10 ENTERPRISE ANALYTICS TRENDS TO WATCH IN 2019
The Future Belongs to the Intelligent Enterprise

To survive and thrive in an era of accelerating digital disruption, organizations require accessible data, actionable insights, continuous innovation, and disruptive business models. It’s no longer enough to prioritize and implement analytics – leaders are being challenged to stop doing analytics just for analytics’ sake and focus on defined business outcomes.

In addition, these leaders are being challenged to bring predictive capabilities and even prescriptive recommended actions into production at scale. As AI and accelerated growth and transformation become top of mind, many enterprises are realizing that their current segmented analytics approach isn’t built to last, and that real transformation will require proper end-to-end data management, data security, and a data processing platform company-wide. The year 2019 will be a turning point for many organizations that realize being data-driven doesn’t guarantee future success.

The future belongs to the Intelligent Enterprise that anticipates constantly evolving regulatory, technological, market, and competitive challenges,
and turns them into opportunity and profit. It connects to any data and distributes reports to thousands.

The Intelligent Enterprise goes beyond business intelligence, delivering transformative insight to every department, device, and constituent through natural and zero-click, real-time experiences.

As organizations focus their 2020 (and even 2030) vision, MicroStrategy has compiled key trends enterprise organizations should be watching and acting on from leading influencers in business intelligence, data analytics and digital transformation, including Forrester’s Mike Gualtieri, Constellation Research’s Ray Wang and Doug Henschen, Ventana Research’s Mark Smith and David Menninger, Marcus Borba, Ronald van Loon, IDC’s Chandana Gopal, and many more.

From embedded and AI-augmented analytics to collaborative decision making, a laser focus on business outcomes, AI strategies, transformational mobility, and answers that find you, we hope you’ll find this gathering of expert insights an interesting and influential resource for looking and planning ahead.
Trend 1:
The Data Mindset Moves from Visualization to Outcomes

Mike Gualtieri
VP and Principal Analyst
Forrester

Mike is a VP and Principal Analyst at Forrester whose research focuses on software technologies, platforms, and practices that enable technology professionals to deliver digital transformations that lead to prescient digital experiences and breakthrough operational efficiency.

Jennifer Belissent, Ph.D.
Principal Analyst
Forrester

Jennifer is a Principal Analyst at Forrester whose research focuses on strategies for developing and delivering data products and services; the emergence of alternative data sources and marketplaces; and the rise of insights services providers to help companies leverage complex data and analytics technologies and methodologies.

Cinny Little
Senior Analyst
Forrester

Cinny serves Customer Insights Professionals, helping marketing research, digital analytics, customer analytics, and business analyst pros navigate the complexities of using data to derive actionable insights.
The Data Mindset Moves from Visualization to Outcomes

From the Forrester blogs: “Give me a dashboard. Give me a report. Give me better insights. If that’s your approach, it’s old-school and you’re falling behind. Leading enterprises have shifted their data sensibilities to action-oriented insights. ‘Interesting’ is no longer the standard for business insights efforts. Instead, insights projects must draw a straight line from business objectives to business outcomes.

Seems obvious . . . MBA 101, right? Unfortunately, many business insights organizations let whimsical stakeholder requests drive their efforts. No more, Forrester predicts. To be successful, business insights professionals must focus their efforts on the business outcomes that matter most. Therefore, the themes of Forrester’s business insights predictions for 2019 are:

• The data economy will fail without a “fail fast, succeed faster” mindset.
• Business insights professionals must become data storytellers.
• Dashboards are for drivers, but we are fast living in a driverless world.
• Data governance, until now a buzzkill, will become ambient and enabling.
• Swamped data lakes will become virtual, because lakes too quickly become murky.

Bottom line: Forrester sees the mindset changing from data and analytics untethered to outcomes to become action-oriented analytics that helps enterprises win.

Mike Gualtieri, Jennifer Belissent, Cinny Little
Predictions 2019: Business Insights Are A Many-Splendored Thing – Data is Meant for More
November 6, 2018

“According to Forrester Analytics, 57% of global data and analytics decision makers are still at the early stages of their insights-driven business transformation and fall into our beginner maturity segment. Only 8% demonstrate advanced insights-driven competencies.”

