Rise of the CDO and Strategic Data Governance

ENTERPRISE MANAGEMENT ASSOCIATES® (EMA™) CDO End-User Research Results Summary

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January 2018

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IT & DATA MANAGEMENT RESEARCH • INDUSTRY ANALYSIS • CONSULTING

Prepared for:

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IMPORTANCE OF STRATEGIC DATA GOVERNANCE AND DATA MANAGEMENT

Data-Driven Disruption

Data-driven companies are pushing the envelope and disrupting how organizations view, value, and utilize information. Data-driven cultures make information the fuel for their business models and operations. They look at internal and external information sources as the keys to building competitive advantage in their markets, maintaining and expanding their influence with customers, and establishing stronger relationships with their partners.

As these firms seek ways to differentiate their offerings for new revenues, target their consumers to improve customer experience, and lower their operational costs to improve margins, they adopt new ways of managing and governing data in parallel.

Data-driven enterprises focus on using information as a disruptive approach in marketplaces. They integrate this approach into their innovative products and services, which requires a fundamentally different way of looking at data and information. In the past, companies viewed information as the exhaust of the organization. Data was a reactive or reflective view of an organization's operations. Changing how data is viewed requires data-driven organizations to free themselves from traditional methods of data management. They have to become more flexible in the acquisition, management, and application of data and data assets.

Some poster children for the ability to leverage data to disrupt industries are well-known: Uber/Lyft, Netflix, and Amazon. These companies made data the core input of their business models, no matter where the information originated. Using the data from multiple internal sources such as billing, customer care, and supply chain management, and reaching out to external sources like geolocation mapping services and external payment systems, fundamentally changed the way they perform their business. Using data first disrupts but ultimately validates a new way for markets to operate in a fact-based manner.

In all these cases, mastering data created a governed model of the complex relationships between information components that related to a central entity or party, such as a customer, product, or location. For example, streaming content providers such as Netflix have a movie or show as a core business component.

While disruptive use cases are well known, the ability to deliver new value through innovative use of data is changing every industry, from restaurants to investments to beverages.

IN THE KNOW

WHO: Executives, architects, and business stakeholders from data-driven organizations

WHEN: Existing data governance and data management practices no longer meet the pace of data-driven cultures and operations

WHAT: Guidance on how strategic data governance and the role of the CDO impact the valuation and delivery of data assets

For example, PIMCO, a global investment management firm, uses strategic data management practices and techniques to identify and administer business entities such as organization, geography, and industry. These entities improve the quality of the analytics and data science operations that improve the performance of the PIMCO sales teams.

In the restaurant industry, customer tastes and consumer trends are moving faster than most organizations can support. Chipotle Mexican Grill, a fast casual restaurant chain operating more than 2,000 locations around the globe, implements data governance and master data management (MDM). MDM supports data-focused applications, including specific geolocation positioning for location-based services, applications, and menu items to assist global supply chain and inventory practices.

Vermont Information Processing (VIP), a technology and business support supplier for the beverage industry, provides an industry-standard item catalog built on collaborative data management strategies that integrate the knowledge of non-technical contributors into applications for sales, marketing, and inventory. The VIP item catalog allows organizations across the beverage industry to have standardized and easily updated information on beverage suppliers such as wineries, distilleries, and breweries, and standardized product information including logo and label imaging.

IMPORTANCE OF STRATEGIC DATA GOVERNANCE AND DATA MANAGEMENT

The Need for Strategic Data Governance

The siloed approaches of data stewards and architects in the past were sufficient on individual projects or engagements, capable of crafting and implementing governance and management practices. However, data-driven organizations and data-focused applications require a more strategic approach. This approach needs to raise the visibility and importance of data governance and management to the correct levels for success within an enterprise. They need:

- Policy development and enforcement for security and privacy, data quality, and overall governance
- Master data management domain development, maintenance, and updates
- Metadata capture and analysis on usage, access, and lineage, as well as business performance
- Process development for data capture, integration, and semantic and technical definitions

Corporate-wide communication is essential to bring together the efforts of technical resources from IT departments with knowledge of the various lines of business, as well as having a comprehensive view of organizational goals.

Begin With the End in Mind

This strategic approach needs to focus data governance and management strategies on successful outcomes associated with data management tasks, such as accomplishing goals for the various line of business stakeholders within the organization, by spreading them throughout an enterprise. From the CxO suite, where business strategy based on information is set, to frontline employees who understand, touch, and utilize data every day, companies need to align and focus on how data impacts topline revenues and bottom-line profits.

Also, the implementation of data governance and management needs to spread across the company rather than a single project, so the organization can include data for every customer. In those cases, siloed grassroots applications of data governance with a data steward or data architect would be enough.

