Building a Hyper-Personalized Customer Experience with Multidomain MDM

STIBO SYSTEMS
MASTER DATA MANAGEMENT

Whether you already use a product configuration engine, recommendation engine, big data analytics or behavioral analysis, having a multidomain master data management solution can dramatically improve the performance of these applications and make a tangible difference to your customers' experiences. The data governance capabilities of multidomain MDM enable you to move from traditional customer segmentation to hyper-personalization as they allow new zones of insight to emerge in the intersections between data domains. These insights help to enhance CRM and other customer data applications with reliable and transparent data.

Customer experience starts with understanding what customers want

In September 2009, Netflix awarded a prize of 1 million USD to a team that designed an algorithm that outperformed Netflix's own algorithm for predicting viewer ratings.

More than 17,000 films and 480,000 customers were considered based on an incredibly constrained collection of data sets comprising the anonymized user, the film, date rated and rating. Rather than being an intellectual exercise on singular value decomposition (SVD), this was very much a business-led initiative. If you are presented with products that are of interest to you on an ecommerce site, you are more likely to buy them. For Netflix, relevant content translates to more customers maintaining their subscription.

Prediction is just one of the components of personalization. While Netflix did not have much customer information to work from at that time, now, it would seem, we have an ever-increasing number of ways and means to collect data about customers. In itself, this presents organizations with a number of challenges. While most organizations would argue that their customer data is of high strategic importance, few are able to articulate a coherent, corporate-wide management process for this data. Fewer still can identify the economic value attributed to the collection and cultivation of customer data.

What separates you from your competitors in how you use customer information?

Companies who excel at managing customer data as a true corporate asset are more cost effective in the development of enterprise initiatives such as compliance, privacy, customer centricity and digital transformation. This is because the cost of data integration reduces dramatically if you have a transparent management process around it. The customer experience joins this list of enterprise initiatives as one of the most important battlegrounds of today's competitive efforts. Understanding the customer's needs, anticipating their demands, building confidence with the brand and respecting privacy are just some of the characteristics of customer experience. Obtaining and managing data about your customer, that your competitor does not have, could give you the edge in user experience.

What is more valuable to your organization? Knowing the true address of your customer? Or knowing that they have just moved home?

From segmentation to personalization

Macro and micro segmentation generally addresses a wide set of demographic similarities, such as geographical region, or gender.

Personalization typically sits beyond more traditional mass-market segmentation strategies and is often characterized as targeting the individual or a collection of individuals with very similar characteristics, interests, and problems, for example, medical professionals or vehicle owners.

While macro- and micro-segmentation strategies remain important for vendors, this viewpoint tends to be that of the vendor perspective rather than that of the consumer.

Invariably this leads to a reactive posture: looking at what a consumer has done rather than looking at what they are doing, or anticipating their motives.

Generic

Macro-segmented

Micro-segmented

Personalized

Hyper-personalized
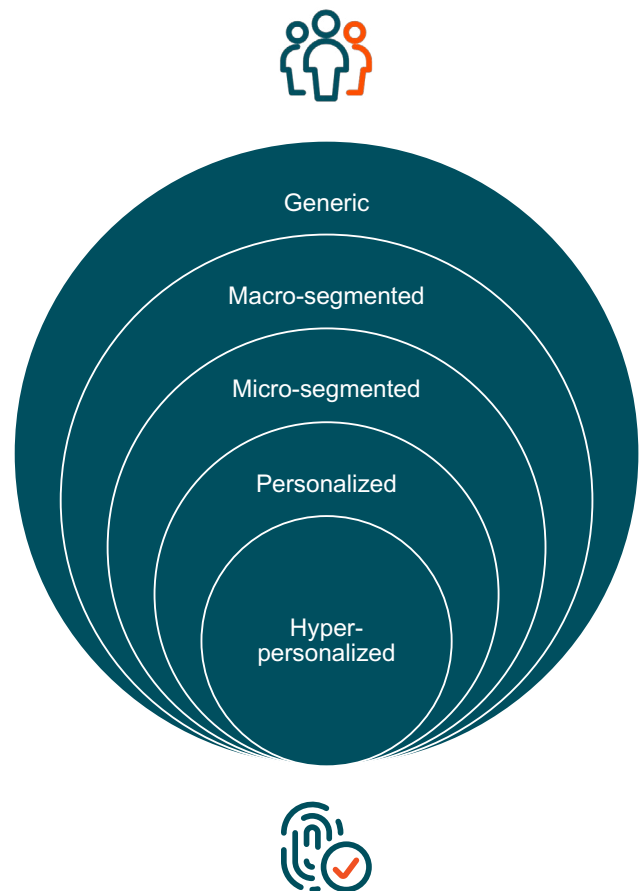
Personalization is intrinsically linked to customer experience

