

WHITE PAPER
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Information lifecycle management best practices in business/IT alignment

ABSTRACT

Information lifecycle management (ILM) is a sustainable storage strategy that balances the cost of storing and managing information with its business value. Managing based on business value requires alignment between the business and IT. This paper describes a process for achieving business/IT alignment in support of an ILM strategy. We describe a simple framework that storage management organizations can adopt to achieve alignment and help their companies drive lower costs and improve revenues and business agility.

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1 Executive summary

Information lifecycle management (ILM) is a sustainable storage strategy that balances the cost of storing and managing information with its business value. ILM provides a practical methodology for aligning storage costs with business priorities. To effectively link business priorities and requirements with storage management actions, ILM is dependent on solid alignment between the business and the IT organization.

The business alignment cycle for ILM storage management provides an actionable framework that storage management organizations can adopt to achieve business/IT alignment. We define six key steps in achieving alignment:

- Define a set of goals, objectives, and metrics for your alignment program.
- Prepare for interactions with business process owners by completing an assessment of your current state of alignment and an inventory of storage assets and business information objects.
- Define and implement a formal and purposeful communication program with business process owners and line-of-business decision makers to define service-level agreements.
- Develop a model of your storage infrastructure linking storage resources to business processes.
- Develop capabilities to automate storage management, and link it to service objectives.
- Implement a management approach to provide “business-aware” storage management and report to business process owners in business terms.

The resulting improvement in alignment between the business and IT should result in reduced IT costs and reduced business exposure, while improving service levels. It should also foster an environment of trust between IT and business process owners, and enhance the perception of the value of IT. Effective alignment initiatives can increase revenues, reduce costs, and improve business agility.

In traditional IT organizations, ensuring business/IT alignment was the job of the IT executive. Unfortunately, efforts at that level seldom went beyond developing strategy. Successful alignment requires translating those strategic communications into storage management actions. Extensive work improving and automating storage management and IT management processes is often required to effect that translation. The key is to develop linkage between service-level objectives, data classification, policy management, and metadata management, in combination with driving automated and business-aware storage management across the ILM infrastructure hierarchy.

Following the business alignment cycle for ILM storage management defined in this paper will foster shared expectations between business and IT managers, and will identify best practices and common processes within IT and storage management to make business/IT alignment sustainable.

Better alignment with the business drives bottom-line benefits that include better allocation of scarce IT resources, more successful support of business strategy, and improved perception of IT service levels and service quality; it can also improve business results.

2 Introduction

Business/IT alignment describes a state where IT is “business-aware.” Day-to-day actions taken by IT professionals reflect an understanding of the business affected by the IT infrastructure and applications. In the context of storage management, business/IT alignment requires an understanding of “business intent” — specifically, what the business needs are and how to translate them into storage management actions. For example, suppose you are the storage manager of a mid-sized company that runs payroll twice a month. Merely having an understanding that payroll data generally is business-critical is insufficient. You also must understand that it is unnecessary to “call in the team” to recover payroll data on the 7th of the month, but is *critical* to do so on the 14th.

Many articles have been published describing the current state of business/IT alignment. Interestingly, there is little agreement as to what that state might be. Some suggest that such conversations are obsolete since IT *is* the business. Others ask: “Are we there yet?” or “Will we ever get there?” Much of this disarray comes from differences in the importance of IT from one business to the next.

We have little doubt that IT and the business are aligned at companies like Google Inc., America Online Inc., AXCIOM Corporation, or Digital River, Inc. For these companies, IT really is their business. Where it gets interesting is at “companies that move electrons,” such as Bank of America or Prudential. It becomes even more interesting at “companies that move atoms” in the industrial, manufacturing, distribution, or process sectors. This white paper will focus primarily on best practices at the latter two types of companies: companies that move electrons (information) and companies that move atoms (physical goods). We assume that if IT is your business, then your business and IT are aligned.

3 Achieving business/IT alignment

One of the interesting problems that storage managers may encounter if they desire to “align with the business” is that the overall IT organization has people and processes allocated to do this, but it somehow remains ineffective from a storage management perspective. Determining an effective role for storage management in this process requires a broad understanding of the overall process. Most importantly, storage management must impose order on the storage aspects of the overall service-level management process. There are six key steps in achieving business/IT alignment:

- **Define the desired future state of business/IT alignment** — Define a set of goals, objectives, and metrics for your alignment program.
- **Assess the current state** — Prepare for interactions with business process owners. Understand your organization’s approach to alignment and relationship management, and create (or update) your inventory of storage assets, business objects, and the business processes they support.
- **Interact with the business strategy** — Based on your current state assessment, define and implement a formal and purposeful communication program with business process owners and line-of-business decision makers, driving the necessary information into service-level agreements.
- **Develop and maintain a storage infrastructure model** — To enable business-aware storage management, a model describing the relationship between storage infrastructure, business information objects, and business processes must be established and maintained.