KEY RESEARCH FINDINGS

Data Governance Maturity

- Over half of respondents (55.9%) said data governance was "currently adopted and a vital part of our business"
- Over 4 of 10 organizations (41.2%) indicated that master data management was "currently adopted and a vital part of our business"
- Over 1 of 3 (34.3%) surveyed organizations scored as **Developing**, or were in the initial stages of data governance strategy, and over 1 of 4 (25.5%) were evaluated as **Robust**, or very mature, in their data management practices

Data Governance Leadership

- Over 4 of 10 respondents (42.2%) indicated that the CDO was responsible for setting corporate strategy around data governance
- Less than 1 of 5 (17.5%) said this role belonged to the data stewards
- **Robust** maturity organizations had a 12.6% increase in the role of the CDO, while the role of the data steward declined by 15.3%

Valuing Data Assets

- Over 3 of 5 (64%) respondents were able to quantify the value of their information assets
- **Robust** maturity organizations were nearly twice as likely to be able to act on the value of data than their **Developing** maturity peers

Data-Focused Applications

- The most indicated data-focused applications in surveyed organizations were those focused on business customers or consumers
- **Robust** maturity companies were nearly 20% more likely to focus on governance and product applications than **Developing** maturity enterprises

Roadblocks to Data Management

- The largest hurdle to effective data management efforts were those associated with business practices and the associated business case for data governance and management
- **Robust** maturity companies are 23% less likely to focus on obstacles associated with costs and budget than their **Developing** maturity competitors

MDM Implementation

- Most organizations implement new MDM domains such as customer or product in 3 to 6 months (29.4%), while **Robust** maturity efforts were 25% more likely to deliver new domains in 3 months or less
- Over 7 of 10 respondents indicated they delivered updates to existing domain requirements in 3 months or more
- **Robust** maturity data governance initiatives were nearly 2x as likely to deliver domain adjustments within 4 to 5 weeks
- Typically, surveyed organizations took 1 month or longer to update the information within their MDM domains
- **Robust** maturity organizations were over 50% more likely to update that same domain data daily or sooner

EMA MATURITY SCORING MODEL FOR DATA GOVERNANCE

Maturity models help organizations understand their developmental positioning on a particular topic, process, or technology implementation. These models also provide a path for growth to achieve higher levels of strategic implementation. Traditional maturity models are usually developed across a pair of axes: strategy and implementation activity. However, a two-axis maturity model is missing a key component of an organization's development or execution: success. The success or failure of a particular activity is generally considered to be the ultimate gauge if a company matures in an endeavor.

Data Governance Maturity Score

Determining an organization's maturity in the application of data governance and management practices is no different. Data management leadership within the enterprise needs to understand how their practices stack up against others.

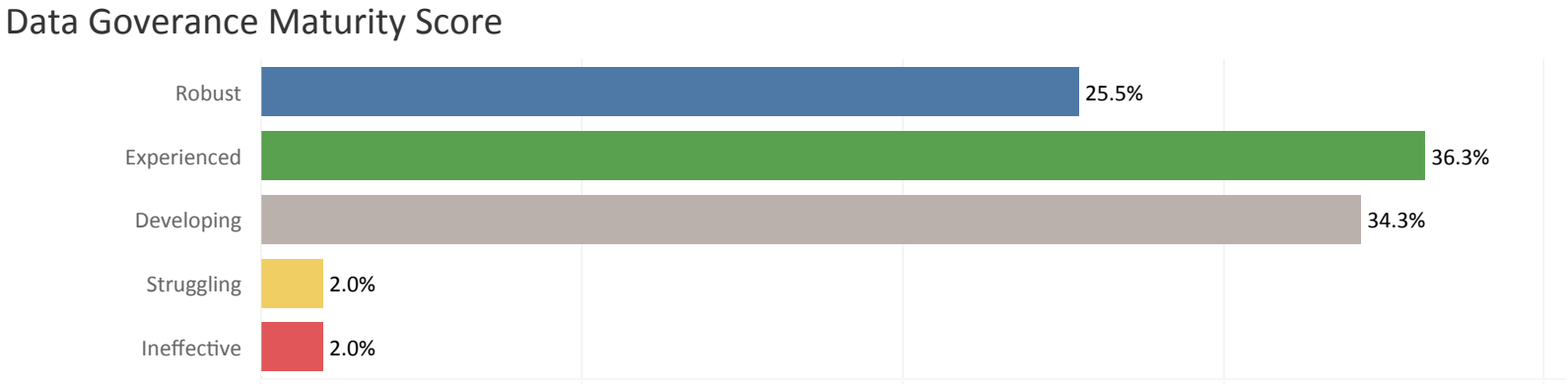
As part of the EMA CDO Data Governance End-User Research study, survey respondents provided information on:

- the importance of data governance and management practices across their organization
- the distribution and penetration of information and data-enabled applications
- the success of their efforts

With the indicators from data governance and management strategies, data-focused application diffusion, implementation, and institutional success associated with data governance and management, the following categories are created from the resulting aggregate scores:

- **Robust**–These organizations are showing a strong competency in terms of strategy, projects, and overall success with strategic data management.
- **Experienced**–These organizations successfully implemented data governance strategies across their enterprises.
- **Developing**–These organizations are working toward their data management strategies and building the best practices that will result in quality.
- **Struggling**–These organizations are laboring toward data governance implementations, but are finding difficulty gaining traction or quality.
- **Ineffective**–These organizations are below average for each of the category types, and appear to be unsuccessful with their data management strategies.

To provide context and guidance for future success, comparisons between the **Developing** maturity organizations and those with **Robust** maturity scores will be made. This will illustrate the difference between two of the largest groups, and the differences between those enterprises beginning their journey toward strategic data governance and those that already made significant progress.



