



Using Collaboration to Extend the Reach of BI

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HIGHLIGHTS

1. Information consumability is the key to pervasive business intelligence (BI)
2. Information producers are the vital link in making information more consumable
3. Collaborative BI empowers information producers
4. Collaborative BI combines BI and collaborative computing
5. Collaborative BI changes the roles of IT and business users

INFORMATION CONSUMABILITY IS THE KEY

Most CIOs see BI as the way to improve competitiveness

Market studies show that the use of BI continues to be a high priority for organizations. A recent IBM worldwide study¹ of 2,500 CIOs, for example, shows that more than four out of five (83 percent) of the CIOs surveyed identified BI and analytics as the way they will enhance their organization's competitiveness.

However, BI has limited user reach in many organizations

An Accenture study² of some 250 executives, however, showed that although nearly three-quarters (72 percent) of the companies surveyed said they are working to increase their company's use of business analytics, some 40 percent of major business decisions in those companies are still not based on such information. Why does BI analytical information have such limited reach?

The issue is not technology usability, but the information itself

Given the maturity of BI technologies, it is difficult to make the case (as many vendors and analysts often do) that the limited reach of analytical information (sometimes referred to as *pervasive business intelligence*) is simply due to the usability of the technologies and tools. Rather, it seems clear that the key to improving decision support lies in improving the analytical information itself.

Analytics need to be made more consumable by a larger user audience

To increase the use of information-driven decisions, analytical information needs to be made more consumable to a broader audience of business users. This requires existing IT-driven analytical approaches to be improved to make analytical information easier to *find* and *understand* by more users.

INFORMATION PRODUCERS ARE THE VITAL LINK

Some users consume information while others also produce it

There are many types of workers in organizations, ranging from senior executives to the task workers that support the day-to-day operations of the business. All of these workers use information to make decisions in their jobs. Some *consume* information, while others also *produce* information for use by others.

¹ ["IBM Global CIO Study: The New Voice of the CIO"](#)

² ["Competing Through Analytics"](#)

Information consumers want guidance and recommendations when making decisions

Many of the users who consume information do not have the time, experience and/or inclination to produce, analyze or synthesize information for making decisions. Instead, they simply want to quickly find relevant information and make fast decisions. These task workers are poorly supported today because enterprise BI analytics often lack the business context these users need to evaluate the relevancy of information. We will call these workers *information consumers*.

Information producers are the business innovators of an organization

There is another class of workers that we will call *information producers*. These users explore and analyze business data, often enhancing enterprise BI analytics by adding additional business context to the analyses. These users both consume and produce analytical information. Information producers are the modern version Peter Drucker's *knowledge workers*, a term he first coined in the 1960s³ to describe people in the workplace who add value by producing knowledge, ideas and information that others use for input.

Frustration with enterprise BI leads to many information producers building their own solutions

Although information producers represent only a small percentage of information workers, they produce most of the organization's context-rich analytical information. These users frequently become frustrated by the inability of the enterprise BI environment to allow them to enhance, tailor, remix or annotate *official* analytical information or the analyses that produce that information. The result is that they create their own solutions using workgroup products such as spreadsheets. These user-built solutions reside outside the domain of enterprise BI and are rarely leveraged by other information producers. Also, information consumers lack a way of accessing the context-rich information produced by these solutions when making their own decisions.

Information producers are vital to extending the reach of BI

If the key to pervasive BI is adding business context to analytical information to make it more consumable, then information producers are the vital link in achieving this because they can provide that context. The result is a better understanding of business processes, faster decision making, motivated business users, and business innovation and creativity.

EMPOWERING INFORMATION PRODUCERS

Collaborative computing helps unlock enterprise BI

Analytical and collaborative computing can be combined to form a *collaborative BI* environment that empowers information providers to unlock enterprise BI and extend the use of informational analytics to a wider audience inside, and also possibly outside, the organization.

Collaborative computing allows information providers to add knowledge to analytics

Combining business analytics with collaborative computing allows information producers to add business knowledge, and thus business context, to the enterprise BI analytical environment. This knowledge makes relevant analytics easier to find and understand with the result that they become more actionable by information consumers. Collaborative BI thus improves the value and influence of information producers in the organization, which in turn increases the overall impact of BI in business operations.

³ Peter Drucker. "The Effective Executive: The Definitive Guide to Getting the Right Things Done" Harper Business Essentials (1967)."

Enterprise BI solutions offer little in the way of collaborative capabilities

Existing enterprise BI solutions provide some features for adding business context to analytical information. Examples here include business glossaries (for defining the business meaning and usage of analytics) and data lineage reporting (for documenting the data sources and data transformations used to produce the analytics). In addition, performance management capabilities allow analytics to be tied to business plans and goals and enable the creation of actionable analytics through the use of scorecards, alerts and recommended actions. Most of these contextual extensions, however, are IT-centric and provide little in the way of user-driven collaborative capabilities.

