AI: The New BI

How Algorithms Are Transforming Business Intelligence and Analytics

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About Eckerson Group

Eckerson Group is a research and consulting firm that helps business and analytics leaders use data and technology to drive better insights and actions. Through its reports and advisory services, the firm helps companies maximize their investment in data and analytics. Its researchers and consultants each have more than 25 years of experience in the field and are uniquely qualified to help business and technical leaders succeed with business intelligence, analytics, data management, data governance, performance management, and data science.

About this Report

To conduct research for this report, Eckerson Group interviewed numerous industry experts and viewed a dozen or more demos of BI tools with AI capabilities from June to September, 2018. The report is sponsored by *Birst, an Infor company, IBM, Qlik* and *ThoughtSpot,* who have exclusive permission to syndicate its content.

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Executive Summary

We're at the dawn of a new era in decision making made possible by the intersection of business intelligence (BI) and artificial intelligence (AI). Rather than replace BI, AI will make BI more pervasive. AI-infused BI tools will be easier to use, generate more useful insights, and make business users more productive, saving companies time and money. Rather than replace human decision makers, AI will free them to focus on value-added activities and make decisions with data rather than rely solely on gut instinct.

AI will transform BI and the way people make decisions and act. Rather than start with a hypothesis, data analysts will begin with an AI-driven insight. Instead of querying data to prove or disprove their hypothesis, users will query data to expand or validate a machine-generated insight or recommendation—or they might act on the AI-based insight at face value. But to get to that point, AI-infused BI tools will need to gain people's trust by consistently delivering accurate, relevant, and transparent insights within the context of a business user's existing workflow.

In the future, AI-infused BI tools will go beyond just surfacing insights; they will recommend ways to address or fix issues, run simulations to optimize processes, create new performance targets based on forecasts, and take action automatically. And yes, machines will make some decisions for us—especially operational decisions in real-time environments. We see this today with fraud detection and online trading systems, but it will become more pervasive.

To view side-by-side short demos of AI-infused BI products, check out our demo site.

Overview

The age of robots. Artificial intelligence (AI) has the power to transform our world. Some believe that intelligent computer systems will eventually replace humans in many fields. Already, some hospitals use image recognition software to perform the work of radiologists. Some financial service firms use AI software to send machine-generated messages to clients recommending trades and portfolio allocations. Soon, autonomous vehicles might make truck drivers a relic of the past.

Despite doomsday scenarios of robots replacing humans, the reality of AI is far different. True, some jobs will disappear, but most will be augmented by technology, making humans much more productive. Like almost all technology innovations before it, AI will automate routine and time-consuming work, allowing humans to do more with less.

Machine Intelligence

Evolution of BI. AI will also have a major impact on the field of business intelligence (BI). In fact, AI will usher in the third generation of BI. The first, which spanned the 1990s and 2000s, consisted of largely IT-generated reports and dashboards. The second, which ran from 2008 to the present, was dominated by self-service analytics, which liberated power users from spreadsheets and IT. Today, thanks to AI, we've entered the age of machine-generated intelligence. (See figure 1.)

