



Balancing quality and agility:

How Retail benefits with Design for Dynamic Governance

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The only thing that is constant is change

The digital revolution has shown the truth of the above phrase. Be it business objectives, business processes, governance policies or more importantly, the data itself, change is inevitable in business. And no where is this more apparent than in retail. The rapid trends in the space are unrelenting forces that force businesses to adapt or die.

Even with innovative solutions in the market, have you ever wondered why satisfaction with master data management (MDM) related efforts is going down?

Are your current data governance methodologies and MDM implementations meeting your business objectives?

Are your current MDM capabilities, processes and implementations able to cope up with any impending changes in your business as you keep up with consumer preferences and choices?

According to Gartner¹, **“Today’s data management best practices are largely unable to cope with the complexity, distribution and pace of data in modern digital business.** Data and analytics leaders should stop striving for total data control and instead adopt a flexible, adaptive approach to data management.”

Increasingly, complex needs of retailers deserve more capable MDM solutions that go beyond what's available in the market today.

1. Gartner: Give Up Controlling Your Data: How to Overcome the Limits of Conventional Data Management Wisdom, 11 Jan 2021, Ted Friedman



Are your MDM processes agile and smart enough to keep up with your evolving business?

Digital revolution has created petabytes of data and continues to do so daily. Social media interactions – on Facebook, LinkedIn, Instagram, Pinterest – and monitoring data, created by IoT devices such as Smart Home devices, fitness trackers etc. on the other, have ushered in the age of Big Data and created a need for retailers to adopt solutions that are flexible and can scale. According to Gartner, "Organizations are struggling to harness, manage and govern data assets effectively because of challenges posed by data stack modernization and the exponential scale of data."²

New technologies like predictive inferencing and machine learning algorithms can consume and process large scales of data and provide significantly useful insights to business. Every enterprise, whether a startup or a multinational corporation, is coming to terms with the basic premise that data needs to be treated as an asset. Increasingly larger quantities of data are now available or have to be processed; be it master data, transactional, interaction, social or competitive data. E.g., there are 31.3 messages, 230 million tweets and 294 billion emails sent per day!

Retailers are spending most of their energy and resources trying to come up with creative answers to stay competitive and keep the lights on. New innovative growth strategies, be it new ways of digital and social interactions or traditional proven strategies like M&A, diversification, etc. are being continuously evaluated and put into effect; and this is not a one-time thing. Enterprises are having to make much more frequent changes in their strategies, approaches, business priorities and objectives, and entire organizations have to align to the new vision and directions in a manner of months, sometimes within a few weeks.

An issue that businesses implementing MDM face is that traditional data governance methodologies, processes and technologies have been rigid by nature. While the business need is to have agile processes to support changing business imperatives and handle the volume, variety and veracity of data, too much emphasis was put on data quality alone resulting in the commercial side of the business being ignored. Organizations must play a delicate balancing act between quality and agility (of processes and data), as there is no simple way to achieve both. The key question that everyone should ask regarding MDM processes and implementations is 'Is my MDM process agile and smart enough to handle changes, especially at the rate and scale of the changes needed?'

To add to this, most MDM technologies are still designed towards strong and rigid governance and are at nascent stages in providing insights to improve data management and governance processes.

2. Gartner: A Technical Professional's Guide to Governing Data Products, 31 Oct 2023, Lydia Ferguson, Zain Khan and Sagnik Das



Challenges with traditional MDM approach

Strict processes, focus only on quality

Historically, companies dealt with their data directly without any governance in place. This led to unreliable data since data quality was in bad shape. The dark ages of data soon led to concepts like CDI, PIM and MDM which led to a focus on getting the best quality of data with deep governance. But these concepts of deep or static governance work best in scenarios when the scale of data is limited. In a world where the “volume, variety and velocity” of data is growing exponentially, business imperatives are forcing the shift from deep governance to a more balanced or lighter governance.

Say you are a retailer whose business objectives have evolved to become a marketplace as well. This, in turn, has created a need to increase product assortment by 1 million items in 6 months. Even if it takes you as little as 10 minutes of total time to go through a specific workflow and set up an item, from ingestion to go-live, it would take you approximately 28,000 person-hours or 3,472 person-days to set up all the additional 1 million items. If you want to on-board these items through the same governance process in 6 months, it would take a whopping 700-member team to do so! To put things in perspective, Amazon helped SMBs sell 4.1 billion products in 2022. A business hoping to compete with Amazon cannot keep up with Amazon’s pace using static governance models.