To differentiate in customer experience, personalization is key. Personalization automatically changes the way the service is being delivered, depending on how it is being used and perceived. For example, when visiting the website of the BBC for the latest news, there may also be displayed some local news, in France for example, based on your current location. In another example, ecommerce sites will often display product recommendations based on previous purchase history.

Personalization is closely connected to configuration or customization where the users make their own choices on how they prefer to experience the service and what their interests are.

Recommendation engines are tools that adjust the experience on a website according to behavior, for example, by changing the content based on user journey and previous visits. Recommendation engines will often have learning algorithms that will change search results,

predict product interest, and change the order of pages to automate recommendation strategies.

However, there are serious data challenges to successful personalization. Personalization is a highly data intensive process. The accuracy, relevance, coherence, timeliness, pertinence, and intimacy of the data being used to support personalization is going to have a direct impact on your customer's experience. Do you want to see dog food being recommended when you own a cat?

Achieving successful personalization is challenging. Despite some good tools being available, such as dedicated personalization engine solutions, for many, they are only as good as the data that drives them.

Master data management gives personalization strategies a better start in life

Master data management (MDM) is a key discipline to help in the successful development of a personalization strategy. It helps to alleviate some of the key inhibitors found in the data management challenges of personalization.

89% of companies view personalization as having a positive impact on customer relationship.

BCG, Personnalisation de la relation client : les entreprises françaises à la traîne, October 2019

Challenge	How MDM helps
Data is of insufficient quality.	MDM ensures that master data, such as product and customer data is accurate, complete, and coherent.
No business owner for the management of customer data and the centralized referencing of product data. **Lack of ownership spurs conflicting business processes for managing business data.**	MDM provides the governance capability to support business ownership and stewardship of the key data elements that are needed for personalization, including customer data, product data, channel data, location data and more.
Customer data does not provide enough insight.	MDM does not develop data on its own. However, it can harness small data that when combined with master data, yields new insights. For example, understanding that two people share the same address may reveal a household relationship. Read more about small data in: **Need Big Data? Think Small Data First**
You don't have enough sources of data.	MDM, as a single point of data governance in the organization, enables you to onboard new data sources easily. For example, census data and social media data, and while they are broad in what content they carry on their own, when combined correctly with master data records, they can reveal new insight.
Analytics are post-fact rather than being dynamically driven.	MDM enables you to drive analytics dynamically, at the point of customer interaction, that also takes into account customer behavior. This is a key personalization capability. Whether this is done by the recommendation engine directly or in conjunction with a customer services agent, the results often yield key decisions, for example, next best offer or privacy consent, that are immediately relevant to other channels, points of interaction, analytics and operational systems. MDM provides an ideal repository for the collection and sharing of these small data elements in order to help create a coherent and customer-centric experience.
It is difficult to collect the data required.	There are three common challenges to this. 1. The customer does not give consent to use the information 2. The tools to collect the information are lacking or insufficient 3. The management discipline and organization required to coordinate data objectives are ill-defined. MDM can help to act as a data brokerage in the support of these three challenges. It brings discipline to data management and provides a safe place to keep the collated data.

"...most marketers are missing opportunities in using a broader set of customer data to improve personalization efforts..."

Gartner, Magic Quadrant for Personalization Engines, July 2020

Multidomain MDM mediates the collection (e.g., from analytics) and dissemination process of insightful data that benefits personalization and other enterprise functions. This approach moves capabilities from personalization into hyper-personalization.
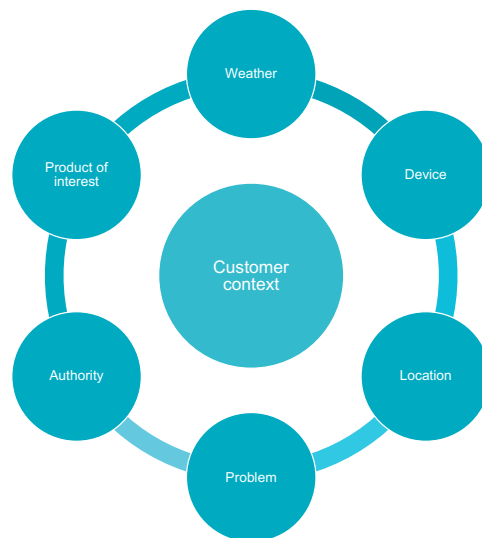
From personalization to hyper-personalization

