Anatomy of a Siebel Archiving Project

Seven Basic Principles for Archiving Siebel Application Data

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Enterprise Data Management and Archiving

Siebel Business Applications have long set the industry standard for customer relationship management (CRM), making it possible to log and route sales and service activities, process orders, track related costs and support revenue generating initiatives. Similarly, companies can coordinate telemarketing, sales and service activities by tracking customer interactions over multiple points of contact, including telephone, web, email, fax and more.

With increasing competition in the marketplace, organizations are under pressure to maximize the business value of their CRM investment. At the same time, industry experts recognize that smarter data management empowers sites to meet service level agreements (SLAs), profitability goals and ROI objectives.

What is Enterprise Data Management?

You purchased Siebel's CRM applications to drive corporate performance by maximizing the value of your customer relationships. So how can you maximize the return on this investment? The answer rests in your ability to align continuous control of your customer data with your business objectives through the power of enterprise data management.

Siebel applications and the underlying database interactions drive your business initiatives by collecting large volumes of customer information from many sources. For example, a Siebel site can log thousands or even millions of new Activities per day. This information must remain accessible to your service and sales representatives and other decision makers. However, once an activity is completed, its value to current business activity declines. In essence, a complete activity becomes a historical artifact, no longer required to support daily business operations.

Siebel sites are realizing the benefits of a full-lifecycle enterprise data management strategy that includes database archiving to derive more business value. When you align enterprise data management with your business objectives, you unleash real benefits across your enterprise:

- Providing consistent SLA performance and ensuring the highest levels of customer satisfaction

- Streamlining application upgrades and improving operational efficiencies, while reducing ownership costs and risks

- Supporting data and records retention compliance, while streamlining storage management

Why Archive?

According to a study conducted by the Enterprise Strategy Group (ESG), database archiving has helped companies mitigate the harmful impact of rapid data growth.[1] Archiving strategies are shown to distribute benefits to both the IT organization and the lines of business. Clearly, archiving has "crossed the chasm" to become an operational best practice.

The research also reveals that enterprises are scaling the deployment of archiving to address issues beyond data growth. For example, companies are applying archiving strategies to facilitate the application upgrade process. Archiving historical Siebel data prior to an upgrade reduces the amount of data to convert and substantially reduces the required Siebel upgrade window.

In short, enterprise data management and database archiving capabilities deliver additional benefits that support IT and business objectives. However, before you can get started, consider the following capabilities as essential for the success of any archiving project:

- **Archiving Complete Siebel Business Objects** – Focus on ensuring the integrity of the archived data in its complete business context. For example, archiving a complete "Service Request" would include relevant Contact or Account details, as well as other customer master data needed to fulfill reporting requirements without ties to production data.

- **Supporting Full-Lifecycle Archiving** – Focus on managing archives and retention periods cost-effectively and consistently over the full lifespan of your data. Capabilities for saving archives on a variety of storage media allow you to future-proof methods for managing data, based on its business value and access requirements. Companies can keep business records accessible until legal retention periods expire and archives can be deleted.

- **Maintaining Archive Administration, Integration and Control** – Focus on managing archive processing using capabilities that respect Siebel customizations. Look for capabilities that ensure superior safety, control, job separation, administration and integration with your Siebel applications.

Managing Your Siebel Archiving Project

The process of planning and sustaining an effective database archiving project must include some basic project management considerations. The following guidelines will be helpful:

- Involve all stakeholders to define business, technical and legal requirements. Establish clear lines of accountability and individual responsibility. Ensure that IT, business units and compliance professionals work together.

- Establish common objectives for promoting archiving best practices within your organization. It is important to ensure that business functional users are appropriately involved with IT and informed about how their information will be managed and how data access requirements will be met.

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[1]Brian Babineau, "Database Archiving: A simple approach to Intelligent Information Management with tangible benefits," Intelligent Information Management Brief, Enterprise Strategy Group, May 2006.

- Monitor, review and update documented archiving policies and procedures. Continue to improve archive processes to support your ongoing business objectives for managing continued data growth, providing appropriate application service levels and supporting retention compliance requirements.

Typically, the business units own the data and set the data management policies, while IT owns the infrastructure and controls data management processes. Accordingly, business managers are responsible for defining who can touch the data and what they can do with it. IT must implement a technology infrastructure that supports these business policies. Promoting cross-functional ownership for data management, archiving, storage and retention policies is perhaps the greatest indicator of project success because all groups have a vested interest in a positive outcome.

