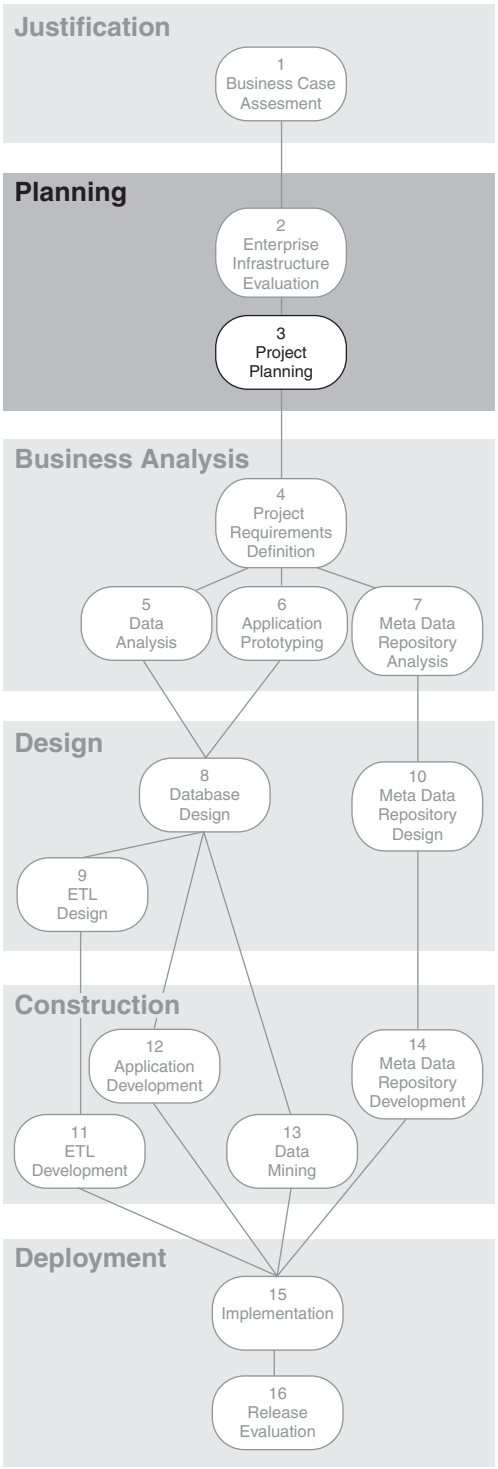

CHAPTER THREE

Step 3: Project Planning

CHAPTER OVERVIEW

This chapter covers the following topics:

- Things to consider about project planning
- Managing the BI project and planning for setbacks
- Items to address when creating a project charter, such as goals and objectives, scope issues, project risks, constraints, assumptions, change control, and issues management
- Aspects of project planning, with a focus on activities and tasks, estimating techniques, resource assignment, task and resource dependencies, critical path determination, and creation of the final project schedule
- Brief descriptions of the project planning activities, the deliverables resulting from those activities, and the roles involved
- The risks of not performing Step 3

THINGS TO CONSIDER

Business Involvement

✓ Do we have a strong business sponsor? Do we have a backup business sponsor?
✓ Do we have stakeholders with whom we need to communicate regularly?
✓ How much time is the business representative committing to this project? Is he or she assigned to this project full-time, or will he or she be available on request only?

Project Scope and Deliverables

✓ Did we receive a formal request for a BI project?
✓ How detailed are the requirements?
✓ What are the requested deliverables?
✓ Can we implement the requested scope given the schedule and the available resources?

Cost-Benefit Analysis

✓ Have we already performed a cost-benefit analysis?
✓ What is the expected return on investment (ROI)?
✓ How soon do we expect the ROI to materialize?

Infrastructure

✓ Did we review our technical and nontechnical infrastructure components?
✓ Does our infrastructure have any gaps?
✓ Which infrastructure components will we need to work on and deliver as part of the BI project?
  –Which technical infrastructure components?
  –Which nontechnical infrastructure components?

Staffing and Skills

✓ Have we already identified the team members?
✓ Do all team members have the skills needed to perform the responsibilities of their assigned roles?
✓ Should we schedule any training before the project kickoff?
✓ Is the project manager assigned to this project full-time? Or does he or she have other administrative responsibilities? If the latter, who will take over those other responsibilities for the duration of this project?

BI projects are not like other projects with a finite and static set of requirements from one business person or one department. Instead, the purpose of an integrated BI decision-support environment is to provide cross-organizational business analysis capabilities to all business people and all departments in the organization. That involves a variety of new tasks, shifted roles and responsibilities, and a more *hands-on* project management approach.

