Intelligent Data Management for Data-Driven Digital Transformation

Accelerating business value delivery with the
Informatica Intelligent Data Platform

ABOUT INFORMATICA

Digital transformation changes our expectations: better service, faster delivery, greater convenience, with less cost. Businesses must transform to stay relevant. The good news? Data holds the answers.

As the world's leader in enterprise cloud data management, we're prepared to help you intelligently lead—in any sector, category or niche. To provide you with the foresight to become more agile, realize new growth opportunities or even invent new things. With 100% focus on everything data, we offer the versatility you need to succeed.

We invite you to explore all that Informatica has to offer—and unleash the power of data to drive your next intelligent disruption. Not just once, but again and again.

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Introduction

Digital transformation is both a business opportunity and a strategic threat. The opportunity comes from leveraging analytics and new business models, fueled by data. The threat comes from competitors emerging from multiple directions with new business models that target your business. Digital disruption is changing the competitive landscape at an unprecedented rate. It is a matter of transform or be disrupted.

Data is the currency of digital transformation. The success of your business strategies depends on making all your data available as a shared resource to your entire organization.

Those who succeed in this new landscape will be the ones who lay a flexible and adaptive foundation of data management to deliver trusted data for all new business models, new analytics, and new users across the entire organization.

What Is Digital Transformation?

Digital transformation is the process of creating new digital business processes and business models to give an organization a competitive advantage, allowing them to make better decisions and deliver a higher level of service to customers. In the Data 1.0 era, data was held in specific applications that often became application "data silos." In the Data 2.0 era, data began to be used in business processes between applications. Now with Data 3.0, data is being used as the fuel for digital transformation, enabling new business models, better decisions, and faster innovation.

Here are some examples:

- **All-digital banking and insurance:** New financial services companies are emerging that have no legacy systems, no merger and acquisition system complexity, and no physical offices. Their agile use of client data allows for more detailed views of the customer's needs.
- **Personalized healthcare:** Providers are applying analytics to patient and genomic data to highly personalize approaches to healthcare.
- **Sensors:** Sports equipment and clothing are equipped with sensors to collect data about the user that provide immediate feedback on athletic performance, potential for injury, product usage, and more.
- **Autonomous cars and ride sharing:** These emerging business models could cause a revenue decline of up to 40 percent in automobile sales in the next few years.[1]
- **Shaving:** A recent startup is offering low-cost men's shaving products on a subscription basis by mail. This simple business model is having a significant effect on the shaving industry.

Clearly, new thinking is required:

- **Offensive thinking:** Leading organizations are thinking of how to use new business models that lead their own disruptions through data. KPMG found that "60 percent (of CEOs) see technological disruption as more of an opportunity than a threat." It also found that the top CEO priority was improving "speed to market." [2]
- **Defensive thinking:** Watching from the sidelines can be dangerous and doesn't take advantage of the disruptive power of data. Competition can come from across industry boundaries (e.g., autonomous cars) or from entirely new startups (e.g., online banking).

At the very least, you will need to monitor the competitive landscape carefully. If it takes your organization years to respond to a new competitive business model, the damage may be irreversible.

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[1] "Driverless Cars May Cut U.S. Sales by 40%, Barclays Says," Automotive News, http://www.autonews.com/article/20150519/OEM06/150519861/driverless-cars-may-cut-u.s.-sales-by-40-percent-barclays-says.
[2] "U.S. CEO Outlook 2017: Disrupt and Grow," KPMG, https://assets.kpmg.com/content/dam/kpmg/xx/pdf/2017/06/2017-global-ceo-outlook.pdf.