Changing business strategies and priorities, but rigid implementations

As business strategies and priorities change, MDM implementations must keep evolving with time. This is not an easy pill for either enterprises or solution providers to swallow. Today, most implementations are so involved that evaluating the impact of a specific change takes days or sometimes weeks. For a business user seeking to implement a change, the entire process – requesting the change, getting approvals for the change, implementing the change, examining the results of the change – can be extremely daunting. Complex and rigid governance processes are inhibitors for growth and change.

A recent Forrester survey shows that existing tools lack efficiency in several areas of data governance including business alignment, measurement, data definitions, policies, and stewardship.

“Data Governance makes data relevant and ready for analytics, insight, and action.”³

3. Forrester: How To Build A Data Governance Practice". Feb 8 2022, Michele Goetz



New data and information, unable to adapt

New data sources are being discovered every day and businesses would like the ability to onboard these data sources to enhance the quality of in-house data or to derive better insights.

For example, as a retailer who added another supplier, how easy (or difficult) will it be to consolidate the data of the combined assortment and syndicate to your existing customers? What if the FDA passed a new regulation which requires you as a food retailer to start displaying a whole new set of attributes?

Any MDM vendor worth considering needs to make onboarding new data sources a standalone project of its own. Changes have to be made all the way from the point of entry, including the process flow and policies and finally to the last step of publishing to downstream systems.

Inability or reactive identification of bottlenecks

Typical MDM implementations are done by either configuring a commercial software to meet a set of defined business requirements or by utilizing a home-grown system built ground up. Either way, it is not possible to identify all the possible bottlenecks or additional use cases that may crop up in the overall process and data flow.

These bottlenecks arise because of multiple reasons, like incorrect assessment of the quality of data, varying levels of quality of data from different sources, skill level of users, difficulty in sourcing the correct information, attrition, etc. After the system is used for a few months, these bottlenecks slowly come to the fore. This degradation of the process and system performance is gradual, goes unnoticed for long periods of time and eventually, the customers are unable to realize the value of the MDM implementation.

Ideally, it would be great to know ahead of time that some data will not pass smoothly. MDM systems seldom have capabilities to indicate data-quality-related errors proactively and alert the stakeholders on recommendations for data resolution. Thousands of dollars are spent building reports to identify data quality root causes, not counting the cost to fix the issues. This does not also account for the fact that all this intelligence is obtained after the fact. You want your solution to be predictive and prescriptive rather than descriptive.

Ultimately, there is a gap between the current state of MDM governance processes and methodologies which take a limited or reactive approach to governance and the ability to handle the dynamic nature of today's businesses.



A new approach to Master Data Governance

The business value of enterprise applications is only as good as the data that can be leveraged. Fragmented, inconsistent data affects cross-sell/up-sell ability, delays time-to-market, creates supply chain inefficiencies and weakens market penetration. MDM solutions are designed to consolidate, cleanse, enrich, govern and share key business data from across the enterprise, and synchronize the data with all downstream business applications and tools. This allows different business functions in the enterprise to collaborate on data enrichment activities while adhering to data governance policies setup for the organization.

This presents the need for a new approach to Master Data Governance. An approach that is proactive instead of being reactive, an approach that is flexible and agile to adapt to changing needs and priorities and based on real insights. There is a need for innovative solutions, and Design for Dynamic Governance is the answer.

Dynamic governance is an increasingly popular new approach to data governance with a set of capabilities that empowers businesses to change the governance policies and processes faster and to accommodate changing business needs with minimal help from the IT organization or the application vendor.

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Design for Dynamic Governance (DDG) defined

Businesses should be able to make changes to the master data business processes to adapt to changing times, needs and scenarios. For example:

- ✓ Enterprises should be able to configure a different process or a set of policies and conditions for a new data source, like an acquired customer database that needs to be on-boarded
- ✓ Enterprises should be able to establish a new process for a customer loyalty program
- ✓ Enterprises should be able to change the governance policies for a new product line that is being launched or a new brand that was acquired

As and when new bottlenecks are identified in the process, businesses should be able to tweak the processes or policies based on the characteristics of the data to be on-boarded and managed. Businesses should also be able to analyze the impact of a change before publishing the change, and have confidence in the system that the change, when published, will be effective and seamless.

Additional capabilities like adaptive workflows and analytics with real time insights will further ensure that business users are on top of the master data management game.

Adaptive Workflows

“Adaptive Workflows” refers to the ability to easily specify and implement variable levels of governance and stewardship to the business processes based on data context, business relevance, urgency and multiple such factors. This should include a set of methodologies or solution patterns, that serve as guidelines and help businesses to adapt the governance processes based on the context. There should also be a set of methodologies or solution patterns, that serve as guidelines and help businesses to adapt the governance processes based on the context.

