Data and Analytics Worlds Collide: A Gartner Trend Insight Report

Published 17 June 2021 - ID G00747641 - 19 min read

By Analyst(s): Carlie Idoine

Initiatives: Analytics, BI and Data Science Solutions; Data Management Solutions; Future of Work Reinvented Resource Center

The collision of once disparate data and analytics markets, fueled by the proliferation of cloud and augmented capabilities, provides opportunity for data and analytics leaders to accelerate maturation and use of data and analytics to drive business-driven decisions and outcomes.

Additional Perspectives

- Summary Translation: Data and Analytics Worlds Collide: A Gartner Trend Insight Report
  (09 July 2021)

Overview

Opportunities and Challenges

- **Augmented analytics and cloud "accelerants":** The rise of augmented analytics, combined with cloud and other accelerants, fueled the clustering of new data and analytics capabilities that, in effect, adapt to the skills, needs and problems of different classes of business users. This rise has resulted in extending the reach of data and analytics.

- **Data and analytics (D&A) markets:** As a result of the rapid growth of AI capabilities, data management and analytics capabilities and vendors are colliding, forming new data management platforms, some with analytics capabilities and vice versa. As a result of the rapid growth of AI capabilities, data management and analytics capabilities — and their respective vendor offerings — are colliding.

- **Augmented business intelligence (ABI) and data science and machine learning (DSML):** Combining augmented analytics and business intelligence, augmented data preparation and augmented DSML facilitates stronger, more complete and more effective links across the analytics continuum and analytics investments, practices, processes and key business outcomes.

- **Collision impact extends beyond data and analytics markets:** Accelerants have significantly changed data and analytics. In addition to the blurring distinctions between data and analytics as well as ABI and DSML, lines are blurring between the roles engaged in D&A activities and even extending to the boundaries between analytics, business process management (including process automation) and application development.

What You Need to Know

The following collisions are examples of multiple, historically distinct markets and elements increasingly drawn together:

- **Augmented analytics and cloud accelerants:** The easy-to-use, automated capabilities provided by augmented analytics, combined with the increased pervasiveness and accessibility provided by cloud deployment, have accelerated the collision.

- **Data and analytics:** There is a growing overlap of data and analytics tool capabilities, processes, roles and governance. **ABI and data science and machine learning:** Nowadays, analytics' descriptive, diagnostic, predictive and prescriptive capabilities are combined throughout the analytical process to drive decisions and actions.

- **Reverberations extend beyond the periphery of data and analytics:**

- **Roles:** As data and analytics drive business decisions across the organization, collaboration across roles and functions is critically important.

- **Analytics, business process management and business applications:** Embedding the analytics directly into the business process and applications is prioritized to drive action and value in the context of business process and decisions.

Strategic Planning Assumptions

By 2023, overall analytics adoption will increase from 35% to 50%, driven by vertical- and domain-specific augmented analytics solutions.

By 2023, 95% of Fortune 500 companies will have converged analytics governance into broader data and analytics governance initiatives.

By 2023, 60% of organizations will compose components from three or more analytics solutions to build business applications infused with analytics that connect insights to actions.

Insight From the Experts

Take Advantage of the D&A Convergence Trend

This insight report addresses the impact of augmented analytics and other accelerants that are altering the course of data and analytics markets as they collide and transform organizations' workplace ecosystems.

The metaphor of a collision of data and analytics worlds describes the increasing convergence of multiple related elements. This notably includes (but is not exclusive to) the analytics and business intelligence (ABI) and data science and machine learning markets across vertical- and domain-specific markets. This coming together creates an opportunity to transform the data and analytics ecosystem, as well as the approach to orchestrating the analytics life cycle. In addition, it impacts markets and elements beyond data and analytics.

Kind Regards,

Carlie Idoine

Executive Overview

Definition

This collection of research aims to assist data and analytics leaders in preparing for current changes in various dimensions of the market as they collide and present challenges and opportunities.