MANAGING THE BI PROJECT

Project management in most organizations is treated as an administrative reporting function. Detailed project planning and hands-on daily project control are often minimized, if not ignored, especially when organizations try to get several BI applications up and running very quickly. In their shortsightedness, organizations forget that extended planning activities often lead to shorter testing and implementation cycles and thus a shorter delivery time—exactly what the business community wants.

No BI project gets off the ground without a few "kinks and bends"; delays are common. For example, some products may not have enough capacity; others may not work well in a distributed environment. Switching vendors and products can prove costly in terms of time and money. Vendors often cannot offer the comprehensive solutions that businesses expect because the vendors are still struggling to integrate all the pieces of their BI products. This leaves integration up to the organizations' information technology (IT) staffs.

Many organizations do not adequately plan for these types of delays and setbacks, nor do they test their BI concepts and strategies adequately. Setbacks are inevitable on a project as resource intensive as a BI application—even under the best of circumstances. Planning for setbacks will help management set realistic rollout dates for the project.

Describing project management activities in the most simplistic terms, the goal is to answer four basic questions.

1. What will be delivered?
2. When will it be done?
3. How much will it cost?
4. Who will do it?

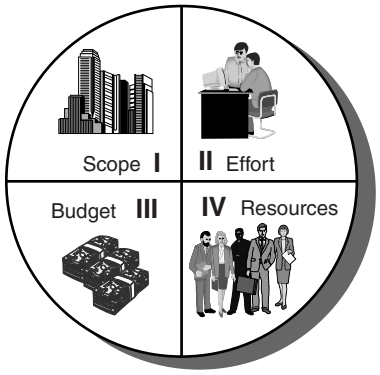

Figure 3.1: Project Constraints

These questions translate, respectively, into the four major project constraints of scope, effort (time), budget, and resources (Figure 3.1). Before the project manager can create a project plan to address these constraints, he or she must spend some time defining the project to clearly understand the related requirements, risks, constraints, and assumptions.

DEFINING THE BI PROJECT

Project planning includes creating a project charter, which defines the project in terms of:

- Goals and objectives
- Scope (the expected project deliverable)
- Risks
- Constraints
- Assumptions
- Change-control procedures
- Issues management procedures

The project charter is the agreement made between the business sponsor and the IT staff for developing the BI application. If any component of the project charter changes, the entire project has to be reevaluated and all project constraints have to be renegotiated.

Project Goals and Objectives

When defining a BI project, first address the goals and objectives. What is the reason for building this BI application? How much business pain (in hard currency) does that business problem, which the BI application is supposed to solve, currently cause? What are the strategic business drivers? Do the BI project objectives fall in line with the strategic business objectives, or is this someone's pet project?

Project objectives should be measurable statements, such as, "In order to increase market share by 10 percent next year, the sales department must have access to month-end sales data as well as pipeline data merged with prospect data within five business days after the close of the weekly accounting cycle." Project objectives must tie in with the expected ROI. The business representative will have to measure the effectiveness of the delivered BI application and report to the business sponsor whether the project was successful or not.

Project Scope

It is impossible to create valid estimates for a project without a solid understanding of the scope. Traditionally, scope has been measured by the number of functions the system will perform (function point analysis). On BI projects that is a sure way to underestimate effort, budget, and resources. BI applications are data-intensive, not function-intensive. Therefore, scope must be measured by the number of *data elements* that have to be extracted from the source systems, transformed and cleansed, and loaded into the BI target databases.

The main reason for concentrating on data rather than functions is that analyzing and preparing source data takes much longer than providing data access and enabling data analysis through reports and queries. The typical 80/20 rule usually applies: 80 percent effort for data and 20 percent effort for functionality.

Project Risks

Every project is subject to some risks—risks are unavoidable. Such risks could severely affect the project schedule as well as the project deliverables, depending on the likelihood that the risks will materialize and on the impact they would have on the project. Therefore, the risk assessment performed during Step 1, Business Case Assessment, must be reviewed and expanded if necessary. The project manager must identify triggers for each risk and incorporate a mitigation plan as well as a contingency plan into the project plan.

- *Triggers* are situations that signal a potential, perhaps imminent materialization of a risk. For example, if management is reviewing the budget for the project for no apparent reason, this indicates a possible trigger for the risk of losing management support for your BI project.
- The *mitigation plan* specifies what actions the project team can take to prevent the risk from materializing. Continuing with the example above, you could solicit support from your business sponsor and promote the BI initiative to other key executives in your organization to keep management's interest in the BI project. Should the project run into trouble, the risk of having it cancelled is mitigated or prevented.
- The *contingency plan* specifies alternatives in case the risk does materialize. For example, if you lose management support for the BI project due to a long project schedule, plan to shorten the release cycles by delivering a smaller scope sooner. If you lose management support due to the business sponsor's departure from the organization, have an alternate sponsor ready to become the champion for the BI project.