Data Management Challenge

Are you having trouble getting traction with new transformative initiatives? You are not alone. McKinsey reports that 86 percent of surveyed executives reported that they were "at best, only somewhat effective at meeting the primary objective of the data and analytics program." The primary technical reason for this failure is the lack of data management.[3]

Data management is a challenge due to the number of requirements:
- **Discoverable data:** Internal data is typically locked up in application data silos. For decades, data has been attached to enterprise applications and was never designed to be shared across the organization.
- **Scalable solutions:** The growth of data volume, variety, and velocity is well-documented. IDC estimates that the amount of data generated is doubling every two years.[4]
- **Consistent quality:** Analysts estimate that 50 percent of data is coming from sources external to the organization: This data often comes in many formats and quality levels and with little or no business context attached.
- **Self-service access:** There is huge growth in new types of users such as business analysts and data scientists who want and need access to data and expect self-serve access.
- **New use cases:** Digital transformation is driving new business models that require data from many new internal and external sources to derive value in terms of customer understanding or decision-making.

Leadership in data-driven digital transformation requires a new approach to data management: Data must be viewed as a shared resource, immediately discoverable and usable by all. Architectures need to be designed data-out rather than application-back. Applications will come and go. What differentiates a strategy is your data and how you use it.

Architectures need to be designed for change. We are experiencing unprecedented technology change at all levels of the stack. It must be able to quickly adapt to change with minimal impact from:
- New data sources
- New use cases
- New technologies such as big data, cloud, etc.
- New user types
- Support for both traditional data use and rapid experimentation for innovation
- Business users must be enabled to manage and self-serve data for their needs

IT groups that can build this type of plan will be in a much better position to participate in the formation of strategy with their organizations rather than after the fact.

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[3] "The Need to Lead in Data and Analytics," McKinsey, April 2016, http://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/the-need-to-lead-in-data-and-analytics.
[4] "The Digital Universe of Opportunities," IDC, https://www.emc.com/leadership/digital-universe/2014iview/executive-summary.htm.

Generational Shifts: Types of Data Management Initiatives

Digital transformation at the business level is driving significant new data-driven initiatives to support new business models. We refer to these business initiatives as "journeys" because most organizations cannot afford to just start over. More often, it is a case of implementing new data initiatives incrementally. At first, the following initiatives may augment current systems, but over time, they will probably expand and ultimately replace them:

- **Journey to cloud and hybrid:** Organizations move to cloud because of the speed in "standing up new projects," flexibility, cost, and, security. But for most large organizations, this means they will be managing a hybrid on-premises and cloud environment for years to come. Most customers are also finding that they need to manage multiple clouds: platforms and applications. This increases the challenge of keeping data accessible, secure, and relevant.

- **Journey to next-generation analytics:** Organizations expand on their current data warehouse/business intelligence environments and augment them with intelligent data lakes, predictive analytics, and artificial intelligence (AI). This also increases the data challenge complexity as there are more analytics systems being used for different purposes that all need to be fueled with trustworthy and relevant data.

- **Journey to data governance and compliance:** Data governance has grown beyond regulatory compliance to include data governance for better analytics and business processes. As data becomes the currency of digital transformation, organizations need enterprise-wide data governance to ensure trusted, timely, and actionable data for management decisions and business processes. It is becoming increasingly critical to secure the veracity of data that proliferates across the organization.

- **Journey to analytics data self-service:** As more organizations build analytics into their applications and processes and look to enable business units to use analytics to drive innovative new business insights, the need grows for analysts to be able to self-serve their own data. This data needs to be "fit for purpose" in terms of trust levels where "good enough" data might be OK for rapid innovation but trusted data will be required when operationalizing key decision-making processes.

- **Journey to 360 engagement:** As master data management (MDM) matures, organizations are moving beyond simple customer master records to mastering and relating much more data about their organizations. They are using this data to drive business initiatives such as deeper customer engagement or stronger supplier management. Some of the new data being collected for these purposes includes
  - **New domains:** They are adding additional related data domains such as suppliers and partner data.
  - **New data types:** They are adding much more data about each domain, such as transaction data, relationship data, interaction data, sensors, and Internet of Things (IoT) data.

Digital Transformation Customer Examples

If building a data foundation for digital transformation sounds challenging, it is. Here are four businesses that are disrupting their markets with data-driven digital transformation:

1. JLL (formerly Jones Lang LaSalle) is transforming commercial real estate. The business is using data and analytics to provide an array of services to its customers that enable the company to be more of a strategic partner. These services include optimal site selection, building security management, HVAC management, power management, conference room design, and property portfolio management. JLL combines a great deal of data from external sources with internal data to provide a higher level of value to its customers.

