

Information Lifecycle Management in Perspective: Initial Findings From Surveys of Top Management

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Abstract

Driven by new government regulations in disclosure, records retention and security, Information Lifecycle Management (ILM) became a storage industry buzzword in 2004. An approach to information management that seeks to take into account information's changing value, ILM is a process for managing information through its lifecycle. This research brief summarizes findings from an exploratory study undertaken by ISIC to explore the views of senior technology managers in addressing ILM. Twelve semi-structured interviews with Chief Information and Chief Technology Officers (CIOs, CTOs) in nine organizations were completed. These interviews sought to understand how IT executives view ILM, its business drivers, and its ultimate business value.

Key findings include: ILM initiatives are many, varied, and focused at three levels: storage and IT infrastructure; compliance, audit and records management; and data warehousing and business intelligence. Key value objectives identified included: supporting the business in improving performance; better alignment of data and information services with business needs; and strengthening the company's foundation (people, processes, systems) for ensuring compliance.

Introduction

Driven by the passage of new government regulations in financial reporting, records retention and security, Information Lifecycle

Management (ILM) became a storage industry buzzword in 2004. ILM is a catch-all concept, an approach to information management that seeks to account for the ways in which information value changes over time, as well as the degree to which automation is used to manage, retain and migrate information across the enterprise as its value changes.

ILM has been much trumpeted and criticized, yet the elements of ILM - structured data, backup and recovery, tiered-storage, robust archival policies, hierarchical data management, data warehousing and business intelligence applications - are essential building blocks in every IT architecture and data center operation. Moreover, whether called ILM or not, in directly affected industries such as healthcare, telecommunications, financial services and retailing, HIPAA, Sarbanes-Oxley, and the Patriot Act are driving numerous, costly, large-scale compliance efforts.

To better understand this industry phenomenon, over the last four months ISIC completed an exploratory study to understand how senior technology executives view ILM. Twelve semi-structured interviews in nine organizations were completed with Chief Information and Chief Technology Officers (CIOs, CTOs), to explore how these executives view ILM, the relationship of ILM to other IT initiatives including business risk and business continuity, and how, ultimately, these executives see ILM and its IT complements delivering business value. The nine organizations participating were all large users of storage systems, in six industries - entertainment, financial services, consumer products, retailing, software services and communications.

The Many Facets of ILM: Multiple Definitions

According to the Storage Networking Industry Association's (SNIA) Data Management Forum, Information Lifecycle Management is an end-to-end concept, comprised of the practices, policies, processes and tools used to align the business value of information, with the most cost effective and flexible IT infrastructure needed to provide it. The promise of ILM is seamless information access and storage, where storage efficiency and cost effectiveness are driven by the value of the information stored.

No single definition of ILM was uncovered in our interviews. Rather, in the words of one executive, "ILM is an important, even critical concept, but one that in its current form is very limited... ILM refers to about 10% of what we do in managing company information and data." Another drew a sharp distinction between electronic records and the practical mix of digital and paper records that comprise enterprise information in his firm: "if an auditor arrived on our doorstep, he would go first to our paper records." A third noted that ILM was part of a broader IT focus on data warehousing and business intelligence (BI) in his firm: "our focus going forward is with data warehousing and BI applications (business intelligence), and working with (educating) the business to help with more understanding and discipline on the applications and data side."

Taken together, respondents fell into one (or more) of three categories of response:

- a technical, "storage-centric" (utility) view of ILM
- a compliance-driven, records management view of ILM
- a customer-focused, business-intelligence view of ILM.

Figure 1 illustrates a simplified framework of response categories. <see page 5>

Implementing ILM: Defining Projects and Business Value

Of the nine organizations participating in the study, five had active ILM, data warehousing and business intelligence initiatives underway. Two had started the IT and business strategic planning steps required for an ILM or data warehousing/BI effort, including management education and systems training efforts targeted at business sponsors and IT project team members. All of the firms participating had some form of compliance, data retention or security initiatives in progress, ranging from major projects underway in financial services and healthcare firms, to smaller scale efforts in other companies focused at the level of business units or departmental functions. Typical of the efforts underway were email archiving and customer records management.

