

Access

# Understanding Metadata: Key Functions, Types and Best Practices



Few would dispute that data is the lifeblood of today's companies. But the amount of data created globally each year has shot up from 2 zettabytes in 2010 to 147 zettabytes today. That staggering volume would be impossible to manage without an overarching system for labeling and organization.

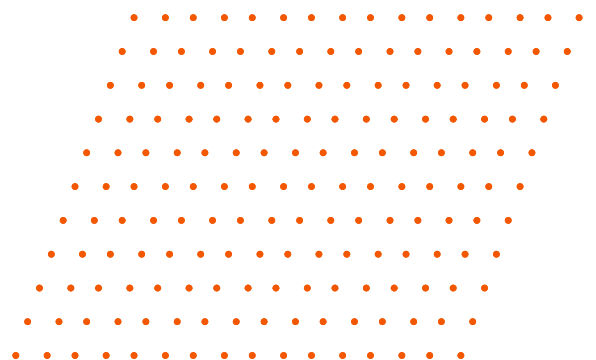
That labeling system is metadata. Often referred to as "data about the data," metadata is a standardized, structured way of describing data. It unlocks records' hidden value by providing critical context, enabling people to find what they need, collaborate more easily, and dramatically improve workplace efficiency.

Without metadata, it would be nearly impossible to locate all the datasets you need, and even if you did, you wouldn't know enough about them to make useful decisions. It would be like wandering around a grocery store where products had no labels stating the ingredients, calories, serving size, or cooking directions.

The concept of metadata is far from new. In 280 BC, Egyptian scribes began attaching small tags to papyrus scrolls, listing the title, subject, and author of each so that others could easily see the information without having to unfurl the bulky object.

Today's electronic metadata tags provide similar information (and much more) to help workers retrieve records faster and perform their jobs more efficiently.

The following pages describe the different varieties of metadata and provide best-practice guidelines on how to leverage it to optimize efficiency, productivity, and security throughout your organization.



# Key Functions of Metadata in Records Management

Virtually every task a records and information management professional performs is enabled or enhanced by metadata. That includes:



## Record identification

Metadata imbues every document with unique identifiers, such as title, creation data, and author.



## Retrievability

Metadata makes records easier to search and retrieve by including keywords, categories, and other indexing information.



## Context

Metadata provides context by capturing the purpose, process, or activity that led to a record's creation. For example, which program or product the record was used for.



## Access control

Metadata can be used to specify who can access or edit a record, a capability essential for ensuring proper security and compliance.



## Preservation and history

Metadata stores details about a file's history, making it easier to manage.



## Compliance

Metadata tracks retention schedules, legal holds, and audit trails to ensure regulatory compliance.



# Types of Metadata

There are many different types of metadata, each designed for a specific purpose and user group. It's important to note that depending on the field you work in, you may hear different names used to describe the various types of metadata; however, the core concepts remain the same. Here are some of the major categories, organized under labels most commonly used by records managers.

## Descriptive Metadata

The most widely-used type, and the one people are most familiar with, is descriptive metadata, which provides details about what the resource is and what it's about. Examples include title, author, keywords, subject, and sometimes a brief abstract describing the contents. Its main purpose is to facilitate the identification and organization of information assets. For example, if your company has several scanned contracts, the title and client name help you distinguish one contract from another. A "2026 Vendor Agreement – Atlas Corp" title immediately sets it apart from "2025 Client Renewal – Horizon Medical." Like a card in a library's catalog, descriptive metadata helps users locate the resources they need and provides a good idea of what they contain—before it's even opened.

## Administrative Metadata

Another type is administrative metadata, which describes the behind-the-scenes details that support the management and use of data. It explains who created the data, when, how, and under what conditions. This type of metadata is vital for ensuring resources are properly maintained and accessible. Administrative metadata includes the subcategories of technical, preservation, and rights metadata, each focusing on a different aspect of managing digital assets.

## Technical Metadata

Put simply, technical metadata helps your organization decode and use data correctly by specifying how that data can be opened, displayed, or used. For instance, a scanned image stored as a TIFF file might require specific viewing software, while a compressed PDF can be opened broadly. Technical metadata reveals those requirements, so no file becomes inaccessible.

In addition to file formats, other examples of technical metadata include compression type, resolution, and software or hardware dependencies.

