The New Era of Customer 360

Modernizing Master Data Management to Really Understand Your Customers

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Introduction – The Tale of the Ever-evolving Customer

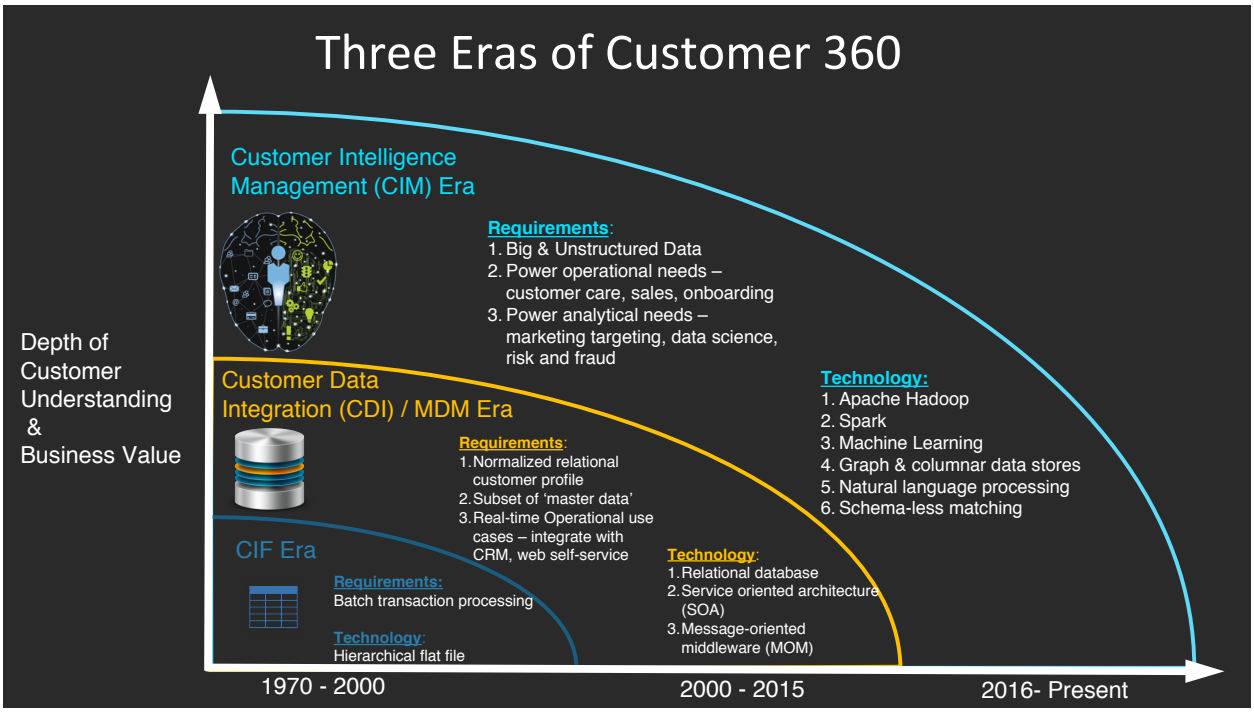
Customers evolve. We must accept and embrace this concept if we ever hope to truly understand them. They move, they change jobs, they form new relationships. They change their opinions and attitudes. They adopt new technologies and interact with companies in new ways. The systems used to serve customers change too, and new ones arise. All this evolution results in one thing – disconnected fragments of customer data. Fragments of data are used to produce silos of customer insight. And none of it is pulled together into that elusive desire – an enterprise Customer 360.

Systems are built as per the requirements known at that time. Historically they are not built to evolve, especially if the new requirements are significantly different. As customer data sources have changed, existing systems have failed to keep pace. In fact, their entire solution has been centered on existing technology, and they attempt to fit new data into those old technologies to preserve their core. They do not evolve so much as they attempt to make a new world fit into their historical reality.

New eras of technology are based on two factors – the existence of new requirements to satisfy business strategies, and the emergence of new technologies that can address those requirements in new ways. For customer data & analytics, both factors are true and we are most definitely in a new, third era of the Customer 360. The objective of a Customer 360 is the same as always – to understand "everything" about the customer. But "everything" has evolved to include new customer data sources that don't fit into existing systems. And new requirements for understanding the customer journey, and marrying operational and analytical uses of customer data, have arisen.