Some common project risks include the following:

- Lack of management commitment
- Lost sponsor
- Lack of business participation
- Imposed, unrealistic schedule
- Unrealistic scope for the schedule
- Unrealistic expectations
- Unrealistic budget
- Untrained or unavailable staff
- Constantly changing business priorities
- Ineffective project management
- Limited scalability

Project Constraints

All projects are subject to the same project constraints mentioned earlier: scope, effort (time), budget, and resources (capable and available people). In reality, there is a fifth constraint: quality. Although quality is a measure of how well the

deliverables meet the requirements, it can also be considered a constraint that must be balanced with the other four constraints.

While everyone on the business side and in the IT department wants quality, rarely is the extra time given or taken to achieve it because quality and effort are polarized constraints. Higher quality requires more effort and thus more time to deliver. Since time factors drive most organizations, effort is their number one constraint (highest priority), followed by scope, budget, and resources (usually in that order); and quality gets pushed to the bottom of the heap (lowest priority), as illustrated in Table 3.1. BI project constraints should *never* be in this order.

Fortunately, organizations have full control over changing the priority of project constraints. To insist that time and scope be the top two constraints is acceptable only on projects that have requirements connected to government-imposed regulations. But in most of those cases, the operational systems (and operational reports) are the ones affected by government-imposed deadlines, rarely the downstream strategic decision-support applications. We strongly advise you to get quality out from the bottom of the heap and put scope there because scope can and will continually be expanded through future BI application releases. Table 3.2 shows our recommended order of project constraints.

Assumptions

An assumption is anything taken for granted; it is a supposition or a presumption. It is important to document assumptions because a wrong assumption could very quickly turn into a risk. Here is an example of how two assumptions on a project backfired.

Table 3.1: Typical Order of Project Constraints

	Priority (Highest to Lowest) →				
Constraint	***1***	***2***	***3***	***4***	***5***
Effort (time)	✓				
Scope		✓			
Budget			✓		
Resources				✓	
Quality					✓

Table 3.2: Recommended Order of Project Constraints

	Priority (Highest to Lowest)				
Constraint	***1***	***2***	***3***	***4***	***5***
Quality	✓				
Budget		✓			
Resources			✓		
Effort (time)				✓	
Scope					✓

- Assumption 1: "The vendor promises to deliver a new database server in May, and by the end of June the IT staff will install and test a new database management system (DBMS) product on that server. This allows plenty of time before the project deadline, which is September 30, the fiscal year-end."
- Assumption 2: "Joe Bamberg will be the database administrator on the project because he is the only person in our organization who has that particular DBMS skill, which is needed for the project. He has already joined the project team."
- Problems: On June 20 (one month late) the new server finally arrives, and on July 1 Joe Bamberg quits the organization. The new DBMS product does not get installed and tested on the new server until the end of September.
- Impact: The project is delayed by three months at a budget overrun of $60,000 (much of it paid as consulting fees for the high-priced consultant who had to fill in for Joe Bamberg).

Important assumptions should have counterpart risks, in case the assumptions either turn out to be false or do not materialize, as in the example above. For each counterpart risk, identify triggers, a mitigation plan, and a contingency plan.

Change-Control Procedures

Traditional waterfall methodologies became so popular in part because the signed-off, phased development approach attempted to curb scope creep. The mental model was "Change is bad—business people must be held to their decisions." Since BI applications are supposed to be catalysts for improved decision

making, the mental model must change to "Change is good—business people should refine and improve their decisions." However, uncontrolled change can still kill a project.

The solution is to manage the changes. Many organizations track their change requests by logging the date of the change request, the name of the requestor, the desired change, to whom it was assigned, and when it was implemented. That is a good practice, but *tracking* changes is not the same thing as *managing* them.

To manage a change, you need to start with a baseline—the agreement between the business sponsor and the IT staff, as documented in the project charter. Every change request, once logged, undergoes an impact analysis and a cost-benefit analysis to determine the effects of the change on the project. Changes, unless they are minute, always impact the three constraints of effort (time), scope, and quality. Some changes also impact the other two constraints (budget and resources). When one constraint changes, the remaining constraints will have to be renegotiated. Unfortunately, business managers and IT managers frequently put the project teams under unwarranted pressure to incorporate scope changes without slipping the schedule.

It is not rational to request a significant scope change to a carefully deliberated and agreed-upon project plan without adjusting any of the other constraints.

