



The Power of Analytics Maturity:

Achieve better business outcomes by raising your analytics quotient

The time is right

Today, despite continuing economic challenges, leading business, government and educational organizations see broad vistas opening up – new, smarter ways to run their companies, hospitals, cities and schools and achieve results that allow them to “outperform” – that is, achieve breakthrough results.

Business analytics is a key factor in achieving such results. A recent IBM study shows that CFOs in organizations that make extensive use of analytics report growth in revenues of 36 percent or more, a 15 percent greater return on invested capital and twice the rate of growth in EBITDA (earnings before interest, taxes, depreciation and amortization).¹

The time is right for IBM Business Analytics software. The focus on improving performance and delivering better outcomes has never been greater. Organizations expect people in every role to be able to contribute to these outcomes. How can your organization take advantage of business analytics to increase effectiveness, grow revenue and increase profitability while identifying and minimizing risk?

Our experience shows that organizations grow in analytics maturity step by step. Many have some type of reporting or analytical technologies in place but then find that these technologies don't adequately address critical business challenges. This realization moves the organization to take steps toward becoming more analytically mature.

In this paper, we will first define business analytics and describe what we see as the four levels of analytics maturity. Then we will cover the five core technologies of IBM Business Analytics, including examples of how organizations have used them to support effective, innovative ways of achieving better business outcomes.



Becoming analytics-driven

IBM Business Analytics software helps your organization better understand, anticipate and shape business outcomes. It enables executives, managers and staff to answer these crucial questions when making decisions:

How are we doing? Why? What should we be doing?

Many organizations have been steadily increasing their ability to answer these questions. Put another way, they have been growing in analytics maturity, or AQ.

AQ measures your organization's readiness, ability and capacity to locate and apply insight and re-orient your business to make better decisions – decisions that will deliver better outcomes.

The AQ concept has two core components. The first is a numerical score. Similar to the familiar IQ metric, the higher you are on the scale, the better you're likely to perform. Unlike IQ, however, there is no maximum score to AQ. Even analytically mature organizations continually find ways to improve their outcomes; as a result, their score (and yours) can always be improved.

The second component is an AQ Maturity Model that maps these scores to one of four stages of increasing maturity.

Most organizations see growing in analytics maturity as a journey – something they achieve in stages. Not only are some organizations more mature than others in their adoption and use of analytics, it's also common to find different levels of maturity within the same organization.

Determine your own AQ
right now with our online AQ
self-assessment at
www.ibm.com/analytics/aq

There are several different models of analytics maturity. However, for the purposes of this paper, we are delineating four levels of analytics maturity as follows:

- **Novice.** At this level, individuals or teams analyze their own data, typically using spreadsheets or basic query tools. Knowledge workers have only a limited historical view into past performance and must rely in part on “gut feel” in making business decisions. Some regions or departments may still be using spreadsheets or other basic reporting tools to organize information about their activities. Others in the same organization, however, may be several steps farther along the journey.
- **Builder.** The second stage is defined by broader collaboration across teams – typically within one department – using both historical and current views of data, as well as trending for past and future time periods. At this level, the organization’s decision-makers may use dashboards or scorecards to drill down or sum up complex information quickly.
- **Leader.** These organizations are typified by VP-level accountability, with defined operational and financial metrics across more than one department. These organizations can combine data from various systems to achieve a cohesive view of conditions. Integrated, driver-based planning aligns resources, and predictive models are used to understand future outcomes and behavior and determine the underlying factors that influence or cause such outcomes.
- **Master.** These organizations are able to set top-down goals and allocate resources based on strategic priorities and real-time insight into shifting dynamics. Everyone knows the objectives and how they can collaborate across the organization to achieve them. Decisions are aligned from strategy to operations and analytics are deployed throughout business processes to optimize business outcomes.

IBM offers clients the ability to build upon their existing environment to achieve better business outcomes. IBM offers a full range of tools, all built on open standards, which you can use as needed to take the next steps in your journey toward achieving better business outcomes with business analytics.

To get a clearer understanding of how organizations like yours are advancing their AQs, let's begin by looking at the five categories within the integrated IBM Business Analytics portfolio: business intelligence, predictive and advanced analytics, financial performance and strategy management, governance, risk and compliance, and analytical applications.