Collaborative BI adds new types of contextual information

One of the benefits of collaborative BI is that direct user collaboration allows information providers to add new types of contextual information. Examples of capabilities here include:

- Business taxonomies and tagging/folksonomies
- Quantitative information quality metrics via ratings and expert commentary and opinions (blogs, annotations, etc.)
- Links to related and trusted information sources (bookmarks, information collections, etc.)
- Communities of interest

Adding contextual information isn't the responsibility of enterprise IT

These types of supplemental contextual information cannot easily be created by the enterprise IT organization. This is due partly to resource constraints, but also because enterprise IT typically does not have business expertise or experience to add this information. It can also be argued that this task is not their responsibility anyway. The rationale and business case, therefore, for collaborative BI is that business users need the ability to directly add contextualized business knowledge to analytics without having to go through the enterprise IT organization.

COMBINING BI AND COLLABORATION

Three main tasks involved in driving the decision-making process

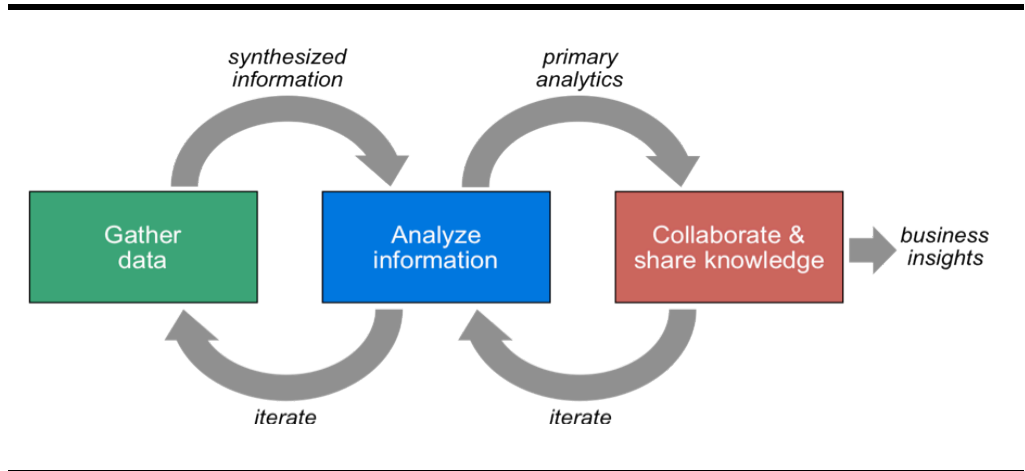
Figure 1 illustrates how data, information and knowledge flow through a collaborative BI environment. The three main tasks illustrated in the figure are performed iteratively to drive the business decision-making process.

- *Gather Data*: source data is collected and synthesized into information ready for analysis.
- *Analyze Information*: where information is analyzed and primary analytics are produced.
- *Collaborate and Share Knowledge*: where analytical results and business insights are shared and discussed, additional contextual information is added, and inspiration for new and improved analyses is generated.

These tasks combine BI with collaboration

These three tasks combine BI with collaborative processing to create an integrated decision-making environment that extends and enhances existing enterprise BI solutions.

Figure 1.
Data, information and knowledge flow in collaborative BI



Several new capabilities are required in a collaborative BI environment

The infrastructure used to support the end-to-end decision support processing shown in Figure 1 requires several important capabilities over and beyond those supported by a more traditional BI environment:

- Federated data access to data sources beyond data warehousing and relational databases
- Interactive analytical workflows that connect and track the tasks involved in gathering data, analyzing information, and sharing knowledge
- Social computing techniques for adding knowledge to the decision-making environment, creating decision-making workflows, managing user communities, and supporting the searching of information
- A development environment that enables BI-related objects to be encapsulated into web-delivered widgets

It is not easy to add collaborative BI to existing products

The table in Figure 2 shows examples of technologies that support the capabilities above and contrasts them with those provided by existing enterprise BI products. Adding these capabilities to older monolithic BI products involves significant redesign and development work. It is likely, therefore, that existing BI vendors and new boutique vendors will instead add new tools to the analytical processing environment that work alongside and leverage these existing BI solutions.

Collaborative BI solutions must be integrated with existing information worker collaboration tools

It is also important that vendors of collaborative BI products leverage and integrate their products with existing collaborative and social computing technologies used by information providers and information consumers. Examples here include office and workgroup products, blogging and instant messaging tools, and the rich web user interfaces built using technologies such as Ajax and Adobe Flash.