Beyond the realms of micro-segmentation and personalization lies hyper-personalization. Hyper-personalization aims to target the individual in a very granular fashion. It identifies a very specific need and an appropriate response to that need. Typically, to support such granularity it employs new types of data, data sources and analytical methods that help to capture the individual in the context (time, place, demand, channel, preferences, etc.) of their request.

"Why, as a loyal customer, is this product not offered to me at a price that is specific to me?"

"Can I have a non-standard color?"

"How do I share my experience with friends?"

Hyper-personalization is driven from the context of the customer..

"When asking the customer to share their data to help with personalization, this should be promoted as a win-win scenario where the customer gets clear benefits from doing so without compromising their privacy preferences. MDM can ensure that this process is transparent, by recording, governing, and auditing the consent and the consented data."

Darren Cooper, Stibo Systems

Different data sources allow different segmentation types and accordingly prefer different MDM governance types.

Data source	Segmentation type			Preferred MDM governance type	Description	Example data / use case
	Macro/ Micro	Personal	Hyper-personal			
Master domain	X	X	X	Single or multiple-domain MDM	Master data of key business facts of a single domain under centralized data governance strategy.	Customer: identification, demographic, etc. Product: descriptions, applicable market, etc. Location: site, ship-to, etc.
Master Multidomain			X	Multidomain MDM	Governance of multiple-domain and inter-domain relationships found within zones of insight under centralized data governance strategy.	Propensity, sentiment, location, eligibility, product preferences, consent per channel/ product/address, etc.
Transactional		X	X	Multidomain MDM	Operational support systems, ERP, Financial, etc.	Transaction history summary, risk profile, etc.
Analytical		X	X	Single or multiple-domain MDM	Historical and trend analytics	Propensity, sentiment, location, eligibility, product preferences, relationships, interactions, compliance, etc.
Small		X	X	Multidomain MDM	Small data collection and interpretation can arrive from a large variety of systems and sources, including customer services, delivery, ordering, web, etc. Small data often lives between and across domain information, so Multidomain MDM is invaluable for its capture and management within zones of insight.*	Sentiment, center of interest, interaction history, language, social influence, etc.
Inferenced			X	Multidomain MDM	Inferenced data refers to predictive analytics, automation of personalization, automated data enrichment and categorization. Machine learning (ML) can help to automate data quality tasks, categorize data and deduce relationships between data elements. ML decision making relies on cross-domain information so Multidomain MDM is invaluable to ensure successful operation and non-biased results.**	Inference of relationship or category, such as household member, fraud suspect, segmentation category, etc. Multidomain MDM provides a data source for bot processing. Anticipate customer demand and automate responses via bots.

* Darren Cooper, **Need Big Data? Think Small Data First**, March 2021

** Darren Cooper, **What Is Synthetic Data and Why Does It Need Master Data Management?**, November 2020

Data source	Segmentation type			Preferred MDM governance type	Description	Example data / use case
	Macro/ Micro	Personal	Hyper-personal			
Event			X	Multidomain MDM	Linking events to master data records can help in developing personalized responses. Multidomain MDM provides a location at which event data can be correlated to master data to yield contextual/ rule-based results.	Cart abandon, life event (change of address, birth, etc.), change of location, product failure, etc.
Configuration		X	X	Multidomain MDM	Consumers control their service preferences	Privacy preferences, consent, etc.
External			X	Multidomain MDM	A variety of external data sources are available to help segment and enrich data.	Social media, census, consumer market trends, financial markets, etc.

