Gartner's Business Analytics Framework

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This framework defines the people, processes and platforms that need to be integrated and aligned to take a more strategic approach to business intelligence (BI), analytics and performance management (PM) initiatives.

Key Findings

- Enterprises will increasingly use a combination of products and services to support the diversity of analytics and decision-making process within their enterprise.

- Interested business leaders recognize the diversity and interrelationships of the analytic processes within the enterprise, and can address the needs of varied users without creating disconnected silos.

- A strategic view requires defining decision-making processes and analytical processes, as well as the processes that define information management, independently from the technology that will be used for implementation. Therefore, this framework clearly identifies the people and process pillars, in addition to the platform pillar.

- The program management, technology and complexity of skills associated with the strategic use of BI, analytics and PM increase dramatically as the scope of the initiative widens across multiple business processes.

- There is no single or right instantiation of the framework; different configurations can be supported by the framework based on business objectives and constraints.

Recommendations

- Use this framework to develop a strategy and an implementation plan, and to surface key decisions, integration points, gaps, overlaps and biases that business leaders and program managers may not have otherwise prepared for.

- A portfolio of information management, analytic and decision-making capabilities will be needed to meet the diverse requirements of a large organization. Strike a balance between creating standards and allowing a variety of technologies to meet business needs.

- If the enterprise has a program management office, seek advice from it on balancing investments across multiple projects, and consider bringing BI, analytics and PM initiatives within a formal program management framework.

- BI, analytic and PM initiatives are best suited to iterative developments driven by a BI competency center (BICC) that gather requirements, prioritize needs and deliver solutions in phases.

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Analysis

The Need for a Framework

Throughout this research, business analytics is used as shorthand to represent BI, analytics and PM. Increased volatility, ongoing economic uncertainty driving first cost-cutting and then return-to-growth strategies and increasing stakeholder pressure has only increased demands from business executives seeking new or better ways to improve performance at all levels of the organization. The continued growth of BI, analytics and PM — with an increasingly large portfolio of available

solutions with divergent functional capabilities, scale and scope with discrete sponsors and buying centers — has increased the need for a renewed focus from IT to avoid platform parochialism at best and analytic anarchy at worst. If unaddressed, BI will continue to be disconnected from analytics, and organizations will fail to achieve optimum business benefits from their investments.

The program management, technology and complexity of skills associated with the strategic use of business analytics increase dramatically as the scope of the initiative widens. No vendor today can provide all the needed technologies, applications and services, despite megavendors' continued expansion through acquisitions. Therefore, enterprises must use a combination of vendors and services to provide a comprehensive solution. Hence, there is a need for a framework to be used by IT architects, system developers and program managers that lays out the components in terms of the people, processes, platforms and performance that should be aligned as part of a strategic solution. The business analytics framework shown in Figure 1 updates Gartner's previous BI, analytics and PM framework, which we originally published in 2006 and updated in 2009.