Design for Create (DFC) vs. Design for Exception (DFE)

Based on business needs, Adaptive Workflows and processes should be optimized for creation of master data with high levels of quality with manual curation (Design for Create or DFC) or to handle large volumes of data with higher levels of automation and manual intervention when needed (Design for Exception or DFE). Some examples of these are:

- ✓ A vendor record creation goes through a rigorous vetting and legal process before the enterprise can start transacting with the entity. DFC will be the right methodology for onboarding a new vendor record.
- ✓ When an enterprise on-boards a new customer/contact database and takes the entire data set through a golden record creation process, manual intervention and remediation workflow should be initiated only for records that do not match the governance policies, that too at a higher threshold. In such cases, enterprises should adopt the DFE methodology. This approach will allow significantly higher throughput for large amounts of data still maintaining the quality standards where needed.
- ✓ For fashion or discount retailers who have shorter product life cycle, large amounts of data need to be processed quickly, whether it is for onboarding new styles or deactivating out-of-stock items. This can be achieved only with a DFE in product data.
- ✓ In some scenarios, there is a need to segment the data based on context and data in each segment will need to be handled using different approaches. Any customer profile changes to premium customer records will follow the DFC approach, while all other customer profile changes will follow DFE approach.

Design for Maximizing Throughput (DMT), maintaining a healthy balance between Quality and Velocity

Adaptive workflows should enable businesses to configure multiple highways or pathways depending on whether the need of the hour is highest quality with human oversight or highest velocity with automated quality rules. The main driver for this decision-making being the business context. This will make the implementations aligned to the business objectives, eventually driving value.

For example, an ecommerce retailer typically has a few product categories that generate 80% of the revenue while rest 70-80% of their product assortment falls into “long tail” product categories. When onboarding products in the long tail categories, applying the same level of rigorous governance will hurt the overall throughput and efficiency of the organization. This segmentation can also happen within the same product family or a style, where all the SKUs in a particular family of colors need to be enriched quickly to launch a specific season campaign on time. Furthermore, this segmentation should be dynamic, based on insights from sales, transactions, inventory, social sentiments, etc.

Based on the context, adaptive workflows should be able to determine the business rules and policies to be evaluated and enforced at each step of the process. While doing so, some steps will need manual intervention, while other steps can progress automatically when required conditions are met. The business process should also be able to determine whether a certain step in the process is mandatory, optional or can be skipped. When some of the entities meet the conditions established, they progress onto the next step and not wait for other entities in the batch. This concept is called Design for Maximum Throughput (DMT).

Design for Data Reuse (DDR)

To minimize user intervention needed, the data model and processes should allow maintaining data one time and inheriting or reusing this information where possible. Users should have to maintain data only when and where needed, in minimalistic manner and only by exceptions. MDM systems should have a strong support for Design for Data Reuse (DDR). This minimizes the errors caused due to duplicate data entry or forgetting to make changes at all the places. For example, having a stock set of images for product families that automatically roll down to the individual products and SKUs.



Analytics and reporting

An MDM implementation engagement should not be treated as complete without having defined ways to measure how the business objectives are being met. Eventually, the implementation itself should be able to provide valuable insights into what is happening in and around the system, what opportunities exist to enhance the process, etc.

Analytics should collect, collate and relate all aspects of master data, changes to master data, processes, policies, conditions and interactions. Business will then have a holistic view of everything that happened, is happening, is about to happen, etc. Businesses should be able to answer the ‘what if...?’ questions that help them make effective decisions in the future.

Some such questions analytics and reporting functions should be able to answer are:

- ✔ What is the time-to-market for entities within a particular context or business segmentation?
- ✔ How much time are business users spending on an average in a particular workflow step?
- ✔ Where are the biggest bottlenecks, which context, etc.?
- ✔ What will it look like after a set of changes are published?

