

A practical framework for business intelligence and planning in midsize companies

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INTRODUCTION

Every company needs a clear set of goals and objectives to achieve the maximum benefits from its business intelligence (BI) and planning projects. These goals may include:

- Company-wide access to one trusted set of corporate information to make decisions based on fact not instinct.
- Easy-to-use reporting and analysis tools that can help business users gain better business insights to uncover issues and spot trends quickly.
- The ability to respond with more agility to changing business conditions using effective, corresponding actions.

Articulating these goals is essential. Yet a company must do more than state its goals to achieve its BI and planning objectives. It needs a working framework that provides a blueprint for success.

Gartner defines such a framework as, “the people, processes and technologies that need to be integrated and aligned to take a more strategic approach to business intelligence (BI), analytics and performance management (PM) initiatives.”¹

DEVELOP A PLAN TO “THINK BIG AND START SMALL”

For midsize companies, a BI and planning framework must, first and foremost, be practical. It may draw upon the conceptual framework used in larger companies, yet it must be scaled to a smaller company with fewer resources. Gartner states that, “Most enterprises use a combination of vendors, products and services to provide BI, analytics and PM solutions.”² However, midsize companies have limited IT staff and limited budgets.

Midsize companies need a solution that provides essential reporting, planning and analysis capabilities without extensive resources. Over time, as a business grows, it's important to avoid an unwieldy combination of vendors, products and services. For midsize companies, one integrated solution from a single vendor makes sense. A single solution can provide the essential BI and planning functions while setting the stage for future growth.

¹Gartner RAS Core Research Note G00166512 Gartner's Business Intelligence, Analytics and Performance Management Framework, Bill Hostmann, Nigel Rayner, Gareth Herschel, 19 October 2009

²Ibid.





A BI and planning framework for midsize companies should also enable firms to adopt a “think big and start small” strategy. They should avoid an “all or nothing” approach and instead employ a BI and planning strategy that hinges on deploying components tactically and incrementally. This approach creates a clear path for connecting additional components over time.

Midsize companies can start small by focusing on a key pain point. They can start anywhere, for example, with only reporting or analysis, and add capabilities as the business grows and its requirements change. There are many benefits to this approach:

- It enables a project rollout that matches resource capacity and budget.
- It helps companies realize business benefits quickly and provide justification for further investment.
- It allows for quick adjustments to respond to changes in business objectives.

Using these approaches, midsize companies can identify the people, processes and technologies required for their essential reporting, analysis and planning needs today. They can also plan a glide path for more advanced BI and planning capabilities as they grow.

IBM COGNOS EXPRESS: UNITING PEOPLE, PROCESSES AND TECHNOLOGIES

IBM Cognos Express is a single, integrated solution that supports the BI and planning requirements of midsize companies. It offers key capabilities to support the three pillars of a BI and planning framework – people, processes and technology.

People: IBM Cognos Express offers self-service reporting, analysis and planning tools to meet the needs of all business users from novice to expert. It provides easy-to-use tools, including Web-based interfaces, Microsoft® Excel® front-ends and dashboards, so users can generate their own reports and analysis.

Gartner’s framework recognizes that, “Increasingly, a broader set of users, in a variety of roles will be enabled to create analytics content. Leaders of the BI, analytic and PM initiatives need to foster this trend, encouraging more people to think like analysts.”³

IBM Cognos Express lets users work independently to access information quickly and create and modify their own reports and analysis without relying on IT resources. It presents data in a business context that business users understand while ensuring data accuracy and consistency throughout the organization. This allows executives, managers and contributors in different departments to spend more time analyzing data and formulating business strategy. They can adjust plans, budgets and forecasts to respond quickly and effectively to changing business conditions.

Processes: To make the recommended shift from tactical to strategic BI and planning, companies must start with a shared repository of trusted information. This includes a common set of dimensions, hierarchies and business rules to ensure consistency across all analytic processes.

³Gartner RAS Core Research Note G00166512 Gartner’s Business Intelligence, Analytics and Performance Management Framework, Bill Hostmann, Nigel Rayner, Gareth Herschel, 19 October 2009



IBM Cognos Express enables midsize companies to start with a solid foundation of consistent, factual information. This integrated solution also provides the flexibility to deploy additional analytic or planning applications as a company grows. Using a practical, incremental process, midsize companies can build the BI and planning solution they need while working with the same accurate data throughout the company.