- **Establish and maintain critical storage management linkages** — Automating the translation of business requirements from service-level agreements into actionable storage management is dependent on a data classification system, policy-based storage management tools, and metadata management.
- **Implement and measure business-aware storage management** — An effective measurement and resource management approach is required to provide business-aware storage management.

The first two steps (future and current state) are generally not part of the ongoing cycle, but may be necessary based on your current business/IT alignment maturity. These steps may require annual review internally to ensure that your understanding of status and goals is relevant to your current business needs.

4 Future state/current state

4.1 Define the desired future state of business/IT alignment

One of the first steps in any effort intended to drive business change is to define a vision for the effort and decide how you will know when you have arrived. We recommend you review several of the information lifecycle management (ILM) white papers available on our Web site.¹

Further, we recommend that you take our ILM maturity assessment (see your Sun Microsystems sales team). In combination, the reading and the assessment should provide some clear guidance regarding not only where you are, but also insight into what's possible.

4.1.1 Program breadth

The reliance of your business on IT is an important consideration in establishing a set of goals and objectives. Although that might seem obvious, organizations sometimes “overperform” in their efforts in driving ILM maturity, and as such, in their focus on alignment. The trick is determining the right amount, and no more. In general, we recommend that all firms achieve a proactive state of maturity. For firms that rely more heavily on IT, achieving an optimized or self-aware state is advised. In terms of business/IT alignment, this generally translates into the breadth of business processes that receive focus and are managed via sophisticated service-level agreements. For firms that are less reliant on IT, it may be appropriate to focus on only the most business-critical processes when seeking alignment. For firms that are based on information, broader coverage of business processes is recommended. In addition to the breadth of coverage, firms more reliant on IT may need to consider more granular standard service offerings and data classification systems to ensure that they provide the right service to differing levels of business priorities.

4.1.2 Alignment metrics

Typical alignment metrics include measurements regarding the formalization of communications, such as the frequency of business/IT planning meetings, the existence of an annual calendar, and the frequency of IT steering committee meetings.

Several organizations use budgetary metrics to measure their business/IT alignment. Examples include:

- Percentage of projects directly linked to business strategic objectives

In our mid-summer 2005 survey of 450+ North American firms:

- *About 16% had achieved the top level of overall ILM maturity*
- *While no participants achieved the top level of business/IT alignment performance, about 17% had achieved an “optimized” state*
- *Approximately 20% were rated as chaotic or reactive in terms of business/IT alignment*

Net: Most organizations have significant opportunities to improve in this area.

¹ See “Information Lifecycle Management Vision,” “ILM Maturity Model,” “Information Lifecycle Management Maturity Benchmark Study,” and “Information Lifecycle Management Benchmark Study: Maturity Progression” at www.storagetek.com.

- Percentage of projects where business process owners provided justification information
- Percentage of IT budget for new (aligned) projects vs. sustaining projects²

It is important to balance “managing to the metrics” with “managing to the goals” of business/IT alignment. It would be foolish to forego an important infrastructure project that provided important shared services to multiple business projects because it didn’t support alignment metrics.

4.2 Assess the current state

A current state assessment on two levels should be completed prior to engaging business process owners. You should understand your organization’s approach to working with business process owners and how you will integrate your efforts, as well as how much is currently known about the relationship between your storage assets and your company’s business processes.

4.2.1 State of alignment process and practice

Most IT organizations today have some formal processes (and organizational structure) focused on understanding business needs. Steering committees, strategy councils, and formal planning processes are common. Recently, some IT organizations have evolved the traditional business analyst role into a “relationship management” function. Relationship managers are assigned to various business processes, organizations, or business lines to facilitate communications between IT and the business. Understanding the process, practice, and organization that your IT function has implemented to improve business/IT communications should provide insight into how you can shape it.

4.2.2 Inventory

In addition to developing a comprehensive understanding of your organization’s alignment approach, we recommend completing (to the best of your ability) a broad inventory of storage assets (infrastructure), storage management processes and tools, business information objects (sets of data objects that are related by application, service, or business process) and related business processes. If an infrastructure model linking all of those elements exists, you are ahead of most IT organizations. The use of a storage resource management (SRM) product to help you inventory is a basic requirement of business-aware storage management, and will facilitate this effort greatly.

Service-level agreements are key to attaining business/IT alignment. You should understand where your organization is in regard to service-level management: what agreements are in place, what service-level objectives have been set, and how they are managed and measured. If strategic, comprehensive, current, and consistently updated service-level agreements are in place for all business-critical processes, achieving alignment becomes somewhat mechanical. This is, of course, a big “if.” In our recent study of 450+ IT organizations in North America, fewer than 10% of the respondents reported they consistently made the connection between service-level agreements and storage management actions.³

In the 2005 benchmark study, respondents scored:

- *On average below the midpoint of the scale regarding the linkage of service-level agreements to storage management activities*
- *On average below the midpoint of the scale regarding the standardization of service offerings*
- *On average slightly above the midpoint of the scale regarding the content of their service-level agreements*

Net: The benchmark appears to indicate that about half of organizations are not well aligned.

