Making Business Intelligence Easy

White Paper
Collaborative Business Intelligence

Contents

Overview

Today, a younger social media savvy generation is entering the workforce, bringing with them new skills and expectations regarding the delivery of information.

A recent joint Unisys and IDC study has found that these younger information workers will drive changes in the way in which corporate interaction and communication takes place. The study expects that, in corporations with more than 500 employees, the number of information workers using social networking platforms will almost double between 2009 and 2014. The same research report predicts that the number of business interactions will grow four-fold, from 3.5 trillion in 2010, to 12.7 trillion by 2013.[i]

Naturally, businesses are searching for more efficient methods of communication to deal with expanding information volumes and the necessary business interactions that accompany that trend. Enterprise collaboration technologies will be crucial in addressing and facilitating this swell in information exchange, by boosting workforce productivity.

To achieve this collaborative decision-making (CDM) environment, Business Intelligence (BI) software is beginning to merge with Web 2.0 technologies, harnessing their rich, open-access, easy-to-use functionality that users have come to expect. The merging of BI and Web 2.0 technologies has given rise to the new concept of Collaborative BI – a type of CDM platform. This platform, like social Web 2.0 technologies, is designed around the premise that anyone should be able to share content and contribute to discussion; anywhere and anytime.

The trend of embedding social media-style features into BI solutions is set to make its mark – virtually all types of business applications are undergoing fundamental transformations to facilitate social and collaborative interaction. According to BI industry thought leader, Wayne Eckerson, Collaborative BI is now moving from a niche-nice-to-have capability, to an industry-defining component of leading BI solutions: “Most people don't make decisions in a vacuum; they share ideas, options, and perspectives with others. Nor do they analyze data in a vacuum, at least anomalies or variances that require further attention. When people exchange ideas on a topic, they refine each other's knowledge, fill in missing gaps, and challenge assumptions. The result is a more comprehensive understanding of a situation and a better course of action.”

IDC, along with many other analytics firms, also believes the emerging CDM software market will grow quickly, forecasting revenues of nearly $2 billion by 2014, with a compound annual growth rate of 38.2 percent between 2009 and 2014.[ii]

This re-design of the corporate communications process – enterprise eagerness and willingness to embed social business technologies (made famous by *Facebook* et al) throughout operational processes and functional workflows – has even been touched on by global computing icon, Bill Gates, with the ICT pioneer stating that: “social networking-type applications will become as ubiquitous in the workplace as Microsoft Office tools and will likely replace email as the dominant form of corporate communications”.

Collaborative BI: Benefits and potential

But most significantly, the concept of Collaborative BI has been hailed by many as the answer to the persistent problem that, despite increasing amounts of money being spent on BI, many organizations are failing to utilize reporting and analytics effectively and continue to make poor business decisions.

Despite the improvement in BI reporting and analytics capabilities, inadequate decision-making processes mean that organizations are still failing to harness the true power of their BI tools.

Integrated CDM platforms will stimulate a new approach to complex decision-making by linking the information and reports gleaned from BI software with the latest collaborative functionality inherent in social media platforms. This new technology will minimize the cost and lag in the decision-making process, leading to improved productivity, operational efficiencies and ultimately, better, more timely decisions.

Collaborative BI has empowered Yellowfin's clients to analyze, understand and use information garnered from data analysis more efficiently and effectively, and move from discussion to action in significantly reduced timeliness. Collaborative BI facilitates organizational CDM, and a better understanding of data, by linking discussion directly to reports and visualizations.

We've found that clients who embrace Collaborative BI have the ability to improve productivity and visibility across the breadth of organizational operations via enhanced knowledge sharing.

Factors driving demand for Collaborative BI within the enterprise include:

1. The increased demand for real-time information, in conjunction with the rapid expansion of corporate data assets, means that organizations are searching for faster methods to share and derive actionable meaning from reporting and analytics
2. Increasingly dispersed workforces have heightened the need for, and benefit of, fast information sharing and collaborative decision-making
3. The need to provide context to actionable information to underpin accurate fact-based decision-making
4. Reduced timeframe to complete key business processes

Key benefits of adopting and embracing Collaborative BI capabilities include:

- The ability to facilitate cross functional and departmental knowledge sharing and building
- The ability to derive amplified value from data assets
- The ability to make faster, better, more cohesive fact-based decisions
- Improved external stakeholder collaboration
- The ability to respond to business threats and complete key projects faster
- Decreased timelines for crucial business process and time to market for new products or services
- Improved employee satisfaction stemming from heightened sense of voice

The potential is exciting and nothing short of transformational.