Understanding that we are in a new era of Customer 360 is critical in setting the correct customer-centric technology strategy. It can make the difference between choosing an outdated technology to address requirements for which it is ill-suited or propelling your customer-centric strategy forward. The market has undoubtedly entered the third era of Customer 360, and software systems are sorely needed to meet the needs of this new era.

The Eras of Customer 360



Customer 360 has experienced three eras, each of which addressed distinct requirements with available technologies. Each of the eras saw the emergence of new categories of software – Customer Information Files, Customer Data Integration & Master Data Management, and Customer Intelligence Management. The technology born from each era continues on to this day – many organizations have CIFs and CDI/MDM systems. During the era, the software is the *primary* way to achieve a Customer 360. As requirements and technologies give rise to a new era, the system from the old era continue to address the requirements for which they were designed. They may or may not be replaced by technology from the new era over time.

The CIF (Customer Information File) era began in the 1970s through to the early 2000s. CIFs were tightly entwined with account-centric transactional processing systems, and as such the concept of "customer" was subservient and buried within the concepts of 'accounts' or 'transactions'. They managed customer data in 'flat files' – compressed into a single file to facilitate efficient batch processing. As new channels such as web self-service emerged, and new technology such as CRM to manage customer interactions, the requirement for a centralized and deeper repository of customer data arose. The CDI (Customer Data Integration) and MDM (Master Data Management) Era was created. The focus was on centralizing and mastering data held in many structured repositories for operational use. Customer data was managed in relational database systems and accessed via service-oriented architecture (SOA) APIs. Analytical use cases were largely addressed via data warehouses and analytics. Around 2012, new forms of data began sprouting up seemingly out of no-where. Suddenly 'big data', 'unstructured data', and 'external data' were on everyone's mind. The era of big data began – along with new technologies such as Apache Hadoop, columnar and graph data stores, machine

learning, natural language processing and later in-memory processing with Spark. While these new technologies had incredible potential to manage and understand a wider variety and huge volume of customer data, they formed a foundation for a new Customer 360 system yet to be built. That system is Customer Intelligence Management (CIM), launched in 2016 to give rise to the third era of Customer 360 – the CIM era. CIM ingests all customer data – big data, unstructured data – to create a deeper and more complete Customer 360. It also addresses new requirements such as understanding the customer journey and deep customer analytics. CIM era technology can propel your customer-centric strategy with a deeper, actionable customer intelligence.

Modern Requirements for the Customer 360

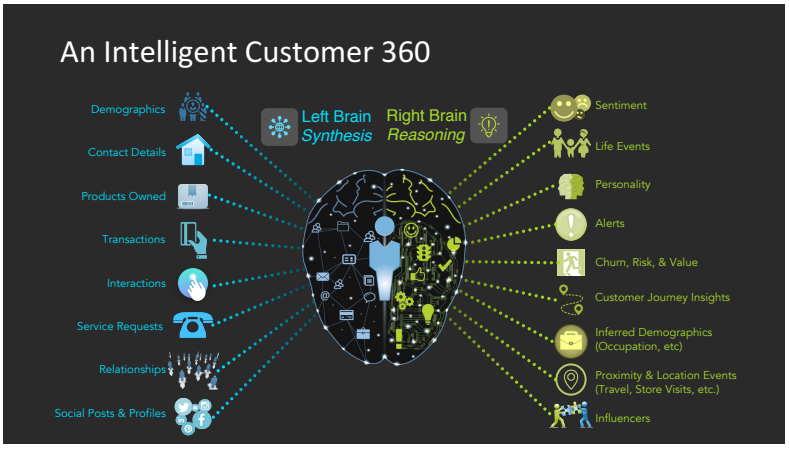
Most organizations never waiver from a customer-centric strategy. But their means of achieving it evolve and change over the years, as do their requirements of Customer 360-technology. In the CIM Era, customer-centric organizations focus on the following requirements:

1. **Really, truly use ALL Customer Data Available** – 88% of customer data goes untouched in most organizations. Most of that data is unstructured. The two most common reasons for that 'crime'? "It doesn't fit in the existing customer system" and "there's too much of it". Business leaders know there is gold within that 88%, and they are convinced that utilizing it will give them a competitive edge.
2. **Combine Operational & Analytic Uses of Customer Data –** Nearly everyone agrees they have silos of customer data, but visionary customer-centric leaders realize they have silos of customer insight that result in disconnected actions. Customer intelligence and insight must be shared to be effective – from targeting market campaigns, to personalize service, to intelligence in the hands of sales representatives.
3. **Evolve or Die** – The pace of creation of new customer data types is accelerating. Customer-centric business leaders don't try to predict the next requirement, rather they embrace that change is a constant. They constantly investigate new sources of customer data to deepen their customer intelligence.

