Information Management Along the Lifecycle of Data and Application Systems: Challenges and Solution Approaches

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Abstract: A tried and tested method for improving the quality of information in the business system and control data volume growth, is moving selected, eligible data from the application system to less expensive long-term storage. To ensure that the eligibility of the data is actively taken into account, methods such as archivability checks must be part of this process. Descriptive policies play into the strategy, to allow for the compliant retention of the moved data along its entire life cycle. A further challenge is controlled destruction to complete the life cycle of data according to the law. At the same time, the fact that often the life span of application systems is shorter than that of the data itself, needs to be considered.
In this presentation we show how long-standing archiving techniques for business data are challenged anew by the growing complexity of today's legal and business requirements, causing an evolution to information lifecycle management.

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Agenda

1. **Current Demands on Information Management Given the Lifecycle of Information**
2. Data Archiving: Managing Data Volumes and Improving the Quality of Information
3. Retention Management: Dealing with Legal Compliance Aspects in Information Management
4. System Decommissioning: Taking the System Life Cycle Into Account
5. Summary: From Data Archiving to Information Lifecycle Management

Information Management Demands Customers are Facing Today

Increasing Complexity	
External Drivers	**Internal Drivers**
– Legal Retention Requirements – Product liability – Lawsuits (Legal holds, e-Discovery) – Tax Reporting, Audits – New technologies	– High costs for hardware and administration – Policies and service level agreements – Risk of litigation – Company-specific processes – System landscape harmonization/centralization – Mergers and acquisitions

Reduced Data Volumes

Legal Compliance

Reduced Risk

Reduced TCO

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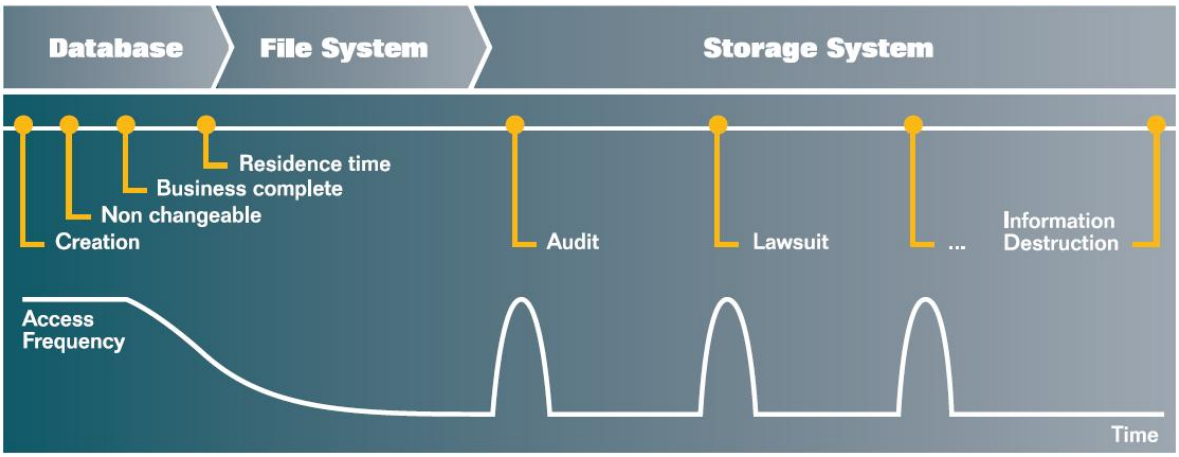
The Lifecycle of Data in a Business Application System



Data Analysis and Classification to Facilitate Archiving and Retention of Data

Bottom Up Approach

- Based on the complete content (filled tables) of the system
- Relevant for data extraction

Top Down Approach

- Based on the **legal and reporting requirements** and those tables that are required for these reports
- Relevant for reporting