— Forrester Predictions 2019: Business Insights
Trend 2: 
Open Black Box in Artificial Intelligence & Augmented Analytics

Marcus Borba  
Founder & Principal Consultant  
Borba Consulting

Marcus is the founder of Borba Consulting, an advisory, management and research firm that helps organizations solve complex challenges with data, developing strategies to plan and implement solutions using analytics, big data, business intelligence, machine learning, artificial intelligence, the Internet of Things and data science. Marcus is also a member of the Boulder BI Brain Trust (BBBT), a gathering of leading consultants and analysts in big data, analytics and business intelligence. Marcus is considered a top global influencer in data science, analytics, machine learning, AI, IoT and digital transformation, and has been recognized by Onalytica in several of its top influencers, brands and publications lists.
Open Black Box in Artificial Intelligence & Augmented Analytics

Everybody knows artificial intelligence and machine learning are transforming the way we live and work. The main use of artificial intelligence applications in business is automating the process of decision making. However, as artificial intelligence becomes more sophisticated, concern around the fear of artificial intelligence systems as black boxes grows. There are several concerns encompassing various themes:

- **Fairness:** How can I check that the decisions were made fairly?
- **Bias:** How do I know that my AI application does not have a biased view of the world?
- **Security:** Can I have confidence in my artificial intelligence application without an explanation of how it makes decisions and reaches conclusions?

Explainable AI is an artificial intelligence whose actions can be explained and understood by people. There are many reasons to invest in explainable AI: regulations, ethical use of data, transparency, compliance requirements and risk. When it comes to the ethical use of data, the explanation of model outputs will drive successful adoption, revealing if sensitive data is causing similar exclusions and avoiding negative ethical outputs, and providing a provable way to show how decisions are ethical. In compliance, explainable AI can provide an auditable record, including all parameters associated with the prediction, enabling the business to meet compliance requirements whenever necessary.

The challenge of explainable AI is to produce more explainable models while maintaining a high level of prediction accuracy, enabling users to understand, trust, and manage their artificial intelligence applications.

**Augmented analytics:** The convergence of technologies like big data, cloud, data science, machine learning, artificial intelligence and IoT are creating new opportunities for the development and evolution of analytics. One of the most interesting new concepts is augmented analytics.

The goal of organizations today is to turn raw data into insights, but it’s not easy to implement a data-driven culture across an organization. Although companies know that they need to leverage their data, a huge number of companies are still in the initial stages of analytics adoption. This happens because to transform raw data into insights, companies need to complete several steps: collect data from multiple data sources, pre-process data, clean and transform the data, analysis, modeling, validation - and after all those steps, the companies can then enable data-driven decisions. Augmented analytics can help companies with these steps. Augmented analytics is a new paradigm that enables automated data insight using machine learning and natural language processing. Augmented analytics will be essential for delivering unbiased decisions, and will transform how business users interact, consume and act on insights. According Gartner, augmented analytics includes:

- **Augmented data preparation:** which uses machine-learning automation to augment data profiling and data quality, harmonization, modeling, manipulation, enrichment, metadata development and cataloging.
- **Augmented data discovery:** which enables business people and citizen data scientists to use machine learning to automatically find, visualize and narrate relevant findings.
- **Augmented data science and machine learning:** which automates key aspects of advanced analytic modeling, such as feature selection.

With augmented analytics, solutions will produce more accurate business forecasts and improve user adoption, enabling better decisions.
“IDC predicts the global datasphere will grow from 33 zettabytes in 2018 to 175 zettabytes by 2025.”

—IDC Data Age 2025 Report
Trend 3: Self-Service Moves to Self-Evident. Zero-Click, Consumer-Grade Intelligence Arrives

Marge Breya
SEVP & Chief Marketing Officer
MicroStrategy

Marge is the Senior Executive Vice President and CMO for MicroStrategy. Her expertise as a software industry Chief Operating Officer, General Manager and CMO, as well as board veteran, spans more than 25 years and some of the world's best-known software companies.

