The next wave of business intelligence for the data-driven enterprise

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Introduction

Massive shifts within the digital business landscape are sparking immense opportunities and reshaping every sector.

In some cases, complete upheaval is happening at lightning-fast speed. In other instances, digital undercurrents are stirring beneath the surface as organizations scramble to monetize vast volumes and variety of data in an effort to sharpen their competitive edge and not be blindsided by unforeseen events that completely upend existing business models.

While long-standing industry leadership might be no match for the next cool app, agility, speed and the ability to harness more data than was ever imagined is fueling powerful possibilities for reinvention among companies of every size.

Data is flowing rapidly from mobile devices and social networks, as well as from every connected product, machine and infrastructure. This data holds the potential for deep insights that can replace guesswork and approximations as to locations, behaviors, patterns and preferences. As the world is being rewritten in code, we can now pinpoint with a high degree of precision what customers want, where traffic will flow, how disease will progress and where risk is the greatest.

Data-driven decisions

A new culture of data-driven decision-making is emerging, but making the right decision is only part of the equation.

Decisions need to be made rapidly, often, in the moment of impact—when the customer is engaged online, on the phone or in person at a customer service counter. That requires the analytics tools to instantly turn data into insight and then to ensure that the right people have access to the right intelligence, removing all obstacles to clarity and consensus.

Modernized analytics solutions are achieving this objective through the distribution of tailored reports and dashboard updates that shape, visualize and package a breadth and depth of organizational data according to prescribed metrics. This kind of a push approach to deploying insights builds upon corporate intelligence and fosters a culture of looking closer and digging deeper. Equally important is the pull component. Users also need to be able to independently interrogate data, building upon existing reports, initiating intradepartmental inquiries or investigating new patterns and relationships.

Enterprise leaders who are determined to take a proactive approach to digital business disruptions are focused on the operationalization of analytics within every function and throughout every level of the enterprise. Users also need to be able to independently interrogate data, building upon existing reports, creating new dashboards, or investigating new patterns and relationships.

A level of inquiry that consistently drives toward a greater breadth and depth of awareness is fueled by:

- Easy-to-use analytics with built-in intelligence
- Multiple starting points
- Access to all types of data—internal and external
- Tools that speed and facilitate every aspect of searching, investigating and collaborating
- Processes and a culture committed to continuously driving insight into as many processes and as much of the enterprise as possible

Analytics at work

The journey is toward cognitive analytics serving as an essential differentiator. It's expanding the expertise and improving the effectiveness of every business leader, stakeholder and individual contributor, with knowledge from data that enables continuous learning, adapting and outthinking the needs of the market.

New possibilities are emerging for leveraging structured data in all of its disparate formats and locations, along with the vast range of unstructured data—such as tweets, emails, Facebook posts, blogs, documents, audio recordings, photos and videos. Until recently, this type of unstructured data was unreadable, and thus invisible to existing systems. It now stands as the source of patterns, insights, intelligence and answers. Rapid access to the entire spectrum of enterprise data represents a new era in human and systems interactions—one in which technology enhances, accelerates and scales human expertise.

The cognitive difference

Deep and machine learning, in combination with natural language processing, serve as the technological foundations of cognitive solutions that understand, reason, learn and interact with humans in a conversational manner. Cognitive systems swiftly process astonishing volumes of structured and unstructured data in order to form hypotheses, make considered arguments and prioritize recommendations that support human decision-making.

Accumulating data and insight from every interaction—versus traditional systems that are programmed to perform in a certain way—cognitive systems are designed to get continuously more effective over time. By extracting intelligence and insights from all forms of data, discovering patterns and finding insights in structured as well as previously unscalable unstructured data sources, cognitive businesses operate with the confidence that decisions are based on data that is both current and comprehensive.

Reimagining what's possible

Enhanced capabilities are partly a function of natural language processing which enables systems to "read," "listen" and process the full spectrum of unstructured types of data—as well as structured data in all of its multiple formats and disparate locations. Natural language queries launch a search of all structured and unstructured data, resulting in a rapid response of the most probable answers. Data that had been previously locked in different systems and silos is now readily accessible at the point of impact where it is needed most.

The evolution towards cognitive systems is switching the traditional human-computer paradigm. While it has previously been the responsibility of people to be trained on how to use systems and to learn how to work with different interfaces, cognitive systems are trained to work with humans and interact with humans in a conversational manner. New technologies take into account that natural language is nuanced and as such, multiple people can request the same information or report using different words.

The surface has barely been scratched as enterprises imagine the potential for:

- Uncovering insights and patterns that would have otherwise remained hidden or siloed
- Engaging and collaborating with data and information for new discoveries
- Drawing upon those insights to make better decisions to better manage performance
- Continuing to dig deeper, asking questions, exploring possibilities and bringing innovations to life

Unleashing insights

A digital-era business intelligence solution needs be designed for agility, while taking a multi-faceted approach to mission-critical analytics. The impact of enterprise intelligence is optimized when insights readily flow in all directions—from the top down, from the bottom up and across functions.

Access to reports, dashboards and insights needs to be streamlined, speedy and include automated reporting options and the ability to set up alerts as needed. Even more critical are self-service capabilities that enable business leaders to create reports and seek answers as needed, without relying on IT to initiate the inquiry. The highest-impact business intelligence solution ensures business users of the ability to:

- Find and reuse content created by others
- Easily upload data from multiple sources and shape it to create dashboards or reports that can be shared
- Search for patterns within the data, leveraging analytics to deepen the exploration process and help identify and understand drivers

Another essential component of digital-age business intelligence solutions is a robust security framework that balances the agility that empowers business professionals to instantly get answers to thousands of questions with the required governance and controls, based on department, roles, sensitivity of data and a wide range of other factors.

