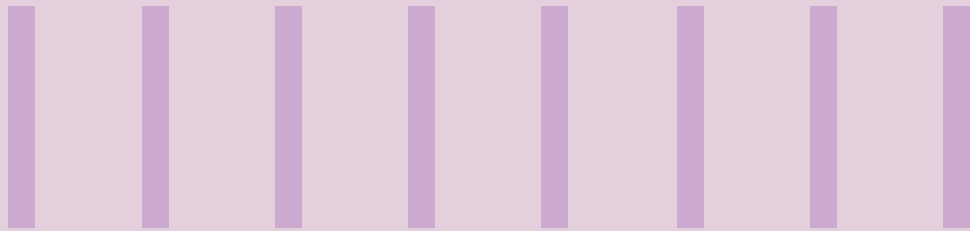




MONETIZE DATA





Enterprises today compete on their ability to find new opportunities, create new game - changing phenomena and discover new possibilities. The need for speed, accuracy and efficiency has never been greater. In an era where always - on people connectivity, Internet - of - Things applications and unstructured data in public domain are the new normal, an organization's competitiveness and differentiation lies in their ability to leverage data and analytics. Today, winning companies are those that are driving tangible and measurable outcomes through predictive and actionable insights delivering data monetization – we call them as 'Analytics Driven Enterprises'.

Infosys has developed a business intelligence (BI) and data platform as a strategic tool to monetize data within the business ecosystem. This solution brings enterprises closer to their customers and creates new opportunities to sustain and grow the business.

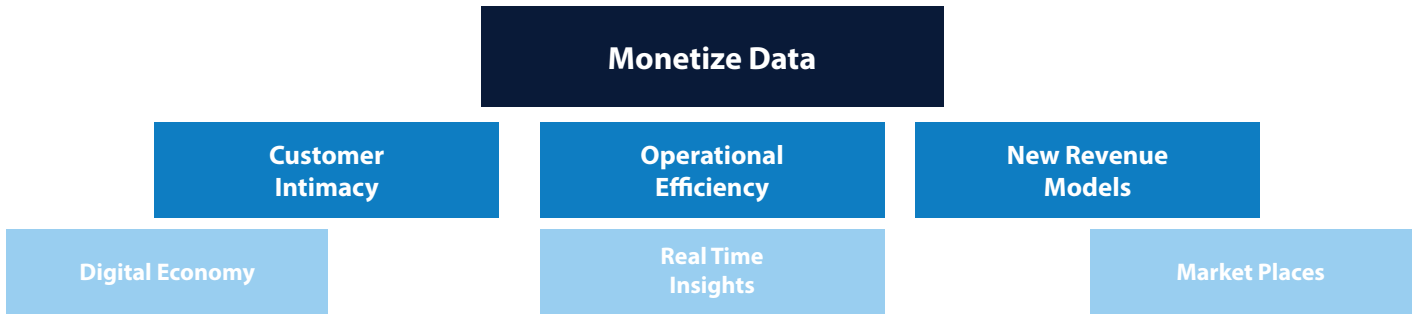


Figure 1: Levers of Data Monetization



The levers of data monetization include:

1) Customer Intimacy:

Driving better customer experience and engagement with end - customers by gaining insights into their behavior, preferences and needs. Driving revenue growth by increasing lifetime value of customer, cross - sell, up - sell etc.

2) Operational Efficiency and Risk Management:

Doing more with less while managing risks by leveraging operational analytics across the organizational business value chain from customer engagement, front office to the back - office and partner/ vendor engagement. Thereby increasing cost efficiencies and profitability. Data and analytics - based risk management helps identify and prevent risks and also helps comply with regulations, thereby avoiding unnecessary costs.

3) New Revenue Models:

Enable organizations to convert data into assets that can create new channels for revenue growth. The existing products/ services can be enriched with insights or new lines of business can be created to sell the information itself.