Marge previously served as COO at Ionic Security, a privately-held provider of data protection and control software. Before moving to Ionic Security, she was EVP and CMO at Informatica Corporation. Prior to that, she was SVP of Marketing Services at HP, EVP and GM of Solutions Management at SAP, GM/CMO at Business Objects, CMO/Chief Strategy Officer at BEA Systems, and SVP of Marketing at Sun Microsystems. Marge has also held public company board positions at LSC Communications, Jive Software, and Document Sciences Corporation.
Self-Service Moves to Self-Evident. Zero-Click, Consumer-Grade Intelligence Arrives

There's a change coming to enterprise analytics – a breakthrough in UX - and it's a welcome one for any organization working to drive an insights-driven culture and digital transformation:

**Self-evident Trumps Self-service:** Over the last few years, analytics and BI vendors have focused on self-service offerings with the promise of more and better insights for everyone delivered in just a few clicks. But that promise hasn't really panned out as many have hoped. Analytics adoption across the enterprise still hovers at around 30% of all employees, according to Gartner. And with a ballooning amount of available data, the average employee is becoming harder-pressed to know what to do with it - and less willing to do it - even with a few clicks.

Research from Moz shows that 40% of Google searches result in no clicks at all from users, and only 21% result in more than one click, which is why Google is working to surface answers without them. For more and more users, a few clicks are still a few clicks too many.

In addition, the enterprise has always preferred their data and intelligence consumers to be chart and graph aficionados, math literate, and experts in data visualization and storytelling. Enterprise business intelligence has catered to that 30% that live, love and linger over box plots, Gantt charts and Sankey diagrams.

But, the design point in business intelligence over the next few years is not going to be for that 30%. The traditional boundaries between business and personal experiences are dissolving. The new design point is going to be for every person, and every device, delivering intelligence in a way that's easily consumed by the individual, from a single source of truth. Self-evident analytics through HyperIntelligence will trump self-service in 2019.

**Smart Discovery of Resources:** Today, in the consumer world, content delivery experiences like Netflix help you find what you want (or might want) based on your personal preferences, your viewing behavior, trending content, or even what people just like you are looking at or searching for. The same consumer experience delivered by Netflix should be available in the enterprise, such that you can look at libraries of data and libraries of reports, and have content curated for you and recommended to you by a trusted source that's used not only by the rest of, but the best and brightest of, the organization.

Just as all business users should be recommended and presented information via a Netflix-like experience, you should also be able to easily search for data and information in the same way. In the enterprise, as you're looking for data sets and other relevant information, an index of what's interesting or important should have a search interface that's pre-populated by behavior, user context, what's available and what's popular.

As you're searching, the system should already be giving you ideas about what you may be searching for – or what you should be searching for. Just like the consumer experience delivered by Google, this enterprise search experience would assist you in refining your search by helping you with what you should be asking, and how you
should be asking it. For voice, the same request and command experience we enjoy with Siri, Alexa and other assistants at home should help any business user quickly find the answers they need at work.

**Smart Recommendations:** Business applications are about to become more accommodating, as well - empowering employees with the right information at the right time via the device of their choice to make better and faster decisions.

Currently, if you’re in a CRM, ERP or supply chain management application, for example, you’re usually only going to be able to see data that’s associated with that application. Why wouldn’t you want to be in a position where, if you hover over a customer or company name in your CRM system or even an email, that you get relevant data from other key enterprise systems, whether it’s open support tickets, sales data, or account statuses? It’s time in the enterprise that if you hover over a certain name or word, step up to a screen in your office or company, or are querying Alexa, that the information and insights you want to see (or should see) come to you, rather than you having to go look in another application or report.

In addition, systems should be smart enough to know if you prefer voice, embedded analytics through hovering over keywords, or even the UX of a certain analytics toolset to view and receive data and insights. What if you’re on a platform that seems competitive with your favorite toolset, whether it’s Tableau, Microsoft or MicroStrategy? Why shouldn’t it be that any of those tools can freely live through open APIs on top of any platform that’s out there? We believe it should be a right that people can choose the tools they love and interface with the UX they prefer.

And this should all naturally come to you whether you need it from a hands-free, voice standpoint from Alexa or are using your camera to literally see an augmented world on a mobile device.

Every application and every tool can and will be smarter in this day of advanced analytics and artificial intelligence. And whether it’s from zero clicks or multiple clicks, the magic will always be in pulling this information from a single source of truth that is role-based, trusted and secure.

It’s time for the business experience to not just match but surpass the consumer experience in empowering the right people with the right resources and recommendations at the right time via the device and tools of their choice. In the future of the Intelligent Enterprise, the answers and information you want, and need, will find you through natural and zero-click real-time experiences.
“Three top barriers to the more effective use of data and analytics today: limited access to data across the organization, lack of training and complicated user interfaces.”

