

REPORT REPRINT

IBM embraces AI for BI in Cognos Analytics

KRISHNA ROY

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The company has infused its business intelligence and analytics platform with additional AI in order to automate as many features as possible and bring out-of-the-box advanced analytics to business users.

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IBM has made good on the Cognos Analytics investment priorities the company outlined earlier in 2018. With Cognos Analytics 11.1, which is the latest release of IBM's flagship BI and analytics platform, the company has integrated artificial intelligence through existing layers, unleashed a new AI-assisted data exploration user experience and expanded the offering's purview into automated advanced analytics. Cognos Analytics 11.1 contains new features too numerous to delve into here, so we will concentrate on what we believe to be the key ones.

THE 451 TAKE

IBM has certainly followed through on its stated intentions for Cognos Analytics, delivering capabilities on time and in the manner that it said it would, which is to be applauded. The result of development work carried out for over a year has turned Cognos Analytics into a compelling BI and analysis platform that hits all the market requirement and trends, including smart data discovery, augmented analytics and automated predictive analysis. However, IBM is not the only vendor addressing these areas, so the company needs to continue to innovate in order to ensure Cognos Analytics' competitive differentiation.

CONTEXT

IBM introduced Cognos Analytics in December 2015 as a successor to Cognos Business Intelligence to meet a demand for modern analysis requirements, including the growing need for self-service analytics by non-BI professionals. Cognos Analytics is the evolution of Cognos Business Intelligence and is offered at no charge as an upgrade for clients paying maintenance. It preserves the enterprise platform advantages while adding self-service capabilities for business users.

Furthermore, Cognos Analytics is also now the successor to Watson Analytics, which the company ceased selling earlier in 2018. IBM has moved a lot of Watson Analytics functionality into Cognos Analytics. Watson Analytics was developed as an AI-driven cloud service primed for DIY data analysis and visualization, guided data discovery, and predictive analytics – all of which Cognos Analytics now embraces.

IBM notes that it has learned lessons from Watson Analytics (the predictive aspect of which was developed by SPSS engineers, who also worked on the automated advanced analytics now in Cognos Analytics), and that Cognos Analytics is better in several areas. Big Blue reports that Cognos Analytics is faster when it comes to data retrieval, and surfaces less-obvious data relationships owing to improvements made in machine learning techniques involving correlation and decision-tree algorithms.

IBM is in the throes of transitioning Watson Analytics users, which tend to be individuals rather than teams, over to the multi-tenant versions of Cognos Analytics. IBM notes that, throughout 2019, this transition will take place once all multi-tenant cloud editions are available.

Cognos Analytics 11.1 is also available on-premises and as a cloud service. Cognos Analytics On Cloud is the name for multi-tenant and dedicated single-tenant services. Cognos Analytics 11.1 (premium version) has been available as a cloud service since late September, and is now available on-premises.

PRODUCT

IBM Cognos Analytics integrates data preparation, reporting, modeling, self-service analysis, dashboards, stories, event management and now automated predictive analytics into one stack. Moreover, the latest release makes extensive use of AI, including machine learning, natural language processing (NLP) and natural language generation (NLG), in order to automate as many features for the end user as possible, in an effort to make BI, analytics and predictive analysis easy for business users.

Cognos Analytics 11.1 aims to make data preparation self-service by making it AI-assisted in order to provide a user-friendly and fast way to cleanse and combine data sources. The use of AI to analyze data while it is being loaded into the offering is a key linchpin here. It enables self-service data preparation by automatically understanding data types on loading, which in turn drives an ability to suggest data joins and other transformations. The user can also override the automatically suggested data relationships and make changes to them.

IBM Cognos Analytics 11.1 supports smart-data exploration by integrating AI into the process involved in finding hidden pattern and relationships in data. While Cognos Analytics continues to be frequently used to create dashboards and reports, which have also been enhanced, IBM is seeking to expand the offering's purview to so-called smart-data exploration through the debut of several key features, including an AI Assistant. Furthermore, the company has earmarked AI-assisted capabilities as an ongoing area of development.