Figure 1. The Gartner Business Analytics Framework
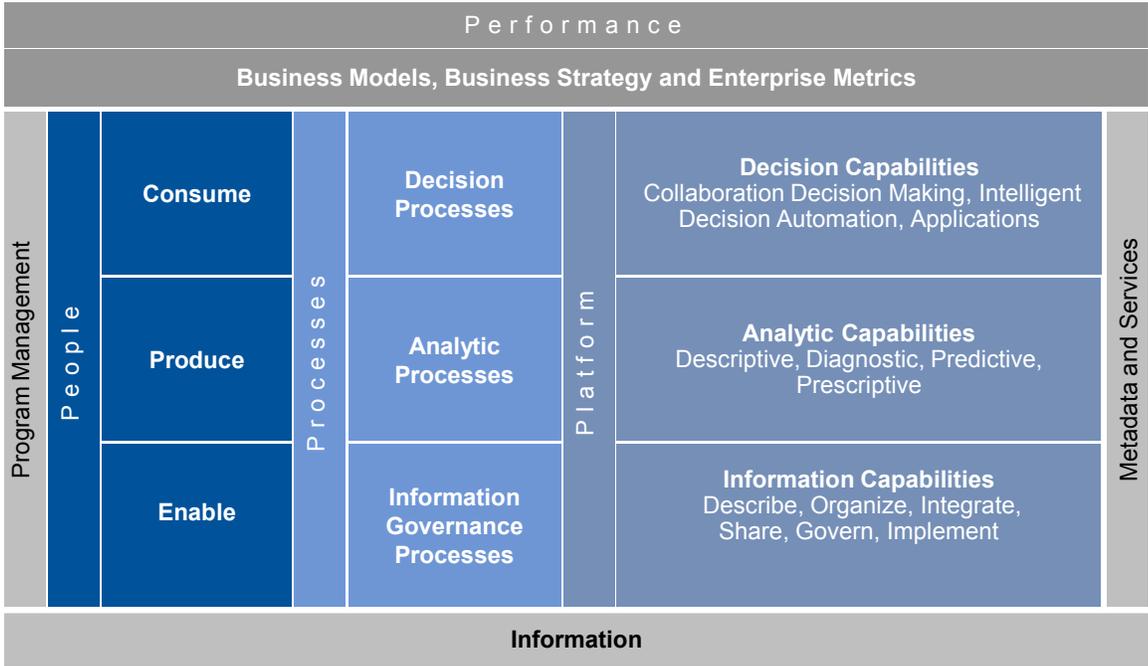
Source: Gartner (September 2011)

Recommended Reading:

- "Business Intelligence Focus Shifts From Tactical to Strategic Approach"

- "The BI(G) Discrepancy: Theory and Practice of Business Intelligence"

- "Deliver Business Intelligence With a 'Think Global Act Local' Organizational Model"

Differences Between the 2011 and 2009 Frameworks

The updated framework modifies and extends several areas of the 2009 framework based on changes in the scope and scale of client deployments. The main differences are:

- **Terminology:** There is confusion concerning the terms BI, analytics and PM because there is so much overlap and codependency among them. This report describes their similarities, but also emphasizes the specific connotation of each term (see the BI section). BI refers to the general ability to organize, access and analyze information in order to learn and understand the business. This ability can be applied to specific business processes, decisions and subject area domains; this is analytics. Therefore, analytics can be thought of as applied BI. Note that the term analytics is usually preceded by a domain-specific modifier, such as website analytics or customer analytics. PM applications are a specific type of analytic application that implies the presence of a management workflow and a goal-setting exercise to define, monitor and optimize business objectives.

- **Performance:** The performance label is explicitly called out as a banner across the top. This is to reinforce the point that the framework is composed of people, processes, platforms and performance aspects. The previous framework underrepresented the significance of this component. Likewise, in many organizations, it is the performance aspects that are least mature and most overlooked.

- **People:** The updated framework tweaks the people activities to represent tasks, rather than roles. Rather than discrete roles for consumer/producer, which best represented the traditional business-IT relationship, newer forms of analytics and PM surpass these distinctions. Hence, a business analytics user can easily be involved across produce, consume and enable activities.

- **Information:** Information as an underlying foundation has been added to the framework to reflect the connectivity of and coexistence with all sources of data that business analytics utilizes — not simply the data warehouse. Since the last framework, this has expanded to incorporate structured and unstructured data (content), on-premises and cloud-based data, and we've seen new terms emerge such as "big data" to represent new extreme information challenges not only of volume, but also of velocity, variety and complexity of information.

- **Platform:** This has seen the biggest number of changes to reflect the continued expansion and longer-term convergence of BI, analytics and PM. The previous groupings of business process applications, analytic applications and BI platforms represented too narrow a definition of how analytics and PM continue to grow. Furthermore, these former classifications portrayed a physical representation of core capabilities that is unlikely to accurately depict next-generation infrastructures. Consequently, the new classification of the platform aspects of the framework are grouped into three clusters of decision-making, analytic and information-centric capabilities.

Recommended Reading:

- "Case Studies for Business Intelligence Excellence Award"

Performance: Start With Business Strategy and Enterprise Metrics

Enterprises should measure the success of business analytics programs by how well they help the business achieve strategic objectives. Clearly defined business strategies and objectives are critical to the success of any business analytics initiative, and to building the case for investment. The CEO, management team and, typically, a strategy manager at the vice president level manage the creation and definition of overall corporate goals, strategies and objectives. PM solutions and methodologies help with strategy development and execution. On the strategy development side, concepts such as performance prisms and balanced scorecards can help interpret strategy, while applications such as strategic planning and profitability modeling help finesse planning processes.

