Predicts 2016: Analytics Strategy

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Over the next few years, leading organizations will link analytic initiatives firmly to financial objectives, increase investments in advanced analytics, evolve comprehensive analytics centers of excellence, and incorporate a wider range of exogenous data.

Key Findings

- By 2020, only 50% of chief analytics officers (CAOs) will have successfully created a narrative that links financial objectives to business intelligence and analytics (BI&A) initiatives and investments.
- By 2020, predictive and prescriptive analytics will attract 40% of enterprises' net-new investment in BI&A.
- By 2018, 75% of technology-oriented business intelligence competency centers (BICCs) will have evolved into strategy-oriented analytics centers of excellence (ACEs) to focus on information value generation.
- By 2019, 75% of analytics solutions will incorporate 10 or more exogenous data sources from second-party partners or third-party providers.
- Through 2020, over 95% of business leaders will continue to make decisions using intuition, instead of probability distributions, and will significantly underestimate risks as a result.

Recommendations

Analytics leaders and chief data officers (CDOs) should:

- Rebrand and relaunch their BICC as a strategic ACE focused on improving analytics architecture standards, governance, project support, communication, collaboration, innovation, information economics (infonomics) and business process digitalization, as well as expansion into advanced analytics.
- Maintain an up-to-date inventory of their organization's information assets, while also curating exogenous data from, and relationships with, various data partners and providers, including second- and third-party sources of data.
Tightly link all analytics initiatives to key business and financial objectives, and measure their ongoing economic value.

Plan to shift money from traditional BI tool budgets to increase funding for the acquisition and use of predictive and prescriptive analytics.

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Strategic Planning Assumptions

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Analysis

What You Need to Know

As analytics has become a core competency and competitive differentiator for organizations, its importance has risen to executive level. The emergence of the roles of CAO and CDO is the most obvious indication of this. Analytics is now about much more than enterprise reporting and self-service BI — it's a central aspect of most organizations' strategies, one that demands significant attention well beyond the selection and implementation of BI tools.
Strategic Planning Assumptions

**Strategic Planning Assumption:** By 2020, only 50% of chief analytics officers will have successfully created a narrative that links financial objectives to business intelligence and analytics initiatives and investments.

*Analysis by:* Jamie Popkin

**Key Findings:**

CAOs are emerging as senior business executives responsible for creating the analytics strategy to drive digital business transformation. The CAO’s vision does more than describe a future state — it establishes the narrative that the organization will use to understand and validate the investments and process changes required by the analytics strategy.

The CAO’s visionary narrative for BI&A needs to begin by articulating the CEO’s strategic objectives as expressed in the financial objectives. The next step is to discuss those objectives in the context of how BI&A use cases could be executed in specific business processes and trade policies. CAOs should perform a use-case gap analysis to identify specific initiatives that have direct "line of sight" back to the enterprise’s financial objectives.

When done properly, process operations and policies around trade are consistent and supportive of the financial objectives. The challenge for the CAO is to develop an underlying analytics program to serve the needs of the business as its implementation of the BI&A use cases changes over time.

To convert vision into strategy, the CAO needs to characterize where the enterprise is starting from; where the enterprise needs to get to; and what the right approach is to move the enterprise from its comfortable state of inertia to a new state that takes advantage of advanced analytics.

There are four key concepts that the CAO must master in order to use these ideas in the narrative he or she will present to the enterprise. These ideas and their vocabulary need to be part of a BI&A lingua franca — a common language adopted by speakers from every department and discipline for the purpose of understanding and discussing analytics. A common prescription is to create an "analytics culture" as a way of engaging the enterprise in analytics initiatives. The BI&A lingua franca is the foundation of that culture and needs to encompass (1) BI&A use cases; (2) baseline maturity benchmarking; (3) the principles of scalability, extensibility and flexibility; (4) the four pillars of business analytics (see below).

**Market Implications:**

Implementation of a BI&A lingua franca is the foundation of the narrative on which the CAO will build the analytics strategy.

The first element of the lingua franca is BI&A use cases. The challenge is to get the people involved in use cases to realize that their activity has a BI&A aspect to it — that is, that they are creating, accessing, storing, manipulating, transforming and destroying data in the execution of their job
responsibilities. Use cases help people to identify with, relate their own activities to, and even feel a sense of ownership of, BI&A initiatives.

