

# Collaborative Business Intelligence

Optimizing the Process  
of Making Decisions

**BY WAYNE ECKERSON**

*Director of Research, Business Applications and Architecture Group, TechTarget, December 15, 2011*

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# Executive Summary

**COLLABORATION AND BUSINESS INTELLIGENCE (BI)** are beginning to intersect. Most BI professionals recognize that collaboration can improve analysis and decision effectiveness and plan to consider collaboration features when selecting their next BI tools. Adoption rates for collaboration software—whether standalone collaboration platforms or collaboration features built into BI and other applications—should begin to climb in the near future.

This report evaluates the role of collaboration in a BI environment and surveys BI professionals about their interest in and adoption of collaborative capabilities. Here are some key findings:

- **Attitudes.** Eighty-seven percent of BI professionals believe collaboration tools can have a positive impact on analysis and decision-making activities.
- **Product selection criteria.** Fifty-eight percent of BI professionals plan to evaluate collaboration features when they purchase their next BI tools, up from 16% who evaluated collaborative capabilities when selecting their current BI tools.
- **Implementation.** Less than half (44%) of companies have implemented collaborative BI capabilities, while 67% have implemented a standalone collaboration platform. More than three-quarters of the latter group count Microsoft SharePoint as their collaboration platform.
- **Usage.** Twenty-five percent of users who have access to collaborative BI features don't use them.

***Fifty-eight percent of BI professionals plan to evaluate collaboration features when they purchase their next BI tools.***

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- **Traditional approaches.** The most popular forms of collaboration are phone calls, meetings and email.
- **Favorite features.** The top collaboration features that BI professionals want in a BI tool are annotations (67%), threaded discussions (62%) and shared workspaces (60%).
- **Users.** Power users are more than twice as likely as casual users to use collaborative BI features and about 30% more than likely to use collaboration platforms.

**BI lifecycle.** The report also extends the traditional BI lifecycle (collect, analyze, decide, act) to include collaboration subcycles at each step and an additional review step at the end. During the review process, the people who participated in a decision reflect on the process by which the decision was made, including every step of the BI lifecycle, to see how it can be improved.

**Collaboration styles and characteristics.**

There are two drivers of collaboration that are relevant for this report: data-driven collaboration and decision-driven collaboration. In data-driven collaboration, anomalies or trends in the data cause users to alert others and possibly discuss the situation and decide on a course of action. In decision-driven collaboration, a team comes together to undertake a project or make a decision. BI tools with collaboration features are best suited to data-driven collaboration, while standalone collaboration platforms are ideal for decision-driven collaboration.

Finally, the report dissects the different ways that business users interact and maps collaboration features to each. For instance, collaboration can be unidirectional or bidirectional, synchronous or asynchronous, manual or automated, formal or informal, and internal or external. Understanding how users collaborate helps organizations select the correct collaboration features and tools to implement. ■

*Understanding how users collaborate helps organizations select the correct collaboration features and tools to implement.*

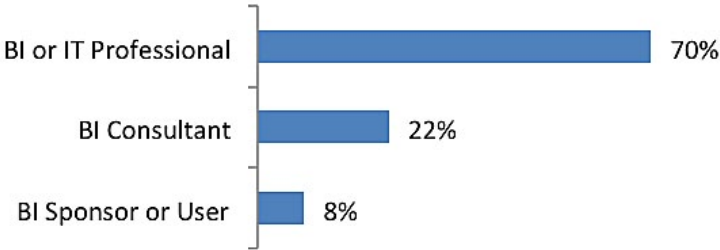
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# Research Background

**THE PURPOSE OF THIS** report is to describe the role of collaboration in a BI life-cycle and gauge the interest in collaboration among BI professionals and end users. The report will discuss the benefits and challenges of collaboration when analyzing data and making decisions. It will also discuss the characteristics of collaborative interactions and map these to collaborative features in BI tools and general-purpose collaboration platforms.

The research is based on interviews with BI practitioners, briefings with BI providers, including sponsors of this report, and a survey of BI professionals. The five-minute survey was promoted to the BI Leadership Forum, an online group of about 1,000 BI directors and managers, and my Twitter followers (2,000-plus people) during January 2012. The survey was started by 304 people and completed by 277 people. Survey results are based on 238 respondents who completed the survey and indicated their positions as “BI or IT professional,” “BI sponsor or user” or “BI consultant.” Responses from those who selected a position of “BI vendor” or “Other” or who didn’t complete the survey were excluded from the results.

Among this set of qualified respondents, most are BI or IT professionals (70%) from large companies with more than \$1 billion in annual revenues (42%). The industries with the highest percentage of respondents are consulting (17%) and software (16%) (see **FIGURES 1, 2 AND 3**). ■



**FIGURE 1.**  
Demographics:  
Respondent Profile

BASED ON 238 RESPONDENTS (BI LEADERSHIP FORUM, JANUARY 2012, [WWW.BILEADERSHIP.COM](http://WWW.BILEADERSHIP.COM))

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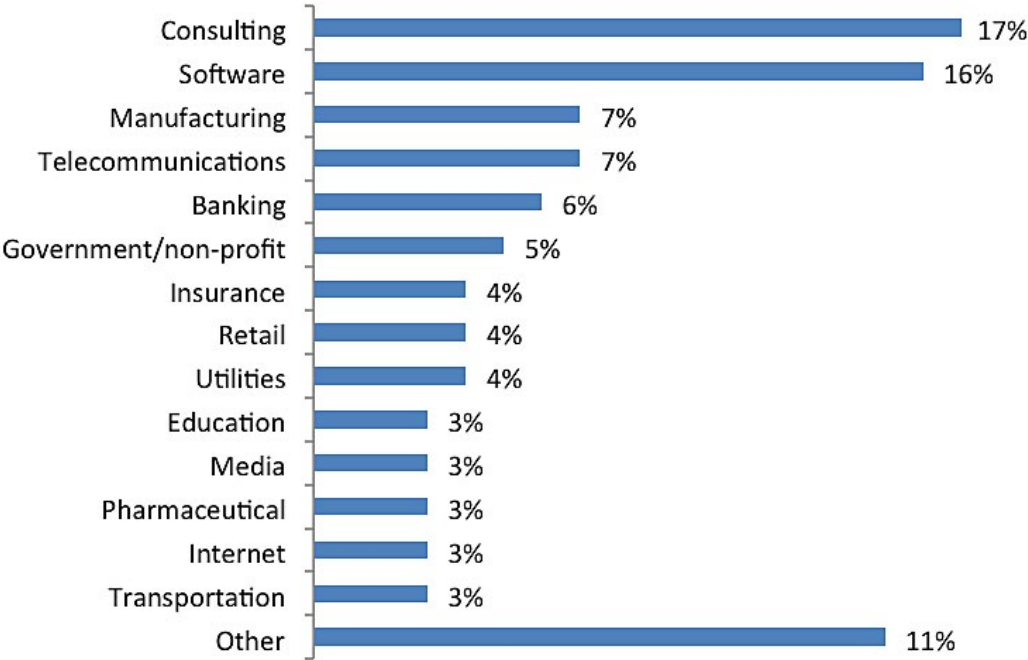
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**FIGURE 2.**  
**Demographics: Company Size**



BASED ON 238 RESPONDENTS (BI LEADERSHIP FORUM, JANUARY 2012, [WWW.BILEADERSHIP.COM](http://WWW.BILEADERSHIP.COM)).

**FIGURE 3.**  
**Demographics: Industries**



BASED ON 238 RESPONDENTS (BI LEADERSHIP FORUM, JANUARY 2012, [WWW.BILEADERSHIP.COM](http://WWW.BILEADERSHIP.COM)).

# Why Collaboration?

**PEOPLE DON'T ANALYZE** data in a vacuum, especially when there are anomalies in the data that bear further discussion and action. Nor do they make decisions in a vacuum; they share ideas, collect information, deliberate options and plan tactics. A respectful give and take of ideas and information leads to better decisions, plans and actions.

Most of the time, people collaborate with peers in a two-way exchange of information. Today, this sharing typically occurs by telephone, face-to-face meetings or asynchronously by email. But fanned by the flames of social media sites like Facebook, Twitter and LinkedIn, companies now are exploring ways to foster peer-to-peer collaboration online. Clearly, the world of social media is moving from the consumer world to the corporate office.

And vendors are eager to foster this transformation. BI vendors, such as Tibco, Jaspersoft, Yellowfin, IBM Cognos, SAP BusinessObjects, Lyzasoft, Panorama and others, now embed collaboration features into their BI products. Software titans, such as SAP, IBM, Oracle, Microsoft and Salesforce.com, now sell general-purpose online collaboration platforms that serve as virtual water coolers and conference rooms where users can informally and formally share information and ideas on any topic. Even service providers, such as itelligence Group, a specialist in SAP and BusinessObjects implementations, now offer consulting services on collaboration.