It is not rational because the business representative, the project manager, and the core team members who developed the plan together believed they could complete the project under the agreed-upon constraints. When the scope constraint changes, the plan is no longer doable without changes to some of the other constraints, namely effort (time), budget, resources, and quality, to absorb the impact of the scope change. Therefore, depending on how critical the change request is, the business representative has to decide whether to:

- Cut back from the current scope by eliminating some of the originally requested data and functionality
- Extend the deadline
- Declare the requested change unfeasible at this time and postpone it
- Incorporate the requested change in the next release
- Eliminate complicated transformations, edit checking, and testing, which will impact the quality of the deliverable

Issues Management Procedures

Issues, whether related to business or technical concerns, always come up during projects. Similar to change requests, issues must be not only tracked but also managed. Every issue must be assigned to a person who has the responsibility for its resolution. Any activity regarding the issue must be dated and described on the issues log. At the end of the project, all issues must have a resolution, even if that resolution is a deferral of the issue to a future BI release. Table 3.3 shows an example of an issues log.

Some issues are minor and can be resolved without impact on the project. Other issues can turn into risks or change requests and have to be dealt with accordingly. Therefore, managing issues includes impact analysis and change control.

PLANNING THE BI PROJECT

Project planning is not a one-time activity. Since a project plan is based on estimates, which are frequently no more than best guesses, project plans must be adjusted constantly. The number one telltale sign that a project is not being managed is a static project plan on which estimates and milestones have never changed from the day they were first developed.

Here is the sequence of activities for preparing a project plan.

1. Create a work breakdown structure listing activities, tasks, and subtasks.
2. Estimate the effort hours for these activities, tasks, and subtasks.
3. Assign resources to the activities, tasks, and subtasks.
4. Determine the task dependencies.
5. Determine the resource dependencies.
6. Determine the critical path based on the dependencies.
7. Create the detailed project plan.

Activities and Tasks

BI projects are composed of many activities, each with a long checklist of tasks. Regardless of how experienced the project manager is, it is impossible for any person to remember all the tasks that need to be performed on a BI project. At a

Table 3.3: Issues Log

Issue No.	*Issue Date*	*Issue Description*	*Assigned To*	*Action Taken*	*Action Date*	*Resolution*	*Closed Date*
001	7/23/ 2003	Delay of server installation expected. Problem with supplier. Impact on project deadline could be one month or more.	Bill	Met with Ron Leard from tech. support to discuss alternatives. He may be able to switch to another supplier. Follow-up in one week.	7/24/ 2003	Switched suppliers. Delay to the project schedule: only three weeks. Delay accepted by Robert Black (sponsor).	8/21/ 2003
				Received call from Ron Leard. He will be able to get a server from another supplier. Delivery date is in one week.	7/31/ 2003		
				Called Ron Leard. Server is installed and being tested. Expected to be available next week.	8/14/ 2003		
				Received call from Ron Leard. Server is available.	8/21/ 2003		

minimum, the project manager must rely on some existing comprehensive list of the most necessary activities. Naturally, not all activities have to be performed on every project. Not even every step has to be performed on every project. The project manager selects the minimum number of steps and activities needed to produce an acceptable deliverable under the imposed constraints.

The development approach in *Business Intelligence Roadmap* is neither as linear nor as rigorous as that followed in traditional methodologies. It is a much more dynamic approach to application development. When using our development approach, it may often look and feel like you are working on a prototype—but it is *not* a prototype. The same discipline applied under a traditional methodology must be applied to BI projects in terms of controlling scope, mitigating risks, and time-boxing weekly activities. (*Time-boxing* refers to planning, assigning, and managing activities on a detailed level in weekly increments.) Despite the discipline, you must expect constant rework during the development cycle and build time for it into the project plan. For example, analysis activities can show up on your project plan as early as Step 3, Project Planning, and as late as Step 12, Application Development. Or you may want to plan another short iteration through database design activities during Step 11: Extract/Transform/Load Development.

The project plan must reflect this dynamic nature of application development. Since changes and setbacks are to be expected, certain "completed activities" will have to be revisited and reworked. The project plan should anticipate that and reflect it on the schedule. The easiest way to plan for these internal iterations is to use the concept of "looping" or "refactoring" by dividing the project into multiple small subprojects, each with a deliverable, albeit not completed. Then revisit and revise each deliverable, adding more data and more functionality until the entire BI application is completed with the desired deliverable. This iterative refinement approach gives the project development effort the feeling of prototyping.

Estimating Techniques

Once you have selected the activities and tasks for the project and organized the project into subprojects, you can derive the base estimates by using one of three methods:

1. *Historical,* based on learned patterns (how long it took on the last project)
2. *Intuitive,* based on intuition and experience ("gut" estimating)
3. *Formulaic,* based on the average of possibilities (Figure 3.2)

$$\frac{\text{Best Estimate} + (4 \times \text{Average Estimate}) + \text{Worst Estimate}}{6}$$

Figure 3.2: Formula-Based Estimating

Estimating BI project activities is much more difficult than estimating traditional projects because no two BI projects are alike. For example, you may use a new tool, work with new team members, or have no experience with a new design method. All three estimating techniques listed above expect you to relate to some prior project experience.

