

## Planning for Success

So you are going to start a business intelligence (BI) program! Whether your exposure to BI derives from the popular press, your friendly hardware or software vendor, or developers within your organization, the promise of BI is sold as a black box full of incredible technology that cranks out dollars by the cartload. Unfortunately, the reality is a bit different, and that promised benefit is often waylaid as escalating costs and limited benefits become synonymous with your comprehensive BI program.

Note that each of those folks selling BI is motivated differently. The vendors are more interested in selling product or licenses than in ensuring your success. And not only are the developers more motivated by interesting technology than the bottom line, many corporate compensation programs do not tie developer remuneration to long-term project success, because the typical annual review process is based on only the previous nine months of an employee's service.

Any manager planning for a successful BI implementation must be aware that the real driver of any internal program of this sort must be some value proposition. Whether it is a painstakingly crafted return on investment (ROI) model or just the means by which senior management can evaluate ongoing organizational performance, no BI program will succeed without being able to convince the senior management that there is value in building the program.

In this chapter we'll look at some of the critical factors a savvy manager must know regarding the successful planning of a BI program. This includes the first important steps in achieving senior-level support and sponsorship for a BI program, building a value proposition, and exploring the partnership between the business user and the information technology development staff.

In addition, we will also look at how to establish and formally define success factors and how to measure against those factors and maintain the partnership relationship between business and IT. Last, we look at issues associated with building the implementation team and how to leverage short-term tactics to ensure the continued development of a long-term BI strategy.

## Initiating a Program

If you are trying to initiate a BI program, you are most likely to be doing so for one of two reasons. If you are a technical person, the driver is probably the draw of the “cool technology” or the opportunity to learn new skills and enhance a resume. Technicians are drawn to data warehousing and large-scale data-integration projects because of the technical challenge. If you are a businessperson, you are likely to believe that a BI program will magically increase profitability while drastically decreasing costs. Businesspeople are incessantly pitched the silver bullet that is going to solve all their past, current, and future business problems.

Although these drivers may have been enough in the past to guarantee a BI budget, the poor track record of these kinds of projects, coupled with increasingly focused project management and governance, has forced the reduction and even elimination of BI programs. Therefore, it is extremely important to identify the factors that are necessary for success.

- Senior-level sponsorship
- The establishment of high-level goals and expectations
- The determination of discrete success criteria
- The definition of success metrics
- Creating a partnership among the participants that provides incentives to act strategically
- Stating a value vision as an ongoing battle cry for success

### *Senior-Level Sponsorship*

By reading the popular data warehousing, BI, or customer relationship management (CRM) literature, you would think that no single technological advance could ever have taken place without the backing of a senior business manager, although I suspect that the invention of the wheel and the discovery of fire occurred in the absence of a CEO. But seriously, when we consider the intricacies of integrating an analytical, strategic program into an

operational environment, the roadblocks that appear are not technical but mostly personal and political.

Reading between the lines in the literature, what we can infer is that one of the reasons most frequently cited for the failure of a BI program is the *lack* of senior-level sponsorship. But what is *senior-level sponsorship*? This term alludes to two different concepts: the seniority of the manager(s) involved, and the financial partnership of the project.

The first concept focuses on establishing a partnership with a senior-level manager (or, better yet, managers) at a level high enough to impose governance on the program and one who is able to enforce cooperation with those entrusted with the implementation of the program. This includes defining and ensuring the organizational commitment along and across the organization structure and removing barriers to success.

The second concept focuses on the senior management's establishing a vested stake in the success of the project. Whether this involves direct profit and loss (P&L) responsibility or whether it is defined more loosely in terms of stated business expectations, having a senior manager with a personal stake in the success (and failure) of the program will project a corporate commitment to project accountability. Even more important is the financial backing (in other words: budget) needed to build the infrastructure and the right team. Also, attributing successes in the BI program to those managers with a stake provides an additional personal incentive to make sure the project succeeds.