General strategy: Combination of both approaches

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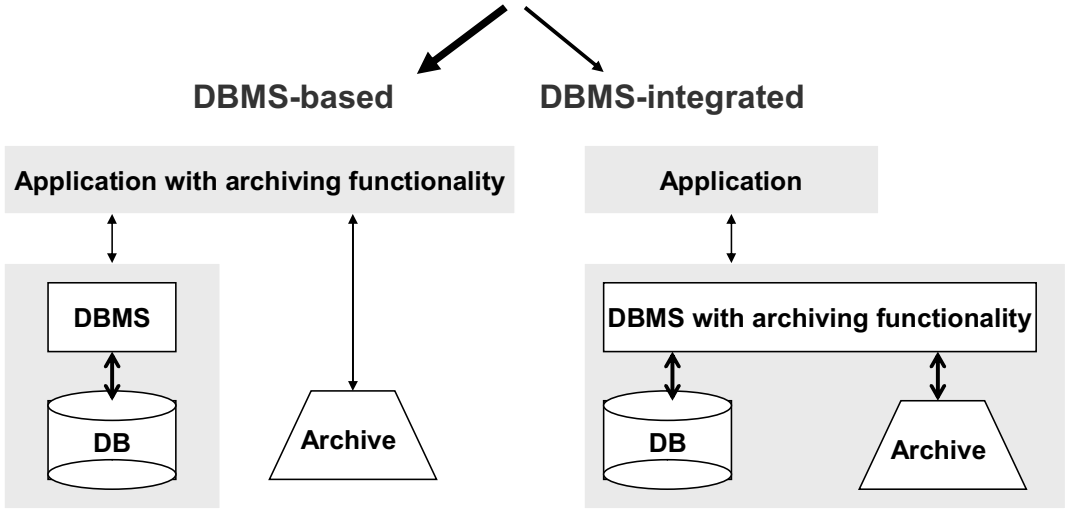
Application-Oriented Database Archiving

Architectural classification by provider of archiving service



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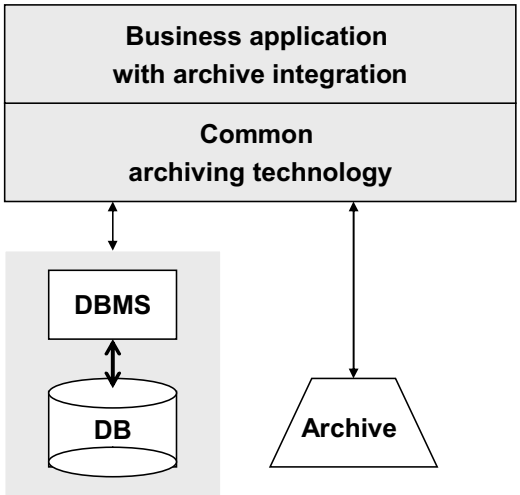
Advantages of the DBMS-Based Approach



DBMS-independence

- Availability: DBMS-integrated approach only in DB2 RAM (restrictions!)
- Even "Standard" SQL needs to be unified