Those requirements have coalesced into a modern definition of a Customer 360 that encompasses a deep understanding of individual customers. A modern Customer 360 includes data from all sources – transactional systems, data warehouses, master data management, content management systems, third party data sources, CRM and channel systems, and it includes a wide variety of data types – structured data files, unstructured documents, emails, webchats, web logs, transaction logs, social posts. All of that source data is synthesized into a real customer 360 which includes:

1. Demographic data
2. Contact details
3. Identification data

4. Accounts
5. Products
6. All transactions
7. All omni-channel interactions
8. Relationships (family, work, social)
9. Social data
10. Preferences
11. Roles
12. Customer journeys



The Modern Customer 360 goes a step further than just 'organizing' data – it actually understands data and infers intelligent attributes and observations on the customer, which form the basis for customer-centric actions. These include:

1. **Attitude** – inferring the customer's mindset for sentiment, personality, and preferences from feedback, interactions and social media data
2. **Actions** – predicting the customer's future actions such as churn, propensity to buy, proximity and location, and alerts from transaction, interaction and social media data
3. **Experience** – understanding individual customer journeys and unique interactions, combined with transactions, to accurately understand and improve customer experience
4. **Influences** – understanding broad graph-based relationships and interactions to know who influences each customer, and whom they influence

These modern requirements are too taxing for the systems of the CDI-MDM Era. Master Data Management systems handle only operational use cases, and only manage a core of structured customer data. Data Warehouses also only manage structured customer data for reporting and analytic usage. Often those two systems are poorly integrated causing a divide in the customer 360 between the operational and analytic worlds. Addressing these requirements is fundamental to being customer-centric, but last-generation technology cannot do so.

Modern Technology to Address the Customer 360 Requirement

Technological innovation has abounded in the past 10 years. New "big data" technologies have made it possible to manage huge volumes and wide varieties of customer data in a flexible, fast and cost-efficient manner. Some of the key technologies include:

1. **Apache Hadoop** – Hadoop is an open-source collection of technologies that include a file system (HDFS) that can store a variety of data in its raw format, and a processing engine (Map Reduce) that can process a large volume of data.

2. **Spark** – Spark is a cluster computing processing engine for in-memory processing, streaming data and graph processing.
3. **Graph Data Store** – A data store that uses graph structured for queries to emphasize relationships as the key concept of the data store.
4. **Columnar Data Store** – A data store that stores data in columns instead of rows to improve processing time.
5. **Machine Learning** – Algorithms that can be trained or learn autonomically to improve processing outcomes.
6. **Schema-less Matching** – Contextual matching that operates without a pre-defined schema and can match and link a wide variety of data sources and fragments into a Customer 360.
7. **Natural Language Processing** – Text analytics to understand unstructured data and derive the context (e.g., customer name, location, phone number, product owned, topic of the interaction, etc.).

These technologies are the foundation for addressing modern Customer 360 requirements. Their only shortcoming is that they are, well, *technologies* and only a *foundation*. Organizations would have to build significantly on those technologies to make them address a Customer 360. What organizations need are pre-built systems based upon those technologies, and designed specifically for the Customer 360 requirements.

New Requirements, New Technology, New Software Category

Once you realize we are in a new era of Customer 360 technology, there is no going back. While the first and second era software will continue to be used, it shouldn't be extended and contorted to meet modern requirements. It will always fail to do so. Unfortunately, the vendors of last-era software cannot be the source of innovation. They are simply too focused on maintaining their core technology to fully address modern requirements. Modern requirements necessitate starting over, and understandably those vendors cannot do that due to the commitment to their existing customers. Nor can they build a new-era system from scratch, typically because it would mean cannibalizing their old-era system, but also because they have old-era thinking and fail to truly understand new-era requirements.