Figure 1. Evolution of BI
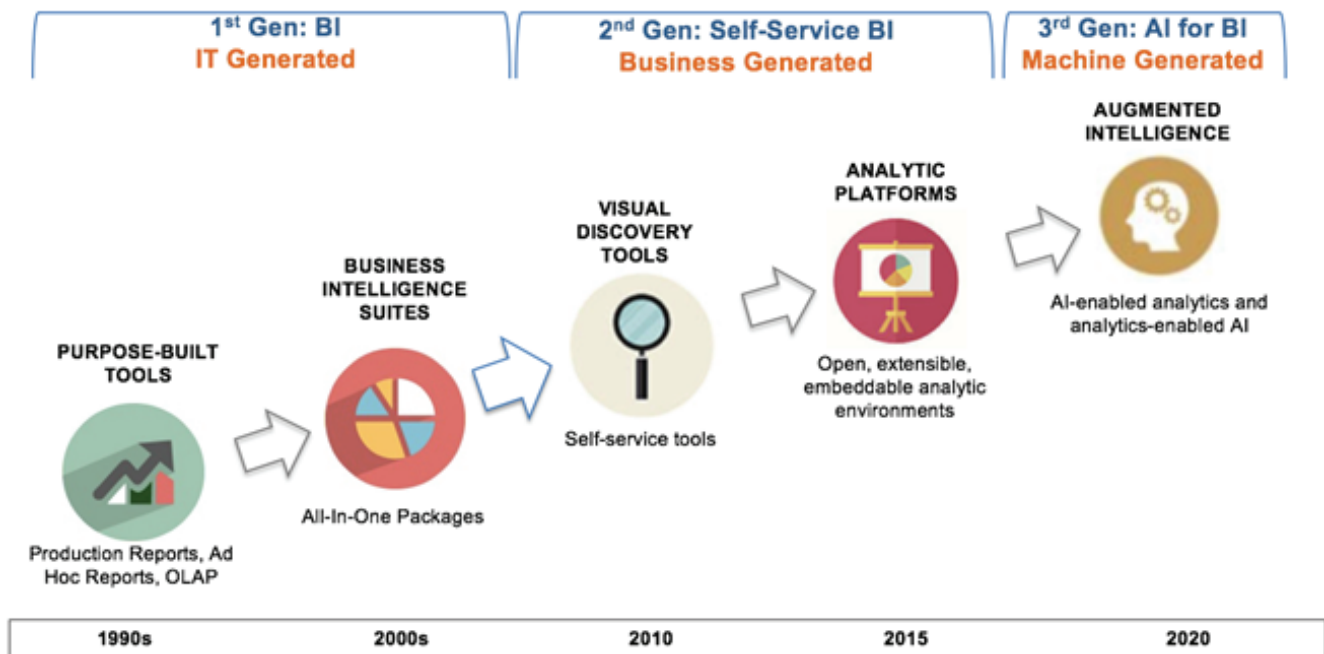
The third generation injects AI and machine learning into BI tools, making them easier to use for all types of business users. These AI-infused BI tools surface significant insights that would otherwise remain hidden. They enable business users to have real "conversations" with data where they can ask any question with written or spoken words and receive instant answers. The tools improve data and analytics literacy, showing business users how to interpret data and respond optimally to various events and issues.

One thing AI for BI won't do is replace data analysts—in fact, it will make them more productive.

Augmented analysis. One thing AI for BI won't do is replace data analysts—in fact, it will make them more productive. Many AI-infused BI tools can automatically generate data models from raw data sets and build routine reports and dashboards, saving analysts hours of tedious work. The tools can also surface insights that might take experienced data analysts hours or days to find, if at all. AI-based

software can run hundreds of models simultaneously, suggest an optimal combination, and deploy it—a process that takes skilled data scientists months to perform.

AI will also transform the analysis process. Rather than begin with a hypothesis, data analysts will begin with an AI-driven insight to guide their analysis. They will spend more time analyzing data than finding and massaging it or chasing dead-end explorations through multiple drill-downs and pivots. They'll focus on predicting performance and recommending actions rather than creating and running standard reports and dashboards.

Conversing with data. Likewise, AI will make BI much more accessible and valuable for average business users. They will use dashboards as a jumping-off point for understanding performance. The tools will explain the drivers of KPIs in plain text or speak to them via digital assistants. Executives will be able to ask follow-up questions by typing plain text into a search bar or chatbot or speaking their queries into a personal digital assistant. To help make a decision, they might simulate the impact of various options by moving sliders representing key metrics and attributes.

Likewise, AI will make BI much more accessible and valuable for average business users.