By all accounts, 2012 will be a breakout year for business collaboration software. One positive sign is that Jive Software, a niche, or “pure-play,” collaboration platform vendor, went public in December 2011, raising more than \$13 million. In addition, interest in BI collaboration capabilities has never been stronger among BI professionals. Our research shows that an overwhelming

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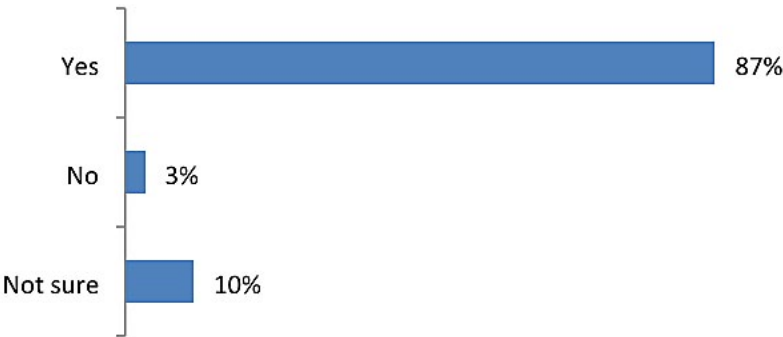
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percentage of BI professionals and users (87%) believe collaboration tools can improve analysis and decision making (see **FIGURE 4**).

Moreover, when asked whether they will consider collaboration capabilities when selecting future BI tools, a substantial majority of BI professionals said yes (58%). This is almost a fourfold increase from the percentage of BI managers who said they considered collaboration capabilities when evaluating their current BI tools (15%) (see **FIGURE 5**).

FIGURE 4.

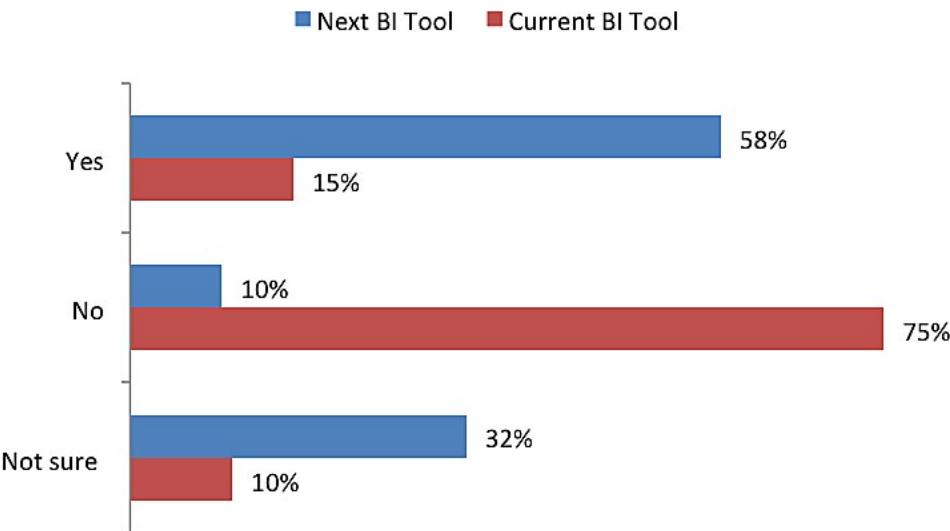
“Do you think collaboration tools can improve analysis and decision making?”



BASED ON 238 RESPONDENTS (BI LEADERSHIP FORUM, JANUARY 2012, [WWW.BILEADERSHIP.COM](http://WWW.BILEADERSHIP.COM)).

FIGURE 5.

“Is collaboration part of the criteria used to select your BI tools?”



BASED ON 238 RESPONDENTS (BI LEADERSHIP FORUM, JANUARY 2012, [WWW.BILEADERSHIP.COM](http://WWW.BILEADERSHIP.COM)).

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Many BI professionals are starting to recognize the benefits that collaboration offers users. “When collaboration occurs, the quality of decisions greatly increases and is more impactful,” said Anthony Marino, BI group manager for Panasonic Corporation of North America. Dan Erasmus, a BI director at iSPartners, a business technology consultancy in South Africa, said, “Collaboration greatly improves the speed at which decisions are made and the quality of those decisions.”

Mike Masciandaro, director of BI at Dow Chemical, sees many ways that collaboration can improve the delivery of information and insights to his 4,000 BI users. “Today, users need to figure out with whom to share their insights, but I’d like the tools to facilitate collaboration so that users can instantly connect with others who have similar roles and interests using instant messaging or some other online communications mechanism. That way, common insight would be created much faster.”

Masciandaro also thinks users should be able to rate and comment on reports, save reports as favorites, and view basic statistics about reports, such as number of views, “likes” and ratings. This information gives both users and BI professionals a better idea of report usage, and more important, what users like or dislike about them. This type of informal interaction helps winnow out unneeded reports from the report catalog. “If I have 40 reports in this one area, we can get that down to 10 reports by looking at the ratings. Users don’t want more reports; they want fewer, better reports,” he said.

**eBay.** While most BI teams are just envisioning the benefits of collaborative BI, eBay is already doing it. The world’s largest online marketplace built its own collaboration platform for business analysts and others involved in analytics at the company. The focus here is a smart one since business analysts are more likely to adopt collaboration tools than any other group in an organization, according to our research (see [“Users: Power Versus Casual,”](#) page 27).

***“Collaboration greatly improves the speed at which decisions are made and the quality of those decisions.”***

— DAN ERASMUS, BI DIRECTOR  
AT ISPARTNERS



Called DataHub, eBay's collaboration platform helps business users find, author and share analytical content so they work together more efficiently. For example, analysts can embed content from eBay's various BI tools into shared workspaces and then discuss that content. Users can rate, tag, follow and comment on content as well as view what the rest of the community is doing via an activity stream (see **FIGURES 6 AND 7**). Unlike some collaboration tools that gather virtual dust from disuse, eBay's DataHub has thousands of users and hundreds of active groups, according to Kiril Evtimov, director of BI platform and architecture at eBay. "With DataHub, everyone in the organization can send out questions and get help from experts within minutes. It's a great place for them to find and share information and establish contacts with other analysts who are working on similar challenges."

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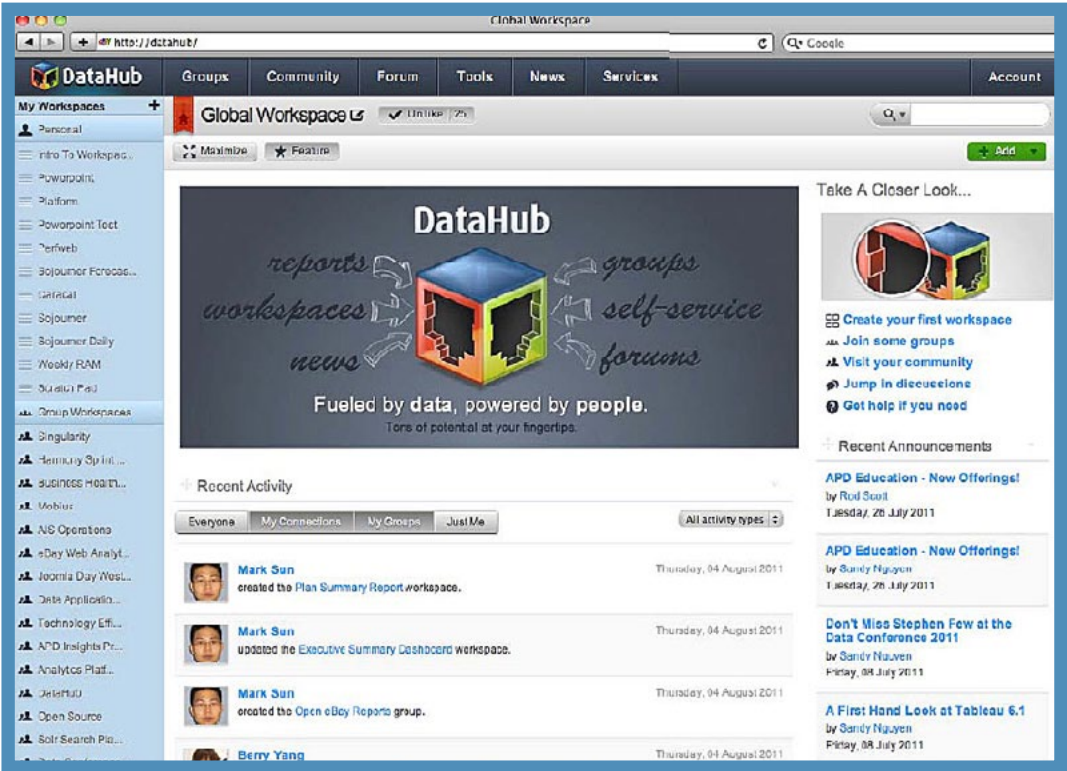
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FIGURE 6.

Home Page of eBay's DataHub Collaboration Platform

The home page of eBay's custom-built DataHub collaboration platform for business analysts contains workspaces (left), an activity stream (center), search (top right), "like" and "unlike" buttons (top) and personalization features.