AI-driven exploration is delivered via a new exploration capability. It's designed to promote the free flow of ideas – users can seek answers to business questions from different places by tapping into smart exploration from an existing visualization in a dashboard, a story or directly from data. Furthermore, the exploration experience is underpinned by NLP and AI-driven visualizations. Additionally, IBM is seeking to make data exploration traceable by providing a navigation panel, which visually depicts the various visualizations used for data exploration so the user can go back to a previous one and take exploration into a fresh area, rather than start from scratch again.

Central to the data exploration experience is an AI Assistant, which enables the user to communicate in natural language by asking Cognos Analytics a question. Cognos Analytics also now generates natural language sentences that describe nonobvious aspects of a visualization. IBM notes that the AI in the exploration experience is also designed to anticipate which fields are most interesting to the user, as well as to suggest next steps based on learning from previous user interactions in order to further support augmented analytics.

Cognos Analytics 11.1 is integrated with The Stanford Natural Language Processing Group's open source NLP software. IBM has, in essence, taken the open source code base and augmented it. However, IBM plans to provide custom plug-ins to its own NLP smarts, as well as ontologies, and to keep IBM Cognos' augmented intelligence architecture open so that it can integrate with other third-party NLP frameworks and ontologies that companies may require in future.

Cognos Analytics' automated advanced analytics are underpinned by predictive algorithms, which are fed into microservices that filter the list of candidate fields according to users, in order to make advanced analytics more pertinent to user requirements. It also surfaces recommended visualizations, which are essentially generated by looking through data loaded into the platform, analyzing all the data sources the user has access to and making suggestions based on the questions the user has asked. Furthermore, Cognos Analytics' AI-driven visualizations employ user preferences, so if an individual doesn't like pie charts, for example, it won't suggest them.

This machine learning was developed by IBM Labs, which crunched through hundreds of data sets to identify characteristics and produce a human-ranked list of different types of visualizations. However, visualizations in Cognos Analytics were also crowd-sourced to support best practices.

COMPETITION

IBM Cognos Analytics faces a number of competitors. For starters, we see SAP, Oracle and Microsoft as key rivals, owing to their shared focus on addressing the same target audience and many of the same use cases in BI, analytics and predictive analysis.

When it comes to self-service visual analysis, which is a key use case for Cognos Analytics, Tableau continues to be considered the gold standard. Qlik Technologies' Qlik Sense, Looker Data Sciences and Sisense are other notable vendors addressing this use case. With regard to traditional managed reporting and pixel-perfect reporting, for which Cognos Analytics it also used, we believe MicroStrategy, Information Builders and OpenText Analytics (formerly Actuate) provide longtime competition.

Additionally, we think it is worth pointing to the integration of data management functionality (including self-service data preparation) into analytical offerings in order to create analytics platforms capable of addressing the need to provide governed and trusted analysis. Cognos Analytics is not alone in recognizing this requirement. It is also being met by a number of other vendors, including, Tableau, Qlik, TIBCO and ClearStory Data, as well as fellow big guns Microsoft, SAP and Oracle. SAS Institute, Domo, Yellowfin and Pyramid Analytics are other examples of vendors looking to address this requirement.

Finally, IBM is not the only vendor adopting machine learning, natural language processing and natural language generation for BI. These algorithms are becoming a core part of an analytics platform, in order to support augmented analytics and smart data discovery.

SWOT ANALYSIS

STRENGTHS

IBM has a long heritage in serving the BI and analytics needs of enterprises. The company's latest Cognos Analytics release doubles down on that by bringing AI-driven data preparation, visualization and analysis to nonexperts, which is vital to making analytics truly successful across an organization.

WEAKNESSES

While Cognos Analytics replicates and - in some cases - improves on Watson Analytics functionality, some individuals won't want to use Cognos Analytics, having spent time and effort learning and employing Watson Analytics. Ultimately, they will have to, once IBM stops supporting Watson Analytics.

OPPORTUNITIES

Existing Cognos Analytics customers will find Cognos Analytics 11.1 compelling because most of the improvements were crafted with customer feedback in mind. The offering's availability on-premises, and as a single- and multi-tenant cloud service via subscriptions, increases its general appeal.

THREATS

The rise of the analytics platform combining an array of data management, analysis capabilities and increasingly AI-driven features means Cognos Analytics is operating in a tough competitive climate.