By monetizing data, enterprises can significantly also benefit from:

- Building an impressive brand in the market to influence stakeholders
- Enabling competitiveness and differentiation in collaboration with their partner ecosystem
- Justifying investments in Data and Analytics (DNA) transformation programs
- Creating a self - funded model for DNA transformational program

Barriers to Data Monetization

While the above benefits are promising, enterprises must negotiate overwhelming internal and external barriers in their process and technology environments to build these assets which include:

- Understanding customers better to improve service, respond to their needs anywhere, anytime and across any channel
- Delivering accurate and actionable insights to business users at any time to improve operational efficiency
- Meeting regulatory needs that are continuously changing for greater transparency in data submissions and faster response to regulators' queries
- Accessing quality data in secure and self - service way
- Acquiring and processing diversified and voluminous data made available from sensors, events, etc. in real - time
- Accessing data in silos on multiple in - house and cloud environments
- Adopt the right technologies that are evolving but is relatively slow to keeping pace with these technological disruptions

With multiple data silos resulting from M&A, data embedded in processes, external data availability, the number of boundaries that organizations need to break in order to create rapid, flowing and interoperable insights engine to deliver on these asks has gone up exponentially. It greatly impedes organizations' ability to leverage analytics and insights for better business decisions. These boundaries also manifest themselves in not only data/ system footprint and data integration sense, but also in terms of how the businesses/ IT are organized to leverage the information value chain.





Boundaryless Information Value Chain

The figure below depicts the information value chain that organizations need to build in order create a boundaryless information platform.

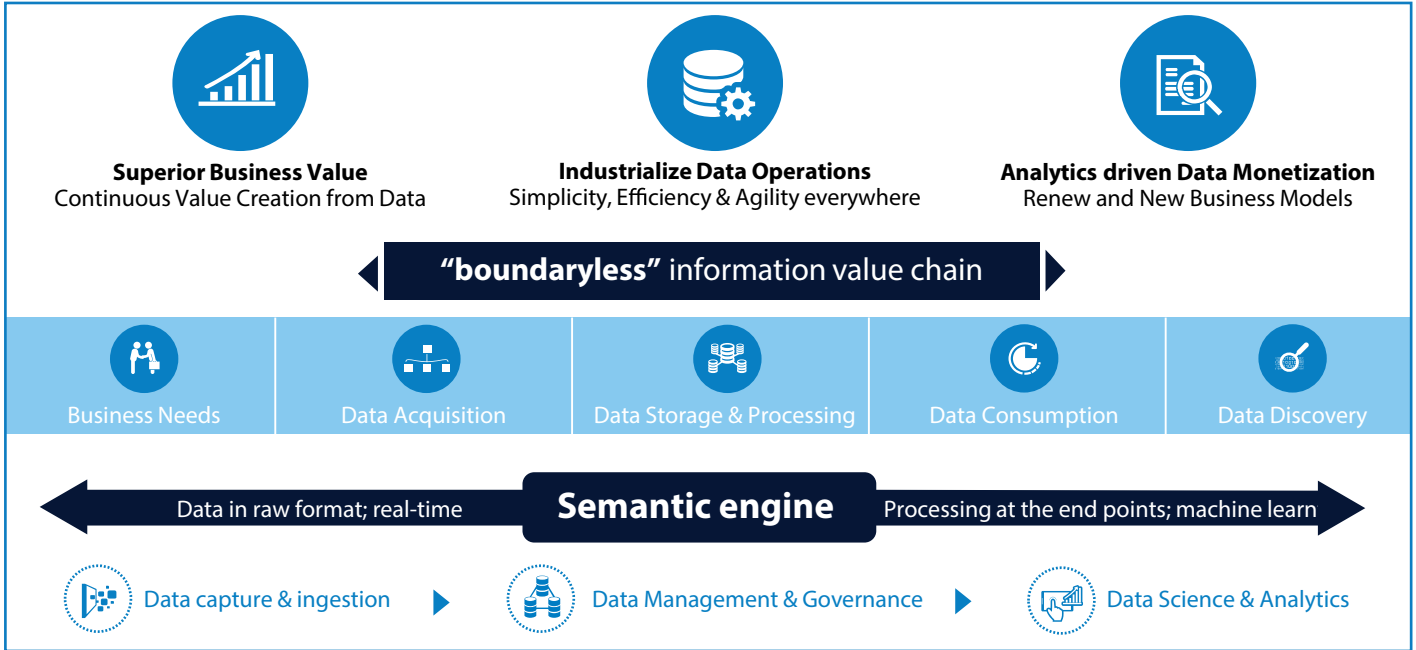


Figure 2: Boundaryless Information value chain

There are new paradigms in the entire value chain that drive the need for organizations to rethink and rebuild a boundaryless Information value chain. For example, data capture and ingestion have new dimensions to deal with especially Internet - of - things generates new data in real - time at very high velocity and variety, i.e., big and fast data. This data needs to be made available for processing across all end - points through a well - defined and accessible semantics engine.