Seven Basic Principles

Field experience has shown that there are seven basic principles for archiving and managing Siebel application data:

Table 1. Basic Principles for Archiving Siebel Data

Component	Description
Assess	Determine which application components are most in need of archiving, grouping them into categories based on your business requirements.
Classify	Document functional business rules and data retention policies to govern active, inactive and compliance-managed data.
Archive	Employ defined classification criteria on appropriate Siebel objects to create secure, audit-ready archives, and process intelligent removal of data from the production database.
Store	Store archived historical records securely and cost-effectively, according to the evolving business value.
Access	Apply service levels that provide appropriate users with access to the historical records they need, when and how they need them.
Tune	Monitor archiving operations to ensure that the archiving strategy continues to support desired service levels and access requirements.
Dispose	Prevent information assets from becoming information liabilities by deleting historical records after they are no longer required for compliance or business purposes.

Each of these basic principles and the questions you should consider for designing your archiving project are discussed in more detail in the remainder of this paper.

Basic Principles for Siebel Archiving

Every Siebel archiving project begins with asking pertinent questions, as you consider a variety of options for managing application data. After you determine which approach best suits your organization's requirements, you can evaluate solution alternatives that support that approach.

Assess Your Siebel Applications

Accumulating current transactions and retaining historical transactions in the same database causes the volume of application data to increase exponentially. As a first step in assessing your Siebel application portfolio, determine which applications and components are demonstrating the symptoms of rapid data growth – delayed report processing, slow response for ad hoc queries and increased potential downtime during an upgrade.

Are these problems more prevalent for some areas of your Siebel implementation than others? When transaction processing slows down, how is your business affected? Consider also your future plans for upgrading Siebel applications. What applications need to be upgraded, and when? The answers to these questions will shape your data management strategy.

When designing your archiving project, remember that each application category will have its own requirements. As an example, imagine a company called Acme Manufacturing, which has identified both mission-critical Siebel applications, as well as upgrade requirements that may benefit from an archiving strategy. An example is shown in Table 2.

Table 2. Application Assessment Example

Application	Business Object	Additional Concern
Call Center and Service V7.8	Service Requests	Activities
Sales V7.8	Opportunities	Activities
Marketing Automation V7.8	Events	Attachments

Acme's goal for archiving historical data from its mission-critical Call Center and Service application is to boost query response time and ensure timely completion of Service Request processing. Similarly, archiving from the Sales application will allow Acme to preserve sales opportunity records in a reference snapshot format, while streamlining operational efficiency. Finally, archiving from the Marketing application will allow them to manage attachment and file system data growth and aggressively manage marketing events without concern for overburdening the supporting infrastructure.

Classify Business Objects

Business objects such as, Activities, Service Requests, Opportunities, Contacts and Accounts, represent the basic building blocks of Siebel CRM processing. Classification schemes can be based on any criteria. However, as a simple example, you can classify a business object based on attributes, such as the transaction status, place and time. By classifying these business objects, you can begin to define the rules for managing them at different stages in the information lifecycle. Consider the following questions:

• What are the post-archive use cases? In other words, who needs access to the archives, when, and for what purpose?

• Will access requirements change as the archives age?

An example of a data classification scheme, based on appropriate business understanding, is shown in the Table 3.

Table 3. Classify Your Data

Service Request Status	Total
Unscheduled	610
Scheduled	2,567
Pending	325
Open	5,551,524
Open – DN Call Back	3,479
In Progress	152,661
Closed	151,529,253
Cancelled	15,695,357

Table 3 shows an analysis of Acme's entire Service Request history, based on the Service Requests that reside in the production database. Knowing how Acme has implemented the Service Request module within Siebel, it is easy to focus on the status of certain Service Requests (*Closed* and *Cancelled*) that would be appropriate for archiving.

Continuing with the example, Acme plans to archive historical Service Requests in the Call Center and Service application. Acme's classification scheme might be refined using a date-based criteria (in this example, the year the Service Request was opened), as shown in Table 4.