² Forrester Research, “IT and Business Alignment: Are We There Yet?” April 2005.

³ See “Information Lifecycle Management Maturity Benchmark Study” and “Information Lifecycle Management Benchmark Study: Maturity Progression” at www.storageitek.com. These studies, based a survey of 450+ North American firms done in 2005, are the source of the information in several of the sidebars in this white paper.

4.2.3 Assessment

If you haven't done it as part of defining your desired future state, we recommend that you take our ILM maturity assessment. The assessment will provide you a view of your ILM maturity status and comparative metrics to your relevant peer group (business size and industry). The section on business/IT alignment should give you a good idea of how you compare to the state of the art.

5 The business alignment cycle for ILM storage management

5.1 Overview

The business alignment cycle for ILM storage management is an ongoing process that can be “entered” or improved at any of the entry points depicted in Figure 1 and defined in the following sections. To have solid alignment, all of the activities must be engaged.

Figure 1. The business alignment cycle.



- **Interact with business strategy** — Defining and implementing a formal approach to service-level planning and service-level management⁴
- **Develop and maintain a storage infrastructure model** — Building and maintaining a model that links storage infrastructure to business processes, and using that model to guide storage management actions
- **Establish and maintain critical storage management linkages** — Implementing a data classification system, metadata management, and policy-based storage management capabilities
- **Implement and measure business-aware storage management** — Implementing resource management and measurement approaches that constantly monitor and report your performance of service-level objectives

5.2 Interact with the business strategy

The key to effective business/IT alignment is organized and purposeful communication. Generally, this is organized around a service-level process approach, using contract-like agreements to document the requirements for storage and storage management.

⁴ We will not describe all of the disciplines and processes associated with service-level management in great detail. For a basic background, we suggest a review of the Information Technology Infrastructure Library at www.itil.co.uk.

5.2.1 Service-level planning

Formal and regular planning meetings are implemented to ensure that service-level agreements are relevant to current business conditions. This can be facilitated by the implementation of relationship management providing an ongoing bridge between IT and business process owners. In addition to regular interactions, the service-level planning process is used to support business needs when a significant business “event” (such as a merger or acquisition) occurs.

5.2.2 Service-level management

Once agreements are in place, service-level requirements are translated into service objectives (specific performance metrics for storage assets and business data objects). Day-to-day IT operations are measured based on these objectives.

In most organizations, some form of service-level management exists; what is often unclear is the linkage between storage management activities and service-level agreements. To effectively manage storage, the following elements should be included in service-level agreements: storage capacity, access time/performance, availability, recovery/restore time, disaster recovery, information security, retention/disposal, and content-based search. The implications of time (such as wall clock and calendar), and growth or trend requirements are also defined for most of these elements.

5.3 Develop and maintain a storage infrastructure model

A comprehensive model that links storage infrastructure to business processes is a key enabler in turning “business intent into storage management actions.” The storage infrastructure model links storage components to critical business processes and identifies what’s important and when.

5.3.1 Best practices for storage infrastructure models

- As appropriate to your business reliance on IT, the level of modeling is intentional, addressing business processes based on your vision for alignment.
- The model enables proactive storage management, including impact analysis, describing the dependencies among business processes and the associated storage infrastructure, and allowing storage managers to predict the impact of events on the business.
- Automated discovery tools (automated storage resource management, or ASRM) are used to collect and update information about processes and related storage components.
- The storage infrastructure model is monitored to ensure accuracy. A change management process is implemented to manage the model.
- The model is stored in a centralized (or federated) repository and can be graphically displayed.

5.4 Establish and maintain critical storage management linkages

In addition to a storage infrastructure model, there are several operational linkages that facilitate business/IT alignment. While it’s hard to imagine achieving alignment without the infrastructure model, the ability to automate storage management linkage to business intent is based on the following best practices⁵.

5.4.1 Best practices for policy-based management

Storage policy is automated by the combination of policy management systems, automated data movers, data classification, and metadata. Policy management software sets and controls priorities for the use of storage resources, data placement, retention/disposal, movement, and migration.

⁵ See white papers on data classification and on metadata management at www.storageitek.com.

In the 2005 benchmark study:

- 14% have a comprehensive storage infrastructure model
- 18% can completely measure utilization via an SRM
- 0% have a truly automated ASRM with discovery capabilities across the enterprise

In the 2005 benchmark study:

- 16% have completely automated policy management
- 23% have fully centralized storage management.
- 12% report pervasive classification systems based on business value
- Fewer than 2% have what they consider “comprehensive” metadata

Best practices for policy-based management include establishing a central (or federated) policy repository, establishing policy centrally, and centralizing storage management professional resources.