Workflow is also an integral part of any process-centric application such as forecasting and budgeting. With an in-memory analytics server that natively supports write-back capabilities, IBM Cognos Express provides a complete system that bridges the gap between strategy and execution. Business users can rely on insights gained through an integrated reporting, analysis and planning solution to fulfill their vision for an information-driven business culture. This culture ties insight to action in all areas of a company – from sales and marketing to finance, operations and human resources.

Technology: IBM Cognos Express includes everything needed for immediate use in a preconfigured solution. It plugs into existing infrastructure with minimal impact and can be deployed in as little as an hour. A single, centralized Web-based console manages all administrative aspects of installation, deployment and ongoing management, using only a few simple mouse clicks. There is no extra burden on IT staff and no additional investment in software infrastructure.

As a midsize company's needs expand in the future, IBM Cognos Express also provides a path to add reporting, analysis or planning capabilities using the same familiar software application. There is no extra training required nor additional demands on constrained technical resources.

CONCLUSION

In Gartner's Business Intelligence, Analytics and Performance Management Framework, a key benefit of a framework is "to surface key decisions, integration points, gaps, overlaps and biases that business leaders and program managers may not have otherwise prepared for."⁴

In essence, midsize companies need a BI and planning framework to make critical strategic decisions based on the best available insights. They do this by putting the people, processes and technologies in place to support their reporting, analysis and planning needs.

IBM Cognos Express enables midsize companies to meet these challenges – both tactically and strategically – in one simple, integrated solution. It provides a solid platform for the people, processes and technology required to achieve a company's BI and planning goals.

Source: IBM

⁴Gartner RAS Core Research Note G00166512 Gartner's Business Intelligence, Analytics and Performance Management Framework, Bill Hostmann, Nigel Rayner, Gareth Herschel, 19 October 2009



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GARTNER'S BUSINESS INTELLIGENCE, ANALYTICS AND PERFORMANCE MANAGEMENT FRAMEWORK

This framework defines the people, processes and technologies 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

- Most enterprises use a combination of vendors, products and services to provide BI, analytics and PM solutions.
- Successful IT leaders recognize the diversity and interrelationships of the analytic processes within the enterprise and can address the needs of a diverse set of users without creating silos.
- A strategic view requires defining the business and decision processes, the analytical processes, as well as the processes that define the information infrastructure independently from the technology that will be used for implementation.
- The program management, technology and complexity of skills associated with the strategic use of BI, analytics and PM increases 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 BI, analytic and PM technologies will be needed to meet the diversity of 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.