The essence of hyper-personalization:

The right message to the right person at the right time in the right channel in the right way, **reliably** and **transparently.**
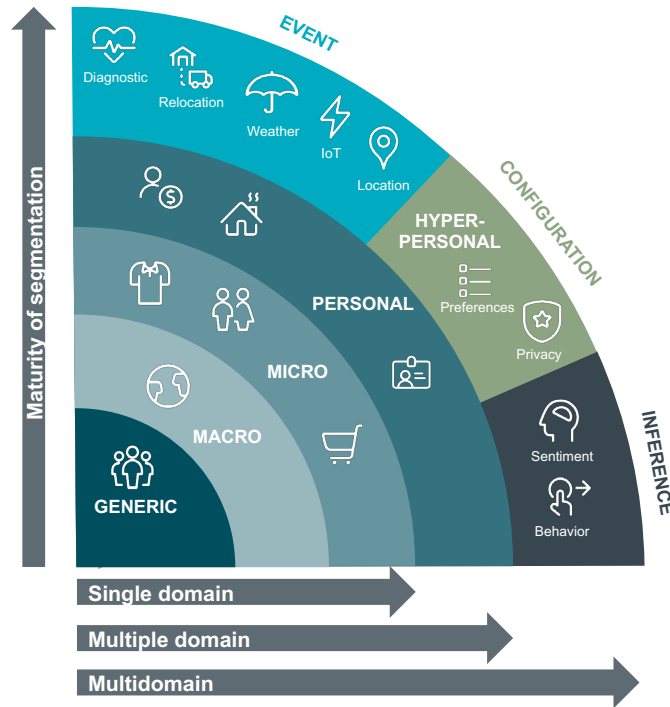

Learn the difference between multidomain MDM and multiple-domain MDM.

▪ **Go to the blog**

26 questions can help you build your business case for customer data transparency.

▪ **Download the white paper**

The different levels of segmentation correspond with certain types of MDM that are best adapted to provide support.

Multidomain MDM can help you put customer data that is difficult to collect, into active, competitive usage

There is no getting around it. Successful hyper-personalization relies on hard to get and hard to manage data. Multidomain MDM can help by providing data collection and management capabilities.
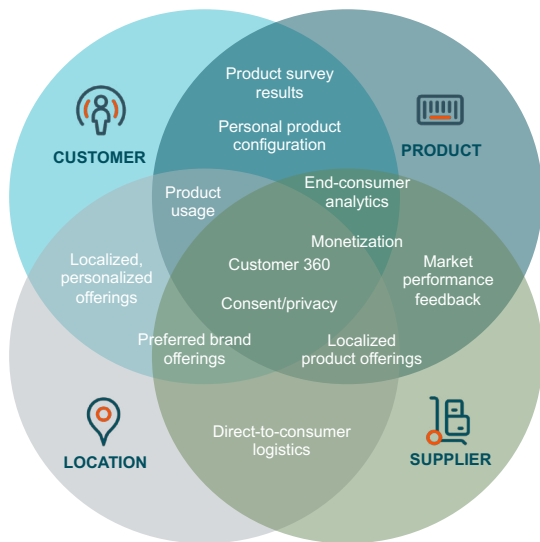
Via the bias of its ability to manage zones of insight, Multidomain MDM can not only help see a product, but also potentially, help to provide insight into how it is used.

Zones of insight provide supporting data management capabilities for hyper-personalization and drive new business models.

Just getting the data is hard – but once you have it, nurture it

A data governance practice designs and implements the data policy that describes what data is, how it should be managed and how it should be consumed. It provides ownership and accountability with the objective of reassuring data users of its suitability for purpose. MDM implements data policy for data representing key business facts (or data domains) describing customers, products, locations, and suppliers. MDM turns this data into actionable insight.

Being able to write and implement a data policy that stretches across different domains and describes their relationships requires a true multidomain MDM system. A single domain MDM approach will not have the breadth to support hyper-personalization while a multiple-domain MDM approach will lack the governance functionality required for the zones of insight that support hyper-personalization.

A multidomain MDM approach provides identical governance functionality uniformly across all data domains allowing cross-domain and contextual data relationships to be defined, discovered, and governed. This functionality is key to the success of hyper-personalization.

How does Multidomain MDM help hyper-personalization

Specific multidomain MDM capabilities carry different advantages for personalization

- **Increasing data quality**: Ensures more accurate measurements of segmentation performance.

- **Increasing number of sources of information**: Facilitates the move to a higher level of segmentation, e.g., from micro to personalized; and integrates more advanced notions of privacy.

- **Identifying, managing and governing the relationships between principal business facts (data domains)**: Enables move from basic identification and transactional behavior monitoring to the development of customer insight.