## Preservation Metadata

This type of metadata supports the long-term maintenance and integrity of data. It carries details about a file's format, version, and history. It also includes checksums—blocks of data that detect errors introduced during format conversions, transmission, or storage—as well as any repairs or data backups that have been performed. Like a service record for a vehicle, preservation metadata helps you ensure that your records remain fully operational and intact over time.

## Rights Metadata

Rights metadata protects data by attaching information about intellectual property rights, including the copyright holder, copyright expiration date, license terms, and access and use restrictions. With these tags attached, no one can claim ignorance about the facts of ownership.

If a file is under a Creative Commons license, for instance, rights metadata tells users exactly how it can be shared or modified. Without it, teams risk misuse or noncompliance with legal requirements.

## Structural Metadata

Structural metadata describes data assets' internal organization and relationships, including information on its formats or schemas (such as a book's table of contents or scene progressions in a movie), as well as any tables, columns, and other information showing the relationships between data elements. Like the blueprint for a building, structural metadata shows how everything fits together. It's essential for achieving successful data integration and interoperability.

## Provenance Metadata

Also called data lineage, provenance metadata records the origin and evolution of data. It traces where a dataset came from, how it has changed, and who has handled it through tags like editing timestamps, version history, and user activity logs. This is especially valuable for compliance, eDiscovery, and audit trails, as it confirms authenticity and accountability.

## Usage Metadata

Usage metadata captures how data is accessed and utilized. It might include the number of downloads, views, edits, or users interacting with a record.

This information offers valuable insights into how teams work with data. For example, if certain records are accessed daily while others are rarely touched, that pattern can guide future digitization, retention, or reorganization efforts.



# Applying Metadata: When and How

Metadata can be applied at different points in a record's lifecycle. As you're creating a process for metadata use at your organization, consider when to apply it:

## Applying Metadata During Capture

When data is first created or received, certain metadata is generated to describe its origin and provide a baseline of authenticity and traceability. It captures the most immediate details, such as who created the record, when and where it was created, and how it came to exist.

For instance, a modern camera instantly embeds information like the location, date, and time a photo was taken, as well as the camera model, lens, and settings the photographer used and the photo's resolution and file format. Similarly, when a document is scanned or uploaded to a content management system, the platform might automatically assign a creation date, file format, and user ID.

## Applying Metadata After Capture

Once data enters active use, new metadata continues to accumulate as part of ongoing recordkeeping and management processes. This includes information about how a record is accessed, modified, transferred, or disposed of—essentially, its operational history.

For example, when a file is reviewed for approval, transferred between departments, or reaches the end of its retention period, those actions can be recorded through metadata. By providing a traceable history, it helps to ensure a record's continual quality and accuracy.

## Active vs. Passive Metadata Application

Each type of metadata listed above falls into one of two categories based on how it is applied and updated:

- **Active metadata** is dynamic and updated automatically. When a system logs who last opened a document or when a record was shared externally, it's generating active metadata in real time.
- **Passive metadata** is static and manually entered. It requires human effort and remains unchanged unless deliberately updated. Additionally, it's prone to errors and cannot scale easily as data sets grow.

## Challenges with Metadata Management

While metadata is a superb tool for information management professionals, it's common to encounter a hurdle or two.

One frequent problem is inconsistency. That's often caused by human error, but organizational silos can be a factor, too. For example, different teams may use different naming conventions for the same kind of data.

These inconsistencies breed inefficiencies and hold-ups, making it tough for employees to find all the information they're looking for or share it across departments. Inconsistent tagging also impedes uniform security and compliance enforcement.

Another common issue is with the enormous volume of data organizations hold. Creating and updating metadata tags for today's large data repositories requires a great deal of time and resources, especially if the tagging is done manually. The task quickly becomes tedious, multiplying the chances of human error. And unstructured data, such as emails, PDFs, images, audio and video recordings, notes, research and anything else that wouldn't fit neatly into a spreadsheet, is particularly challenging to work with, requiring more time and effort to tag than structured data.

The result is often incomplete, outdated, or inaccurate metadata—all of which make it tougher for users to find what they need and more difficult for you to ensure compliance and operational efficiency.

## Metadata Best Practices

Metadata's precision, versatility, and convenience make it an ideal vehicle for managing information, but to reap its full value, you must govern and administer it with care. After all, even a Lamborghini will lose its value if it's not properly maintained.

By following these best practices, you'll improve efficiency, security, and compliance throughout your organization.