To succeed in executing developed strategy, the enterprise first needs an enterprise metrics framework that links strategic goals with operational activities. Such a framework minimizes siloed, tactical approaches in which each department or function focuses on its own performance needs without looking at the bigger picture. This metrics framework should include defining the cause and effect relationship between leading and lagging metrics. This definition can take the form of a strategy map or some other framework that identifies the relationships among different business metrics. The metrics framework will also help create links among different analytic applications, particularly in planning. In many cases, different parts of the organization may create PM initiatives at intermediate levels of the organizational hierarchy. Failure to connect these initiatives will result in suboptimal organizational performance, but may still deliver business benefits within those organizational groups. Second, the enterprise needs flexible and nimble command and control capabilities to closely monitor the chosen strategy and support, where necessary, fact-based decision making to find suitable modifications or alternatives.

It also signifies that this framework can be applied at a global or local level. For instance, merchandising managers might use the three layers and three pillars of this framework for their own domain, looking at the information, analyses and decisions they make in merchandise planning and assortment, but that is only one island (local) that connects to a broader picture (global). A COO or CEO could use this framework to align the information, analytics and decisions that are made at a global level. Strategy maps help connect global to local levels.

Recommended Reading:

- "The Gartner Business Value Model: A Framework for Measuring Business Performance"
- "Pattern-Based Strategy Requires a Performance-Driven Culture"

Give Equal Consideration to People, Processes and Platforms

People

Planners should consider a business analytics initiative from the perspective of three tasks that participants can perform:

- Produce — traditionally performed by analysts who define and carry out domain-specific and ad hoc analysis.

- Consume — traditionally the line-of-business users who consume analytic results and associated information for making decisions and managing performance at every level of the company from clerical workers to senior executives.

- Enable — traditionally the IT staff that facilitates the information management tasks required to perform analytics and decision making. However, technology such as software as a service (SaaS), data discovery and packaged applications increasingly enable business users to support themselves with less help from IT. Increasingly, a broader set of users in a variety of roles will be empowered to enable, produce and consume analytic content.

Producer

Traditionally, organizations have employed analysts in specific roles to define and explore business models, mine and analyze data and events, produce reports and dashboards, provide insights into the organization's performance and support the decision-making processes. However, with the rise of increasingly sophisticated self-service analytic capabilities and the flattening of organizational hierarchies, the production of analytic insights is supported by a growing spectrum of people across and outside the organization. Producers may combine specific technical skills, such as the ability to write code or to use data mining workbenches, with a deep understanding of business issues and related performance measures and good communications — a tricky balance to achieve. Producers come in several varieties, depending on the types of analytic applications they use and the types of work they support.

Technological trends in data discovery, analytical methods, collaboration and social software, combined with trends in the business world for more transparent and fact-based decision making, will lead to a new style of decision support model and system that will give further leverage to the work of producers. It will be necessary to put in collaborative processes and infrastructure to help producers get their analytical insights consumed more broadly by the user community, and to have their analysis available and/or embedded in other business and analytic applications. Gartner has named this new analytical work model, designed to tie information more directly to the decisions made, collaborative decision making.

Recommended Reading:

- "Toolkit: Analytical Skills Template for a Business Intelligence Competency Center"

- "Best Practices on How Metadata Management Helps Deliver Adaptive Information Infrastructure"

Consumer

Users consume the information, analysis and insight produced by applications and tools to make decisions or take other actions that help the enterprise achieve its goals. Increasingly, some users are more than just consumers, such as the top executives who will help craft performance metric

frameworks, or planning application users who create new insights and forecasts. Consumers are increasingly operational workers (whether call center handlers, inventory managers in the warehouse, retail outlet sales staff or other front-line activities) making day-to-day or real-time decisions within their areas of responsibility, in addition to executives and managers. Consumers determine how well business analytics initiatives succeed. Interested business leaders should consider users' requirements from several perspectives:

- **What roles do they need to play in analytic, business and decision processes?** For example, finance executives responsible for managing corporate budgets and plans need different analytic applications from the operations manager of a highly automated manufacturing environment.