—MicroStrategy Global State of Enterprise Analytics Report
Trend 4:
Embedded Analytics Enables Success in the Digital Economy

Chandana Gopal
Research Manager,
Analytics and Information Management
IDC

Chandana is the Research Manager for IDC Business Analytics software responsible for the advanced and predictive analytics practice. Her core research coverage includes the vendor and buyer research in business intelligence and predictive analytics, with a particular emphasis on how analytics is being embedded into many different software applications, and how end user requirements are driving technology design. Chandana holds a Bachelor of Science in Electrical and Electronics Engineering from Mysore University, India and an MBA in Information Systems from Boston College. She is a frequent speaker, presenter and moderator at industry conferences, as well as women in technology events, and is a regular contributor to media outlets such as CNBC.
Embedded Analytics Enables Success in the Digital Economy

Success in the digital economy will be enabled by embedding intelligence into day-to-day business applications so that knowledge workers at all levels are empowered. Data volumes and complexity are rapidly increasing, and enterprises need a clear strategy to provide all knowledge workers access to data and analytics within their workstreams. Executive decision making often gets the most limelight, but operational and tactical decisions are just as crucial. To that end, users at all levels of an enterprise need to be able to access data and analytics to be able to make successful business decisions.

Enterprises have invested in a variety of tools and have custom built applications for data and analytics over the past several decades. Most large enterprises have deployed business intelligence tools, data warehouses, data lakes, predictive analytics, and many other solutions, but have lost the essence of the reason for investing in these tools. Often these have been deployed in silos or have been made available to a select group of individuals or have been so complex that they were not accessible to the line of business worker. As a result, even after decades of investment, few enterprises can claim to be truly intelligent. Business users still cobble together data sets for analytics or revert to using spreadsheets or desktop tools because enterprise IT and data scientists are often backlogged with requests for new reports or dashboards or models and cannot keep up with demand.

Embedding analytics into business applications or enabling access to analytics from tools and applications used by business workers empowers users and allows them to harness the power of data for themselves. Most modern analytics tools provide APIs for connectivity to systems of record or other business applications. By evaluating business use cases to determine which ones are most likely to achieve success with the infusion of data and analytics, enterprises must prioritize investment in those that can show a short-term return on investment to get business buy-in, and at the same time plan on embedding analytics into more long-term and complicated end-to-end processes.

Enterprises should treat the analytics process as an iterative lifecycle, where each step learns and adapts from the previous one. As the enterprise matures with its data strategy, it can progress from being able to leverage retroactive descriptive analytics (that looks at historical performance), towards becoming predictive and eventually prescriptive in nature. Machine learning and artificial intelligence (ML/AI) can be embedded into each step of the analytics lifecycle. If the power of these techniques is made available to the business user, they will be able to automate mundane and repetitive aspects of their jobs and focus on more high-value activities. Today, business analysts spend 80% of their time searching, cleaning, validating and governing data and only 20% of time analyzing data. By embedding intelligence into applications, business users will be able to focus on new ideas and innovate much faster than before.

Artificial intelligence and machine learning (AI/ML) have the potential to do what the industrial revolution did in the 18th century, in that they can change the nature of the way we work. These techniques will allow knowledge workers to process vast amounts of data that are humanly impossible to synthesize and automate aspects of the job that don’t require human intervention. Successful enterprises will have a clear strategy on how they can harness the power of the data that is accessible to them and allow their workers to focus on intelligent decision making.
“Today, business analysts spend 80% of their time on searching, cleaning, validating and governing data and only 20% of time on analyzing data. By embedding intelligence into applications, business users will be able to focus on new ideas and innovate much faster than before.”

— Chandana Gopal, IDC
Trend 5:
Leaders Bring Advanced Analytics into Production at Scale

Doug Henschen
VP and Principal Analyst
Constellation Research

Doug is the Vice President and Principal Analyst at Constellation Research focusing on data-driven decision making. His Data-to-Decisions research examines how organizations employ data analysis to reimagine their business models and gain a deeper understanding of their customers. His coverage areas include analytics, big data platforms and NoSQL technologies, business intelligence, data exploration and visualization, data integration and orchestration, decision support and management, decision-management and real-time analysis technologies. Prior to Constellation, Doug led analytics, big data, business intelligence, optimization, and smart applications research and news coverage at InformationWeek. He has also served as Editor in Chief for Intelligent Enterprise and Transform, as well as Executive Editor at DMNews. Doug holds a Bachelor of Arts from Syracuse University.
Leaders Bring Advanced Analytics into Production at Scale

The state of data management has matured such that leading companies and even many fast followers have embraced and mastered next-generation big data platforms and NoSQL databases. Leaders and fast followers have also learned how to take advantage of the agility of cloud-based services and data platforms. The leaders have also mastered machine learning techniques and have experimented with deep learning, natural language processing and other technologies associated with artificial intelligence.

