
Chapter 2

How to Determine Project Scope

So far, we have introduced a 10-step project management model, along with an overview of the job of the project manager during each of these steps. In this chapter we will take a detailed look at the tasks required to complete Step 1: Determine Project Scope.

The Big Picture

An ID project, like any project that consumes resources, must be approved by top managers of the organization (i.e., the sponsors) before it can proceed. In effect, the project manager must “sell” the project to the organization’s decision makers. But before selling the project, the project manager must make a preliminary guess at the project scope. Questions like “Exactly what are we going to develop? How much will it cost? How long will it take? How many people will we need?” must be addressed. Answers to these questions provide a “reality check,” allowing everyone concerned to affirm his or her commitment to the project. What starts out as a great idea for training may, after project scoping, turn out to cost more or take more time and effort than anyone imagined.

To determine the scope of the project, you must first estimate the amount of materials that must be created, then the time and effort required to create them, and, finally, the cost. Figure 2-1 illustrates this process.

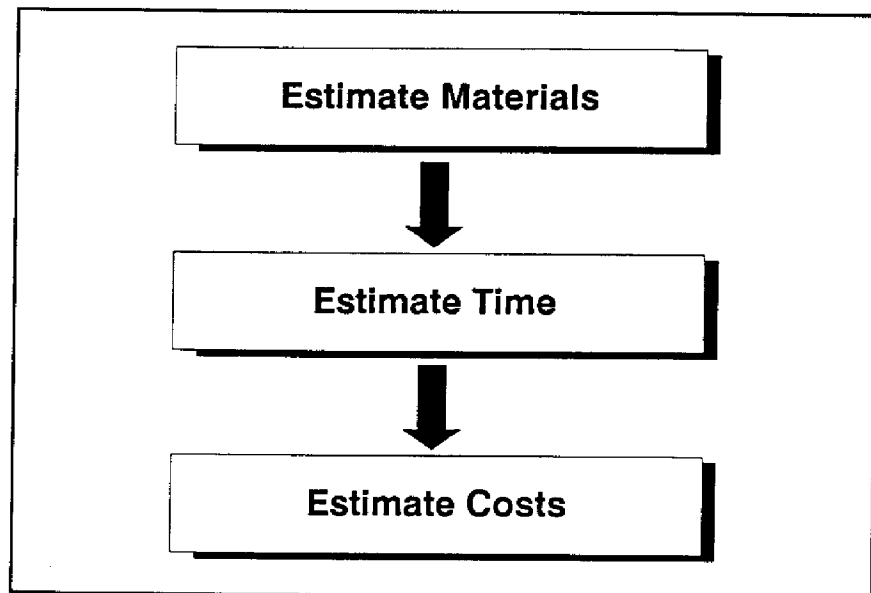


Figure 2-1: Determining Project Scope

Note the sequence of these activities. It's strictly linear. You can't estimate time required before you describe the materials you will be creating. And you can't estimate costs until you know the time (effort) required. Seem obvious? Maybe so. Yet you'd be surprised how often project budgets are built without detailed estimates of materials or time.

In any case, your goal as project manager is to come up with each of these estimates and present them to the sponsor (or buyer) of the project.

Estimating Required Materials

So the first task in determining project scope is to figure out what materials must be created. But how can you possibly estimate materials when you haven't written your performance objectives or gathered information about the content or the tasks to be learned?

Unfortunately, you seldom have a choice. You can't get approval to begin until you present your project schedule and budget to your sponsor. And you can't create a project schedule or budget until you make an estimate of effort — and that estimate is based on materials. So you're stuck with making an educated guess about required materials.

You can, however, take comfort from the fact that there are a few rules of thumb which instructional development managers have used for years to estimate the materials required. Using these rules of thumb, you can make a **sensible** estimate.

The key word at this point in the project is estimate. You are making a preliminary guess only. It need not be absolutely accurate. It must simply provide enough information for planning and negotiation.

Typical Materials Created

Below is a list of the typical kinds of materials that are created during the development cycle. You can use this list to help you think of all the materials that you might require.

- The Blueprint (or design specifications)
- Pages of workbook
- Pages of job aids and reference materials
- Scripts for audio-visual presentations
- Finished audio-visual presentation masters
- Pages of lesson plans
- Computer-assisted instruction flow charts, text frames, and branching instructions
- Professionally produced graphics
- Overhead transparencies
- Pages of general instructions for instructors or trainees describing facilities and equipment requirements, room set-up, and so on

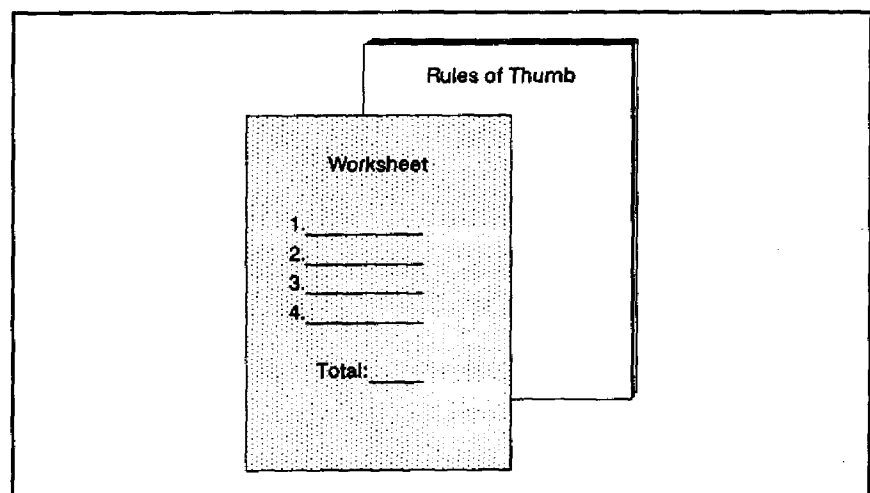


Figure 2-2: Tools for Estimating Materials

Tools for Estimating Materials

There are two tools required when you are making estimates of materials. A paper worksheet (or electronic spreadsheet) will help you keep a tally of the materials, while a set of guidelines (rules of thumb) will help you make your estimates.