ANALYSIS

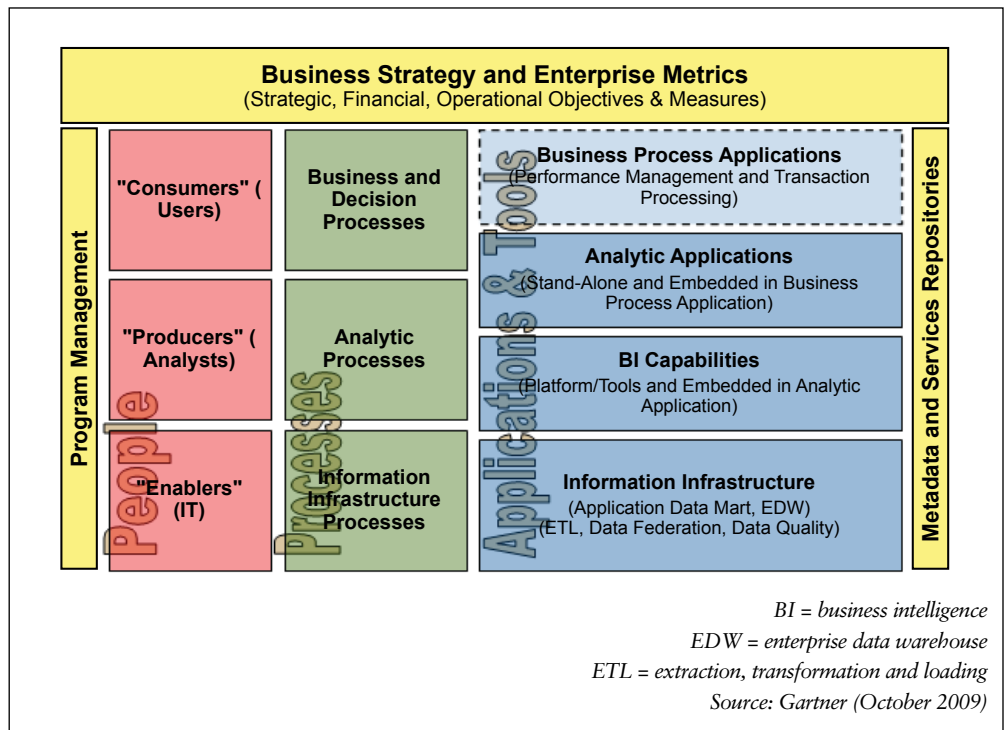
1.0 THE NEED FOR A FRAMEWORK

BI, analytics and PM initiatives have been the top technology priority for CIOs in Gartner's annual CIO survey since 2006. The recent economic uncertainty has only increased demands from business executives seeking new or better ways to "seek," "model" and "adapt" to improve performance at all levels of their organization. Unfortunately, business executives ask the leaders of their BI, analytics and PM initiatives to fulfill immediate reporting or dashboard requests that are often tactically focused. But leading enterprises are taking a strategic approach to these initiatives.



The program management, technology and complexity of skills associated with the strategic use of BI and PM increase dramatically as the scope of the initiative widens. No single vendor today can provide all the needed technologies, applications and services. Therefore, enterprises must use a combination of vendors and services to provide a comprehensive solution. Hence the 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, tools and technologies that should be aligned as part of a strategic solution. The BI, analytics and PM framework shown in Figure 1 updates Gartner's previous framework, which we originally published in 2006.

Figure 1. The Gartner Business Intelligence, Analytics and Performance Management Framework



1.1 DIFFERENCES BETWEEN THE 2009 AND 2006 FRAMEWORKS

The updated framework expands several aspects of our original 2006 framework based on three years of client interactions. The main differences are:

- Terminology:** There can be confusion concerning the terms "BI," "analytics" and "PM" because there is so much overlap and codependency between them. This report describes their similarities, but also emphasizes the specific connotation of each term (see section 5 of this report). 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.

- **Analytics:** The new version of the framework explicitly includes analytics along with BI and PM. BI, analytics and PM can each be undertaken as individual activities: it is possible to “do” analytics without BI or PM, to “do” PM without analytics or BI, and so on. The three elements often have significant overlaps in terms of people, processes, and tools and applications. The updated framework addresses the need to define the integration and alignment of the various components to get the best return on investment, and also helps users understand market terminology more clearly.
- **People and Process:** The updated framework adds greater focus on the people and process aspects of a BI, analytics and PM strategy. The original framework treated them simplistically as a single layer. Experience and case studies have shown that people and processes need to be addressed at each level of the framework.
- **Integration:** This new iteration of the framework recognizes the need to integrate with other frameworks, and with the business process platform in particular. The updated framework adds metadata and service repositories for enabling this integration. The top layer of the framework, Business Strategy and Enterprise Metrics, provides transparency and alignment with other essential business frameworks and programs.
- **Heterogeneity:** BI, analytics and PM will exist in multiple initiatives, and use numerous tools and information infrastructure components, throughout an organization. This new and updated framework recognizes the need to strike a balance between homogeneous architectural standards (that provide consistency and efficiency) and the need to have a variety of tools, applications and information models that are appropriately aligned and integrated to serve a diverse set of requirements.

2.0 START WITH BUSINESS STRATEGY AND ENTERPRISE METRICS

Enterprises should measure the success of BI, analytics and PM programs on how well they help the business achieve strategic objectives. Clearly defined business strategies and objectives are critical to the success of any BI, analytics and PM 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.

To succeed in executing this strategy, the enterprise 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 between different business metrics. The metrics framework will also help create links between 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. The BI, analytics and PM framework can still support subenterprise-level initiatives.