In short, data maturity is such that having data at scale and even having solid data management across on-premises and cloud-based sources is no longer differentiating for the leading five percent of organizations or the fast-following 15% of organizations. (As for the 40% - 50% cautious adopters and 20% - 30% laggard organizations, they’re still learning and struggling, respectively).

What will be differentiating for leaders and fast followers is how broadly, how quickly and creatively they make use of all that data and whether they can do it with solid governance and compliance. With this in mind, here are the areas where leaders will need to excel in 2019:

**Bring advanced analytics, including ML and DL, into production at scale.** On using data broadly, true leaders are bringing predictive capabilities and even prescriptive recommended actions into production at scale. As detailed in my report, *AI Imperative: Advance from Experimentation to Deployment at Scale*, what’s needed to do this effectively is a team-based approach that knits together data scientists, data analysts, data engineers, developers, and business leaders in order to embed models, including advanced machine-learning and deep-learning models, into business applications at scale with ongoing monitoring and optimization.

**Meet low-latency requirements by embracing stream processing and streaming analytics.** Customer and employee expectations have shifted such that they now expect low-latency if not real-time performance. Leading organizations have embraced next-generation software and services that support not just real-time data pipelines but also real-time analytics that can trigger next-best actions and recommendations within seconds if not milliseconds.

**Get creative with embedded analytics.** Delivering insight through static reports and separate, purely analytical interfaces can take users away from their real work. Instead of answering questions in context and taking action, users can get distracted and fall prey to paralysis by analysis. Leading organizations are catching on to the benefits of embedding analytics directly with the transactional applications that people use every day.

Instead of sending people off to a report or dashboard, the idea is to deliver concise charts, visualizations, metrics or key performance indicators in the context of key decisions points within applications. The emphasis is on decision support, so in some cases the analytics only show up as alerts when conditions fall out of desired thresholds. And with the trend toward real-time action, embedded analytics will increasingly be used to trigger actions behind the scenes. There may be no time for human intervention or analysis, so we need smart, embedded systems designed to take the right actions at the right time.
“Data maturity is such that having data at scale and even having solid data management across on-premises and cloud-based sources is no longer differentiating for the leading five percent of organizations or the fast-following 15% of organizations.”

—Doug Henschen, Constellation Research
Trend 6:
Collaboration Rises Again

David Menninger
SVP and Research Director
Ventana Research

David is responsible for the overall research direction of data, information and analytics technologies at Ventana Research covering major areas including analytics, big data, business intelligence and information management, along with the additional specific research categories including IT performance management and IoT. He has more than 25 years of experience bringing leading-edge data and analytics technologies to market. David served as the Head of Business Development at Strategy at Pivotal (Dell/EMC), and VP of Marketing and Product Management at Vertica Systems, Oracle, Applix, InforSense and IRI Software. He holds an MS in Business from Bentley University and a BS in Economics from University of Pennsylvania.
Collaboration Rises Again

Analytics is not the end of a process, rather it’s the beginning. Analytics may help identify trends such as whether sales are up or down, but historically they’ve done little to address what course of action should be taken. Should we adjust prices? Should we increase or decrease advertising? Should we hire or fire sales people?

Good analytics tools can help organizations solve problems by exploring the impacts of different scenarios and comparing them to help clarify which would be the best course of action. But even when organizations have decision-making options to compare, the choice of a best decision is rarely black and white. Usually, individual judgment and communication with others is required to pick the best course of action. The best outcomes typically are ones that have been vetted with colleagues as an integral part of the process and have included the assigning of tasks to the participants and tracking those tasks to completion. This visibility into the process helps document decisions, both for compliance purposes and for knowledge sharing.

Collectively, I describe these capabilities as collaborative decision-making. Our research shows that more than half (52%) of organizations use or intend to use collaboration with analytics. Keep your eye on the prize – action, not just analytics. Look to support those actions with collaborative decision-making. Doing so will help ensure that your analytic processes result in actions that improve the bottom line for your organization.

“52% of organizations use or intend to use collaboration with analytics.”

