



2021 ANALYTICS TRENDS

The 2021 analytics trends reflect the unique nature of the analytics function. Both data and analytics sit at the intersection of business and technology, where new drivers, trends, or developments in either area can cause a shift in how businesses use, manage, and optimize data and analytics.

In 2021, many businesses will seek to advance or maintain market positioning and growth through data and analytics. Data strategy, partner data, the role of data in diversity, equity, and inclusion, and the democratization of analytical knowledge will all drive significant change in the new year, among other emerging analytics trends.



TREND #1:

Data Strategy as a Competitive Advantage

Moving into 2021, firms should view their data strategy as a way to gain competitive advantage. Looking ahead for strategic moves and acting on them with speed can help businesses leverage data to push past competitors into a top position. However, those planning to formulate their data strategy need to understand the time investment that executing on that roadmap will take.

Some organizations may struggle to turn the abstract idea of being a data-centered company into measurable goals with actionable steps. However, time spent building that roadmap will pay dividends in the ability to incorporate insights and can help make it [more difficult for competitors to catch up](#). Establishing a steady growth pace and understanding the business units where data strategy can have the highest impact can greatly increase buy-in, adoption, and implementation of new methods.

Additionally, a recent growth in cloud usage means that for businesses, understanding vendor partners and selecting the best options to fit your organizational needs is crucial for successful implementation. [76% of firms use multiple cloud vendors](#), including public, private, and on-premise options. Using more data requires establishing data governance processes and procedures, keeping firm goals in mind and on a path to achievement. It's also still important to remember that a great data strategy isn't managed by "fire and forget" - it requires regular maintenance and tuning just like any good model.

Public cloud services are going to be an essential element of 90% of data and analytics innovation by 2022.

SOURCE



TREND #2:

Proliferation of Business Partner Data

How businesses use in-house data in conjunction with third-party data will be one of the key 2021 analytics trends. The exponential growth of available data from a variety of touch points is only creating a greater need for an organizational approach to leveraging and optimizing data from disparate sources to draw out unique insights that drive business improvement.

Examples of third-party data could include supply chain and logistics data, delivery apps data, and point of sale data. Utilizing data on weather, foot traffic, historical demography, or economic trends can add another layer to insights as well. In 2020, this [access to shared third-party data has played an important role](#) in combating the COVID-19 pandemic.

The combination of external source data with internal data can lead to unique insights which can then be transformed into levers that drive results for your company. It is important for organizations to work on defining the processes that can be used to bring these data sets in, reviewing them to understand any required cleansing or transformation, creating dictionaries for them, and sharing them with analyst teams.

It can also be beneficial to communicate use cases for this data across teams to best set up success for all functions across an organization with potential to benefit. In some cases, improvements in data access and engineering may be needed to realize the largest benefits; these findings should be added to the discussion around the organization's overall data and analytics strategy.

In the next year, more large organizations are getting involved in buying and selling data on online marketplaces, rising from 25% to 35% involved.

SOURCE





TREND #3:

Considering Data Impact on Diversity, Equity, and Inclusion in Organizations

The wave of protests fighting for racial equality in 2020 led many organizations to renew or make a commitment to prioritize DE&I for the first time. These commitments will only come to life with the use of data to set and track progress toward specific goals.

Data can be used to help companies best serve a diverse set of employees, customers, and partners. For any customer-facing decisions, business should form processes and best practices to fairly sample data from a diverse population for any studies or testing. For example, vaccine clinical trials that are conducted on men but do not include women or children should not lead health authorities to approve decisions for populations of women and children.

Leveraging best practices in sampling methods can help firms reduce bias in study results, and organizations can also turn this analysis inward. [Understanding metrics chosen to assess DE&I](#) within a company can help teams become more inclusive and equitable for all stakeholders.

This trend in increased awareness of the effects of data on DE&I also highlights a greater macro trend of pushing toward more responsible and ethical AI. In the last year, [companies like IBM, Optum, and Goldman Sachs](#) have gone under investigation for developing algorithms that have caused discrimination based on race and gender, stemming from methods of data collection and analysis that helps train AI models. As technology advances, ethical AI [grows in demand and importance](#).

Overall, in 2021 it will be important to ensure that your teams understand the human impact of analytical projects, as well as ethical risks that can come from AI models.

45% of firms have developed charters to guide ethical AI development in 2020, compared to 5% in 2019.

[SOURCE](#)



TREND #4:

Raising the Analytical Knowledge of Non-Analytical Teams in a Firm

2020 has seen an increased focus on democratization of data, with [remote work leading to less reliance on IT data masters](#) and increased use of cloud technologies. To support this trend in transparent data sharing within an organization, there has been a recent rise in the use of modern data visualization tools like Power BI and Tableau throughout all types of teams.

Raising the analytical capabilities of non-analytical teams can lead to higher powered analysis across the entire organization and can reduce bottlenecks for opportunities that otherwise may not have been uncovered. In the past, [data has been controlled within a department](#), but this often puts limits on the extent of an organization's decision-making processes. Considering an ever-increasing volume of data available to businesses, firms should break down silos and take a more modern approach with a democratic data culture.

While businesses may worry that democratized data may [cause non-technical employees to misinterpret information](#) and therefore make poor decisions, promoting training can improve teams' abilities to explore and understand trends and patterns. This can improve decision making by helping employees understand the applicable reports and dashboards.