Table 4. Data Classification Example

Service Request Status	Opened 2006	Opened 2005	Opened 2004	Opened Pre-2003
Unscheduled	578	32		
Scheduled	2,356	211		
Pending	322	3		
Open	5,093,750	456,542	1,211	21
Open – DN Call Back	3,245	211	23	
In Progress	123,552	23,475	4,695	939
Closed	36,383,928	32,485,650	29,005,045	53,654,629
Cancelled	3,768,637	3,364,854	3,004,334	5,557,531

Acme wants to maintain the current two years of Service Request records online in the production database and archive records in other selected status categories that are more than two years old. However, it is clear that *Closed* and *Cancelled* Service Requests are appropriate candidates for archiving. Of particular note to Acme is that *Closed* and *Cancelled* Service Requests from 2004 and earlier represent over 50 percent of all Service Requests being managed in the current production database environment.

Once these records are archived, if Acme receives a customer inquiry, the Support Manager should be able to access the archived historical Service Requests from within the Siebel Workflow. Similar analysis would be performed in Siebel Sales to understand and classify Sales Opportunities, as well as Marketing Events for archive selection and processing.

Archive Historical Business Records

Archiving is the process of segmenting business objects (application transaction records) based on business rules, such as age and status. These records are then safely moved to a secure archive. Consider the following questions:

- Does archive processing capture complete business objects, including both transaction details and master or reference data?

- Does archive processing perform the appropriate functional condition checks and Siebel cascade delete properties?

- Is the archive solution Oracle (Siebel) validated?

- Will associated attachments from the File System be brought into the archive?

- Will the created archives require a painstaking upgrade process as the Siebel implementation (application and production database) progresses from versions 7.7 to 7.8 to 8.x?

Archive Complete Business Objects

Conceptually, the complete business object represents a historical reference snapshot of a business transaction that must include both transaction details and related master information. For example, the Service Request business object contains line items (from S_SRV_REQ, S_SRV_REQ_BU, S_EVT_ACT and so on), as well as corresponding master and reference information, such as related Contact, Account and/or Household details.

After capturing the complete business object, the archive process should also perform the appropriate functional condition checks. These condition checks identify which specific records in a defined group are safe and appropriate to archive. For example, an Order should not necessarily be archived simply because it is two years old. Before moving to the archive, the Order must first be completed and closed. You should validate that the archive process applies all the necessary Siebel condition checks, as determined during the data classification process.

Archiving complete business objects ensures that all the related details, master and reference data remain together. When the complete business object is captured, your archives serve as an intact, accurate, standalone repository of transaction history. You can query this repository to respond to customer inquiries or e-discovery requests, without the need to reference information stored in separate schemas.

In contrast, when a history database is simply split off from the production database, it contains only the transaction details. Storing master and reference data separately from transaction details introduces unnecessary risk into your archiving project. Remembering the Service Request example, ensure that the archived object looks exactly as it did in the production database. Acme Manufacturing will validate that its selected archive solution captures the complete Siebel application business objects, leaving no orphan records or referential integrity issues in the Siebel production database.

Store Archives throughout the Full Data Lifecycle

Storage decisions play a major role in project planning, and archiving offers the potential for substantial storage savings. Focus your analysis on full-lifecycle archive capabilities so you can easily manage archives and retention periods cost-effectively for three years, seven years and ten or more years into the future. Consider the following questions:

- In what format should we store our archives? Can we compress the archives to maximize storage savings? Can we index archives for faster retrieval?

- How many storage tiers and what types of storage devices should be deployed? NAS or SAN? WORM devices? Optical disk? Tape?

- What business objects should be placed on which storage devices, and for what periods of time? How do we manage archives throughout the full data lifecycle?

Alternatives for Archive Formats

Give consideration to solutions that store historical records in a secure, compressed archive system. Compressed file formats require only a small footprint, so you can maximize storage savings. What if you could compress archives by up to 20 percent and retain full SQL read support? Compression capabilities would reduce storage requirements and costs. Compressed files can also be indexed, enabling rapid retrieval of archived data.

Most importantly, managing archives in a file format offers the broadest range of access methods *over the full lifespan of the archive*. You can use a variety of industry standard access methods, like ODBC/JDBC, XML and SQL, and reporting tools, like Business Objects®, Cognos® or even Microsoft® Excel.

Tiered Storage Options Enable Greater Cost Savings

Consider storing archived data based on its business value and access requirements. Over time, the value of a business transaction naturally declines unless needed to respond to an immediate request. However, as long as transaction records remain within their legal retention period, the business value will never be reduced to zero. Accordingly, Acme must ensure access to its archives throughout the retention period. If the company should receive an audit inquiry, it will require flexible access alternatives to provide a prompt and accurate response.