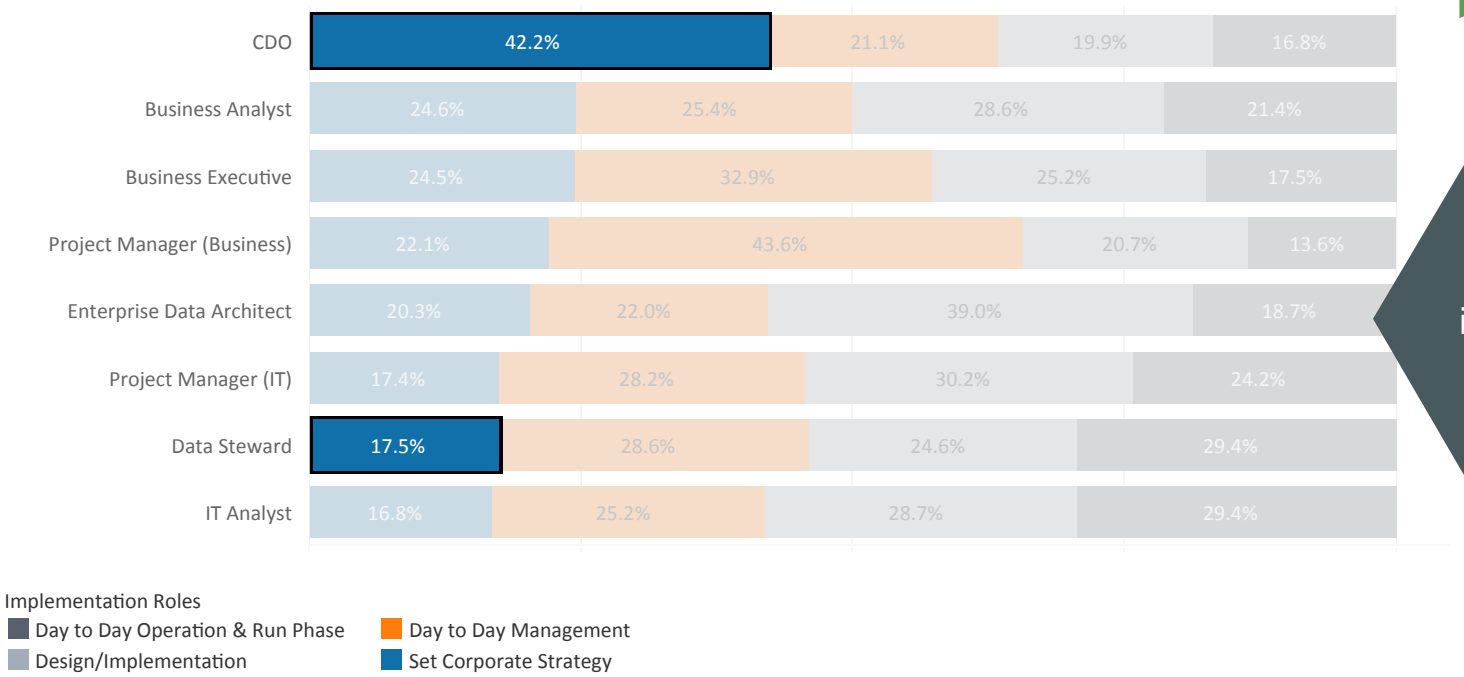
LEADING STRATEGIC DATA GOVERNANCE

The ambitions of data-driven cultures place more demands on the data governance and management practices of an enterprise. This means the organization's leadership for data governance and management practices needs to evolve to meet the challenge.

Over the past five years, the role of the Chief Data Officer (CDO) has been created and empowered to bring data governance and management strategies to the next level. The CDO is moving beyond the data steward's relatively low-level view to provide enterprise-wide visibility to data management efforts within the CxO suite.

The EMA CDO Data Governance End-User Research study found that respondents overwhelmingly consider the CDO the best choice to set corporate strategy within an organization's data governance and management practices. With a nearly 3x larger distribution over the role of the data steward for setting policy, companies are making a move to a strategic approach. In fact, when comparing enterprises with various maturity levels, the role of the CDO increases over 12 percent (12.6%) in organizations with a **Robust** maturity score. Conversely, the role of the data steward is reduced by over 15 percent (15.3%) when comparing **Robust** maturity score organizations vs. their **Developing** maturity counterparts.

Role Responsible for Strategy, Implementation and Operations



12%

Robust maturity organizations had a 12.6% increase in the role of the CDO, while the role of the data steward declined by 15.3%

