



IoT Information Lifecycle

The Comprehensive Guide to Information Lifecycle Management

Information is now the oxygen for businesses – big and small. Data-driven companies have proved successful when they align their strategies to market requirements. They must know what their customers want and demand, and provide it. They can also approach potential customers in their target market who are interested in their products or services thanks to the detailed information they collect and closely analyze.

All businesses deal with vast volumes of information they collect, generate or store over their lifetime and as they grow. Because information is a critical element that augments a business's productivity and profitability, there is a need to manage it correctly.

A business collects, creates, classifies, and archives data and later deletes it when it becomes obsolete. Hence, information lifecycle management (ILM) is a critical part of any business that constantly grows and evolves.

ILM (a form of data lifecycle management) is a best practice for managing business data throughout its lifecycle. These solutions can improve the performance of enterprise applications and reduce infrastructure costs. They can also provide risk, compliance and governance frameworks for enterprise data.

Therefore organizations can optimize their infrastructure using ILM with a tiered enterprise data management strategy while establishing a control framework for data governance and compliance.

Industry analysts point out that a lot of the data that enterprises rely on is not current. With the value of data declining dramatically over time, there is a need to establish information technology lifecycle management. It would ensure that only current, active data consumes valuable tier-one computing, processing, and storage resources and that compliance policy governs all data throughout its lifecycle.

What is Information Lifecycle Management?

Information lifecycle management (ILM) refers to overseeing data (information) from creation through to retirement to optimize its utility and lower its costs. It also aims to minimize the compliance and legal risks that the data introduces.

ILM helps align information with business requirements through service levels and management policies associated with metadata, data and applications.

Businesses must manage information and data throughout their lifecycle. ILM starts when they create or receive the record and later covers its usage, maintenance, storage and retrieval. At the final stage, the information is either disposed of, destroyed or permanently retained per the established records retention schedule.

Moreover, organizations must manage all information with the [proper protection and security](#), especially for personal and confidential information. Information lifecycle management best practices involve storage optimization plus strategies to improve data quality, utility and safety.

Characteristics of Information Lifecycle Management

ILM has several defining characteristics:

- **Business-Centric:** Businesses should integrate ILM into their key processes, initiatives and applications to meet current and future growth and demand in information.
- **Centrally Managed:** Businesses should put their information assets under their ILM strategy purview.
- **Policy-Based:** Businesses should implement an information lifecycle management policy that encompasses all their processes, applications and resources.
- **Optimized:** The information lifecycle management strategy should consider the different data storage requirements and allocate resources based on business data value.
- **Heterogeneous:** ILM strategies should consider all types of operating systems and storage platforms available.

Information Lifecycle Management Process

The information management lifecycle begins well before the business or organization starts. Before starting, a company or organization conducts market research that involves collecting vast information amounts to make critical decisions. These include the product or service to focus on (produce, distribute or manage), the customer or market segment to concentrate on, proper placement, pricing and the existing competition.

When the business eventually starts its operations, it begins creating and collecting information that it further uses to fine-tune its processes and procedures. It then

classifies and stores the created and managed information such that it's retrievable when required.

As the business or organization matures, it archives the older information and deletes obsolete data. It also secures the stored data to ensure that only authorized people can access it. Therefore, businesses continuously analyze and assess data to use it for forming strategies and for decision-making processes.

Information Lifecycle Management Policy

Information lifecycle management policy consists of the overarching data storage and [information policies](#) driving management processes. Business goals and drivers dictate ILM policies, so they generally tie into an information lifecycle management framework of overall IT management and governance, change control processes, service level agreements (SLAs), and system availability and [recovery times](#).

Information Lifecycle Management Goals

Managing data is a challenging task, but there are specific goals that a business needs to consider. They form the foundation by which it achieves unhindered and streamlined information flow. The main objectives of ILM are:

- Data Security and Confidentiality: The massive volume of data in existence means an equally all-time high amount of [risks and threats](#). Today, data is almost

the digital world's new currency, so its security is highly essential to any individual and organization. Thus, it's necessary to protect data security, prevent access from unauthorized third party users and protect it against [malware](#) or corruption.