### *High-Level Goals and Expectations*

In the absence of well-defined goals, how can we ever determine the point of success of a project? In the past, there has been a fuzzy general expectation based on "build it and they will come"—in other words, build the data warehouse and suddenly business clients will line up to drink from an unlimited tap of business value. What happens too often is that the time to build the data warehouse exceeds the patience level of the business partners, so when the data warehouse is completed, there is either significant difficulty in extracting the right kinds of reports from it or limited trust in the information that is extracted from it.

To properly recognize success, we must have a yardstick against which to measure success. This has to be defined in terms of delivering the value that the client expects. This means that there has to be a common language with which the clients and the providers describe expectations; we will explore this in greater detail later.

### *Creating a Partnership/Success Stake*

An old aphorism claims that you can catch more flies with honey than with vinegar. To paraphrase, it is easier to get someone to do something for you when they expect to receive some valued return in exchange. This concept must be applied across the hierarchy in a way that engages all participants by promising everyone some stake in both the short-term and the long-term success of the project.

This implies that there is some incentive for everybody associated with the project to achieve the specified goals. In a number of organizations I have observed, two environments that conflict with the notion of a stake in success seem to prevail. The first is the “What have you done for me lately?” mentality, which rewards individual achievements accomplished within short-term periods. This attitude encourages tactical steps at the expense of long-term strategy and stifles strategic thinking. The second environment is the “inequitable risk/reward” mentality, where individuals who have taken on added risk and have sacrificed short-term successes in exchange for long-term strategy are overlooked when it comes to advances in compensation or position, which in turn also discourages strategic thinking.

The success partnership should be designed so that short-term successes can be engineered into a long-term strategy, where components of a BI strategy are implemented in a sequence that provides ongoing value. In turn, all participants are to be rewarded for achieving specific goals within reasonable deadlines. This is in contrast to the “big bang” approach, where three years are spent building the all-encompassing environment and where all centralized governance and business value becomes secondary to delivering a complete, fully integrated enterprise data warehouse.

### *The Value Vision*

What I refer to as the *value vision* is the statement that, moving forward, the organizations that best control and exploit information and knowledge will be the ones to pull forward in terms of strategy and competitive advantage. This generic expression of the concept needs to be restated for each individual instance and industry.

For example, in the financial industry, it may be expressed in terms of recognizing that the potential for increasing value lies in the most precise and fastest analysis of financial information, followed by taking some action to exploit that advantage, such as in financial arbitrage. Another example might be the retail industry, where the value vision is expressed as using

information to completely understand the customer, which in turn can lead to more effective targeted marketing.

This vision embodies an agreement between the business management and the technologists that long-term corporate information-based strategy is critical to the future of a business and that synergy and cross-fertilizing technology and business expertise will result in higher profits and lower costs for the business and in personal rewards for all participants.

## Business/Information Technology Partnership

One success factor in building this value vision in exploiting a company's information asset is establishing a partnership between the business users and the information technology team. Over time, the evolution of technical resources has had an interesting influence on more than the speed at which things get done. There is what we might call a psychological effect on the way people work together (or not) based on the allocation and distribution of computational resources. A clear example lies in the miniaturization of computers. Thirty-five years ago analysts shared time on huge computers housed in separate rooms; the services provided were purely operational—no BI applications at all. Twenty years ago was the beginning of the era of both the minicomputer (operating as a departmental resource) and the personal computer, along with the trend of distributed computing. With a machine on his or her desktop, a business manager could make use of local applications (including seminal personal business applications such as VisiCalc and WordPerfect) for both operational and intelligence-oriented processing; you no longer needed to be a FORTRAN IV programmer carrying stacks of punch cards to use computers. There was a need for technical support, and the concept of the information technology department evolved into a technology development, support, and evaluation organization, investigating new hardware and applications.

### *Dichotomy*

The way the information technology department has evolved has imposed an artificial boundary between those who require computer services and those who provide them, mostly because the ability to build user-friendly end-user applications has broken down the barrier to entry to exploiting computers. In turn, there is a greater need for both technicians to solve problems with computer use and those who can translate a business user's problems into a collection of technical issues. And although the way that these IT personnel

were compensated evolved into complicated charge-backs and accounting tricks, it was clear that the division between business and IT is essentially a budgetary one: IT is usually a cost center, as opposed to the business units, which are supposed to be profit centers. But this split imposes a deeper philosophical division between information technology providers and business users because the interaction framework is built around the IT folks' asking the business folks to support the IT initiatives (i.e., with money).