3.0 GIVE EQUAL CONSIDERATION TO PEOPLE, PROCESSES AND TECHNOLOGY

3.1 PEOPLE

Planners should consider a BI, analytics and PM initiative from the perspective of three groups of participants:

- Analysts who define and carry out domain-specific and ad hoc analysis.
- The users who consume analytic results and associated information for making decisions and managing performance.
- IT staff that define, develop and support the technology components.
- Increasingly, a broader set of users, in a variety of roles, will be enabled to create analytic content. Leaders of the BI, analytic and PM initiatives need to foster this trend, encouraging more people to think like analysts – 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.

3.1.1 Analysts

Analysts 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. Analysts 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. Analysts come in several varieties, depending on the types of analytic applications they use and the types of work they support.

Technological trends in 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 analysts. It will be necessary to put in collaborative processes and infrastructure to help analysts 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.



3.1.2 Users

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. Some users may be more than just consumers, such as the top executives who will help craft the performance metric framework. Users may also include operational workers, in addition to executives and managers. The users determine how well BI, analytics and PM initiatives succeed. IT 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 will 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?* Analytic applications turn data into the information the users 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 determine 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.

3.1.3 IT Enablers

This group includes the IT professionals, members of a BI competency center (BICC) and others who help design, build and maintain the systems that users and analysts use (see Note 1). Traditional IT roles such as project managers, data and system architects, and developers remain important. But BI, analytics and PM 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, IT enablers need business knowledge and the ability to work collaboratively outside their traditional area of expertise. This team needs a detailed understanding of how users and analysts work, what roles they play in processes and how those processes unfold. In short, the IT organization must find ways to bridge the gap between it and the business side. Gartner strongly recommends a BI competency center, 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 more rapid prototyping is a common characteristic of Gartner’s BI Excellence Award finalists.



Note 1

The Business Intelligence Competency Center

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. 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.

3.2 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.

3.2.1 Business and 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 infrastructure processes that support them) have largely been distinct and separate from the business and 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 lower than expected uptake of analytical technologies and processes among business process users.

BI and 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 facts, also cause problems. When BI and analytic capabilities are integrated into business processes, decisions are more repeatable, scalable, traceable and accurate. Properly implemented, BI and 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 BI and analytics add value to business processes is 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 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.

3.2.2 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 we 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 we 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 we performing?* For example, a statistical analysis requires a different process from that of an analysis of “customer verbatims.”
- *What data and models do we 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 time and money, but sometimes the analytic task requires augmenting models or building them from scratch.



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

3.2.3 Information Infrastructure Processes

The enterprise's ability to deliver BI, analytics and PM is built on the capabilities of its information infrastructure processes. Most enterprises do not have a program to coordinate and architect all the parts that make up the information infrastructure processes; therefore, these functions occur in separate processes – for example, the deduplication efforts that occur before data enters a data warehouse or the governance processes that manage customer data. Cross-functional teams, such as a BICC, can bridge any gaps between different information infrastructure processes and between these processes and PM, BI and analytics efforts.

3.3 TECHNOLOGY

Many IT organizations tend to focus on the technology of BI, PM and analytic applications and tools, but can struggle to get business users to adopt them widely. We have already mentioned that planners should define, implement and support these tools within a defined context of the sets of people and the processes they are to be associated with. Planners should also consider where these tools fit in relation to adjacent technologies, including business process applications, and the supporting information infrastructure. Users will more readily adopt PM, BI or analytic applications and technology if they fit naturally into their information and computing environment.

3.3.1 Business Process Applications

Two types of packaged applications support the management and execution of business processes:

Transaction-processing applications: These applications primarily support operational business processes, which have a clear progression from initiation to completion (for example: placing and fulfilling customer orders; requesting, ordering and paying for supplies; identifying a head count requirement; and recruiting and “onboarding” a new employee). Transaction-processing applications may exploit analytic applications and BI capabilities in the way they are packaged and sold to the user, but the transaction-processing capabilities are built using different technology and tools. Typical transaction-processing domains include ERP and CRM.

PM applications: These applications focus on management processes (for example, plan-to-perform) and have heavy analytic application content with limited transaction-processing capabilities. For example, corporate performance management (CPM) applications can support the entry of journals (similar to an ERP system) for the purposes of financial consolidation, and all these applications will have workflow capability of some sort to manage the management process. However, data structures are less normalized, and very often multidimensional



databases are used as they provide the aggregation and reporting capabilities that are needed by PM applications. Although PM applications often include some form of transaction processing, the transaction loads they deal with are light compared with transaction-processing applications. They are optimized for reporting, analyzing, forecasting and simulating.