Looking back in history, we see this pattern is well established. The vendors of the CIF era were back office account system vendors'. Near the end of the CIF era and the dawn of the CDI-MDM era, new software began to emerge. At first, CIF-era software such as IBM's CIIS competed with the new CDI-MDM software, then over time those vendors began to partner with the new upstart vendors. They proposed hybrid architectures to their clients with CDI-MDM as the SOA-relational "front end" and CIF systems as the "back end core customer file". Organizations who already had CIFs accepted the hybrid as a way to move forward, but organizations who didn't have CIFs wanted no part of a "hybrid" solution. They moved rapidly to implement the new era technology and progress their customer-centric strategy. CIF vendors used new technology as an adjunct to their CIF software. Only once the market direction towards CDI-MDM was clear

did those vendors seek to re-write their core technology, but at that point it was too late to catch up. None of the CIF software or the vendors became major players in the CDI/MDM era (until much later when vendors such as IBM, Oracle and others acquired the 'upstart' CDI-MDM vendors).

The same pattern is occurring today. CDI-MDM vendors and data platform vendors are talking about new technologies and how they can "be bolted on to their MDM core". They see the new technology as a threat, and seek to marginalize it to the periphery and maintain the last-gen core. Those vendors are also partnering with the 'new upstarts' of the CIM era – looking to augment and extend their CDI-MDM systems by integrating to CIM. For organizations who already have CDI-MDM (and there are many of them), this is a valuable approach.

CIM can extend the CDI-MDM system to address a much deeper and broader Customer 360. But it can also be a blind alley – it leads to thinking the role of new technology is to address the same use cases as the last generation technology. CDI-MDM wasn't used to address the batch-centric back office processing that CIFs were, but rather to power customer-facing systems such as CRM and web self-service. CIM technology should not be used only to augment and fulfill CDI-MDM use cases, but it should also address new ones such as customer-centric data lakes, Customer 360 with analytics for marketing and CRM systems, and delivering a next-era Enterprise Customer 360.

There is a Huge Difference Between "Next-gen MDM" and the New Era of Customer 360

New-era Technology, Last Era Requirements = A Recipe for Failure

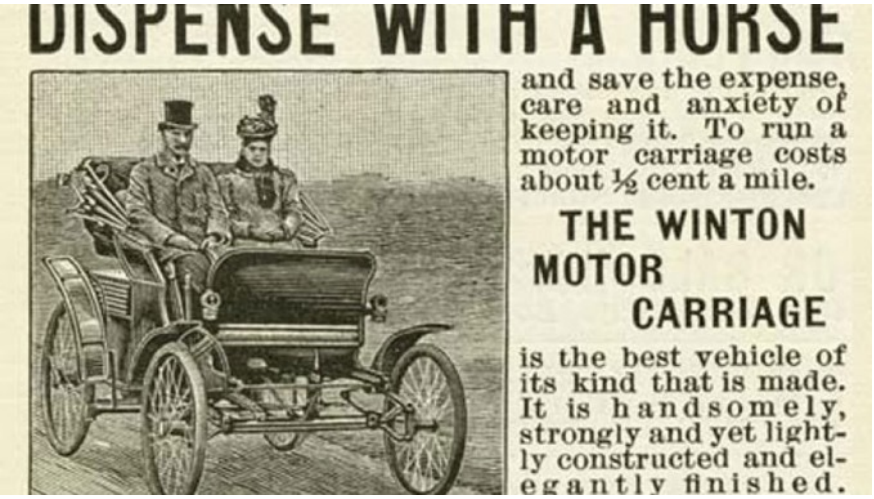


Figure 1 Do you want a Horseless Carriage or an Automobile? Beware of vendors who only think of Horses, or MDM, as their frame of reference.

Organizations must beware the software vendor who talks a new technology game, but focuses on the requirements of the last era. These vendors can often be hard to spot because they use a lot of technical jargon and therefore appear to be new. But there are tell-tale clues. First, they focus on the use cases of the last-gen technology. They will use the same terms as the last generation, and in a lot of cases define themselves as the 'next generation of MDM/CDI'. But modern requirements demand something much more than the next generation of yesterday's ideas; they beg for a re-imagining of the Customer 360. Second, these vendors will focus their entire value proposition around the last-generation software. They will define themselves as 'cheaper', 'faster', and 'more flexible' than last-generation software. This should be a huge red flag for organizations. Is your greatest desire a cheaper version of CDI-MDM? Or one that runs on the cloud because that is cheaper too? Or a faster version of it? Sure, that would all be very nice, but that is well off the mark of next-generation requirements for the Customer 360. And therefore, those vendors and their software will miss the mark as well.