15%

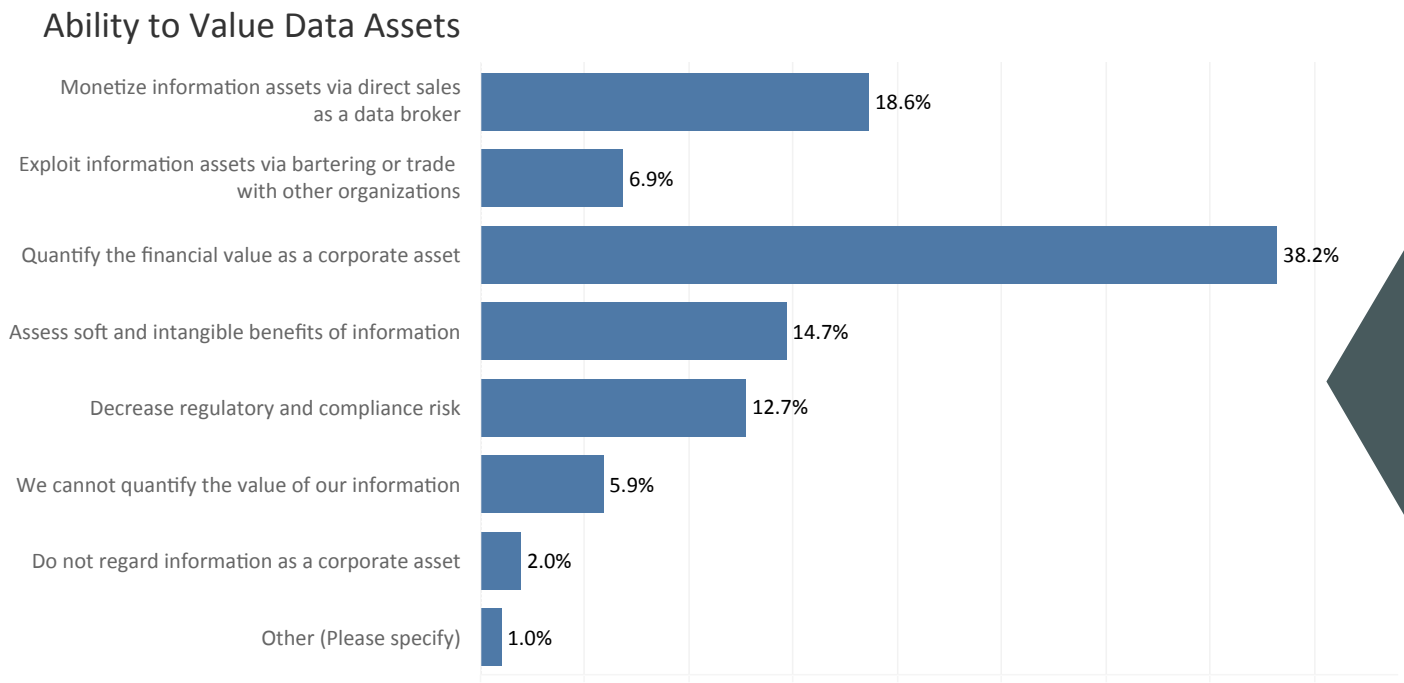
EXECUTING WITH DATA ASSETS

Data-driven organizations take pride in the ability to gain advantage of the value of information. The goal of using information as the fuel for their company instead of simply the exhaust depends on the ability to find and properly assess that value. Organizations must move from simply knowing where data is within their environment to assessing and assigning hard value to that information. With their strategic approach to data governance and management and their position within the CxO suite, CDOs are tasked with surfacing an enterprise's data assets for the CFO, and ultimately the CEO, to treat information as a quantifiable corporate asset.

In the EMA CDO Data Governance End-User Research study, 64 percent of respondents indicated they had the ability to calculate the hard value of the data within their organization. They could quantify the financial value, exploit the information assets via barter or trade, or fully monetize information assets. This shows that these companies can make a monetary valuation of their information and use that valuation for corporate accounting.

Organizations with a **Developing** maturity score associated with MDM strategies were more likely to be able to quantify the financial value as a corporate asset, but were challenged to take action on that value. While quantifying is a necessary first step to executing an action associated with data, it is not impactful enough to truly be able to leverage data for competitive advantage.

Organizations with a **Robust** maturity were nearly twice as likely to take direct action, either through monetization or bartering, than their **Developing** colleagues in the marketplace. **Robust** maturity organizations are able to execute on the value of their data and make the most of the opportunities, whether they are in trade or actual monetary exchange.



2x

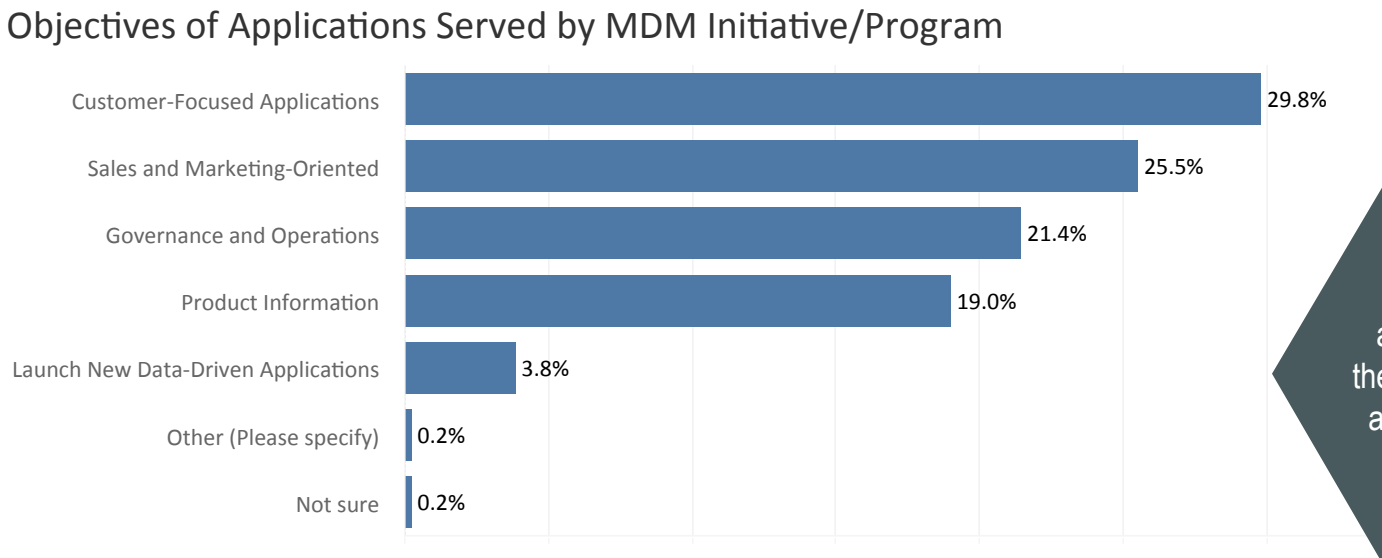
Robust maturity organizations (26.9%) are able to execute on leveraging data as an asset nearly twice as often as organizations with a **Developing** maturity stage (14.3%)