- **What metrics, data and applications do they have and/or need?** Decision and analytic capabilities turn raw information into the insights consumers need to make the appropriate decisions and support their management processes. And every user wants timely, relevant, accurate and consistent data and analysis, but each user may define those terms differently and need data from different domains, one seeking product data, another focusing on customer data, and so on.

- **How do the metrics and needs change over time?** Any of the factors that determines a user's needs at a given moment can change at any time, including business strategy, processes, roles, goals and available data. Even if all these factors remain the same, the insights delivered to users will lead them to ask new questions.

Recommended Reading:

- "Succeed With Business Intelligence by Avoiding Nine Fatal Flaws"

"Prosumer"

Rather than the discrete roles for consumers/producers that best represented the traditional business-IT relationship, newer forms of analytics and PM surpass these distinctions. Hence, a business analytics user can easily be involved across produce, consume and enable activities. For example, a line-of-business manager may consume information on sales figures, but produce and consume pipeline forecasts and trends. Encouraged by an expanding portfolio of self-service solutions (such as data discovery, simple English language query, sophisticated data visualization and powerful black-boxed analytic functionality) users are increasingly encouraged to design, configure and manage analytic applications without advanced resources or IT assistance.

Leaders of the business analytics initiatives need to foster this trend, encouraging more people to think like producers and consumers or prosumers — creating new models of how the business performs. This is particularly important in creating a culture that continuously looks to establish connections between leading and lagging indicators.

Recommended Reading:

- "Maturity Model Overview for Business Intelligence and Performance Management"

Enablers

This group includes the external vendors, IT professionals, members of a BICC and others who help design, build and maintain the systems users and analysts use (see Note 1). Traditional IT roles such as project managers, data and system architects, and developers remain important. But business analytics initiatives require more than simply building applications to fit a list of requirements. Those applications also have to deliver business results. Users have to want to use them. They have to support analytic, business and decision processes. Thus, enablers need business knowledge and the ability to work collaboratively outside their traditional area of expertise. This team needs a detailed understanding of how producers and consumers work, what roles they play in processes and how those processes unfold. In short, the organization must find ways to bridge the gap between IT and the business side. Gartner strongly recommends a BICC, which brings together the IT, analyst and business expertise.

The need to establish a collaborative work environment between IT and the business cannot be underestimated. Traditional approaches in which IT considers the business as its customer sound good, but inevitably lead to suboptimal results because of a lack of communication and a rigid development process. Creating new styles of workgroups that blend IT skills (for example, data modelers, report writers) with subject area domain expertise and analytic modeling into a single team for faster prototyping is a common characteristic of Gartner's BI Excellence Award finalists.

Recommended Reading:

- "Q&A: Create a Business Intelligence Competency Center That Fosters a Performance-Driven Culture"
- "ITScore for Business Intelligence and Performance Management"
- "Eight Steps to Foster the Creation of a Business Intelligence Competency Center"
- "Toolkit: Job Descriptions for 12 Key Data Management Roles"

Processes

A shift from a tactical to a strategic approach to BI, analytics and PM requires a broader view of processes. With a tactical approach, planners focus on only one process in isolation — for example, customer service analytics. With a strategic approach, planners must understand the diversity of analytic processes within the enterprise, which could include, for example, multiple lines of business cross-selling. A strategic view must also encompass business processes and decision processes, as well as the processes for creating an information infrastructure on top of which BI, analytics and PM initiatives are implemented.

Decision Processes

Much of the investment in business applications (such as ERP, CRM and supply chain management [SCM]) has focused on automating business processes, which are now increasingly viewed as end-to-end processes that span functional silos. But many analytics processes (and the information governance processes that support them) have largely been distinct and separate from the decision processes associated with these business applications. While many analytical applications and processes render useful analysis and information to manage the business processes, very few are anywhere close to delivering true decision support. This has contributed to a lower than expected uptake of analytical technologies and processes among business process users.