Typical Worksheet: Estimating Materials Required

The sample worksheet on the next page could be used to estimate the required materials for a course consisting of some reading materials, media presentations, case studies, role plays, job aids, and other deliverables.

A close examination of this worksheet reveals that it is based on a lot of different rules of thumb. Let's look at some of these.

On the first line we can enter the number of hours we estimate people will spend reading our text materials. This is then multiplied by 20 pages to determine the total reading (text) materials required. The rule of thumb, therefore, is that people will be able to read about 20 pages per hour of our text materials.

The next part of the worksheet assumes we will guess the number of minutes of audio and video that must be created and multiply it by a factor to determine the length of the script that must be written. The rule of thumb used is that we will need to create $1\frac{1}{3}$ pages of script for every minute of audio and 2 pages of script for every minute of video. The rest of the worksheet uses similar rules of thumb to help provide a concrete summary of pages of instructional materials that must be created.

Note the bottom of the worksheet, under "Blueprint." This section assumes that you will be creating a Blueprint (set of design specifications) that will be either $\frac{1}{2}$ or $\frac{1}{3}$ the volume of the entire set of instructional materials. Let's say, for example, you have completed the top part of the worksheet and determined that you will be creating 150 pages of instructional materials. If you expect these materials to be complex or controversial, you might want to build a Blueprint that is very detailed so that you can get lots of feedback from your reviewers. In this case you would estimate your Blueprint to be 75 pages (150 divided by 2). If you expect the materials to be fairly straightforward, you may plan on a less detailed Blueprint of only 50 pages (150 divided by 3).

Worksheet: Estimating Materials Required

Reading Materials: _____ hrs. X 20 pages = _____

Audio script: 1 1/3 X _____ (# minutes) = _____

Video script: 2 X _____ (# minutes) = _____

Introduction and Summaries for Media:

Audio: 1/2 X _____ (# of segments) = _____

Video: 1/2 X _____ (# of segments) = _____

Instructor Orientation Notes (10 - 15 pages) = _____

Lesson Plan or Lecture Notes:

15 X _____ (# of hours lecture) = _____

Overheads or Flip Charts:

10 X _____ (# of hours lecture) = _____

Case Studies, Role Plays, Quizzes:

Instructor Guidelines: _____

Describe Situations: _____

Describe Roles: _____

Assign Tasks: _____

Give Solution/Feedback: _____

Step-by-step Instructions: _____

Quiz Questions, Answers: _____

Job Aids, Other Reference Materials: _____

Miscellaneous Materials: _____

Total Pages of Instructional Materials: _____

Blueprint (choose one):

Blueprint, complex materials:	<u>TOTAL PAGES</u> 2	_____
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or

Blueprint, straightforward materials:	<u>TOTAL PAGES</u> 3	_____
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Typical Rules of Thumb: Estimating Materials Required

On the next page is a typical set of rules of thumb that you might use to estimate materials required.

CAUTION: The worksheet and rules of thumb presented here are only examples. They are based on assumptions that may or may not be useful in your organization. In order for you to make your own estimates of materials required you should set up a similar worksheet, either on paper or on an electronic spreadsheet. You will also need to assemble some rules of thumb that you can trust. These are available from a number of industry sources. The best rules of thumb, however, are ones that are specific to your organization. These can be obtained by reviewing completed projects and by talking to your fellow project managers.

By the way, one of our favorite ways of estimating materials does not require any rules of thumb. You simply look in your library for an existing course that seems to be similar to the course you intend to build. When you find one, you then count up the pages of materials, minutes of script, and other materials. You then compare this course to the one you intend to build and make your materials estimate.

Rules of Thumb: Estimating Materials Required

This reference aid will help you estimate specifically how many units of each type of material you will need to satisfy your course requirements.

Some Magical Numbers

Here are a few numbers used by some old hands in the training business to estimate the amount of materials required for courses:

Reading Materials

Rule: Up to 20 pages for each hour of trainee reading

Explanation: These include anything that trainees are asked to read (class handouts, text of workbooks, etc. Exercises and quizzes are not included.)

Audio and Video Scripts

Rule: About 1 1/3 pages of script for each minute of audio, 2 pages of script for each minute of video. Storyboards may take more pages per minute.

Explanation: If you intend to have your designers write their own scripts, use this rule of thumb. If your media contractors will be writing the scripts as part of a fixed price bid, then simply tell them how many minutes you will need.

Introductions and Summaries for Audio or Video Segments

Rule: About 1/2 page for each introduction or summary

Explanation: These "set-ups" or reviews may be required in trainee and/or instructor materials, especially when the productions are lengthy or complex. Explanations for overhead transparencies should not be considered here, but counted as part of the lesson plan (lecture) notes.