Data science for the masses. Finally, some BI vendors are turning their BI tools into platforms for building analytic models. Traditionally, only trained data scientists using specialized development environments could build analytic models. But some BI vendors are adding lightweight development environments that enable so-called citizen data scientists to build fairly complex models without coding. With these tools, data analysts can write Python or R scripts or import and add them to a complex data workflow to train and run analytic models.
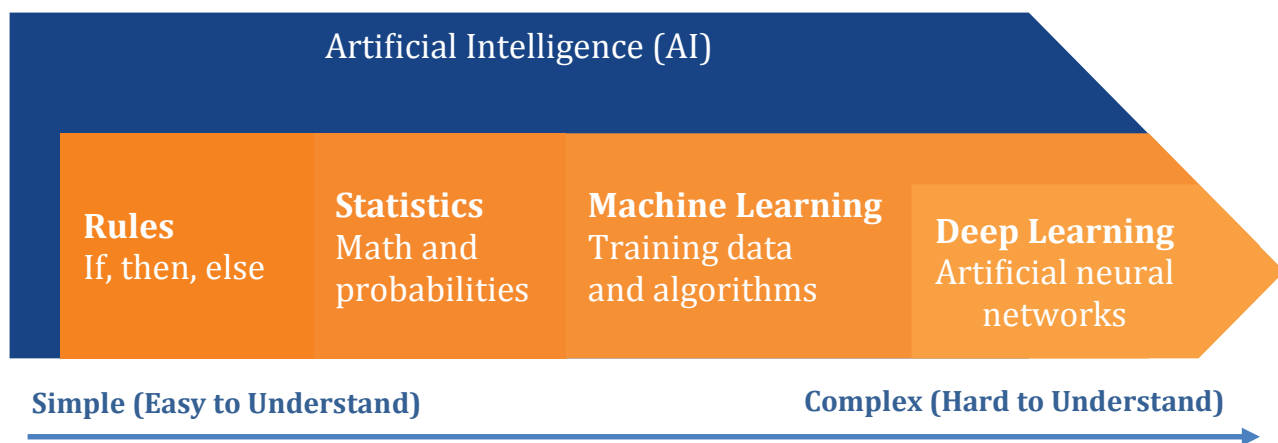
Organizations can use these models as prototypes for data scientists or to optimize non-mission-critical tasks or processes. These BI-generated models will bring data science to the masses, providing additional insight into trends, correlations, clusters, root causes, and anomalies in the data. They will offload overworked data scientists, allowing them to focus on higher-value tasks. But they do carry risks: citizen data scientists may not create the most accurate models or monitor their performance over time.

This report. This report provides an overview of what AI means for BI and analytics. First, it explains AI and its role in the evolution of BI. Next, it explains the benefits of AI-enabled BI products and some of the challenges to consider. Finally, it examines where AI fits in the existing BI landscape and predicts how AI will transform BI.

The Rise of AI

Modern artificial intelligence was born in the 1950s when research pioneers started combining mathematics, information theory, and other areas to shape the new discipline. Since then, AI has seen many ups and downs, but the related theories, technologies, and methods have evolved continuously. Today, AI is experiencing a renaissance thanks to advances in technology, an increasing availability of data and computing power, and a myriad of use cases.

Figure 2. Evolution of AI: From Rules to Artificial Neural Networks

Artificial Intelligence (AI)			
Rules If, then, else	**Statistics** Math and probabilities	**Machine Learning** Training data and algorithms	**Deep Learning** Artificial neural networks

Simple (Easy to Understand) → Complex (Hard to Understand)

Rules. The first AI systems were simple rule-based systems that used an if-then methodology to make decisions for predefined cases. (See figure 2.) A good example would be expert systems that apply rules inferred from a knowledge base to mimic responses from human experts (e.g., medical diagnoses). However, building all the necessary rules is laborious, and complex scenarios usually can't be reflected with Boolean logic alone. This is why statistical methods are used to understand data sets and find patterns in order to develop more complex decision models.

Machine learning. Today, AI is often used as an umbrella term for machine learning, which applies statistical methods and specialized algorithms to large volumes of data so machines can improve their performance (that is, learn). This approach is flexible; it requires no predefined rules, but rather uses training data to learn patterns that exist in real-world applications. For instance, a set of known fraud cases may be used to build a machine-learning model that detects potentially malicious transactions.

Deep learning. Deep learning is a subset of machine learning; it uses methods that mimic neural processing in the human brain. Deep learning uses artificial neural networks with multiple layers to recognize complex patterns hidden in large data sets. This approach requires sizable processing power and large volumes of training data. Today, machines use deep learning to learn complex board games,

recognize human speech, identify images in photos and videos, translate text between languages, and guide autonomous vehicles.

Although AI is a novel area, it has already made its way into everyday life and business. For example, smart voice assistants use natural language processing to understand and communicate with users, AI-powered algorithms examine customer behavior and recommend relevant products, and video surveillance systems autonomously recognize faces and report suspicious behavior.

AI-Enabled Business Intelligence

Companies use data to discover insights, understand customers and markets, predict trends, and make decisions. The process of collecting, transforming, and analyzing data was initially called data warehousing. Today, we use the terms business intelligence (BI) and analytics. AI-enabled BI seems to be the next natural step in the evolution of BI. (See Wayne Eckerson, "The Impact of AI on Analytics: Machine-Generated Intelligence.")