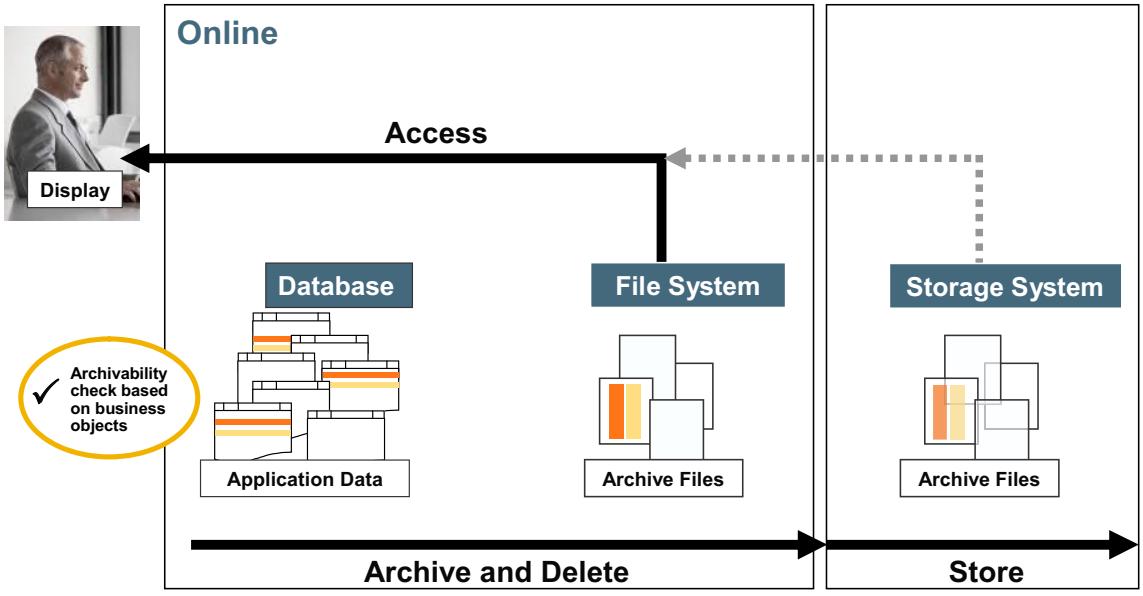
Archive storage integration

- Needs to be vendor-independent as well: Dedicated Content Mgmt or ILM-aware storage systems, connected via certified interfaces; physical location matters!

Application "awareness" of archiving

- DB schema hardly contains application semantics (almost no integrity constraints on DB level, business context for archive access, ...)

Data Archiving Process



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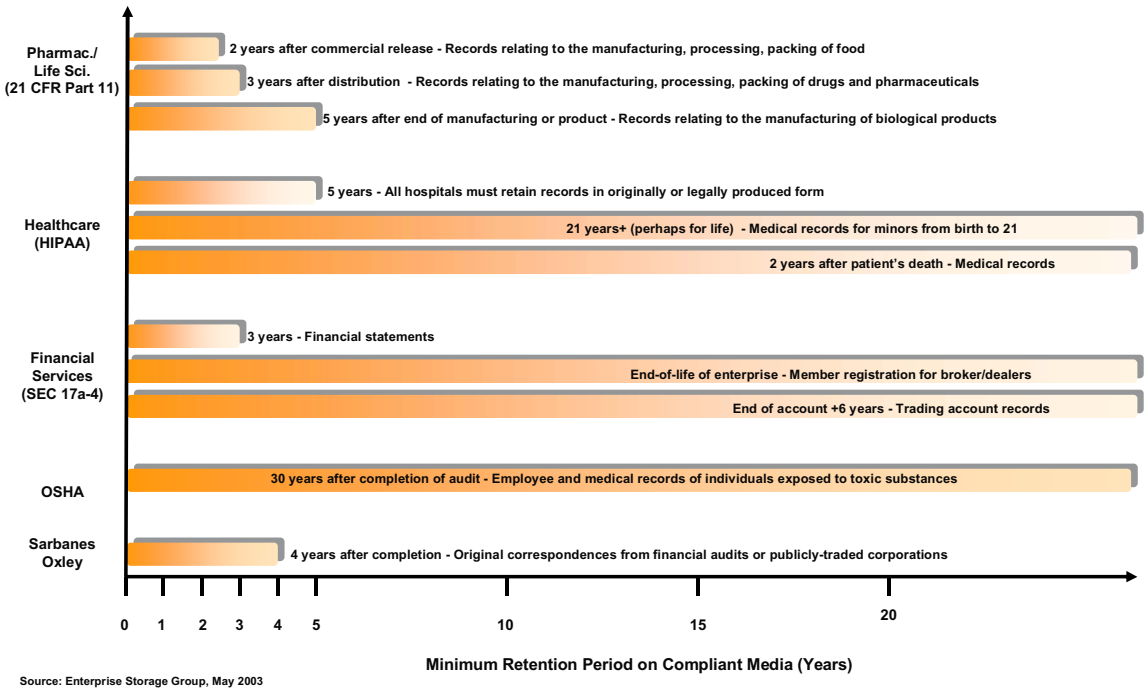
Legal Compliance - Record Retention Periods