FOCUS OF DATA-DRIVEN APPLICATIONS

As initiatives push information into the hands of their employees, customers, and partners, data-driven organizations seek to increase the adoption of data usage and thus the value of information. When data consumers have access to and confidence in these applications, they make them integral to their interactions with the enterprise. For employees, trusted data applications improve operational efficiency and the pace of decision making. For both corporate customers and consumers, these applications provide valuable inputs to their purchasing decisions and improve confidence of the organization as a supplier. For partners within the ever-growing ecosystem of supply chains, access improves relationships and refines coordination.

The top applications for the EMA CDO Data Governance End-User Research study respondents were customer-focused applications such as service, experience, and loyalty. These applications focus on utilizing information and data to manage customer experience and retention. The next phase of applications is focused on sales and marketing efforts such as sales performance management, digital marketing, and marketing campaign management. The resources of an organization move toward the right revenue generation goals and objectives. Governance and operations applications consider how companies manage the data within their organization, such as location, asset, and reference data management. Other governance and operations areas include fraud, risk, and compliance management applications. Product information allows organizations to have a similar level of knowledge about their products as they do about their customers. To truly make an effective product match with a customer, this information is crucial.

Developing maturity organizations focus on customer, sales, and marketing. However, as organizations improve their data governance maturity, they increasingly focus on the areas of governance, operations applications, and product information. **Robust** maturity organizations are nearly 20 percent more apt to support those categories as they increase the strategic levels of data management and governance within their organizations.



20%

Robust maturity organizations are nearly 20% more likely to focus the applications they support as part of their MDM practices on Governance and Product objectives than their counterparts in the **Developing** maturity group.

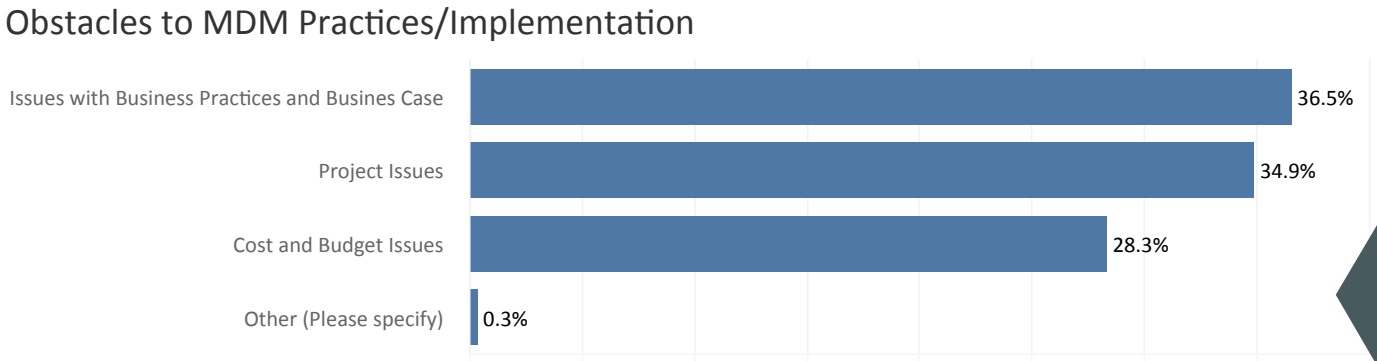
ROADBLOCKS TO MANAGING DATA EFFICIENTLY

Master data management (MDM) practices have often been an underappreciated aspect of data governance and management. Traditional MDM implementations have a reputation for slow delivery timeframes, difficult implementation processes, and high costs. Many of these issues relate to technical constraints associated with MDM practices and implementations.

Data-driven organizations no longer allow technical restrictions to be a limiting factor to their progress. CDOs and CIOs phase out, or minimize, constraining technologies and implement agile and iterative approaches.

The obstacles listed as most damaging to MDM practices were the lack of a defined business case and lack of evidence that an MDM implementation would impact revenues within the implementation timeframe. The second obstacle category focused on implementation issues such as complexity, lack of speed in implementation, and failure of previous projects. Finally, cost and budget issues impact how organizations view implementing MDM practices. These issues include upfront costs associated with MDM implementation and a lack of budget due to those upfront costs.

Developing maturity organizations have comparable obstacles across the three different categories, so organizations at the start of a maturity journey can see multiple areas of challenges equally. **Robust** maturity data governance organizations see the roadblock of business practices and case development as their biggest constraint. The lowest obstacle for these more mature organizations is cost, which is over 20 percent lower than **Developing** organizations. **Robust** maturity organizations have visibility over the landscape of implementation costs and the leadership to help them avoid these issues in the first place.