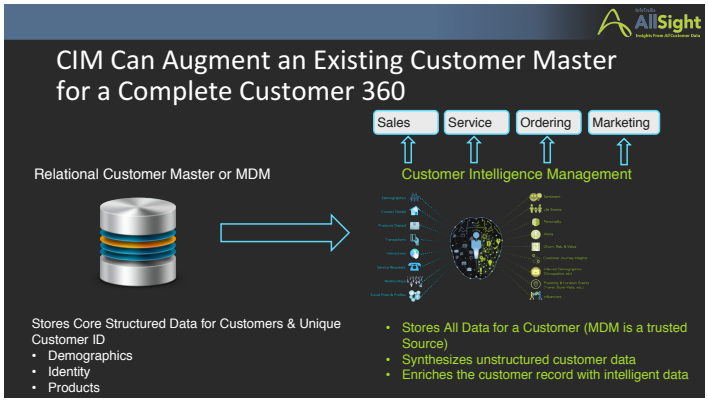
Again, history provides a lesson. In 2000, some of the emerging CDI-MDM vendors took aim at the CIF market by calling themselves "Super CIFs", "CIFs on Steroids", and the "Next-gen CIF". Their value prop was full of jargon – relational databases, normalization, SOA, APIs, enterprise java beans, etc, etc. The market coldly rejected that approach. CIFs stayed in place for many, many years. CDI-MDM technologies that addressed the requirements of their era (vs the last era) thrived by providing more data within the Customer 360 using relational technology and making customer data available via service-oriented architecture APIs. The same will happen for the CIM era.

Beware of vendors touting new technology – graph databases, big data, Hadoop, machine learning, cloud – and talking about themselves as the "next-generation of MDM" or "MDM on cloud". They don't understand your new requirements, and they have built *old* system with *new* technology. The first requirement for a "next generation" software is that the software

vendor actually realizes it is in a new era, not the last one. The point of next-era technology is to address next-era requirements, plain and simple.

Modernizing Master Data Management / Customer Data Integration

A lot of organizations that invested in MDM are considering modernizing it. Primarily, their requirements are the same as the ones outlined above for the era of CIM. They want a broader view of the customer from all big data/unstructured sources. They want to infer intelligent attributes to complete the Customer 360. They want to run analytics against that data. And they want advanced visualization to support different business users.



For organizations that have already invested in MDM, they should keep it. Let it support the processes it already supports. Leverage that investment. But don't push it to do things it was never intended to do. CIM-era technology, or purpose-build Customer Intelligent Management (CIM) systems, can work with existing MDM to deliver a complete Customer 360. CIM can ingest trusted data from MDM as the basis for the Customer 360, then add many other big data and unstructured sources to complete the Customer 360. CIM can also utilize analytics to infer intelligent customer data to truly complete the Customer 360.

For organizations that do not have CDI-MDM, they should determine whether they even need it. CIM software addresses the most common CDI-MDM requirements and deployments, such as consolidation style and registry style MDM. Those companies may find that CIM technology can address a combination of CDI-MDM and CIM era requirements and address both with a sngle, modern CIM system.

Dell Modernized C360 by Augmenting MDM with CIM

Dell utilizes AllSight to provide actionable customer intelligence to their sales force. AllSight ingests data from MDM, transactional order systems, webchat data, as well as external social media data, and synthesizes it into a complete Customer 360. AllSight generates insight on the customer journey and future events to provide alerts. The Intelligent Customer 360 is integrated with salesforce.com and homegrown sales applications, enabling Dell's sales reps to make decisions based on real customer insight.

Will the *Real* Customer 360 Please Stand Up?

Has there ever been a more over-used term in IT? It's hard to find a software vendor that *doesn't* talk about Customer 360. But upon examination it is easy to put software vendors in three buckets – foundational technologies that ***enable*** Customer 360, applications that need to ***consume*** a Customer 360, and systems that actually ***create and manage*** a Customer 360.

Customer 360. Graph database vendors claim they enable it. So do Hadoop vendors and big data platforms. In a round-about way they do, just as gas, steel, glass, and plastic enables you to build a car. Oh yeah, there are lots of system integrators, platform vendors, and many others that have a "solution" for Customer 360 (aka a blueprint to build a car). No one builds their own car, however, because it's difficult. Building a CIM system is difficult too.

