Module 8 - Document & Content Management

What is Document & Content Management

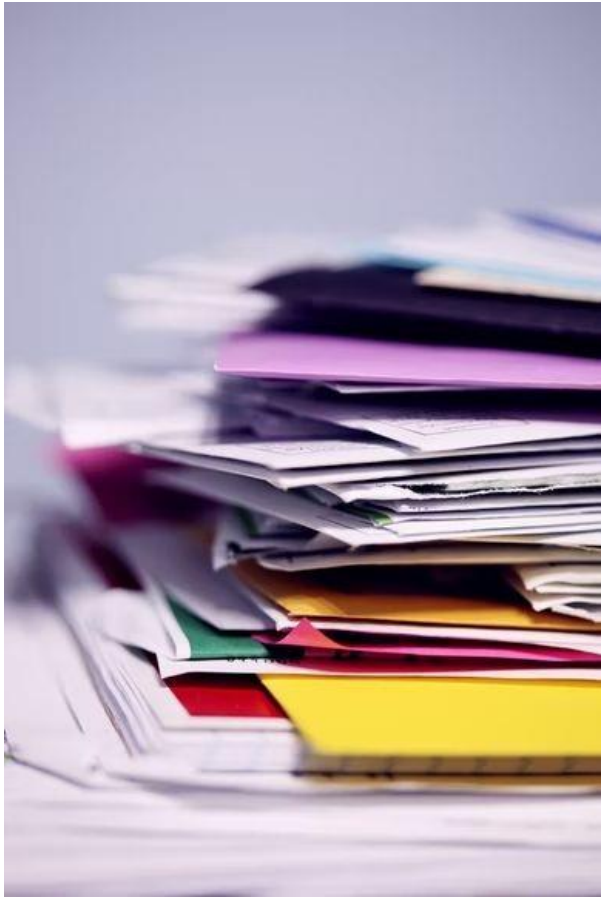
“**Document & Content management** is the process of establishing planning, implementation and control activities for lifecycle management of data and information found in any form or medium - outside of relational databases”

Why do we need Document & Content Management?

- Comply with legal obligations
- Comply with customer expectations regarding records management
- Effective and efficient storage, retrieval and use of documents and content
- Integration between structured and unstructured content

What is a DMS?

- DMS stands for Document Management System
- What are the benefits?
- Types of DMS



What is a CMS?

- CMS stands for Content Management System
- What are the benefits?
- Types of CMS

ECMS

- ECMS stands for Enterprise Content Management System
- What are the benefits?
- CMS vs ECM

Figure 1: Magic Quadrant for Content Services Platforms

Source: Gartner (October 2021)

Document Management vs Enterprise Content Management

Comparison	Document Management System (DMS)	Enterprise Content Management System (ECMS)
Type of Data	Structured data in traditional formats (Word, PDF, PowerPoint, Excel, etc)	Structured + unstructured data such as images, audito, video files, HTML, etc
Main purpose	Workflow management and regulatory compliance	Storage, retrieval and publishing of content
Key difference	DMS is a software	ECM is a set of tools and processes. ECM is a broader version of DMS
Company size	DMS only solution can work well for small companies	ECM solution needed in bigger organizations

Module 9 - Master & Reference Data Management

What is Master Data

DAMA Guide to Data Management Body of Knowledge: “Master Data represents data about the business entities that provide context for business transactions”

Gartner: ‘Master Data is the consistent and uniform set of identifiers and extended attributes that describes the core entities of the enterprise including customers, prospects, citizens, suppliers, sites, hierarchies and chart of accounts”

What is Reference Data

DAMA Guide to Data Management Body of Knowledge: “Reference data is data used to classify or categorize other data”

Examples of Reference Data:

- Postal codes
- Language codes
- Customer segments
- Country codes
- Cost centers

Master Data vs Reference Data

Comparison	Master Data	Reference Data
Main purpose	Represents the business objects which contain the most valuable, agreed upon information shared across the organization	Data that defines the set of permissible values to be used by other data fields
More on usage	Master data is the data shared by multiple systems, applications, processes in the organization	Reference data is a type of master data that is used by other data fields
Examples	● Customer information - names, phone numbers and addresses ● Product information - product name and location ● Partner data - partner name and address	● Fixed conversion rates - weight, temperature, length, etc ● Currency codes ● Language codes ● Customer Segments ● Cost centers ● Postal codes ● Units of measurement