## DataHub's Workspace and Content Sharing Features

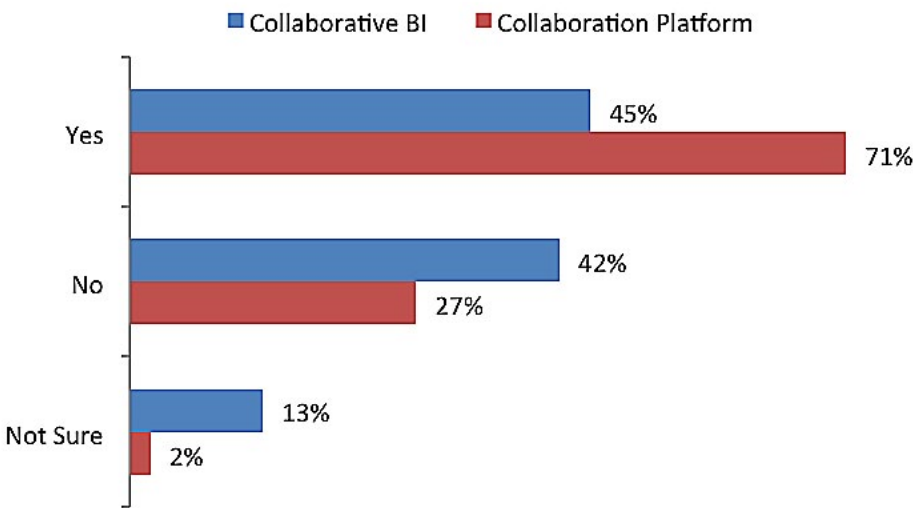
## ADOPTION TRENDS

Unfortunately, eBay is an outlier when it comes to online collaboration. Most companies have yet to implement and use collaboration software. That's largely because little has been available until recently, especially for BI tools. Our research shows that 45% of companies have implemented BI tools with collaboration features and 71% have implemented a standalone collaboration platform, usually Microsoft SharePoint (see **FIGURE 8**).

Collaboration platforms are more heavily used, largely because Microsoft SharePoint—a portal product with built-in collaboration capabilities—is a mature product that many companies have deployed for many years. More than three-quarters of our respondents count SharePoint as their standalone collaboration platform.

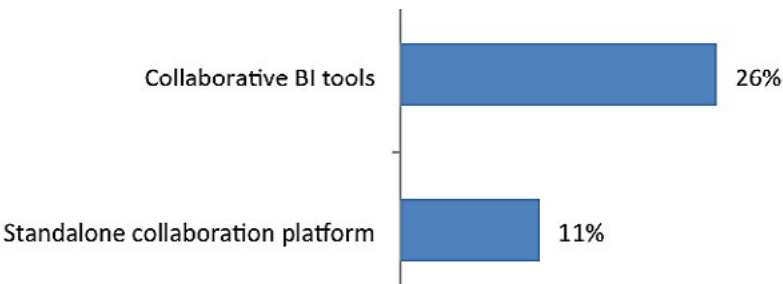
But even when companies make collaboration tools and capabilities available, there’s no guarantee that users will use them. More than a quarter of BI professionals (26%) say their users don’t use available collaboration features, while 11% say they don’t use available standalone collaboration platforms (see **FIGURE 9**).

**FIGURE 8.**  
“Have you implemented collaboration software?”



BASED ON 238 RESPONDENTS (BI LEADERSHIP FORUM, JANUARY 2012, [WWW.BILEADERSHIP.COM](http://WWW.BILEADERSHIP.COM)).

**FIGURE 9.**  
Percentage of Users Who Don’t Use Available Collaboration Features



BASED ON 101 BI PROFESSIONALS WHOSE COMPANIES HAVE IMPLEMENTED A COLLABORATIVE BI TOOL AND 155 BI PROFESSIONALS WHOSE COMPANIES HAVE IMPLEMENTED A STANDALONE COLLABORATION PLATFORM (BI LEADERSHIP FORUM, JANUARY 2012, [WWW.BILEADERSHIP.COM](http://WWW.BILEADERSHIP.COM)).

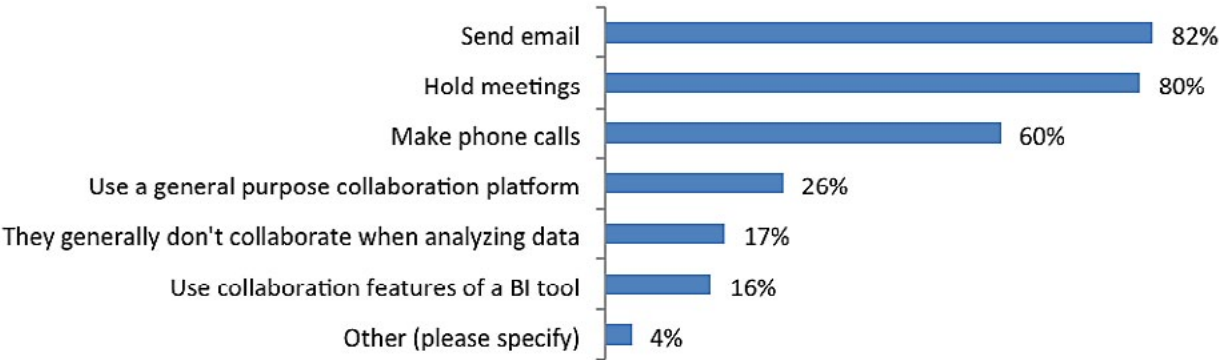
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**Traditional collaboration.** Although BI users haven't yet widely embraced collaboration tools, this doesn't mean they aren't collaborating. Most simply use tried-and-true collaboration features such as email, meetings and phone calls. According to our research, only 16% use collaboration capabilities of a BI tool, and a slightly larger percentage (26%) use a general-purpose collaboration platform. What's really frightening is that 17% don't collaborate at all when analyzing data (see **FIGURE 10**).

The lack of adoption of collaboration capabilities is not surprising, given that there have been few collaboration tools available. Once vendors thoroughly seed the market with collaboration platforms and embed collaboration capabilities into BI tools and applications, all of which began happening in 2011, adoption rates should climb.

**Challenges.** There are several challenges to getting users to collaborate online. First and foremost, it takes two to tango. "If you collaborate and no one answers, that's the kiss of death," said Lou Bajuk-Yorgan, director of product management at Tibco Spotfire. First, you need people who are willing to converse, and second, they need to converse thoughtfully. "Just writing a response like 'That's cool!' doesn't help." People are really busy, eBay's Kiril said, so they may not see how taking the time to share ideas and information online benefits them personally, especially if they don't know most of the people in the online community.

**FIGURE 10.**  
**Collaboration Techniques When Analyzing Data**



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Some BI professionals don't think collaboration will ever catch on in their organizations. "I honestly cannot see [collaboration] being adopted here," said a BI manager at a university in Australia. "I believe old-fashioned management practices and habits will be resistant to this type of change."

**Techniques.** There are many ways to overcome these challenges. Many BI professionals say it's important to educate people about the value and purpose of collaboration tools and techniques. They add that the tools should allow users to share any kind of content from a variety of tools and applications, including documents, and not be limited to one tool or content format. Also, forums that support the free exchange of ideas require a moderator to weed out irrelevant comments and a catalyst or two who initiate discussions and actively participate to build momentum for the online community.

Changing habits is also key. "If users understand that they can collaborate in the BI tool via embedded chat or messaging rather than have to export data to Excel and attach it to an email, they quickly see the value and that drives adoption," iSPartners' Erasmus said. Security and privacy are also important. Users won't comment on documents if they can't restrict their remarks to selected individuals or groups. Paradoxically, a strict security policy can help foster a more open exchange of information.

Most important, it's critical to tailor collaboration capabilities to various types of interactions. For example, the nature of how people collaborate differs by whether they're focused on data or decisions and whether they are part of a formal team or an informal community of peers. We'll explore these and other dimensions of collaboration in the third section of this report. (See ["Dimensions of Collaboration,"](#) page 24). ■

***Many BI professionals say it's important to educate people about the value and purpose of collaboration tools and techniques.***

# Collaboration and BI

**MOST BI METHODOLOGIES** contain a circular workflow that includes one or more of the following steps: collect, analyze, decide and act. Although this workflow adequately describes how BI tools contribute to the decision making process, it doesn't adequately capture the many intangibles that go into making effective decisions. To do that, we need to expand the basic BI workflow to include collaborative processes within each of the steps (see **FIGURE 11-12**).

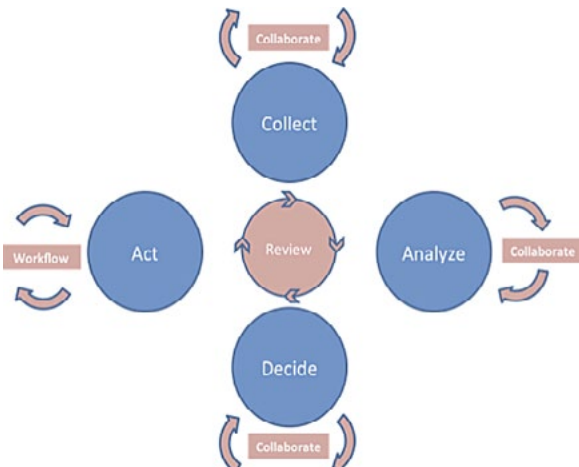
In real life, collaboration happens at each step in the BI cycle. Although the nature of the collaboration differs at each step, the need for people to interact and discuss data remains constant. There is an additional step—review—that requires participants to evaluate the impact of their decisions and reflect on the decision-making process itself. Here is a brief description of the collaboration that occurs at each step in the BI lifecycle:

- **Collect.** During this phase, business and technical users collaborate to

**FIGURE 11.**  
Traditional BI Workflow



**FIGURE 12.**  
BI Workflow With Collaboration





determine what data needs to be collected for analysis and decision-making purposes. Typically, this is done manually by technical folks who interview businesspeople to determine their requirements. However, a growing number of companies are moving this process online by allowing tech-savvy business analysts to prototype requirements using simplified data integration tools and then pass those specifications to technologists working with more sophisticated, but compatible, data integration tools.