Let's look at a typical exchange between developers and business users: The implementers say, "We want to make improvements, but our budget has been cut. How can we do this with no additional spending?" The users say, "We expected the data warehouse to be online already, but it is a year late and over budget and is still unusable!" The implementers say, "We want to get the project finished, but the requirements keep changing!" The users say, "The business environment continues to change, and what were requirements a year ago, when we first planned the project, are no longer the same." Clearly, the entities perceived as the "IT side" and the "business side" have aligned themselves in an adversarial relationship. Taking this interaction to its extreme, both sides are eventually dissatisfied, because reduced budgets lead to missed deadlines and unmet business-side expectations.

### *Partnering*

Fortunately, there is a growing knowledge overlap between the IT and business sides. As the relationships between business units and IT groups grow, we find that the IT side gradually learns more and more about how the business works and that the business side has a growing understanding of the capabilities and limitations of the technology. These businesspeople now understand more about the relationship between business applications and the hardware, software, and developer resources they require, and the technologists document and learn more about business process modeling and how those processes can be encapsulated within an operational system. This is a growing knowledge management trend that reflects the need for a deeper understanding of how to exploit data and technology to gain a competitive edge.

One aspect of this trend is the abstraction of the components of the BI process. New ideas, such as business rule management, workflow analysis, classification and segmentation, and business process modeling, are being introduced as a launch pad for business/IT partnerships, effectively providing a way to formalize and document the ground rules associated with the way the BI program will work, as well as a means for planning the implementation of that program.

## Business Intelligence Success Factors

Although there may be many factors that contribute to the success of any BI project, here are some critical factors for BI success.

### *Strong, Dedicated Management*

As I have alluded to earlier in this chapter, it is important to have strong business management that can:

- Direct the business side engagement process.
- Guide the definition of success and the associated metrics.
- Manage the knowledge and technology acquisition process.
- Manage program implementation.
- Defuse any political time bombs.

### *Setting Appropriate Expectations*

To avoid the perception that expectations are not being met, it is important to have a process for determining, articulating, and *documenting* the appropriate expectations regarding:

- **Functionality**, which refers to the kinds of BI applications and features to be provided
- **Accessibility**, which ensures that those clients who are meant to derive value from a particular BI application are able to access the application and the data underlying the application
- **Performance**, which refers to both interactive performance and scalability (see Scalability on page 38)
- **Delivery**, which refers to the timeliness and predictability of delivering functionality on a predetermined schedule
- **Quality**, in terms of data, applications, and reporting
- **Availability**, which can be dictated based on agreed-to service-level agreements
- **Business relevance**, which is of primary importance, because it relates the objectives to key business performance indicators, such as cost reduction, increased throughput or volume, and higher profits

Very often, clients define their own expectations as a by-product of a business application or service that is to be supported by a technical solution. In these cases, the perception of success or failure is (mistakenly) related to the

client's ability to perform the client's jobs, which may or may not relate to the correctness of the technical solution. This is a symptom of improperly setting expectations; instead, the path to success is for the business client to articulate the business problem and then to discuss the solution process with the implementers.

Consider this example: The supplier management team for a large manufacturer wants to build a data mart to figure out how much business the company does with each of its suppliers. The team supplies its data to a data-enhancement company for the purpose of company name aggregation. Unfortunately, the enhancement company, doing what it normally does, aggregates by corporate *hierarchy*, not by company, which resolves multiple, mostly independent subsidiaries into the same grouping, which in turn is overkill for what the client wants. Not only does the supplier management team not get what it wants, but the data are made even worse, for their purposes, with the ultimate result that the entire project is viewed as a complete failure. Yet had the team properly articulated its result expectations to the enhancement company, it is likely that the data mart would have been properly constructed and then seen as a success.

### *Establishing Metrics for Success*

The previous section explored some dimensions for setting expectations; this section talks about what is needed to determine compliance with those expectations. This boils down to the ability to identify a way to quantify compliance with an expectation and the means to measure that compliance.