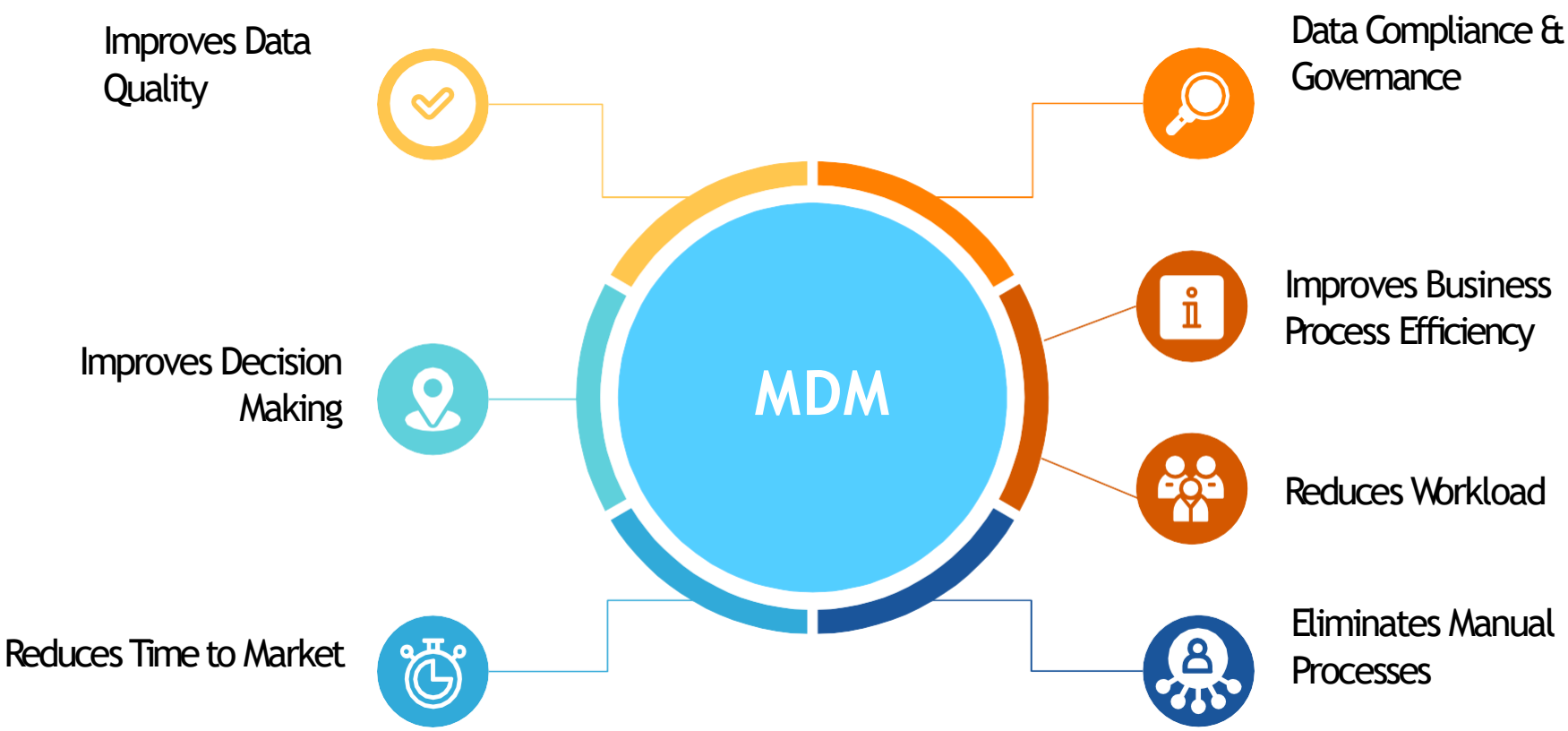
What is Master Data Management (MDM)

Master Data Management is the process of creating and maintaining a single master record - or single source of truth - for each person, place, and thing in a business.

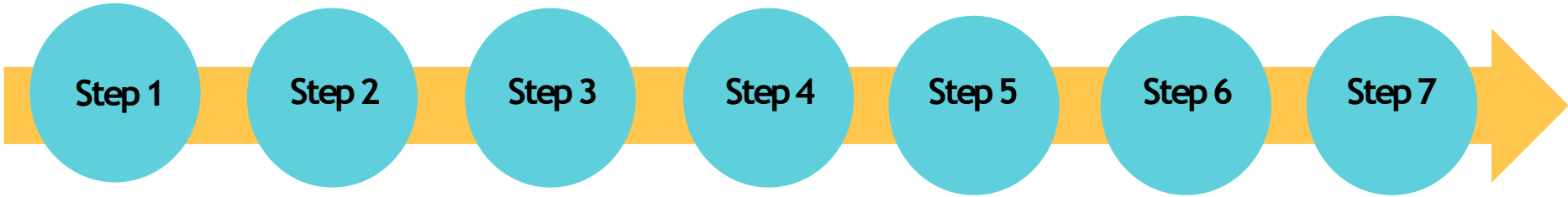
Through MDM, organizations gain a trusted, current view of key data that can be shared across the business and used for better reporting, decision-making, and process efficiency.