Business intelligence

Perhaps the greatest benefit of business intelligence (BI) software is that it connects people with information when and where they need it. BI provides capabilities far beyond spreadsheets or ad hoc reporting to deliver a true picture of present conditions.

IBM Cognos® Business Intelligence software has long been recognized as an industry leader. It provides the essential and elusive “single version of the truth” to leading organizations worldwide and is particularly valuable to those with highly complex and fluid operational structures. Cognos Business Intelligence offers a comprehensive set of capabilities including built-in collaboration and social networking, all accessible from a single unified BI workspace. It enables organizations to:

- Maximize effectiveness by enabling business users to discover, understand and share the right information to drive better decisions and actions across the organization
- Effectively respond to market opportunities and challenges with agile and collaborative decision-making processes
- Equip business users everywhere to make the best decisions and act on them promptly
- Enable IT to respond quickly and effectively to changing business demands

“BI initiatives continue to be a top strategic activity among companies across all industries and geographies.”

—Aberdeen Group²

Cognos Business Intelligence is built on a flexible, service-oriented architecture using open standards that allow integration with a range of IT infrastructures. It is tightly integrated with IBM Business Analytics technologies for predictive and advanced analytics and is often deployed in combination with other IBM technologies, such as WebSphere®, InfoSphere® and other IBM software products.

- Ahead of the curve in the healthcare industry, North-Carolina-based Duke University Health System recognized the need for a new level of patient engagement for healthcare transformation initiatives to achieve their full potential. What makes such engagement possible is a deep personalization capability enabled by powerful healthcare analytics. It's part of Duke's strategy of becoming a continuously learning healthcare provider – and a reason Duke's quality ratings consistently rank in the 100th percentile nationally. By drilling down into its millions of clinical records, Duke was able to develop a predictive model for identifying high-risk scenarios, and use those insights to improve training, which ultimately improves patient safety.

Predictive and advanced analytics

With IBM predictive and advanced analytics solutions, your organization can create forecasts, conduct what-if analyses and predict future outcomes and behavior. This enables you to be proactive in your planning. You can identify key predictors that can be used to minimize threats and risks and build responses into your processes to maximize positive outcomes.

Within highly accessible environments, these solutions feature sophisticated techniques that enable your organization to analyze both the “structured” data found in tables and databases and also “unstructured” text. In this way, you can begin to base strategic and operational decisions on predictive intelligence that not only shows future outcomes and behavior, but also details the factors that influence them. This increases your ability to proactively and repeatedly exploit revenue opportunities, for example, or reduce costs and increase operational productivity.

*“Data mining and predictive analytics provide another means to further extend the value of your business intelligence (BI) infrastructure and investments and, with the right set of competencies, gain more insight into patterns within the information in return.”*³

Predictive and advanced analytics also enables organizations to embed into their operational systems the analytics and business rules that support consistent, automated decision optimization at the “point of impact” – where a company’s staff or automated systems interact with customers. Information about results is then used to refine predictive models and future recommended actions.

IBM predictive and advanced analytics products such as IBM® SPSS® Statistics and IBM® SPSS® Modeler can be accessed from the IBM Cognos Business Intelligence interface and results can be written back into a variety of data sources, such as the IBM InfoSphere Data Warehouse and IBM® DB2® databases on a variety of platforms, including IBM System z®.

- The **Memphis Police Department** instituted a business analytics solution to provide unparalleled insight into criminal activity and crime trends as they occurred. Now, the department can change tactics and redirect patrol resources as needed, to prevent crimes before they happen and catch more criminals in the act. The program has reduced serious crime by 30 percent, cut violent crime by 15 percent, increased conviction rates fourfold – and realized an 863 percent ROI, based on an assessment conducted by independent analyst firm Nucleus Research.

Financial performance and strategy management

Today’s Finance professionals need to operate at the strategic level while at the same time managing multiple, detailed levels of performance across the organization. IBM solutions for financial performance and strategy management include software to support performance reporting and scorecarding; planning, analysis and forecasting; profitability modeling and optimization; and financial consolidation and statutory reporting. The solution’s fully integrated set of capabilities simplifies, automates and structures dynamic and sustainable performance management and financial governance practices.