— Ventana Research
Trend 7:
Pervasive Mobility Bolsters Business Success

Mark Smith
CEO & Chief Research Director
Ventana Research

Mark is responsible for the overall business and research direction of Ventana Research and drives the global research agenda covering both business and technology areas. He is an expert in enterprise software and business technology innovations including business analytics, big data, cloud computing, business collaboration, mobile technology and social media. Mark has held CMO, research and product development roles at a variety of research and software companies. Mark started Ventana Research more than a decade ago and has worked in the software industry for 25 years leading innovations in research and technology. Mark was rated the 2011 software industry analyst of the year by The Institute of Industry Analyst Relations (IIAR).
Pervasive Mobility Bolsters Business Success

Mobile devices have become part of our daily lives. By 2020, new smartphone users will account for 66% of new global connections to the Internet, up from 53% in 2017. Without question, Apple (iOS) and Google Android devices have radically simplified the technology people have come to rely on, and applications that users can download via app stores have become an increasingly well-traveled path to engaging consumers. In this new era, businesses require mobile technology that integrates with the enterprise to fully engage the workforce and ensure maximum productivity. Business users want and increasingly expect their working environment to mirror their consumer life. This means they expect a simple, user-friendly experience, one where all the applications and information they need is readily available.

Advances in mobile technology are changing how people work as business users take advantage of digital devices in new ways. Six key mobile technology innovations are making smartphones and tablets truly smart and more valuable to business: device proximity, speech recognition, gestures, facial recognition, high-quality cameras and augmented reality (AR). When considering how to take strategic advantage of mobile technology, organizations can embrace enterprise platforms that are built to support mobile devices and take advantage of these six digital innovations.

Any platform designed for mobile technology should have applications that can be assembled and configured without a developer. It should enable personalization, including secured identity access that is specific to individual roles, responsibilities and needs. And it should have robust enterprise security support to protect corporate and customer information, including mobile certificates, encryption, multi-factor authentication and enterprise mobility management (EMM) integration. The platform should support transactions, analytics and collaboration across business workflows and be optimized to use mobile devices’ native technology environment.

Moreover, data and analytics should be a part of a platform’s foundation so that it can better inform and guide actions. More than half of organizations (57%) in our benchmark research indicate the importance of accessing analytics from mobile technology. Presentations and visualizations of analytics should be configured in a way that makes sense when presented via mobile devices and should facilitate easy collaboration. Also, look to support geospatial analysis so that the context of analytics is specific to the device. Finally, embrace machine learning and AI technology, which can generate more prescriptive analytics that can better guide decision making on mobile devices. Our research finds that almost every organization (96%) reported that mobile technology has improved access to and use of data and analytics in the cloud.
An array of opportunities and potential benefits await organizations that are ready to take advantage of cutting-edge technological advancements in enterprise mobility. To improve efficiency and increase productivity, organizations should seek out relevant applications that can adapt to individual business needs. When marketing and sales professionals are working with effective tools, they can optimize potential revenue. To embrace enterprise mobility, organizations should identify their goals and needs and then determine if they have software designed for mobile applications that advance their potential.

“96% of organizations report that mobile technology has improved access to and use of data and analytics in the cloud.”

— Ventana Research
Trend 8: AI Strategies Become a Necessity

Ronald van Loon
Top 10 Analytics, AI, Big Data and Digital Transformation Influencer

Ronald is globally acknowledged as a Top 10 Influencer in big data, IoT, data science, machine learning and predictive analytics. He is ranked among Onalytica’s Top Global Big Data Influencers. Ronald helps organizations in their digital transformation efforts, including providing insights and best practices to become more data-driven and customer-centric. He is a frequent public speaker at industry events and is an author for Dataconomy, Datafloq and Data Science Central.
AI Strategies Become a Necessity

Artificial intelligence will transform every industry across both B2B and B2C sectors, including retail, healthcare, legal, manufacturing, and automotive. It’s not a matter of if AI will transform your industry - it’s only a matter of when. The earlier businesses are ready to use artificial intelligence throughout their core functions, the faster they will benefit from it, and the more prepared they will be for the digital future. Therefore, every business needs an AI strategy and must prepare an end-to-end AI management solution for 2019.

Companies need to move step by step in analytics maturity from predictive to prescriptive to AI applications for their core data and analytics processes. Data originates from numerous sources and is distributed across differing sources, and the volume and speed make it impossible to rely on central storage. A complete data management solution that encompasses data quality, governance, security, and metadata is necessary.