Business analytics can improve decision making if they supply the right insight. Unfortunately, most organizations have struggled to model decision processes effectively, especially when they occur outside end-to-end business processes. Business processes can be optimized only if they incorporate decisions. Processes without decision points are static, inflexible and inefficient, but decisions made on guesses and gut instinct, rather than on facts, also cause problems. When business analytic capabilities are integrated into business processes, decisions are more repeatable, scalable, traceable and accurate. Properly implemented, business analytics integrated into process can help differentiate the enterprise from competitors. They can also help planners decide when to add steps to make the process more effective and less risky, or to remove steps that are not needed for a specific process instance. Understanding and defining how business analytics add value to business processes are key to making BI pervasive among business users.

While some business processes that focus on executing business transactions (such as order to cash or procure to pay) are well-understood and well-documented, PM processes (which are a type of business process) are often informal and poorly documented, with few best practices. For example, it should be possible to define and manage the process of formulating a strategy and linking that to operational execution in the same way as an order-to-cash process. However, to date, few enterprises have integrated PM processes across multiple subject area domains. This is another reason why the framework is being updated to emphasize the need to support heterogeneity across business processes.

Recommended Reading:

- "The Trend Toward Intelligent Business Operations"

- "Guide to Process-Centric BI Terms"

Analytic Processes

Enterprises often focus more on training people how to use a specific analytic application than on educating them in the broader processes the application supports. But the outcome of any effort depends far more on the analytic process than on the application. For a given process, architects and project managers must consider a variety of questions that can seem deceptively simple:

- **What are we trying to learn?** The outcome of the entire process depends on formulating a precise answer. For example, if you want to know who your best customers are, you have to define what "best" means.

- **How do you measure success?** Planners need to link the outcome of analytic processes to business results (for example, forecast accuracy), rather than to internal measures alone (for example, process efficiency). Measures of success will also tend to be comparative — for example, how much better the results of the analytic process are than the experts' best guesses.

- **How do you design the process?** Different analytic tasks require different steps to ensure a good outcome. Analytic processes have to run on different timelines and cycles. Full automation may serve some processes best; others may need manual steps or exception handling. For each process, planners have to decide which people should play a role, for example, subject-matter experts.

- **What kind of analysis are you performing?** For example, a statistical analysis requires a different process from that of an analysis of customer verbatims.

- **What data and models do you use?** Planners have to determine whether they have sufficient data to work from, and whether they have chosen the right data to meet the goal of the analysis. Each set of data comes with hidden assumptions and biases. Existing models cost less in time and money, but the analytic task sometimes requires augmenting models or building them from scratch.

- **How and where do you publish the results?** The results of the analysis have to reach the right people in the right format at the right time.

Recommended Reading:

- "The Four Styles of Integrating Analytics Into Business Processes"
- "Embedded Analytics Will Impact Business Application and BI Strategy"

Information Governance Processes

The enterprise's ability to deliver business analytics is built on the capabilities of its information governance processes. Most enterprises do not have a program to coordinate and architect all the parts that make up the data management/information management strategy; therefore, these functions occur in separate processes — for example, the deduplication efforts that occur before data enters a data warehouse or the processes that manage customer data. Cross-functional teams, such as a BICC, can bridge any gaps between different information governance processes and between these processes and business analytics efforts. However, some information such as departmental systems or external data like Nielsen data for marketing that may be produced and used locally and any information strategy will also need to take account of how these assets will be supported and managed.

Recommended Reading:

- "Gartner Defines the Information-Centric Infrastructure"

Platform

Many IT organizations tend to focus on the technology of BI platforms, analytic applications and tools, but can struggle to get business users to adopt them widely. Conversely, line-of-business functions also tend to focus on the technology but struggle to see beyond immediate needs or get IT to integrate solutions with enterprise infrastructure. We have already mentioned that planners should define, implement and support these platforms within a defined context of the sets of people and the processes they are to be associated with. Planners (from within the BICC) should also consider where these platforms fit in relation to adjacent technologies, including business process applications, and the supporting information infrastructure. Users will more readily adopt business analytics if they fit naturally into their information and computing environment. IT will in some cases be invited to support line-of-business solutions if they can demonstrate value as a business partner and provide a more controlled, consistent and reliable infrastructure without stifling innovation or reducing corporate agility. Where IT is not invited to support line-of-business solutions, they will need to ensure appropriate procedures, governance and control are in place.