2. Cleveland Clinic is transforming the delivery of healthcare. The healthcare organization has long been a leader in its use of data warehousing and business intelligence but recently launched a predictive analytics initiative. To start, the organization expanded its data governance practice to ensure that the data was trusted. Then it built systems to predict up to eight weeks out for its more than 100 operating rooms and all upstream and downstream patient care needs. In that way, Cleveland Clinic is working to ensure the right people and resources are in place at every stage to address each patient's healthcare needs.

3. Nordstrom has consistently been recognized as a customer service leader. Nordstrom's recent efforts to use data and analytics to better understand and engage with its customers are resulting in high levels of customer loyalty and more return shoppers, across all sales channels.

4. Tinkoff Bank is one of the largest credit card issuers and fastest growing banks in Europe. The bank has accomplished this by building an all-digital business model that leverages data and analytics to better understand customers, innovate rapidly, and monitor fraud. Its architecture ensures 100 percent of the bank's data is available to employees for ad hoc reporting, dashboards, and decision-making.

How Informatica Helps: The Intelligent Data Platform

The Informatica® Intelligent Data Platform™ (IDP) is designed to meet the needs of customers' digital transformations. It's the industry's most complete and modular solution that helps companies unleash the power and value of all data across the hybrid enterprise:

• Built for a hybrid world of on-premises, cloud, and big data anywhere.
• Modular, letting you start small and grow at your own pace. Many of our most sophisticated customers have started with a single product.
• AI-driven, including the CLAIRE™ engine that provides built-in intelligence and automation by leveraging Informatica's leading metadata capabilities across the platform.
• Microservices-based, enabling Informatica to deliver data management innovation faster and to allow the IDP to be easily integrated via open APIs into customer environments.
• Complete, the IDP provides an end-to-end solution built from products that are all industry leaders in their spaces.
• Management and governance, for all things data, from mainframes to IoT, at any speed.

The IDP delivers data that is trusted, timely, and actionable for any data-dependent use case.

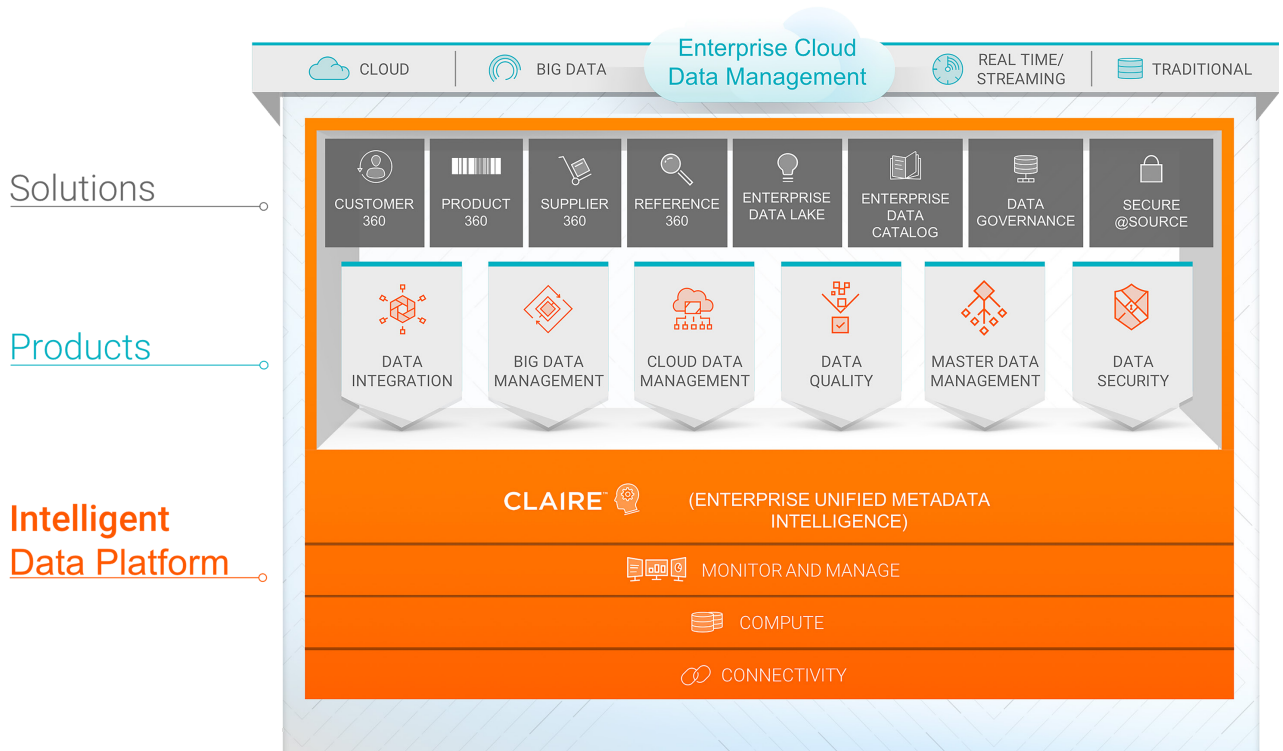The Informatica Intelligent Data Platform is made up of the following products and solutions:

Figure 1: Unlock data's potential with the Informatica Intelligent Data Platform.

Products

There are six product areas within the IDP. Each product area contains multiple products:

- **Data Integration:** To move, transform, and integrate data
- **Big Data Management®:** To manage very large data sets with complex data structures
- **Cloud Data Management:** To provide software as a service data management capabilities in the cloud that can manage data anywhere, referred to as integration platform as a service (iPaaS)
- **Data Quality:** To ensure that the data is trustworthy for decisions and business processes
- **Master Data Management:** To provide a related and trusted 360-degree view of data for domains such as customer, supplier, or product
- **Data Security:** To ensure that your sensitive data is protected

Solutions

The solutions run on top of the products and provide business-appropriate user interfaces to enable business users to self-serve data and to take an active part in managing the data.
The IDP integrates products and solutions to provide the following capabilities:

- **CLAIRE intelligence:** With AI and metadata-centric intelligence across the IDP, products and solutions gain intelligence to provide suggestions, recommendations, and automation of tasks such as discovering data, tagging data, and recognizing data entities and domains. CLAIRE automatically detects the structure in new unstructured data and creates mappings to onboard similar data in the future. CLAIRE metadata-centric intelligence will be increasingly integrated with all the capabilities of the Informatica Intelligent Data Platform to automate tasks and boost overall productivity.
- **Informatica Operational Insights:** This machine-learning-based analytics tool provides monitoring and management of all products across the IDP.
- **Compute:** The IDP automatically selects the optimal compute engine for big data jobs based on the requirements of the job from MapReduce, Spark, Tez, and Blaze engines.
- **Connectivity:** All products on the IDP share connectivity to all data sources on-premises, cloud, or big data, anywhere.

Drill-Down: Enterprise Data Catalog

Informatica Enterprise Data Catalog (EDC) provides a critical starting point for almost any data-related project and enables any user to discover and manage any data in your enterprise—that's any data.

