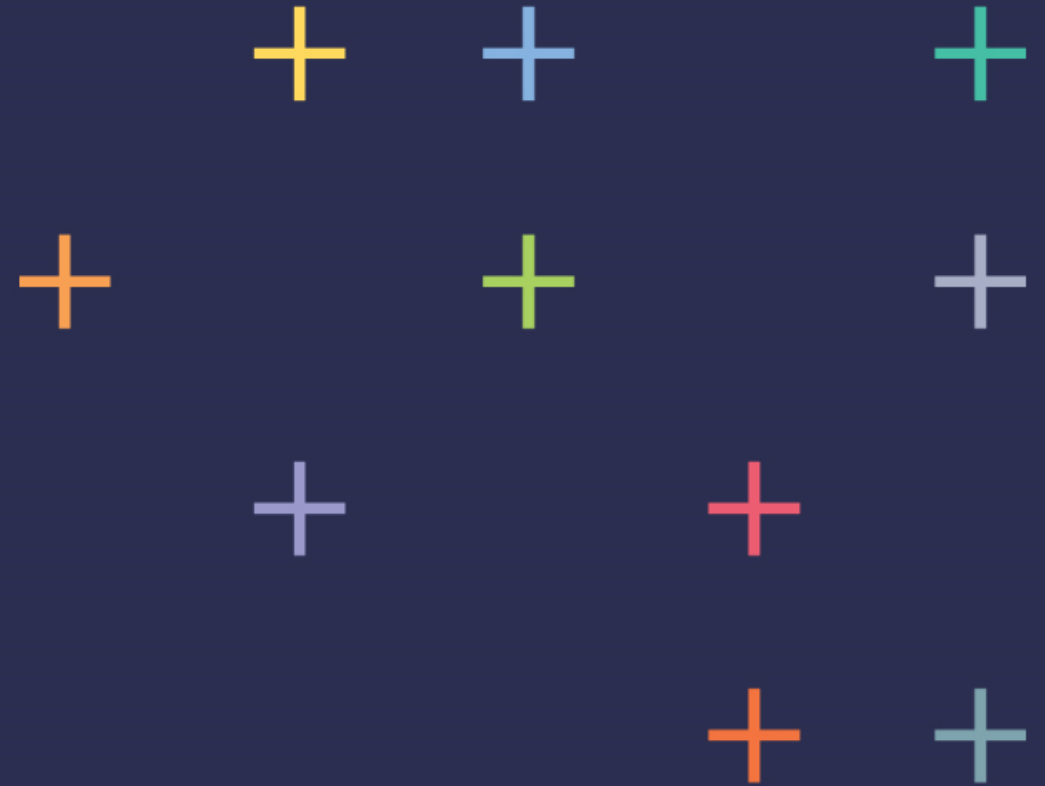




Top 10 Business Intelligence Trends for 2019

The pace and evolution of business intelligence solutions mean what's working now may need refining tomorrow. As leaders plan for the future, they're assessing emerging trends and technologies that will shape the business intelligence industry and create new opportunities. Based on our interviews with experts in the field, here are our collective predictions for the top 10 trends to watch in 2019 and beyond.

01

The rise of explainable AI

As organizations rely more on artificial intelligence and machine learning models, how can they ensure they're trustworthy?

Leaders are asking data science teams to use artificial intelligence models that are more explainable and offer documentation or an audit trail around how these models are constructed. AI has to be trusted to make the strongest business impact, and the generated conclusions must be intelligible, actionable, and easy to understand—all to help humans better understand their data. This need for transparency is driving growth of explainable AI—the practice of understanding and presenting transparent views into machine learning models.

85%
of CIOs will be
piloting artificial
intelligence
programs through a
combination of buy,
build, and outsource
efforts.

“

Analytics and AI should assist—but not
completely replace—human expertise
and understanding.

Richard Tibbetts, Product Manager for AI, Tableau

02

Natural language humanizes your data

Advancements in NLP systems enable all people to unlock natural conversations with data.

BI vendors are incorporating natural language processing (NLP) into their platforms, offering a natural language interface to visualizations so people can interact with their data as they would a person, allowing everyone to ask deeper questions. The technology is evolving to support analytical conversation—defined as a human having a conversation with the system about their data, leveraging context to understand the user's intent and further the dialogue, creating a more natural, conversational experience. This evolution will break down barriers to analytics adoption and help transform workplaces into more data-driven, self-service operations.

The natural language generation market size is estimated to grow to **\$825.3 million** by 2023 (Markets and Markets)

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Natural language is a way to bring all kinds of technology to a much broader audience. It decreases the technology barrier, so you don't have to learn the software. You don't even have to learn about analytics. You just need to have the business context to ask the right question.

Stephanie Richardson, Senior Director of Product Marketing, Tableau

03

Actionable analytics put data into context

BI platforms evolve to put data where people want to take action.