Robust maturity organizations are nearly 23% less likely to have issues associated with cost and budget as counterparts in the **Developing** maturity group.

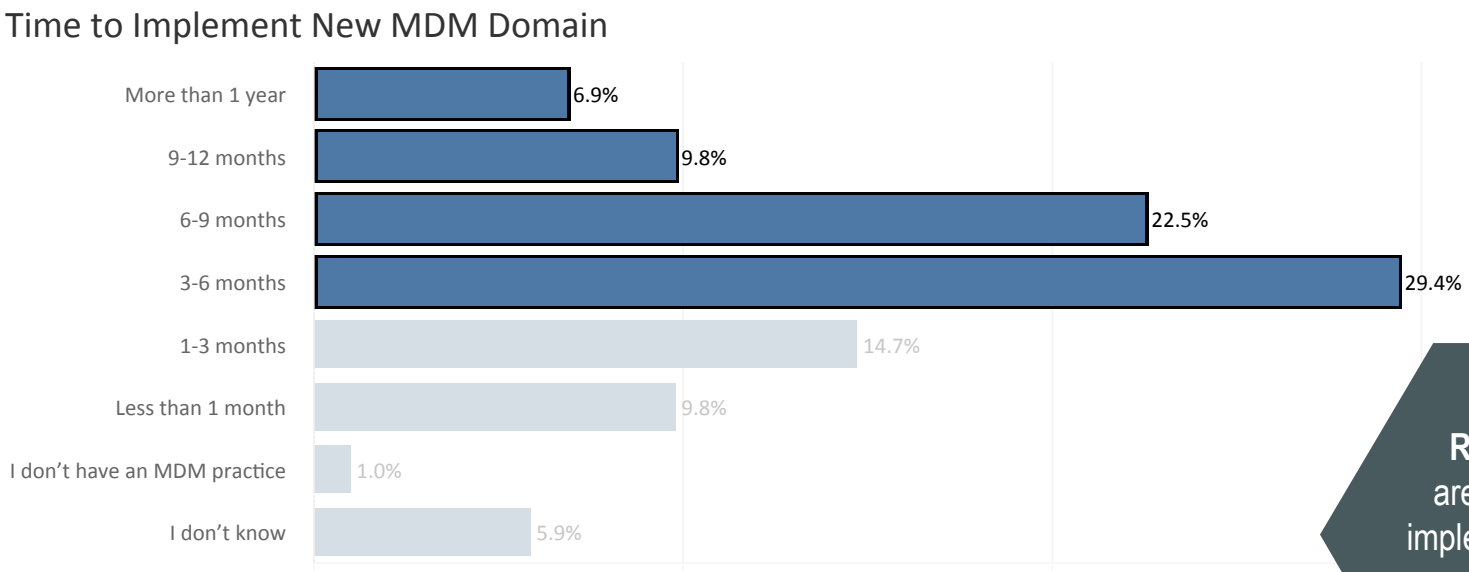
23%

IMPLEMENTING NEW MDM DOMAINS

Data-driven organizations are pushing for greater speed and flexibility in the implementation of MDM practices to hasten the deployment of data-focused applications. Part of this flexible implementation strategy is the goal to quickly meet business opportunities. This means MDM practices and platforms need to meet changing business goals as they arise, and not necessarily on the timeframe of the IT department's deployment teams.

Taking long periods of time to implement a new MDM domain slows the ability to effectively develop a business case to prove the value of the data. Long implementation timeframes contribute to high upfront costs associated with MDM implementations. Those long implementation timelines also lead to implementation failures, when business stakeholders lose sight of the implementation goals or the CFO simply pulls the financial plug on the implementation due to a lack of progress. Nearly 70 percent of the respondents to the EMA CDO Data Governance End-User Research survey have an implementation timeframe above three months (3-6 months, 6-9 months, 9-12 months, or more than a year) for the development and implementation of a new domain. Almost 40 percent fall into an implementation of six months or more.

As CDOs foster a more mature approach to data governance and data management practices, they are able to implement MDM domains with a faster tempo. **Robust** maturity organizations are nearly 35 percent more likely to implement in three months or less than their **Developing** maturity counterparts. This speed allows **Robust** data governance organizations to execute better and avoid implementation obstacles that face their less mature colleagues.