The second element of the lingua franca is baseline maturity benchmarking. Once people begin to realize they are part of a group or category, they naturally benchmark the starting point, so that progress can be tracked. Humans are competitive by nature and can be engaged in cooperative and productive competition to achieve the next level of performance through incentives, gamification and other techniques that harness and exploit humans' innate desire to achieve.

The third element of the lingua franca is the principles of scalability, extensibility and flexibility. The lingua franca needs to be conceptually rich enough to discuss the measurement and progress tracking of the analytics strategy and initiatives beyond cost-cutting, revenue generation, cash conservation and profits. This is because a long-term strategy needs to change over time, and those changes, as represented by specific tools, technologies, application requirements and so on, have three concepts associated with them — scalability, extensibility and flexibility — that form a large part of the lingua franca discussion on analytics.

The fourth element of the lingua franca is the four pillars of business analytics: people, process, technology and data. The BI&A vision process is for a basis for creating a BI&A strategy to achieve higher levels of BI&A maturity. Many individuals, and therefore enterprises, fixate on technology as the cure for their problems. But all four pillars need to be addressed when articulating the BI&A strategy.

**Recommendations:**

CAOs should:

- Create a narrative that links financial objectives and modes of operation to BI&A initiatives and investments.
- Create a BI&A lingua franca — that is, a common language adopted by speakers from every department and discipline for the purpose of understanding and discussing analytics.
- Use the BI&A vision to create a BI&A strategy that addresses the enterprise's financial objectives through a "quality data" information governance program, and work with the CIO to build a flexible, extensible and scalable BI&A infrastructure and platform.

**Related Research:**

"Why and How to Measure the Value of Your Information Assets"

"Toolkit: Chief Analytics Officer Job Description"

**Strategic Planning Assumption:** By 2020, predictive and prescriptive analytics will attract 40% of enterprises' net-new investment in business intelligence and analytics.

**Analysis by:** Jamie Popkin and Jim Hare
Key Findings:

Predictive and prescriptive analytics have begun to gain momentum in the market as businesses realize the potential to automate a broad range of human- and machine-based decision-making processes. Gartner defines net-new BI&A investments as including new related software licenses, noncloud subscriptions and cloud investments, minus those investments that have been divested. We estimate that, in 2014, predictive and prescriptive net-new BI&A investments were approximately 25% of the total new investment of $8.8 billion.

Investment in predictive and prescriptive analytics is accelerating. It is accelerating from the purchase and use of new advanced analytics platforms and analytical applications and business applications that feature expanded predictive and prescriptive capabilities.

Market Implications:

Acceleration in the adoption of predictive and prescriptive analytics has major implications for end-user organizations and technology service and software providers. For end-user organizations, this acceleration will happen in 2016 and 2017, which means plans and budgets for this growth need to be established now. For providers, the ability to market predictive and prescriptive functions and capabilities will become more important over the next two years, and may be essential by 2018.

Recommendations:

Enterprise IT and business departments should start planning for expanded acquisition and use of predictive and prescriptive analytics in the budgeting cycle of the third and fourth quarters of 2015. Waiting for the next budgeting cycle to plan predictive and prescriptive investments will make them late, relative to the average for competitors.

BI&A software and service providers should evaluate their portfolio capabilities to ensure that predictive and prescriptive features are incorporated into one- and two-year product and service development roadmaps. Providers need to prepare to differentiate themselves on the basis of predictive and prescriptive analytic capabilities, which will become increasingly important in 2016.

Related Research:

"Lessons Learned From Advanced Analytics in Action"

"Ten Reasons to Reach Beyond Basic Business Intelligence"

"Survey Analysis: ITScore Assessments Show BI Maturity Remains Low, With Organizations Ill-Prepared for Challenges Ahead"

Strategic Planning Assumption: By 2018, 75% of technology-oriented business intelligence competency centers will have evolved into strategy-oriented analytics centers of excellence to focus on information value generation.

Analysis by: Douglas Laney
Key Findings:

BICCs exist in many organizations, but few achieve the fundamental goal of connecting solution delivery to decisions through the use of analytics. Few organizations have an exhaustive strategic roadmap document to clearly define their business objectives and support the holistic evolution of their BI&A initiatives. Most organizations with an established BICC are finding it not to be in the correct shape with respect to either cross-functional representation or organizational alignment. In addition, most BICCs are not equipped with the skilled resources and modern information infrastructure capabilities needed to incorporate and support complex use cases requiring advanced analytics and predictive modeling. Organizations commonly operate in reactive mode with respect to their BI&A initiatives, and lack the ability to anticipate business needs and engage with business units collaboratively, in order to deliver solutions with true business impact.