Source - definition SAP. www.sap.com/insights/what-is-master-data-management-mdm

Why MDM is important



Steps to implement MDM



Learn about MDM:

- Important Capabilities
- Implementation Styles
- Domain Categories

Analyze your current data environment

Define your business goals

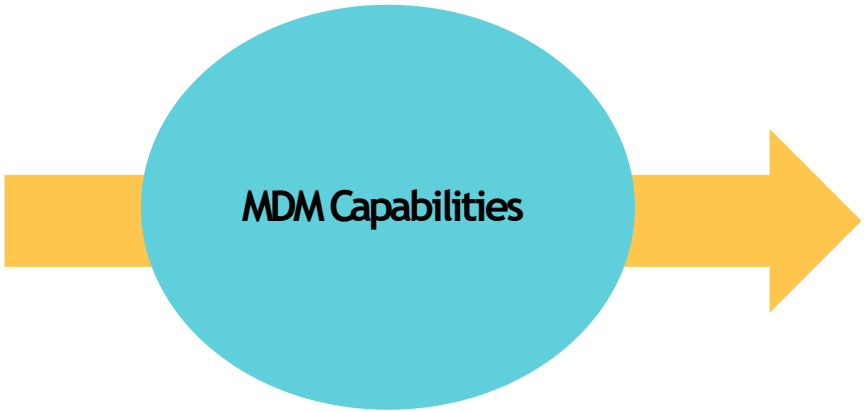
Secure the right sponsorship

Get the right team and tool

Implement a quick win

Repeat Step 6 and monitor

MDM Solution Capabilities



- Workflow/BPM
- Loading/Sync/Business Services
- Data Modeling
- Information Quality/Semantics
- Perform/Scale/Availability/Security
- Hierarchy Management
- Data Stewardship
- Data Governance
- Multiple Implementation Styles
- Multiple Usage Scenarios
- Multiple Domain and Multidomain
- Product Suite Internal Integration

Source: Gartner - Critical Capabilities for Master Data Management Solutions

MDM Implementation Styles

Consolidation

- **Ideal for reporting or analytics that reside in a BI/data warehouse**
- Nonintrusive to the business
- BI is the business platform
- Any industry
- Benefits dependent on success of BI strategy
- No attempt to clean up source data

Registry

- **Low control, autonomous environments**
- Nonintrusive to edge applications
- Emphasis is on remote data and application-to-application integration (lots of real-time network access)
- Distributed governance
- Faster to implement than coexistence and centralized

Coexistence

- **Large-scale distributed model**
- Largest change to information infrastructure
- Greatest need to mirror data
- Global and local governance
- Greatest risk over control, security
- Focused on shared services

Centralized

- **High-control, top-down environments**
- Largest change to application infrastructure
- Hugely invasive to the business
- Centralized governance
- Greatest control over access, security
- Focus on common services

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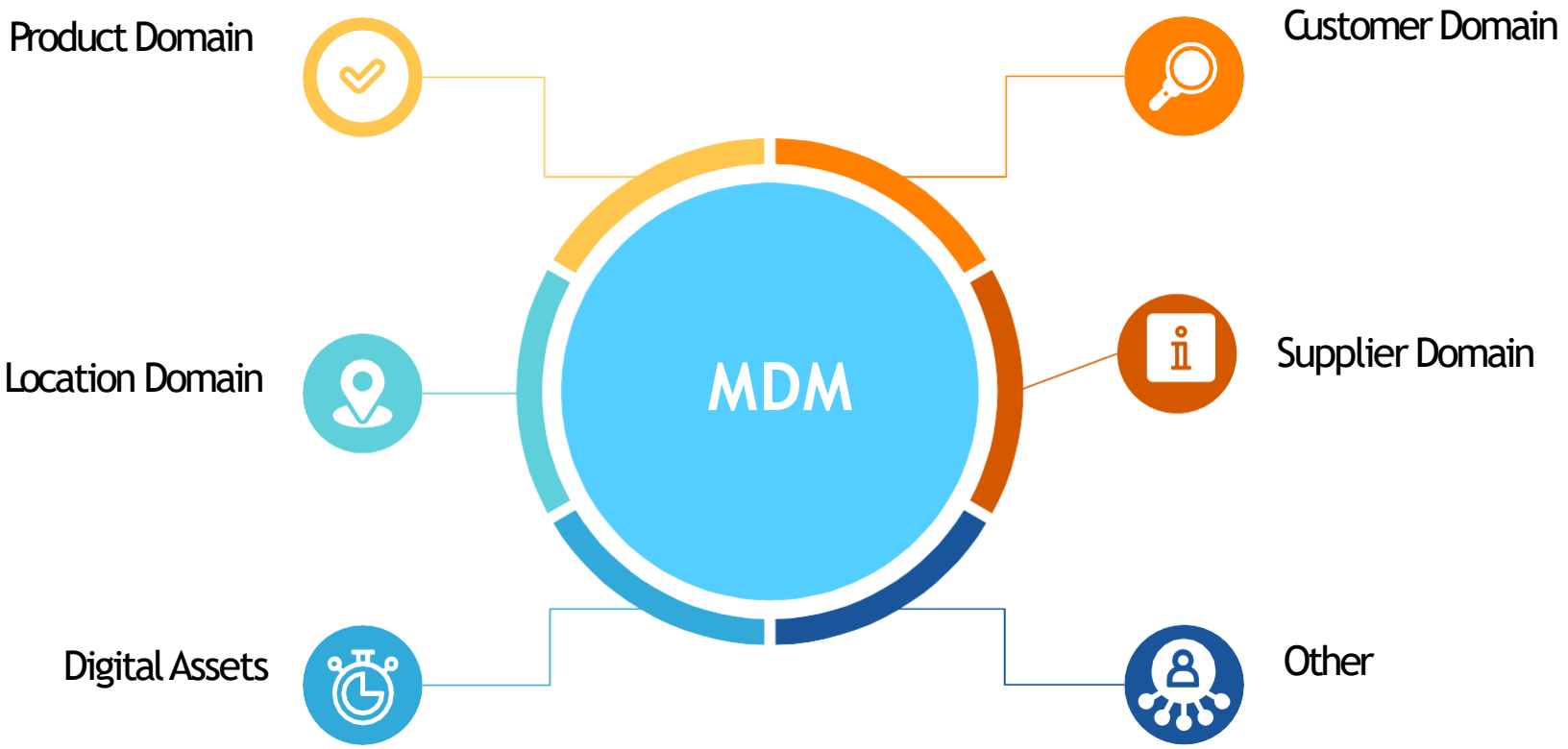
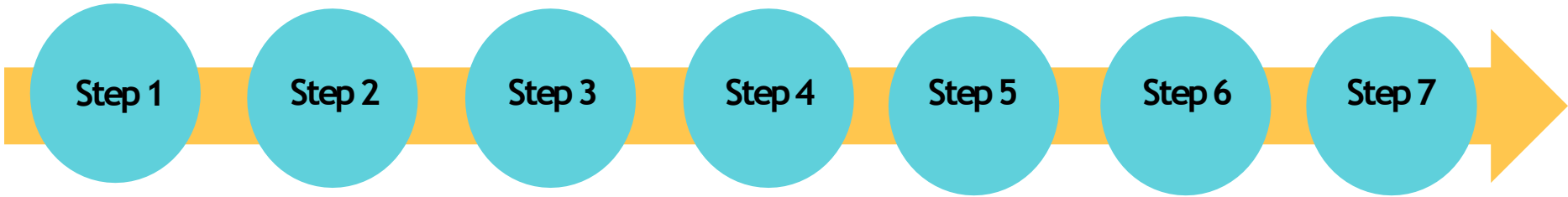
MDM Domains