Figure 3. From Reporting to AI-Enabled BI
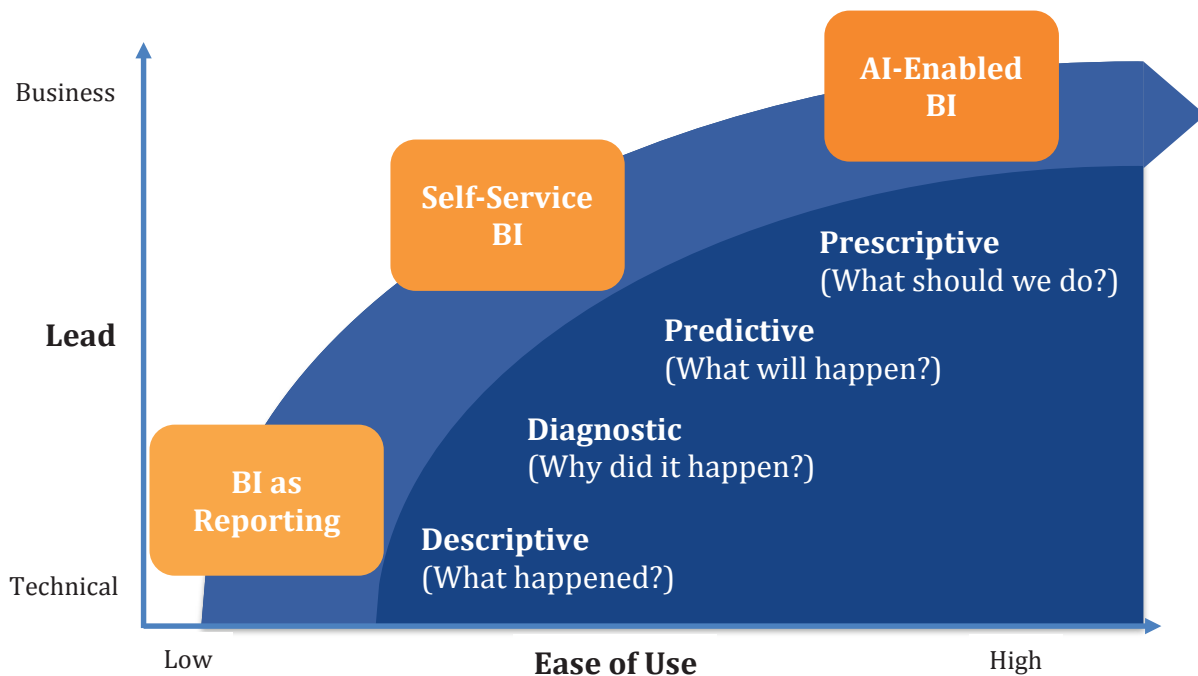
As the terms change over time, so do the functions, tools, and stakeholders. In the beginning, BI was mostly led by technical stakeholders who transformed data and presented insights in descriptive reports. Over time, as data gained importance and stakeholders became more demanding, the balance
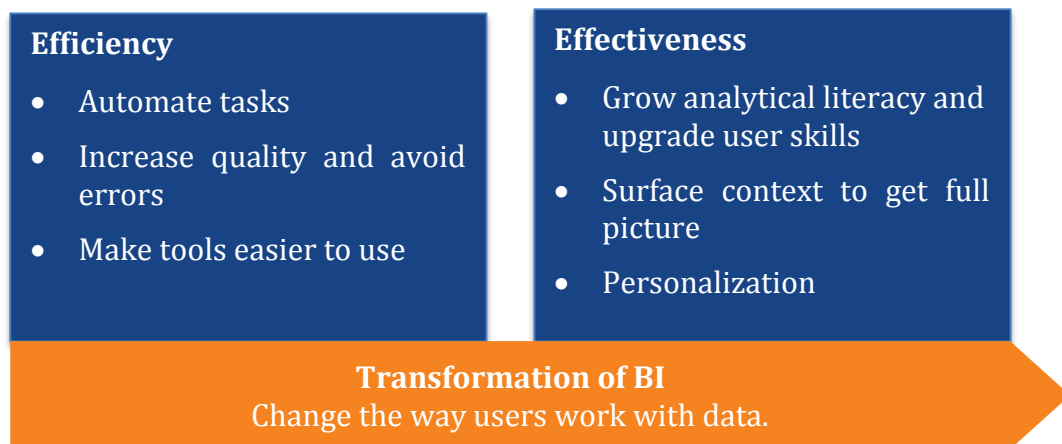
of power shifted toward the business users. This was when self-service BI made analytics more accessible, empowering business users to explore data and create advanced analyses and custom dashboards.

