

Overcoming the Gap Between Business Intelligence and Decision Support

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Although the promise of better decision making is a top driver of business intelligence (BI) and performance management investment, information generated by BI systems and other decision inputs are rarely linked to business decisions and outcomes. This research note describes how resurrecting the notion of decision support systems will enable organizations to follow a more empirical, logical, transparent and (hopefully) superior decision making process.

Key Findings

- Most BI deployments emphasize information delivery and analysis to support fact-based decision making, but fail to link them to the decision itself, the decision outcome, to decision making best practices, or to the related collaboration and decision inputs. This reduces the quality and transparency of resulting decisions.
- The current global economic crisis will likely elicit regulatory and executive pressure for greater transparency and scrutiny over how organizations make decisions. These "top down" forces coupled with a more information-centric and results-driven culture will overcome individual and organizational resistance to transparent decision making.
- A variety of systems will be required to support different types of decisions, some more ad hoc and collaborative and others more automated, routine and process oriented.
- Until "out of the box" solutions are available during the next decade, organizations under intense pressure to provide greater decision support, management and transparency must plan to build custom solutions.

Recommendations

- Identify opportunities to pilot different decision support styles by creating a decision inventory that identifies and categorizes the top decisions that would benefit from automation, greater transparency, or from a tactical deployment of social software for collaborative decision making. Map decisions to performance and risk metrics to determine the impact on business processes from better decisions.
- Track decision transparency and disclosure requirements that may emerge from regulatory reform initiatives and accelerate the need for solution deployment.
- Begin a cultural transformation focused on developing decision optimization as a core competency. Start with a corporate education effort around decision making best practices and provide opportunities for decision simulation to socialize the value of

transparent decision making and create a common corporate vocabulary to drive a cultural shift.

- Vendors should recognize the eventual commoditization of pure measurement-driven BI software and focus product development efforts to deliver the next generation of decision support systems. These vendors should develop a cost structure that delivers low priced decision support software that can be deployed without a major customer investment. This is critical to gain customer traction and viral adoption in an emerging market.

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WHAT YOU NEED TO KNOW

Despite unprecedented information availability, the past decade suffered from several imperfect decisions made in both the public and private sectors. It is not enough to provide voluminous access to information and expect good decisions to be made as a result. Numerous social, cultural and educational factors influence how well individuals and organizations are able to improve their decision-making ability, but clearly information systems have a significant impact. With this premise, Gartner has written a set of reports — of which this is one — that describe how the information technology community, both vendors and users, could play a decisive role in optimizing decision making in the next decade. The other reports in the series are:

1. "The Rise of Collaborative Decision Making" which predicts that a new style of decision support system — CDM — will emerge in 2009 that combines social software with BI.
2. "Automating Decisions With Intelligent Decision Automation," which describes intelligent decision automation (IDA), an emerging decision support style that embeds BI and analytics into applications to automate and optimize high-volume, highly predictable and operational decisions.
3. "The Future of Optimizing Decisions With Decision Hubs," which describes how a new style of decision support system, called a decision hub, is needed as a system of record for decisions to manage the complex decisions made throughout an organization.

ANALYSIS

As global markets and extended enterprises become increasingly intertwined and complex, making decisions by relying solely on "gut" feel or past experience can put an organization at tremendous risk. Transparency into how a decision was made and why becomes increasingly important not only to dissect past mistakes, but to learn and evolve from successful decisions. Optimized decisions share some common characteristics. Optimized decisions are transparent and decision makers are accountable; the situation is accurately understood, changes in assumptions and course of action are rapid; decision makers have considered a diversity of opinions, and there's a way to capture and learn from best/worst decision practices. However, decision making in most organizations today is a highly manual and disconnected process that lacks transparency. In the wake of a string of disastrous decisions leading to the current global economic crisis, there will likely be more pressure for regulations and on executives for greater scrutiny and accountability over how organizations make decisions that goes beyond reporting and disclosure. In the coming decade and beyond, the software industry and organizations need to deliver a variety of styles of decision support systems to address these requirements.

While collaboration, commentary, and in some cases social software capabilities, such as blogs, are making their way into in many BI platform tools and corporate performance management (CPM) applications, such forms of collaboration are attached to information delivery (for example, a specific report, dashboard, budget or forecast) rather than to a decision or decision process. These BI collaboration capabilities are tied to the BI artifact as opposed to a decision artifact and are missing an environment for supporting decision making.