Decision Capabilities

Decision capabilities build applications that help enterprises learn and understand their business. For example, a BI platform provides three categories of functions: integration, information delivery (such as reporting and dashboards) and analysis (for example, online analytical processing [OLAP], predictive modeling and data mining). Information delivery is the core focus of most analytic application projects today, but we see an increasing need to focus on analysis to discover new insights and on integration to implement those insights. This is particularly important to discover the leading indicators that influence the lagging indicators we measure and value as a company. Planners must define and prioritize the capabilities that users need from their analytic applications, and minimize redundancy.

Not all styles of analytic applications require BI platform components. Some may be directly embedded in a composite application or within a transactional or workflow application. PM applications focus on management processes (for example, plan to perform), and have heavy analytic application content with limited transaction-processing capabilities. Analytic applications (such as PM and embedded analytics) have blurred the boundary between business analytics and the business process applications. IT must ensure that the road map for business analytics is complementary to the future plans for the business process applications.

There will likely be a plethora of new capabilities to provide decision support. Some, such as intelligent decision automation, will optimize decisions in structured, well-known, decision-making scenarios. Other types of capabilities will be required to support more flexible, iterative and less hierarchical decision-making styles. Applying BI and analytics to decision making will require IT enablers to work closer with business users to understand and model business decisions. And a new crop of tools and capabilities will be required. For example, one capability likely to increase in

popularity as part of an organization's decision capabilities is scenario modeling and simulation, as trade-offs (that is, among resources, risk and reward) are inherent to a decision. Enabling decision makers to perform and communicate simulation or scenario modeling will help them select the right option that optimally balances the trade-off. This will require that architects can work with analysts to codify the key business decisions and processes (analogous to key performance indicators), and model the cost/quality trade-off inherent in that decision.

Recommended Reading:

- "The Trend Toward Intelligent Business Operations"

- "Tutorial for Collaborative Decision Making"

- "Defining and Managing an Expanded Set of Business Intelligence Capabilities"

- "Magic Quadrant for Business Intelligence Platforms"

Analytic Capabilities

Analytic capabilities refer to a portfolio of analysis methods, tools and data transformations. Text analytics, content analytics, speech analytics, predictive analytics, prescriptive and embedded analytics are common examples that indicate the nature of the analysis or the way it will be consumed, but do not specify the particular domain or intended result. They also include traditional capabilities, such as ad hoc query, dashboards, OLAP and visualizations, as well as analytic applications that package analytic capabilities for a particular domain or business problem.

Analytic applications consist of predefined data and process workflows, and sets of predefined models, analysis and delivery capabilities. These applications require integration with a business process, and this integration can take different forms, with the best approach dependent on a variety of factors, such as the complexity of the analysis and the variability and time sensitivity of the business process. For example, the capability of forecasting becomes packaged as an analytic application of sales forecasting and put in the hands of a sales manager. Many different types of analytic applications address multi-industry business functions (for example, workforce, analysis and supply chain), as well as industry-specific issues (for example, claims analytics and anti-money-laundering). Although these applications vary in maturity, most represent emerging markets.

Analytic capabilities can be bought as a configurable solution (most often as a packaged analytic application) from a variety of vendors (traditional BI platform providers, best-of-breed, stand-alone analytics vendors and business process vendors delivering analytic applications as a complementary module or embedded capability within business process applications). Analytic applications can also be built by internal teams (or their third-party equivalents from consulting companies).

Recommended Reading:

- "Understanding Packaged Analytic Applications"

- "Clarifying the Many Meanings of 'Analytics'"

- "What's Needed in an Analytic Application"

Information Capabilities

Enterprises have accumulated a wide variety of technologies for managing information assets over many years in many different projects. The resulting silos leave workers unable to find or use information from across the enterprise. The solution lies in creating an information infrastructure that will unify all these technologies, services and schemas. An information infrastructure can help business analytics initiatives get the right information in the right format to the right people at the right time. Information capabilities make explicit the interfaces with other parts of the organization and permit the automated exchange of data, documents and other forms of content.