Success metrics can be directly related to each of the expectation dimensions.

- **Functionality** can be broken down into an enumeration of service or product features; success can be measured by how many of those features are supported by that service or product.
- **Accessibility** is suitably represented as a collection of access policies that relate information clients to data by security constraints. Accessibility can be measured as a function of how many clients there are, what their access path is (e.g., software connectivity), and whether proper access has been granted.
- **Performance** can be distilled into individual performance components, such as timeliness (How quickly is information available?), speed of processing (How quickly are processes needed for analysis finished?), and volume/throughput (How many can I process? And at what rate?).



- **Delivery** is a function of whether what has been promised is delivered within a timely manner. Practically speaking, a program for which promises made by individuals or teams are not delivered is a program destined for failure. Even if the delivery time is not as timely as the client would like, what is more important is *predictability*; in other words, knowing when you can reliably expect a feature or access rights to be made available.
- **Quality** is very frequently talked about but seldom addressed. High quality of information in a BI program is probably the most important success factor, because if the information is of low quality, no other component of the system can be trusted. The measurement of quality is a funny thing; when we talk about manufactured objects, we can define some expected result and then impose some range of acceptable values. For example, if we are making 1-inch-long screws, perhaps we can accept screws that are 1.002 inches long. On the other hand, because it is hard to define what is right and what is wrong for data, it is very hard to objectively define data quality metrics. We treat this topic in greater detail in Chapter 9.
- **Availability** is relatively easy to measure; in fact, many systems refer to both uptime and downtime as a measure of availability. We can also incorporate a measure of those scheduled hours the systems are expected to be available. There are also concepts of the expected life-time of various components that relates to availability, such as mean time between failures (MTBF) for hardware, etc.
- **Business relevance** is easy and hard—easy because the effects of a successful program are immediately clear, hard because whether the result is attributable to the original BI may not be clearly evident. When we look at modeling the business process and then determining the importance of the pieces of the BI program within that process, we may have a better way to track bottom-line improvement to the technical program. We will explore the concept of business process modeling in greater detail in the next chapter.

### *Building a Strong Team*

Assembling the right set of smart, motivated people to take on part of the BI program is critical to success. We discuss this in more detail in the later section on Team Building.

## *Understanding the Technology*

In contrast to what a lot of experts say, I believe that everyone involved in BI, including the business partners, should have some understanding of the technology that comprises the BI program. There are a few reasons for this.

- Understanding the technology provides some grounding in what is possible and what is not possible.
- Awareness of the complexity of some analytical applications will help in determining the resources needed to properly service the client base.
- Many vendors dress up simplistic applications with fancy visual interfaces as a way to hide product deficiencies. Understanding the technology will help customers evaluate different products and determine which tools are of value and which are not.

## *Proper Data Architecture*

When we build a system, we also build the representation of information within that system. This representation, which is called a *data model*, describes the different entities that exist within the system along with the relationships between those entities. But it is important to remember that it is still *just a model*, and that model, once defined and put into production, remains relatively static. On the other hand, what is being modeled is not necessarily static. This means that as things in the real world change, there must be some way to reflect those changes in the model.

A well-thought-out data architecture will account for this possibility. The data architecture reflects the needs of the business applications, including the entity relationships, as well as metadata, information sharing, and backup and recovery, among other things.

## *Using Quality Information*

A common theme throughout this book is the importance of high-quality data to any BI program. To paraphrase what I said before in this chapter, if the input to a decision process is faulty, the decisions will be faulty. Whether the application is an operational process or an analytical process, errors in data may cause glitches in processing streams, result in incorrect analyses, or even lead to errors in judgment when carrying out the actions prescribed by the analytical process.

Different kinds of errors can wend their way into data. Some examples include data-entry errors (e.g., someone types in a last name with a different

spelling than it has been entered before), data-transcription errors (e.g., the data-transformation process is flawed, creating inconsistencies in the data), or analysis errors (e.g., summarizing averages of values without considering how null values are to be treated). Integral to any BI program is a clearly defined data quality initiative; we will explore data quality and information compliance in Chapter 9.