Still, providing new tools for employees is not enough; it's critical to provide training and a change management approach to ensure that all teams understand best practices in order to improve the results of this type of investment.



Only around 27% of executives report that they've successfully built a data-driven culture within their firms.

SOURCE



Novel Approaches to Model Development Technologies

In 2021, novel approaches to model development technologies, such as federated learning and graph databases, are expected to surge and increase in adoption.

One new intriguing approach to model development is federated learning. Federated learning is growing in popularity to protect users' data and improve model performance. Rather than combining all data from different teams or functions and training a single model, this relies on training a model with multiple smaller independent data sets, then sharing the updated parameters back to a central global model. This keeps **raw training data private and stored on a device**, and can also **provide more personalized user experiences**.



Graph technologies will be assisting with decision making in 30% of organizations globally by 2023.

SOURCE

Federated learning also reduces the cost of data transfers and need for data storage, and applicable use cases include healthcare data, eCommerce, personal data on mobile devices, and more – helping in any situation where data shouldn't be read by anyone other than the end user, or where there is protected data that shouldn't be shared across teams in an organization.

Another novel approach is leveraging graph databases, and with a **24% CAGR from 2019 to 2026**, the graph database **market size is expected to grow to \$2 billion by 2025**. Graph has a database structure different than a traditional relational database, relying on metrics describing how data is connected to one another. It empowers network analysis and allows models to understand relationships that may not be available in traditional relational databases. It helps **maintain performance, flexibility, and agility even as data grows**. We are just beginning to scratch the surface of all that graph can be used to improve and do for analytics and machine learning applications.

It is important to keep in mind that newer does NOT equal better models. These novel technologies can bring many benefits in the right situation, but firms should consider whether they would improve their end results enough before jumping into an investment.

Optimization and Simulation

Operationalizing, optimizing, automating, and simulating existing models is an important part of delivering value from analytics beyond reporting out of interesting insights. In 2021, we expect to see more growth in technologies enabling model usage, with [75% of enterprises moving from pilot programs to fully productionized models by 2024](#). This will help companies broaden the impact of the model and improve decision making across their organizations.

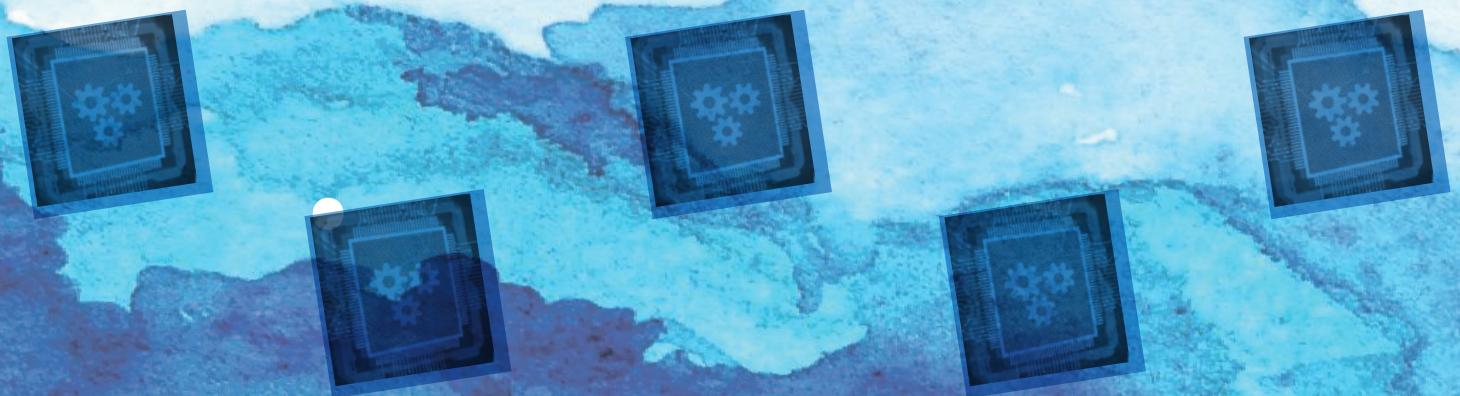
75% of enterprises are expected to operationalize AI out of piloting in the next four years.

SOURCE



Embedded analytics in reports, dashboards, and processes can increase accessibility to the predictions and improve understanding of business behavior. As models and analytics become more established, companies need to find the best way to continue to tune their models and receive the most from their investment. Putting models into production where they can [begin continuous improvement can help improve business](#) in many cases, such as analysis of customers' purchase patterns, machinery sensors to prevent failures, and even in healthcare to assist with diagnoses and treatment plans.

Automation also allows the model to reduce manual work from employees, freeing time up for higher level work and planning. More standardized automated models can [prevent bias and other error that may come with manual involvement](#), helping keep the model at its most useful. Remember that once operationalized, models need consistent maintenance through automating, optimizing, etc., or else organizations will not be able to reap the expected benefits.



Going Forward

In 2021, we will start to see more frequently how data and analytics can bring competitive advantage to businesses, especially as data-centered strategies emerge and leave an impact across an organization. Technological growth will continue to introduce more effective approaches for many companies; it's critical to develop a plan of action to take advantage of the capabilities that will move the needle for your particular growth strategy.



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