Product Domain
Customer Domain
MDM
Location Domain
Supplier Domain
Digital Assets
Other

Steps to implement MDM



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Analyze your current data environment

Define your business goals

Secure the right sponsorship

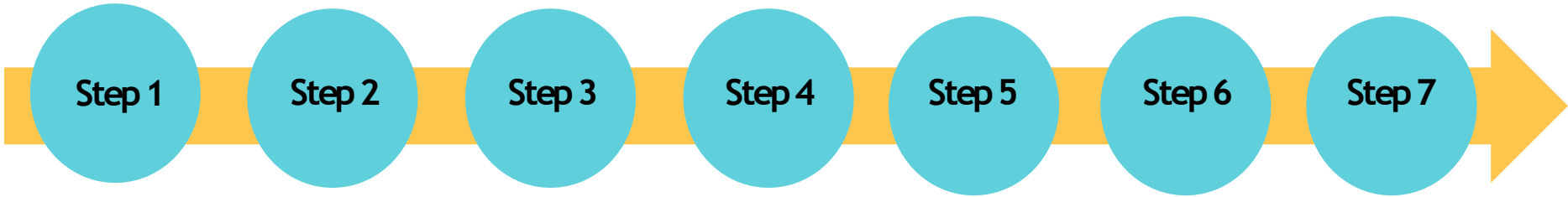
Get the right team and tool

Implement a quick win

Repeat Step 6 and monitor

1. What are the different company departments?
2. What kind of data do they use?
3. Where is the data coming from?
4. Is it well integrated with the company tools/apps and central repositories?
5. Any data silos?
6. What are the main data problems for the business?
7. Are there data quality controls in place?
8. How is the data being governed?
9. Who are the main data stewards in the department?
10. Any documentation that will help the MDM program?

Steps to implement MDM



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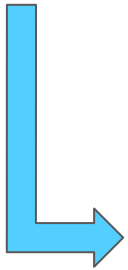
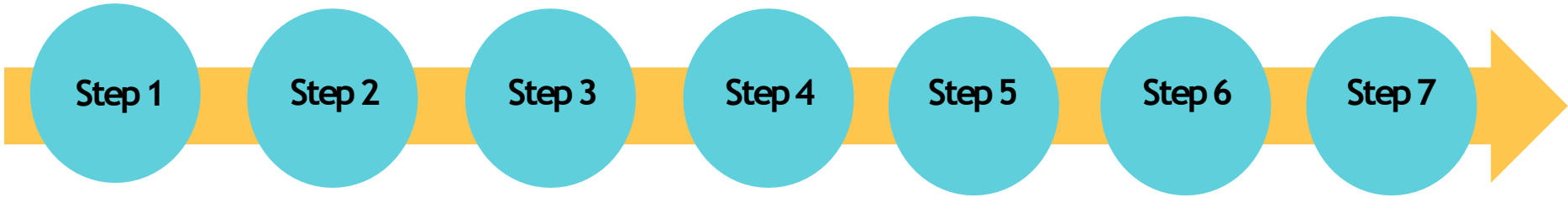