Collaborative BI still in its infancy

However, Collaborative BI and CDM software is still in its infancy, according to Gartner, and remains underutilized.[iii] Many business decision-makers still have limited capacity to share and discuss reporting and analytics.

This infancy is evidenced by an Accenture survey of 250 IT executives demonstrating that BI still has limited reach within many organizations. Whilst those companies interviewed in the *Competing Through Analytics* study have some form of business analytics in place, respondents indicated that around 40 percent of major business decisions are not based on information generated from reporting and analytics[iv] – there is limited capacity for business decision-makers to share and discuss reporting and analytics. TDWI research has suggested that BI tools only reach around eight percent of users within an organization.[v]

So what are the crucial components that make up a true and complete Collaborative BI platform (CDM module) that facilitates pervasive sharing, discussion and fact-based decision-making?

And how can organizations position themselves to maximize its decision-making capabilities?

This paper identifies three major functions that combine to enable effective enterprise collaboration and networking, based on reporting and analytics, and form the basis of a CDM platform. These are the ability to:

1. Discuss and overlay knowledge on business data
2. Share knowledge and content
3. Collectively decide the best course of action

CDM software and the concept of Collaborative BI is about harnessing and applying the functions and features of social media to the enterprise, to enable better CDM processes, and bridge the gap between insight and action.

Adding new social media-style and networking capabilities to BI, supports better and faster information sharing and decision-making, resulting in more rapid, smarter actions.

This paper discusses and analyzes those components and functions that effectively leverage reporting and analytics via enterprise collaboration and networking.

Discussion

Most analytics-based decision-making occurs outside organizational BI platforms, opening a gap between human insight and business data. Decision-making remains isolated from the data that should drive and underpin the decision-making process. New generation BI tools, with fully-integrated CDM modules, address that problem.

An integrated CDM platform empowers BI users to discuss the results of data analysis by connecting the right people with the right data and supporting a culture of organization-wide information sharing and data access. This knowledge-sharing framework breaks down departmental knowledge silos, enabling faster, better and more effective decision-making. Discussion platforms allow users to overlay human knowledge, insight and provide context to the data in reports.

Business decisions are able to be made alongside business data to ensure steadfast, fact-based decision-making. On a unified discussion platform, users can discuss and share content in three ways, via:

1. Report centric discussion
2. Annotations
3. General discussion topics

Report centric discussion

A true CDM platform allows BI users to initiate and participate in a documented discussion concerning a particular report. All relevant stakeholders can participate in the analysis and conversation in full view of the data.

A collaborative layer within a BI solution improves the efficiency of business interaction and conversation regarding reporting and analytics compared to traditional avenues of communication, such as faxes, phone calls and face-to-face meetings. It improves efficiency by:

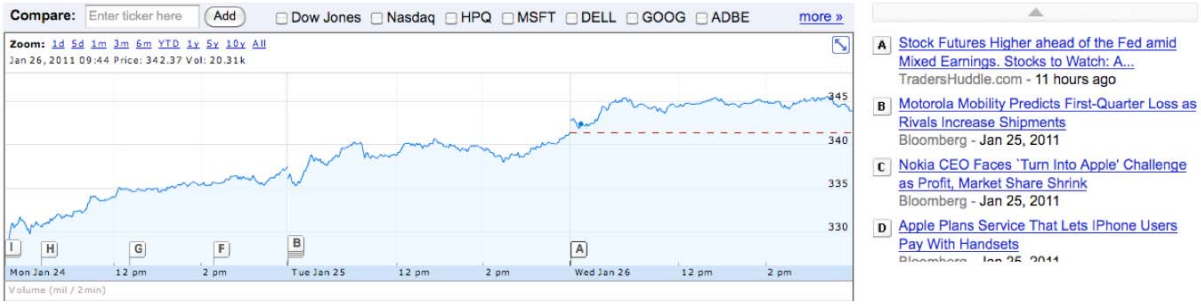
- **Being recordable:** Conversations are automatically recorded, creating a searchable history of all interaction, eliminating the unnecessary revisiting of points previously made
- **Eliminating logistical hurdles:** The need for complex and costly travel arrangements is significantly reduced, with geographically dispersed stakeholders able to participate in the exchange of information faster
- **Enabling all relevant stakeholders to participate:** All relevant stakeholders can contribute to discussion at their convenience

Let's use an example to illustrate. The executive team of a large retailer, *Mega Business*, is due to discuss the advertising budgets for each department. They initiate the process by analyzing a line chart representing total sales for last financial year. The conversation builds as each person records their individual ideas and expertise…