As expected, the organization of ILM projects varied widely according to the goals, level and sponsorship of the effort. As a general observation, multi-function (enterprise level) ILM and data warehousing / BI efforts appear to require relatively large sponsorship networks and executive level commitments of time and stewardship across the full planning and project lifecycle. In the words of one executive, "these projects can be significant and require the active (not passive) support of top management... they (generally) involve customer data and the information necessary to meet functional or personal goals, or they arise out of legal or compliance directives that usually require immediate attention... you don't want to be starting from scratch on one of these."

No dedicated Records Information Management (RIM) projects were observed in the exploratory sample. However, all firms had some activity underway in data security or compliance, with records management as a key project activity. Electronic records pose a business risk associated with potential exposures in legal discovery, regulatory inspections, industry investigations and privacy rule violations.

Three principal business value objectives were named by respondents in the exploratory study:

- supporting the business in improving performance, especially in customer facing activities and improving customer relationships and interaction
- improving performance of IT through better alignment of data / information services with business needs, including lowering costs, improving quality, and improving the performance of data / information access and storage
- third, strengthening the foundation (people, systems, records) for ensuring compliance (“decreasing the business risks and costs of compliance”)

Other important objectives included working with the business to achieve a more cohesive (“disciplined”) approach to the use and storage of information / data in the firm. This included issues such as ownership, application, quality and patterns of use, and building commitment across the business and IT for the investments needed in time and resources required to address ILM. Technology and IT infrastructure objectives included reducing IT complexity in database, decision support, and storage systems; implementing improved business intelligence applications (improved query and search capabilities, improved response), improving cost performance of the information infrastructure, and reducing the information, data management and archiving / storage component of overall IT costs.

Synthesis and Key Findings

Our exploratory study found the importance of ILM is not in a well-defined concept or set of practices. Rather, executives see the importance of ILM in the issues underlying it, specifically:

- risk management and compliance
- business continuity
- the explosion of data and information demands fueling storage growth
- the demand for IT systems and data alignment with rapidly escalating business demands for more and better data, faster access, and significantly

better analytics to enable improved enterprise performance.

ILM was not, therefore, viewed as an end in and of itself. Rather, it was a process whose value was to support business goals. Second, ILM was seen as a “natural” progression of ideas and products coming into the IT marketplace, evolving from early database management and storage systems, to more complex information and storage architectures, including tiered storage, hierarchical storage management (seen as data and transport centered), to ILM and beyond. In this view, the evolution of ILM will drive other, complementary IT practices (in better defining information value, for example), and that ILM’s value, therefore, will be in both direct and indirect benefits.

Third, ILM was seen intrinsically as a management process by respondents, one where business value would only be realized when the process was embedded within enterprise or business unit goals of improved performance, or mitigation of business risks associated with regulation, business continuity, or compliance and security for example. As one executive stated: “it is important to start somewhere, whether it is looking back at your infrastructure, or looking out to your customers and the support for the business needed there... Whether it is called ILM, or something else, is less important than working with the business to get it done.”.

The Paradoxes Posed by ILM

Our analysis found there is no single, clear-cut approach to defining the scope, objectives, and implementation practices of ILM. Rather, a range of business objectives can serve as policy and operational drivers for ILM, and firms have adopted multiple approaches.

ILM proponents often base their arguments around the conceptual soundness of viewing information as a corporate asset, or the rationale for aligning business demands for information with the IT infrastructure needed to provide it. Paradoxically, while these arguments are conceptually appealing, they rarely energize concrete action in the pragmatic world of the

performance-minded, cost-conscious business manager. As researchers have found in previous work on data management, “Most successful data management processes we observed have been aimed at solving a clear and specific business problem or exploiting an opportunity.”

Implicit in the promise of ILM, therefore, are several paradoxes borne out in lessons from IT practice.

Centralization – Decentralization and Control

Researchers in data management have long pointed out that underlying any effort toward more effective data management is the potential for greater centralization of control (decision making) in an organization. That is, increased standardization of data can facilitate increased central control, whether or not it is a design objective. For example, ILM emphasizes the importance of data classification and standardized modes of transport and storage for information based on its value. As that data is made available to senior executives, they will have enhanced abilities for comparing operational details of business units under their control, and there will be a tendency to act on this data. Paradoxically therefore, while design objectives for ILM include decentralized access to high quality data, the result may also be the occasion for heightened central control.