Source: Enterprise Storage Group, May 2003

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Evolution of Archiving Functions Towards ILM

Archiving

- Archive business-complete objects after an archivability check
- Policy engine determines how long and where the data will be stored

Snapshot

- No archivability check
- Also writes non business-complete objects to archive files
- No data deletion possible on the DB (always redundant data)

Data Destruction

- No archivability check
- Only data that can be destroyed immediately is written
- Allows the removal of non business-complete objects (old non closed processes)
- File is not stored, but deleted

Define Retention Parameters: Policies and Rules

Example of Policies and Rules for Financial Documents in a Global Enterprise

Subsidiary	SAP Company Code	Location of Data Retention	SAP-Residence Time in the Database (Days)	Legal Retention times (Years)	Retention Location
Germany	1000	D	1	10	CRep A1
Great Britain	2000	GB	1	7	CRep A2
USA	3000	USA	1	7	CRep A3
Canada	4000	CAN	1	30	Directory …/canada

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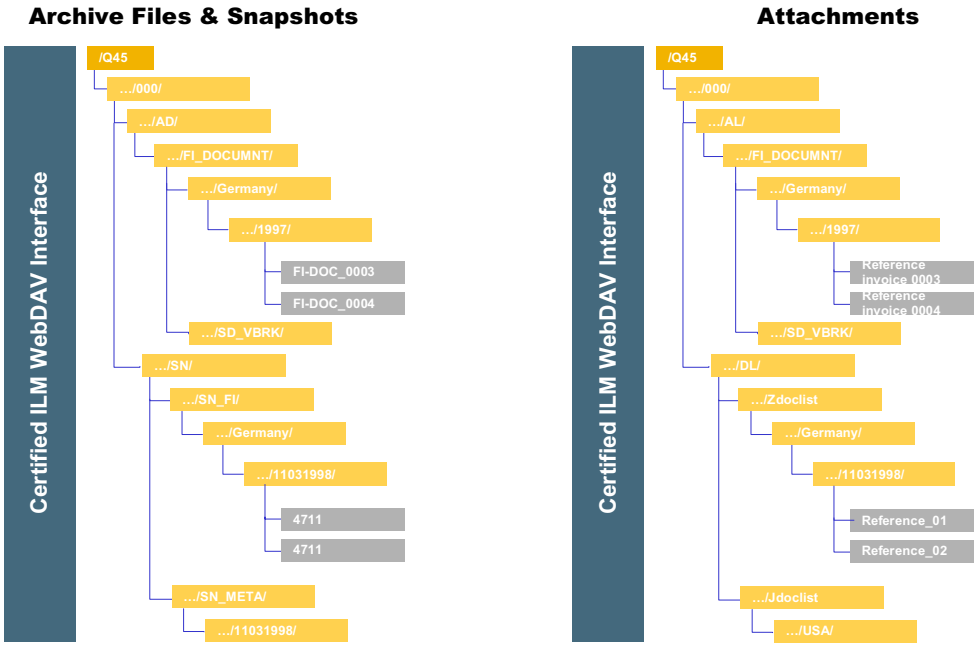
Archive Hierarchy Based on Retention Rules