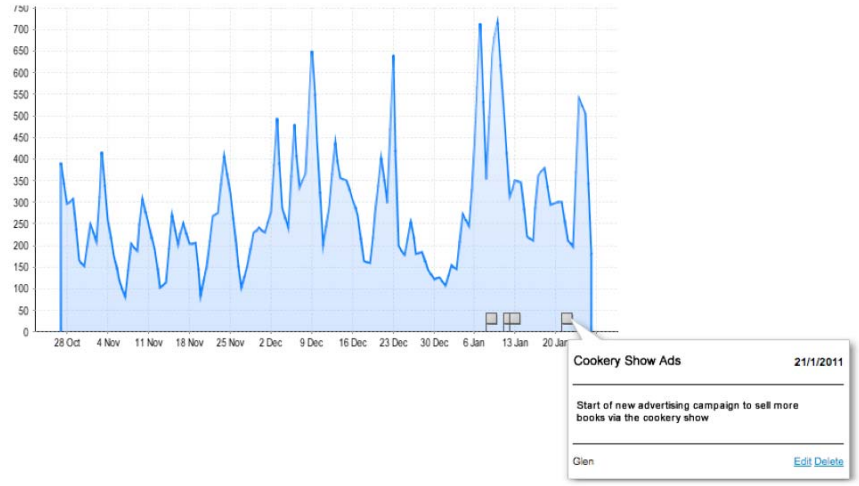
Annotations

Annotations allow users to overlay knowledge onto a report, pinpointing specific dates, to help explain the actual events that gave rise to a particular trend in the data.

The *Google Finance* line chart below has lettered annotations superimposed over the graph to link changes in the chart to actual real-world events.



The ability to annotate reports adds context to data, enabling quantitative figures to be explained and given real-world significance. In the example below, we can see the impact of a new marketing campaign on book sales.

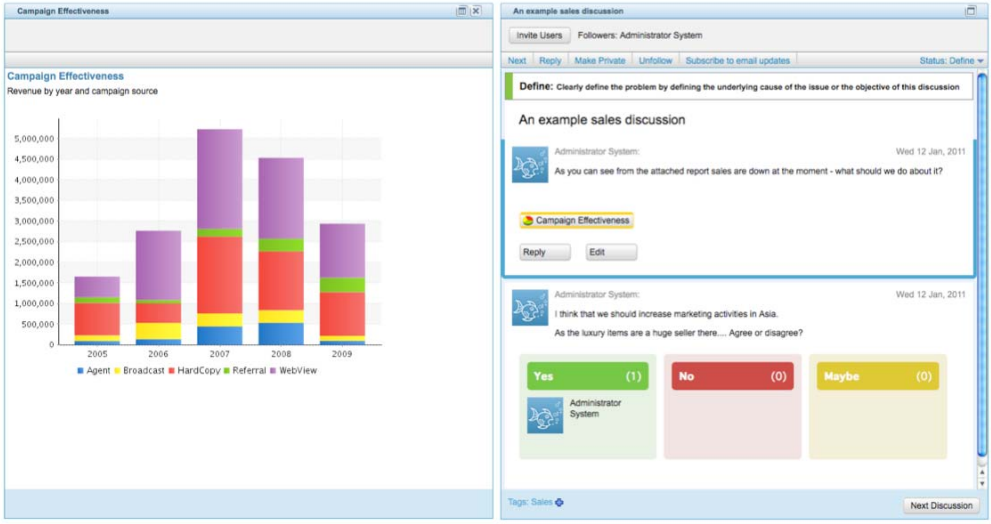


Let's head back to Mega Business' executive team. They have initiated a report-centric discussion in their CDM platform based on a line chart representing total sales for last financial year. They are attempting to allocate an advertising budget for the coming financial year. The peaks and troughs on the chart hold little value or significance on their own. Why was there a spike in sales in January last year? Who can remember? Silence.

However, if the chart was annotated, everyone could see, at a glance, that January's boost coincided with the sponsorship of a high profile sporting event. Suddenly the data makes sense. They decide to allocate additional sponsorship budget for the same event this year. Annotations make good data useful, and help to underpin future planning.

General discussion topics

Collaboration based on discussion topics allows users to drive analysis and decision-making across broad issues by sharing insight from multiple reports simultaneously. General discussion topics are like the dashboard of discussion; mixing together multiple reports for analysis and debate.



In the context of business reporting and analytics, users need to be able to collaborate around whole topics – such as why sales are down in Europe – and include the multiple reports needed to facilitate an appropriately detailed and contextualized discussion and analysis.