The continued expansion in the variety and types of devices, tools and solutions available to present and analyze information means that there are an increasing number of sources of information, and an increasing number of consumer/producers. This means IT must develop a new plan for how it helps the business with information activities — one that understands where to control and/or centralize and where to accept decentralization and be a guide or service. To help organizations develop a new information model, Gartner has developed the information capabilities framework.

Recommended Reading:

- "Information Infrastructure Drives Business Efficiency"

- "The Information Capabilities Framework: An Aligned Vision for Information Infrastructure"

- "Data Modeling and Data Architecture; A Required Strategy for Enterprise Information Architecture"

- "Data Architectures to Support Performance Management Applications"

Pay Attention to Two Related Areas

Business analytics initiatives do not exist in isolation from the enterprise's wider application and IT initiatives. The framework includes two areas (program management, and metadata and services) that must be considered across all levels of performance, people, process and platform.

Program Management

Program management offers a mechanism for prioritizing projects and allocating resources within business analytics initiatives. These initiatives are complex, spanning multiple functions, departments and business processes, and need to be managed to avoid fragmented, tactical initiatives. If the enterprise has a program management office, planners involved with business analytics initiatives should at least seek advice from it on balancing investments across projects. Planners may also want to consider bringing BI, analytics and PM initiatives within a program management framework. If the enterprise lacks a program management office, the IT staff

responsible for BI, analytics and PM initiatives must implement some form of program management disciplines. Staffing plans must include IT personnel with the right program management skills.

Program management means more than just delivering the right information to the right user at the right time. It also includes going the last mile in support of the need to deliver analytical insight integrated as part of the user's decision processes. Going this last mile is a key characteristic of industry-leading initiatives.

There has been a significant volume of discussion and hype surrounding the use of agile methods of program management with business analytics. Agile is a proven iterative software development approach, intended to be more responsive and rapid than waterfall methods. However, business analytics initiatives have always followed a form of Iterative development often employing a less formal version of agile based on prototyping or short-term project phases typically taking two to six months during which time the product team does not change frequently. In Gartner's opinion, and the experience of the firms we talk to, the way to best address the requirements gathering process is to have a live and active BICC in order to parse and prioritize needs to BI development staff on an ongoing, iterative basis (which sounds a little like agile, but provides a structure more suitable to BI's needs than simply partially applying a software development methodology to one part of the overall process).

Recommended Reading:

- "Program Management: Definition, Context and Content"

- "The First 100 Days: The New BIPM Leader"

- "Agile Techniques Augment But Do Not Replace Business Intelligence and Data Warehouse Best Practices"

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

Metadata and Services

Metadata helps create a common way of describing information assets across the enterprise. Metadata management integrates the various metadata schemas that may be in use in different parts of the enterprise, and must also incorporate external sources. Thus, users in one part of the organization can find and reuse relevant information in another part of the organization. Metadata management contributes to information sharing, presenting a common face to customers, linking structured and unstructured information, and other efforts that require bridging gaps among different pools of information. Metadata management can extend the reach of business analytics initiatives. For example, a project for analyzing customer behavior can tap information that resides in the different units within the organization with which the customers have interacted; the project would not be limited to one area or whatever data is convenient to pump into a data warehouse. Consequently, metadata must be shared through common repositories.

In addition, BI, analytics and PM initiatives must exploit business services repositories. With the increasing adoption of service-oriented architecture (SOA), BI, analytics and PM, applications and tools should align with the business services defined in the transaction-processing applications. To

create composite applications that combine transaction-processing services with analytic services, analytic and PM tools and technologies must have access to shared repositories of these services.

Recommended Reading:

- "Gartner's Information Management Grand Challenges: Opportunities for Resolution"

- "Best Practices on How Metadata Management Helps Deliver Adaptive Information Infrastructure"

Use the Framework to Scope Business Analytics Efforts

The terms BI, analytics and PM confuse many people because they overlap in many ways. For example, PM applications are a form of analytic applications. Many enterprises implement BI platforms to support analytics projects. BI, analytics and PM projects can involve the same users and business processes. Those who plan strategic efforts in one of these domains should define the scope of their work in terms of the relevant components of the framework.