The table below highlights the major shifts and trends that businesses and the data industry must capitalize on:

Stages	Current paradigm	New paradigm
Data acquisition	Sourced from enterprise applications in batch mode	Sourced from the IoT and public domain in real - time
Data processing and storage	Pre - processed data is stored in data warehouses and hosted on premise	Data is stored in raw form on the cloud and is available on demand
Data consumption	Used by few analysts. Data is mostly pre - processed and new data takes weeks/ months and requires IT intervention	Rapid and agile processing at the end - points based on the need and does not require IT intervention
Data discovery	Supervised and is hypothesis - based where data must support the hypotheses	Data based; data drives discovery of new patterns, hypotheses and opportunities; Increased dominance from unsupervised analytics
Data management and governance	Addresses structured data	Highly contextualized and customized depending on the type of data

We, at Infosys, believe that it is these fundamental transformations that businesses need to undergo in order to create a new Information value chain. And, once delivered can be a differentiator to discover new opportunities and also predict them ahead of time. However, many enterprises today have approached this journey as an “incremental addition” to current systems and capabilities. This approach not only fails to deliver a boundary - less information value chain but creates additional boundaries owing to new data sources, varying speeds, separate islands for processing, etc. Further, it increases the barriers to enabling an analytics - driven enterprise.

The pillars enabling an analytics - driven enterprise to deliver data monetization

Organizations need three distinct pillars to build an analytics - driven enterprise and deliver on the data monetization promise – revenue growth, cost savings and de - risked business. These three pillars are:

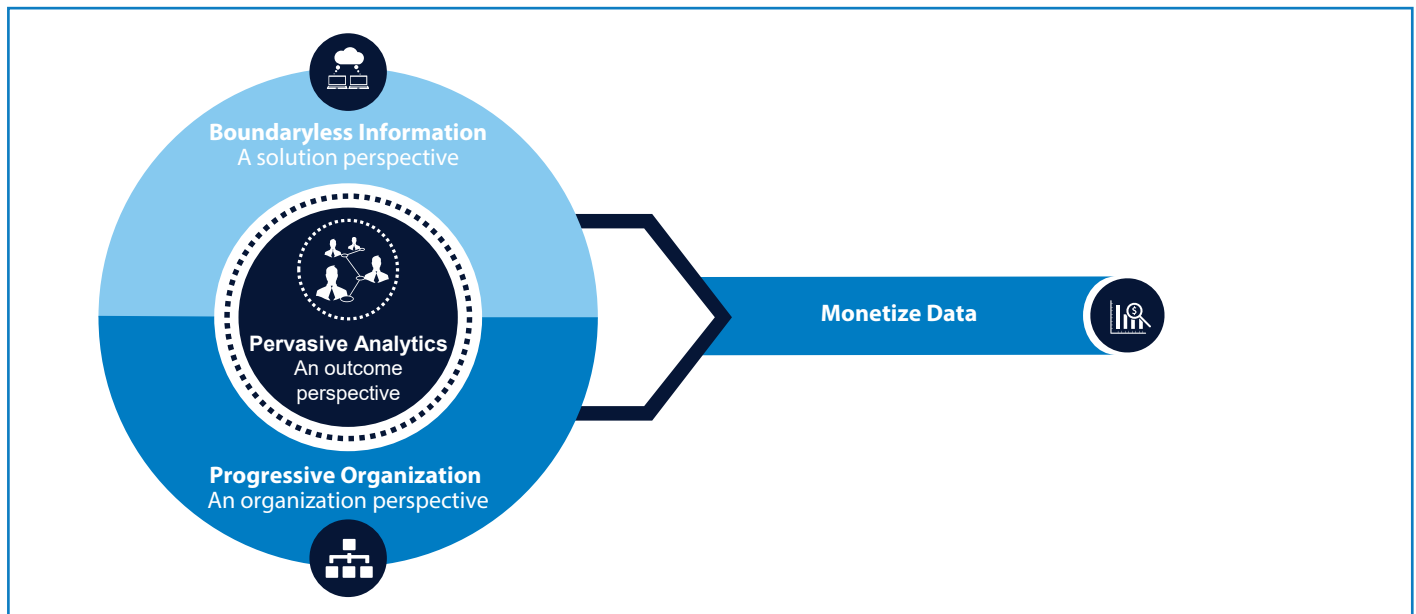


Figure 3: Three pillars of Data Monetization

Boundaryless Information:

The boundaryless information platform breaks system, technology, process, deployment, and organizational barriers to make the right information available to the right people at right time. This approach is driven by data consumption and begins with objective of building a marketplace of assets such as enterprise master data, transactional data, machine data, and external data from social, public and connected enterprises data that is available on - premises or on cloud. The platform provides best - in - class capabilities for digital and information management, enabling easy, personalized, collaborative, and secure discovery of information assets by constructing a metadata - driven data lake or leveraging data virtualization. The platform increases the usability of information assets through effective application of information semantics and a data democratization layer. It integrates analytics tools and enables consumers to rapidly build analytics solutions by leveraging the necessary information assets without engaging in expensive data integration initiatives and time - consuming IT development.

Pervasive Analytics:

An analytics - driven enterprise will be defined by the extent to which it uses its available data to make decisions at all levels and therefore how analytically mature they are in terms of features enabled. While strategic decision - makers need predictive analytics, field sales and operations need real - time analytics on machine learning to enable consumer pattern identification, predictive maintenance, etc. For analytics to be pervasive in the organization, it should enhance business processes, drive business decision - making and enable agility through self - service. Self - service capabilities reduce dependencies on analysts and IT as business users create their own reports, run analysis, build models, and share these across the organization. In an analytics - driven enterprise, decision - makers can leverage analytics for all their interactions with ecosystem partners including suppliers, investors, regulatory bodies, employees, distributors, and customers, thereby making it critical to invest in analytics across all functions.

Progressive Organization:

A progressive organization is the glue that binds, builds and delivers capabilities such as the boundaryless information platform and pervasive analytics. The progressive organization introduces the right structure, culture and processes to embrace new paradigms. To succeed as a progressive organization, a relevant data and analytics strategy along with the right operating model are vital. Data governance and change management provide the necessary alignment between business and technology and enable business speed and responsiveness. Data governance ensures that accurate, complete and secure data is available whenever and wherever required along with the right architecture, policies and procedures in the information value chain. While building a progressive organization, it is important to understand the organizational culture for change and leverage industry experience when adopting this change. Thus, building a progressive organization is not only about leveraging technology or advanced analytics but it is also about building constructs around organization culture, process, people and embedding analytics deeply into the business processes.