When Acme Manufacturing first books a sales order, its highest priority is to fulfill that order. Once the order is shipped and payment collected, Acme will shift its resources to fulfilling the next order and so on. Yet, without an archiving strategy, Acme must use the same expensive storage resources for all orders, regardless of priority.

Archiving enables Acme Manufacturing to deploy a tiered storage strategy and assign the appropriate level of resources to each transaction, based on priority, age, status or other parameters. Tiered storage strategies can be managed manually or using an integrated storage controller, such as IBM Tivoli or Symantec, to improve control and administration throughout the lifecycle.

As an example of full-lifecycle management, new orders are maintained in the production environment, on the fastest (and most expensive) storage devices available. After a year, shipped and paid orders are archived and stored in a less-expensive, nearline storage environment, where they remain until the end of year five. In year six, the records shift out of the nearline archive and onto a secure WORM ("Write Once, Read Many") device. They are deleted upon expiry, in year eight.

Access the Archives

Early in the project planning process, you determined your post-archive use cases; that is, who needs access to archived data, what they do with it and so forth. These use cases become the primary driver for selecting the optimal access method. Consider the following questions:

- What access methods are available to us? What are the costs and benefits of each?

- What SLAs are appropriate for accessing the various archived business objects? Do these SLAs vary over time?

- Would we ever want to retrieve transactions from an archive and reload them into a temporary environment?

Your goal is to analyze the use cases versus the cost-of-access to determine the optimal SLAs.

Alternatives for Accessing Archives

Typical alternatives for accessing archived data include native application access and application-independent access. Some archive solutions provide only one access method or the other, but few provide both.

You need to weigh the advantages of each method for meeting your specific access requirements. For example, native access allows you to interact with archived data through Siebel displays and Workflow. This method allows functional users to access the information they need, using familiar user-interface displays and views. However, if you plan to upgrade your Siebel applications and want a consistent access path across multiple versions, application-independent access may be the better alternative.

Application-independent access provides the most flexible range of access alternatives over the life of the archive. This approach enables authorized functional users to interact with archives using industry standard access methods, such as ODBC/JDBC, XML tools and report writers. Most importantly, application-independent access allows you to "future-proof" your data. This approach makes it possible to access historical transaction records long after a Siebel version has been retired.

Apply Distinct Access and Service Levels

While government regulations require that certain records be retained for specific periods of time, subsecond retrieval is not necessarily a requirement. In fact, archiving makes it possible to apply discrete service levels for different use cases and business objects. Accordingly, Acme Manufacturing will provide more resources and faster service for mission-critical business activities. However, where priorities are less urgent, the company can reduce resource allocation and still meet user needs.

Incorporating both distinct service levels and optimal access methods for each scenario, a sample of the company's full-lifecycle archiving deployment is shown in Table 5.

Table 5. Access Your Archives

Application / Module / Business Object	Storage Tier Deployment	Archive Access Method	SLA
Call Center and Service V7.8 / Service Requests	Online Archive – Closed 2004 and earlier	Native	On Demand
	Nearline – Years 3 to 5; Offline – Years 6 to 10; Delete after Year 11	Application Independent	Standard reports on demand; Ad-hoc queries, 24-hour IT turnaround
Sales V7.8 / Opportunities	Online – Closed 2004 and earlier	Native	On Demand
	Offline – Years 3 to 8, Delete after Year 8	Application Independent	Ad-hoc queries, 24-hour IT turnaround
Marketing Automation V7.8 / Campaigns	Offline – Completed 2004 and earlier	Application Independent	Standard reports on demand; Ad-hoc queries, 24-hour IT turnaround

Tune Archive Operations

Tuning involves monitoring operations to ensure that archiving processes operate efficiently and continue to support service level goals. Consider the following questions:

- How quickly does data continue to accumulate? How often, and when, should we archive?

- Should our archive processes be automated or manual? Online or offline?

- Does archive administration have a native Siebel look and feel? Does processing incorporate our site-specific Siebel customizations?

- Do our routine archive processes operate according to our expectations? How well is database archiving supporting our business objectives?

Determine the Optimal Frequency for Archive Processing

Periodically monitoring data growth in the application database is the best way to determine the optimal frequency for archive processing. Your goal is to maintain response times and application availability to support your defined SLAs. Continued rapid data growth may signal a need to increase the frequency of archiving or to expand the scope to incorporate additional business objects.