Figure 2.
Technologies for building traditional BI and collaborative BI solutions

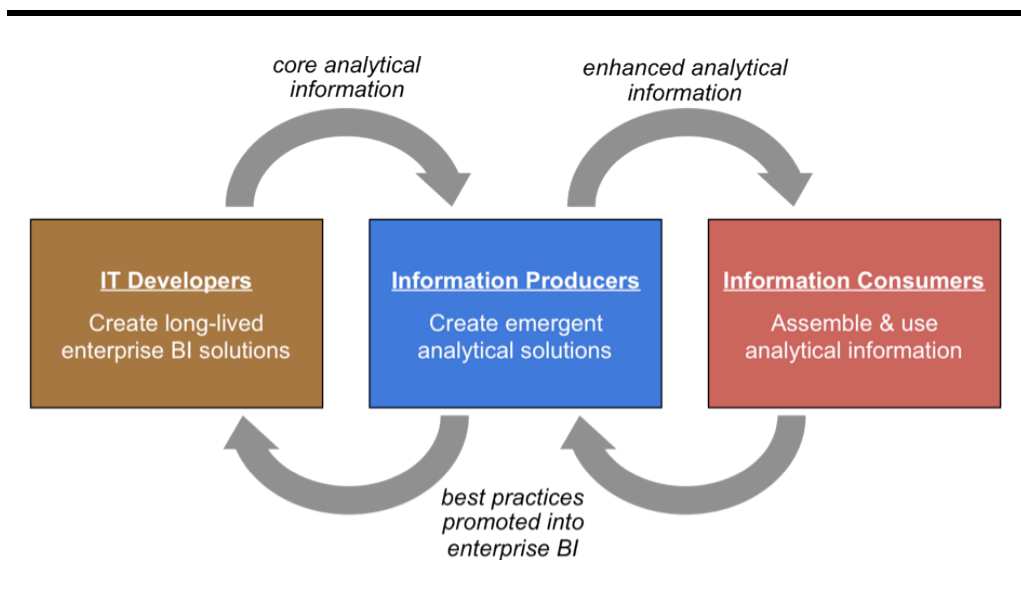
Decision-Making Task	Current BI Processing	Collaborative BI Additions
Gather Data	Data warehousing & data marts	Enhanced data federation
Analyze Information	Batch & interactive BI tools Standalone spreadsheets	Interactive analytical workflows
Collaborate & Share Knowledge	Reports & dashboards Scorecards Alerts & recommendations Business glossary Data lineage Shared directories Portals	Folksonomies Blogs Annotations Bookmarks Information collections Ratings Decision-making workflows Communities Search Web widgets

THE CHANGING ROLE OF IT AND BUSINESS USERS

Collaborative BI changes the role of enterprise IT

Collaborative BI changes the way IT develops analytical applications and interacts with information workers. Figure 3 illustrates this new approach to development and shows how IT and information workers work together to develop collaborative BI solutions.

Figure 3.
Analytical application development in a collaborative BI environment



The role of IT is to build and deliver core analytics to information providers

In a collaborative BI environment, the role of enterprise IT is to build and deliver core analytics to information producers. Information producers then tailor and enhance these analytics so that they become more consumable by other information producers and consumers. In this manner, enterprise IT plays the role of information wholesaler, and the information producer plays the role of information reseller creating value-added analytical information tailored to specific business needs.

IT also captures popular user-created emergent solutions and promotes them into enterprise BI

Information providers also create original analytical information when enterprise IT does have the budget, resources or inclination to develop them. A certain proportion of these *emergent* solutions will become popular with other information workers, indicating best practice approaches. IT monitors and captures these best practices so that they can be promoted into the enterprise BI environment when appropriate.

SUMMARY

The reach of business analytics is limited at present

The reach of BI is limited at present by the lack of rich contextual business information that allows less experienced users to effectively locate and use analytical information for business decision making.

The reach of BI can be improved by making analytical information more consumable

To solve this problem, and increase the reach of BI for decision making, analytical information needs to be made more consumable by a broader audience of business users. This requires the existing IT-driven BI environment to be enhanced to make analytical information easier to *find* and *understand* by more users. These improvements can be achieved through the use of a collaborative BI infrastructure that enables information providers to add business knowledge and value to analytical information and publish the results to other information workers.

About BI Research

BI Research is a research and consulting company whose goal is to help companies understand and exploit new developments in business intelligence, data management, and collaborative computing.

About Lyzasoft

Lyzasoft develops software that blends business intelligence and enterprise social features, enabling users to create collaborative analytical solutions. More information is available at www.lyzasoft.com.