Analytic vendors talk about the Customer 360. Under the covers, they have analytic models that need a Customer 360. They have barely any capabilities to actually create that Customer 360. CRM systems are exactly the same – they need a Customer 360 but they don't create it. Neither do marketing applications and marketing data platforms, or customer care applications. They can be hard to spot because they talk about Customer so much you'd just assume they manage a Customer 360. But they have no interest in managing a Customer 360 outside of their own processes (aka for enterprise use). Road trips and vacation plans are fun, but they don't come with a car included. Applications can look like a lot of fun too, but the Customer 360 doesn't come with them. That's what CIM is for.

CIM Systems are designed to create and manage the enterprise Customer 360. You can tell this software apart from the other two buckets *because they talk about the other two buckets*. They run on big data platforms and technologies and they say so. They provide intelligent customer data for analytic and operational applications to use it and they say so. Only a software system that was originally built for an enterprise (e.g., multi-system, multi-use case) Customer 360 can actually deliver it.

Modernizing MDM – *Customer* Intelligence Management or Multi-Domain Intelligence Management?

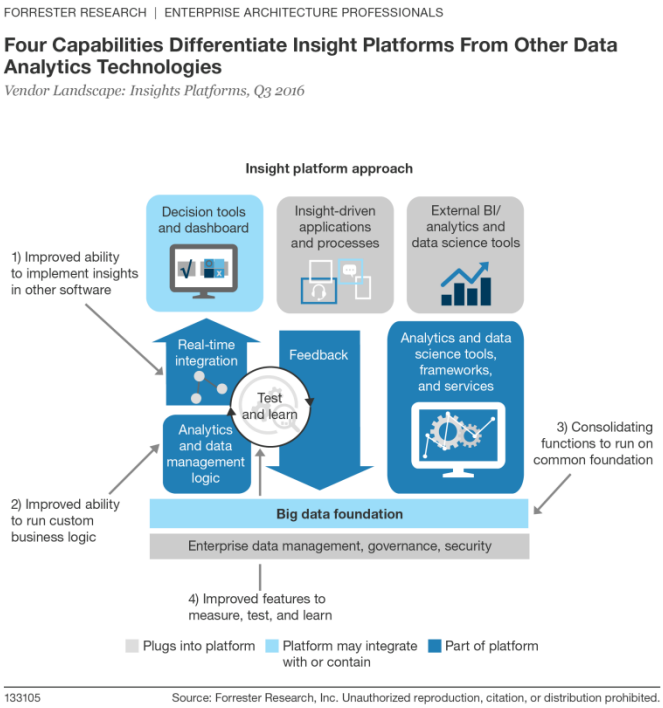
MDM came about from the convergence of two separate markets – Customer Data Integration (CDI) and Product Information Management (PIM). Soon many other data domains were considered 'master data' such as asset, account, reference data, and many others. When you are considering modernizing your MDM system, you will need to consider whether or not that is about Customer or truly about all data domains.

Once again, history can give us direction and advice. How many MDM implementations are truly managing multiple primary domains within the same instance? In the words of one of the foremost experts in MDM, Gartner's Bill O'Kane, not many:

The majority of #MDM vendor solutions market is still driven by requirements based on a single #data domain. https://www.gartner.com/doc/3243517
Bill O'Kane, Gartner, August 19, 2016