The Mega Business executive team has decided that to accurately and effectively allocate their advertising budget, greater insight is needed. To aid this process, they create a discussion topic that includes additional reports detailing individual departmental revenues and advertising spends.

General discussion topics give users the ability to collaborate at the level of detail required, and gain the necessary perspective, to make informed and effective business decisions.

Limitations of traditional note taking

Documenting discussion within a BI tool, on a single open-access CDM platform, eliminates many of the shortfalls of traditional discussion and information sharing.

Traditional meetings and individual note taking inhibit the ability to conduct fast and accurate information sharing, knowledge building and decision-making due to its awkward, error-prone nature. Using traditional techniques, human analysis and discussion is recorded separately on individual laptops and note pads; or worst of all, never recorded at all. This risk associated with individually stored information is obvious. If insights, ideas and knowledge are partitioned and individualized, its potential may never be realized. If notes are lost, computers damaged, or if individuals leave an organization, so too does the knowledge.

Further, notes taken during a meeting or discussion, and viewed at a later date, are out of context. The significance of certain points can be easily lost. As we take notes, they are influenced by, and reflective of, our interpretation of the information at the time of delivery, rather than an accurate re-presentation of the original message. The notes are time-bound – we subconsciously record the pieces of information we interpret as being the most relevant at the time, whilst discarding what may prove vital for later discussion and analysis.

Benefits of documenting discussion on a single open-access platform

Providing a social media-style forum within the BI tool itself, for the discussion and dissemination of ideas surrounding reporting and analytics, creates a knowledge-sharing network that improves the reach of information and analysis throughout an organization and across departmental lines.

The ability to record comments, share ideas, data, documents, and facilitate discussion on a single uniform platform, means:

- The conversation can be saved and referred back to for future use to avoid unnecessary rework and the revisiting of questions, comments and decisions previously covered
- Ensures that comments are interpreted in their original context to avoid misunderstanding
- Provides a system of transparency and accountability for team decision-making, establishing a clear link between discussion and decision
- Ensures all the relevant people and information are involved in the decision-making process
- Provides context to data and enables better alignment of data analysis with organizational strategy
- Reduces the time and resources spent on gathering intelligence and reaching consensus

Integrating social networking capabilities into existing BI applications allows users to undertake discussion, analysis and CDM in full-view of their data, within a uniform environment.

Without a single easy-access forum to facilitate ordered discussion and record comments, the decision-making process becomes burdensome, unrepeatable for future planning, and so labor intensive that more resources are spent making a decision than acting on it.

A single open-access forum within a BI tool connects knowledge with data, and makes for a more efficient decision-making process, leading to better and faster decisions.

Sharing

The digital era is often described as the Information Age. Information is the new global currency. But the value of information resides in its ability to be shared.

Popular social media platforms, such as Twitter and Facebook, are designed around the concept of sharing content across networks. Socially, these networks may be based around friendship groups or topics of interest. In the enterprise, business insights can be shared between and across departments to facilitate an understanding of operational factors, and form a basis for strategic planning.

Sharing knowledge is the primary aim of any collaborative endeavor. In the enterprise, this provides a cross-departmental bridge to eliminate organizational knowledge silos and close the gap between technical experts and business decision-makers. A Collaborative BI platform supports the ability to share data and insights wherever they are required, and in a manner that suits individual circumstance. The point of sharing information is this: The multi-perspective and multi-expertise nature of group discussion and decision is far superior to individual conclusion – socially or professionally.

Good decisions are not made in isolation in response to an individual's idea or individual piece of data. Good decisions require shared knowledge and analysis of a combination of different pieces of information.

But how do we share? Sharing has changed over time.

Email: Initially, sharing was conducted via email. A user created a report in a spreadsheet and then emailed that report to all required recipients.

Links: Subsequent to emailing, the ability for users to access a common portal meant that links could be emailed to reports stored within that portal.

Tagging: Initially**,** reporting portals were set up on a file-based system. Reports were stored in folders. This system, whilst useful, meant that the categorization of reports was limited to a single folder structure. The ability to tag reports frees users from this constraint – users can categorize content into multiple areas, facilitating the sharing and search functions that modern enterprises require.