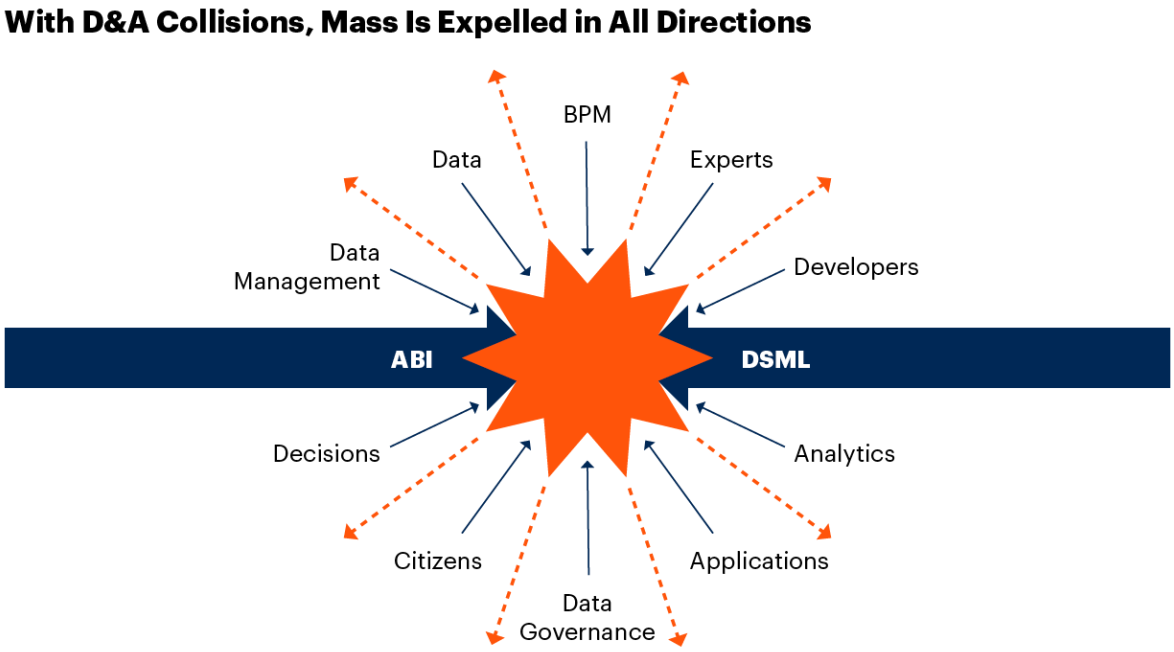
The proliferation of augmented capabilities, cloud and other accelerants within data access, data management, analytics and data science makes once-distinct markets collide. Fueled by cloud approaches, the collision has ushered in a transformation in not only *ho*w data and analytics is used, but also who can effectively leverage it. Of surveyed business technologists — those who create analytics and technology output but are not in IT — 80% said they are advanced users of at least one type out of seven data science and AI tools. 80% also routinely use at least one of these tools. To harness the energy released, data and analytics leaders must anticipate big changes in products, investments and practices.

The ability to seamlessly go from data to insight to action to impact has challenged data and analytics leaders for quite some time. The collision related to analytics, BI and data science addresses this, as different data, analytics and other markets and elements continue to merge and overlap.

Organizations that take advantage of this convergence can achieve material time to insight, closed-loop impact monitoring, and adjustment and productivity benefits for any data and analytics use case or application. Additionally, collisions related to data management are already providing new platforms to support all uses of data, everywhere, all the time, beyond analytics. In the long term, the data and analytics governance platform may emerge to serve as a single place for all aspects of governing both data and analytics in all its forms.

When D&A markets collide, expect increased energy and opportunity (see Figure 1). Sometimes, collisions exude mass, and the trajectories are impacted. And it's not just technology-centric — there are broader aspects of worlds colliding, including a collision of viewpoints (e.g., bimodal, to oversimplify).