PM

Gartner defines PM as the management processes, methodologies, metrics, applications, tools and infrastructure that enable users to define, monitor and optimize results to achieve personal or departmental objectives, as well as strategic objectives across multiple organizational levels. PM initiatives often drive the definition of the enterprise metrics framework and encompass the top layer of the framework's three pillars: consumers, decision processes and decision capabilities. A PM initiative may not require any technology investments. It is possible to implement PM processes and methodologies with little or no technology (for example, a stand-alone balanced scorecard implementation in a spreadsheet — one of the authors of this research developed such a balanced scorecard spreadsheet that the CEO of a $600 million software company used to manage his strategic plan and company performance). However, to deliver better business value, PM processes and methodologies should integrate with the rest of the portfolio of business analytics that the enterprise uses. Lack of integration among the major framework components will create organizational and data quality problems, which will compromise the value of the PM applications.

Recommended Reading:

- "Best Practices in Strategic Decision Making"

- "Understanding the Four Stages of Performance Management Evolution"

BI

Gartner defines BI as an umbrella term that spans the people, processes and applications/tools to organize information, enable access to it and analyze it to improve decisions and manage performance.

BI initiatives focus on locating and accessing the information that's most relevant to the consumers and to the producers who handle the enterprise's analytical, business and decision processes. BI presents the information in the most usable formats, and BI also pays attention to the efficiency of the processes and technologies by which information is provided. Pervasive adoption by business users represents the key for BI. The enterprise does not benefit if the BI team provides great information that the business simply does not use. Thus, BI planners should focus most on understanding users' roles and how BI will fit within the processes they support.

Recommended Reading:

- "Dropping the BI Ball? Warning Signs to Watch Out For"
- "Succeed With Business Intelligence by Avoiding Nine Fatal Flaws"

Analytics

Analytics has become an increasingly common word in the BI and applications space, but the exact meaning is often unclear. Analytics can be used to signify many different things, such as:

- A particular BI capability or technique, especially a more advanced technique (e.g., predictive analytics)
- The business strategy of using analysis to address a particular business problem (e.g., fraud analytics)
- Analytic applications; a collection of packaged BI capabilities for a particular domain or business process (e.g., sales forecasting analytics)
- The entire domain, spanning hardware, software, personnel and processes

The differences between these different meanings of analysis can be considered in reference to the business analytics framework. Analysis is present in the process column, while analytic techniques and analytic applications are both in the platform section, with analytic applications broadly mirroring the scope of the analysis process (hence the approximate alignment between what the vendors sell and their positioning of it as a solution to the analytic process issues an organization may experience).

Analytics represents the most diffuse of the three domains because its practices vary widely, depending on what is being analyzed — for example, PM data, Web usage, the workforce, customers, financial numbers, and demand planning information. Each of these individual areas tends to have its own set of analytic models, processes and applications, as well as the analysts themselves. For this reason, planners need clarity in internal documentation and discussion, and they should standardize on a set of definitions to enable faster, more effective definitions of the business opportunities and requirements.

Recommended Reading:

- "Clarifying the Many Meanings of Analytics"

- "The Role of Analytics in Adding Value to Business Processes"

- "Embedded Analytics Will Impact Business Application and BI Strategy"

Note 1 The BICC

The BICC develops the overall strategic plan and priorities for how organizations can, and should, support BI, analytics and PM. As such, it is the owner and developer of the BI, analytics and PM framework. The BICC also manages the programs that deliver the implementation, which, in turn, support business requirements, including data quality and governance (see "Business Intelligence Competency Center Key Initiative Overview for CIOs"). The BICC also helps users interpret and apply insight to business decisions and processes. It also needs to define and measure the business impact that insight, analysis and resulting decisions have on improving the performance of the associated processes and the business overall.

This is part of three sets of related research. See the following for an overview:

- Information and the Nexus of Forces: Delivering and Analyzing Data

- Engage, Learn, Create and Disrupt With the Nexus of Forces

- Research Roundup for Domain-Specific Analytics

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