Databases are architected to perform at high speed when you add or update data, not necessarily when you delete it. The process of deleting data is expensive, meaning that it creates overhead for the database. Therefore, it may sometimes be necessary to evaluate indexing and partitioning strategies and tune the SQL to make the delete process run more efficiently.

With these points in mind, Acme's IT group will periodically review the effectiveness of their Siebel archiving operations, looking for ways to refine their deployment for even greater business value.

Evaluate Archive Administration and Controls

Ensuring archiving administration, control and job separation, as well as integration with Siebel applications, are important considerations. Most functional business users prefer archiving capabilities that are intuitive and fit seamlessly into their existing workflow. To ensure the widest acceptance, give thought to integrated capabilities that allow you to administer archiving by means of Siebel displays.

The majority of Siebel sites have implemented customizations and unique configurations to meet specific business needs. Verify that the archive process incorporates and respects your site-specific customizations. For example, the solution should offer a clean visual editing environment, where custom extension tables can be added easily. As validation, preview the table traversals, including the custom tables, before executing the archive process. Verify also that the records to be archived are complete and accurate.

Consider Automating Archive Processing

Give thought to an archiving solution that allows manual processing, but also provides integration into automated schedulers for hands-free processing. Keep other operational requirements in mind as well. Do available windows allow enough time to take your application offline for archiving? Or, would you benefit from the flexibility of online processing alternatives?

Acme will use an automated scheduler to run archive processes. Service Request records that meet the Classification definition will be archived monthly. Closed Sales Opportunity records more than two years old will be archived before the Siebel upgrade and quarterly thereafter.

Dispose of Expired Business Records

In a business climate conditioned to strict retention regulations, the concept of data disposal seems counterintuitive. Both business executives and IT managers hesitate to delete application records for fear of legal repercussion. However, it is not only expensive to "retain everything forever," it is also risky. Any data that exists can become a target for discovery. As a prudent and cost-effective alternative, organizations are mapping retention policies to defined business objects, enabling an orderly disposal and enterprise-class data retirement. Consider the following questions:

- Who decides the retention policies for each business object?

- How should we dispose of archived data after the retention period expires? Can the process be automated?

- What audit trails will prove that data has been deleted according to our policies?

Promote Cross-Functional Ownership and Orderly Disposal

In practice, organizations build cross-functional teams to define data management and archiving policies. So that all relevant issues can be considered, these teams will commonly include line-of-business representatives, application owners, DBAs, storage administrators, legal counsel, risk managers and other subject-matter experts. Business managers can define use cases, legal counsel can map retention requirements to deletion policies, and IT can ensure that the archive process meets the defined requirements.

After all stakeholders have signed off on the archiving and data retention policies, IT can develop a plan to implement those policies. Consider solutions that generate notification reports, identifying which archives are nearing expiry.

You may want to initiate the delete process manually at first, until the practice of deleting expired data becomes more comfortable. Later on, you may want the option to perform automated deletion upon expiry. Finally, ensure that the archive process provides an adequate audit trail, so that you can verify compliance to your stated deletion policies.

To conclude our example, Acme's CIO consulted with both General Counsel and the CFO to determine how and when to delete expired data. The group was most concerned about certain Service Request transactions, which may be subject to retention and discovery requirements. Based on the General Counsel's recommendations, Acme will delete its Service Request archives upon expiry of the legal retention period; that is, after year seven.

Archiving: the Time to Begin is Now

Effective enterprise data management strategies that include database archiving capabilities provide companies with a full-lifecycle approach for managing Siebel application data. The basic principles for managing application data presented in this paper can help you initiate and plan an archiving strategy that meets your organization's requirements.

Database archiving is a recognized best practice for managing data growth that offers significant advantages. Only Princeton Softech Optim™ Siebel Solution provides proven, full-lifecycle capabilities for archiving and managing Siebel application data, with the broadest range of implementation options to ensure your success.

Optimize Performance, Mitigate Risks, Control Costs

Now is the time to exploit the power of Enterprise Data Management for Siebel CRM Applications so you can realize measurable business value across your enterprise:

- Align application performance with business processes and profit from superior performance and availability.

- Simplify database administration, ensure business continuity and speed disaster recovery.

- Streamline application and database upgrades and reduce resource requirements for key IT operations.

- Automate data retention to support compliance initiatives and respond quickly and accurately to audit and discovery requests.

- Leverage existing investments in applications, databases and storage, and eliminate IT budget variances.

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