Figure 1. With D&A Collisions, Mass Is Expelled in All Directions



Source: Gartner
747641_C

Research Highlights

Augmented Analytics and Cloud Accelerants

The easy-to-use, automated capabilities provided by augmented analytics, combined with the increased pervasiveness and accessibility provided by cloud deployment, have accelerated the collision. Organizations that seize the opportunities in the newly catalyzed markets and elements can dramatically hasten their data- and analytics-related maturation, potentially enabling them to make competitive breakthroughs and respond to crises and downturns, in comparison with slower-maturing rivals.

Related Research

Analytics, Business Intelligence and Data Science Solutions Primer for 2021 showcases how technology markets are blurring for analytics, BI and data science solutions, forcing end users to increasingly become self-sufficient. Success requires data and analytics leaders to provide a resilient ecosystem that supports the individual and community while being laser-focused on business impact.

Worlds Collide as Augmented Analytics Draws Analytics, BI and Data Science Together is research about how the proliferation of augmented capabilities within analytics, business intelligence, and data science and machine learning products is making once-distinct markets collide. To harness the energy released, data and analytics leaders must anticipate big changes in products, investments and practices.

Comparing AI-/ML-Based Systems That Minimize Data Science Requirements makes the case that organizations developing AI and ML solutions are challenged with a shortage of data science skills, longer development cycles and other complexity barriers. This research helps data and analytics technical professionals assess approaches to accelerate development of AI- and machine-learning-based systems.

Data and Analytics

Traditionally, there were divisions separating distinct markets or dimensions of data and analytics. This type of landscape hampered data and analytics professionals in that the boundaries of each market were not conducive to the work that needed to be done and the business value that needed to be added. The irony inherent in this separation is that analytics required sound data practices to be successful, and the primary consumer of data is almost always analytics tools and applications. Separating these markets merely inhibited the timely delivery of analytics and data science to business production value.

“Data governance” becomes “data and analytics governance,” which is increasingly incorporated as an essential part of delivering data management solutions. Data stores have evolved from a historic focus on a data-centric data warehouse to an analytics-centric data lake and the much-hyped lakehouse. New data management and analytics platforms are emerging, some coming from a data-centric perspective, and some from an analytics-centric perspective. The rise of business technologies also drives consumers to naturally look for broader access to data and analytics capabilities. Additionally, parts of the individual markets are colliding. Such is the case with master data management (MDM), governance and data hubs.

Data and analytics leaders should prepare their organizations for major changes in D&A products, investments and practices. Augmented analytics is driving each of those elements, among others, toward one another with an overlap of roles, skills and capabilities that are colliding. The challenge now is how to converge them.

Begin with the end in mind — meaning, focus first on the business and work back to the data and analytics approaches required to support them. This enables data and analytics leaders to identify where the collision happens and positions them to capture (harness) its energy to propel analytics programs forward. This concept requires a mix of data and analytic approaches by combining and recombining data and analytics capabilities multiple times, as needed. This allows D&A leaders to model and analyze the problem to deliver an effective solution aligned with supporting and reengineering business decisions.

Related Research

Benefit From AI and Logical Data Warehouse Synergy instills the need for data and analytics leaders to ensure their data science and data warehousing teams work together. These two disciplines are notably different, but there is some overlap, and they are highly complementary. The AI and logical data warehouse systems must be designed to work together.

Case Study: Data and Analytics Monetization With Knowledge Graphs and AI (Turku City Data) recognizes data and analytics leaders who struggle to monetize data to solve real-world problems using AI techniques. Turku City Data has a best-practice solution: a knowledge graph framework for organizing data, exploring business problems, and building reusable data products and analytic solutions.

Modern Data and Analytics Requirements Demand a Convergence of Data Management Capabilities covers why modern data and analytics use cases need a portfolio of capabilities that cannot be fulfilled by existing, stand-alone products. Data and analytics leaders must invest in new data management solutions that leverage aggregated and integrated capabilities.