- **Cultivating zones of insight to record 360° customer view and the small data associated with customer insight**: Supports personalization feedback loop to increase customer intimacy over time; and supports additional business that provides feedback loops into personalization, such as CRM, customer data analytics, product experience management (PXM), risk and compliance.

- **Event management**: Supports collection of small data and real-time event information that describe environmental, contextual, and personal changes that would impact personalization. This may range from weather to life events (e.g., marriage), accident reports, change of location, etc.
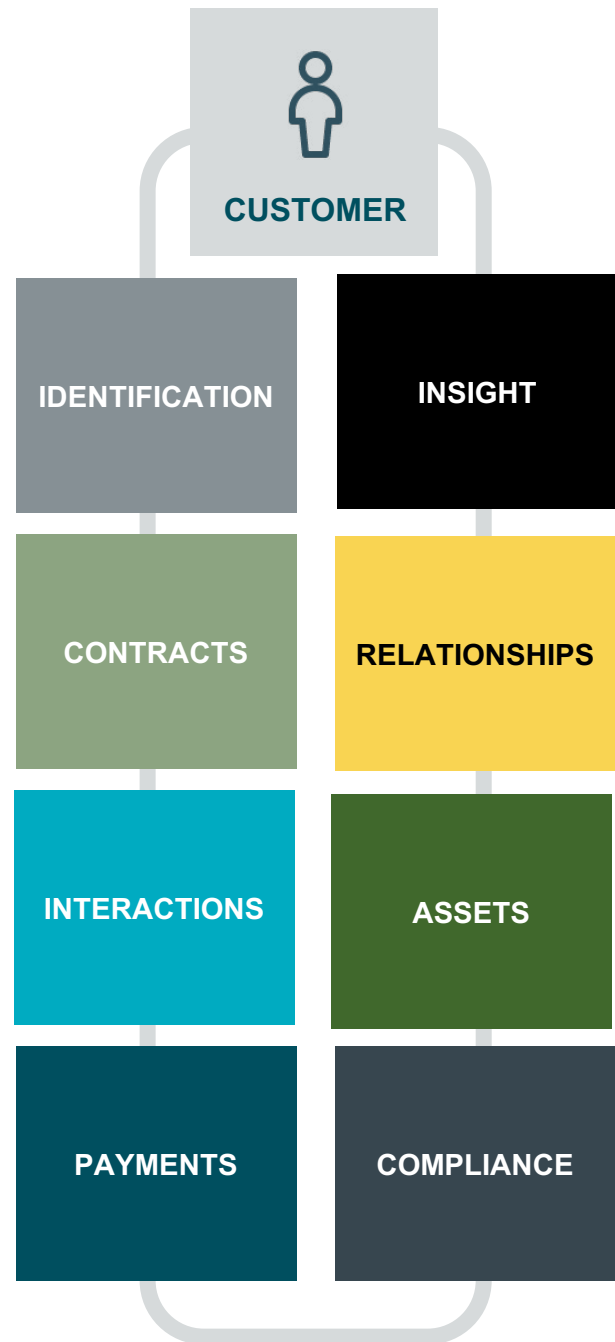
The hyper-personalized 360° customer view