In 2018, many companies were running AI POCs, but in 2019, companies will be moving to operations, and step by step into mainstream. For legacy infrastructures transitioning to a modern digital infrastructure, this can be challenging.

Due to this, it’s necessary to have an end-to-end enterprise AI lifecycle management platform to transition from POC to operations to a continuous improvement cycle. Businesses need to implement artificial intelligence solutions so that they’re prepared for the digital disruptions occurring across all industries and domains - and are able to benefit from the advantages that AI has to offer.

“Companies need to move step by step in analytics maturity from predictive to prescriptive to AI applications for their core data and analytics processes. A complete data management solution that encompasses data quality, governance, security, and metadata is necessary.”

— Ronald van Loon
Trend 9:
Leaders Must Take the Best Steps Today to Ensure Future Success

Ray Wang
Founder & Principal Analyst
Constellation Research

Ray is the Principal Analyst, Founder, and Chairman of Silicon Valley based Constellation Research, Inc. He’s also the author of the popular business strategy and technology blog “A Software Insider’s Point of View.” Wang has held executive roles in product, marketing, strategy, and consulting at companies such as Forrester Research, Oracle, PeopleSoft, Deloitte, Ernst & Young, and Johns Hopkins Hospital. Ray is a regular contributor to Harvard Business Review and well quoted in The Wall Street Journal, Forbes, Bloomberg, CNBC TV, Reuters, IDG News Service, and other global media outlets. His is also the author of the best-selling book Disrupting Digital Business, published by Harvard Business Review Press.
Leaders Must Take the Best Steps Today to Ensure Future Success

**Leaders will focus on the business problem.** Stop doing analytics for analytics’ sake. A lot of efforts miss the big picture. Define what business outcome you want to achieve. Will you improve customer satisfaction? Does this initiative drive down cost of sale? Can we improve supply chain efficiency? Will we deploy cash more effectively? Are we getting a good internal rate of return? Define and ask the best and big questions of your data.

**Leaders will apply AI for business agility and scale.** The goal is to augment humanity, not to replace it. Find the highest volumes and repetitive tasks that touch the most people and document the process so you can automate it. Take BPO and find ways to use AI for automation and to find insights. As organizations move forward, there are five elements that are really important in the design of AI-augmented data systems:

- **The systems must be transparent.** You have to understand how the system gets to its decisions. You have to understand the reason why and how an algorithm is created so people know the implications.
- **It’s got to be explainable.** This comes back to knowing what causes decisions to occur. When you understand the attribution, you understand the impact of what could happen next and why certain decisions or next best actions have been suggested.
- **It’s got to be reversible.** You have to have the ability to reverse decisions, so that if you learn something new, you don’t continue to do the old or the wrong thing over and over again.
- **It’s got to be trainable.** Training those systems take time. You have to pair people with systems and train these systems over time, so that you and the system know what’s going on. There are a lot of false positives you’ll have to address, and you’ll only catch those by going through scenarios over and over until you get to a point where you’re comfortable.
- **It’s got to be human-led.** This is the most important part. The process must begin with a human and must end with a human. When you want to shut down a process, you can.

These are important overall design points when you think about digital transformation. They apply to AI and ethics. They apply to how we handle and work with data.

**Leaders will invest in technique before tools.** Don’t forget the importance of data governance, data privacy, and integration. From batch to real-time to predictive data, success requires the orchestration of not only technology and data, but people and processes. Successful organizations focus on people and process first and tools support the business model. Form always follows function.
“Constellation Research estimates that 87% of successful digital transformation projects incorporate an underlying data component.”

—Constellation Research Digital Transformation Study
The Evolution of Analytics Accelerates

Trend 10:
The Evolution of Analytics Accelerates

Beverly Wright, PhD, CAP®
Executive Professor, Analytics,
Emory Continuing Education,
Georgia Institute of Technology

Beverly leads the Analytics Practice for aspirtent as Chief Analytics Officer. She is also an Executive Education instructor at Georgia Tech, Continuing Education instructor at Emory University, and Co-Founder of the non-profit ATLytiCS, which leverages analytics talent for community causes.

