

White paper

Deliver the information business users need

Building the Business Intelligence
Competency Center



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Overview

Today's volatile marketplace demands quick business decisions based on analysis and facts, not intuition. Executives, managers, and analysts demand more information faster, with less tolerance for ambiguity or errors. The problem, however, is that many organizations do not have information organized properly or the analytic competencies and disciplines necessary to meet these information delivery requirements effectively.

Users spend most of their time integrating the data to a point where they can report and analyze it effectively—and time spent organizing the data means time lost in analysis. Who can afford to spend days resolving differences in the data from various departments?

Companies need to organize their data in an intuitive and integrated way where users can get to the business answers quickly. Building an enterprise data warehouse (EDW) to deliver data in a more efficient manner resolves part of the problem. The other part involves aligning the organization in a more efficient manner to achieve fast, consistent enterprise answers to business questions.

A Business Intelligence Competency Center (BICC) delivers this alignment. This paper outlines how a BICC can help organizations better leverage their investment in technology and improve the effectiveness of knowledge workers, transition analysts from technical data gatherers to solution providers, and enhance fact-based business processes.

Components of the BICC

The BICC interacts in many ways with technology and the business departments within an organization. A common philosophical discussion surrounding the BICC concept asks: Should a BICC only address information delivery, or should it also address the components of information management that include data acquisition and integration? We do not believe there is a single right answer to this question and have seen both models work. Culture, capabilities, and other factors within an organization vary greatly across organizations and help determine which approach represents a better starting point.

Our experience shows that the challenges and complexity associated with establishing a BICC are more closely related to the information delivery capabilities and components. Also, the combined information delivery and information acquisition models are implemented more frequently than an information acquisition-only model. This paper focuses on the information delivery aspects of the BICC for these reasons.

Components of the BICC may be defined in a governance framework, as shown in Figure 1. The framework includes multiple components:

- Business objectives
- Technology
- Standards and guidelines
- Education and certification
- People
- Functional and technical support
- Information
- Analysis assistance

Figure 1. Components of the BICC

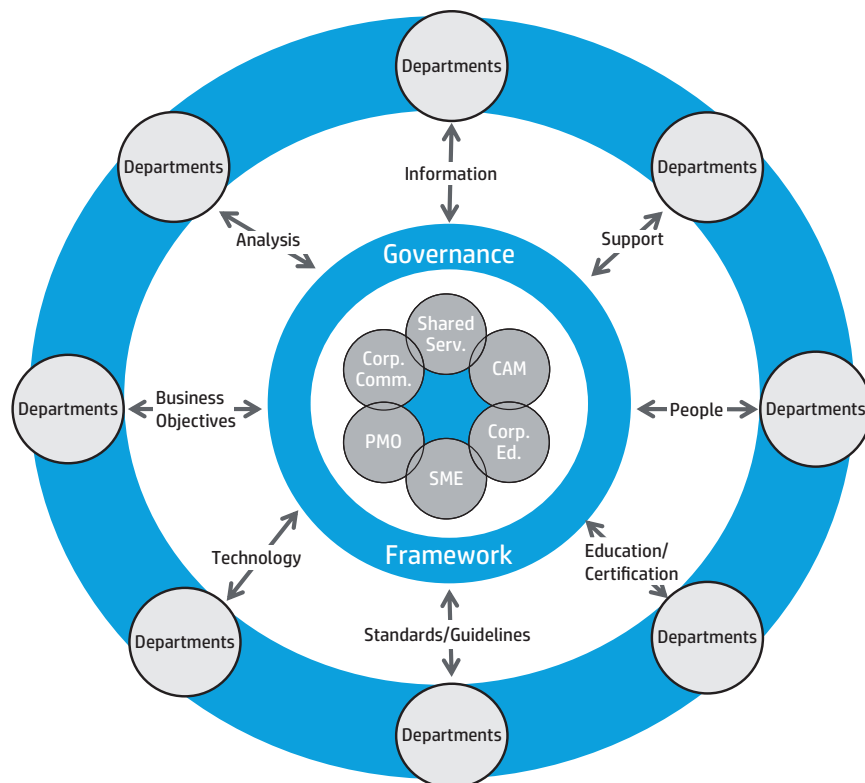
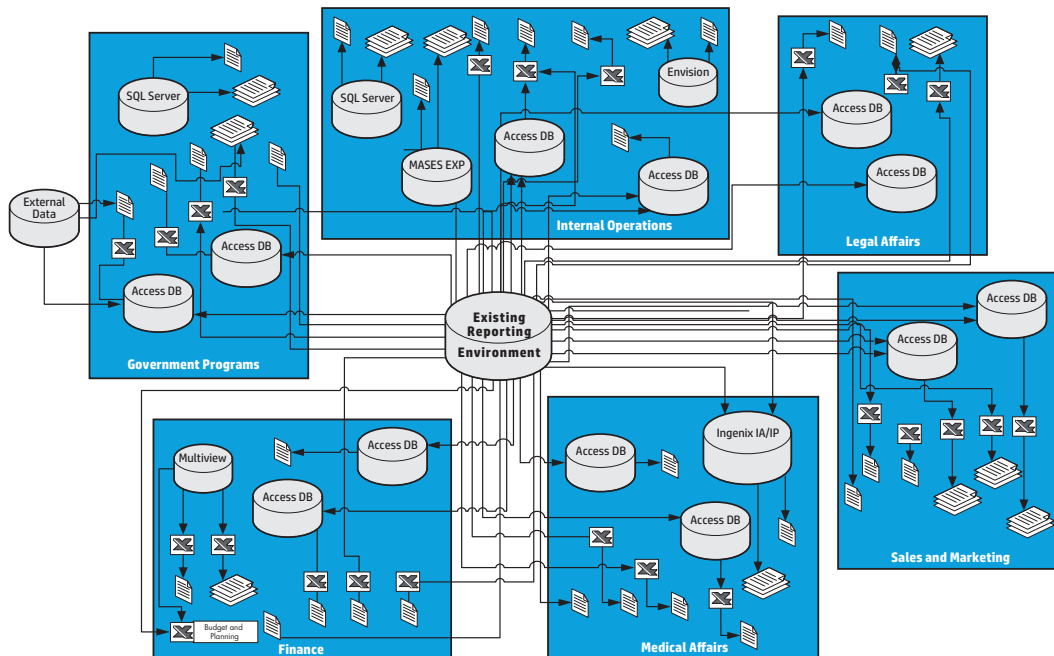