Future Outlook

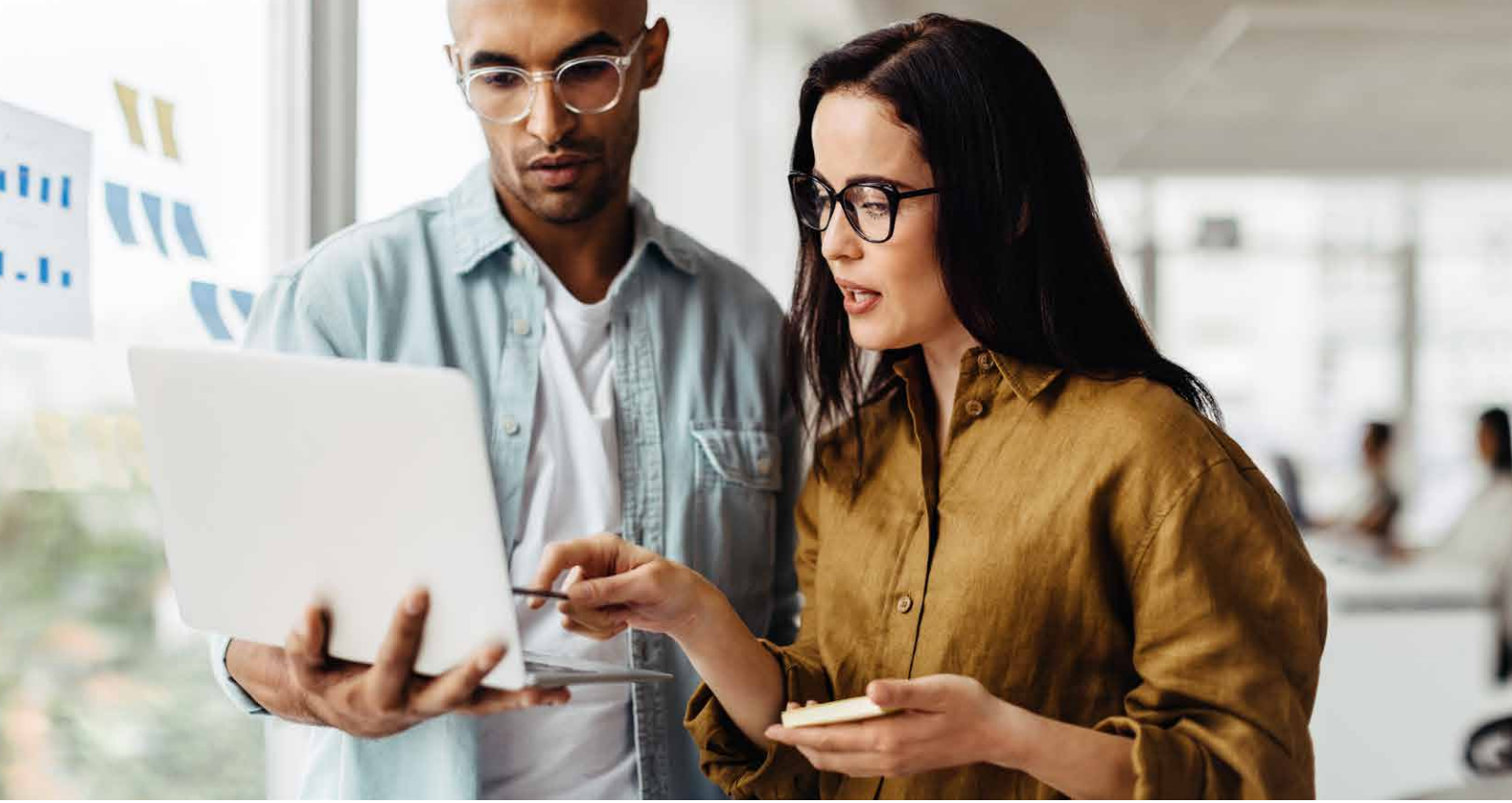
While these ideas will bring about significant improvements to the operations of an organization, they are by no means perfect and do not present a complete picture. There is a lot of scope for further questions like

- ✓ Are the current MDM processes aligned to the business needs?
- ✓ Are we mastering and managing all the master data we should?
- ✓ How can we measure the value of the MDM implementation?
- ✓ What kind of additional insights can be derived by harnessing the power of new technologies?

As enterprises and their data needs evolve, technologies and processes will evolve alongside them to provide better solutions that improve operations and ultimately bottom-line revenues. Design for Dynamic Governance is a significant step in that direction.

Summary

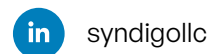
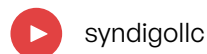
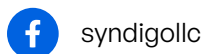
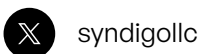
- ✓ The governance program and the resultant MDM implementation has to be future proofed for any curve balls future may bring upon the business.
- ✓ Business should take a deeper look at the current processes to see how much of Design for Dynamic Governance thought process is already incorporated, how adaptive the current workflows are and what can be automated.
- ✓ Businesses should establish an enhanced dynamic governance program that is ongoing, incorporating the relevant design methodologies from the ones detailed above (DFE, DFC, DMT, etc.)
- ✓ The focus of master data governance should never deviate away from business objectives and goals. MDM implementations should strive to derive business value and adoption of the processes.



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