Beverly brings more than 20 years of marketing science, analytics, and insights experience from corporate, consulting and academia. In her consultative roles, she solves critical issues using modeling and advanced analytics. Her academic experience spans more than a decade with a strong emphasis toward community engagement and experiential learning, where she provided direction and oversight for hundreds of projects led by master’s students. She’s also worked for companies within or leading marketing analysis, advanced analytics, and market intelligence departments.

Beverly earned a PhD in Marketing Science, a Master of Science degree in Analytical Methods, and a Bachelor of Business Administration degree in Decision Sciences from Georgia State University. She regularly presents at professional and academic conferences, as well as publishes articles in various business journals, serves on the board for Technology Association of Georgia’s Data Science & Analytics Society, and hosts the TAG Data Talk podcast.
The Evolution of Analytics Accelerates

Analytics has become an important part of the decision-making process for many companies in the past few decades, particularly with corporations using data assets as a core competency and point of origin. My observations from the past few decades in the data and analysis field have brought forward a handful of predicted trends to watch for in the near future:

**Deliberate data-culture initiatives:** Companies articulate openly their need to shift their organization’s culture to become more data-inspired in decision-making related to strategic down to tactical decisions. Now it seems they’re starting to put initiatives in place to encourage this shift and move the environment along more quickly, with the hopes that this priming will help increase the absorption and adoption of analytics solutions.

**Unstructured data proliferation:** With the dynamic shifts of data collection methods, types, and availability of data on consumers, machines and just about everything else, I suspect the future holds the collection and use of more creative types of data, especially unstructured elements such as audio, video and mood capture, as examples.

**Need for real-time models:** Gathering insights and reacting to them over a fiscal year is helpful, but developing solutions that enable answering what is needed now will most likely become more commonplace. My estimation is that we’ll see this trend across analytics applied within several contexts. As one example, consumers may hold higher expectations for brands to understand them at a deeper, more detailed, and holistic manner, and respond immediately to fulfill preferences at the moment of relevancy. Analytics on demand and in real-time may take over traditional static insights to meet the fast-paced environments where they are applied, whether that’s a marketplace, research lab or other.

**Specificity, granularity of insights, including mass personalization:** The granularity and precision of analytics solutions will likely improve as we gather more details and complex data on individual units, whether that includes rail cars, drops of a poisonous substance, or persons. Analytics may move more toward applying unique solutions on a per-unit basis to create more precise reactions.

**Tool reliance / citizen analyst:** Accepting secret sauce as a core ingredient may become more commonplace, and trust in packaged analytics processes could breed more citizen analysts across organizations. This trend may be a bit disturbing for some, but the growing need for analytics solutions and work may lead the higher tolerance of placing sophisticated tools in the hands of professionals with less data science knowledge.

**Increased movement toward automation, AI, deep learning techniques, methods and processes:** As we forge ahead towards developing specific, real-time solutions to answer complex problems, we’ll need to apply, possibly even discover, more complex and sophisticated methods for answering these questions. The dynamic nature and improved capabilities for analytics continues to excite and enable companies and even individuals to do more and in better ways, and I’m looking forward to seeing what the future of analytics brings toward our decision-making processes.
“By 2025, nearly 30% of all data created will be real-time, and IoT devices will create more than 90 zettabytes of data.”

—IDC Data Age 2025 Report
Get More 2019 Trends and Insights

The evolution of analytics is accelerating. For enterprise analytics insights throughout the year and actionable advice on focusing your organization’s 2020 vision, follow these experts on Twitter:

Jennifer Belissent @jenbelissent
Cinny Little @cinnylittle
Marcus Borba @marcusborba
David Menninger @dmenningervr
Marge Breya @margebrea
Mark Smith @marksmithvr
Chandana Gopal @chagopal
Ronald Van Loon @ronald_vanloon
Mike Gaultieri @mgaultieri
Ray Wang @rwang0
Doug Henschen @dhenschen
Beverly Wright @drbdub
LEARN MORE ABOUT MICROSTRATEGY

MicroStrategy (Nasdaq: MSTR) is a worldwide leader in enterprise analytics and mobility software. A pioneer in the business intelligence and analytics space, MicroStrategy delivers innovative software that empowers people to make better decisions and transform the way they do business.

We provide our enterprise customers with world-class software and expert services so they can deploy unique intelligence applications. To learn more, email info@microstrategy.com, visit MicroStrategy online, and follow us on LinkedIn, Twitter and Facebook.

For an overview of MicroStrategy’s capabilities, customer success stories and a link to a free trial, click here.