Instructor Orientation Materials

- Rule:** 10 or 15 pages for the average course
- Explanation:** This material describes general instructor skills required, facilities and set-up requirements, overall expectations regarding the "orchestration" of events, etc.

Lesson Plan (Lecture) Notes

- Rule:** About 15 pages for every hour of lesson plans
- Explanation:** Lecture notes are assumed to be outlined, bulleted lists of the points to be discussed by the instructor when teaching the course.

Overhead Transparencies or Flip Chart Visuals

- Rule:** About 10 per hour of lecture
- Explanation:** Be careful with this one! Complex materials can require substantially more visuals. Consider examining those used in a similar, existing course before deciding on a specific number.

Course Blueprint

- (Estimate the Blueprint **after** all other estimates have been made.)
- Rule:** Complex materials - 1 page of Blueprint for every 2 pages of finished materials; Straightforward materials - 1 page of Blueprint for every 3 pages of finished materials.
- Explanation:** If your course materials will be complex or controversial, plan on building a thorough Blueprint so that reviewers will have lots of detail to react to. This will save time and money in the long run.

When There Are No Numbers

When you must create materials for which there are no rules of thumb available, the best thing to do is look to the past. Find a copy of a course similar to the one you must build and count how many pages of the various materials were built. Then you will simply have to take your best shot at an estimate.

Case Studies, Role Plays, and Quizzes

There are no reliable numbers available to help estimate case studies, role plays, and quizzes. These vary too greatly, depending upon course objectives and content. If you will be developing these kinds of materials, ask yourself the questions below.

Ask Yourself: How many pages will be required to completely describe the case study or role play **situation?** ... the **roles?** ... the required task or **assignment?** ... the "school **solution?**" ... special **instructor guidelines?**

How many pages of **reference materials** will you need to allow trainees to solve the problem?

How many pages of **step-by-step instructions** will you need to guide trainees through hands-on activities? (Think about each activity separately when estimating.)

How many tasks will require supporting **job aids?** What will these look like?

How often will trainees be given quizzes in the course and how many pages of **quiz questions and answers** will be created?

Estimating Time Required

The second major task in estimating project scope is to make a guess at how long it will take you to develop the materials. This can get a bit tricky, since there are essentially two types of time consumed during an instructional development project: consulting time and development time. As project manager you need to know how much of each you will be spending.

Consulting Time

Consulting time consists of the time spent in performing professional services, as opposed to creating tangible materials. Consulting time includes time spent when members of the design team:

- Determine project scope.
- Plan the project and hold meetings to discuss scope.
- Gather information, analyze the population, analyze the task, analyze content, and so on.
- Brainstorm and coordinate among members of the development team.
- Review (quality assure) materials before they are seen by the sponsor.
- Review and obtain feedback or approval from the sponsor.
- Set up, run, and observe pilot test sessions.
- Interact with production people to assure that the materials created meet specifications.

These activities usually account for 80% of the time spent by instructional designers and their managers during a typical development project. Because these activities are essential to creating high-quality, performance-based materials, it is important that they are planned for in the project schedule.

Development Time

Development time is time spent solely in creating instructional materials. Examples of development time include the time expended when designers:

- Write the Blueprint.
- Write the draft materials.
- Revise the draft materials for the test and for production.

While development time is essential to the creation of effective instructional materials, it usually accounts for only about 20% of the time spent in a typical project.

Novice project managers (and many course sponsors) often believe the development process to consist primarily of writing. This can lead to project schedules which have little or no consulting time allocated. As the pie chart below implies, the consulting activities must be as carefully planned as the development activities.

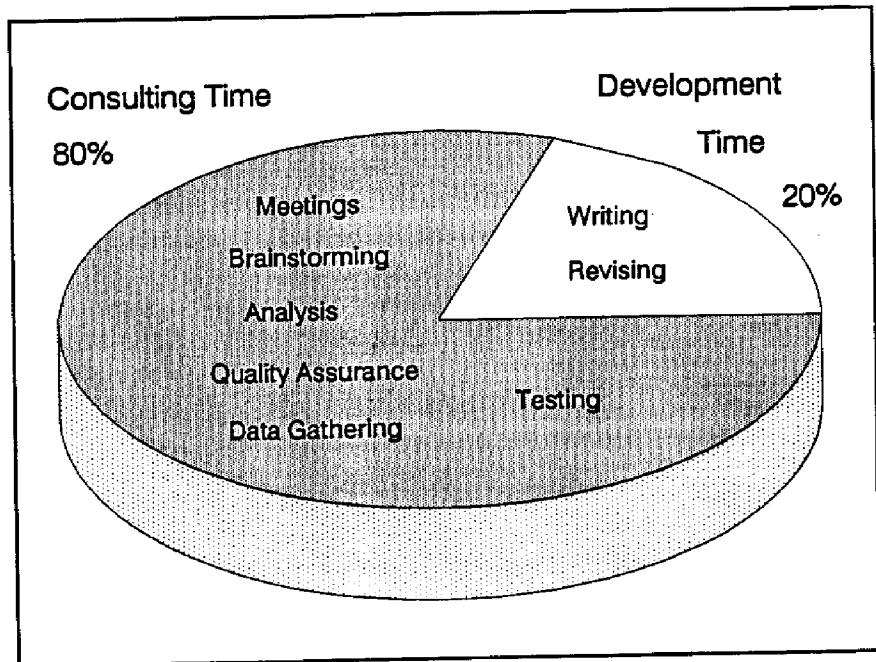


Figure 2-3: Consulting Time vs. Development Time

Tools for Estimating Time Required

The two basic tools for estimating time are the same as those required for estimating materials. You will need a worksheet (or electronic spreadsheet) and a set of guidelines (rules of thumb).