- Availability: As data is the digital world's driving force, it makes sense to ensure it's readily available when needed. Lack of availability results in cascading failures of processes dependent on information from previous processes, making data one of the primary goals of ILM.
- Integrity: Data is used in daily operations, making it subject to multiple revisions and edits for every instance of use. Additionally, there is increased implementation of data-centric technologies like cloud computing, [edge computing](#), or the Internet of things (IoT). Hence, data integrity is needed to ensure that correct information is available to all users and any changes made reflect in all instances.

Information Lifecycle Management Strategy

Creating an ILM strategy can help businesses determine how to treat their data, information and storage media or leverage tiered protection.

- Taking a Step Back: If something happens to business data, information and applications, businesses cannot go back in time to make corrections or find and access those records without a [backup](#) in place. Hence, the need to have an information lifecycle protection strategy to manage and coordinate the various life cycles in the data and information lifecycle management framework.
- Considering the Future and the Past: Data remains active from a reading perspective either during different intervals or on a sustained basis. Businesses

constantly produce new data, metadata, copies and copies of copies. Thus, by understanding that the base data remains static and unchanging, enterprises gain insight into how to protect it in the future – for example, safeguarding static data frequently.

- **Focusing on the Essential:** Businesses know the similarities and differences across their data, information and media storage, plus their associated ILM and tiered protection. Hence, they can unlock value and remove complexity and high costs to sustain growth. To do this, they start by revisiting their information management along with their storage media, backup and corresponding lifecycles.

Why the Need for Information Lifecycle Management?

The information lifecycle management definition given above shows that ILM is critical for data-centric businesses, such as banking, telecom or insurance. Below are several other reasons for implementing an information lifecycle management policy:

1. Find Difficulties with Compliance Issues

Federal and State compliance is mandatory for all businesses. It's only possible when business data is well-managed. For instance, the banking sector requires all companies to keep their customer information secure. They also retain information such as transaction details, social security details and contact information.

Therefore, they need to validate, update and maintain the information to keep track of current and former customers. Similarly, they should also preserve tax-related data and file regularly with the relevant authorities. ILM ensures companies update their

information periodically and file in the correct format on time. (Check out these compliance regulations to learn more: [GDPR](#), [CCPA](#), [CPRA](#), [PCI](#), [FedRAMP](#))

2. Facing Several Legal Actions

Businesses that face legal actions regularly initiated by vendors or customers need to analyze their database information. Metadata could offer them enough information about why they face legal actions and allow them to make corrections. The data could also help businesses provide enough evidence to counter the legal actions against them.

3. Not Performing Optimally

It's only possible to optimize processes after their performance is quantified and compared against the plan. Keeping track of related processes ultimately enables the business to understand the time taken to complete tasks and measure the success or failure rates.

For an e-commerce business, for example, the time customers spend on the website, the volume of transactions completed, or the time taken per transaction all provide valuable information that allows the owner to optimize the website performance.

4. Quick and Effective Customer Service

Businesses that can quickly retrieve customer details from their phone number are a confidence boost in the customers' eyes. They can resolve customer queries fast and improve their customer service and satisfaction. In turn, this creates brand loyalty and good reviews that attract new business.

Phases of Information Lifecycle Management

Different industries will generally have different information lifecycle management stages. However, it's possible to classify them into the following broad phases:

1. Data Collection

Businesses collect data from reliable sources – online and offline. Social media networks and the Internet are good sources of large volumes of available data for free and paid users. Some companies offer authentic information based on their requirements, which is more valuable.

2. Data Creation

As the business begins its operations, it starts generating and collecting information on a large scale. It records data daily in all its processes and stores it digitally, including attendance, inventory, invoices, complaints, queries and other transactions.