5.4.2 Best practices for data classification

Data classes provide a means to “mass-customize” policy based on specific class characteristics. Without an effective data classification system, service objectives would be handled on a one-off basis. In a large enterprise, this is probably impossible. Best practices for data classification that support business/IT alignment include basing the classification schema on the business value of the data, plus linking the data classification schema to your organization’s business data taxonomy.

5.4.3 Best practices for metadata management

Metadata (data about the data) is used to assign classification information to specific objects and to provide information for any specialized one-off handling of business data objects. Best practices for metadata management that support business/IT alignment include using metadata comprehensively and implementing a “rich metadata” approach that collects and attaches broad content information to business data objects.

5.5 Implement and measure business-aware storage management

Business-aware storage management links business intent with storage management actions. In a sense, it implies that management activities will be clearly driven, linked, and prioritized based on the requirements of the business processes that the infrastructure supports. More simply, it means that storage management actions should support users and manage infrastructure resources to ensure delivery of agreed-upon service levels.

To manage, we must measure. The purpose of measurement from an alignment perspective is clear; we need to verify and communicate that commitments are met, and use measurement data to continuously improve operations and reduce operational and support costs while meeting service-level objectives.

5.5.1 Best practices for management

- Storage management best practices related to business/IT alignment are based on maintaining a business view of problems, incidents, and events. The omnipresent consideration of how any storage management action affects users and business processes is the key feature.
- Proactive storage management using root-cause analysis and incident correlation, plus monitoring via a single pane, are implemented to avoid service disruption or degradation.
- A full set of IT management disciplines — including resource, change, event, problem, incident, capacity, scheduling, service, and infrastructure management — is generally necessary to operate an effective storage management function and to support service-level commitments.

5.5.2 Best practices for measurement

- Reporting key metrics to business users based on the impact of storage subsystems on applications and business processes, and integrating storage metrics with other infrastructure measurement information, help business process owners understand how storage impacts their business.

In the 2005 benchmark study:

- 14% consistently report business-related storage metrics to business process owners
- 13% completely integrate their storage metrics with other infrastructure metrics for presentation
- 15% consistently deploy a “balanced scorecard” for business process owners
- 18% are fully engaged in a continuous process improvement effort for storage management

- Top-performing organizations provide business management with a balanced scorecard that relates IT service delivery to business objectives and deploy a quality improvement process that continuously improves the quality of storage service levels in support of critical business processes.

6 Benefits of business/IT alignment

The business alignment cycle for ILM storage management provides a model for storage management organizations to achieve business/IT alignment. The key benefits of attaining a greater degree of alignment include:

Key benefits:

- *Lower IT costs while improving service levels*
- *Establish an environment of accountability and measurability, driving realistic expectations between the business and IT*
- *Improve the adaptability and responsiveness of IT, contributing to business agility*
- *Increase the value of IT to the business*

- **Lower IT costs while improving service levels** — Implementing an effective business/IT alignment initiative in support of an information lifecycle management strategy may help lower the cost of IT while improving service. It's all about prioritizing activity and expenditure based on a clear linkage to business priorities. The business alignment cycle for ILM storage management provides a means to establish clear linkage between IT infrastructure and business-critical IT processes, and can improve resource planning. The cycle will help to prioritize storage activities and spending based on business value and impact.
- **Establish an environment of accountability and measurability, driving rational expectations between the business and IT** — The interactions and processes associated with planning with business process owners, establishing service-level agreements and objectives, managing to them, and reporting on your performance to business process owners should improve the perception of storage management and storage service levels and quality.
- **Improve the adaptability and responsiveness of IT, contributing to business agility** — When the storage management organization is driven by business priorities tied to contract-like agreements, the quality of service improves for important business processes. The linkage between the business and IT is strengthened, allowing IT to be more responsive to dynamic business requirements. The process improves the ability of the business to adapt to changes in economic, competitive, or business conditions. IT is always ready to adapt to change; thus, the business is more agile.
- **Increase the value of IT to the business** — The business alignment cycle for ILM storage management generally results in improved business process owner satisfaction and a more receptive IT funding environment. The communications and measurement aspects of the linkage provide an improved demonstration of the quantified value of IT to the business.

7 Conclusion

The business/IT alignment cycle for ILM storage management and the processes recommended in this white paper can help storage managers make a stronger contribution to their businesses. By establishing an ongoing means of linking business priorities to storage management actions and automating them in an ILM environment, storage managers can contribute improved service at lower costs and improve business agility. Driving business/IT alignment can help drive your organization to an “application-aware” storage management model that will help you link information management to information use, and should result in improved revenues, reduced costs, and improved competitiveness.

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