Data workers need to access their data and take action—all in the same workflow. BI platform vendors are responding by offering capabilities like mobile analytics, embedded analytics, dashboard extensions, and APIs. Embedded analytics puts data and insights where people are already working so they don't have to navigate to another application or shared server, while dashboard extensions bring access to other systems right into the dashboard. While these capabilities bring action and insight together within platforms and tools, mobile analytics allows users to access data wherever they are physically, and empowering different business teams and verticals with on-demand data in context.

By 2022, **50%** of digital business technology platform projects will connect events to business outcomes. (Gartner)

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In order to make analytics actionable, we need to make sure that we're providing the right message to the right person, at the right time, in a way that they can understand.

Peter Benson, Head of Strategic Alliances, Automated Insights

04

Data collaboratives amplify social good impact

Focused efforts from public and private-sector organizations strengthen 'data for good' movement.

Data has transformed how non-governmental organizations (NGOs) and nonprofits operate. One practical example is the emergence of data collaboratives—platforms for sharing data and collaborating across organizations to achieve a common goal. It has also driven conversation around the factors that build trust within these partnerships, including governance standards and the responsible use of data. Advancements in technology, increased data literacy, and a focus on collaboration are creating an opportune environment to solve some of the world's most difficult problems.

Social media mentions of 'data for good' have increased **68%** in the last year.

“

Data commonwealths allow organizations to share data between themselves and with the world in a way that is safe and secure—and in a way that protects the privacy of any individuals from whom the data is collected.

Neil Myrick, Global Head of Tableau Foundation

05

Codes of ethics catch up to data

Focused efforts from public and private-sector organizations strengthen 'data for good' movement.

With data regulations like GDPR, organizations are having critical conversations around data ethics and privacy in the context of daily business practices. Chief Data Officers are rolling ethical codes into digital transformation efforts, establishing a framework for future infrastructure, governance, and staffing decisions. As this matures, companies will review their entire data lifecycle to ensure compliance with both external regulations and internal codes of ethics. As modern BI platforms further democratize analytics, more roles will be responsible for following data ethics principles, and data ethics will be a core part of data literacy efforts.

Social media mentions of 'data for good' have increased **68%** in the last year.

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The practice of ethics helps practitioners step back and evaluate a situation from an ethical lens. Above all, data ethics are designed to act as speed bumps in our work so we understand how to face dilemmas both personally and professionally.

Bridget Cogley, Senior Consultant, Teknion Data Solutions

06

Data management converges with modern BI platforms

Governed data curation bridges the gap between data and business.

With greater diversity and complexity of data sources, and more of the workforce using data to drive decisions, data management is more critical than ever. Companies are turning to data curation—which includes capturing, cleaning, defining, and aligning disparate data—to bridge the gap between data and its real-world applications. Data curation tools and processes (like data catalogs and semantic governance) are now converging with BI platforms to link data with its business context and maintain governance at scale. Ultimately, governed data curation will provide a stronger foundation for the entire analytical pipeline, helping users move beyond asking questions of their data to asking questions of their business.

Digital data will grow at a compound annual growth rate (CAGR) of **42%** through 2020 (IDG)

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Data curation is the process of identifying which data sources are needed, putting that data in the context of the business so that business users can interact with it, understand it, and use it to create their analysis.

Mike Hetrick, Senior Product Marketing Manager, Tableau

07

Data storytelling is the new language of corporations

Finding and communicating data insights is now a team sport.

It's now a critical skill for analysts to be able to convey the steps that led to data insights in an actionable, easy-to-understand way—also defined as “data storytelling.” As companies create a culture of analytics, the definition of data storytelling is changing. Instead of presenting a singular conclusion, today's data storytelling methods emphasize nurturing conversation and collaboration. This invites a diversity of perspectives before making a business decision. Embracing data storytelling across roles will amplify the potential for business impact as data is used to engage, inform, and test ideas enterprise-wide.

According to a
Dresner 2018
Market study, **75%**
of respondents
found data
storytelling to be
critical or important
to their business
intelligence
initiatives.

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As audience members we need to be willing to be informed, to be able to interpret, we need to have a degree of subject knowledge. If that's not something we hold, then the designer has to take the responsibility to provide us with a sense of what all this means.

Andy Kirk, Founder, [VisualisingData.com](https://visualisingdata.com)

08

Enterprises get smarter about analytics adoption

What happens when leaders focus less on adoption and more on engagement?

The assumption that everyone gets value out of a BI platform just because they have access inhibits analytics progress. Opening a report occasionally doesn't mean it drives action or influence. Instead, leaders should focus on impact and whether or not a BI platform changes the way people make decisions. This engagement is real adoption. One way companies are increasing engagement is through internal user communities who can help onboard users, socialize best practices, and align others around data definitions. The outcome will be increased impact and return on investment from your BI solution, a more data-literate workforce, and a more competitive organization.