Typical Worksheet: Estimating Time Required

On the next page is a sample worksheet for estimating time. It is designed to help you capture two different types of information: days of labor required and calendar time required.

In the columns labeled "Mgr. Days" and "ID Days" you can fill in the number of days that you estimate will be spent by the project manager and the Instructional Designer or Developer. Later on, you can use this information to help determine labor costs and detailed calendars for the manager and ID.

In the column labeled "Schedule Duration" you can enter the number of days that a particular activity will take, regardless of how much time will be spent by the manager or ID. For example, a review of draft materials by subject matter experts may require 5 days of time in the schedule, yet no time will be spent by the manager or ID. By entering "5 days" in the Schedule Duration column, you will capture this time in your overall time estimate. Later, when you build a detailed calendar of project events, you will be able to include these 5 days of review.

Figure 4 illustrates how the first two columns of the worksheet capture information that you can use later to make job assignments and labor cost estimates, while the third column, "Schedule Duration," will help you build your specific project calendar.

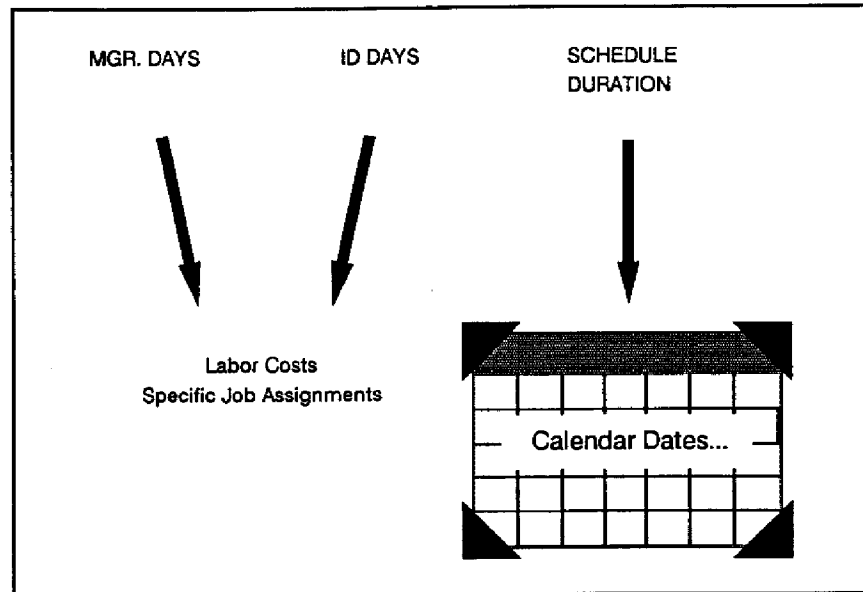


Figure 2-4: Uses for Information Captured

Worksheet: Estimating Project Time

STEP	MGR. DAYS	ID DAYS	SCHEDULE DURATION ~
1. Determine Project Scope			
Create preliminary project estimates:	_____	_____	
2. Organize the Project			
Confirm preliminary specifications:	_____	_____	_____
Hire or acquire project team members:	_____	_____	_____
Set up Project Diary; plan Kickoff:	_____	_____	_____
Conduct Kickoff meeting:	_____	_____	_____
Total Steps 1 & 2:	=====	=====	=====
3. Gather Information			
Plan information gathering strategy:	_____	_____	_____
Gather information:	_____	_____	_____
Total Step 3:	=====	=====	=====

~ Note: "Schedule Duration" is the number of consecutive work days required, regardless of time to be spent by ID or Manager. For example, during audio production, the ID may be required 2 days, the Manager required 1 day, while the Schedule Duration needed for the entire production may be 10 working days.

STEP	MGR. DAYS	ID DAYS	SCHEDULE DURATION
4. Develop the Blueprint			
Get designer(s) started:	_____	_____	_____
Write Blueprint:	_____	_____	_____
Review Blueprint prior to review by SME/sponsor:	_____	_____	_____
Sponsor review:	_____	_____	_____
Meet with sponsor; feedback and approval:	_____	_____	_____
Total Step 4:	=====	=====	=====
5. Create Draft Materials			
Get designer(s) started:	_____	_____	_____
Write materials:	_____	_____	_____
Review, discuss, revise prior to SME/sponsor review:	_____	_____	_____
Sponsor review privately:	_____	_____	_____
Meet with sponsor; feedback and approval:	_____	_____	_____
Revise drafts after sponsor review:	_____	_____	_____
Total Step 5:	=====	=====	=====
6. Test Draft Materials			
Make copies, plan test, set up test site, rehearse:	_____	_____	_____
Run course:	_____	_____	_____
Debrief with students, instructors, and observers:	_____	_____	_____
Total Step 6:	=====	=====	=====

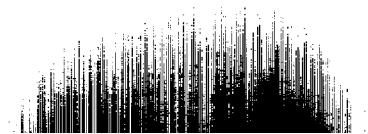
STEP	MGR. DAYS	ID DAYS	SCHEDULE DURATION
7. Produce the Masters			
Revise drafts based upon test results:	_____	_____	_____
Have materials copy edited and revised:	_____	_____	_____
Meet with production people, review specifications:	_____	_____	_____
Time needed to produce masters:	_____	_____	_____
Prepare for review of masters:	_____	_____	_____
Review finished master materials with sponsor:	_____	_____	_____
Review masters and specify revisions to producers:	_____	_____	_____
Have producers revise masters:	_____	_____	_____
Total Step 7:	=====	=====	=====