Business intelligence creates the foundation for the operationalization of insights into business processes. Among the ways this can be achieved is the creation of predictive business models based on the monitoring of key indicators. These models can then be embedded into repeatable and tactical business processes.

Advanced analytics are enabling astute targeting of products based upon deeper insights into customer behavior patterns, smarter hiring that correlates candidate profiles with characteristics of top performers and superior fraud detection that rapidly identifies anomalies that can signal impending security breaches.

New era for analytics

According to some estimates, 40 to 60 percent of a business analyst's time is typically spent searching for data or preparing it. New analytics capabilities are offering alternatives to this inefficient use of time and talent. Data can be found infinitely faster than ever before with automated data preparation options, vastly accelerating the path from raw data to deep insight.

With an intent-driven approach, natural-language queries search the entire spectrum of available data sources to quickly find relevant content and accelerate analyses. Data sets and dashboards can automatically be created from the content, along with informative visualizations that recommend the most impactful approach to presenting the information. Interactive visualizations and easy infographic assembly promote collaboration and enable business users to communicate insights with others, which helps to fast-track decision-making.

As business users become increasingly adept at exploring and engaging with data for new discoveries, IT is freed from the role of handling these types of requests on their behalf. As a result, IT is able to sharpen its focus on strategic issues and the bigger picture of enterprise technology.

At the same time, providing business users with a tool that's easy to learn and use for gaining access to multiple data sources, along with the agility to create great visual presentations, serves to diminish shadow IT. The recent phenomenon of shadow IT, resulting from employees installing non-company-sanctioned apps and software at work, is largely the result of employees not believing that company-approved capabilities provide the required level of functionality. To an increasing degree, millennials indicate that outdated collaboration solutions hinder agility and innovation, leading to a trend of non-authorized applications exceeding authorized applications within many enterprises.

Retooling requirements

In a world awash with data, making sense of—much less harnessing—the volume, variety and velocity at which data is being created, far exceeds the capacity of traditional analytics solutions. IBM Cognos Analytics represents the next phase in the evolution of business intelligence.

Reframing what's possible, IBM Cognos Analytics enables both business users and IT to explore the unknown, challenge the status quo, identify relationships in data and get a deeper understanding of outcomes. With minimal training required to uncover amazing insights, the journey from simple to sophisticated analytics is automatically tailored to accommodate individual usage. Cognos Analytics supports smarter self-service capabilities in which the ability to gain access to or interact with dashboards and reports, as well as external data, can be determined by role, department or user. Individual users can subscribe to reports pulled in from multiple sources, have them refreshed daily and set specific reports as their home page. IBM Watson Analytics augments the BI capabilities in Cognos Analytics with smart data analysis and visualization capabilities that help business users discover the underlying patterns and meanings in their data.

Natural language dialog, guided analytics, smart visualizations and the ability to get unbiased recommendations accelerate both personal productivity and enterprise agility. The impact enterprise-wide is enhanced collaboration, the assurance that insights are derived from data that has been vetted for accuracy and greater confidence in the intelligence and insights that drive decisions.

Blending cognitive and advanced analytics capabilities, IBM Cognos Analytics distinctly positions enterprises to seize opportunities and respond rapidly to emerging threats in an environment where previous borders, boundaries and business-as-usual no longer apply. In a business climate where the only certainty is change, never before have enterprises had access to better resources for thriving, disrupting and redefining what's possible.

The IBM advantage

Infusing cognitive capabilities throughout its entire software and systems portfolio, IBM has expanded access to cognitive systems across 17 industries, four languages, 36 countries and more than 75,000 developers.

IBM has drawn upon a wide range of disciplines and employed the world's best researchers to combine massive data processing power with reasoning and learning abilities to create unsurpassed cognitive analytics capabilities.

IBM technology and embedded intelligence is positioning organizations to lead in the cognitive era, empowering individuals to embrace the digital culture to explore and engage with data in different ways to spark new discoveries and ideas.

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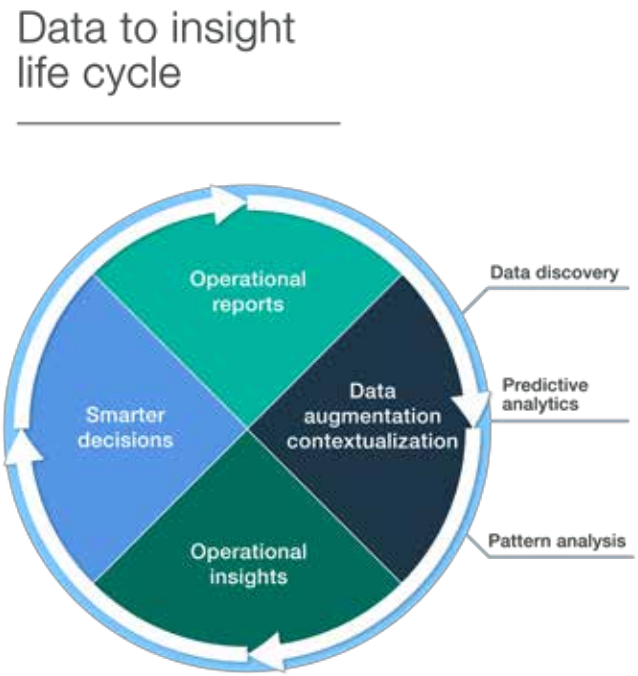

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