Figure 2. Typical current-state reporting architecture



Each of these components are reviewed and prioritized by the governance framework and are described in the following subsections. To execute, the BICC uses services spanning many areas of the organization, including shared services, core asset management, corporate communications, project management organization, subject-matter experts (SMEs), corporate education, and corporate strategy.

Business objectives

- Understanding of current, ongoing, and future business requirements
- Understanding of the technical capabilities of the users through continuous monitoring of the business intelligence (BI) skill sets and enhancing the skills as required

Technology

- Analytical functionality provided for users through information-delivery capabilities based on the integrated data in the EDW system
- Operational reporting provided as close to the source system as possible to meet reporting service-level agreements

Standards and guidelines

- Standards and guidelines established and enforced to facilitate efficient and consistent operations
- Service-level agreements established and adhered to with enforcement by the governance framework
- Continual communication with the business to understand issues and modify as needed

Education and certification

- Verifying users and developers are fully trained on tools, data, analytic techniques, and problem-solving; the center requires specialized skills in many information delivery capabilities, including data and process education
- Ongoing education where users are initially trained and then updated periodically through user sessions, demonstrations, and additional hands-on training of additional features
- Lab environment where users receive real-time assistance with information delivery

People

- Business and technology need alignment on the understanding and purpose of BI
- Incorporation of business SMEs and power-user resources
- Governance by the steering committee to resolve issues and set direction

Functional and technical support

- User support that can be transitioned from an initial centralized approach to a decentralized model as required
- Initial centralized support model with SMEs identified throughout the business and technical people available for support within technology
- Frequent communication and user sessions to understand current and long-term issues and needs

Information and analysis assistance

- Self-service access to information with assistance as required from BICC, SMEs, and power users
- One-on-one analytical assistance to the business
- Delivery in structured releases through change and release management

Typical scenarios

The BICC is a critical component in solving many of the information challenges companies face today. These situations can include inadequate reporting systems that spawn other manual processes, disparate data, and poor or no training. Below we outline several typical situations and how the BICC can help.

Analytic and technology issues

Figure 2 outlines a typical current-state reporting architecture. Data integration and organizational issues force users to extract data from the main reporting environment and create off-line reporting areas using tools such as Excel, Access, and SQL server. Users then are required to spend excessive amounts of time preparing and organizing the data to resolve issues instead of performing analysis. The impact to organizations is seen in many ways, including:

- Inconsistent results, commonly referred to as multiple versions of the truth
- Business analysts who are required to have strong technical skills to resolve data issues
- Business analysts who are technically strong but lack desired business analytic skill (that is, framing and answering business questions)
- Additional analytics staff that are required to compensate for information inefficiencies
- Excessive timeframe to get an answer or inability to assemble information at the level of desired detail
- Varying quality of analytic techniques across analysts, resulting in partial or incomplete results

In addition to data issues, the many different reporting systems required to meet reporting needs add another layer of complexity. The end result is lack of a centralized information delivery architecture, which, in turn, creates increased cost, support, and maintenance issues for the company.

