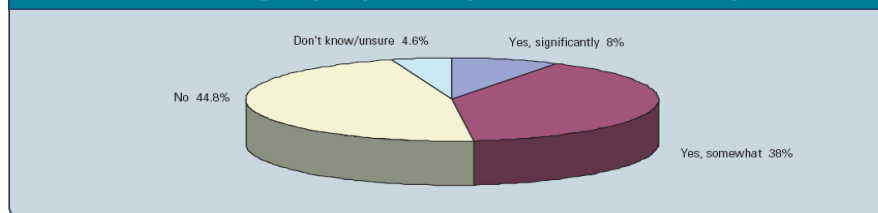
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Common Responses

- **Tune or partition the database**
- **Add capacity**
  - Processors, storage
- **Back up the database**
- **Purge data**
- **Alleviate symptoms temporarily, but …**
  - *Inflate costs*
 - *Does not address underlying data growth issues*

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7

Capabilities of a Comprehensive Solution

- **Organize and retain business records generated from enterprise applications**
- **Segment and manage data at the complete business object level**
- **Define and achieve desired service levels**
- **Apply policies to manage data at each point of its lifecycle**
- **Store data securely and cost-effectively**
- **Deliver information to decision makers, when and how they need it**

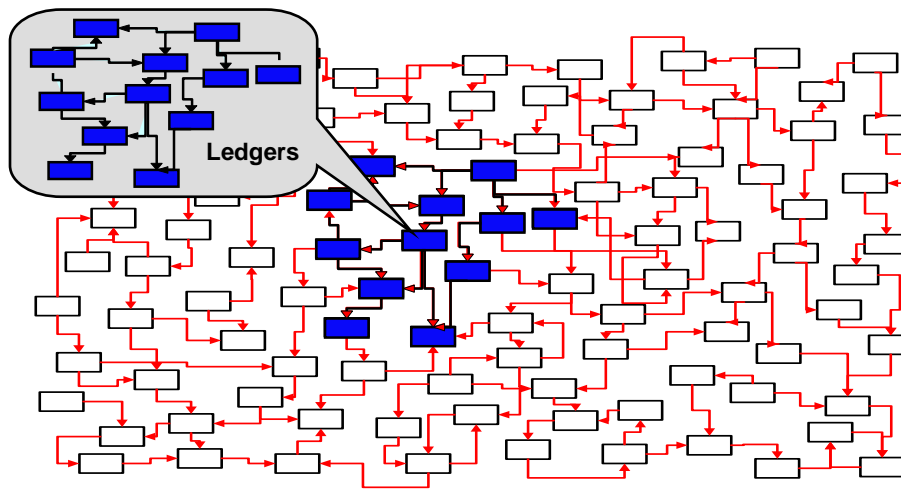## How do I start my Database Diet?
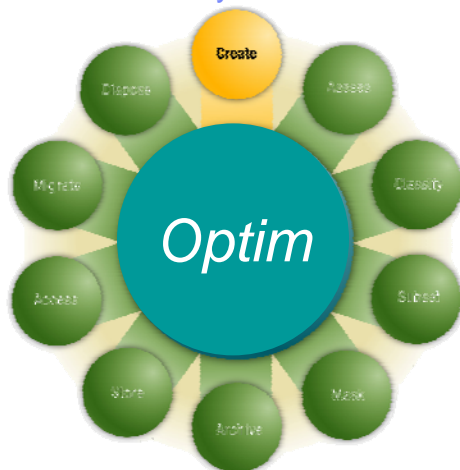
- **Assess applications and data**
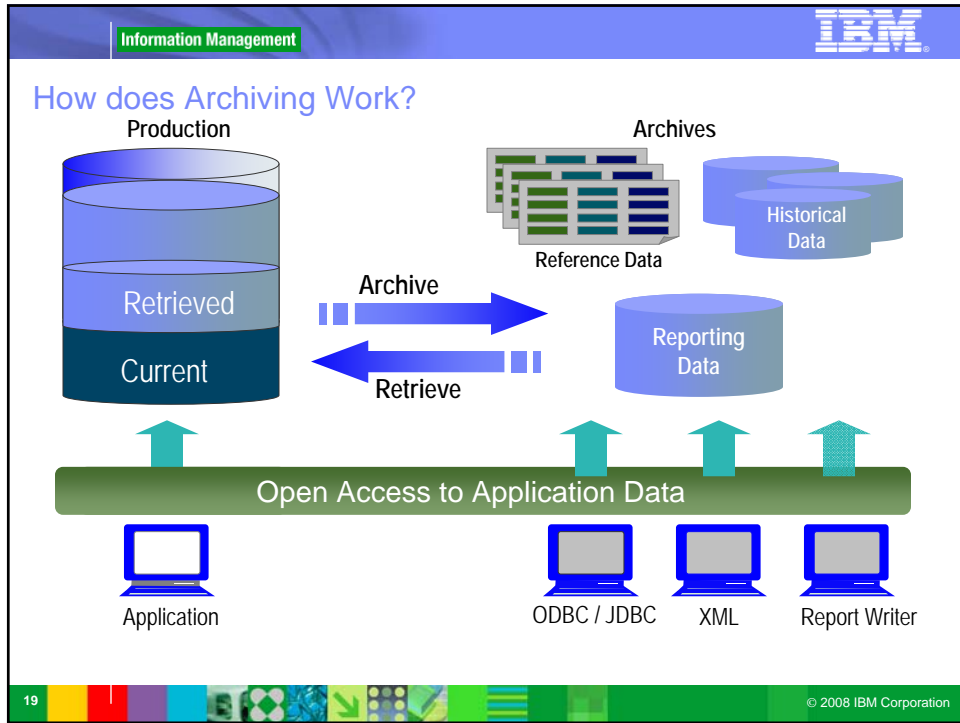- **Classify business objects**