- The historical estimating technique expects you to have statistics on how long similar projects took in the past—but you may not have had a similar project before.
- The intuitive estimating technique expects you to predict, or guess, based on prior experience how long it will take to complete a similar activity—but you may have never performed a similar activity.
- The formula-based estimating technique expects you to know the longest time it may take to complete an activity, the shortest time, and the most probable time—but you would not know what the longest, shortest, and most probable times for an activity could be if you had never performed that activity before.

In all those cases, it is best to consult with other people (in-house staff or outside consultants) who have already developed a similar BI application because your own uneducated guesses may be gross underestimates. This also demonstrates how important it is to track actual time on BI projects. You will need that information for estimating your next BI project.

Resource Assignment

Effort estimates cannot be completed until the activities and tasks are assigned because the estimates must take into consideration each team member's skills and subject matter expertise as well as the environmental factors that affect him or her.

- *Skills*—the ability to perform specific tasks. Has the team member done this type of work before?

Table 3.4: Environmental Factors That Can Affect Team Members' Availability

Administrative Factors	*Non-Work-Related Factors*
Lack of computer access	Vacation
Time required to troubleshoot other systems	Illness
Meetings	Jury duty
E-mails and in-baskets	Personal time off
Training seminars	Medical appointments
	Religious holidays

- *Subject matter expertise*—the possession of facts or concepts about a specific subject matter. Is the team member an expert in this business area?
- *Environmental factors*—administrative and non-work-related activities. Table 3.4 lists some examples.

Task Dependencies

Not all activities and tasks have to be performed serially—many can be performed in parallel as long as there is sufficient staff. The first step in determining which tasks can be performed in parallel is to identify task dependencies and develop the critical path. Most project-planning tools support the four types of task dependencies (Figure 3.3). *Finish to Start* and *Start to Start* are the most common task dependencies; *Start to Finish* is the most infrequent.

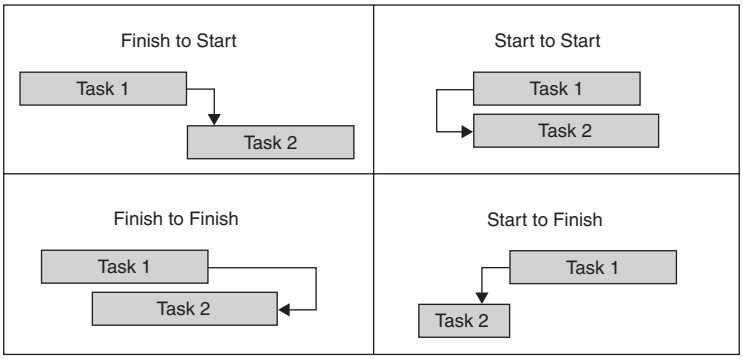

Figure 3.3: Task Dependencies

1. *Finish to Start* indicates that Task 2 cannot start until Task 1 finishes.
2. *Start to Start* indicates that Task 2 can start at the same time as Task 1.
3. *Finish to Finish* indicates that Task 2 cannot finish until Task 1 finishes.
4. *Start to Finish* indicates that Task 2 cannot finish until Task 1 starts.

The more tasks that can be performed simultaneously, the faster the project will get done. To take advantage of task dependencies, you need the right number of resources with the right skills at the right time.

Resource Dependencies

A shortage of staff can quickly reverse the benefits of having few task dependencies. For example, tasks that could have been performed in parallel but cannot be assigned to multiple staff members because of a staff shortage must revert to being executed in sequence. Figure 3.4 shows how four tasks can be accomplished in 10 days with adequate staffing; Figure 3.5 shows that it will take 14 days to complete the same tasks if only one person is available to work on them. (Note that in Figure 3.5 the time required to compile the findings is reduced by one day because there is no longer a need for two analysts to collaborate.)

Critical Path Method

Once you have identified the task dependencies and leveled the resources (that is, assigned the tasks and adjusted the dependencies for the available resources), use