Often a larger concern is the impact data issues have on business decisions based on partial or inaccurate information, or data issues that only permit a limited ability to comply with Sarbanes-Oxley and other regulatory requirements. Every organization can cite situations where revenue or profits were affected because decisions were based on incomplete or misinterpreted information. A few examples of this in the healthcare payer industry include:

- Inflated medical costs resulting from a contract change forecasted incorrectly
- Higher services costs resulting from an incomplete analysis of new or changed health benefits

Other examples in the insurance industry include:

- Time and effort required to research customer retention using a variety of factors, including previous carrier, payment frequency, behavior, and channel
- Linkages established between business profitability and a representative's experience and ability to sell insurance initiatives

How can the BICC help?

Implementing an EDW can resolve many of the data integration and organizational issues that companies face today. The BICC extends the value of the EDW by gathering business requirements, providing them to SMEs who understand the information and know how to use it most effectively, and providing resources to implement technical and soft skill solutions to improve information effectiveness.

The governance framework can help set architectural standards that control the departmental purchasing of systems for the company. There may be times when a department requires another application for reporting. The BICC can provide the review and guidance to verify that the systems are aligned with the business intelligence technical direction and architectural standards. Governance must go a step further and actively involve business users in the information-delivery processes. These processes lead to the acceptance of enterprise standards, with higher use of the EDW, translating into greater business value.

Inadequate training

Another common issue is the lack of training that exists for most reporting tools. When users are not properly trained, they often find alternative methods to analyze and report information. For example, in one client situation, HP discovered that technology would download information from a reporting tool and upload it into an Excel spreadsheet where the client would format it and then distribute it to the user. This client could have avoided the process of downloading and formatting in Excel if the client only knew how to use the tool properly.

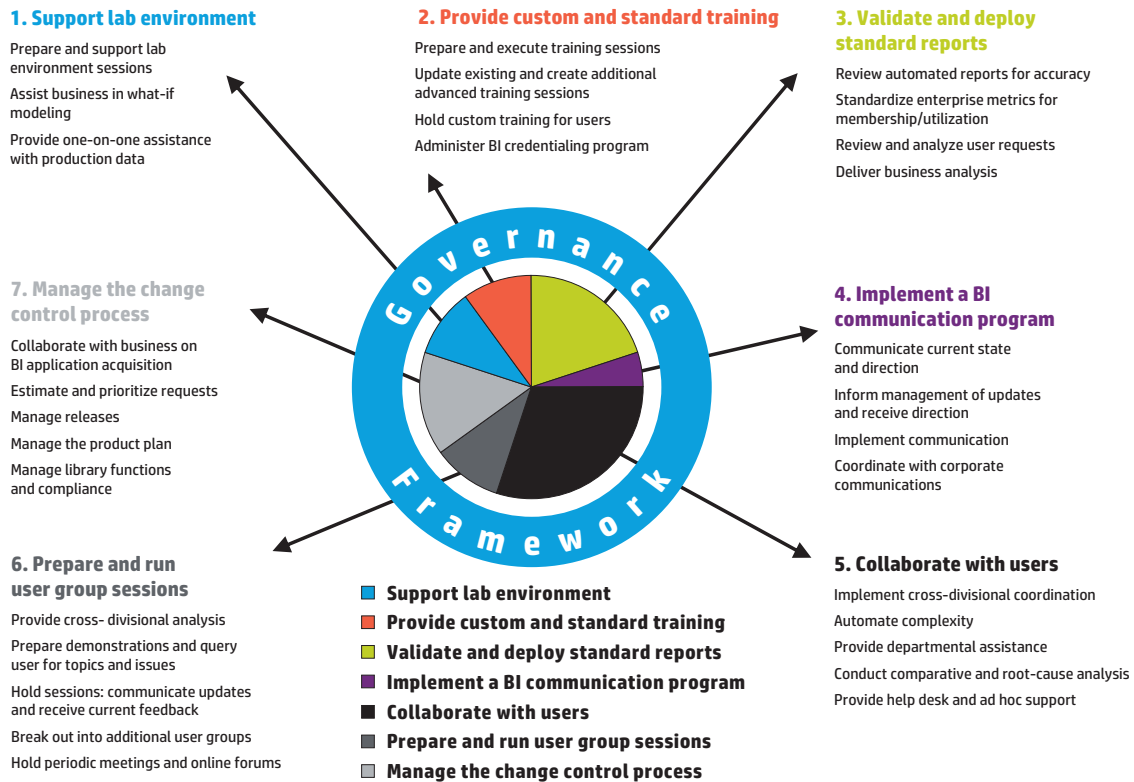
We have found that more than 75 percent of users either do not receive training or receive inadequate training. It is important to remember that training does not end after system implementation but needs to continue throughout the BI adoption lifecycle as described in the HP BI Maturity Model.