Retention Information Bound to Stored Archive Files

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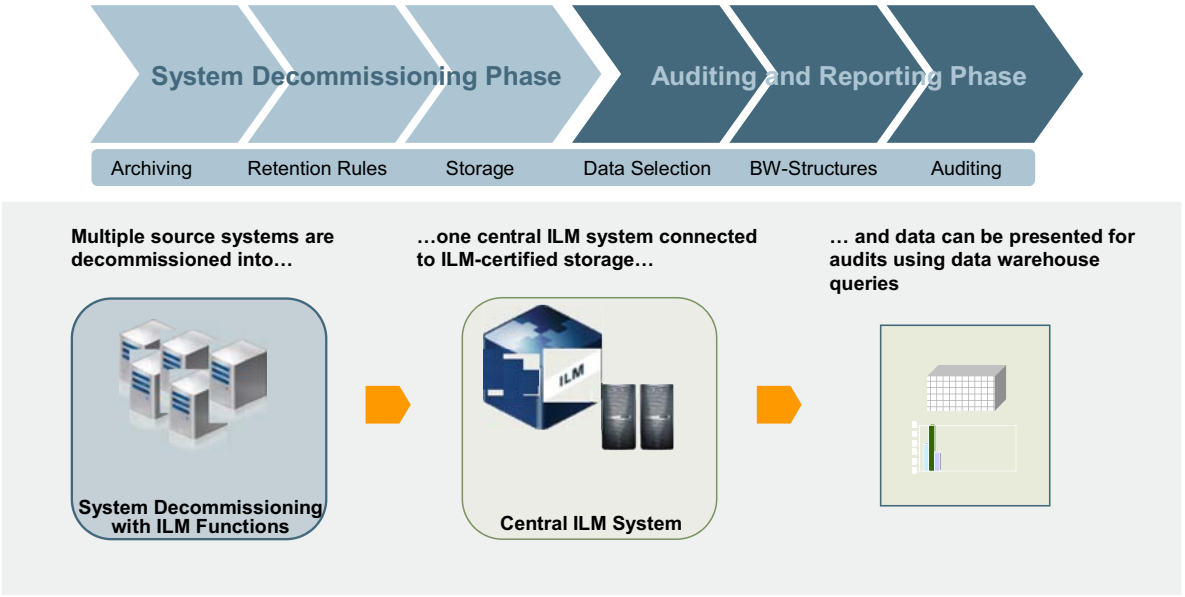
System Decommissioning Process



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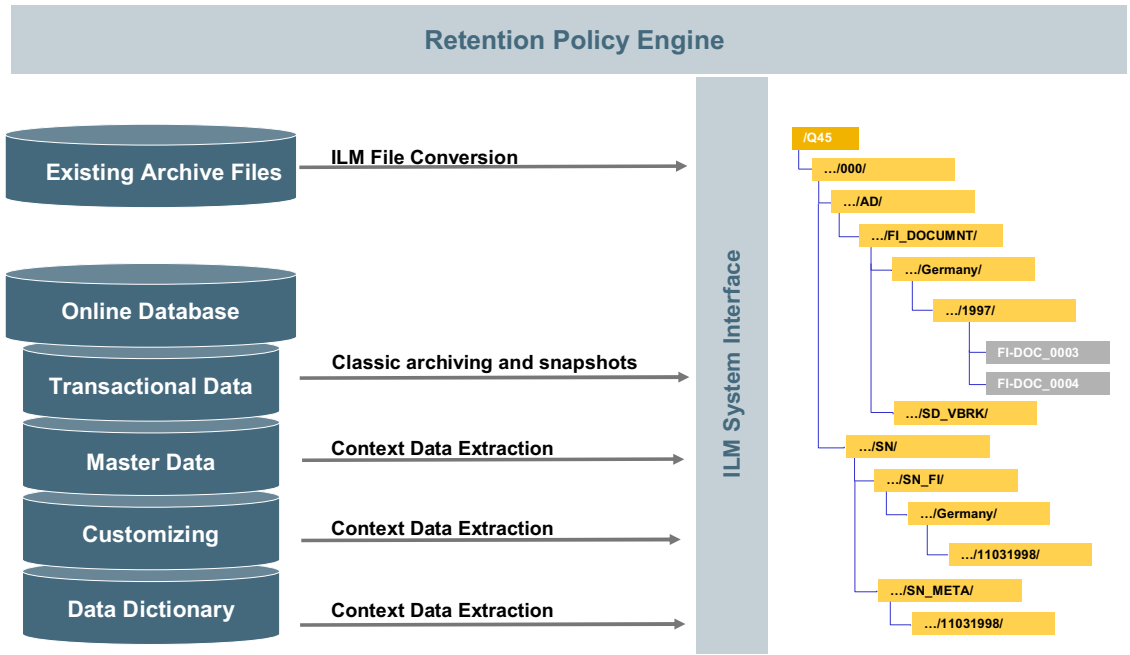
Archiving Functions in System Decommissioning Scenario