Data Strategies versus Data Realities

Too, lack of data and records standardization remains more generally an underlying problem with data, making it difficult (costly) to share or interpret data across application system boundaries. ILM is not the first fusing of technology and management process innovation to attack this problem. Indeed, the host of strategic data planning approaches in the 1980s incorporated standardized data architectures, arguing that consistency of data would enable more easily integrated systems and improved productivity in systems development and maintenance. However, research found that in most companies where strategic data planning methods were tried, the approach taken was often too expensive, its benefits too uncertain,

and it was too organizationally difficult to implement to realize its full value. It is important, therefore, to ask what aspects of ILM are likely to make it more successful than previous attempts to address the problem.

New Responsibilities for Line Management

Implementing ILM initiatives will not only require teaching IS and records management professionals new skills. There is also the question of what will be required of line business managers – what new skills and/or new responsibilities will be needed? Our interviews pointed out that firms are experimenting with “data steward” or “data custodian” roles at the line level, where business managers are responsible for owning / managing data subject areas such as price and customer. Others are experimenting with task forces or executive committees, incorporating user and IS representation to establish data policies.

It appears obvious that the effective management of data, whether falling under the umbrella of ILM, or records management, or data warehousing / business intelligence, requires the active participation of line managers. However, the exact nature and scope of the new line responsibilities are not well defined. Paradoxically, in many industry discussions of the preparations needed for ILM, analysts, business reporters and others typically direct attention to assessing the technical infrastructure, and the fit (alignment) with business demands for improved information. Such assessments show a gap in supply and demand, thereby posing the question as to what can close the gap. These assessments come perilously close to missing the lessons of past practice. Indeed, the problems brought out in data management and data quality initiatives of the past were largely organizational, not technical. Achieving performance was more a matter of effectively managing people and process, not just the alignment of IS with business requirements.

It is still the case, therefore, that difficult organizational issues are present in efforts such as ILM that focus on managing enterprise

information. The managerial focus on short-term results, the centralizing tendencies of data and records management, the issues of data ownership and stewardship by line managers, all present challenges to well-intentioned efforts to develop a more cohesive and strategic approach.

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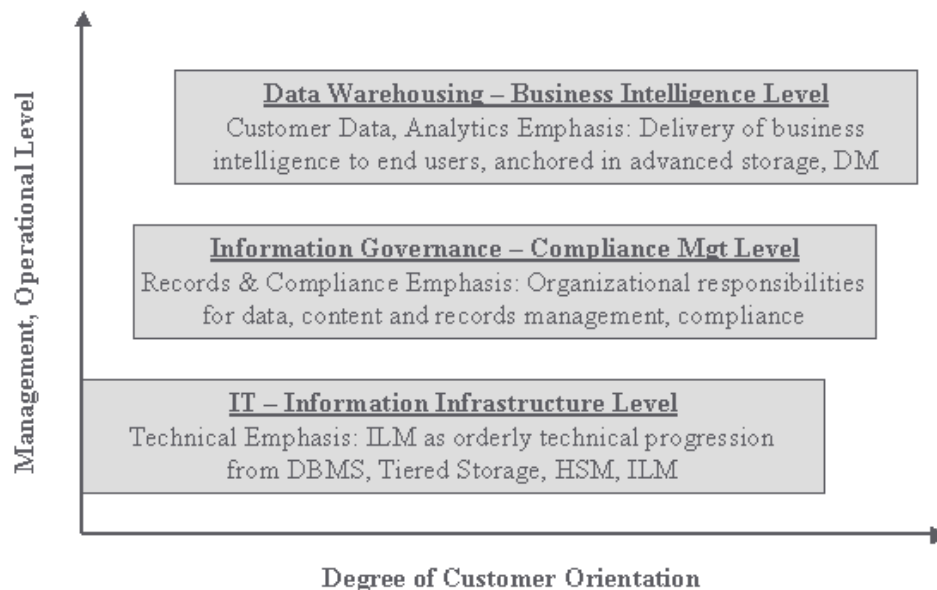
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About the Author

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Figure 1

Underlying ILM Drivers: Framework



About ISIC

The Information Storage Industry Center (ISIC) at the University of California, San Diego is a university-based, management research program studying the business applications and economics of advanced storage technologies in the modern information-intensive corporation. ISIC's program areas include industry studies (competitive dynamics, product innovation and manufacturing, industry structure), business innovation and applications of advanced storage systems (data management, data mining, distributed information management), and the management of storage as an integral part of the firm's IT business resource. ISIC works closely with the Center's StorageNetworking.org community of practice in conducting industry facing, direct observation research.

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