But self-service BI requires that business users have basic knowledge about how to work with data and IT systems. Otherwise, they can easily come up with half-truths or become overwhelmed by possibilities. AI can help to overcome these issues by automatically supporting users, minimizing the degree of manual work, and introducing prescriptive features that not only predict what will happen but also recommend actions to take.

Benefits

There are many benefits for AI-enabled BI tools. (See figure 4.)

Figure 4. Benefits of AI-Enabled BI

Efficiency

- Automate tasks
- Increase quality and avoid errors
- Make tools easier to use

Effectiveness

- Grow analytical literacy and upgrade user skills
- Surface context to get full picture
- Personalization

Transformation of BI
Change the way users work with data.

Efficiency
First, AI increases BI efficiency by automating tasks, performing quality control, and simplifying the tools.

    1. Automate tasks. AI can handle routine tasks that might take data analysts hours to complete. For example, many analysts spend a majority of their time collecting and massaging data rather than analyzing it. But with AI, software can now identify data types, recommend joins, and build entire data models. This makes data analysts more productive and effective.

    2. Increase quality and avoid errors. AI can increase quality by avoiding ¬human errors with automated quality control. For instance, AI software can continuously learn human error patterns and check thousands of records to detect potential flaws. Moreover, AI systems can resolve many problems without human intervention (e.g., by auto-correcting wrong inputs).

3. Make tools easier to use. AI can make BI tools easier to use by offering more natural ways of interacting with data. For instance, users can converse with data by speaking or typing queries in plain English; they can read textual analysis generated automatically in a dashboard; or they can query data via a personal digital assistant, such as Siri, or a preferred chatbot integrated in messaging tools. AI can also tailor visualizations and recommended reports based on users' past activity and preferences.

In short, AI can accelerate the time it takes to get from data to insights and actions. AI can help automatically process and analyze data, communicate insights, and derive actions efficiently.

Effectiveness
AI improves BI effectiveness by maximizing the value of insights and results that users can gain from their data.

1. Increase analytical literacy and upgrade user skills. AI-enabled BI tools surface insights rather than force business users to hunt for them. With a click of a mouse, users can perform a root cause analysis of any metric in a chart or dashboard and view related insights and reports. Some can even close the loop by recommending next steps and actions.

2. Surface context to get the full picture. High data volumes make it difficult to discover the most important insights. AI can help navigate through large data sets, automatically finding relationships between records and pointing out other avenues of inquiry.

3. Personalization. Personalized reports and dashboards can boost user effectiveness by showing relevant information that precisely fits their current needs. AI-powered systems enable tools to do this automatically by learning from a user's past behavior.

Challenges

AI-enabled BI tools hold great potential, but there are also many technical and non-technical challenges to hurdle. (see Table 1).

Table 1. Challenges of AI-Enabled Business Intelligence

Technical	Non-technical
• Validation and accuracy • Relevancy • Quality of training data • Performance and scalability	• Trust and acceptance • Over-dependency and hidden biases • Lack of creativity • Ethics and legal issues • Know-how and staff

Technical Challenges

1. Validation and accuracy. Results generated by AI-enabled BI systems must be correct and reliable. This becomes even more important as prescriptive systems close the loop and automatically trigger actions. Many AI systems are not mature enough for mission-critical use cases.

2. Relevancy. There is a risk that AI systems will generate noise and trivial results that do not offer valid insights. If users don't trust or value the recommendations made by digital assistants, they will turn them off or ignore them.

3. Quality of training data. The performance of machine-learning models depends on the quality of the training data. When AI systems learn from flawed data, they copy poor behavior and generate bad results. Training data must be clean and consistent, and the more data a model uses, the better it will perform. Models must be kept up to date as conditions change along with the data.

4. Performance and scalability. Machine learning and other AI methods require greater processing power than most BI tools have now. As a consequence, many AI platforms use graphical processing units (GPU) to run calculations faster. However, GPUs are expensive, and there is high demand thanks to their broad application scope (e.g., mining cryptocurrencies).

Non-Technical Challenges

1. Trust and acceptance. If people don't trust the output of AI-based BI tools, they will stop using them. The results or findings must be understandable, intuitive, and timely. AI-enabled systems must not be magical black boxes; users should understand how they work and how results are calculated. (See Julian Ereth, "[Analytics Needs Explanation: Helping Users to Understand Underlying Data and Processes](.)")