35%

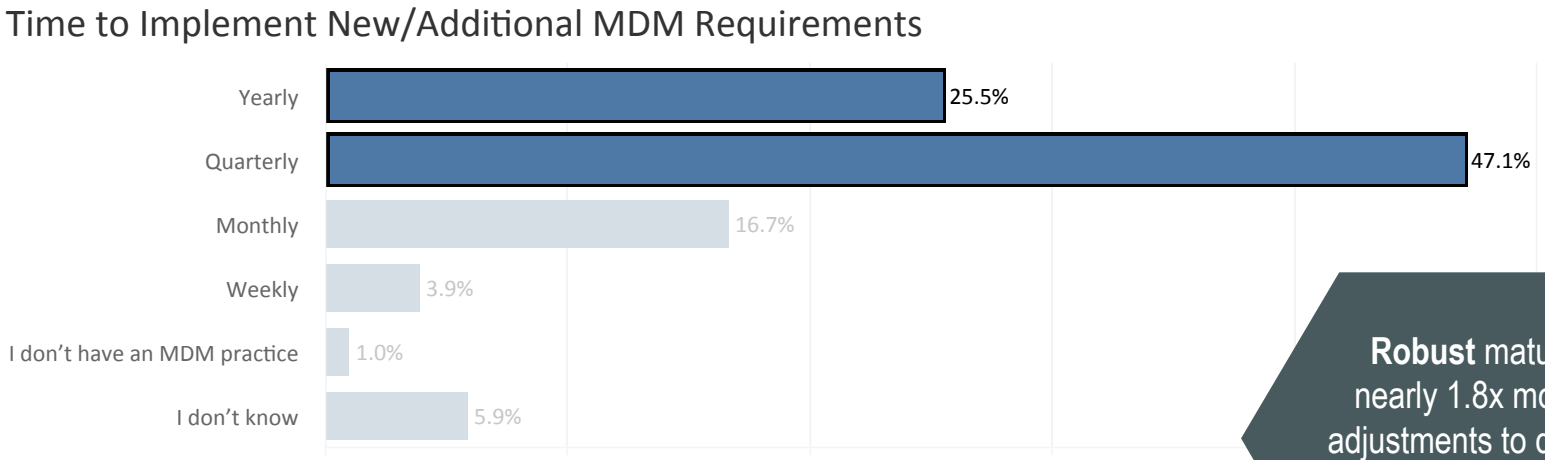
Robust maturity organizations are nearly 35% more likely to implement new MDM domains in 3 months or less than **Developing** maturity organizations.

NEW FACES IN A NEW PLACE: ADDING NEW REQUIREMENTS

As data-driven organizations expand and add new data sources to their data landscapes, the need to adjust and update the requirements associated with MDM domains becomes nearly as important as the ability to add new domains. Merger and acquisition activities add additional customers and products to the corporate portfolio. Incorporating new data sources from external and third-party providers and newly-acquired operational platforms changes how MDM domains are modeled and presented. In each of these situations, there are adjustments to those domains necessary to incorporating the new information.

Nearly 75 percent of respondents indicated that their ability to implement adjustments to requirements for a particular domain was quarterly or yearly. This falls outside of the typical agile implementation timeframe of 4-5 weeks. Being outside this window lowers the trust and impact of the data-focused applications that depend on updated MDM domains.

Developing maturity organizations indicated they needed only 20 percent of the time to be able to implement within this timeframe. Eighty percent of the time, their update fell outside a typical update cycle. For **Robust** maturity data governance organizations, the implementation within an agile scrum is nearly 2x as often. These more mature organizations are able to better meet the speed of the business challenges and keep up with the backlog of MDM-related requirements.



1.8x

Robust maturity organizations are nearly 1.8x more likely to implement adjustments to domain requirements within a monthly timeframe than **Developing** maturity organizations.

MANAGING STREAMS OF INFORMATION UPDATES

CDOs are focusing on the development of their data management practices so they do not have to be concerned with the acquisition and structure of their data, and the pace of updates to that information is not a problem. As the adoption of data-focused applications increases, updates from operational and transactional systems are streaming at a furious pace. Also, as external data sources such as social and third-party validated information become integrated into data-focused applications, updates for MDM domains come from multiple locations with disparate schedules.

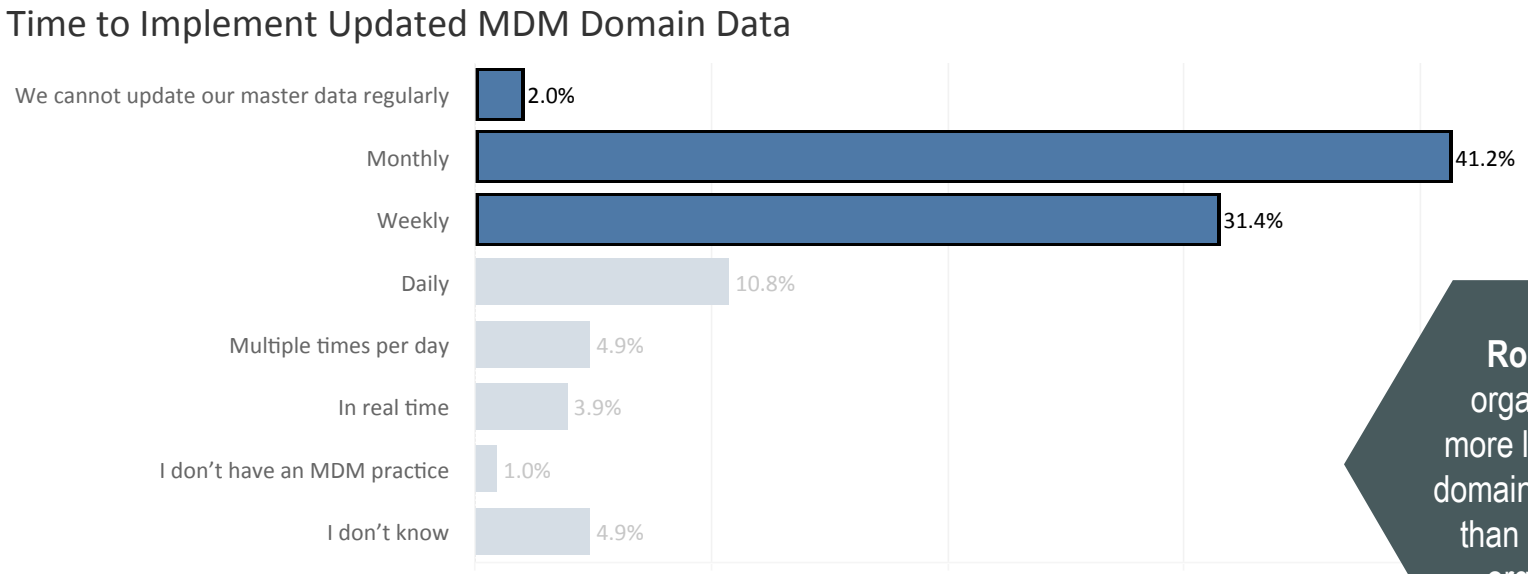
This means that to fully keep the data associated with a customer experience portal up to date, an organization needs to ensure that the flow of data regarding transaction history such as orders, payments, and shipments is accurate. This also applies to product inventory levels and regional demands associated with interaction between transaction applications.