Transaction-processing applications are typically sold as suites of packaged applications targeted at specific business process areas. In the same way, PM applications are sold as suites of analytic applications that support specific management processes. For example, CPM suites include five clearly defined functional areas, while sales performance management (SPM) suites include four clearly defined functional areas. Specific analytic applications in these areas have been (and continue to be) sold on a stand-alone basis, such as financial analytics in CPM and sales incentive forecasting in SPM. Extending the example, the applications in CPM and SPM suites together can support an end-to-end approach to managing performance.

3.3.1.1 Understand the Relationship to the Business Process Platform

Business process applications are governed by what Gartner defines as the business process platform (BPP), and have typically been managed by a different part of the IT organization than is responsible for BI, analytics and PM initiatives. However, the emergence of PM applications in the past two to three years as a specific application category has blurred the boundary between business process applications and BI. PM applications straddle both worlds: they are analytic applications, but they are packaged, sold, implemented and managed more like other business process applications. Also, business users and executives are the primary users of PM applications, rather than analysts or information management specialists.

Consequently, the IT staff responsible for BI, analytics and PM initiatives need to work closely with the team responsible for business process applications to ensure that the deployment of PM applications is complementary to the strategy for other business process applications. We have indicated this dependency with the dotted line around the business process applications box in the framework diagram (Figure 1). (Our previous framework did not explicitly recognize the need for a close relationship between BI, analytics and PM initiatives and business process applications.)

3.3.2 Analytic Applications

Analytic applications package BI 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 BI 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 applications can be bought as a configurable solution 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).

Analytic applications can support both PM and transaction-processing applications. Sales forecasting can be embedded in both an SPM initiative (for planning purposes), as well as in an inventory control and product-purchasing application (for the automatic reordering of products likely to have high sales volumes).

3.3.3 BI Capabilities

BI capabilities build applications that help enterprises learn and understand their business. A BI platform provides three categories of functions: integration, information delivery (for example, reporting and dashboards) and analysis (for example, online analytical processing [OLAP], predictive modeling and data mining). Information delivery is the core focus of most BI 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 BI platform, and minimize redundancy. Not all styles of analytic applications require a BI platform. Some may be directly embedded in a composite application or within a transactional or workflow application.

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 to decision making will require IT enablers to work more closely 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 BI capabilities is scenario modeling and simulation, as trade-offs (that is, between 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 BI 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.



3.3.4 Information Infrastructure

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 PM, BI and analytics applications get the right information in the right format to the right people at the right time. Information infrastructure makes explicit the interfaces with other parts of the organization and permits the automated exchange of data, documents and other forms of content.

4.0 PAY ATTENTION TO TWO RELATED AREAS

BI, analytics and PM initiatives do not exist in isolation from the enterprise's wider application and IT initiatives. The revised framework, therefore, includes two areas that must be considered across all levels of the framework and all the pillars: program management, and metadata and services repositories.

4.1 PROGRAM MANAGEMENT

Program management offers a mechanism for prioritizing projects and allocating resources within BI, analytics and PM 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 BI, analytics and PM 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 business and decision processes. Going this last mile is a key characteristic of industry-leading initiatives.

4.2 METADATA AND SERVICES REPOSITORIES

Metadata helps to 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. 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 between different pools of information. Metadata management can extend the reach of BI, analytics and PM 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, analytics and PM tools and technologies must have access to shared repositories of these services.

5.0 USE THE FRAMEWORK TO SCOPE BI, ANALYTICS AND PM 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. To help clients sort out the differences, Figure 2 maps the PM, BI and analytic domains to the framework. 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.

5.1 PERFORMANCE MANAGEMENT

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: users, business and decision processes, and business process applications. 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 report developed such a balanced scorecard spreadsheet, which 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 BI and analytic applications that the enterprise uses. The lack of integration between the major framework components will create organizational and data quality problems, which will compromise the value of the PM applications.