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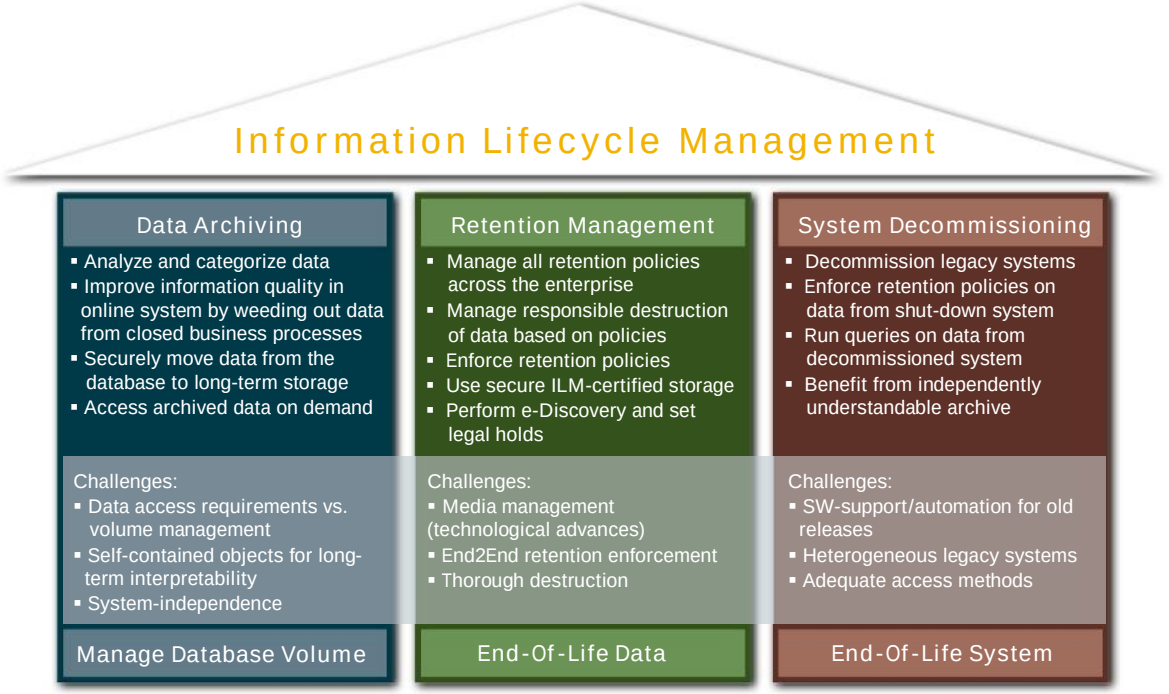

Benefits of Information Lifecycle Management

1 Data Archiving

Improves information quality for online system. Higher system availability and better performance with shorter response times.

2 Retention Management

Improves quality of retained data, based on legal and business requirements.

Supports the complete lifecycle: creation – preservation – destruction.

3 System Decommissioning

Takes system lifetime aspect of information management into account, by facilitating the long-term use of data, even though the original systems no longer exist. Helps avoid high costs of unnecessarily maintaining legacy systems.


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