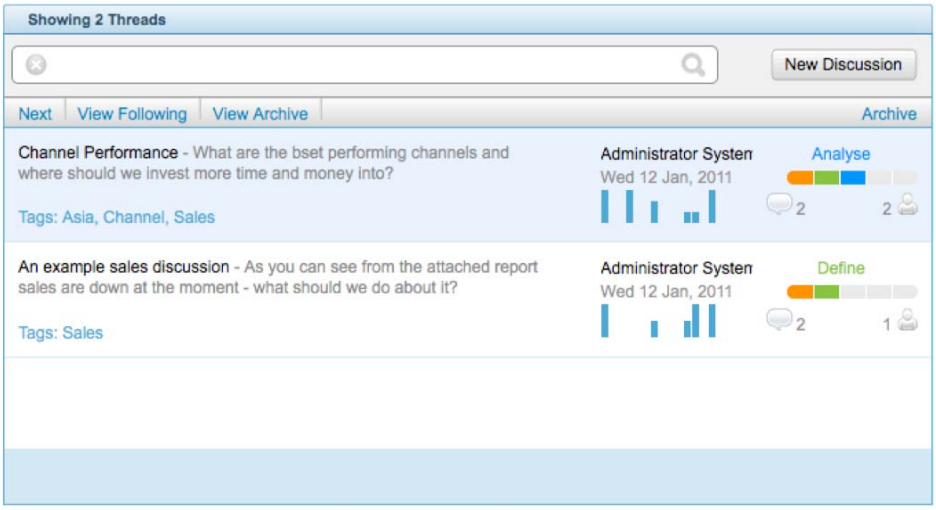
Embedding: The ability to embed content represents a major shift in information sharing. Now, users can embed BI content into third-party Web-based platforms and applications. For example, instead of having to log into a reporting portal to access financial reports, users can place those reports into the budget wiki they use for day-to-day budgetary management.

Corporations should be able to share information relating to reporting and analytics via their Collaborative BI module in three ways, by:

1. Cataloguing
2. Distributing
3. Embedding

Tagging, Cataloging: Creating a searchable history

A social layer within a BI solution allows users to create a searchable history by tagging and cataloging past discussions and reports within shared folders inside the BI portal.



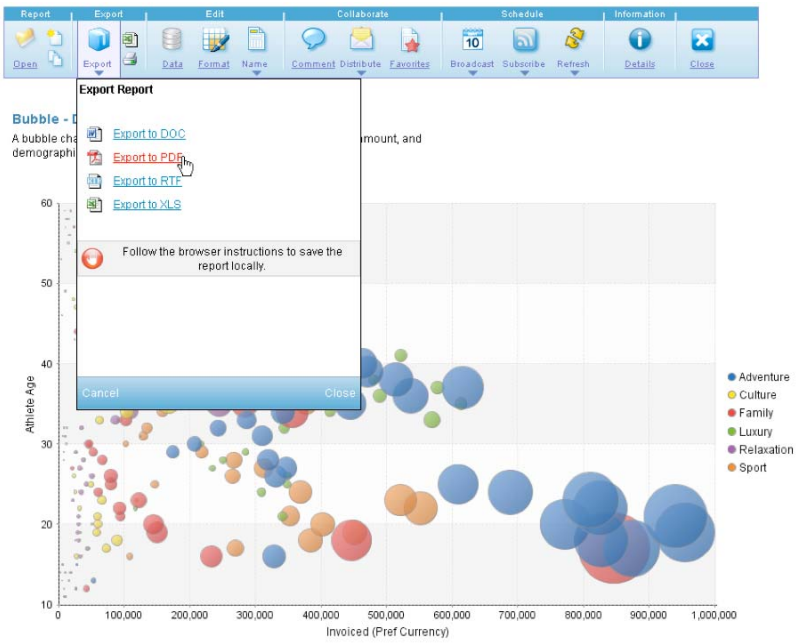
Tagging allows users to quickly and easily file report, annotation and discussion content under multiple categories for quick and easy retrieval.

Tagging allows users to categorize content in a way that makes it easily searchable for them, and other users like them.

Distributing: Exporting and direct links

The ability to distribute information from a centralized location allows it to be shared across platforms to enable geographically dispersed stakeholders, and/or those positioned outside internal/private networks, to keep up-to-date.

For a BI tool's CDM platform to be an effective mechanism for enterprise information sharing, it must be contain features and functionality that facilitate the distribution of corporate data and associated information to dispersed (external) stakeholders – those personnel unable to actively participate within the BI tool's CDM platform..



The ability to export entire files/reports from the BI portal, is critical for keeping all relevant decision-makers properly informed.

Likewise, not all relevant information will be included, or available, within the CDM platform and BI portal. The ability to share direct links to external information in a threaded discussion within the CDM platform is critical for adding necessary detail, context and perspective to discussion.