- **Analyze.** Here the data drives the discussion. For example, when a metric exceeds a target threshold, users typically investigate the source of the anomaly, communicate what they find to peers and managers, and discuss ways to improve performance. In other cases, a business analyst may discover something interesting in the data and want to share that with others. When data drives discussions, users need BI tools with embedded collaboration capabilities, such as annotation, comments and links to email and social platforms to spread the word. Here the focus of the collaboration is to alert users about pertinent trends or patterns in the data that may require action.
- **Decide.** Here the decision or project drives the collaboration. Users come together to address a problem or manage a project. In the course of doing their work, the team gathers data, shares ideas, brainstorms options, makes decisions and defines execution tactics. Such teams, whether permanent or ad hoc in nature, benefit from collaboration platforms, which create virtual conference rooms or workspaces where participants can gather to perform work when they are not physically in the same space. In addition, the virtual workspace keeps all collected data and opinions in one place and maintains an audit trail of all activity and decisions. This audit trail is helpful when the team reviews the impact of its decision and may be required for legal, if not political, reasons.
- **Act.** Once a decision is made, it is implemented. Often this requires creating complex workflows that pass work among individuals and teams with steps built in for approval, execution and follow-up. This type of collaboration is now increasingly integrated within functional and enterprise application packages. Some BI tools support transaction services that enable analysts to execute actions within the context of the BI tool. This may

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include updating a forecast, creating a purchase order, sending an email or alert or updating a database.

REVIEW—THE FIFTH STEP

Collaboration alone is not enough to guarantee effective decisions. To do that, people must review their decisions and examine how they could have done things better. Otherwise they are doomed to repeat mistakes and will fail to optimize performance. Success comes not just from working hard, but working smart. And that requires replaying past events and learning how to improve.

In the book *How We Decide*, author Jonah Lehrer tells the story of Bill Robertie, a world-class backgammon player (as well as chess and poker) who turned a childhood obsession into a lucrative career. Lehrer writes, “Robertie didn’t become a world champion just by playing a lot of backgammon. ‘It’s not the quantity of practice; it’s the *quality*,’ he says. According to Robertie, the most effective way to get better is to focus on your mistakes ... After Robertie plays a chess match or a poker hand or a backgammon game, he painstakingly reviews what happened. Every decision is critiqued and analyzed ... Even when he wins—and he almost always wins—he insists on searching for his errors, dissecting those decisions that could have been a little bit better. He knows that self-criticism is the secret to self-improvement; negative feedback is the best kind.”

Although Robertie’s focus is on improving his individual performance, the same lesson applies to teams. Forward-thinking teams require members to assess the impact of their decisions and the decision-making process in a post-implementation debriefing session. This period of self-reflection involves asking questions about each step in the lifecycle:

- **Collect:** “Did we collect the right data?” “Was the quality of the data sufficient to make an effective decision?” “Did we deliver the data in a timely fashion to make the decision?”
- **Analyze:** “Did we have the right experts investigating this issue?” “Was the scope of our analysis sufficient?” “Did we over- or under-analyze the situation?” “Did we properly balance facts with intuition?”
- **Decide:** “Were the right people involved in making the decision?”



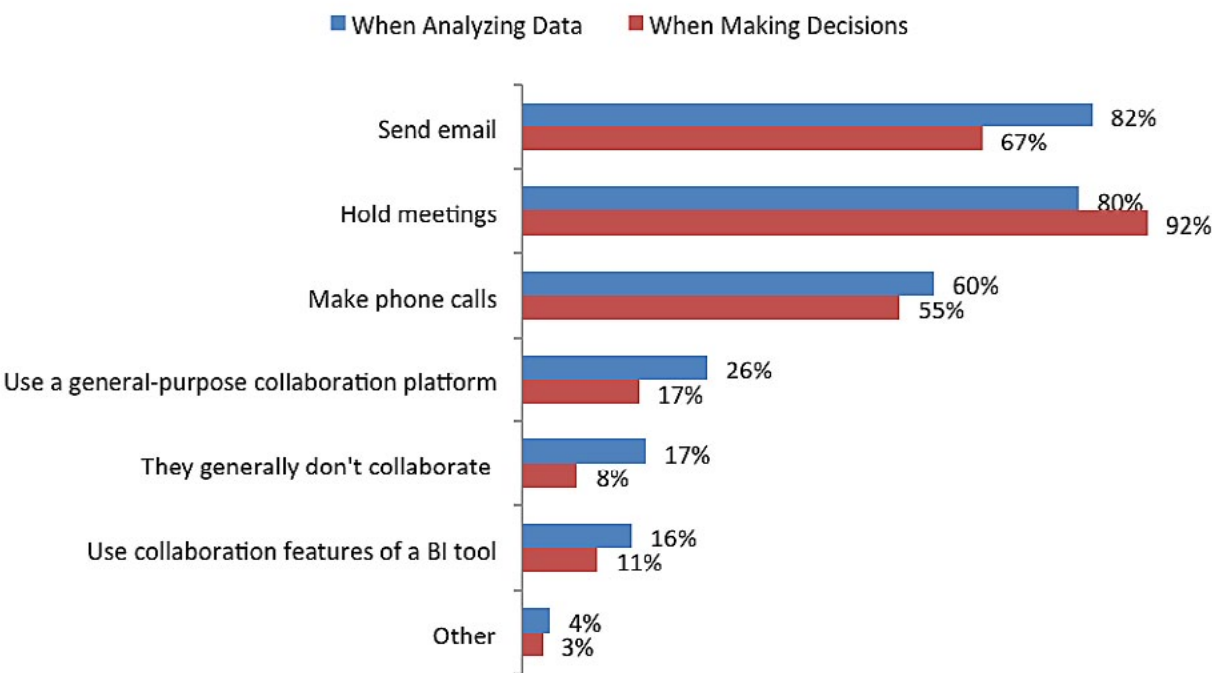
“Do we have a process for making decisions and did we follow it?” “Does our culture and organizational structure support an effective decision-making process?”

- **Act:** “Did we adequately communicate the decision to the people who had to carry it out?” “Did we monitor the execution of the decision to ensure it happened as planned?” “Did we adjust the decision and execution strategy when new events or conditions warranted it?”

**Operational versus strategic collaboration.** The nature of collaboration changes depending on whether the business process is more operational or strategic in nature. Collaboration within operational processes is more analytical and data-driven, while the collaboration in strategic processes is more decision-driven.

**FIGURE 13** shows how the nature of collaboration shifts depending on whether users are analyzing data or making decisions. For example, when users ana-

**FIGURE 13.**  
**Operational Versus Strategic Collaboration Profiles**



BASED ON 238 RESPONDENTS (BI LEADERSHIP FORUM, JANUARY 2012, [WWW.BILEADERSHIP.COM](http://WWW.BILEADERSHIP.COM)).

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lyze data, they are more apt to send email messages (82%) or use collaboration tools than users who come together to make decisions.

Since analysts are more technically inclined than general business decision makers, it makes sense that they are more apt to use online tools and utilities. Also, since they work closely with data, they are more likely to discover issues that require notifying others, which can more easily be done online than in meetings or on phone calls. They simply send a view or copy of the data in an email or annotate a chart or report with relevant comments.

Conversely, people who collaborate for the purpose of making decisions are much more likely to hold meetings (see **FIGURE 13**) than those who collaborate when analyzing data (92% to 80%). Making decisions requires a lot of give and take and sharing, which is best done face to face so people can read each other’s body language and exchange informal conversations before and after the meetings. In short, operational collaboration involves more notification while strategic collaboration requires more discussion.