As a result, we find many clients turning to the expanded idea of an ACE to solve endemic BICC challenges; to expand the center’s reach, influence and capabilities beyond the realm of technology-focused solutions; and to improve information economics (infonomics) throughout the organization by forming a center of analytics strategy and thought leadership. This trend relates to, and in part results from, executive-level information and analytics appointments, such as CAO and CDO.

A mature ACE features capabilities not often found in a typical BICC. These include:

- A reference architecture for the full range of information and analytic components needed throughout the organization, such as source systems and data, analytic data stores and metadata management, along with recommended data flows for certain kinds of analytic need
- User engagement procedures for the submission and handling of analytic requests
- Success metrics, measurement methods and communication procedures
- Definitions for the full range of analytics skills and responsibilities
- Methods and mechanisms for collaboration on analyses between project members and across projects
- A roster of individuals throughout the organization with particular analytics talents and knowledge
- An ability to identify, monitor, support and (as necessary) consolidate "rogue" analytic efforts throughout the organization
- A well-honed change management approach and skills
- Ongoing identification and assessment of analytic technologies and trends, and how and when they should be incorporated
- Assistance with analytics project budgeting and financials
- Governance of analytic initiatives throughout the organization to ensure appropriate use and disposition of data, models and algorithms
Identification and curation of exogenous data sources of particular analytic value

Market Implications:

Although the explicit technological implications of this trend are few, advances in information governance and collaboration software will find their way into ACEs, with purpose-built features or products emerging over the next few years. Already, some analytics vendors have included governance and collaboration features limited to their own products. But these are insufficient for the breadth of analytic technologies found in most organizations.

Professional services firms specializing in analytics, or with analytics practices, will either extend their services to help clients establish high-functioning ACEs or offer ACE services themselves.

Recommendations:

Analytics leaders such as CAOs and CDOs should assess their BICC capabilities to consider the range of services that a more pervasive ACE could offer to their entire organization. The primary focus should be on improved analytics architecture standards, governance, project support, communication and collaboration. The ACE should be staffed by at least a handful of full-time individuals, with others participating as necessary. This rebranding and relaunching of the BICC as an ACE should include a focus on innovation, infonomics, business process digitalization, and expansion from descriptive analytics into diagnostic, predictive and prescriptive analytics.

Related Research:

"How to Choose the Right Organizational Model for Your Supply Chain Analytics Centers of Excellence"

"Use the Gartner Business Analytics Compass to Drive Strategy"

"How to Be Agile With Business Analytics"

Strategic Planning Assumption: By 2019, 75% of analytics solutions will incorporate 10 or more exogenous data sources from second-party partners or third-party providers.

Analysis by: Mario Faria

Key Findings:

As the "algorithm economy" becomes pervasive in the market, predictive and prescriptive analytics solutions will become mainstream. The use of an external data provider to make your own internal data better and more reliable is not a new development. But what is new is that data providers are becoming much more sophisticated in order to differentiate themselves. They are using data from sources not considered before, and more companies are starting to use this data, acquired from these providers, to enhance their own data in new ways or to create better models for analytics solutions.
You can also expect your data partners to start offering your company ways to monetize your data through them. Since your data partners may also talk to your competitors, they will be able to devise new analytics solutions that you could not come up with alone, while protecting the confidentiality and privacy that each organization requires.

**Market Implications:**

Customers need to prepare for new complexities in the market:

- Data partners and data providers are having to become highly sophisticated in order to survive.
- Stakeholders are demanding analytics solutions to enhance the usage of external data.

**Recommendations:**

Information management leaders, such as CDOs, should:

- Keep an updated inventory of their company’s data assets.
- Establish an acquisition team dedicated to researching, selecting, negotiating with, and managing data partners and providers.
- Involve their company’s risk, compliance and security teams during those activities, to avoid future headaches.
- Establish, with all their company’s data providers, service-level agreements that will enable them to measure and optimize speed, quality and spending over time.
- Work closely with sales, marketing, operations, finance and HR stakeholders to find out whether they see other possibilities for enhancing the company’s analytics solutions.