Some business drivers for MDM include:

- Up sell and cross sell opportunities
- Complete view of customers
- Improved Data Quality and business decisions
- Centralization of data
- Reduce costs of data maintenance and support
- Improved customer experience
- Other

Steps to implement MDM



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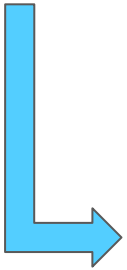
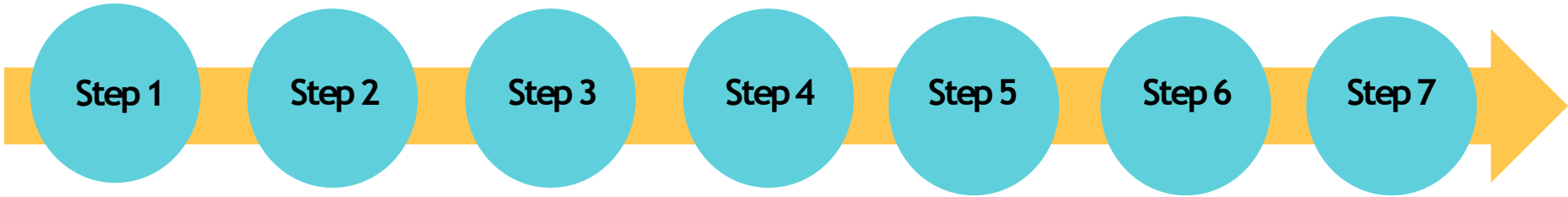


- MDM Programs can take years to implement
- Present your goals, strategy and success criteria
- Go to the top for long term budget commitment

Steps to implement MDM



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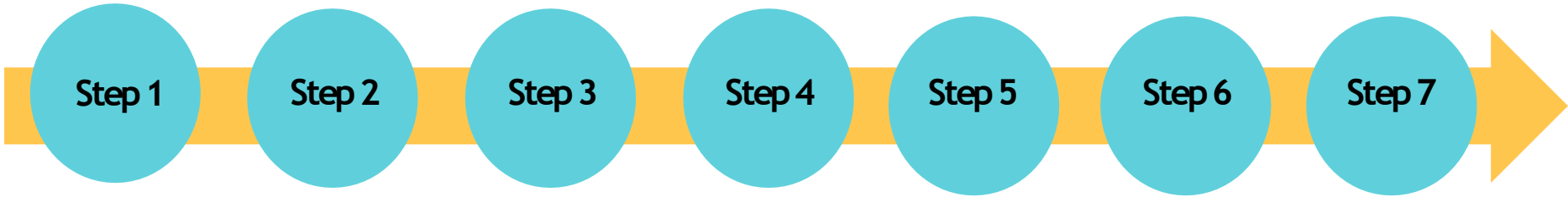
Get the Right Team:

- **Business Team -** *Sponsor (already covered), business analysts/SME, end users/data stewards
- **Program Team -** MDM Specialist, Data Architects, Program Manager
- **Tech Team -** DBA, Developers, Integration Experts, System Admins

Steps to implement MDM



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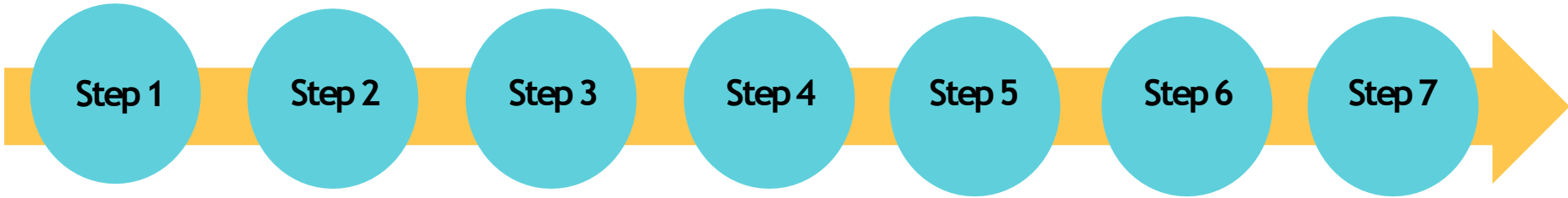
Implement a quick win

Repeat Step 6 and monitor

Get the Right MDM Solution (Master data management software that consists of policies, governance, standard tools and processes that facilitate defining and managing organization's data from a single point):

1. Understand your needs - features, functionality and business processes
2. Make a list of top 3-4 MDM solutions to further explore
3. Explore with a free trial