COLLABORATION FEATURES IN BI TOOLS

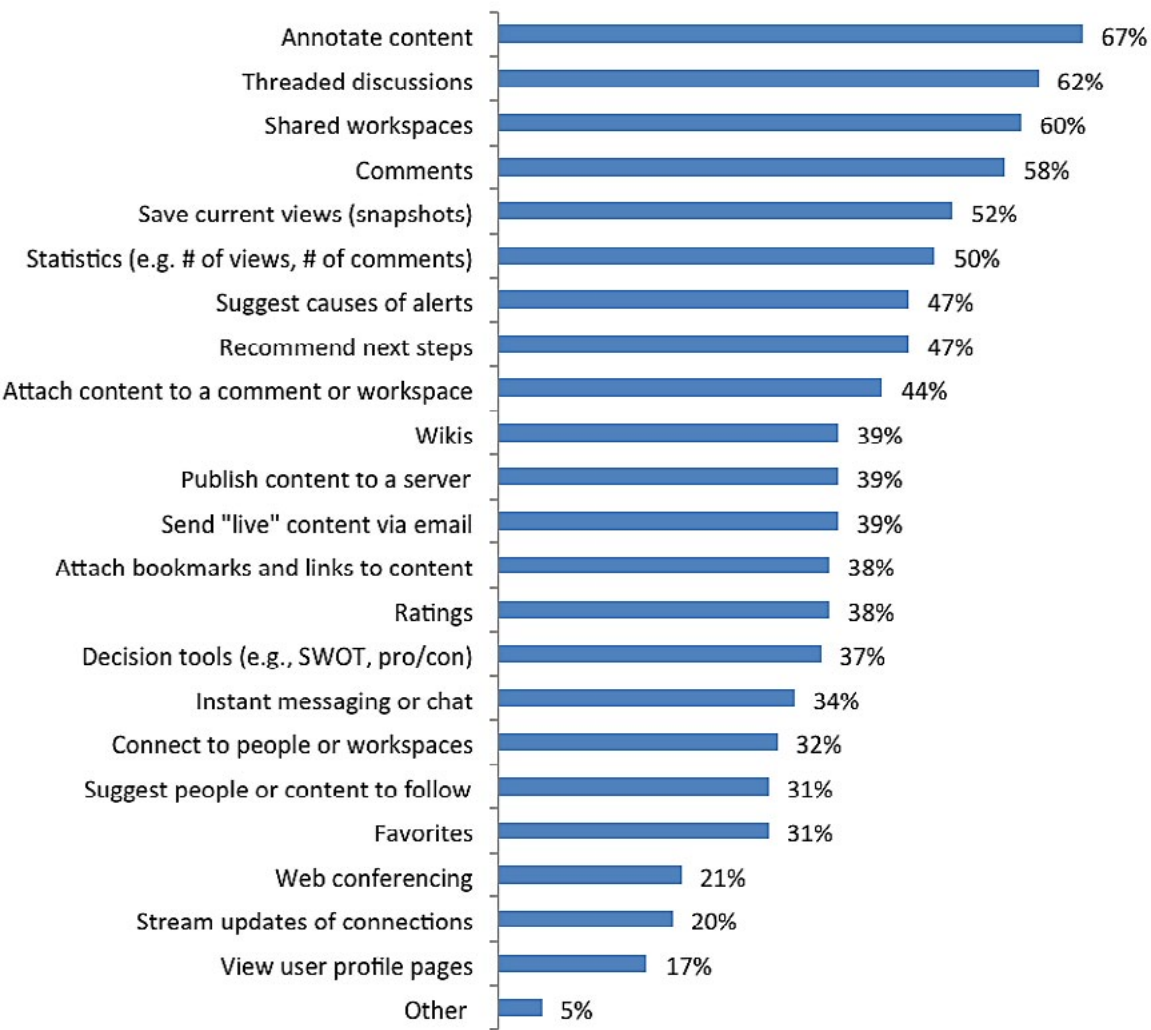
Given that BI tools are used to access, monitor and analyze data, it should be no surprise that the type of collaboration that users want BI tools to support is more operational in nature. The most sought-after collaboration features for BI tools are annotation, the ability to attach a note to a cell, chart, page or dashboard (67%); threaded discussions (62%), an extended annotation in which people can comment on each other’s annotations or comments; and shared workspaces (60%), where users can create a custom group, invite selected participants, upload content and documents, hold discussions and use various decision-making tools. The next three most sought-after features are comments (58%), snapshots (52%) and statistics (50%), which provide some context about a report, such as how many times it’s been viewed, how many comments are associated with it and its average rating (see **FIGURE 14**).

Interestingly, when we asked respondents which BI collaboration capabilities get used in practice, a different set of features pops to the top (see **FIGURE 15**). The most frequently used collaboration feature is “publish content to a server” cited by 35% of respondents. Of course, this is a core self-service BI feature and you can debate whether it’s really a form of collaboration, although most BI vendors claim it is. Certainly, if collaboration is about sharing information, then the ability to share a custom-built report is a form of collaboration. Of course, only superusers and power users are capable of cre-

ating custom reports and dashboards, which limits this collaboration feature to a subset of users.

Shared workspaces took the second spot with just 28% of the vote. This is odd since most BI tools don't yet support shared workspaces. However, a good portion of users have integrated BI tools with Microsoft SharePoint, which supports shared workspaces, and this may explain this percentage. Third on the list is "Send 'live' content via email" (26%) which enable recipients to view and interact with the report as if they had created it. Fourth is

**FIGURE 14.**  
**Ranking of Desired BI Collaboration Features**



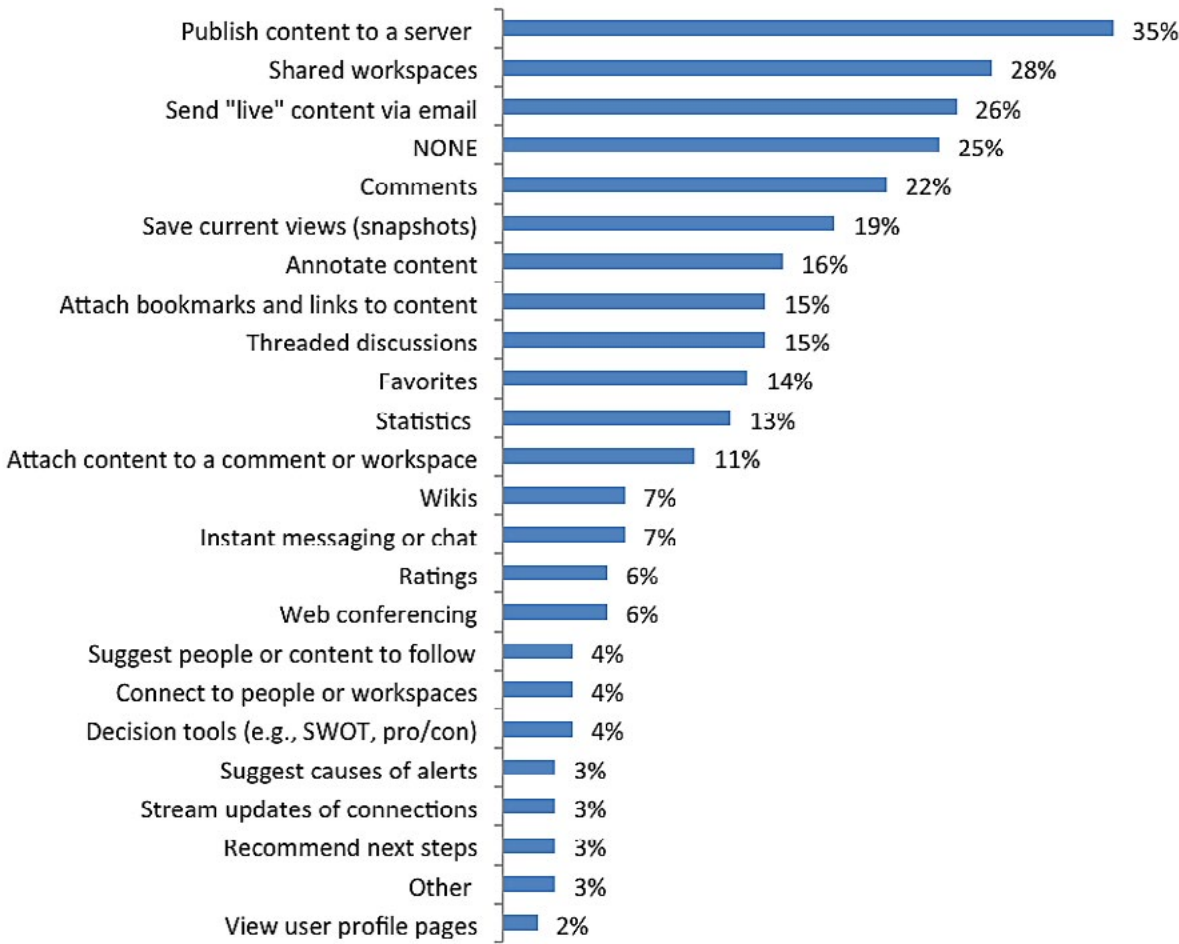
BASED ON 176 BI PROFESSIONALS (BI LEADERSHIP FORUM, JANUARY 2012, [WWW.BILEADERSHIP.COM](http://WWW.BILEADERSHIP.COM)).

“None,” with 25%, a surprisingly large percentage. There are many potential reasons for this low adoption rate. There might be a mismatch between users and capabilities offered, a lack of training on how to use the features, or the features may be clumsily implemented.

COLLABORATION PLATFORMS

Interestingly, organizations are more likely to have implemented a collaboration platform than a collaboration-enhanced BI tool. More than two-thirds of surveyed organizations (71%) have implemented a general-purpose col-

FIGURE 15.  
Ranking of BI Collaboration Features by Actual Usage



BASED ON 94 BI PROFESSIONALS WHOSE BI TOOLS SUPPORT SOME SORT OF COLLABORATION CAPABILITIES  
(BI LEADERSHIP FORUM, JANUARY 2012, [WWW.BILEADERSHIP.COM](http://WWW.BILEADERSHIP.COM)).