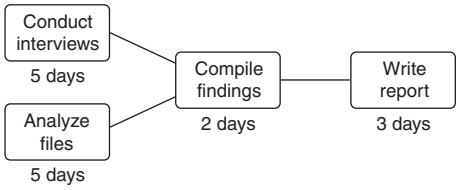

Figure 3.4: Elapsed Days When Two People Can Work on the Tasks

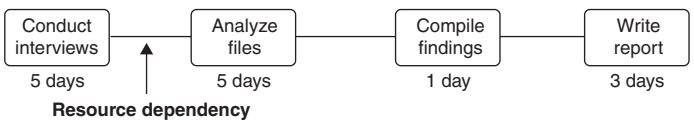

Figure 3.5: Elapsed Days When Only One Person Is Available

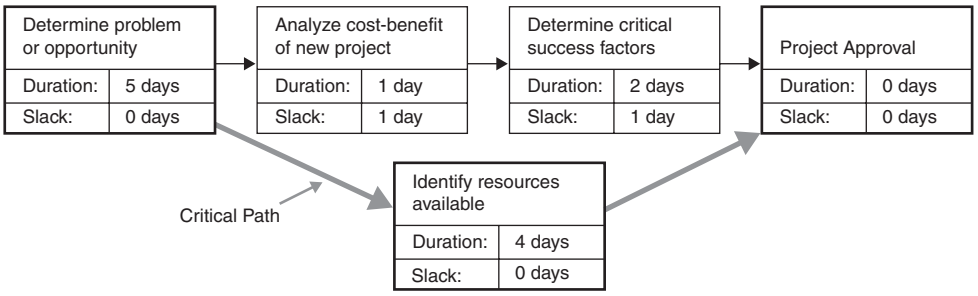

Figure 3.6: Critical Path Method

the critical path method (CPM) to outline task duration, indicating any lag time for tasks not on the critical path (Figure 3.6). This provides the visibility needed to reassign resources or to renegotiate project constraints.

In this example, the task "Identify resources available" can be performed in parallel with the tasks "Analyze cost-benefit of new project" and "Determine critical success factors." Since the task "Identify resources available" is estimated to take 4 days, and the other two tasks combined are estimated to take only 3 days, the task "Identify resources available" is on the critical path. If this task were to take 5 days to complete instead of 4, it would delay the milestone "Project approval" by one day. However, if either of the other two tasks were delayed by one day, it would not affect the milestone "Project approval."

Project Schedules

Once you have determined all the tasks, resources, dependencies, and estimates, you can schedule the project on the calendar. The most common and most familiar representation of a project schedule is a Gantt chart. Figure 3.7 shows an example.

Creating a useful project plan requires some effort, but maintaining the project plan (adjusting it) is not as labor intensive as it used to be prior to the availability of project management tools. Becoming proficient on a sophisticated project management tool takes some time and requires a solid understanding of project management principles.

Once you key into the tool all the planning components (e.g., tasks, estimates, resources, dependencies), any adjustments you subsequently make to the components automatically cascade through the entire project plan, updating all