Embedding

However, with the influence of social media platforms, sharing information socially has moved well beyond the basic capacity to email materials or direct links. People are able to share knowledge and insights by embedding content (documents, videos, etc) into blogs, wiki's – wherever the information is required. Business personnel now rightly expect to be able to share information with the same ease and fluidity in professional contexts.

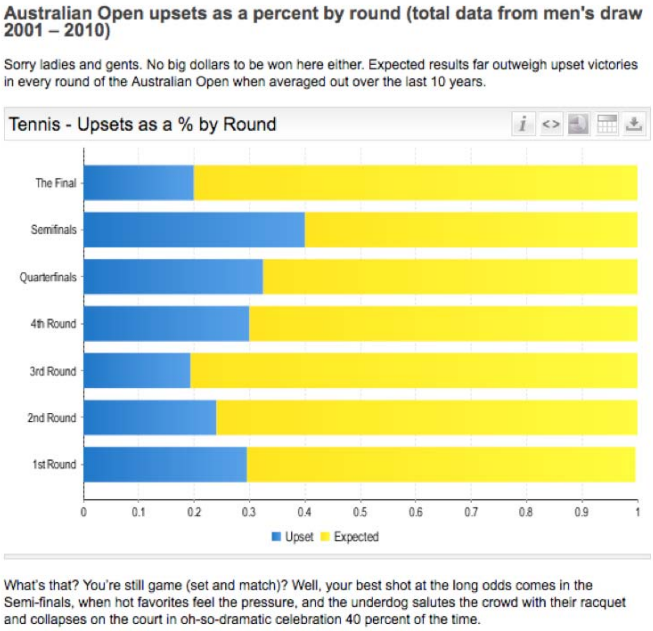
CDM platforms need to support the ability to share content across platforms – wherever it's needed for decision-making. To support syndicated content – the capacity to embed a report or dashboard in platforms or applications outside the BI solution, such as a wiki, blog or Web page – the CDM layer within a BI tool should allow users to embed BI content in two ways:

1. Within the BI tool's social layer or enterprise portals (intranet system) via a web services application programming interface (API)

2. Outside the enterprise, on any platform, via YouTube-style Java script export – users can embed live interactive reports or other information by simply copying the Java script fragment of a report or dashboard into any HTML page

SlideShare is a Web-based sharing platform that provides a good case in point. Not only can registered users upload presentations, documents, videos and catalogue them for sharing across the SlideShare network, information can be distributed to other interested parties and stakeholders outside the SlideShare platform by direct link, email or direct download. But most advanced, is the ability to embed a presentation or document for discussion on any platform, by placing a customized Java script code into any third-party Web-based platform or application.

The ability to embed information allows multiple people to view that information, discuss it and contribute their own, in an accessible, convenient environment. Embedding information eliminates the need to distribute information to individual stakeholders. Everyone can remain directly involved in the conversation – information is not consumed in isolation (via direct links or exports/downloads). The ability to embed BI content into third-party platforms marks a significant shift in the way people consume, discuss and disseminate reporting and analytics. The ability to perform content syndication helps customers derive the best value possible from their business data by transforming BI from an application centric, to an information centric model.



Deciding: The difference between social media and enterprise collaboration platforms

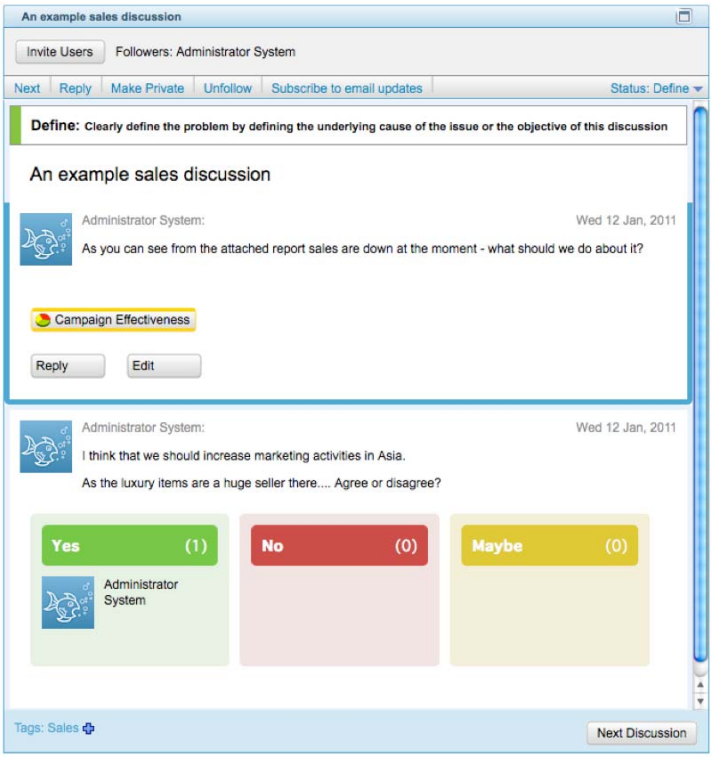
Corporate collaboration and knowledge-sharing platforms borrow many of their components from popular social networking platforms, such as Facebook or MySpace, allowing participation in recorded threads and discussions, as well as the embedding of external content and links. Although, there is one important difference.