Finance organizations can use the capabilities of IBM Cognos Business Intelligence, IBM Cognos Controller and IBM Cognos TM1® to address the specific needs of their company and industry. For example, IBM Cognos TM1 is a highly configurable solution that provides a real-time approach to consolidating, viewing and exploring enormous volumes of multidimensional data to enable powerful profitability modeling and analysis. It supports the creation of “what if” scenarios for many different financial and operational conditions as part of an integrated planning and forecasting process. This helps your organization prepare for a variety of potential business conditions.

“Value integrators” – high-performing Finance organizations – have implemented common processes such as source-to-report, and standardized data and metric definitions. Finance efficiency makes them scalable, agile and fast.⁴

In addition, with IBM Cognos FSR™ (formerly Clarity FSR™), organizations can embed control and compliance policies, practices and metrics into operational processes and automate workflow and other key processes in the production of financial and regulatory reports. IBM Cognos FSR users gain more confidence in their ability to deliver such reports accurately and on time. A valuable added benefit: Finance analysts can spend more time providing guidance to senior management in strategic decision-making rather than collecting and validating data.

- **Huntsman Corporation** is a Canada-based global manufacturer of chemical products used in a variety of applications, including adhesives, aerospace, automotive, construction products, electronics, and chemicals. The company was faced with extremely complex and time-consuming financial planning, budgeting and reporting processes. For internal and external reasons, the company needed to perform monthly reporting by business and product lines – an enormous task for the financial executives and analysts within the company, since the business is composed of thousands of cost centers. Using IBM Cognos TM1, the Huntsman business performance management system now provides real-time write-back capabilities and dynamic consolidations to the team responsible for budgeting activities. The company reduced audit fees, increased the productivity of its accounting staff by 50 percent and saw other efficiency gains for an ROI of more than 1,000 percent.
- **Time Warner**, the parent company of Time Inc., HBO, Turner and Warner Bros., until 2009 used large spreadsheet models and Microsoft Word templates to compile its quarterly and annual reports. It was a slow and tedious activity. Then the SEC (Securities and Exchange Commission) introduced rules mandating that public companies submit quarterly and annual reports using the XBRL (Extensible Business Reporting Language) common reporting format. Less than three months after making the decision to implement Clarity FSR (now called IBM Cognos FSR), the company successfully submitted its first 10Q to the SEC in April 2009. Since then, adoption has moved ahead at a rapid pace.

“We needed an umbrella view of risk, not just a departmental view.”

— Richard Brilliant, Vice President and Chief Audit Executive, Carnival Corporation & PLC.⁵

Governance, risk and compliance

Recent economic events highlight the fact that companies need to instill better internal processes for governance, risk and compliance (GRC) management. Organizations must approach risk in a more holistic manner to respond quickly and accurately when market conditions, regulations and other factors that affect business performance change. IBM Business Analytics, through its OpenPages software products, provides an aggregated, enterprise-wide picture of risk exposure. OpenPages® GRC solutions enable companies to gain deep insight into cross-domain business operations and embed risk management practices into these processes so that they can manage unexpected outcomes and reduce the impact of realized risks when they do occur.

- **Carnival Corporation & PLC** operates more than 90 cruise ships under 10 different brands. Key to success in the cruise business is the ability to manage risk both onshore and onboard. The company has used OpenPages to facilitate the move from a departmental view of risk, which varied across each brand, to a common process classification that breaks down every aspect of on- and off-shore operations into 13 categories comprising 300 individual processes and more than 1,200 different risks. Carnival’s OpenPages implementation goes well beyond financial risk. It forms the foundation of the company’s enterprise risk model.

Analytic applications

More rapid deployment of business analytics means faster achievement of better business outcomes. For this reason, IBM continues to invest in analytic applications that offer rapid deployment through ready-made templates for reporting and analyzing results for specific business domains such as customer, workforce, supply chain or financial performance management. These applications sit on top of a single data model, allowing the solution to rapidly integrate with enterprise environments with a minimum of IT effort. Your organization also benefits because our analytic applications can easily be customized to reflect your particular ERP environment.