2. Over-dependency. There is also a risk that people might become overly dependent on AI-enabled systems. They might stop questioning results and abandon common sense, which could lead to bad decisions. This was a major cause of the 2008 financial free fall, caused in part by bank executives who never questioned their risk models.

3. Lack of creativity. One area where machines do not yet outperform humans is creativity. This is because most AI models are based on patterns found in historical data. It is difficult to innovate by imitating existing concepts. Accordingly, AI-enabled BI systems are not very good at making strategic decisions in complex and unstructured scenarios.

4. Ethics and legal issues. Who will be held accountable if something goes wrong with the model? The developer of the model, the vendor of the product, or the person who used it? There are also ethical factors to consider: AI models may contain hidden biases that discriminate against people based on ethnicity, race, or beliefs.

5. Know-how and staff. AI and machine learning are cutting-edge technologies, and few people know how to implement and maintain them. This is why AI needs to become more mainstream and vendors need to implement AI capabilities under the hood so that even citizen users can benefit.

In summary, AI makes BI easier to use, automates tasks, and accelerates time-to-insight. But there are challenges, primarily delivering accurate, unbiased, relevant, and timely insights that users can trust.

Where Does AI Fit in the BI Landscape?

Advancements in AI have led many established BI vendors to integrate AI capabilities into their products, improving accessibility and providing new features and functions geared toward business users and data analysts. (See figure 5).

Figure 5. Types of AI-Enabled BI

AI for Business Users
Supports decision making

AI for Data Analysts
Supports the work with models

AI for business users refers to features that use AI under the hood of a BI tool. For instance, BI vendors are enhancing their products with AI capabilities that make the tools easier to use and offer automated insights. In many cases, the business user will not know that AI algorithms are running in the background. For example, a BI tool might suggest an adequate visualization or automatically cleanse duplicate and flawed records in data sets.

AI for data analysts refers to functions that enable data engineers and data scientists to prepare, create, and deploy analytic models within a BI tool. Rather than import AI models into a BI tool, this functionality lets data analysts build models inside BI tools where they can leverage the tools' ability to extract data from multiple data sources, develop complex data flows that can daisy-chain multiple advanced algorithms, and deploy models within BI reports and dashboards or to external engines via an API.

AI Functionality for Business Users

Here is a description of the core functions in the **AI for Business Users** category:

Reporting

- **Auto-charting.** BI tools automatically display or recommend a chart type based on the underlying data. With machine learning, the tools can learn user preferences for associating chart and data types.

- **Auto dashboard creation.** When fed a data set, usually an Excel file, the BI tool can automatically create a data model with metrics, dimensions, and hierarchies, and then build relevant charts and display them in a dashboard. This works best when users identify a key metric they want to focus on.
- **Natural language generation (NLG).** Many BI tools have NLG plug-ins to automate the creation of text that explain significant findings in charts or entire dashboards. When users click to drill or pivot, the text changes dynamically.
- **Related reports and insights.** Within a report, dashboard, or exploration canvas, BI tools can display links to related reports and charts that are generated dynamically using machine learning models and rules.
- **Chatbot integration.** Business users can interact with a chatbot or digital assistant to query data and receive results in written or spoken form.
- **Portal personalization.** BI tools can use machine learning to understand the preferences of individual business users and customize a portal with reports and feeds to suit their preferences.

Analysis

- **Natural language search.** Using rules and/or machine learning, BI tools can enable business users to type words into a search box to dynamically generate queries that return relevant tables and charts.
- **Auto insights.** Business users can click a button to run machine-learning algorithms against a data set contained in a chart or dashboard. Most apply numerous algorithms (correlations, trending, anomalies, root cause) and generate charts and tables that display significant findings. The performance here is generally instant or near-real-time. With some tools, insights are automatically generated, while with others, users must click a button.
- **Root cause analysis.** Here, business users select a data element (independent variable) and then ask the system to determine its key drivers (dependent variables). Typically, the tools perform a regression analysis if the data element is a metric and a classification analysis if the data element is a dimension. The tools generally spit out a profile of the data element and a large number of charts worth investigating. Performance here is generally slower than with auto insights, since data sets are larger.
- **Time-series detection.** Most automated insights (above) represent snapshots in time. But time-series analyses identify anomalies across potentially tens of thousands of metrics in real time and surface correlations that might contribute to or provide context to the exception.
- **What-if simulation.** Using machine learning (e.g., Monte Carlo) algorithms or other techniques, BI tools can enable business users to change field values to predict the impact on other variables in a model.
- **Next best step.** Rather than just surfacing trends, correlations, and anomalies, some BI tools can model actions and recommend or execute next steps automatically. This autonomous decision making is already being applied in many low-latency environments (e.g., trading desks).