Steps to implement MDM



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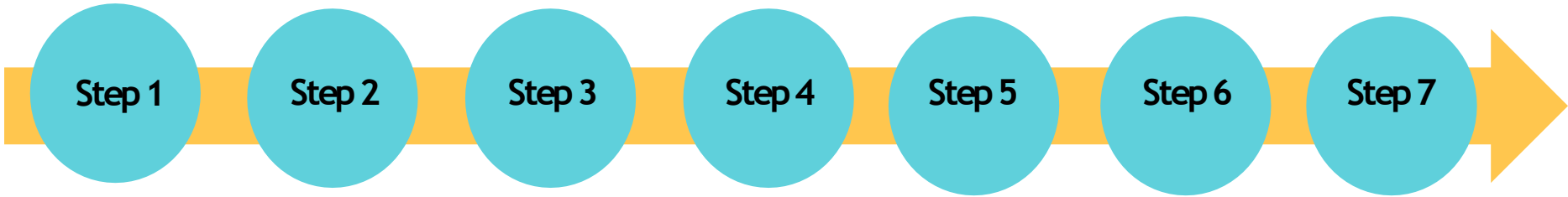
Implement a quick win

Repeat Step 6 and monitor

- Start with a small pilot project to show the power of MDM (look for the stakeholders that were vocal about their data problems in Step 2)
- Leads to your first happy customers
- Secures your budget for the long term

Steps to implement MDM



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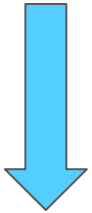


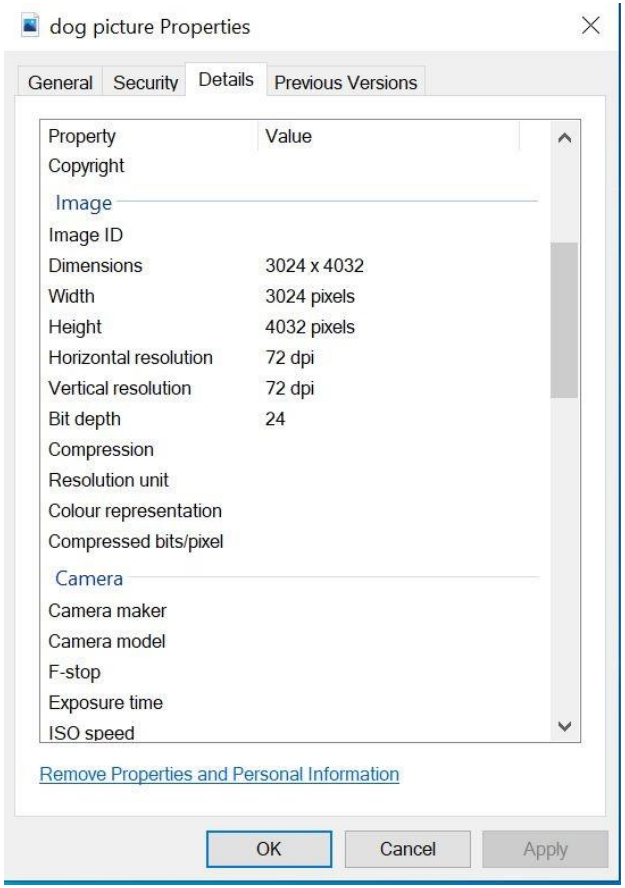
- Maintain the long term vision and release “wins” at regular intervals
- Keep on tracking the KPIs
- Maintain leadership’s interest in the MDM Program

Module 10 - Metadata Management

What is Metadata

"**Metadata** is data that provides information about other data"

Example of Metadata



What is Metadata Management?

It is the portfolio of best-practice processes and technologies that allow businesses to manage this data about their data and derive insights for more effective data management. It allows users of all kinds – business, technical, and operational – to search for, understand, and securely access the data they need to do their jobs.

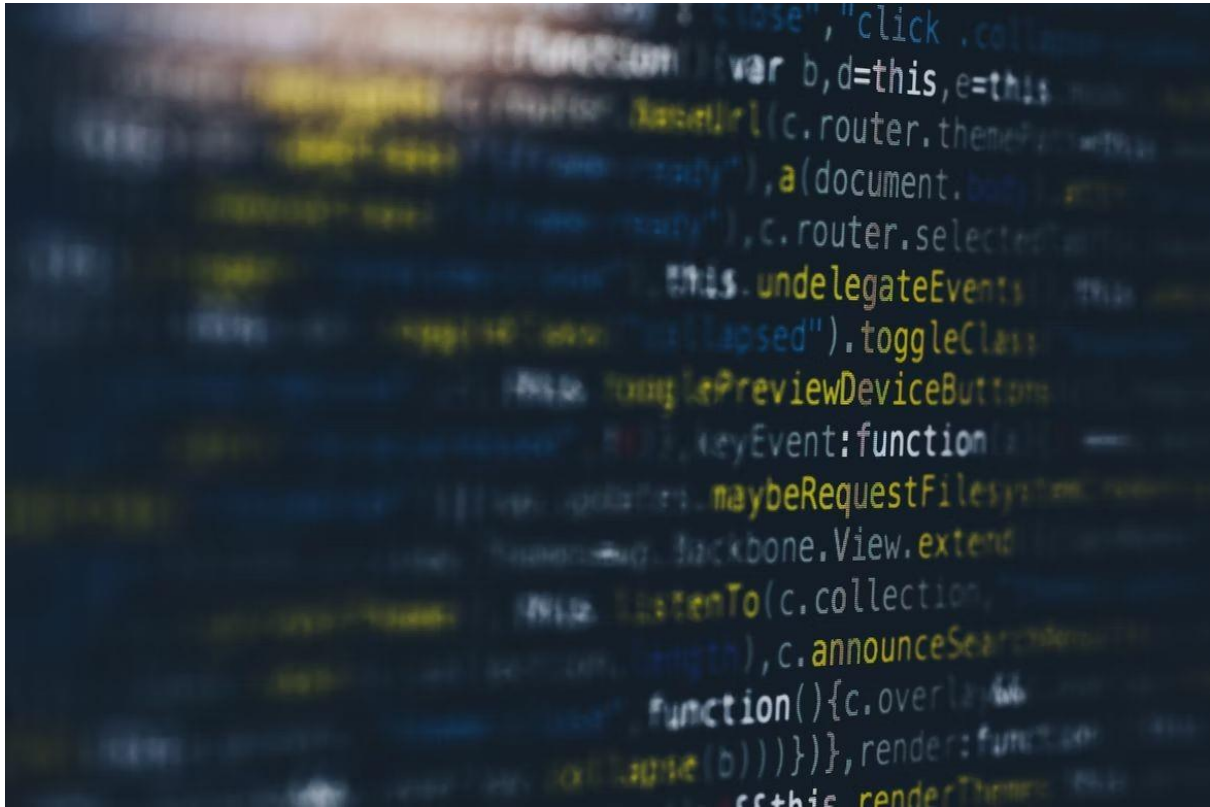
Source: https://www.informatica.com/resources/articles/what-is-metadata-management.html