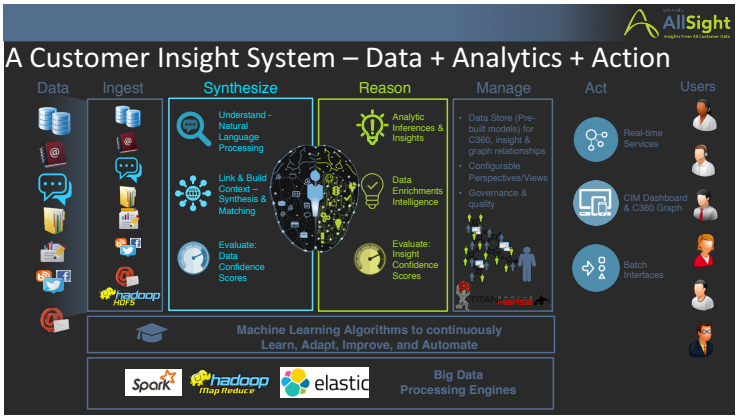
In our experience, we tend to agree. Nearly all MDM implementations are designed around one primary domain (like customer) and contain many supporting domains (location, account, product, asset, event, etc). Now the same multi-domain platform *could* be used to address a different primary domain (say Product) in a completely different instance. The question is whether you want a system that could address a secondary requirement down the road, or one that is built to address your primary requirement today? Most software vendors that talk about multiple data domains really have *just* a platform – they can handle *everything* because they haven't pre-built *anything* other than tooling, generic data models, and generic UIs. They don't really address the new CIM-era requirements very deeply. Contrast that with vendors who focus on the customer domain. Of course they are built on platforms that can handle any data domain, but by focusing on Customer 360, they force themselves to pre-build capabilities – data models, analytics, natural language processors, synthesis algorithms, confidence scores, and more – all focused on the Customer 360. They contain functionality that works out of the box. And they save you a lot of time and cost, and mitigate the risk of an in-house build gone wrong.

The Customer Intelligence Management Era – Data Management + Analytics + Action in one Customer 360 System



The market for CIM-era technology is here. Forrester Research defines this type of software as an Insight Platform – a new breed of technology that combines data management, analytics and action into one system. They have further analyzed the market and have defined different types of Insight Platforms. Customer Intelligence Management Systems are defined by Forrester as a Business Solution Insight Platform. The difference in terminology is not important – what's important is that that concept of CIM systems is valid and being put to use in organizations. The time to evaluate CIM systems and how they can address your modern Customer 360 requirements is right now.

AllSight Customer Intelligence Management System



AllSight is the first Customer Intelligence Management System. While other vendors utilized new technology for modern data platforms or a next-generation of MDM, AllSight imagined that a new era of Customer 360 was possible, and it built AllSight to address the requirements of the new era. AllSight ingests data from all sources. It contains sophisticated synthesis capabilities that understand data (including raw unstructured data) and stitch it together into a Customer 360. Advanced reasoning analytics then infers additional customer 360 attributes to complete an Intelligent Customer 360. AllSight contains CIM applications for an operational Customer 360 Dashboard and an Analytical Customer 360 graph visualization to power CRM and analytic users. Built entirely on modern technology including Apache Hadoop,

Spark, Machine Learning, Natural Language Processing and Graph & Columnar data stores, AllSight can deliver an intelligent and actionable Customer 360 for your organization.

The Era of CIM is Upon Us, Are You Ready?

The CIM era is here and change will happen. Modern technology has matured, and CIM systems designed for a Customer 360 now exist that utilize that modern technology. And a new set of modern Customer 360 requirements have emerged – for understanding the customer journey, experiences, attitudes, and actions, among others. Who drives those requirements? Your customers do. The expectations for customer experience are set by the best customer-centric companies in the world. Customers expect an Apple or Amazon-like experience, even when they deal with a telco, insurance company, bank, or local retailer. Customers are already demanding this of your organization. Are you ready to meet that challenge?

AllSight can help you thrive in the CIM era.

We are the team that built the first CDI-MDM system (DWL). It was the first and the pre-eminent CDI-system of the second era of Customer 360.

We helped 1000s of customers implement CDI-MDM and move from the 1st to the 2nd era of Customer 360 (leveraging their investment in CIF software).

We recognized that the 3rd era of Customer 360 was coming.

We built the first CIM system, AllSight.

We want to help you move into the CIM era of Customer 360, and we know how to do so while leveraging your investment in the technologies of the last eras.

Learn more about some of the early adopters of CIM here www.allsight.com/customers, and contact us at marketing@allsight.com for a briefing on CIM use cases, case studies, and technology.

About InfoTrellis AllSight

Based in Toronto, Canada, InfoTrellis AllSight was founded with one purpose – to help organizations get more value out of their data. From its inception in 2007, our vision has remained constant: We help companies utilize modern technologies that consolidate & transform fragmented data into good, intelligent data to be consumed by business users. AllSight Customer Intelligence Management (CIM) system is the culmination of that vision – an intelligent data management system that satisfies the needs for the 3rd era of Customer 360. AllSight CIM is a pre-built system that manages any source of customer data, synthesizes it into a real customer 360, and produces intelligent customer data complete with enrichments, insights, and actions for each customer. For more information, please visit www.allsight.com.