5.2 BUSINESS INTELLIGENCE

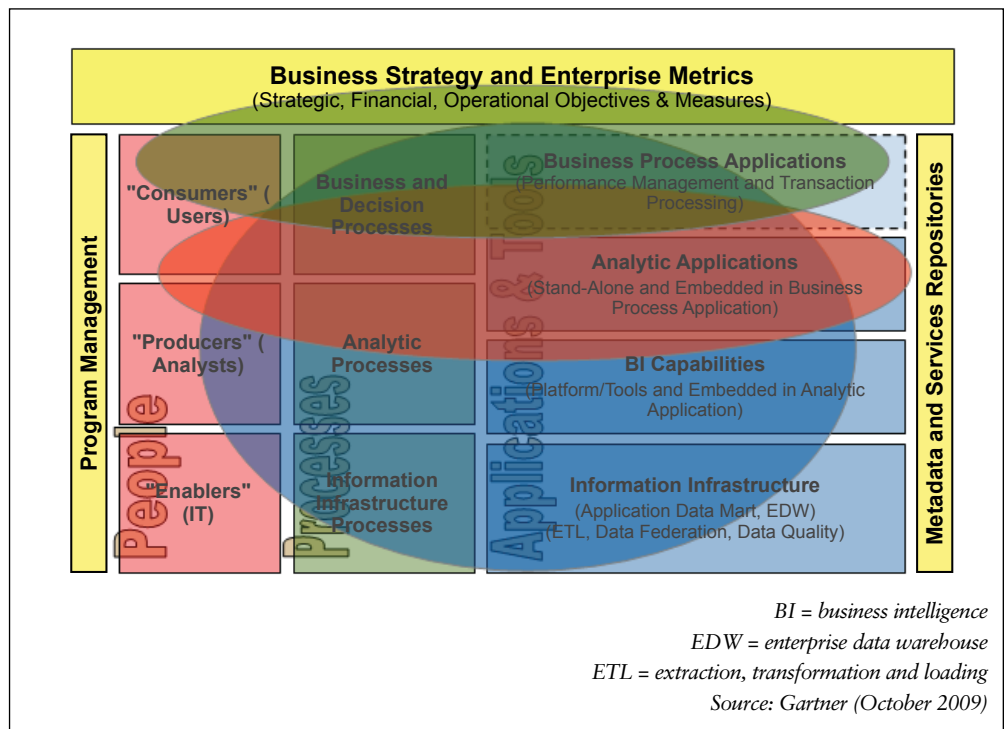
Gartner defines “BI” as an umbrella term that spans the people, processes and applications/tools to organize information, enable access to it and analyze it to improve decisions and manage performance.



We have made minor changes to the definition of BI in this version of our framework. We have replaced the terms applications, best practices, tools and infrastructure with people, processes, and applications/tools. This makes the definition correspond more effectively with our updated framework. We have also added the term “organize” in addition to “access” and “analyze” – given that BI applications often have unique information organization requirements; that is, the information is organized differently (for example, in a data warehouse or data mart) than, say, for operational or transactional applications.

BI initiatives focus on locating and accessing the information that’s most relevant to the consumers and to the analysts 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. Business users represent 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.

Figure 2. The Scope of Business Intelligence, Analytics and Performance Management





5.3 ANALYTICS

“Analytics” includes all but the bottom layer of the framework’s three pillars: users and analysts, business and decision processes and analytic processes, business process applications and analytic applications, and BI capabilities. 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. But analytics generally happens in support of a larger effort, such as PM and BI. For example, users who receive reports on product sales may want to know what causes profit margins to fluctuate and will, therefore, undertake an analytics project to find out. Thus, the elements that planners must pay attention to are less predictable for the analytics domain.

The market often uses analytics as a general term to refer to different aspects of the framework. 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 definition of the business opportunities and requirements. Analytics commonly means:

- The process of “doing” analysis in a particular domain, such as website analytics.
- Different analytical techniques, such as predictive analytics.
- An analytical application or solution, such as Siebel Analytics.

This research is part of a set of related research pieces. See “Roundup of Business Intelligence and Information Management Research, 4Q09” for an overview.

Gartner RAS Core Research Note G00166512, Eric Ouellet, Bill Hostmann, Nigel Rayner, Gareth Herschel, 19 October 2009







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