8. Reproduce			
Plan reproduction:	_____	_____	_____
Meet with repro people and review repro specifications:	_____	_____	_____
Reproduce materials:	_____	_____	_____
Spot check samples:	_____	_____	_____
Total Step 8:	=====	=====	=====

STEP	MGR. DAYS	ID DAYS	SCHEDULE DURATION
9. Distribute			
Distribute materials:	_____	_____	_____
10. Evaluate			
Plan evaluation strategy:	_____	_____	_____
Conduct evaluation:	_____	_____	_____
Write up results/make recommendations:	_____	_____	_____
Present results and recommendations:	_____	_____	_____
Total Step 10:	_____	_____	_____

Summary Time Estimate

	MGR. DAYS	ID DAYS	SCHEDULE DURATION
Total Steps 1 & 2. Scope/Organize	_____	_____	_____
Total Step 3. Gather Information	_____	_____	_____
Total Step 4. Develop the Blueprint	_____	_____	_____
Total Step 5. Create Draft Materials	_____	_____	_____
Total Step 6. Test Draft Materials	_____	_____	_____
Total Step 7. Produce the Masters	_____	_____	_____
Total Step 8. Reproduce	_____	_____	_____
Total Step 9. Distribute	_____	_____	_____
Total Step 10. Evaluate	_____	_____	_____
GRAND TOTAL, ALL STEPS:	_____	_____	_____



Some Rules of Thumb for Estimating Time

In order to fill in the preceding worksheet, you will need some rules of thumb for estimating time at each step of the project. Here are some generic guidelines.

CAUTION: If any of these guidelines don't seem to make sense in your environment, then ignore them and use your own. Always trust your own experience or your organization's history when selecting appropriate rules of thumb.

Typical Rules of Thumb for Estimating Time

Overview

Each stage of the development process involves the completion of specific activities. The amount of time required to complete these activities will depend on the complexity of the materials, the number of materials required, and the number of people who are on the design team.

To make your time estimate, review these rules of thumb then apply your best judgment.

Step 1. Determine Project Scope

This step is usually not included in the time estimate. However, if you want to recover the value of time spent, you should keep track of the days managers spend performing this activity for the project and fill it in on the worksheet. This will assure that the time is included in the cost estimate later.

Step 2. Organize the Project

This project planning stage typically takes anywhere from 10 to 20 working days, depending on the complexity of the project. The manager will be involved full time. ID time is optional, depending on how much the manager consults the ID. In any case, ID time will probably be no more than one-half the time spent by the manager. Some typical numbers include:

- Confirm and/or revise preliminary materials specifications, time estimates, and cost estimates: 3 days
- Hire or acquire project team members: 4 days (10 days, if using a vendor and soliciting bids, etc.)
- Set up Project Diary and plan Kickoff meeting: 2 days
- Conduct Kickoff meeting: 1 day

Step 3. Gather Information

Two activities consume time here:

- Plan information gathering strategy: 1 or 2 days
- Gather information: 5 to 10 days

Complex information, inaccessible SMEs, unstable content, and traveling to meet with widely distributed members of the target audience are examples of things that can increase the time needed. Plan accordingly.

(ID time: 100% of overall elapsed time. Manager [Mgr.] time : up to 75% of elapsed time.)

Step 4. Develop the Blueprint

This stage involves planning, writing, and review. Expect to spend the following time on these activities:

- Get the designer(s) started: 1/2 to 1 day (Both Mgr. and ID)
- Write the Blueprint: 1 day writing for every 10 pages of Blueprint. (For cut and dried material, you might consider 1 day for every 12 pages; more difficult content may require 1 day for every 6 to 8 pages. All writing time is spent by the ID only. Figures assume a quiet, uninterrupted writing place.)
- Review the Blueprint, then discuss and revise prior to review by sponsor and/or SMEs: 2 to 4 days (Both Mgr. and ID)
- Allow the sponsor to review the Blueprint in private: 2 to 5 days (This extends the schedule, but does not require ID or manager time.)
- Meet with the sponsor to obtain feedback and approval: 1 or 2 days (Both Mgr. and ID)

Step 5. Create Draft Materials

This stage also involves planning, writing, and review. Expect to spend the following:

- Get the designer(s) started: 1/2 to 1 day (Both Mgr. and ID)
- Write the materials: 1 day writing for every 10 pages of materials (For cut and dried material, you might consider 1 day for every 12 pages; more difficult content may require 1 day for every 6 to 8 pages. All writing time is spent by the ID only. Figures assume a quiet, uninterrupted writing place.)
- Review the materials, then discuss and revise prior to review by sponsor and/or SMEs: 2 to 4 days (Both Mgr. and ID)
- Allow the sponsor to review the materials in private: 3 to 5 days (This extends the schedule, but does not require ID or manager time.)
- Meet with the sponsor to obtain feedback and approval: 1 or 2 days (Both Mgr. and ID)
- Revise drafts after sponsor review: 2 to 10 days (depends on course complexity - ID only)

Step 6. Test Draft Materials

Include the following time:

- Make copies of materials, plan the test, set up the test site, and rehearse the instructor: 5 to 10 days (Mgr., 50%; ID, 100%)
- Run the course: [Assume actual number of days the course is designed to run.] (Mgr. & ID, 100%)
- Debrief with students, instructors, and observers: 1 or 2 days. (Mgr. & ID, 100%)

Step 7. Produce Master Materials

Include the following time:

- Revise drafts based upon test results: 3 to 7 days (ID, 100%; Mgr., 25%)
- Have the materials copy edited and revised: 1 to 3 days (ID, 50%)
- Meet with production people and review production specifications: 1 to 3 days (ID, 100%; Mgr., 50%)
- Schedule time needed for producing master materials (audio-visual and print are produced concurrently): 5 to 10 days (ID and/or Mgr. at video shoots, recording sessions, and editing sessions only — 5 to 7 days maximum.)
- Prepare for review of the masters: 1 or 2 days (ID, 100%; Mgr., 50%)
- Review the finished master materials with the sponsor: 1 or 2 days (ID, 100%; Mgr., optional, up to 100%)
- Review the masters and specify revisions to producers: 1 or 2 days (ID or Mgr., 100%)
- Have producers revise masters: 3 to 5 days (ID, 50%; Mgr., 25%)

Step 8. Reproduce

- Plan reproduction: .5 to 1 day (ID or Mgr., 100%)
- Meet with reproduction people and review reproduction specifications: .5 to 1 day (ID or Mgr., 100%)
- Reproduce materials: 15 to 20 working days (This extends the schedule, but only requires 1 or 2 days of ID or manager time.)
- Spot check samples of materials: .5 to 1 day (ID or Mgr., 100%)

Step 9. Distribute

- Distribute materials: 1 day (by expensive, next-day air) to 2 weeks, depending on method of transport chosen and storage circumstances. (This extends the schedule, but only requires 1 day, at most, of ID or manager time.)

Step 10. Evaluate

- Plan the evaluation strategy: Time required varies; could be a few days or a few weeks. (ID and Mgr. roles also vary from situation to situation.)
- Conduct the evaluation: Again, time required varies. This must be determined case by case.
- Write up the results of the evaluation and make recommendations: Time required varies.
- Present the results and recommendations and decide where to go from here: Time required varies.

Can You Really Save Time with More Designers on the Team?

If your course materials may be divided into self-contained parts, you might consider assigning additional designers for each additional part. For example, one designer might write the training for the technical people, another might write the customer training, and still another might write the training for the sales people. This could save you some time in gathering information (Step 3), developing the Blueprint (Step 4), creating draft materials (Step 5), and testing draft materials (Step 6).

The other development activities, including planning, analysis, reviews, and production/reproduction, will not show substantial time savings.

Warning: If you choose to add other designers, they should be hired early so they can participate in all stages from 3 (Gather Information) through 5 (Try Out the Materials and Revise). It will never save time to add a new designer at Step 5, Create Draft Materials. This person will need far too much coaching and will likely not create materials of the same quality as the designer who has helped mold the course from scratch.

Arrgh! It's Going to Take Too Long!

At this point you might be saying to yourself, “How in the world am I going to sell a project to my sponsor when it requires so much time!?” Let’s look at our example project; pay particular attention to the Summary Time Estimate. Here are some things to keep in mind:

Sponsor involvement with the project will likely begin with Step 3: Gather Information and end with Step 7: Produce the Masters. The sponsor will not be personally involved in the first 16 days of effort spent by you scoping and organizing the project and will likely be able to “go away” when production begins.

Courseware will be available for the first time at Step 6: Test Draft Materials. Some members of our training audience could be trained at this point by participating in this Test. (This is only about 75 days, or 60%, into the process — not 124 days as our full project time estimate indicates.)

Revised drafts of materials will be available about a week or so into Step 7: Produce the Masters. If necessary, some members of our training audience could be using “quick and dirty” photocopies of our drafts while the production and reproduction processes are underway. (This is about 85 days, or 68%, into the process — nearly 40 days less than the 124 days.)

As project manager, you want to ensure the creation of quality courseware by following a systematic development process. You can’t afford shortcuts, nor do you necessarily have to take them. As shown above, if your sponsor demands minimum involvement and courseware available as quickly as possible, you can respond by pointing out two important facts:

- Sponsor involvement won’t become substantial until Step 3: Gather Information. And throughout the project this involvement will take the form of critical intervention only (input/review/feedback), not daily participation.
- You can have training ready for some trainees as early as 60% of the way through the project.

Pointing out these facts should help you sell your project time estimate to a sponsor who “wants training yesterday.”

Estimating Project Costs

So far, we have discussed how to estimate:

- The **amount of materials** needed for a course
- The **time** it will take to create those materials

These are the two prerequisites for making your estimate of project costs. Each of these must be factored in to the project budget. Before you try to create a project budget, however, you need to consider project costs in broad terms.

Two Types of Project Costs

Generally, there are two types of project costs: labor and outside purchases.

Labor Costs

Labor costs include the money paid for salaries and benefits for the people who work on the project. Usually, project managers and designers account for most labor costs on a project.

Outside Purchases

Outside purchases consist of goods and services that must be purchased in order to complete the project. The costs of outside purchases are usually fixed, as in a “fixed-price” contract provided by a vendor. Examples of outside purchases include:

- A contract with a producer to create a video tape
- A contract with an instructional development expert to complete a task analysis or to conduct an evaluation
- Typesetting services used to create master materials
- Graphics created by an outside artist
- Reproduction services
- Express mail charges for shipping materials to reviewers
- Catered meals for course participants during the test

You can probably think of many more examples. The important thing for now, however, is to be aware of outside purchases as one category of project costs.