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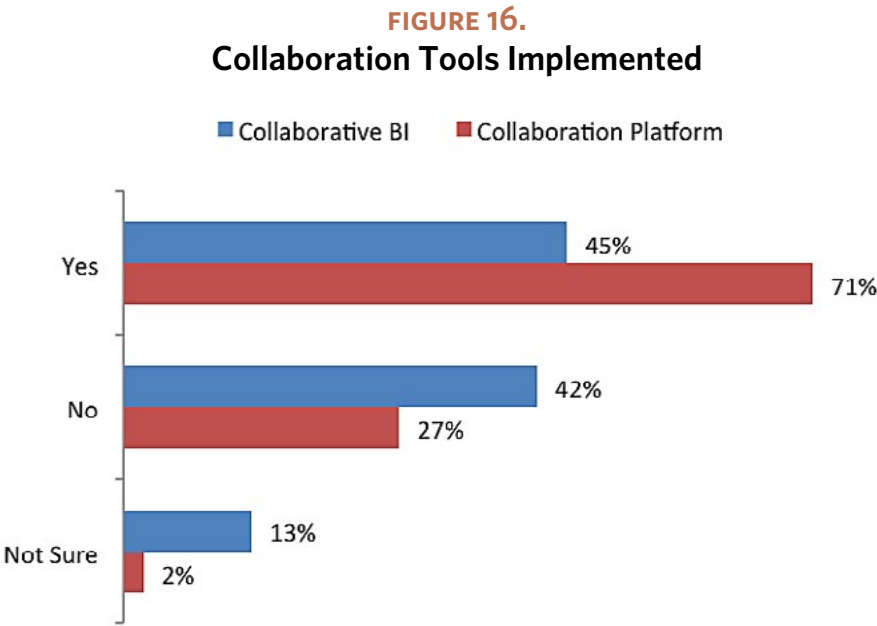
laboration platform, compared with less than half of organizations (45%) that have implemented collaborative BI solutions (see **FIGURE 16**).

The most popular collaboration platform by far is Microsoft SharePoint, which is used by almost three-quarters of respondent organizations (74%). The next most popular collaboration platform is IBM Connection, which has been implemented by 5% of organizations.

The most popular feature of a general-purpose collaboration platform is shared workspaces (55%), followed by the capability to publish content to a server (50%), instant messaging or chat (34%) and threaded discussions (30%). It is interesting that the percentage of users that don't use the collaboration platform at all (11%) is half the number of users who don't use BI collaboration features (25%) (see **FIGURE 17**). The fact that many organizations implemented SharePoint several years ago while BI collaboration tools are a relatively new phenomenon, accounts for this discrepancy.

**Collaborative BI versus collaboration platforms.** When we compare the features used in collaboration platforms versus BI tools, a few things stand out (see **FIGURE 18**). First, collaboration platforms are getting a lot more use. This is largely due to the pervasiveness of Microsoft SharePoint.

Second, collaboration platforms had more than twice the usage in many features: shared workspaces (55% to 28%), instant messaging or chat (35% to 7%),

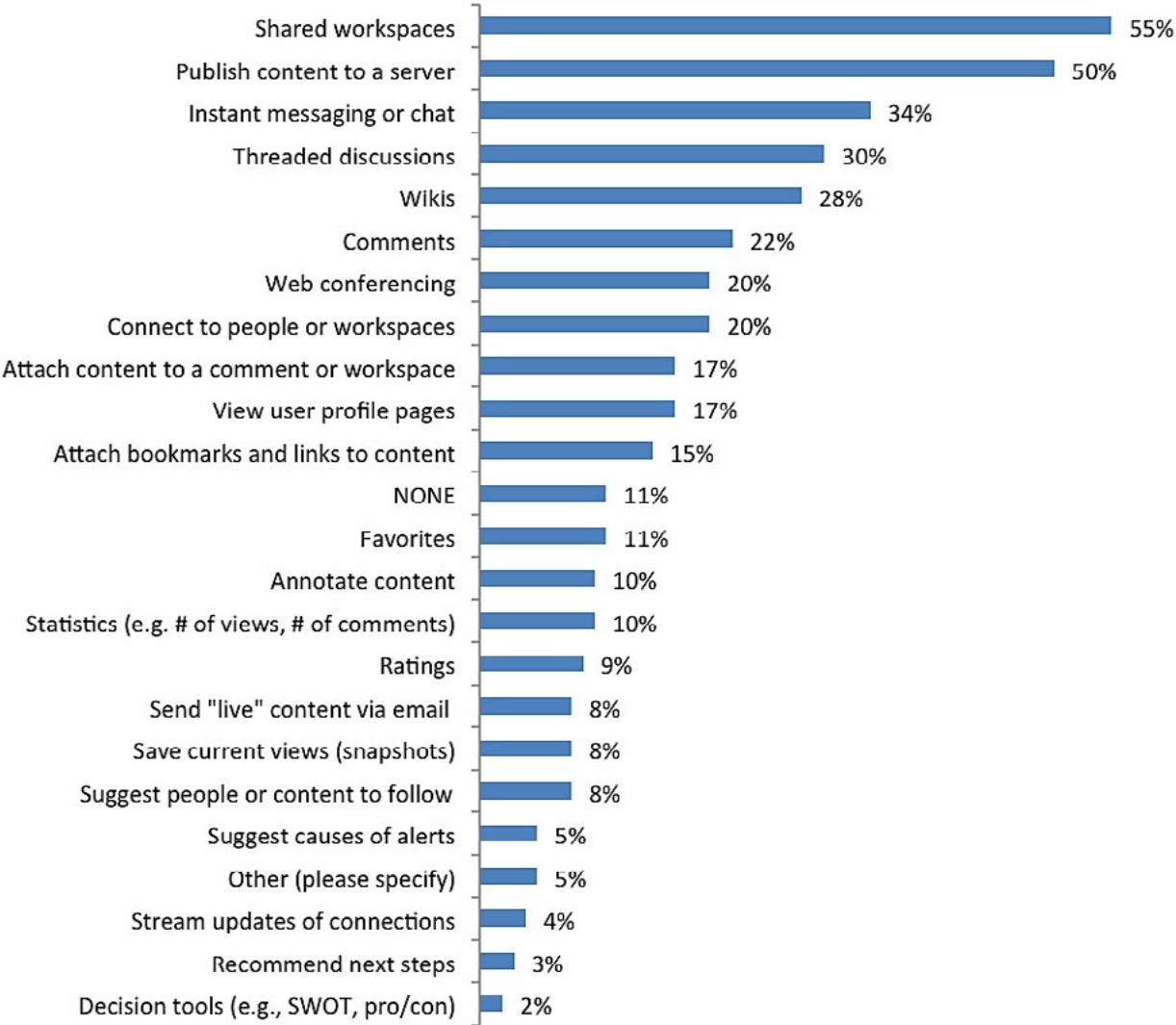


BASED ON 238 RESPONDENTS (BI LEADERSHIP FORUM, JANUARY 2012, [WWW.BILEADERSHIP.COM](http://WWW.BILEADERSHIP.COM)).

wikis (27% to 7%), Web conferencing (21% to 6%), the capability to connect to people or content (19% to 4%) and the capability to view user profile pages (17% to 2%). Collaboration platforms are good at letting people find each other (search profile pages, connect to people), communicate synchronously (chat, Web conferencing) and perform work together (wikis, shared workspaces).

Third, BI tools had a higher degree of usage in several areas, such as sending live content by email (26% to 10%) and snapshots (19% to 8%). This conforms

**FIGURE 17.**  
**Ranking of Collaboration Platform Features by Usage**



BASED ON 145 BI PROFESSIONALS WHOSE COMPANIES HAVE IMPLEMENTED GENERAL-PURPOSE COLLABORATION PLATFORMS  
(BI LEADERSHIP FORUM, JANUARY 2012, [WWW.BILEADERSHIP.COM](http://WWW.BILEADERSHIP.COM)).