**Related Research:**

"The Benefits and Risks of Using Open Data"

"How to Adopt Open Data for Business Data and Analytics — And Why You Should"

"Algorithm Marketplaces Are Bringing the App Economy to Analytics"

**Strategic Planning Assumption:** Through 2020, over 95% of business leaders will continue to make decisions using intuition, instead of probability distributions, and will significantly underestimate risks as a result.

**Analysis by:** Jim Hare, Lisa Kart

**Key Findings:**

Despite the massive amount of available computing power, data and analytics, many organizational leaders continue to make critical business decisions based on intuition and speed, rather than
robust analysis. They constantly face the need to make complex decisions quickly in order to grow their business. They easily become overwhelmed, reaching the limits of their ability to process information and trade-offs, and therefore start to make decisions using their "gut feeling."

Even among the business executives who embrace data-driven decision making, most rely on point estimates and averages. They ask their employees to perform detailed data gathering and analysis, such as forecasting, and report back to them with an "average," on which they base their decisions. But the problem with using averages is that uncertain outcomes cannot be represented by a single number. Instead, they require a probability distribution with a certain shape and range of possibilities (some outcomes being more likely than others, and some estimates commanding confidence than others). A good example is the 1997 Red River Flood in North Dakota, Minnesota. The U.S. National Weather Service forecast that the river level would peak at 49 feet (the same height as the dike built using a 100-year average), and this single number lured people living in nearby towns into a false sense of security — the level rose to 54 feet and caused a major disaster. Unfortunately, few businesses are investing in probability-based simulation and optimization to support strategic decisions and reduce risk.

**Market Implications:**

The practice of advanced analytics is less about data and more about decisions. While many organizations are still moving from basic reporting to predictive analytics, the following wave of investments will be in prescriptive analytics (simulation and optimization) to improve decision making. However, as long as business executives continue to make decisions based on intuition and point estimates, these investments will bring little benefit. Analytic techniques such as Monte Carlo simulation must not be isolated to operations research teams, but must instead find their place in the boardroom, to improve strategic decision making.

Vendors of advanced analytics platforms will extend their tools beyond predictive analytics into simulations and optimizations that can be run by business people. But analytics and simulation alone will not be enough — the decision process will also have to change, with people learning new skills and new ways to make decisions. The transformation must be organizational, as well as technological, and the change will have to come from the top.

**Recommendations**

BI&A leaders should:

- Engage with their executive team to go beyond providing averages in reports and dashboards. They should showcase how simulation and optimization tools can improve decision making by giving more insight into the uncertainties and risks behind the estimates.
- Read Gartner’s research on how to get started with prescriptive analytics and how to take a first step in advanced analytics, and use it to educate internal stakeholders.
- Investigate available simulation and optimization tools, as well as consultants with expertise in these areas.
Invest in building your team's prescriptive analytics skills.

**Related Research:**

"How to Get Started With Prescriptive Analytics"

"Maverick* Research: Myths and Realities in the Brain-Aware Enterprise"

"How to Establish a Data-Driven Culture in the Digital Workplace"

"Emerging Provider Executive Insights: Move Now to Seize the Opportunity in the Personal and Ecosystem Eras of Analytics"

**A Look Back**

*In response to your requests, we are taking a look back at some key predictions from previous years. We have intentionally selected predictions from opposite ends of the scale — one where we were wholly or largely on target, and one where we missed.*

**On Target: 2013 Prediction** — By 2015, more than 30% of analytics projects will deliver insights based on structured and unstructured data.

The inclusion of exogenous data from Web content and social media, along with analysis of internal documents, has become pervasive. Certainly many "basic BI" efforts still rely exclusively on structured data, but data discovery and most advanced analytics initiatives rely on unstructured data as well, either in its raw form or, more often, in a preprocessed form.

**Missed: 2013 Prediction** — By 2016, 70% of leading BI vendors will have incorporated natural-language and spoken-word capabilities.

Few major BI vendors have yet included natural-language input or output capabilities in their offerings. Instead, most rely on native operating system and device interfaces to provide such features. Notable exceptions are IBM (with Watson Analytics) and ThoughtSpot, which include natural-language query capabilities in their offerings.

**Gartner Recommended Reading**

*Some documents may not be available as part of your current Gartner subscription.*

"Why and How to Measure the Value of Your Information Assets"

"Seven Steps to Monetizing Your Information Assets"

"Redefine, Reorganize, Revamp and Rebrand Your BICC to Shift Focus to Analytics"

"Without Change Management, Your BI Program Could Easily Fail"

"Business Intelligence Teams Need to Change With the Times"
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