EMA CDO Data Governance End-User Research study respondents indicated that over 70 percent were updating their MDM domain information either weekly or in a greater timeframe.

This means transactions or informational updates are needed for data associated with customer experience and sales performance applications are using data that is at least one week old. Oftentimes, the delay is more.

When organizations develop data governance maturity, they are often challenged to update their domain information as quickly as their business stakeholders desire. Over 50 percent of **Developing** maturity organizations update their data monthly.

Conversely, **Robust** data governance maturity organizations are able to meet those demands. **Robust** organizations are over 50 percent more likely to update their domain data daily or sooner. More significantly, **Robust** organizations are 3x more able to update their domain data in real time to support critical data-focused applications.



54%

Robust maturity organizations are over 50% more likely to update their MDM domain data daily or sooner than **Developing** maturity organizations.

ABOUT OUR SPONSOR: SEMARCHY

Semarchy™ is a technology and software provider focusing on master data management and their Intelligence MDM™ strategy. Its *x*DM program is a hybrid, multi-vector data management platform that encompasses the capabilities of master data management (MDM) and collaborative data governance. The Semarchy software leverages smart algorithms and material design to simplify data stewardship, governance, and integration. Its platform is implemented via an agile and iterative approach that delivers business value almost immediately, and scales to meet enterprise complexity.

Semarchy *x*DM

*x*DM empowers data stewards by generating graphs that detail the relationships between automatically-detected record duplicates. This allows them to more easily understand fuzzy-matched suggestions, and to explore these relationships deeper. The updated user interface turns splitting or merging into a simple drag-and-drop exercise, making it even easier for non-technical staff members to use. Business users are able to focus on making decisions while *x*DM handles details such as data lineage, security, and audit trails, ensuring only permitted data can be accessed or changed, and appropriately tracking all changes.

Control has become even more granular, adding to the comprehensive data survivorship capabilities announced with *x*DM. Users can now define survivorship rules for individual fields or groups of fields. Survivorship rules select the most useful data as golden values, maximizing the impact of the MDM consolidation hub. Moreover, user-defined overrides now allow data champions to easily fix anomalies. These features expand multi-domain capabilities by enabling the MDM system to naturally evolve from pure consolidation to a hybrid model.

A natural authoring experience guides users through the steps needed for collaborative data governance, data creation, and editing. Authoring automatically adapts to the user's persona, role, and privileges. Workflows support approval processes, and provide impact analysis. This helps users avoid data wrangling, and enables them to focus on analysis and operational data requirements.

*x*DM supports guided authoring for all types of entities: basic, ID, and fuzzy-matched. The authoring experience uses the steps for data creation and override functionality. Following the persona and role-based access controls common to *x*DM, authoring automatically adapts to the privileges of each user.

*x*DM provides a comprehensive, guided, simple, and consistent authoring experience that serves business users and data stewards alike. This delivers on the company's mission to turn data consumers into data producers, with almost no formal training.

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RESEARCH BACKGROUND AND KEY FINDINGS

Research Methodology

EMA crafted an end-user survey to establish opinions, trends, and implementation strategies associated with data governance, management, and master data management (MDM) in October 2017. For this research, EMA invited prequalified business intelligence and information technology professionals to complete an extensive web-based survey. These respondents were further qualified based on their responses to the following questions:

- How would you describe the extent to which data governance initiatives have been adopted within your business/organization?
- How would you describe the extent to which master data management initiatives have been adopted within your business/organization?

Respondents who failed to qualify after these questions were rejected. As a result, all respondents (in addition to being independently prequalified through the initial invitation process) self-identified as being active participants with a working knowledge of data management practices within their company. In total, 102 business and technology professionals responded with their insights on big data strategies and implementation practices.

Before EMA conducted the survey, the report sponsor was included in the survey instrument development. However, the sponsor had no direct involvement in any of the subsequent evaluation and analysis of the results for this report.

About Enterprise Management Associates, Inc.

Founded in 1996, Enterprise Management Associates (EMA) is a leading industry analyst firm that provides deep insight across the full spectrum of IT and data management technologies. EMA analysts leverage a unique combination of practical experience, insight into industry best practices, and in-depth knowledge of current and planned vendor solutions to help EMA's clients achieve their goals. Learn more about EMA research, analysis, and consulting services for enterprise line of business users, IT professionals, and IT vendors at www.enterprisemanagement.com or blogs.enterprisemanagement.com. You can also follow EMA on Twitter, Facebook, or LinkedIn.

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