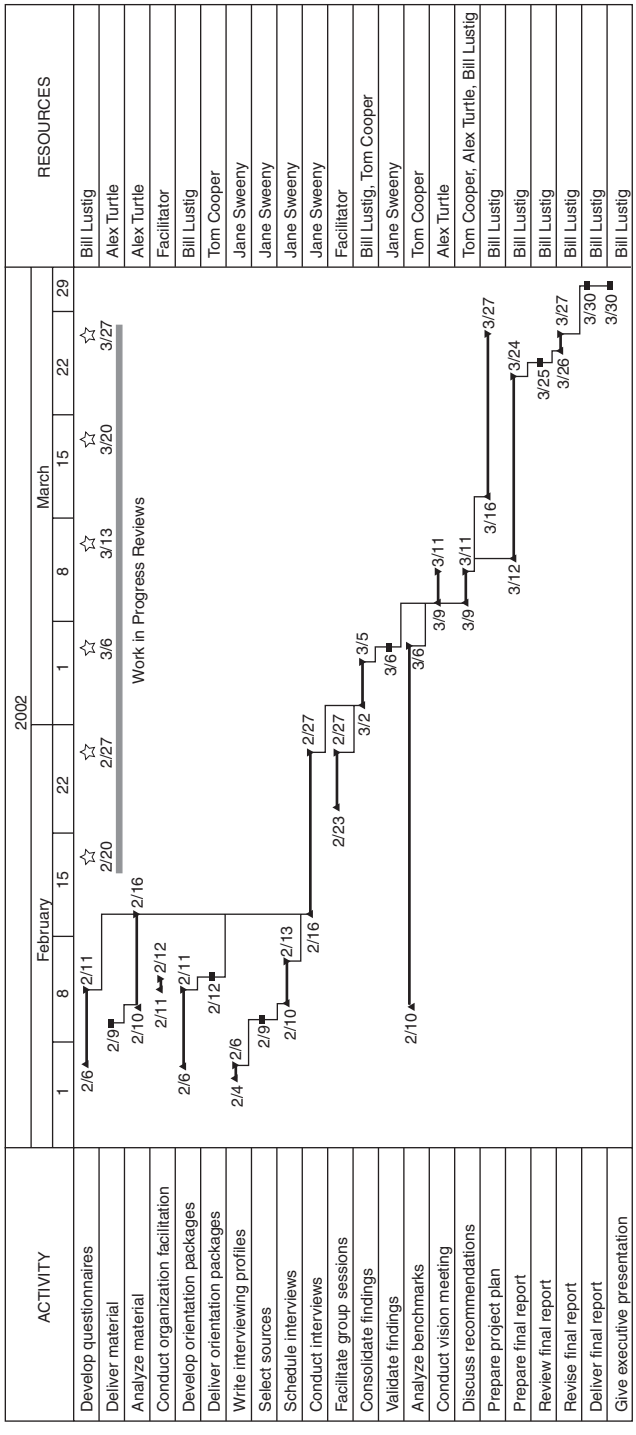

Figure 3.7: Example of a Gantt Chart

charts and reports. Although the results must still be reviewed and validated, an experienced project manager who is skilled on the project management tool does not need to become a slave to the tool or to the project planning activities.

PROJECT PLANNING ACTIVITIES

The project planning activities do not need to be performed linearly. Figure 3.8 indicates which activities can be performed concurrently. The list below briefly describes the activities associated with Step 3, Project Planning.

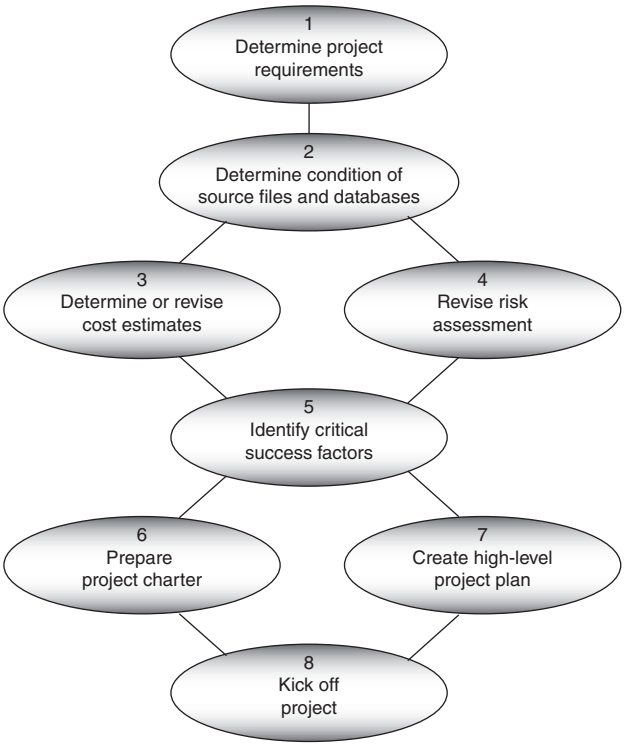

Figure 3.8: Project Planning Activities

1. **Determine the project requirements.**
   You may have already prepared the objectives for the project and some high-level requirements for the proposed scope during Step 1, Business Case Assessment. However, most likely they are not of sufficient detail to start the planning

process. As part of the scope definition, review and revise the following requirements: data, functionality (reports and queries), and infrastructure (technical and nontechnical).

2. **Determine the condition of the source files and databases.**
   You can neither complete the project schedule nor commit to a delivery date without a good understanding of the condition of the source files and databases. Take some time to review the data content of these operational files and databases. Although you will perform detailed source data analysis during Step 5, Data Analysis, right now you need to glean just enough information to make an educated guess about the effort needed for data cleansing.
3. **Determine or revise the cost estimates.**
   Detailed cost estimates must include hardware and network costs as well as purchase prices and annual maintenance fees for tools. In addition, you must ascertain the costs for contractors, consultants, and training. A more indirect cost is associated with the learning curve for the business and IT staff members. Remember to factor that into the cost estimates as well as the time estimates.
4. **Revise the risk assessment.**
   Review and revise the risk assessment performed during Step 1, Business Case Assessment (or perform a risk assessment now if you skipped that step). Rank each risk on a scale of 1 to 5 according to the severity of its impact on the BI project, with 1 indicating low impact and 5 indicating high impact. Similarly, rank the likelihood of each risk materializing, with 1 being "probably won't happen" and 5 being "we can almost count on it."
5. **Identify critical success factors.**
   A critical success factor is a condition that must exist for the project to have a high chance for success. Some common critical success factors are a proactive and very supportive business sponsor, full-time involvement of a business representative, realistic budgets and schedules, realistic expectations, and a core team with the right skill set.
6. **Prepare the project charter.**
   The project charter is similar to a scope agreement, a document of understanding, or a statement of work. However, the project charter is much more detailed than the usual 3- to 4-page general overview of the project that contains only a brief description of resources, costs, and schedule. The project charter is a 20- to 30-page document developed by the core team, which includes the business representative. Present the project charter and the project plan to the business sponsor for approval.