Multidomain MDM provides governance capabilities that are often used to build a 360° customer view. For hyper-personalization, two types of data sets are particularly useful from this 360° customer view: relationships and insights.
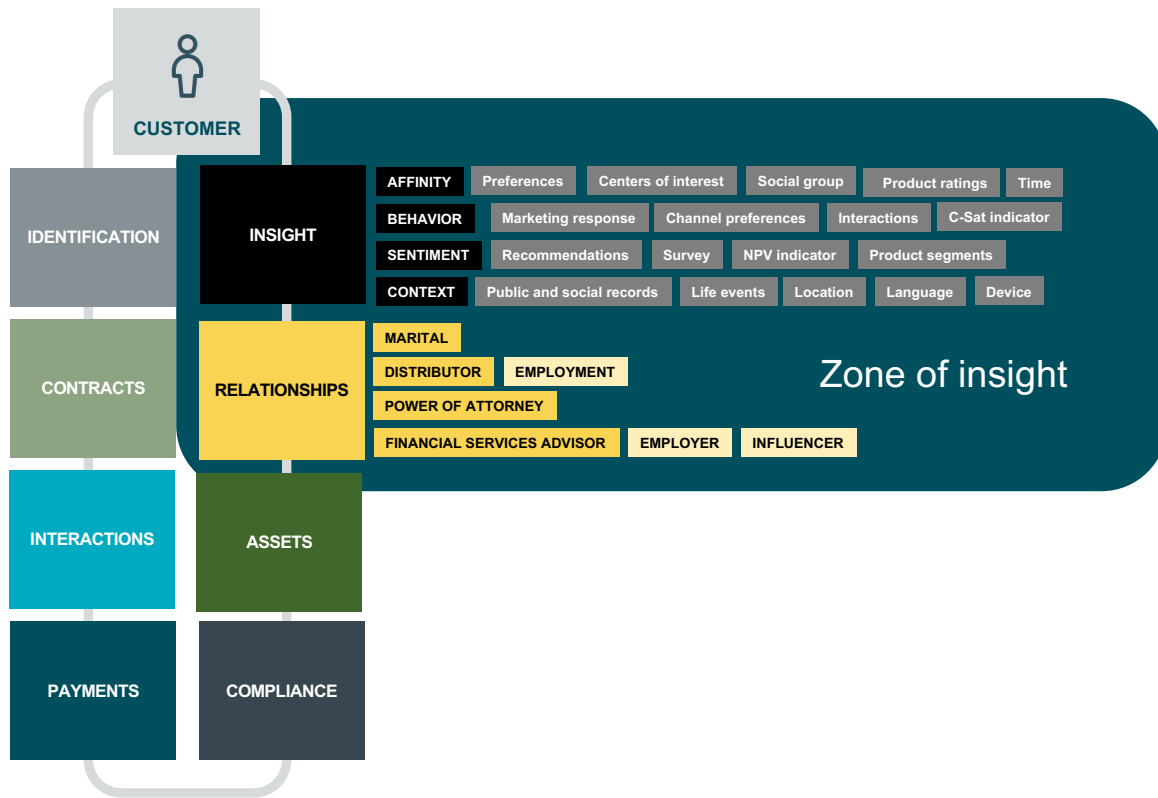
Relationships may be inter- or cross-domain. For example, when defining what constitutes a household, multiple parties and location data must be governed together. A household is not necessarily defined in the same way for all organizations. It might be address-based, or family member-oriented. Multidomain MDM helps to determine and align the data so that it correctly reflects the policy of household definition.

Insights are arguably the golden data elements of the hyper-personalization. They help to make the user experience unique. Many of the data elements can be considered as being small data. For example, determining location-based preferences, sentimental analysis, or a life event.

The single customer view

CUSTOMER

IDENTIFICATION

INSIGHT

CONTRACTS

RELATIONSHIPS

INTERACTIONS

ASSETS

PAYMENTS

COMPLIANCE

Examples of insightful customer information

CUSTOMER

IDENTIFICATION

INSIGHT

AFFINITY	Preferences	Centers of interest	Social group	Product ratings	Time
BEHAVIOR	Marketing response	Channel preferences	Interactions	C-Sat indicator
SENTIMENT	Recommendations	Survey	NPV indicator	Product segments
CONTEXT	Public and social records	Life events	Location	Language	Device

CONTRACTS

RELATIONSHIPS

MARITAL

DISTRIBUTOR   EMPLOYMENT

POWER OF ATTORNEY

FINANCIAL SERVICES ADVISOR   EMPLOYER   INFLUENCER

Zone of insight

INTERACTIONS

ASSETS

PAYMENTS

COMPLIANCE

Main points

1. For effective hyper-personalization, a governance strategy is required that provides data transparency (quality, coherence, relevance, auditability, etc.) across many data sources, from analytical to transactional to real-time event-based data. Multidomain MDM provides the governance strategy for transparency.

2. Actively managing the complex relationships between data domains adds the ability to reveal new types of information that can directly impact customer experience. Multidomain MDM governs this new information in "zones of insight" making it reliable, and as a result, actionable for hyper-personalization.

3. Establishing a feedback loop from hyper-personalization to supporting enterprise systems and processes provides the opportunity to monitor and enhance the user experience and develop AI/ML strategies that automate personalization. Feedback from hyper-personalization can benefit corporate initiatives, such as CRM and risk and compliance. Multidomain MDM provides the mechanism that ensures trusted and relevant data may flow to and from personalization engines.