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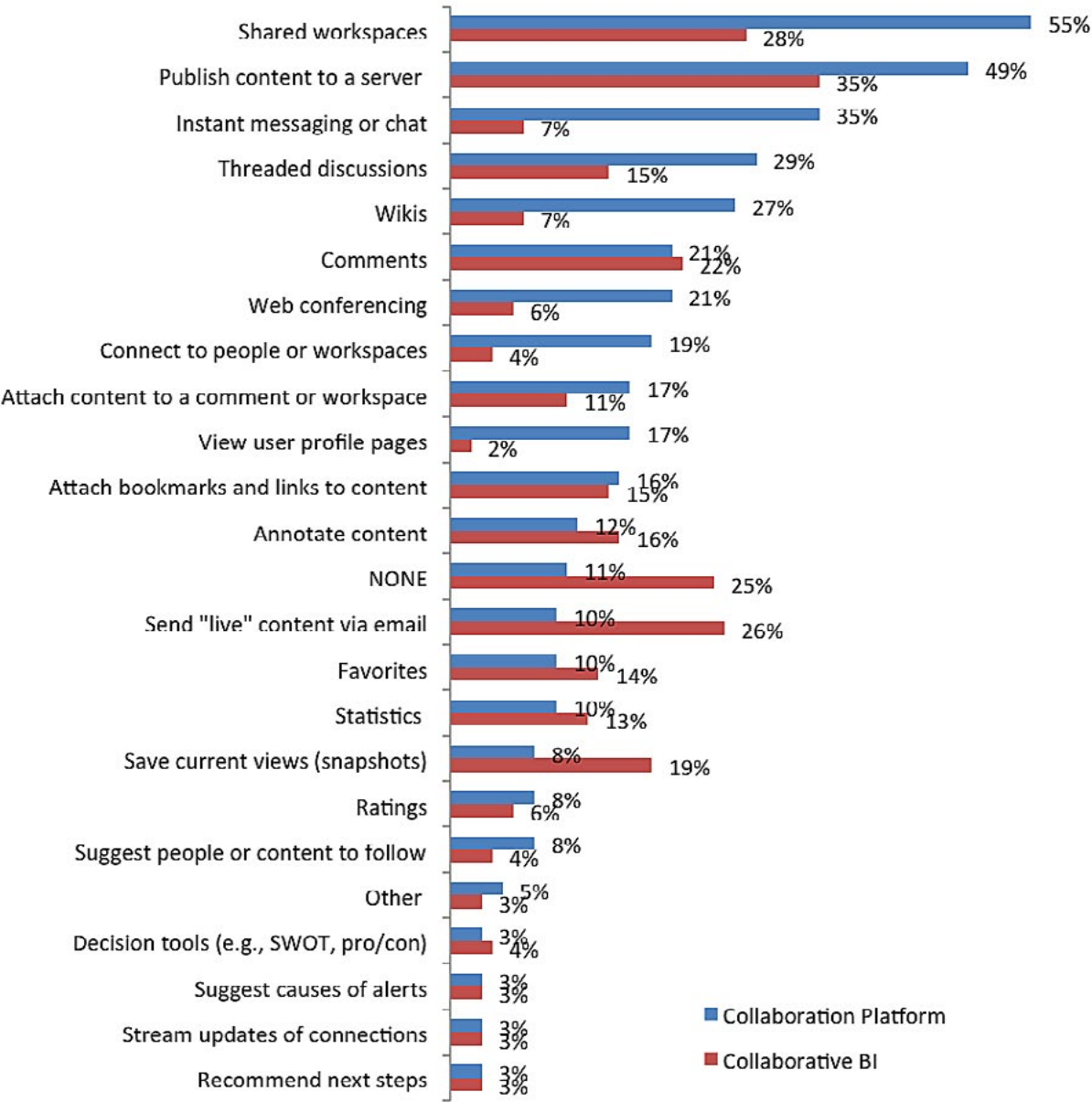
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with the notion that BI tools are used for analytical collaboration, whose main focus is to alert people to problems discovered in the data. Also, as discussed in the previous section, BI tools had a greater degree of nonusage (25% to 11%). ■

**FIGURE 18.**  
**Feature Usage for Collaborative BI Versus Collaboration Platform**



BASED ON SURVEY QUESTIONS ANSWERED BY 94 RESPONDENTS AND 145 RESPONDENTS (BI LEADERSHIP FORUM, JANUARY 2012, [WWW.BILEADERSHIP.COM](http://WWW.BILEADERSHIP.COM))



# Dimensions of Collaboration

**THERE ARE MANY** dimensions to collaboration. Understanding the trade-offs within these dimensions is critical to selecting the right collaborative capability to use for various types of interactions. Table 1 summarizes the intersection of collaborative capabilities and dimensional characteristics.

## DIRECTION: BIDIRECTIONAL VS. UNIDIRECTIONAL

**Bidirectional.** Communications within a collaborative activity can be bidirectional or unidirectional. With bidirectional communication, a user communicates with a specific individual or group of people and expects to receive a response. Bidirectional collaboration is the most common and powerful form of collaboration. Examples are meetings, phone calls and email messages. Newer forms of bidirectional collaboration include Web conferences, chat, wikis and threaded discussions.

**Unidirectional.** With unidirectional collaboration, a user communicates without expecting to receive a response. Unidirectional collaboration is really a one-to-many broadcast of content and ideas. Publishing reports is the most common form of unidirectional collaboration, followed closely by annotating content. Annotations are designed largely to inform others of the status or condition of something. (Annotations that allow users to reply to the annotation are threaded discussions or comments with replies.) Other forms of unidirectional communication include ratings and “like” and “unlike” buttons.

## TIME: SYNCHRONOUS VS. ASYNCHRONOUS

**Synchronous.** Collaboration can also take place synchronously or asynchronously. With synchronous collaboration, users share ideas and content in real time. This sharing can occur within the same physical space (i.e., face to face) or online. Examples of synchronous communication include meetings, phone calls, chat and Web conferencing.

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TABLE 1.  
Collaborative Capabilities by Dimensional Attribute

This table assigns dimensional attributes to each type of collaborative capability explored in this report. In some cases, dimensional attributes do not apply, such as for automated collaboration features.

		DIRECTION	TIME	MECHANICS	STRUCTURE	USERS	ORIENTATION
EXECUTIVE SUMMARY	Holding meetings	Bidirectional	Synchronous	Manual	Formal	Both	Both
	Telephone calls	Bidirectional	Synchronous	Manual	Both	Both	Both
	Sending email	Bidirectional	Asynchronous	Manual	Both	Both	Both
	Annotating content	Unidirectional	Asynchronous	Manual	Informal	Casual	Internal
	Sending “live” content by email	Bidirectional	Asynchronous	Manual	Informal	Power	Internal
	Threaded discussions	Bidirectional	Asynchronous	Manual	Informal	Both	Both
	Shared workspaces	Bidirectional	Asynchronous	Manual	Both	Both	Both
	Decision tools	Bidirectional	Asynchronous	Manual	Formal	Casual	Internal
	Comments	Unidirectional	Asynchronous	Manual	Informal	Both	Internal
RESEARCH BACKGROUND	Snapshots	Unidirectional	Asynchronous	Manual	Informal	Both	Internal
	Statistics	N/A	N/A	Automated	Informal	Both	Internal
	Automated causal analysis	N/A	N/A	Automated	Informal	Both	Internal
WHY COLLABORATION	Automated alerts	N/A	N/A	Automated	Informal	Both	Internal
	Recommending people to follow	N/A	N/A	Automated	Informal	Both	Internal
	Recommended next steps	N/A	N/A	Automated	Informal	Both	Internal
COLLABORATION AND BI	Publishing content to a server	Unidirectional	Asynchronous	Manual	Both	Power	Internal
	Attaching content to comments	Unidirectional	Asynchronous	Manual	Informal	Both	Internal
DIMENSIONS OF COLLABORATION	Attaching bookmarks and links	Unidirectional	Asynchronous	Manual	Informal	Both	Internal
	Wikis	Bidirectional	Asynchronous	Manual	Formal	Both	Both
	Chat	Bidirectional	Synchronous	Manual	Informal	Both	Both
RECOMMENDATIONS	Web conferencing	Bidirectional	Synchronous	Manual	Formal	Both	Internal
	Forums	Bidirectional	Asynchronous	Manual	Informal	Both	Internal
	Connecting with people	Bidirectional	Asynchronous	Manual	Informal	Both	Internal
	Favorites	Unidirectional	N/A	Manual	Informal	Both	Internal
	Activity streams	Unidirectional	Asynchronous	Automated	Informal	Both	Internal
	Ratings	Unidirectional	N/A	Manual	Informal	Both	Internal
	Viewing profile pages	Unidirectional	Asynchronous	Manual	Informal	Both	Internal

The advent of portable devices, such as laptops, mobile phones and tablets have enhanced face-to-face meetings by allowing users to share content easily within the four walls of a conference room. And Web conferencing, chat and even two-way video built into smartphones facilitate robust, two-way conversations even when participants are not in the same room or location.

**Asynchronous.** Asynchronous collaboration happens when there is a delay between when a user shares an idea or piece of content and when the recipient replies. Here, the message or content is queued up until the recipient is ready and able to reply. In our modern, interruption-driven world, asynchronous communication is the norm and the basis for most online collaboration capabilities. The most common form of asynchronous collaboration is email. But threaded discussions, forums, shared workspaces and comments also qualify. Even snapshots, in which a user creates a live view of data that they will consume later, is a form of asynchronous collaboration.

STRUCTURE: FORMAL VERSUS INFORMAL

**Formal.** Some collaboration is highly structured because the collaborators need to produce something or resolve a specific problem, usually by a certain date. For example, a project team or skunk group may need to build or fix a product, or a SWAT team may need to fix an urgent problem. These types of groups typically benefit from online collaboration tools, especially when team members are in different locations or work for different organizations. Collaboration platforms with built-in tools for decision making, calendaring, brainstorming, voting and so on are great aids for formal collaboration.

**Informal.** On the other hand, a lot of people collaborate without a specific goal or timeline in mind. They are simply collaborating to increase their awareness and knowledge. Forums, such as LinkedIn groups or shared workspaces facilitate informal collaboration. Social media tools are designed for informal collaboration and have clearly struck a chord with a consumer audience—and increasingly with business professionals. Informal collaboration features include utilities that let users find and follow each other, view their activity stream (such as, Facebook’s wall), vote on “likes” and “dislikes” and save favorites. Social media tools also do a great job of recommending users and content to follow based on a person’s interests and social network. In a business context, these informal collaboration features can help business

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users form stronger relationships with colleagues and help new workers quickly build their knowledge and personal contacts within the organization.