• **Import models and scripts.** Rather than use built-in models and algorithms, some BI tools let users import models from third-party vendors or custom scripts written by individuals inside or outside the organization.

AI Functionality for Data Analysts

Here is a description of functionality in the **AI for Data Analysts** category:

Data Preparation

• **Auto data typing.** BI tools use a combination of statistics and heuristics primarily to automatically identify data elements as metrics, dimensions, keys, dates, locations, and hierarchies. They use rules to automatically distribute or format the elements in the data preparation module.

• **Auto data joins.** Using identified keys, the tools link tables and specify types of joins to occur. Some tools can even identify relationships between non-relational data sets.

• **Auto data modeling.** BI tools can identify relationships between tables (using keys and joins) and build a strawman data model to guide analysis and design work.

• **Auto formatting.** With rules and machine-learning techniques, BI tools can identify formatting inconsistencies and recommend fixes. For example, they can identify null fields, inconsistent formatting (e.g., M/F and male/female), and out-of-range values.

Model Creation

• **Create analytic data flows.** Here, BI tools leverage data preparation features to incorporate analytic models—sometimes daisy-chaining algorithms to create complex data flows—to produce specific outcomes.

• **Create models and scripts.** Rather than import external models or scripts, data analysts can build custom models inside the BI tool using custom data flows to create and run training and production data sets.

• **Rank models.** Some BI tools will apply multiple models, rank them, and recommend the best one to use. The rankings can be based on simplicity, accuracy, and lift, among other things.

Model Management

• **Model library.** Some BI tools offer a library of models that data analysts can choose to run, including models supplied by internal data scientists and external partners and customers.

• **Deploy models.** BI tools can display model findings and output in the form of reports and dashboards as well as provide an API to support the execution of models in other applications.

• **Document models.** Some BI tools can document model configuration and findings, providing an explanation of how a model derived its results.

• **Monitor and manage models.** When multiple data analysts create models, it's important that there is a central console for managing models and tracking their accuracy over time to ensure they are delivering business value.

Vendor Landscape

This year, many BI vendors announced AI features that provide a better experience for business users. This includes natural language search and natural language generation features as well as one-click insights that automatically surface significant trends, correlations, and anomalies in a chart or data set. Many have also implemented intelligent data preparation features, including auto typing, auto joins, and auto modeling. Few, however, have yet to implement a point-and-click development environment for creating analytic models targeted at the citizen data scientist.

Eckerson Group contacted more than 20 vendors for this report and 12 agreed to brief us about their AI capabilities. Table 2 summarizes key AI features from our list above supported by those vendors.

Table 2. Sample Vendor Support for Select AI for BI Features

Automated Insights	Natural Language Search	Intelligent Data Preparation	Time-Series Analytics	Import/Run Models and Scripts	Create and Run Models and Scripts
Anodot	Birst/Infor	Birst	Anodot	Birst	Logi Analytics
Birst	IBM (Cognos)	ClearStory Data	Yellowfin	IBM (QMF-Vision)	Pyramid Analytics
ClearStory Data	Pyramid Analytics	IBM Cognos		Pyramid Analytics	Tellius
IBM (Cognos)	SAP Analytics Cloud	Logi Analytics		Qlik Sense	
IBM (QMF-Vision)	Sisense	Pyramid Analytics		Sisense	
Pyramid	Tableau	Qlik Sense		Tableau	
Qlik Sense	Tellius	SAP Analytics Cloud		Tellius	
SAP Analytics Cloud	ThoughtSpot	Tableau		ThoughtSpot	
Sisense	Tibco Spotfire			Tibco Spotfire	
Tellius				Yellowfin	
ThoughtSpot					
Tibco Spotfire					
Yellowfin					

To appear above, a vendor needs to offer a BI tool and have briefed us explicitly on their AI capabilities.

Vendor Examples

Here is a description of the AI capabilities of BI vendors who sponsored this report. To view side-by-side short demos of AI-infused BI products, check out our demo site.