### *Enterprise Integration*

A successful program supplies an intelligence capability that both draws on enterprise data resources and is available as a resource across the enterprise. This implies that there must be well-defined processes for integrating information from multiple sources, whether it means merging data sets aggregated and deposited at a staging area or providing the means for integrating collections of data instances as they move through articulation points in the enterprise. Extract/transform/load (ETL) processing, enterprise application integration (EAI), and Web Services are all examples of process architectures designed for enterprise integration.

### *Exploiting Reuse*

The concept of reuse is to leverage work that has already been done and to avoid simultaneous duplicated effort. Here are some areas of reuse to focus on.

- **Reuse of data**—Replication and duplication of data sets (especially reference data) lead to inconsistencies and errors. If there are data sets that are ultimately used in multiple information flows, it is worthwhile to manage those data sets as a shared resource and likewise share in the management responsibilities. Consistent shared data sets add significant value.
- **Reuse of metadata**—As distinct data sets are integrated into a single BI repository, there are likely to be differences in the way that similar entities are represented. Consolidating the metadata representations and creating transformations from original source into that representation will ease the data integration process.
- **Reuse of business logic**—If the same data sets are reused throughout the BI program for different aims, then it is possible that similar business rules may need to be applied to the data at different points in the information flow. Archive and manage those business rules as content, and use a methodology to make those rules actionable.

- **Reuse of business process**—If there is a human-oriented process (i.e., communications and interaction) that is successful, try to recreate the same cooperation in all aspects of the program.

### *Managing Scope*

A malevolent notion that deviously extends the time to delivery of a project is *scope creep*, the continuous addition of deliverables into an already agreed-to scope of work. A successful manager maintains control on the scope and makes sure that additional noncritical items are relegated to a follow-on scope so as to not disturb the ability to deliver.

### *Scalability*

Remember that as the program grows and is more successful, current client use will grow and the program will attract more clients. As the pressure on the system grows, more and larger data sets will be integrated into the repository, and the interactivity will increase. Therefore, design the program so that it can be easily scaled so as to maintain performance at the agreed-to service level.

## Team Building

Because BI is not a purely technical solution, the leader must have the ability to craft the right team that can successfully implement the selection of technical components to the BI solution as well as articulate the needs and understand the results. When selecting team members, keep the following ideas in mind.

### *Insist on Business Participation*

The team is not a team if it does not incorporate the business client. The business use of information should drive the program, and as already discussed in earlier, senior management sponsorship is a critical success factor.

### *Clarify Responsibilities*

On both the micro and macro levels, there is a distinction between what has been enumerated in an employee's job description and "what needs to be done." Team members should be willing to take on added responsibility when it is critical to program success, and they should be rewarded accordingly.

### *Create Leadership Possibilities*

An organizational structure can impose a hierarchy on a set of individuals, but the placement of one box on top of another set of boxes does not create a leader. Leaders arise out of opportunities to take action and responsibility for getting things done. In a strict hierarchy, fresh leadership is stifled, which only frustrates good people and leads to the turnover of critical employees. To prevent this, provide many opportunities (while, of course, mitigating risk) to let good people bubble up to their leadership role.

### *Create an Ego-Free Culture*

One of the best experiences I have had was working on a software product implementation team where the project leader insisted that any successes experienced by the business client were attributable to the entire team. In turn, well-defined implementation standards imposed on the staff led to the development of a product that could have been easily implemented (and, subsequently, modified) by anyone on the team. The leader referred to this as *ego-free development*, which means that all individual successes and contributions were highlighted and rewarded internally but not exposed externally. This led to a seamless product that was easily maintainable and encouraged a high level of conformance to internally specified standards.

In the development of a BI program, it may be unreasonable to expect that any one team member will have *all* the skills needed for the project. But the concept of the ego-free culture implies that all team members should understand that in order for the project to be successful, all contributions are valuable.

### *Cultivate Believability*

A major failure of BI is the “overpromise”—project managers mindlessly acceding to client requests without determining feasibility first, which raises expectations that can never be met. Before making any promises, a project manager should discuss the tasks necessary to meet that promise and have team members project how long those tasks should take to complete. Then team members should be encouraged to commit to completing their tasks within that predicted amount of time.