The type of training users typically receive is inadequate. Some training programs are limited to teaching the user how to use a tool instead of learning how to leverage the underlying data. Users should be able to understand the information and be trained on all aspects of information access and usage. A description of the data elements or metadata and how each data element relates to one another is just the start. Effective information usage training is critical to delivering the benefits of an EDW. Data education and process education must be part of the education program.

How can the BICC help?

The BI Maturity Model shows how BI usage matures as the company evolves its use of business intelligence. As users receive better access to information, they require access to more information, faster—real-time access. The BICC can develop education and certification programs that provide the user with the tools, data, and processes required and then offer a certification program to enable the user to leverage the system properly. The BICC can build a program to monitor and continue to improve the methods of information delivery and training on systems throughout their maturity lifecycle.

Figure 3. Supporting the business—A day in the life of a BICC BI analyst



Inefficient end-user support

Support comes in many forms for users. It begins with the system and information being aligned to meet business needs and the users receiving proper training on how to use the system and information. Often, users do not receive one-on-one training and need to resolve questions by calling the help desk and requesting assistance. If the request is for system improvements or to remedy issues using a report, the help desk logs a request with the technology department; a developer looks at the request, modifies the report, and distributes the new report back to the end user. This process is inefficient and time-consuming and generally takes several attempts at resolution, as the first adjustment generally does not satisfy the user requirement. The above scenario and process can improve, and it begins with the assistance of the BICC.

How can the BICC help?

The fundamental problem with the support model outlined above is that the user is not adequately armed and able to report and analyze information in a self-service mode. The user does not have the understanding and ability to modify the report, nor does the user understand whom to go to for assistance.

Through the BICC, support can provide proper data, training, and certification to the organization, and can provide the user with the capability to report and analyze data independently. The BICC can also provide a communication program to keep users informed of changes and available support, as well as provide updates to information.

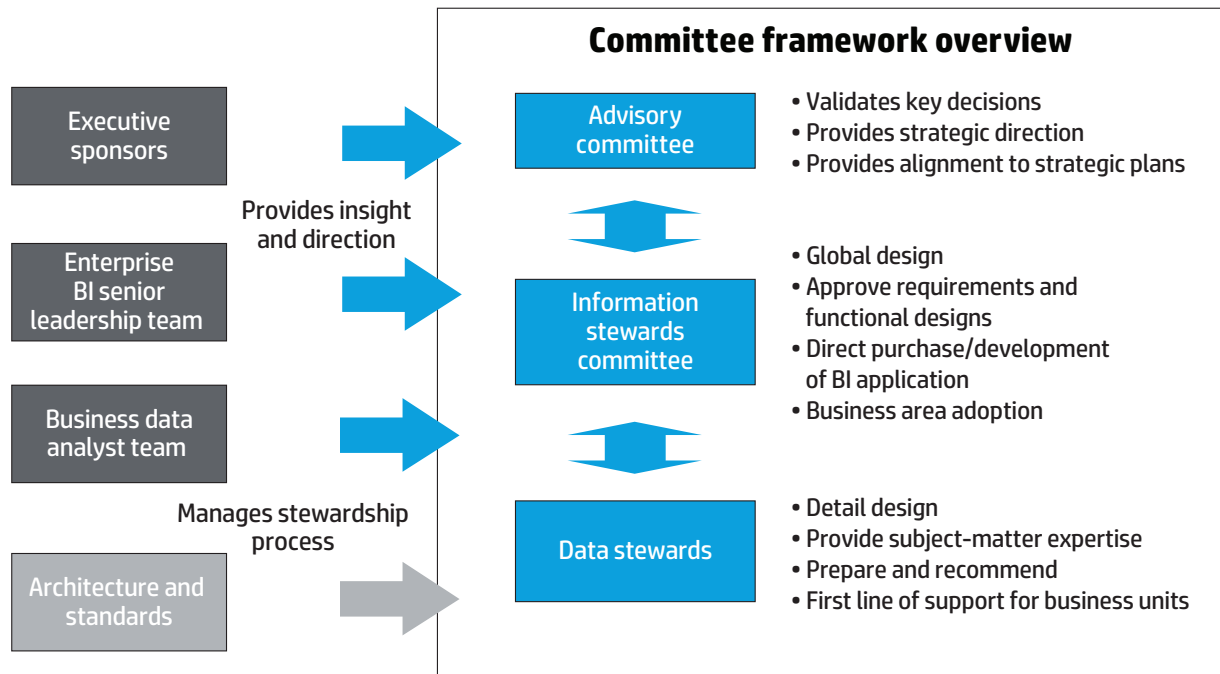
It can be challenging to build a system, teach the user, and then expect some level of user autonomy, but this can be achieved with the right support model. One-on-one assistance, departmental and corporate technical assistance, and subject-matter expertise are several ways the BICC can assist users with departmental and individual needs or company-wide needs. The BICC team becomes trusted advisers to the business and blends business knowledge with technology disciplines to remove complexity, automate redundancy, and enable analysts to focus on business solutions.