Detailing the three pillars

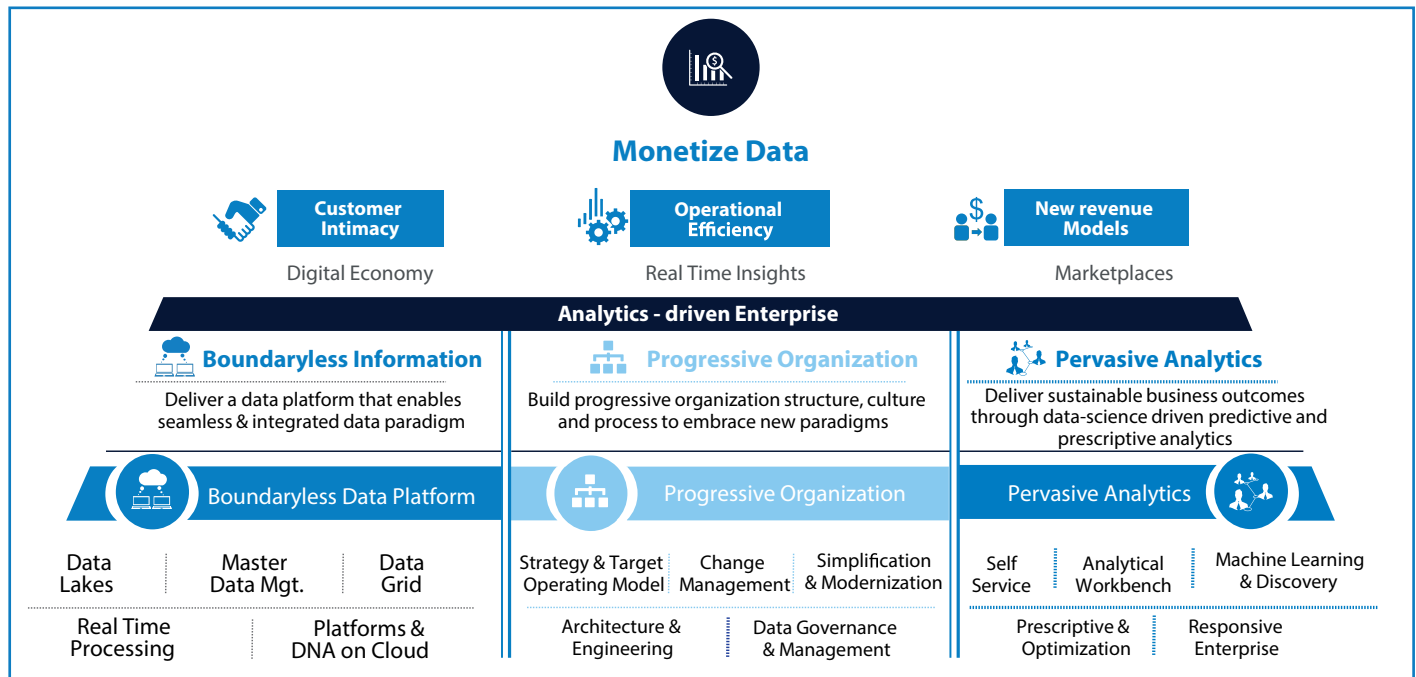


Figure 3: Strategic approach to sustainably deliver Data Monetization

To transform into an analytics - driven organization, it is important to get the right combination of technologies, tools and strategic services.

The building blocks

Boundaryless Data Platform

- **Data Lakes**

Enables storage of unlimited data in any format, schema and type in a cost - effective and scalable manner. The data lake can expand existing data warehouses by capturing data at lower grain and higher diversity. It supports agility in analytics by allowing discovery and exploration on raw data to uncover correlations between seemingly unrelated data streams.

- **Master Data Management**

Enables universal definition of data domains such as customer, product, etc., and seamless interoperability between domains and applications with the right business - centric semantics model to deliver a 360 - degree view of customers, products/services, suppliers and employees.

- **Data Grid**

Breaks the physical boundaries by

integrating data from a variety of sources such as on - premises/cloud in real - time with the right use of integration technologies such as Extract, Transform, Load (ETL) and Virtualization/Federation. The catalog of raw and enriched data is made available for consumption through a metadata - driven semantic layer (data democratization layer) in a seamless and secure manner.

- **Real Time Processing**

Enables real - time, rapid and high - speed processing of streaming data such as clickstreams, weblogs and sensor data while catering to high volume, velocity and variety of data.

- **Platforms and Data - Analytics - on - the - cloud**

Leverage the on - premises and/or cloud - base deployment models to reduce cost. They also support a seamless and integrated data platform to create boundary - less information flow and provide a data and analytics services - based delivery model.

Pervasive Analytics

- **Self - Service**

Untether business users by enabling them to consume information on their

own. Interactive dashboards that are persona - based with custom alerts and exceptions reduce time - to - insights and improve BI adoption. Further, ad - hoc reporting users can utilize data and report catalog and semantic layers that are available on boundary - less platforms.

- **Analytical Workbench**

Diagnostic and predictive analytics. Business users can trigger these using an analytics work - bench along with model configuration workflows, pre - built analytical models and new model plug - in/refresh mechanisms.