What Data and Analytics Leaders Need to Know and Do About Digital Twins discusses how digital twins are rapidly becoming a core component of digital business solutions. Digital twins include a combination of data management and analytic capabilities. Data and analytics leaders must engage with operational technology teams to help their organizations capture value while managing risk.

Market Opportunity Map: Data and Analytics, Worldwide points out that the data and analytics market has strong and growing significance, particularly as it evolves to focus on diverse data sources and machine learning. Technology general managers in data and analytics can use this research to optimize market entry strategy, investment and differentiation.

Magic Quadrant for Data and Analytics Service Providers brings to light that the COVID-19 pandemic has been an accelerator for data and analytics demand, and its adoption is further expanding across business units and communities.

Cloud Data Ecosystems Emerge as the New Data and Analytics Battleground shows how data management in the cloud shifted from a developer-oriented “some assembly required” focus to an enterprise-oriented, solution-based focus. Data and analytics leaders must understand the implications and trade-offs to make informed strategic decisions for their data and analytics deployments.

Market Guide for Analytics Query Accelerators explains how analytics query accelerators provide optimization on top of semantically flexible data stores, typically associated with data lake architectures. Data and analytics leaders should use these offerings to accelerate the time to value of their data lake initiatives as they move toward operational production delivery.

The Practical Logical Data Warehouse — a data consolidation and virtualization architecture of multiple analytic systems — is used by both user organizations and vendors. This research provides practical advice for data and analytics leaders planning data management solutions for analytics.

How Augmented Data Management Capabilities Are Impacting MDM and Data Governance brings to light new opportunities for data and analytics leaders to extend the business value of master data management. It is critical that existing MDM strategies are renovated to reflect the impact of bringing application data into existing MDM and data governance processes.

Top Trends in Data and Analytics for 2021: Data Fabric Is the Foundation provides an approach to enhance traditional data management patterns and replace them by reducing the variety of integrated data management platforms and delivering more responsive cross-enterprise data flows and integration opportunities.

Augmented Business Intelligence and Data Science and Machine Learning

More and more data and analytics leaders are shifting their focus to begin, first and foremost, with the business decisions that must be made. Good decisions drive business value. In that shift, they begin by exploring the business issues that need to be addressed, then identifying what decisions will be impacted in addressing the issues. In a 2021 Gartner hyperautomation survey, 46% of business technologists who created output for business-driven automation initiatives cited improving the quality or speed of decision making as a top objective. As such, the use of analytics to support these reengineered decisions does not proceed in an orderly fashion from descriptive to diagnostic, next to predictive and, finally, to prescriptive approaches which are seamlessly incorporated into business processes.

The analytics and BI market has historically been adjacent to, but separate from, the data science and machine learning market. However, as a result of the rapid growth of AI capabilities, in the form of augmented analytics within analytics and BI and data science products, these formerly distinct markets are colliding.

ABI capabilities overlap with data science and machine learning platforms. Some organizations want their ABI tool to deliver sophisticated capabilities in the data science space, including the ability to build, test and deploy machine learning models, invoke predictive analytics functions, and visualize highly complex data science calculations. In addition, data scientists increasingly have a need for stronger data exploration and visualization capabilities. Technical professionals evaluating ABI platforms and DSML tools will find there are many overlapping capabilities, but the key differentiator is the intended user and use case for analytics.

Related Research

Tech Providers 2025: Composable Analytics Is Shaping the Future of Analytic Applications discusses how and why organizations need more advanced and flexible analytics capabilities to support, augment and automate decisions.

Convergence of Analytics and Business Intelligence, Data Science and AI explores the lack of clarity on the elements of analytics and business intelligence, data science, and machine learning and AI, and how they interact with one another. Data and analytics leaders can use the infographic in this research as a starting point to differentiate and understand the nuances within each.

Follow 4 Data Science Best Practices to Achieve Project Success sets forth the fact that data science and machine learning initiatives are increasingly popular, but frequently fail to realize business value due to mistakes in project execution. Data and analytics leaders should follow four best practices to achieve project success.