“We now have the tools we need not only to monitor real-time energy usage but also to determine how best to reduce that usage, resulting in lower energy costs and an environmentally friendlier campus.”

— Official at Canadian university.

- **A Canadian university** uses analytics to go green. This university is going beyond standards set by the Leadership in Energy and Environmental Design (LEED®) organization by feeding data from an extensive array of sensors, energy consumption meters and dynamic pricing sources into predictive analytics and decision-support technology to accurately assess, track, simulate and optimize energy consumption for dozens of campus buildings. It can also forecast the impact of various energy reduction strategies...resulting in smarter decisions related to the reduction of energy consumption and greenhouse gas emissions.

A comprehensive, unified platform for analytics

The categories of IBM Business Analytics software described above form a comprehensive, unified platform that works smoothly to deliver insight to your decision-makers. Key capabilities are tightly integrated, and you can build or add capabilities as you need to. All of these software products use open, industry-standard technologies that allow for information to be transmitted and shared securely and efficiently. At whatever point you are starting your journey to analytics maturity, IBM has products to assist you.

Step up to the next level of analytics maturity

IBM is committed to business analytics as a central enabling technology for delivering better business outcomes and making your organization as effective as possible.

Unlike vendors of stand-alone software that focus only on the short-term needs of the business user, or big ERP providers that focus solely on centralized IT deployment as their added value, IBM delivers a comprehensive, unified business analytics system that meets the growing demands of business users while providing IT with a low total cost of ownership and secure enterprise governance and control.

Plus, you can seamlessly leverage IBM's best-in-class information management capabilities to deliver accurate, relevant, trusted information to accelerate an important element of your analytics journey.

Only IBM offers a broad range of flexible deployment options, ranging from individual, desktop-based products to client/server software, workgroup software, on up to centrally managed enterprise software, workload optimized systems and cloud-based services.

Thanks to IBM's single, integrated business analytics system, any and all of these flexible deployment options can happily co-exist, making it easy for you to start your analytics journey anywhere, and deploy solutions as enterprise and user demands change over time.

Fully committed to business analytics

With its combination of software, hardware and consulting expertise, IBM is driving the creation and development of analytics-driven organizations in every industry, around the world. In the past five years, IBM has:

- Invested more than \$14 billion (including the acquisitions of Cognos and SPSS) in software to build the industry's most robust portfolio
- Created the Business Analytics and Optimization service line of our Global Business Services® division and staffed it with more than 7,000 dedicated consultants
- Opened eight analytics Centers of Excellence around the world to help clients uncover insights hidden in their data

IBM is the right partner for your journey – whatever your starting point may be – and we would welcome the opportunity to help you explore analytics further.

As new economic challenges present themselves, and as new technologies and trends emerge, our mission is to empower you and your organization with powerfully simple and adaptive analytics that deliver the insight and foresight needed to drive the next level of performance – to raise your AQ and enable the next step in your analytic journey.

About IBM Business Analytics

IBM Business Analytics software delivers actionable insights decision-makers need to achieve better business performance. IBM offers a comprehensive, unified portfolio of business intelligence, predictive and advanced analytics, financial performance and strategy management, governance, risk and compliance and analytic applications.

With IBM software, companies can spot trends, patterns and anomalies, compare “what if” scenarios, predict potential threats and opportunities, identify and manage key business risks and plan, budget and forecast resources. With these deep analytic capabilities our customers around the world can better understand, anticipate and shape business outcomes.

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- 1 2009 research based on "The New Value Integrator: Insights from the Global Chief Financial Officer Study," IBM Institute for Business Value, 2010
- 2 Aberdeen Group. "Beyond Spreadsheets: The Value of BI and Analytics," January 2009, page 3.
- 3 Hostman, Bill. "Seek Information Patterns with Data Mining and Predictive Analytics." Gartner, Inc. July 15, 2010
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- 5 Axson, David A.J. "Finance 2011 – Time to Build the 'Last Mile,'" IBM Business Analytics, 2011, page 8.

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