Collaborative or 'Enterprise 2.0' platforms, such as Jive and Cubetree, have helped assist collective and unified conversation, by letting people work together on projects. However, their failing is that they usually don't directly support goal-oriented decision-making – there is no function to assist users to make collective decisions. There is no bridge between insight and action.

Most social media platforms are designed around the individual, allowing for individual knowledge sharing and participation. They are not designed for, and do not facilitate, consensus and CDM.

The usefulness of networking at the enterprise level rests on the ability to reach appropriate and timely decisions. For corporate discussion forums to be successful, they must include a mechanism for deciding action, such as voting or polling, to help push conversation towards a specific, measurable and desirable course of action.

Achieving ROI is the overriding goal and aim of any BI project. To realize this goal, users must be able to make meaningful business decisions based on the data analysis generated from their BI tool.



Crucial technological components of a CDM platform

To facilitate effective enterprise CDM, using the information generated by reporting and analytics, a Collaborative BI platform needs to be:

1. Easy to use
2. Fully integrated
3. Web-based

1. **Easy to use: Stimulate high user adoption**
   CDM software must follow the Web 2.0 self-service mindset – help yourself and each other.[vi] The collaborative component(s) within the BI solution must cater for a diversity of user ability and skill levels to enable people with varying technical capabilities, from across different departments, to share their insights. If only select users are comfortable and capable of using the collaborative functionality, knowledge and insight will remain siloed and departmentalized – defeating the purpose of a CDM module. However, the tool's ease-of-use cannot come at the expense its usefulness. The collaborative components must be both highly intuitive and functionally rich, facilitating the ability to discuss, share and decide.

2. **Fully integrated**
   Users must be able to discuss their queries regarding reporting and analytics within the BI tool itself in a single uniform, Google Wave like, environment.

   As a concept, Google Wave was ingenious. Google Wave provided a shared space on the Web for people to communicate, share documentation and collaborate in real-time. Participants could also embed information – such as formatted text, videos, photos and maps – into the forum for discussion, or give context to existing discussions. Google Wave incorporated many of the features and functionality required in successful CDM platforms. However, Google Wave failed to achieve high levels of success because it was a collaborative engine without a problem. By integrating an enterprise-wide collaborative platform within a BI tool itself, users are able to collaborate in full view of the information and problem (BI content). Users don't have to search for content to discuss an issue. All they have to do is begin the conversation.

   Picture this scenario: You're using your BI tool to search for data on last month's sales results from the Americas. You find a startling anomaly – sales have skyrocketed compared to previous months. Why? What has been done differently? How can you replicate the results? If your BI tool has an integrated CDM platform, you can immediately start the investigation, inviting others into the conversation in full view of the data. There's no need to set up meetings and discussions in isolation from your data set. The collaborative process remains clearly documented in a single open-access space, and discussion remains on topic – the underlying information (data) is right there. To enable successful CDM, both your collaborative platform and information should be in the one place.

3. **Web-based**
   The collaborative platform must be entirely Web-based to enable true enterprise-wide knowledge sharing. Being Web-based allows information to be accessed and added both internally and externally in real-time, anywhere, anytime. Social networking giant Facebook has only proved so explosively popular because they offer people the ability to instantaneously connect and contribute to discussion as it unfolds, no matter their locality, time difference or the device used.

Enabling Collaborative BI: A culture of collaboration

Without a willingness to fully engage with, and take advantage of, the CDM technology, organizations will not be able to realize its full potential. Effective CDM requires the right mindset, not just the right tools.

If you fail to establish a corporate environment conducive to collaboration, how will you extract the best value from your CDM software?

To ensure your CDM platform is fully optimized, follow these three cultural enablers:

- **Senior executives lead the way**: Management needs to set the tone and lead by example. To ensure the effectiveness of CDM technologies, collaborative processes must be established and followed as normal business practice. If senior leaders adopt collaboration as routine best practice, others will too.