Birst. Birst, an Infor company, uses AI to automatically detect patterns and relationships in data, define data types, detect joins paths, and generate data models. On the analytics side, it supports the automated generation of reports and dashboards, a one-click function that applies regressions and classification algorithms to data and generates relevant visualizations, and the ability to import and run R scripts as part of user-defined measures. It is working on automated dashboards, anomaly detection, natural language search, and natural language generation.

IBM. IBM QMF (Vision) is business intelligence software geared to IBM's mainframe customers who want a self-service tool for building and consuming interactive dashboards that source data from a multiplicity of systems. Users can simply drag a data file into QMF Vision, select an analysis target (or field of study), and the tool automatically generates a relevant dashboard. Using built-in AI, the tool automatically detects dates, geographic fields, and hierarchies, and spots outliers, trends, and correlations that shed light on the analysis target (e.g., sales). IBM QMF Vision also has AI-infused collaboration, making it easy for users to publish dashboards to collaboration environments and summarize conversations there to better help users understand what is going on.

Qlik. Qlik uses AI to amplify the power of human intuition to create what it calls "augmented intelligence." It recently shipped Insight Advisor, which auto-generates visual insights based on the data set and a user's search criteria. In the background, Qlik's new Cognitive Engine runs algorithms against data in context of a user's selection to generate highly relevant findings. Qlik also supports intelligent data preparation and combination, visual recommendations, natural language generation, and it can invoke R or Python scripts dynamically via an API.

ThoughtSpot. A BI and analytics upstart, ThoughtSpot is known for its highly scalable and relational analytics search engine that makes it easy for business users to converse naturally with data. This past year, it became one of the first BI vendors to offer AI-generated insights across the entire user experience—from a smart home page to search and dashboards and data sets. It offers an attractive interface for displaying automated insights as well as related queries and searches, and it uses natural language generation to explain findings in plain text, adding transparency to AI to foster adoption. Its AI engine works together with search to detect the most relevant insights for the user. It can also import and run R scripts using a point-and-click interface.

The Present and Future of BI

Present. We're at the dawn of a new era in decision making made possible by the intersection of BI and AI. AI-infused BI tools are easier to use, generate more useful insights, and make business users more productive, saving companies lots of time and money. Rather than replace human decision makers, AI frees them to focus on value-added activities and make decisions with data rather than rely solely on gut instinct.

Most BI vendors are baking AI into key modules—data preparation, reporting, and exploratory analysis—to make the products easier to use and generate more valuable insights quickly. A minority are also turning BI tools into data science platforms for savvy data analysts. Such empowered data analysts will use the BI tools to create, train, and run models without having to write code or possess deep data science expertise.

Future. In the future, AI-infused BI tools will go beyond just surfacing insights; they will recommend ways to address or fix issues, run simulations to optimize processes, create new performance targets based on forecasts, and take action automatically. Yes, machines will make some decisions for us—especially operational decisions in real-time environments. We see this today with fraud detection and online trading systems, but for strategic decisions, we need both machine and human intelligence.

We still have a long way to go to achieve the promise of AI for BI. But development and innovation are moving more quickly than ever. Companies should begin preparing now for the shift to autonomous AI-enabled BI systems.

Key Takeaways and Recommendations

Key Takeaways

- AI is transforming BI, ushering in a third generation of BI tools.
- AI will make BI easier to use because it automates routine tasks and makes people more productive.
- AI will make BI more valuable because it accelerates time to insight and enables business people to converse iteratively with data.
- There is a risk that people will ignore or disable AI recommendations if they are deemed irrelevant or opaque.
- BI vendors are racing to implement AI capabilities. Expect an onslaught of AI announcements in 2018 and 2019.
- Most BI vendors are using AI to make BI easier to use. A few are also focusing on turning BI into a platform for building and deploying AI models. (See Table 2: "Vendor Support for AI Features and Functions.")

Recommendations

- Ask your BI vendor to provide a road map of its AI features and functions.
- Thoroughly test the AI capabilities to ensure they deliver relevant, timely, and accurate insights.
- Work with your BI vendor to tailor AI capabilities to make them more useful. Participate in programs that feed data to vendors so they can better train their models.
- Control access to model-development features. Restrict access to data analysts who have a good understanding of the basics of creating predictive models.
- Facilitate conversations between data analysts and data scientists about how best to use the model-building functions within a BI tool.

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