Figure 3 represents a view of a BI analyst within the BICC. Note that a large percentage of the time is spent supporting users through collaboration with users (5), supporting the lab environment (1), preparing and running user group sessions (6), and participating in the BI communication program (4). The additional outlined tasks assist in monitoring change (7) and are discussed in the “Limited governance” section of this paper. Custom and standard training (2) is discussed in the “Inadequate training” section. Additionally, the support for standard reporting (3) is discussed in the “Analytic and technology issues” section of the paper. All are essential functions of the BICC.

Limited governance

Reporting systems often lack the controls that outline for users how to use the system, how to make requests, and how to verify requests, enabling all parties to adhere to the controls. Often, there is no operating body that can review and analyze needs effectively in an efficient and structured manner. As a result, it becomes difficult for users to satisfy additional needs, complete report modifications, or request integration of additional subject areas.

Figure 4. Example governance framework



Governance is rarely driven by business users and is often considered an impediment to getting things done. Rarely is usage and adoption of the data warehouse considered a business issue and governance responsibility. This is where governance as part of the BICC can assist the company.

How can the BICC help?

As indicated in Figure 1, a governance framework is a key part of the BICC. The framework exists to understand and prioritize business needs, review technology changes, and assign resources for implementation. The scope, objectives, and structure of the governance need to be analyzed and established based on each company’s organization and goals. Governance generally is created in several tiers, where each tier has a responsibility to analyze the need and situation and determine the resolution where approval is then submitted to the next tier.

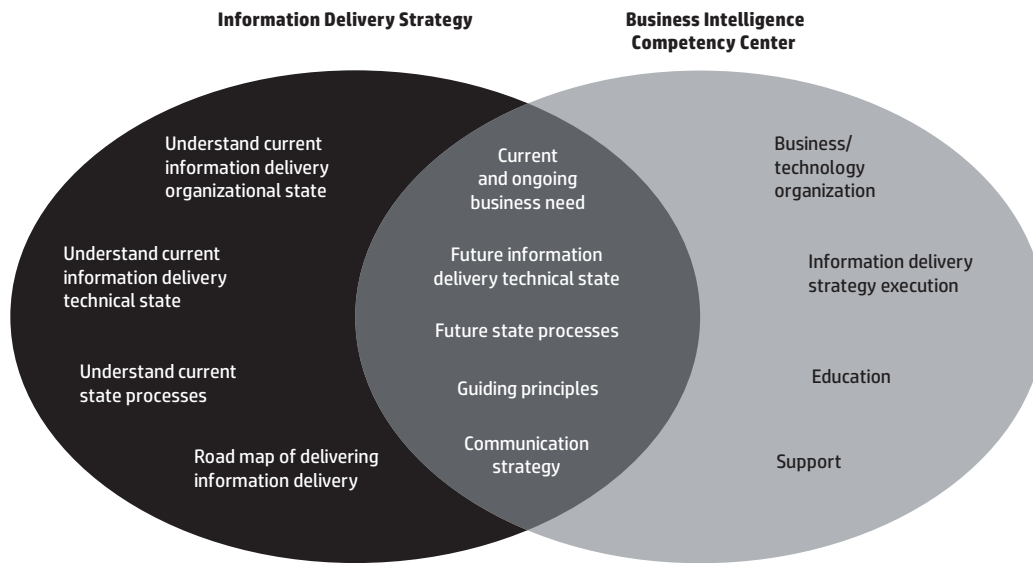
Figure 4 is an example of a framework that has been successfully implemented in a typical company environment. Information stewards are typically business managers with process responsibility who rely on data to get their jobs done, who set direction, and make decisions. Information stewards are directly affected by information integration decisions. Depending on the size of an organization, they are typically senior manager to vice president-level associates.

Data stewards are staff of the information stewards and are focused on the details for making recommendations and taking action. One key to success is empowering stewards to make appropriate decisions and holding them accountable for the results. Effective stewardship not only enables the efficient delivery of information management solutions, but it also drives business acceptance and usage. The BICC provides the structure and framework to administer a sustainable stewardship program effectively.

Approach to building the BICC

The approach used in forming the BICC is based on many factors outlined throughout this document. Generally, there are several key objectives of the BICC, including business efficiencies and improvements, technology, training, support, improved analytical capabilities, and governance. All these aspects must be taken into account when planning and implementing the BICC.

Figure 5. Information delivery strategy versus BICC



Building the BICC is closely aligned to developing the information delivery strategy, because each interacts with the other in many ways. The information delivery strategy understands the current and future needs and outlines the information roadmap. The BICC supports the direction of the strategy. Figure 5 outlines how the BICC and the information delivery strategy interact. The high-level approach to forming the BICC is outlined in the following subsections.