### *Maintain Diversity of Opinion*

A team of yes-people will not lead to a successful program; look for those people who have different opinions and are willing to voice them.

Disagreement in a divisive manner is counterproductive, but encouraging team members to look for faults in solution paths and to voice disagreement early on will stimulate more robust and complete solutions.

### *Look for Diversity of Technical Skill*

Some of the best data-management people I have met had their original training in other areas and came to data management as a way of achieving goals in their selected profession. Their business background prepared them for looking at information modeling and use in creative ways. Yet there is also a need for personnel trained in engineering and computer science to ensure that things are being done efficiently and in accordance with best practices.

### *Keep Your Eyes on the Prize*

Remember that the goal is not to build the most impressive piece of technology, but to integrate the practices, software, and hardware into a system for addressing business needs. Remember the 80/20 principle: 80% of the value can be achieved with 20% of the work. Do not let your team be distracted by focusing on getting a complete solution if one is not necessary to reap most of the benefits.

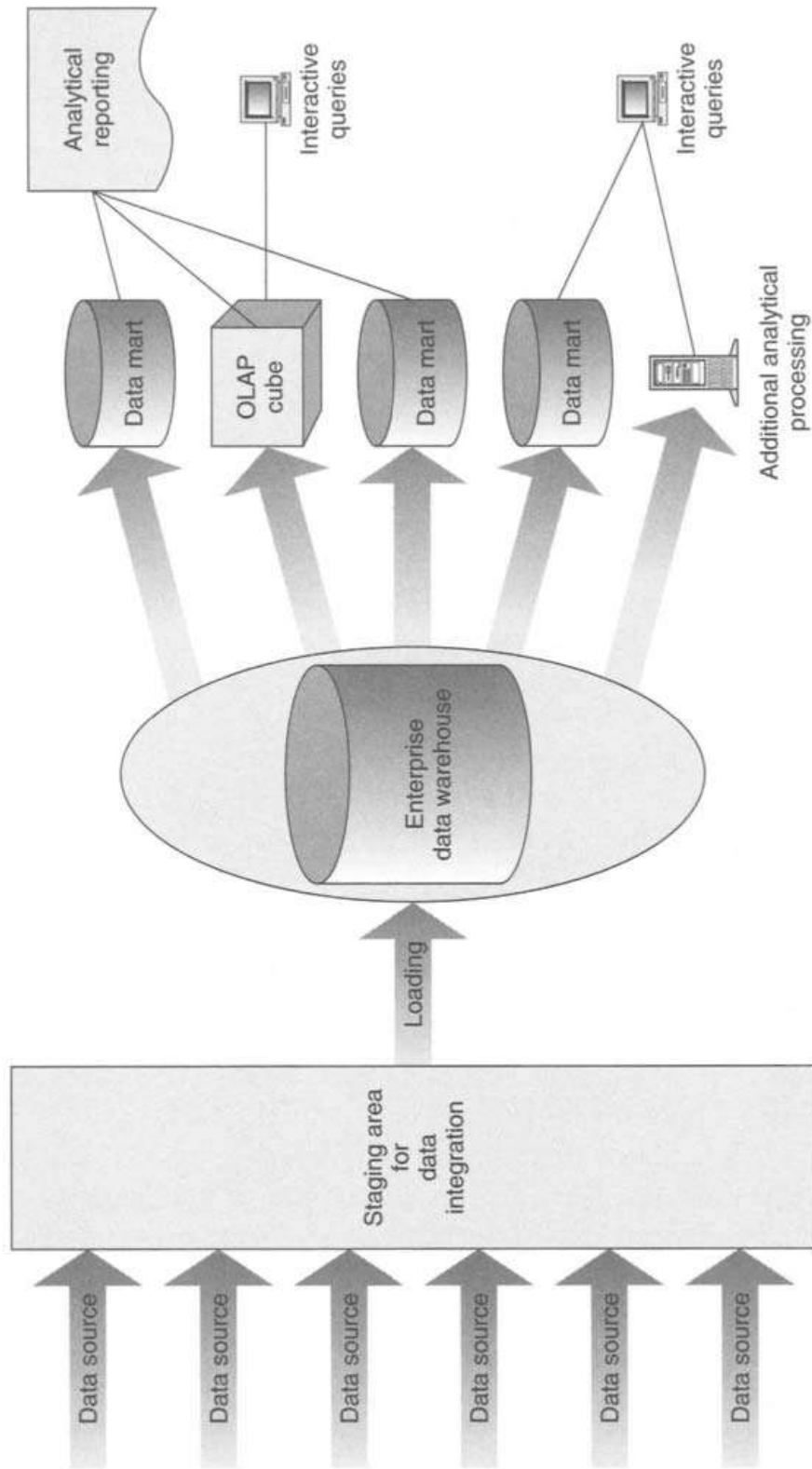
## Strategic versus Tactical Planning

Earlier I briefly mentioned the distinction between long-term strategic thinking and short-term tactical thinking. After having seen and heard about numerous BI program failures, I have come to the conclusion that to succeed, we must strike a balance between shooting for the long term while satisfying our clients' requirements in the short term.

### *Long-Term Goals*

The long-term strategy of a BI program involves building an analytical information platform from which business value can be derived. The seamless enterprise BI environment essentially is a factory to collect information from multiple sources, prepare that data for use, aggregate it in a repository, provide analytical services, and supply the means for accessing and viewing the results of those analytical processes, as can be seen in Figure 3.1.

This end state is very appealing, because it provides the necessary business-oriented functions that any particular vertical area could desire. Yet the inability to deliver the entire package within a short amount of time



**FIGURE 3.1** A general view of the BI environment.

limits the feasibility of a team's building the entire intelligence resource at one time. In fact, committing a large amount of resources to a long-term project without identifiable short-term results is the kind of risk that most senior-level managers are not likely to take.

Therefore, it is important to develop the end-state vision while keeping in mind that short-term successes are critical. And designing the implementation plan with those short-term value-adding deliverables in mind is more likely to lead to overall success than the big-bang approach.