Figuring Project Costs

It's fairly easy to figure project costs, once you have estimated the amount of materials required and the number of days needed to create

Number of Days X Daily Labor Costs = Project Labor Costs

**Project Labor Costs
+ Outside Purchases
Total Project Costs**

Figure 2-5: Figuring Project Costs

them. In ultra-simplified form, the process looks like this:

On the next page is a worksheet that can help. Note that it includes some rules of thumb, but for the most part you will need to research the specific prices paid by your organization for labor and outside purchases in your local area.

Worksheet: Estimating Project Costs

The following worksheet can be used to help you estimate project costs. Before you try to use this worksheet, **have the following on hand**:

- The worksheets *Estimating Materials Required* and *Estimating Project Time*, with all appropriate blanks filled in
- The average daily pay rate for a project manager and a designer in your organization (include benefits, if applicable)
- The average daily pay rate for a designer/developer (ID) in your area (Typical rates are \$400 to \$600.)
- Any information about your project that could affect project costs, including:
 - **Set up charges:** How much will it cost to set up the classroom environment and/or rent equipment or facilities?
 - **Special print formats:** Do you require unusual formats for job aids or other handouts? Will special packaging, lamination, or other physical treatments of finished materials be required?
 - **Reproduction method:** Will you be using photocopy or offset reproduction methods?
 - **Distribution method:** Will you be distributing your course materials via ground or air shippers? ... via express or slower (and cheaper) methods?

When you have all these materials together, you are ready to begin your project cost estimate.

1. Determine Project Scope

Mgr.: _____ days X \$ _____ daily rate = \$ _____

ID: _____ days X \$ _____ daily rate = \$ _____

Other: _____ days X \$ _____ daily rate = \$ _____

Travel: \$ _____

Communications/Shipping: \$ _____

Duplication: \$ _____

Catering: \$ _____

Supplies: \$ _____

Other: \$ _____

Total Step 1: \$ _____

2. Organize the Project

Mgr.: _____ days X \$ _____ daily rate = \$ _____

ID: _____ days X \$ _____ daily rate = \$ _____

Other: _____ days X \$ _____ daily rate = \$ _____

Travel: \$ _____

Communications/Shipping: \$ _____

Duplication: \$ _____

Catering: \$ _____

Supplies: \$ _____

Equipment Rental: \$ _____

Other: \$ _____

Total Step 2: \$ _____

3. Gather Information

Mgr.: ____ days X \$ _____ daily rate = \$ _____
ID: ____ days X \$ _____ daily rate = \$ _____
Vendor: ____ days X \$ _____ daily rate = \$ _____
Other: ____ days X \$ _____ daily rate = \$ _____
Other: ____ days X \$ _____ daily rate = \$ _____

Travel: \$ _____
Communications/Shipping: \$ _____
Duplication: \$ _____
Catering: \$ _____
Supplies: \$ _____
Equipment Rental: \$ _____
Other: \$ _____
Total Step 3: \$ _____

4. Develop the Blueprint

Mgr.: ____ days X \$ _____ daily rate = \$ _____
ID: ____ days X \$ _____ daily rate = \$ _____
Vendor: ____ days X \$ _____ daily rate = \$ _____
Other: ____ days X \$ _____ daily rate = \$ _____

Travel: \$ _____
Communications/Shipping: \$ _____
Duplication: \$ _____
Catering: \$ _____
Supplies: \$ _____
Equipment Rental: \$ _____
Other: \$ _____
Total Step 4: \$ _____

5. Create Draft Materials

Mgr.: _____ days X \$ _____ daily rate = \$ _____
ID: _____ days X \$ _____ daily rate = \$ _____
Vendor: _____ days X \$ _____ daily rate = \$ _____
Other: _____ days X \$ _____ daily rate = \$ _____

Travel: \$ _____
Communications/Shipping: \$ _____
Duplication: \$ _____
Catering: \$ _____
Supplies: \$ _____
Equipment Rental: \$ _____
Other: \$ _____
Total Step 5 \$ _____

6. Test Draft Materials

Mgr.: _____ days X \$ _____ daily rate = \$ _____
ID: _____ days X \$ _____ daily rate = \$ _____
Vendor: _____ days X \$ _____ daily rate = \$ _____
Trainer: _____ days X \$ _____ daily rate = \$ _____
Other: _____ days X \$ _____ daily rate = \$ _____

Travel: \$ _____
Communications/Shipping: \$ _____
Duplication: \$ _____
Catering: \$ _____
Supplies: \$ _____
Equipment Rental: \$ _____
Other: \$ _____
Total Step 6: \$ _____

7. Produce Master Materials

Mgr.: ____ days X \$ _____ daily rate = \$ _____
ID: ____ days X \$ _____ daily rate = \$ _____
Vendor: ____ days X \$ _____ daily rate = \$ _____
Other: ____ days X \$ _____ daily rate = \$ _____
Other: ____ days X \$ _____ daily rate = \$ _____

Travel: \$ _____
Communications/Shipping: \$ _____
Duplication: \$ _____
Catering: \$ _____
Supplies: \$ _____

Video masters
(\$2 - 15K per minute*): \$ _____
Overhead transparency masters: \$ _____
35 mm slide masters: \$ _____
Audio tape masters
(\$1 - 7K per minute*): \$ _____
Graphics artwork
(\$20 - 200 per graphic*): \$ _____
Print masters
(\$25 - 40 per page, typeset*): \$ _____
Editorial services: \$ _____
Spine and cover art: \$ _____
Disk and tape label masters: \$ _____
Other: \$ _____
Other: \$ _____
Total Step 7: \$ _____

* The range in cost of this item is based on complexity and "flash," or production value required.