EDC collects metadata on all the data in your organization: traditional structured data, Word docs, PowerPoint, PDFs, flat files, big data, cloud data, applications data, and data from other non-Informatica Extract Transform Load (ETL) sources. You will get one view of all your data.
You could sum up EDC this way: "Google-like search with Amazon-like recommendations." The result is that developers, business analysts, data scientists, and others can quickly find and manage the data they need. This represents a savings of up to 50 percent of the time spent doing data discovery and preparation.
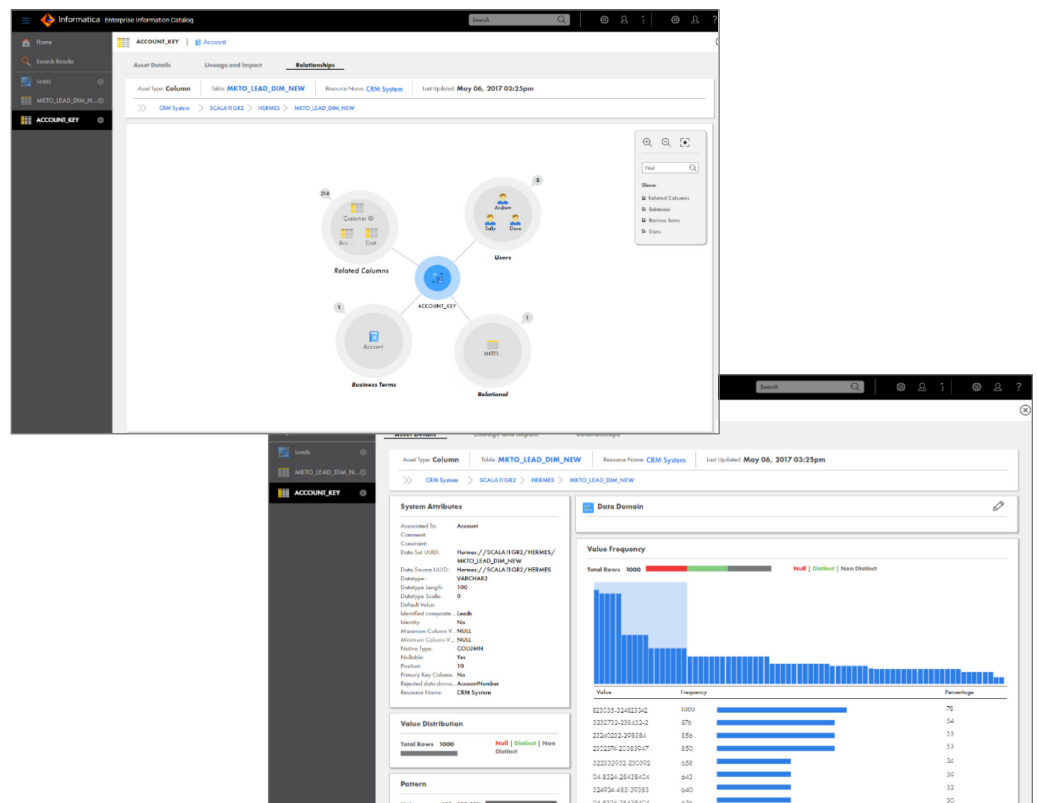

Figure 2: Informatica Enterprise Data Catalog automatically catalogs and classifies all types of data across the enterprise.

EDC also provides capabilities such as data lineage diagrams, impact analysis, data tagging, data classification, annotations, data recommendations, and more.

The Intelligent Data Platform Supports the World of Cloud and Hybrid

Informatica has provided industry-leading cloud products for more than a decade. Over time, the definition of a cloud integration platform has evolved to become the iPaaS definition. This includes the following functionalities:

- Cloud data integration (ETL capability)
- Application and process integration
- API management
- Connectivity

Informatica Intelligent Cloud Services[SM] significantly expands the potential scope of iPaaS and increases the value delivered. This latest development is a direct response to customer feedback. Customers need a complete and integrated platform that can manage data across multiple clouds, on-premises, and big data, anywhere.

Informatica Intelligent Cloud Services includes everything in the traditional definition of iPaaS plus capabilities such as:

- Cloud B2B
- Cloud Integration Hub (unique in the industry)
- Cloud Data Quality
- Cloud MDM
- Cloud Data Security
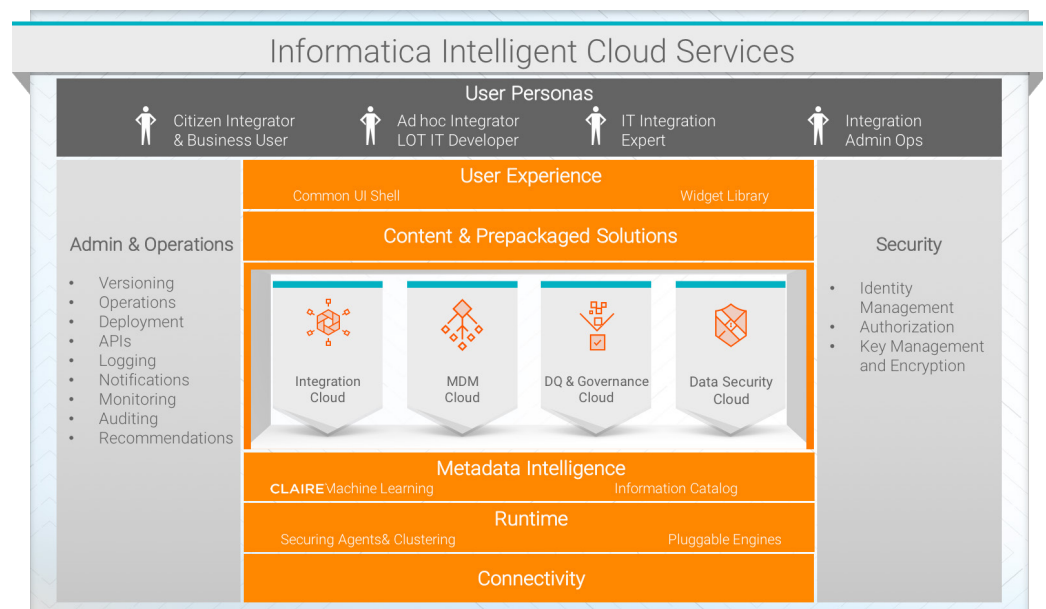- Cloud Data Lakes and Internet of Things

Figure 3: Informatica Intelligent Cloud Services automates data migration and integration.

Informatica is a recognized Leader in the March 2017 Gartner Magic Quadrant for Enterprise Integration Platform as a Service.* With Informatica Intelligent Cloud Services, Informatica is reimagining iPaaS and delivering a solution that is more comprehensive than anything else currently available in the cloud marketplace.

Informatica Intelligent Cloud Services is a "cloud of clouds." It is an instantiation of the Informatica Intelligent Data Platform in the cloud that includes cloud capabilities for our Data Integration, Data Quality and Governance, Master Data Management, and Data Security products. Additional clouds will be added over time.

While Informatica Intelligent Cloud Services functions as the IDP in the cloud, there are some distinct additional features specific to the cloud:
- With a completely reimagined user experience (UX) for all products, starting with a consumerlike user interface, Intelligent Cloud Services also includes next-generation approaches to accelerate business agility and speed to market.
- New UX includes many services that are the same across all products. Functions such as data search, data discovery, asset management, authentication, and others, look, feel, and behave the same across products, dramatically reducing the learning curve and increasing user confidence to drive efficiencies.
- UX features intelligent guidance at each phase of the data management process to promote learning during live development.
- Each new feature is made possible by a modular microservices architecture that allows a single implementation of the dozens of shared services in Intelligent Cloud Services, ensuring each works the same, regardless of environment.

Informatica Intelligent Cloud Services is specifically designed to address the next-generation use cases that our most innovative customers are facing and to provide the tools and agility to manage rapid change. It will also enable a new class of users to actively participate in data self-service and data management, ensuring that the people who have the most business context have the appropriate tools to manage the relevant data.

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Conclusion

Successful data-centric business strategies are built on a foundation of trusted, relevant, and timely data. Winning in this environment requires an architecture and a distinct competence in data management.

The era of hand-coding, point products, and allowing developers tools of choice is over. These approaches simply cannot scale to enterprise requirements, or to the requirements of data-driven digital transformation.

To build data competence that meets the needs of your business strategy, while maintaining the management flexibility to adapt to changes across on-premises, cloud, and big data environments, you should be thinking in terms of an integrated, modular, and intelligent data platform.

Contact us to learn more about how the Informatica Intelligent Data Platform can help you unleash the power of data to intelligently disrupt your industry.

Informatica