Predicts 2021: Analytics, BI and Data Science Solutions — Pervasive, Democratized and Composable shows how increased consumerization of analytics technology and the need for communities are changing the analytics, BI and data science landscape, accelerated by movement to the cloud. Data and analytics leaders must leverage the collective intelligence of the organization to compose effective and augmented analytics solutions.

Contract for Customer Satisfaction, Not Promises, in 2021 Infrastructure Managed Services Deals points out Gartner's measure of more than 1,400 customer references across 2019 and 2020 for data centers, cloud, workplace and Internet of Things. Sourcing, procurement and vendor management leaders can use providers' customer satisfaction best-in-class metrics as key performance indicators in sourcing transformational IT service and solution deals.

Magic Quadrant for Data Science and Machine Learning Platforms highlights the data science/machine learning market's significant resilience in the past year, in terms of vendors' performances as businesses and ability to sustain high levels of innovation during trying times.

Critical Capabilities for Data Science and Machine Learning Platforms looks at the functions and features of data science and machine learning platforms' rapid evolution to keep pace with a highly innovative space. This research helps data and analytics leaders to evaluate 20 of these platforms across 15 Critical Capabilities.

Toolkit: RFP for an Analytics and Business Intelligence Platform includes a customizable request for proposal template and a questionnaire. It helps data and analytics leaders define and prioritize required capabilities before selecting a modern analytics and business intelligence platform vendor.

Toolkit: Framework to Select the Right Analytics and BI Tool for the Right User presents a six-phase buyer's guide for assessing analytics strategy and choosing the right mix of analytics and business intelligence tools for users.

How to Manage a Portfolio of Analytics, Business Intelligence and Data Science Tools reminds organizations that, although they must add data science and machine learning capabilities to their analytics and BI toolsets, they must do so without creating redundancy and overlap. We show data and analytics leaders how to form a tool management strategy that fosters innovation, evolves analytics needs and enables economies of scale.

Top Trends in Data and Analytics for 2021 covers trends that help organizations respond to change, uncertainty and the opportunities they bring over the next three years. Data and analytics leaders must examine how to turn these trends into key investments that accelerate their capabilities to anticipate, shift and respond.

Cool Vendors in Analytics and Data Science finds that organizations keep adding augmented analytics capabilities but neglect their foundation, resulting in a failure to harness the power of augmented analytics when more people and data are involved. This causes data and analytics silos with disconnected insights.

Newly Catalyzed Markets and Elements

The data and analytics markets are not the only ones impacted by the collision. Additional related and adjacent markets and elements are also drawn into the force, resulting in fundamental changes in who does the work and how it is done. According to the Gartner 2020 Building Digital Platforms survey, data and analytics platforms are the systems most widely integrated with digital business platforms (70%) with the largest increase since 2018 (up from 57%). Changes to traditional roles, business process management approaches and application development are being morphed and redefined as a result of the collision.

Related Research

Composable Analytics Shapes the Future of Analytics Applications shows how open, containerized analytics architecture makes analytics capabilities more composable and able to be more flexibly combined into applications. Data and analytics leaders should adopt the concept of composable analytics to provide consumer-focused analytics applications.

What If More People Could Ask "What If?" — Providing Tools to Support Scenario Thinking reveals why COVID-19 has made it clear that "what if" scenario modelling must become more prevalent. Data and analytics leaders must ensure these techniques are used more widely. This research looks at the options available to enable more business users to ask and answer "what if" questions.

Market Guide for Web, Product and Digital Experience Analytics is based on data and analytics leaders' use of web, product and digital experience analytics to analyze customer and user behavior, digital product performance, and usage patterns. This Market Guide offers insights into the vendor landscape.

How to Define and Guide Citizen Development Practices highlights how an effective business and IT partnership around a citizen development strategy is key to avoiding unmitigated shadow IT application development. Gartner's framework shows clients how to guide a citizen development community.