Why do you need Metadata Management?

- Improved Consistency -establish a common business language
- Capture institutional knowledge
- Better data quality
- Faster access to insights
- Faster project delivery timelines
- Reduced costs
- Improved regulatory compliance

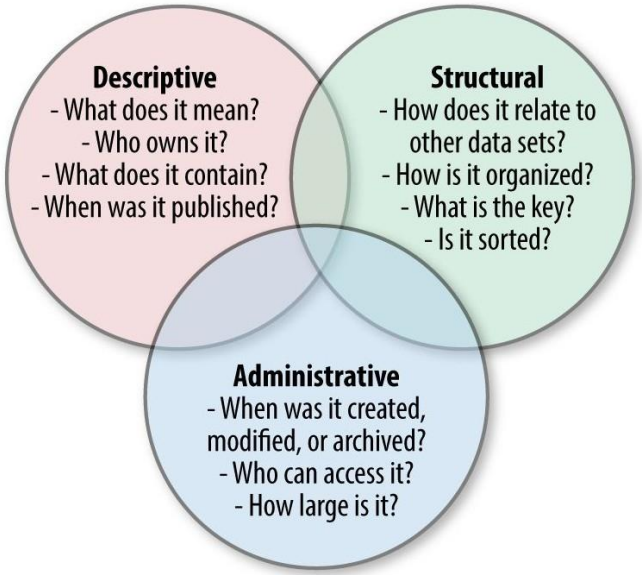
Types of Metadata

- Descriptive metadata
- Structural metadata
- Administrative metadata



Descriptive Metadata

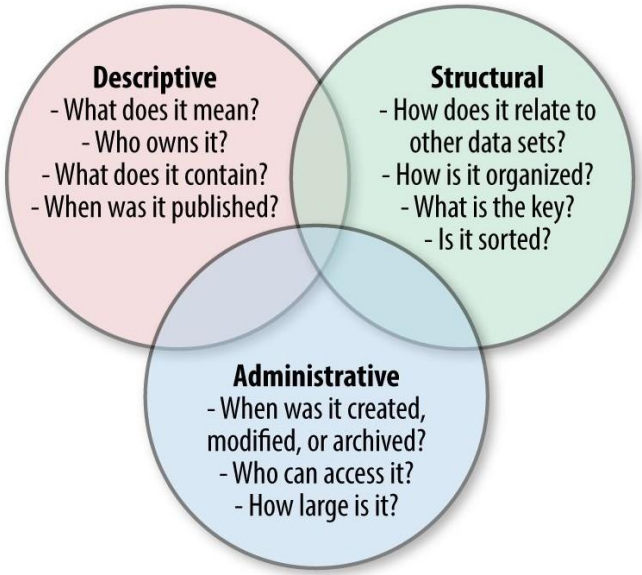
Descriptive metadata describes a resource for purposes such as discovery and identification. It can include elements such as title, abstract, author, and keywords.