- **Anti-hierarchical culture**: True collaboration requires organizations to foster a culture of interactivity between business groups, departments and down hierarchies. All relevant parties must be able to participate equally in the information sharing, discussion and decision-making processes – uninhibited by vertical business structures (role or seniority). Within the CDM platform itself this means not only allowing, but encouraging, all users to respond to and generate new discussions.

- **HR to include team-building skills early on**: An organization's Human Resources department has a key role to play in maximizing its ability to collaborate. Learning and development programs should incorporate relationship-building modules and HR policies should be designed to support online social interaction.

The right technology alone isn't enough to ensure great performance. The environment must be right too. After all, it's not the technology itself, but what you do with it that drives performance and ROI.

Yellowfin: A complete Social and Collaborative BI solution

Yellowfin is currently the only BI solution on the market that offers a complete CDM module straight 'out-of-the-box'. Yellowfin's Collaborative BI components facilitate better, faster, less labor-intensive organization-wide CDM.

Yellowfin Collaboration – a Web-based discussion forum within Yellowfin itself – allows users to create and participate in real-time threaded conversations around reporting and analytics from inside or outside the company. Users can embed reports and other contextual information in threaded conversations, and add annotations, to further explain patterns and trends in the data. Conversations can be centered on a single report or entire discussion topic.

Yellowfin Connect – a YouTube style embeddable widget – enables fully interactive reports and dashboards to be shared across platforms, anywhere and anytime – wherever the content is needed for discussion and decision-making.

Finally, Yellowfin supports the transition between discussion and decision with decision widgets for voting and polling on a particular course of action.

The collaborative components within Yellowfin are designed to help organizations spread fact-based decision-making throughout the enterprise. Yellowfin creates a business environment that empowers all relevant decision makers with the ability to use the insights generated through reporting and analytics accurately, maximizing its potential to underpin better, faster decisions and support operational objectives.

Summary

This paper has defined Collaborative BI as the merging of BI with social networking and Web 2.0 technologies.

To facilitate enterprise CDM based on reporting and analytics, three essential features of a Collaborative BI platform have been identified. BI users need to be able to discuss and overlay knowledge on business data; share knowledge and content; and collectively decide the best course of action.

Effective collective discussion and analysis of BI content necessitates that users are able to: Discuss and analyze data within an individual report; Add context and meaning via annotations; Create general discussion topics (by including multiple reports in a single discussion) to enable users to collaborate at the level of detail required, and gain the necessary perspective, to make informed and effective business decisions.

Documenting discussion on a single open-access CDM platform within the BI tool has been argued to overcome many of the shortfalls of traditional discussion and information sharing by being: Recordable; Eliminating logistical hurdles; Enabling all relevant stakeholders to participate.

Corporations should be able to share information relating to reporting and analytics via their CDM platform in three evolutionary ways, by: Cataloguing; Distributing; and Embedding information.

The ability to help reach timely decisions based on the discussion and sharing of knowledge, contextual information and business data, has been recognized as the most important characteristic of a CDM platform. Without a decision, there is no ROI for a BI solution. To ensure the success of a CDM platform, it must include a mechanism, such as voting or polling, for transforming discussion into action.

A CDM platform requires three fundamental technological factors. It should be: Easy-to-use to stimulate high user adoption and BI reach throughout the organization; Fully integrated so that discussion is recorded and undertaken in full view of the business data used to underpin action and decision-making; Entirely Web-based to allow information to be accessed and added both internally and externally in real-time, anywhere, any time.

For CDM technology to be successful, organizations must adopt three cultural enablers. Culturally, it is imperative that: Senior executives lead the way to ensure that collaborative processes are adopted as routine best practice; An anti-hierarchical approach to information sharing and discussion is encouraged to enable all relevant parties to participate in the decision-making process; HR incorporates team-building modules in company learning and development programs.

A true CDM platform delivers faster, better and more efficient analytics-based collaboration and collective decision-making. Collaborative BI bridges the gap between insight and action.

Find out more

Contact Yellowfin at **www.yellowfinbi.com** and ask for our proven roadmap to assist you to successfully implement Yellowfin's Social and Collaborative BI solution into your organization.

References:

[i] *Unisys Consumerization of IT Benchmark Study*, Unisys, 2010
[ii] *Determining the Value of Social Business ROI: Myths, Facts, and Potentially High Returns*, IDC report, 2010
[iii] Gartner, April 9, 2009
[iv] *Competing Through Analytics*, Accenture, 2009
[v] *Report Debunks BI Usage Myth*, TDWI News, May 20, 2009
[vi] *Self-service Goes Mainstream*, Allen Bonde, DestinationCRM.com, February 23, 2009