3. Data Classification

The business will classify any collected and input data before storing it. Classification makes it easier to store and retrieve data efficiently. Large enterprises manage databases that store information categorically and offer many processing facilities, making the information more valuable. They keep and classify data in tiers for efficient retrieval and better management.

4. Data Archiving

Collecting and storing data over a period becomes voluminous, making it difficult to sort and store information. Thus, it is critical to document and archive stored data periodically to make it available when required and allow frequent queries and transactions to only use the latest and relevant data.

5. Data Security

Whether real-time or archived, businesses should securely store their data. Cybersecurity is critical for information lifecycle protection due to the increasing number of threats to data privacy and attacks from malicious actors worldwide.

6. Data Disposal

Data becomes obsolete over time for several reasons, such as changing processes, changing policies, or adopting better strategies. Outdated data costs to businesses can be quite high due to the costs involved in data security, processing, storage and

retrieval. Periodic information assessment is necessary to remove obsolete data.

7. Data Assignment

Assessing what you store is essential to make use of it. Data management is costly and requires careful assessment frequently. Businesses can compile and store bulk data to use later for computations. They can also retrieve and analyze old data for comparison and identifying patterns that help management decisions.

Records and Information Lifecycle Management

Records management is a critical part of the overall ILM strategy. It ensures the availability and authenticity of records over time to help businesses achieve their mission and make decisions. It also helps ensure compliance with industry regulations and government laws.

Records management policies are at the center of records management – information lifecycle policy. They define what information and data businesses keep as records. These policies also define the procedures for records management, retention periods and secure destruction.

Benefits of Information Lifecycle Management

Information lifecycle management benefits vary from business to business. From customer service to content management, information is now the driving force that helps companies survive and succeed in a highly competitive marketplace.

Information lifecycle management implementation transforms data management and brings businesses significant benefits through simplification and consolidation of information technology resources and systems. It also helps reduce the growth of information stored and supports investments in enterprise information lifecycle management to produce apparent increases in specific business capabilities.

Below are the essential benefits of information lifecycle management:

- **Reduced Risk:** ILM reduces expired and unneeded information and makes your data easier to discover and manage. Reducing non-essential information volume lessens the risk of data loss, leakages and the discovery of unfavorable content. Additionally, businesses that know where to find electronically stored information (ESI) reduce the chance of missing critical data when searching.
- **Content Management:** ILM enables businesses to manage their content from its point of creation or collection until its storage, disposal or retirement.
- **Improved Service:** eDiscovery, records management and archiving may stop becoming a distraction that drains legal and IT. Business and legal can focus more time and effort on serving customers and executing business strategy and less on eDiscovery and information management requests.
- **Cost Savings:** Businesses can reduce storage, legal hold and eDiscovery costs using better information lifecycle management solutions. Reducing the “digital debris” decreases a business’s overall search scope while improving the chances of finding information promptly. Additionally, reducing duplication and non-value-added data directly impacts discovery costs.
- **Faster Access to Information:** Categorizing the data created, collected or stored under ILM gives the business speedier access to the information.
- **More Effective Governance:** Information lifecycle management can introduce management controls that benefit the enterprise. ILM can also bring the bonus of improving information management for the entire business.

The Bottom Line

Interestingly, irrespective of the industry, information lifecycle management remains similar – from online retailers to banking, telecom or insurance businesses. The information must go through information lifecycle management stages at some point.

Businesses start their ILM by collecting market data to determine feasibility and understand competition. They then use information lifecycle management tools to generate and collect information that they classify and store for various reasons. Later they use business intelligence tools for process analysis and fine-tuning.

Businesses depend heavily on information they collect, create, analyze and store. Therefore, they must give [data security](#) prominence to protect their information assets and interests. They also use records management to archive and dispose of information to save storage space and minimize associated costs.