Source: The three types of metadata based on NISO's classification. Source: O'rielly

Structural Metadata

Structural metadata is used to specify the relationships between components of a digital object (internal structure) and between different digital objects (external structure)



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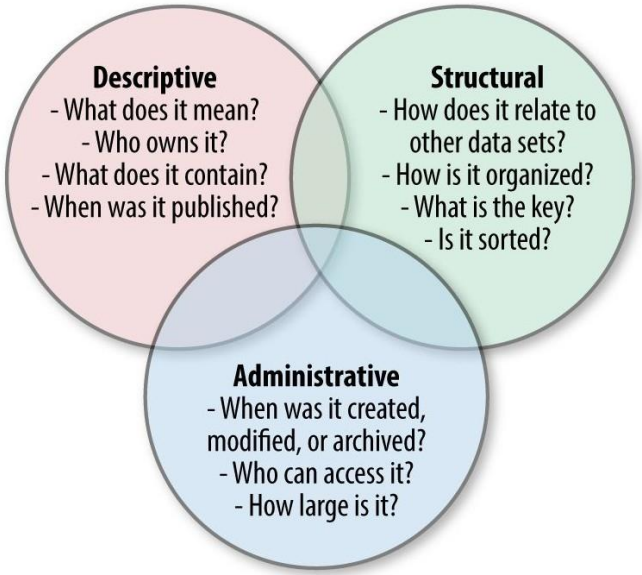
Administrative Metadata

Administrative metadata provides information to help manage a resource, such as when and how it was created, file type and other technical information, and who can access it.



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Magic Quadrant for Metadata Management Solutions

Figure 1. Magic Quadrant for Metadata Management Solutions

Source: Gartner (November 2020)

Implement Metadata Management

Step 1

Select the Metadata Program team

Step 2

Define the Metadata Strategy

Step 3

Adopt Metadata Standards

Step 4

Get the right Metadata Management tool

Step 5

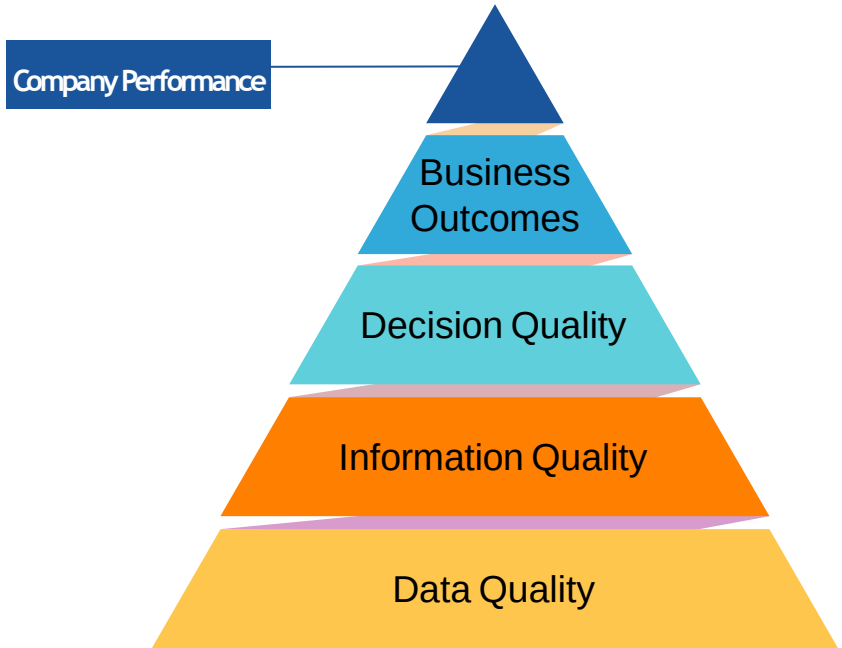
Deploy and expand

Module 11 - Data Quality Management

What is Data Quality?

Simple Definition of Data Quality:

"Data quality is defined by how well a given dataset meets a user's needs. Data quality is an important criteria for ensuring that data-driven decisions are made as accurately as possible"



Presentation by George Smarts

Slides design source: https://slidesgo.com/

Data Quality Management

Definition of Data Quality Management:

"Set of practices that aim at improving and maintaining a high quality of information within the organization"

Pillars of Data Quality Management

- People
- Data Profiling
- Defining Data Quality
- Data reporting
- Data Repair

Presentation by George Smarts

Cost of Poor Data Quality

- According to IBM's estimate, the US lost $3.1 trillion yearly due to bad data.
- Gartner.com suggests that organizations lose between $10 to $14 Million USD annually due to poor data.
- Integrate reported that around 40% of all leads have inaccurate data.
- Cio.com identified that around 80% of companies believe they lost revenue due to data challenges.
- MIT Sloan reported that employees spend half of their time coping with managing data quality tasks.
- Pragmaticworks states 20 to 30 percent of operating expenses are due to bad data.
- Econsultancy.com reported that due to poor data, companies having mail delivery issues lost about 30% of their revenue, in addition to the 21% of businesses experienced reputation damages.
- Gartner also reported that data scientists spend around 80% of their time cleaning and organizing data.

Source: https://www.gartner.com/en
https://www.invensis.net/blog/cost-of-bad-data-quality/

Data Quality Dimensions

Accuracy
Data accurately represents “reality”

Validity
Data conforms to the expected format, type and range

Timeliness
Data is available when expected and needed

Completeness
All the data required for a particular use is present and can be used

Uniqueness
Data appears only once in a data set

Consistency
Data values do not conflict with other values across different data sets

Presentation by George Smarts

Data Quality Improvement Process