8. Reproduce

Mgr.: _____ days X \$ _____ daily rate = \$ _____

ID: _____ days X \$ _____ daily rate = \$ _____

Vendor: _____ days X \$ _____ daily rate = \$ _____

Other: _____ days X \$ _____ daily rate = \$ _____

Other: _____ days X \$ _____ daily rate = \$ _____

Travel: \$ _____

Communications/Shipping: \$ _____

Catering: \$ _____

Supplies: \$ _____

Equipment Rental: \$ _____

Video copies: \$ _____

Overhead transparency copies: \$ _____

35 mm slide copies: \$ _____

Audio tape copies: \$ _____

Print copies: \$ _____

Editorial/packaging/
assembly services: \$ _____

Binders: \$ _____

Computer Disks: \$ _____

Spine and cover
art copies: \$ _____

Disk and tape labels: \$ _____

Other: \$ _____

Other: \$ _____

Other: \$ _____

Other: \$ _____

Total Step 8: \$ _____

9. Distribute

Mgr.: ____ days X \$ _____ daily rate = \$ _____
ID: ____ days X \$ _____ daily rate = \$ _____
Vendor: ____ days X \$ _____ daily rate = \$ _____
Other: ____ days X \$ _____ daily rate = \$ _____

Travel: \$ _____
Communications/Shipping: \$ _____
Duplication: \$ _____
Catering: \$ _____
Supplies: \$ _____
Equipment Rental: \$ _____
Other: \$ _____
Total Step 9: \$ _____

10. Evaluate

Mgr.: ____ days X \$ _____ daily rate = \$ _____
ID: ____ days X \$ _____ daily rate = \$ _____
Vendor: ____ days X \$ _____ daily rate = \$ _____
Other: ____ days X \$ _____ daily rate = \$ _____

Travel: \$ _____
Communications/Shipping: \$ _____
Duplication: \$ _____
Catering: \$ _____
Supplies: \$ _____
Equipment Rental: \$ _____
Other: \$ _____
Other: \$ _____
Total Step 10: \$ _____

Cost Summary

To find the total cost of course development, transfer all the "Total Step..." costs from the preceding pages to the list below.

	Total Costs
Step 1. Determine Project Scope	_____
Step 2. Organize the Project	_____
Step 3. Gather Information	_____
Step 4. Develop the Blueprint	_____
Step 5. Create Draft Materials	_____
Step 6. Test Draft Materials	_____
Step 7. Produce Master Materials	_____
Step 8. Reproduce	_____
Step 9. Distribute	_____
Step 10. Evaluate	_____
Total Estimated Costs:	_____
10% Margin of Error:	x 1.10*
GRAND TOTAL COST ESTIMATE:	_____

* Use your judgment with this. You might want to go as high as 30% on a project that appears unstable or difficult to estimate and control. Consider complexity and stability of the content, potential SME or sponsor control problems, and your design team's level of experience.

Arrgh! It's Going to Cost Too Much!

At this point you might be saying to yourself, "How can I sell a project to my sponsor when it costs so much!?" Let's think about our example project. Here are some things you and your sponsor might consider in order to save money.

- Could we reduce the amount of materials that need to be created? (For example, could we use existing documentation or text materials instead of researching and developing new materials?)
- Could we eliminate or trim down expensive media? (For example, could we use printed case studies instead of video presentations or could we use media that are less flashy?)
- Could we use fewer developers or developers who charge us less money? (For example, might subject matter experts participate in writing some materials or could student interns from a local Educational Technology program be employed?)
- Could we completely eliminate the costs of formal print production and reproduction by using desktop published and photocopied materials?

You can probably think of many other ways to save money on the project. However, it is important to your project "selling" effort that you involve your sponsor in helping you to "downsize" the project when you are trying to cut costs. Ask him or her to sit with you and go over your detailed estimates of deliverables, time, and costs, and help decide where you can make sacrifices. When you both agree on all the project assumptions, there will be a greater likelihood of a smooth and successful development effort.

Conclusion

This chapter has described how to complete Step 1 of the ID project management process, Determine Project Scope. It has shown how you can build fairly detailed estimates of required course materials, development time, and project costs. In addition, it has emphasized that materials estimates must precede time estimates and that time estimates must precede cost estimates. Finally, it has provided some worksheets and rules of thumb to help you in developing your own estimates of project scope.

A caution: We strongly urge you to find or develop rules of thumb that are unique to your organization and industry. In the long run, these will be more valuable than the generic tools presented here.

One final note: The project scoping activities described here can involve a lot of number crunching. This need not be a tedious job. There are lots of personal computer applications which can speed up and partially automate these estimating chores. Spreadsheet programs and even some databases can help. In addition, there are several good project management software products on the market that are specially designed for planning and tracking projects. These will not only support your cost-estimating efforts, but can also produce Gantt and PERT scheduling charts, work breakdown information, and lots of other valuable reports. If you are serious about your project management, you should spend some time at your local software store investigating these products. They can make a significant difference in helping you plan, control, and communicate with project team members.