MECHANICS: MANUAL VERSUS AUTOMATED

**Manual.** Most forms of collaboration are manual; that is, a user must consciously initiate a collaborative activity. Users who send messages, annotate documents, check a “like” button or craft a comment collaborate manually.

**Automated.** There are automated forms of collaboration in which a user does not initiate the interaction. For instance, a collaboration tool may suggest people to follow based on a person’s interests, activities or roles. Or the tool may suggest content to view based on the report or document the user is viewing. Other forms of automated collaboration include BI tools that automatically trigger alerts, perform a root cause analysis or recommend actions to take. These types of guided analytics are helpful for novice users or new employees who need help learning their way around an organization and its culture, processes, people and data.

USERS: POWER VERSUS CASUAL

**Power users.** Different users often use different types of collaboration. Power

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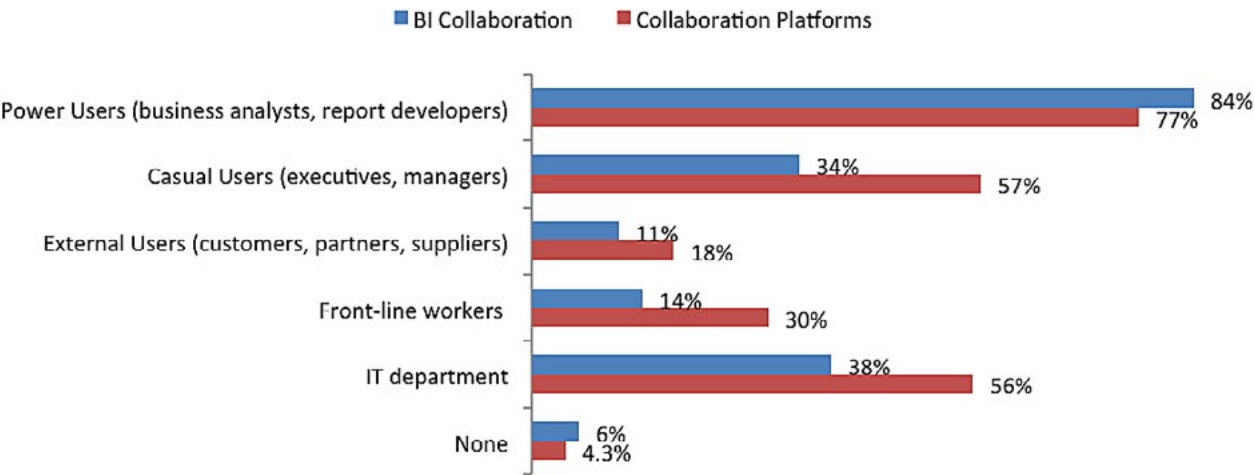
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FIGURE 19.  
Collaboration by Type of User



BASED ON 145 BI PROFESSIONALS WHOSE COMPANIES HAVE IMPLEMENTED A GENERAL-PURPOSE COLLABORATION PLATFORM AND 85 BI PROFESSIONALS WHOSE COMPANIES HAVE IMPLEMENTED BI COLLABORATION CAPABILITIES (BI LEADERSHIP FORUM, JANUARY 2012, [WWW.BILEADERSHIP.COM](http://WWW.BILEADERSHIP.COM))

users are the most prolific users of collaboration capabilities. According to our survey, 84% of respondents said their power users use BI collaboration tools while 77% said they use collaboration platforms (see **FIGURE 19**). Since power users are data driven and technically savvy, it’s no surprise that they tend to leverage all forms of collaboration to a higher degree than other users.

Most important, collaboration makes power users much more productive. Typically, power users are embedded in departments and work away from other analysts. As a result, they often unknowingly re-create reports and analyses that already exist.

**Casual users.** The next most prolific group of collaborators is casual users (such as executives and managers). Interestingly, casual users are much more likely to use collaboration platforms (57%) than collaborative BI tools (34%).

**Other users.** Among other types of users listed in **FIGURE 14**, the IT department leads the pack with 56% using collaboration platforms and 38% using BI collaboration, followed by front-line workers (30% and 14% respectively) and external users (18% and 11%, respectively).

ORIENTATION: INTERNAL VERSUS EXTERNAL

**Internal.** Most collaboration occurs among people within a single organization and among people in the same department or people who share roles. Peer-to-peer collaboration is generally bidirectional, whereas collaboration across role or hierarchical boundaries is normally unidirectional. An example of the latter is when an analyst or front-line worker who notifies a boss of a problem via email or annotation.

**External.** A significant amount of collaboration occurs between business partners who work in different companies. For example, users can communicate with customers, suppliers or partners about some aspect of their business relationship, such as a contract or joint project. A shared workspace with requisite security is required for external collaboration. (Actually, internal collaboration requires security since users typically only want to share content, annotations and comments with a subset of people, not everyone.) If an organization has a mass market of customers, then collaboration is normally facilitated by social media tools, such as Facebook, Google+ or Twitter. ■

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# Recommendations

**THERE IS CONSIDERABLE INTEREST** in collaboration, theoretically at least. Few BI professionals quibble with the notion that collaboration improves the effectiveness of analyses and decisions. But translating interest into actual usage is challenging. When implementing collaboration in your organization, especially in conjunction with BI tools, consider doing the following:

**1 Start with the basics.** If you’re a BI professional looking to add collaboration capabilities to your BI environment, you’re in luck. Many BI tools have added or soon will add data-driven collaboration features, including annotation, threaded discussions and the ability to send “live” content by email. Most users find these features relatively easy to use and a natural extension of their work habits. If your company has a general-purpose collaboration platform, make sure the BI tool integrates with it so users can take advantage of its collaboration capabilities there, including workspaces, comments, and discussions.

**2 Seek robust annotation capabilities.** Of all the data-driven collaboration features, annotation is the most important because it simplifies the way users alert others to anomalies or trends in the data. Today, notifying users is a multistep process that involves emailing individuals a static image of the data. Ideally, BI tools should let users annotate data at the cell, object—such as a chart—page or report level. Also, annotations should stay with the original content and contain a link to the most current data. (It is bewildering to users to see a comment about data that no longer exists.) Also, security should apply to annotations so users can select who can see their message and who can’t, just as with email.

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**3 Focus on power users first.** Power users love to collaborate, so target your initial efforts at them. Besides data-driven collaboration features, power users love to create and join shared workspaces on topics that are interesting to them. They are also amenable to social media features, such as the ability to follow people or content, rate and comment on content, view statistics, upload documents and mark favorites. Social media features help analysts form a network of associates, which encourages them to reuse work instead of reinventing it each time they conduct an analysis, and it minimizes the proliferation of analytical silos.

**4 Identify formal collaboration opportunities.** Users are more apt to collaborate online if they know that team members are using collaboration tools to communicate and do work. Thus, collaboration takes root the quickest in formal settings, such as when a team comes together to perform a task. Virtual teams are particularly good candidates for online collaboration since their members are geographically dispersed. Collaboration platforms make it easy for them to exchange and store content, discuss issues, make decisions and document processes.

**5 Assign catalysts.** When collaboration is informal in nature and users simply want to stay aware of what's going on and become part of a larger community, it pays to recruit one or more individuals to catalyze discussions. Ask these individuals to start discussions, create workspaces, invite people to participate and respond to comments quickly. This keeps the dialogue going and builds momentum for the community, which ideally becomes self-sustaining in time.

**6 Assign moderators.** It is also important to assign moderators to informal forums and workspaces, especially externally facing ones. Moderators need to weed out the irrelevant or inappropriate comments and delete spam. Again, the goal is to reassure potential collaborators that this is a safe environment in which to share ideas and that their efforts to reach out will be rewarded with valuable insights from others. In other words, a moderator helps reassure potential collaborators that they will gain as much as they give.

**7 Create open, shared workspaces.** A shared workspace shouldn't be tied to a particular application or set of content. To be useful, it needs to allow users to upload or access any content in the organization's ecosystem. It also needs to let users personalize views to match the way they see themselves and how they want to contribute and consume content on the site. ■



ABOUT THE AUTHOR

**Wayne Eckerson** has been a thought leader in the data warehousing, business intelligence (BI) and performance management fields since 1995. He has conducted numerous in-depth research studies and is the author of the best-selling book *Performance Dashboards: Measuring, Monitoring, and Managing Your Business*. He is a noted keynote speaker and blogger and he consults and conducts workshops on business analytics, performance dashboards and BI, among other topics. For many years, Eckerson served as director of education and research at The Data Warehousing Institute, where he oversaw the company's content and training programs and chaired its BI Executive Summit. Eckerson is director of research at TechTarget, where he writes a popular weekly blog called Wayne's World, which focuses on industry trends and examines best practices in the application of BI (see [WWW.B-EYE-NETWORK.COM/BLOGS/ECKERSON](http://WWW.B-EYE-NETWORK.COM/BLOGS/ECKERSON)). Eckerson is also president of BI Leader Consulting ([WWW.BILEADER.COM](http://WWW.BILEADER.COM)) and founder of BI Leadership Forum ([WWW.BILEADERSHIP.COM](http://WWW.BILEADERSHIP.COM)), a network of BI directors who meet regularly to exchange ideas about best practices in BI and educate the larger BI community. He can be reached at [WECKERSON@TECHTARGET.COM](mailto:WECKERSON@TECHTARGET.COM).

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