Forming the BICC team

Typically, a team of key stakeholders from across the organization is established and tasked with defining the BICC and building the initial charter and staffing models. Team members from the business include high-level decision-makers who rely on analytic information. The team members become sponsors of the initiative and change agents who can drive the culture change associated with these initiatives. Areas represented include the key consumers of information, such as finance, operations, and sales and marketing. An often-overlooked resource is a senior HR representative who can help with staffing and culture-change issues.

Analyzing the environment

An analysis of the current environment should be performed and a strategy outlined as to the next steps. There are several areas that should be investigated that are in line with the main themes and discussed throughout this paper:

Business objectives

What are the tactical and long-term goals of the business, and how well are they currently being met?

The BICC should focus on supporting the highest-priority goals that deliver the most value. It is common for organizations to find that information delivery is often the largest barrier that must be overcome to meet the business objectives. The BICC provides the infrastructure and a team with cross-functional enterprise tools that can identify and document specific information-delivery needs of each goal and work to enable appropriate solutions efficiently.

BICC objectives and desired outcomes

An often-overlooked component is defining and building consensus of the outcomes the BICC is expected to deliver. This step should specifically identify:

- *What are the current problems the BICC should address?*
- *What are the current behaviors the BICC should influence?*
- *What measures can demonstrate success?*
- *Where are the obstacles and how should they be removed?*

It is important to recognize and manage the culture-change aspect associated with implementing the BICC. A common mistake is to assume there is alignment across the cross-functional BICC formation team on these topics or a common understanding of core analytic functions and priorities. A good analytic functions' map that outlines functions by department is a critical component to completing this step. The analytic functions' map should:

- Define key analytic functions and their interdependencies
- Identify the relationship between high-level business processes and analytic functions
- Show where the analytic functions are used—that is, how pervasive they are across the organization

A common mistake is to assume that the BICC formation team shares a common understanding of key analytics or of what the BICC should be. The analytic function map becomes a key tool to drive consensus and build alignment across the team. It is also a mechanism that can be used to lead fact-based discussions and remove emotion from some tough discussions that must occur. For example, organizations often are looking for the BICC to deliver centralized consistency and efficiencies where it makes sense while maintaining the entrepreneurial capabilities of the functional business areas.

Identifying what falls into the centralized category can be difficult, emotionally charged conversations. On a recent project with an insurance payer, during initial conversations, there were strong sentiments expressed that utilization analysis (what services are

performed by doctors) belonged to a specific functional business area and should not be changed. The building of an analytic functions' map demonstrated that utilization analysis is:

- Used by most of the functional business areas in the organization
- Embedded as subprocesses or as prerequisites for many of the other analytic functions in ways that are not always obvious
- Not reported consistently across the organization, meaning there are multiple versions of the truth
- Not adequately supported in a manner that can identify and address business issues that impact financial results (For example, radiology cost have increased by 15 percent—is there a problem that needs to be addressed compared to change in treatment protocols that may lower costs somewhere else?)

In the insurance payer example above, a fact-based discussion about centralizing this process benefited the organization. The business unit that declared ownership quickly realized how it would benefit as a consumer of a centralized service and realized what it really owned was the medical business policy supported by utilization analysis and other analytic functions.

Successful BICCs aren't just service areas or report producers; they become hybrid business or service organizations with responsibility to execute identified business processes and provide services to improve analytics across the organization.

Information access

- *How well are users receiving information?*
- *What is the current state of information access?*
- *Does the information access look similar to Figure 2?*
- *Are the users spending more time organizing data into a final report instead of performing analysis?*
- *How well are the users prepared to perform detailed analysis?*

These and other similar questions need to be answered to properly determine the current state of information access. Ideally, self-service access should be a goal for the BICC, because this provides the users with the greatest ability to analyze information and answer business questions quickly.

People

The resources that help to build the technical infrastructure and support the users must be aligned. Analyze the current technology organization to determine how well it is meeting user needs. Analyze the users to determine their analytical and technical ability to outline the future education program. The appropriate BICC organizational structure must be identified.

- *Who can the BICC report to?*
- *What is the level of the person running the BICC?*

This step identifies behaviors that the organization needs to build, modify, or eliminate, as well as skills and capabilities resources required to be successful. It also builds the plan to achieve them.

Technology

The current information delivery architecture should be analyzed to determine how well it is meeting users' needs.

- *What is the user perception of the system?*
- *What is working and what isn't?*
- *What additional tools are needed to meet users' needs?*

Governance

- *What kind of data and information governance is in place?*
- *How are users' needs being determined, reviewed, and prioritized?*
- *Is the information getting to the users at the right time?*
- *Are the developers and users operating within reasonable standards?*
- *Is the business a full partner, accountable for the solutions, use, and adherence to standards and policy?*

All these questions play a part in analyzing governance. Governance is a key component of empowering the business to take ownership of its information needs. As we have discussed, in a typical current state, the way information is delivered is often the key barrier to implementing business objectives, and the business must be an active partner in owning and solving these issues. The flip side of ownership is accountability, because the business then becomes willing to accept responsibility for adoption, use, and adherence to technical and business standards and best practices. Effective governance delivers alignment between the business and technology.