7. **Create a high-level project plan.**
   Project plans are usually presented in the form of a Gantt chart that shows activities, tasks, resources, dependencies, and effort mapped out on a calendar (Figure 3.7). Some project managers also create Pert charts, which show the graphic representation of the CPM on the calendar.
8. **Kick off the project.**
   Once you have planned the project, assigned the resources, and scheduled the training, you are ready to kick off the project. This is usually accomplished with an orientation meeting for the entire team (the core team members as well as the extended team members). Project kickoff should also include setting up communication channels (e.g., newsletters, e-mails, Web pages) with the rest of the organization to keep stakeholders and interested parties up-to-date on the project's progress.

DELIVERABLES RESULTING FROM THESE ACTIVITIES

1. **Project charter**
   This document represents the agreement between the IT staff and the business sponsor about the definition, scope, constraints, and schedule of the BI project. It also serves as the baseline for all change requests. A project charter contains the following sections:
   – Goals and objectives (both strategic goals for the organization and specific objectives for the BI project)
   – Statement of the business problem
   – Proposed BI solution
   – Results from the cost-benefit analysis
   – Results from the infrastructure gap analysis (technical and nontechnical)
   – Functional project deliverables (reports, queries, Web portal)
   – Historical requirements (how many years of history to store)
   – Subject area to be delivered
   – Entities (objects), significant attributes, relationships (high-level logical data model)
   – Items not within the project scope (originally requested but subsequently excluded from the scope)
   – Condition of source files and databases
   – Availability and security requirements
   – Access tool requirements

– Roles and responsibilities
– Team structure for core team and extended team members
– Communication plan
– Assumptions
– Constraints
– Risk assessment
– Critical success factors

2. **Project plan**
   A project plan may contain multiple graphs (such as a CPM chart, a Pert chart, or a Gantt chart) detailing task estimates, task dependencies, and resource dependencies. Most project-planning tools can also produce additional tabular reports on resources and schedule.

ROLES INVOLVED IN THESE ACTIVITIES

- **Application lead developer**
  The application lead developer works closely with the data administrator and the database administrator to understand the data access, data analysis, and general data requirements as well as the tool capabilities. He or she must estimate the effort for application prototyping and development, which the project manager will include in the project plan.
- **Business representative**
  Although the business representative does not actively produce estimates for the work to be performed by the technicians, he or she must be involved in the entire planning process in order to negotiate the project constraints. The business representative must also understand how much of his or her time will be required on the BI project and what is expected of him or her.
- **Data administrator**
  The data administrator needs to participate in the requirements discussions in order to determine the data scope of the BI project. The data administrator will provide any data models that exist for the objects and data elements in the requested subject area. If no data models exist, the data administrator can draw a straw-man model (that is, a first-cut draft of a logical data model) and use it to validate the understanding of the requirements and the scope. The data administrator works with the data quality analyst to assess the condition of the source files and databases.

- **Data quality analyst**
  The main responsibility of the data quality analyst is to assess the condition of the source files and databases and to estimate the data-cleansing effort based on that assessment. To assess the quality of the source data quickly, the data quality analyst can use the functions of a data-cleansing tool, or he or she can write customized domain analysis reports.
- **Database administrator**
  The database administrator needs to understand the scope and schedule of the project from the DBMS perspective so that he or she can be available for database design and application design activities, as well as ongoing project reviews.
- **ETL lead developer**
  The ETL lead developer works with the data administrator and the data quality analyst to understand what types of data transformations and data cleansing the BI application will require. Based on the condition of the source files and databases, he or she will give ETL estimates to the project manager for the project plan.
- **Meta data administrator**
  The meta data administrator is responsible for defining the tasks and estimates for the meta data repository track. Working closely with the data administrator, the meta data administrator has to start exploring what the meta data requirements for this BI project are and whether they can be met with the current meta data repository (if one exists). He or she has to determine the meta data repository effort for the project plan.
- **Project manager**
  BI projects are not for rookie project managers. The project manager must have successfully managed several large projects before. The project manager must also be familiar with a project management tool to minimize the time required for preparing charts and reports.
- **Subject matter expert**
  The subject matter expert will assist the other team members in preparing the project plan and the project charter. Either the subject matter expert or the business representative must be an active, full-time participant in this step.

Risks of Not Performing Step 3

It is impossible to build a BI application ad hoc without a plan. You may as well take a dart, throw it at a calendar, and commit to the date the dart hits. In other words, the project will veer out of control if it is not planned well. You may miss deadlines, have runaway expenses without accountability, implement the wrong solution—or you may never get to the implementation. A BI decision-support environment is very complicated, and BI projects are very costly. The risks of undertaking such projects without adequate planning and control are unacceptable.

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