## Best Practice #1: Establish Clear Metadata Standards and Practices

- Use recognized standards like Dublin Core or ISO 23081 as a foundation, then define and document guidelines tailored to your organization's needs. That includes establishing naming conventions, required fields, and acceptable formats.
- Create a metadata dictionary with term definitions, acceptable values, and rules.
- Standardize practices for structured and unstructured data using templates and controlled vocabularies.

## Best Practice #2: Automate Metadata Generation and Updates

- Implement tools that leverage AI and machine learning to auto-generate metadata from file properties, content, or predefined templates, as well as classify unstructured data and extract key information from within documents.
- Configure your systems to enforce your rules and automate updates for lifecycle events like archiving or migration.



## Best Practice #3: Centralize Metadata Governance and Oversight

- Assign a dedicated governance team or records manager to oversee metadata practices.
- Develop workflows for metadata creation, review, and approval to ensure uniformity across departments.
- Conduct regular audits to make sure your controls are working as they should, and to ensure metadata is complete and accurate.

## Best Practice #4: Prioritize and Optimize Metadata Management Efforts

- When getting started, focus on applying detailed metadata to your most highly valued or most frequently accessed records first.
- Implement retention schedules to archive or dispose of obsolete records. In addition to keeping records compliant, this will help reduce the immense volume of metadata you have to manage.
- Use analytics to identify active records, and prioritize updates accordingly.

## Best Practice #5: Leverage Scalable and Efficient Systems

- Use systems designed to manage high volumes of both structured and unstructured data efficiently.
- Choose platforms that support batch metadata processing and cloud scalability.
- No matter how great your systems were when you set them up, assess and update them regularly to make sure they can continue handling your data repositories as they grow.

## Best Practice #6: Provide Comprehensive Training

- Educate all staff on metadata standards, consistency practices, and volume-specific challenges. Demonstrate how metadata will save them time and improve their workflows and encourage questions and discussion.
- Offer role-specific training tailored to records managers, IT staff, and end users, and conduct workshops on automated tools and metadata processes for large-scale repositories.

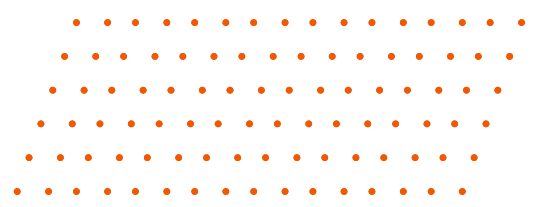


## Best Practice #7: Foster Interdepartmental Collaboration

- Work with department heads to discover normal collaboration patterns, then engage cross-functional teams to refine metadata strategies aligned to their specific business goals.
- Host workshops to align departments on consistent metadata usage. Once again, encourage feedback from users to help them refine processes and address practical challenges.

## Best Practice #8: Implement Quality Assurance Processes

- Use automated monitoring tools to flag issues in real time.
- Conduct spot checks on unstructured data, where metadata is more likely to be incomplete.
- Perform regular audits to identify inconsistencies, gaps, or redundancies in your metadata.



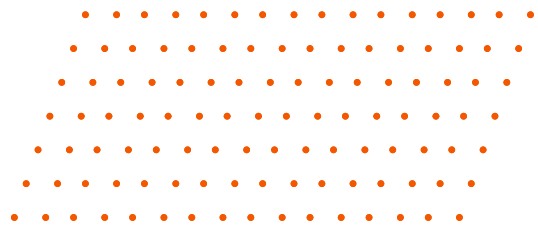
## Obtaining Lasting Results

It's easy to see why metadata is such a powerful tool for records management professionals. By providing a treasure trove of information in a compact, easily accessible format, it enables you to find records quickly, ensure document accuracy and integrity, implement proper storage and disposal procedures, and enforce consistent adherence to security and compliance rules.

However, many organizations still face a critical gap: their physical records. Applying metadata retroactively is a time-consuming process, and sometimes, you don't even have a clear picture of what's inside a box. [Access Unify®](#) bridges that gap.

By using AI and machine learning to automatically identify and classify record types as they're scanned, Access can apply metadata during the digitization process, turning physical files into fully searchable digital assets. The result? Information that's easy to find, secure, and ready to support your team's daily workflows.

**The sooner you start incorporating metadata into your document strategy, whether at creation or conversion, the faster you'll realize greater efficiency, accuracy, and control over your information landscape. To learn more about Access Unify® or request a quote, [contact us today](#).**



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