Archive

- **Segregate historical information from current transactions and safely remove it to a secure archive**
- **Complete business object**
- **Access to data**
- **Apply right level of resources**
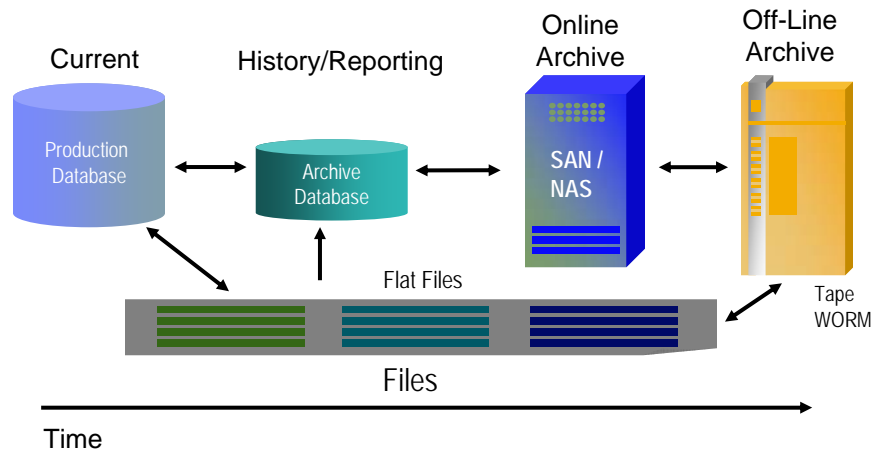
Archiving a Complete Business Object

Ledgers

9

How does Archiving Work?

Production

Retrieved

Current

Archive

Retrieve

Archives

Reference Data

Historical Data

Reporting Data

Open Access to Application Data

Application

ODBC / JDBC

XML
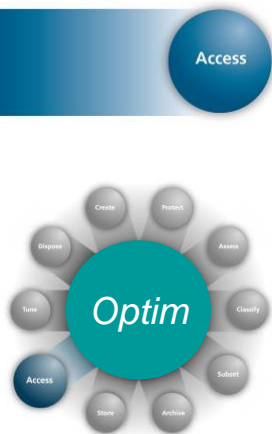
Report Writer

Store

Store

Optim

- **Works with multiple storage devices – storage agnostic**
- **Put ILM into action**
- **Store archived transactions in an immutable format**
  - Audit-ready "snapshot in time"
  - Mitigate the risks of regulatory exposure

10

Cost-Effective Tiered Storage

Online Archive

Off-Line Archive

Current

History/Reporting

Production Database

Archive Database

SAN / NAS

Tape WORM

Flat Files

Files

Time

Access

Access

Create · Protect
Dispose · Assess
Tune · Classify
Access · Subset
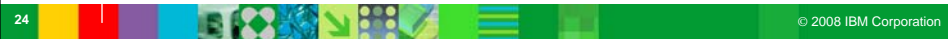Store · Archive

Optim

- **Enable decision makers to access the right data at the right time**

- **Browse, query, search and report on archived historical transactions**

- **Restore to an application environment when additional business processing is required**