Education

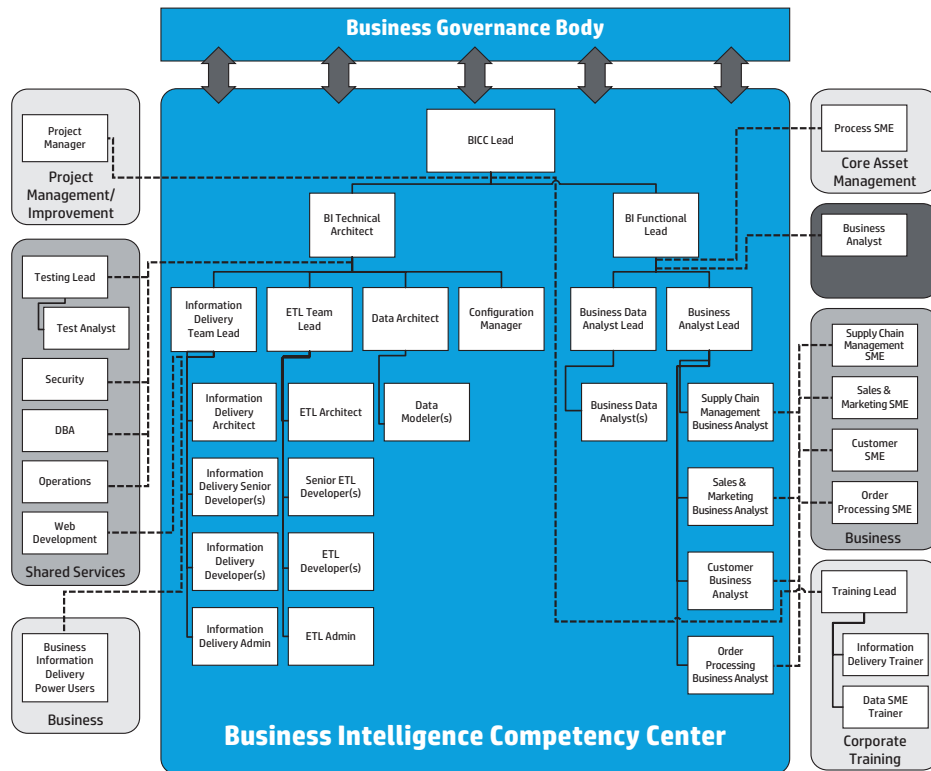
- *How well are the users educated?*
- *Can they use the system effectively?*
- *What are the future education goals?*
- *Do they know who to go to for help or to escalate business problems (for example, if gross margin for a product line seems wrong, who needs to be involved to determine the extent and cause of the potential problem)?*
- *Can users frame and answer the right business questions?*
- *Do they understand what the data means and make recommendations for action based on the facts?*
- *Do they understand how to ask requirement questions to make certain that analysis can meet the intent of the question?*
- *What additional training is needed for the current users to meet objectives?*

An education strategy should be outlined as part of the BICC, and the current state of education needs to be determined. Technical and tool training is only a small piece of the answer. The BICC provides a centralized area that not only has the technical skills but also the required business knowledge to address the broader educational challenges.

Support

- *Are the users getting the right kind of support?*
- *What changes are needed to get users the answers they need quickly?*

Figure 6. Example BICC organization



The existing support structure for the users needs to be analyzed and determined as to how well it is working. There are many approaches that can be used to support users, and the answer begins with understanding how well support is working currently. The BICC is not about centralizing all reporting and analysis. It is about improving the effectiveness of the knowledge workers throughout the organization.

Information delivery strategy

After the current state is analyzed, an information delivery strategy can be outlined. Figure 5 outlines the key components of the strategy, and the analysis performed in the previous step serves as a key element in determining the overall direction with information delivery. The strategy sets the tactical and strategic direction to align technology, people, and processes to better meet business needs. The BICC helps deliver the strategy.

Information management strategy

Along with the information delivery strategy, the alignment of information is essential to implementing information delivery. This strategy includes the way the data warehouse is organized and managed to meet the business needs through information delivery.

Senior level buy-in

Approval and support of the information delivery strategy and the BICC is critical to the success of forming the BICC. Support needs to come from the top down to propagate the objectives of the BICC effectively throughout the organization. Obtaining senior-level support is critical to the business accepting the BICC. The business members of the BICC team play a large role in this process.