- **Machine Learning**

Self - learning models that can provide recommendations on decisions based on past decisions or user - driven decisions. This technology uncovers trends and patterns that are significant for business decisions without forcing the decision - maker to construct specific questions.

- **Prescriptive and Optimization**

For most decisions in an organization to be analytics driven, even decision making would need to be automated to an extent. For example, a pricing analytics output can be presented as recommended prices and only those

over a threshold would need exception approval. This would imply price optimization and is the last mile in making analytics pervasive.

- **Responsive Enterprise**

Building the user - experience capability while focusing on pervasive analytics.

It introduces mechanisms that allow business users to consume insights derived from analytics on - the - go within the platform or on any device. The insights are rendered in an interactive and visual format. With a pre - built and comprehensive user - experience manual, users are empowered to

customize the insights and account for the changing internal and external attributes that affect business decisions. Thus the organization can ensure analytics is used extensively, thereby becoming a responsive enterprise that is able to respond to dynamic operations and environments.

Strategic services

Strategy and Target Operating Model

Assess and define the transformational strategy and roadmap for building and operating a boundary - less information platform and analytical capabilities while prioritizing high - value functional assets in high - impact domains. It also enables organizations to unlearn old ways and adopt new ways to become analytics - driven. This is a key enabler to adopt new transformations along with business action.

Change Management

Aligns people and the organization to the change. It identifies the right capability across the data value chain to meet organizational objectives and improves decision - making. It also ensures that change is seamless and widely - accepted through continuous communication, training and development.

Architecture and Engineering

Design future - state architecture that is scalable, flexible and robust. These functions handle all aspects of business, data, applications, and technology architecture to address ever - changing business paradigms and compliance with regulatory needs.

Data Governance and Management

Enhances data governance capabilities with the right data strategy, policies and guidelines to maintain high quality and secure data for consumption and compliance. It also provides data lineage for internal usage, regulatory queries and archived data along with the appropriate data retention strategy.

Simplification and Modernization

Simplifies and modernizes the existing landscape, making it agile and efficient. The adoption of new technologies and best - practices in performance measures and consolidation of systems and technologies makes analytics a viable initiative for enterprises.

How Infosys delivers value to customers

The Infosys Analytics - driven Enterprise approach helps customers benefit from enhanced business value through:

- Outcome - centric roadmap based on data monetization and powered by transformational building blocks and strategic services
- Boundary - less information that delivers real - time, rapid and high - performance insights and enables pervasive analytics with limited IT intervention
- Empowering business end users and customers with real - time, processed and easily visualized insights

- Enabling organizational constructs and processes that evolve with changing business and technology landscapes

Infosys has developed an AI platform - Infosys NIA as a reference implementation of the boundary - less concept. We also leverage over 80 assets in accelerators, AikiDo Transformation Framework and the Design Thinking - driven problem - solving approach to accelerate the customer journey towards an analytics - driven organization.



Success Story:

A European financial services firm was struggling to stay ahead on the technology curve and was unable to meet their business requirements. The client could not meet expectations of quick insights and was unable to keep up with emerging technologies. Over the years, it had fallen behind on new technology adoption resulting in specific businesses trying to build their own BI system footprint bringing inconsistencies and integration issues. Earlier this year, the organization realized that it had failed to deliver on the business requirements and also failed to deliver ROI on the technology trials. It invited Infosys to rebuild its BI landscape while catering to in - flight strategic initiatives. Infosys built an Analytics Driven Enterprise across 3 dimensions:

- a. High - performance big - data enabled boundaryless information platform
- b. Customer Centric Analytics solution to deliver better customer experience
- c. Define its progressive organization structure and processes across IT and business to build solid data governance

The program was designed to deliver results in as quickly as 3 months while driving transformation across multiple businesses and areas.

It is this comprehensive approach of realizing a boundaryless organization that enables an analytics driven culture reducing both the cost and time to insights that differentiates us. Leveraging this, customer can not only monetize their data but also drive a data driven decision culture towards becoming an Analytics Driven Organization.



For more information, contact askus@infosys.com



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