11

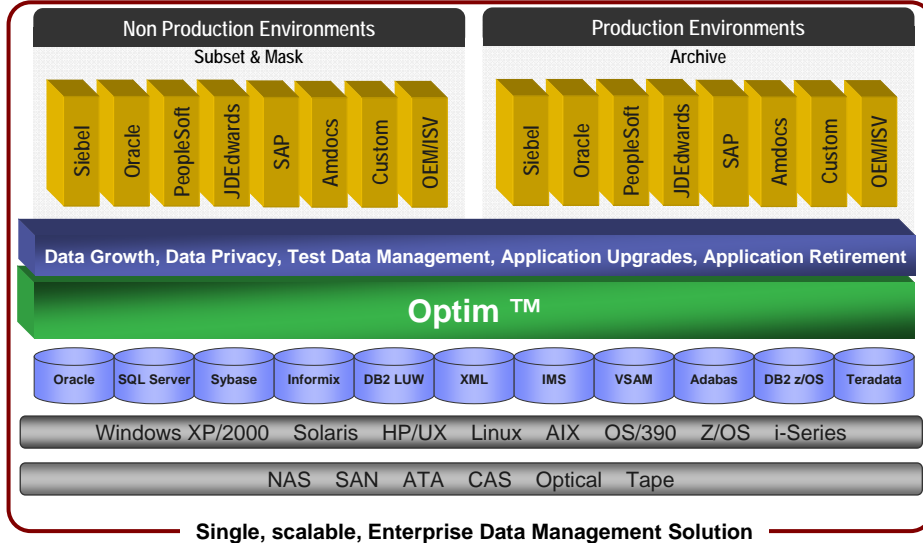**Optim, the Leader in Enterprise Data Management**

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IBM Optim Solutions

- **Manage enterprise application data throughout the information lifecycle**

- **Apply business rules to subset, archive, store and access enterprise application data**

- **Leverage a single solution to support and scale across applications, databases and platforms**

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

How OPTIM architecture can support the Enterprise?

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

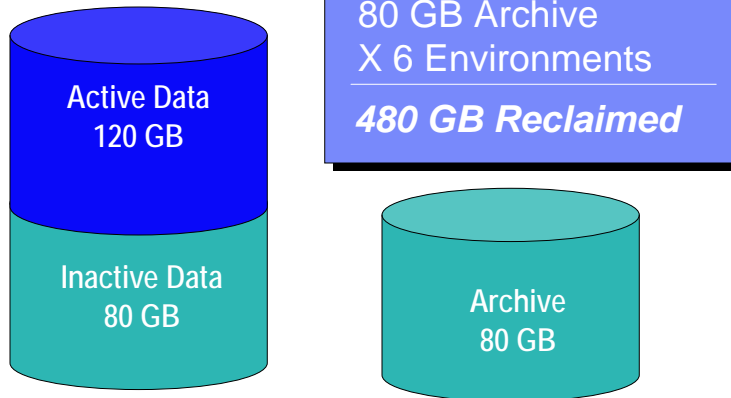**Single, scalable, Enterprise Data Management Solution**

Optim Controls Data Growth

- **Segregate historical data from current activity**
- **Safely remove it to a secure archive**
  - Retain convenient access
- **Set and achieve desired service level for each category of data**
  - Active data, reporting data and reference data
- **Implement cost-effective tiered storage strategies**

13

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Optim Controls Data Growth

Reverse Multiplier

Active Data
120 GB

Inactive Data
80 GB

80 GB Archive
X 6 Environments

480 GB Reclaimed

Archive
80 GB

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Data Management Improves Performance, Cuts Cost

TD Bank Financial Group (Canada)

TD Bank Financial Group

Client Profile: Banking / Finance, C$14.3 Billion Annually

Success: Data Growth

Reduced batch processing runtime for Payroll by 25%. Realized a cost savings of 50% and reduction in runtime for database utilities. Reduced database storage needs by 30% (from approximately 325 GB to 225 GB).

Corning

CORNING

Client Profile: Manufacturing, $3.7 Billion Annually

Success: Data Growth & Compliance

Improved SCM performance by 60% by archiving high volume tables, reducing overnight processing time from 6.5 hours to 2.2 hours, all while addressing new industry and regulatory standards for HR data retention.

Bausch & Lomb

Bausch.Lomb

Client Profile: Healthcare Retail, $32 Billion Annually

Success: Data Growth & Portfolio Optimization

Improved performance by 50% by archiving historical data. Reported estimated savings of $1.5 million in capacity costs, plus additional savings in hardware & software costs, by archiving to sunset several applications worldwide.

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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**

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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

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15