With a tough global economic environment driving increased compliance and transparency requirements and cost cutting pressures across the board, but particularly on travel, managers and analysts in all organizations will have a greater need for a virtual collaborative decision support environment. This environment would allow decision makers to remotely collaborate in discussions around assumptions, incorporate relevant BI analysis and other decision inputs, and explore and gain consensus around the pros and cons of alternative courses of action using a

decision support framework. Connecting and capturing this thread with decisions made and outcomes would give organizations greater transparency into how decisions are made, so that they can identify trusted decision makers and reuse successful decision patterns that represent best practices across a broad range of highly structured and ad hoc decision processes.

The trend toward more optimized decisions has begun with the emergence and early adoption of IDA support systems, where BI is embedded in applications along with business rules for operational (process-oriented, run type), highly predictable, highly structured, repeatable and automated decisions. Loan approvals, fraud detection, Web-based real-time offers and dynamic pricing are examples of decisions that are well supported by IDA applications.

While operational decisions can be optimized by IDA, the decision making process for executives and knowledge workers is largely manual. This manual process creates a market opportunity for decision support systems that link decision making best practice, BI and decision input and outcomes in a decision making environment for nonroutine, iterative, complex, high value, strategic decisions. See "A Simple Framework to Translate IT Benefits Into Business Value Impact" for more details on the run, grow, transform model.

In most companies, line of business managers and knowledge workers make "grow the business" types of decisions by using traditional BI reporting, analysis and dashboarding tools to identify trends analysis, exception highlighting, root cause analysis and so on. This is the most common application of BI for decision making today. In a typical knowledge worker decision scenario, a sales manager may determine from a BI alert and subsequent dashboard analysis that sales in a particular region are lower than expected. The sales manager e-mails colleagues with the linked report to alert them to the problem and ask for input. During the e-mail thread, the sales manager and the ad hoc decision group learns that a competitor is targeting a specific customer segment in the region with a price promotion. The e-mail discussion may be followed by an in-person meeting, conference call or Web conference to discuss the problem. The group may also bring in additional external information about the competition and the customers. They will likely "white board" options and make a decision about the corrective course of action. Based on the collaboration with colleagues and assembled information, the sales manager decides to initiate his or her own price promotion and switching campaign. The following quarter, sales in the region are back on track, but the details of the decision, the input and the outcome are lost along with any best practices that may have been developed to address the problem and that could be applied to similar situations in the future. Short of piecing this decision thread together manually, the decision thread becomes a black box. How the decision was made and whether or not the outcome was successful is lost along with any effective or ineffective practices that may have been followed.

Other analyst-driven "grow" types of decision processes that involve discovering new patterns in data, such as drug discovery, oil exploration and new product development may be structured, but decisions are highly iterative based on high degrees of collaboration combined with the search, profile and analysis of information which may be structured or unstructured and internal or external to the enterprise. There is currently no structured decision support system that provides an automated audit trail or linkage between analysis, outcomes, collaboration and these types of decisions.

Strategy-driven analytic applications, such as planning, budgeting, forecasting and pricing optimization all embed some business rules and decision logic into the workflow of the application and they also offer some form of predictive capabilities that let users model different scenario outcomes. However, they require highly adaptive human input into the final decision. Decision points are typically tied to workflow built into the analytic application and many provide a detailed audit trail of how various data items have been changed, and by whom, along with note/commentary capabilities. Nevertheless, the final decision, outcome as well as collaboration

and additional input outside the application are not linked to the analytical application or automated. Therefore, it is difficult to optimize the human interaction piece of the decision or later audit or assess decisions and adapt them based on learning.

Knowledge workers make a slew of large and small decisions which are lost every day. Examples include: which customer segments should receive which discounts and offers, should we make this new business investment, should we hire more staff, what new features should we add to our product, what are the best launch venues and activities for our new product, and what should be the new forecast based on variance analysis? Decisions to take corrective action, analyze and choose from options, identify new opportunities, determine root causes, assess or respond to changes in the competitive environment are the life blood of knowledge worker activity and are ripe for optimization through a convergence of technologies such as social software, BI and decision frameworks, which are not available as out of the box decision support applications today. Until these solutions are available, organizations should pilot applying these capabilities to select high-value decisions.

Gartner is predicting that during the next decade, technologies and business practices will converge to enable collaborative decision making and decision hub decision support systems (other styles may also emerge) that address this un-met need and market opportunity. These new decision support systems should provide collaborative decision support environments that bring decision makers, influencers and information together to make better, closed loop decisions with a high degree of transparency. Organizations will need to initiate a cultural shift and prepare for regulatory and top down pressure to support more transparent decision making. At the same time, organizations should begin to identify opportunities to pilot homegrown intelligence decision automation, collaborative decision making, and decision hub support systems until out of the box solutions are available.

This research is part of a set of related research pieces. See "Roundup of Business Intelligence and Information Management Research, 2Q09" for an overview.

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