### *Short-Term Success*

The smart approach is to look for opportunities for short-term successes that conform to the plan for reaching the end state. For example, if a business client anticipates having a data mart populated from a data warehouse, it may not be necessary to source the mart directly from a data warehouse. Instead, it may be possible to create a data mart from the required data sources that satisfies the clients' needs, and providing the mart and the associated analytical and reporting components will yield business value while not detracting from the strategic goal. Later, when the large-scale repository is available, the data mart can be reconfigured to be sourced instead from the repository. In this case, the client may see no difference in the analytical environment, so having implemented the mart first is a short-term success that fits in with the long-term goals.

Other ways to achieve short-term successes include projects that have alternate benefits. For example, a data cleansing effort that improves a data set's quality will benefit the current users of that data and the BI clients. Being able to fund and deploy a data cleansing effort will not only provide immediate value, it will also provide a set of business processes and tools that can be leveraged for future data cleansing projects.

The decision as to which kind of smaller project to select should be directly driven by client needs. It is possible that some work may need to be done in the wrong logical order or perhaps may even need to be implemented twice. But if this must be done to satisfy the senior-level sponsor, it is important to make sure business clients are satisfied that their perceived intelligence needs are being met. And remember: Always look for an opportunity for reuse, whether it be a tool, a process, metadata, or data sets.

## Summary

In building a BI program, it is important to focus on the idea that the success of the program is not always tied to whiz-bang technology. The most



important factors to success are being able to partner with senior-level business sponsors, identify and articulate high-level goals and expectations, and build the right team to execute the vision. Keep these success factors in mind throughout the process:

- Maintain strong management.
- Set appropriate expectations.
- Establish metrics for conformance with those expectations.
- Understand what technology can and can't do for you.
- Create a flexible and extensible data architecture.
- Use only high-quality data.
- Reuse as much as possible.
- Deliver on your promises.

Long-term strategic compliance can be achieved through tactical short-term successes. Plan to be flexible with the long-term implementation plan if that guarantees continuation of the program. And always keep your eye on the prize!