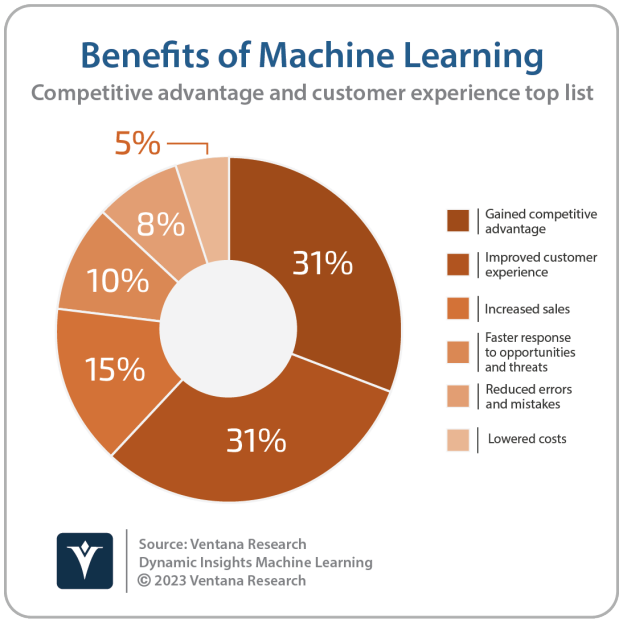
Elevate Analytics with Generative AI

Artificial Intelligence (AI) is all the rage right now, and generative AI has unlocked new possibilities and made the insights it provides more accessible to more people. Although AI has existed for decades, it has been difficult for organizations to implement. Nonetheless, the value of AI has driven organizations to continue to pursue its use. Now large language models (LLMs) have significantly improved both the experience and the results of AI, thus driving an extraordinary surge in interest.



Our research shows that AI can provide a competitive advantage, improve customer experiences, lower costs and improve the bottom line. As a result, one-quarter of organizations (25%) are currently using AI, with an additional 62% planning to adopt AI, including 34% who plan to do so within the next 12 months.

However, our research also shows that two-thirds of organizations (65%) report they don't have the skills they need to successfully apply AI. And, because the skills are so specialized, traditional AI and machine learning teams will likely remain independent of business intelligence (BI) teams for the foreseeable future. Governing traditional AI is also challenging, as we find that only one-quarter of organizations (23%) have governance policies in place for AI. Part of the challenge is that separate AI tools require separate governance. As a result of the lack of governance, it is difficult to trust and rely upon the output of AI-based analyses.

In contrast, generative AI can be combined with BI in ways that traditional AI cannot. Generative AI has the potential to make elements of AI much more accessible without requiring dramatic changes in an organization's skill set. One of the most enticing aspects of generative AI is natural language processing (NLP), which can make it easier for many individuals to access data and analytics. Prior to the popularization of generative AI in November 2022, developing the NLP models to interact with data and analytics was a cumbersome process. The models needed to be programmed very carefully to be able to deal with all the various ways a question might be asked which is made much easier today with LLM-backed generative AI. Similarly, LLMs make it much easier to generate plain-language explanations to help individuals understand key aspects of different analyses.

NLP opens up a new world of possibilities for other aspects of BI tools as well, making it much easier to create visualizations and dashboards. Individuals can simply describe the type of analysis they would like to perform, over which data and how they would like it displayed. Using these instructions, BI tools enhanced with generative AI can produce a first draft of the display. This draft might require some fine-tuning, but this approach can make individuals much more productive. This type of interface could also make it possible for many more individuals to access capabilities that were time-consuming or cumbersome for them to use previously. Advanced users can benefit as well. For instance, LLMs can be used to generate or explain code, so in those portions of the BI tool where a SQL statement is required, a natural language description of what is needed can produce the appropriate SQL to accomplish the task. Similarly, where an analysis has been developed by others, generative AI can be used to create an explanation of the SQL statements or optimize the SQL in that analysis.

LLMs can also help make sense of unstructured data. Organizations collect large amounts of unstructured data, which can be difficult to analyze. This data can include, for instance, comments in surveys or social media. Generative AI can create structured data from these sources that can be used in further analysis. Comments can be categorized by sentiment—positive, negative, or neutral. Data can also be extracted from documents or images and converted to more structured information that can be used in traditional analyses. Without the assistance of generative AI, categorizing and extracting this information could be much more time-consuming and costly. Generative AI can also be used to supplement documentation and help systems. Rather than searching through the documentation to learn how to do a particular task, individuals can describe what they are trying to achieve. By training an LLM on the system documentation and by observing past patterns of usage, generative AI can point an individual to the right portion of the system and guide them through the necessary steps.

With all these enhanced NLP capabilities powered by LLMs, generative AI combined with BI will naturally evolve toward conversational experiences about data and its underlying meaning. These conversational experiences are commonly presented as bots. With generative AI, the developer experience and the user experience can be greatly enhanced since LLMs can handle a wider variety of prompts with much less effort. In part because of that flexibility, bots can be embedded into nearly any type of application or website. As a result, the user will be more productive and is much more likely to have a pleasant experience rather than a frustrating one.

The promise of generative AI combined with BI is significant. One key aspect is that the BI vendor does the work, while its customers reap the benefits. Little or no special knowledge or skill is required. If the generative AI technology is bundled with the BI tool, no additional vendor relationships are required. And, for existing customers, generative AI is built on a base of well-understood and trusted information. Best of all, these are not magical futures, and many of these capabilities are available now. Make sure to check with your BI vendor to see how they can help you utilize generative AI to elevate your analytics.

Dave Menninger – SVP and Research Director, Ventana Research

David Menninger is responsible for the overall direction of research on data and analytics technologies at Ventana Research. He covers major areas including artificial learning and machine learning, big data, business intelligence, collaboration, data science and information management along with the additional specific research categories including blockchain, data governance, data lakes, data preparation, embedded analytics, natural language processing (NLP) and IoT.