60% of CIOs plan to increase spending on analytics in the next 12 months.

(IDG CIO Tech Poll: Tech Priorities 2018)

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We need to rethink how we actually measure the benefit of BI. It's not just about who has access. It should be about how people are actually using analytics to inform their decision-making processes. That's adoption.

Josh Parenteau, Market Intelligence Director, Tableau

09

Data democracy elevates the data scientist

Data scientists develop soft skills to drive organizational change.

More departments and roles working with data has led to an increase in data literacy, shifting the definition of data science and blurring the lines of traditional data expertise and business domain knowledge. Today's data scientists are expected to have advanced statistical and machine learning knowledge alongside a strategic mind for the business and deep industry knowledge.

Instead of handing over their results, data scientists now participate in how results are applied to the business. Data scientists will start to differentiate themselves by how well they can communicate their findings to leadership and collaborate with other people working with data to drive impact.

Data scientist
roles have grown
over **650%** since
2012 (LinkedIn)

“

Statistical modeling and machine learning are now becoming table stakes in order to become a data scientist. The differentiator is how well those working in the field can communicate their findings in a simple, but actionable way.

Sonic Prabhudesai, Manager of Statistical Analysis, Charles Schwab

10

Accelerated cloud data migration fuels modern BI adoption

Data is moving to the cloud faster than ever, driving organizations to rethink their data strategy.

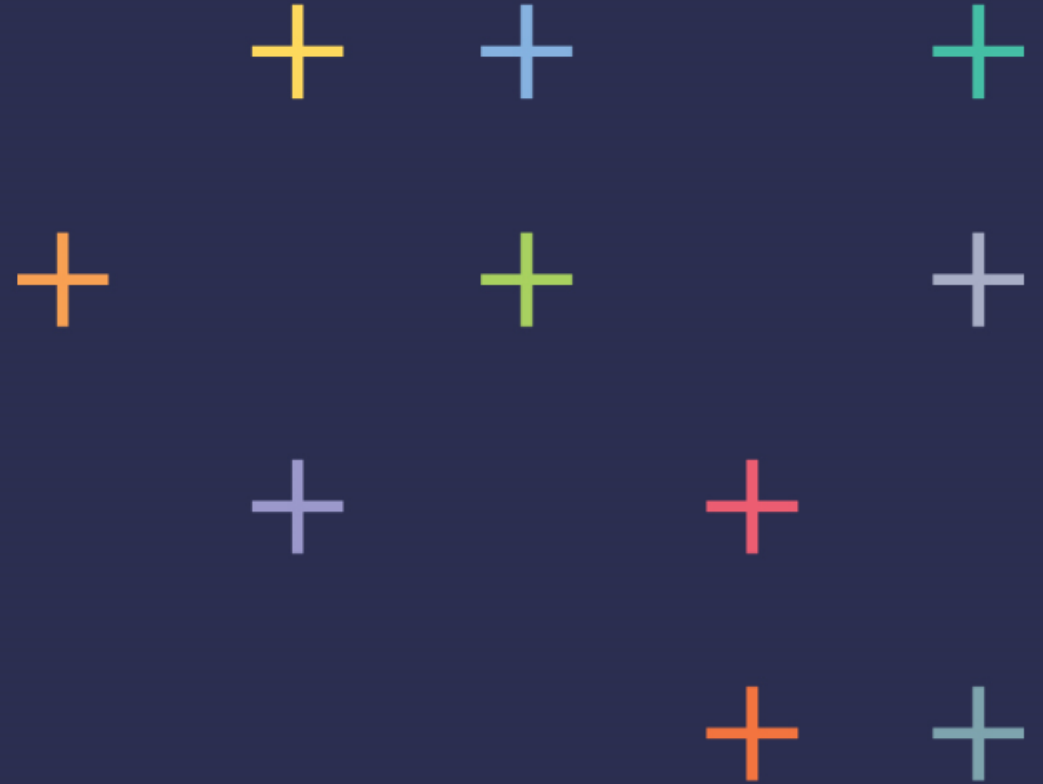
When modernizing your data strategy, you must think about where data is stored. For many companies, this means considering moving data to the cloud because of added flexibility and scalability at a lower total cost of ownership. As data moves to the cloud at an accelerated rate, analytics will naturally follow because of “data gravity”—the idea that services and applications are pulled in the direction of where the data resides. This is causing leaders to shift from traditional to modern BI, assessing whether or not their chosen BI platform will support a move to full-cloud analytics. Not every company is ready for this move, but 2019 will see more companies experimenting with hybrid solutions to take advantage of diverse data sources and the benefits of the cloud.

The public
cloud services
market is
projected to
grow 21.4% in
2018 to total
\$186.4 billion
(Gartner)

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We're seeing leaders rethink their entire
data analytics strategy and how the cloud
can impact their business and bottom line.

Sudhir Hasbe, Director, Product Management at Google Cloud



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