Funding

The BICC funding model should be outlined early to fill the positions. There are several options for funding, including:

- Centralized funding: The BICC is fully budgeted, and full-time resources are filled and available. There are dedicated full-time resources within the BICC.
- Partial funding with time and materials: The BICC is partially funded with all changes billed back to the departments on a time and material basis. This allows for a cost-effective approach to the BICC, but does not allow for a set of full-time resources within the BICC.
- Custom: A custom funding approach is created for the specific situations that exist within the company. It is not recommended that a full-time, time and material model is implemented since there are no dedicated resources in the BICC, and this is a key part of the success of the BICC. Dedicated resources need to exist within the BICC to meet the objectives of the BICC and to keep an impartial view of the company while analyzing and meeting objectives.

Implementation

After the strategy is outlined and approved, resources need to be placed in the BICC. The information delivery strategy continues to be built during this time, as well—typically with a strong technology implementation effort followed by deployment and support. The resources used to implement any technology change are typically a part of the BICC, but there must be a strong business focus, because these resources take time to analyze the situation, determine responsibilities, and fill positions.

Determining responsibility

As the strategy is implemented and the BICC organization resources are filled, the technical and functional resources within the BICC need to be determined. Figure 6 is an example of a BICC organization chart. Notice that it has technical and functional branches, and there are many dependencies with BICC and other departments. The responsibility of each resource needs to be determined. The functional resources should be filled by the business, with the business responsibility of the BICC determined before the resource responsibilities are filled.

Establishing governance

A review and control process should be developed before the BICC is put in place. The business continues to communicate additional needs to the BICC, and a process and organization need to be put in place to review and prioritize changes. Verify that governance is built as an integral part of the processes, executed to define and build solutions and not isolated committees.

Communicating the plan

Communicate the BICC early and often to the business. It is important for the company to understand the BICC's goals and purpose so acceptance and input by all people can be included into the BICC. Communication of the status of forming the BICC should be analyzed. Determine what needs to be communicated, because forming the BICC can be a huge culture change, and senior-level buy-in is critical to the BICC's success.

Assigning resources

After the responsibilities of the BICC resources are determined and a governance framework is put in place, the positions can be filled. The governance framework can help determine the best approach to filling the positions. Typically, a BICC formation committee is organized to analyze and prioritize the overall required competencies of the BICC, which determines the roles and responsibilities of the BICC and the BI analyst within the BICC.

Best practices and keys to success

BICC formation approach	A thorough, consensus-based approach to planning for the BICC is the best way to avoid false starts, deliver real value, and obtain acceptance across the organization. Defining the BICC based on capabilities required can deliver agreed-to, actionable outcomes. This approach often delivers outcomes that are quite different than what was anticipated at the start of the process. The ability to fund and sustain the project increases when there is a clear understanding not only of what benefits can be achieved, but also of what cannot be addressed without this type of initiative.
Senior-management support	There may be inherent resistance to the BICC, because there generally are several ongoing initiatives to drive business change with technology. Many of these may be solid initiatives that involve direction and support from senior-level management. Executive-level support is required to enable all of these initiatives to be pulled together and coordinated with the BICC, following the guiding principles and scope of the BICC. Executive support is required to promote and communicate the BICC to the C-level management and throughout the organization. Executive support can also help guide and move the organization along the maturity model. These executives also need to be providing credibility to the organization so that it can more effectively accomplish the scope and guiding principles.
Enterprise-wide communication of the BICC	The purpose, competencies, and implementation plan of the BICC need to be communicated to the business. An ongoing two-way communication should be established to continually gather business needs from all levels. The BICC interacts with the business through training, the lab environment, user groups, and also through the support model. The governance framework also serves as a mechanism for senior management to communicate business direction to the BICC.
The BICC is part of the business	The BICC is part of and contains members of the business. It should not be a technology organization, but a functional/technical organization within the business, run by the business, and working for the business.
Funding support	The BICC should be funded and contain resources that work for the business. The overall funding model should be determined, but having funding is critical to having the proper resources available to meet business needs.
Governance framework enforced	The governance framework model should be enforced and parties held accountable. This allows for user needs to be addressed and implemented based on the greatest value to the business.
Implementation of immediate needs	The BICC is established to resolve issues with users' access to and use of information. All issues should be prioritized with the "high business value with low effort" implemented first to demonstrate immediate success. This is critical for the BICC to gain the confidence of the business.
Better understanding of future business needs	Following the initial implementation of the flow of information and abilities to the users, change should rapidly flow through the business, and the BICC should continue to assist the business as needed.
Enterprise alignment of business needs	Certain widely used and high-value business needs should be implemented and supported by the BICC. The BICC supports many other business functions, but the BICC is responsible to implement identified business functions.
Improving the analytical capabilities of the business	One of the most important required competencies of the BICC is understanding and improving the business' analytic capabilities. This is the primary and most critical objective of the BICC and can be accomplished through improved training, support, and understanding of business issues and current needs.

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