Platform-Enabled Citizen Development (BP) explores how enterprise architecture leaders are implementing digital platforms to meet the growing demand for business technologists to play a greater role in digital transformation efforts throughout the enterprise.

AI Development Must Embrace Empathy or Face a Human Uprising calls for data and analytics leaders to change from a technology-centric to a human-centric approach to developing AI solutions. This requires a deliberate focus on empathizing with users. Designing and developing AI systems without empathy leads to user distrust, culminating in active opposition.

Gartner Associates Supporting This Trend

 Carlie Idoine

 Melissa Davis

 Adam M. Ronthal

 Rita Sallam

 Jason Wong

Also, see Note 1.

Acronym Key and Glossary Terms

ABI	augmented business intelligence
BI	business intelligence
D&A	data and analytics
DSML	data science and machine learning
MDM	master data management

Evidence

Gartner's 2020 Building Digital Platforms Study: This study was conducted to provide guidance on how to build a digital initiative.

The research was conducted online during May and June 2020 among 206 respondents working for organizations in North America and Western Europe with at least $1 billion in annual revenue. Organizations were from the manufacturing and natural resources, communications, media, services, retail, banking and financial services, insurance, healthcare providers, transportation and utilities industries.

Organizations also had to be working on digital business efforts or have plans to do so, defined as involving IoT, delivery of public APIs, private/B2B APIs, or a combination thereof. Quotas were set to ensure a majority of respondents have a fully implemented digital business initiative.

Respondents were required to have a job title of Director or more senior and to be involved in either digital business, data analytics, IoT or API-based platforms for partners. In respect to digital business initiatives, they were also required to have a role in either defining technology requirements, investigating or evaluating service providers or making final decisions.

The study was developed collaboratively by Gartner Analysts who follow digital business trends and the Primary Research Team.

Results of this study do not represent global findings or the market as a whole but reflect the sentiments of the respondents and companies surveyed.

Gartner's 2021 Hyperautomation Survey: This study was conducted online during March 2021 among 558 business technologists from North America (n=226), Europe (n=146), LATAM (n=78) and APAC (n=108).

To be qualified to answer the survey respondents would need to:

- Have created, built or coded analytics or technology capabilities on their own or with input from others in the last 12 months.
- In the same time period, they have used at least one of the tools to produce analytics or technology capabilities for work. 21 tools were considered under four categories: application development tools, automation tools, integration tools and data science and AI tools.

Results of this study do not represent global findings or the market as a whole, but reflect the sentiments of the respondents and companies surveyed.

Gartner's 2021 Reimagining Technology Work Survey: This study was conducted via an online panel in March 2021 among more than 6,000 employees across functions, levels, industries and geographies. The survey examined the extent to which employees outside of IT were involved in customizing and building analytics or technology solutions. It also looked at the types of activities they performed, the teams and structures they worked in, and the types of support they received, among other things.

Results of this study do not represent global findings or the market as a whole, but reflect the sentiments of the respondents and companies surveyed.

Note 1. Additional Contributors

In addition to those listed in the Gartner Associates Supporting This Trend section, the following associates also contributed to this collection of research:

- Sumit Agarwal
- Joe Antelmi
- Mark Beyer
- Farhan Choudhary
- Henry Cook
- Guido De Simoni
- Pieter J. den Hamer
- Ted Freidman
- Malcolm Hawker
- Jorgen Heizenberg
- Gareth Herschel
- Afraz Jaffri
- Peter Krensky
- James Richardson
- Kurt Schlegel

- Julian Sun
- Joao Tapadinhas
- Alys Woodward

Recommended by the Author

Some documents may not be available as part of your current Gartner subscription.

Maximize the Benefits of Augmented Analytics With a Strategic Action Plan

How to Optimize Business Value From Data and Analytics Investments … Finally

7 Must-Have Foundations for Modern Data and Analytics Governance

Build a Comprehensive Ecosystem for Citizen Data Scientists to Drive Impactful Analytics