What's Involved: Defining the Position

What's involved with being a CAD manager? That's a reasonable question. In order to do any job well, you need to define the position and understand the tasks that you're expected to accomplish. And make no mistake, if you don't define your CAD management job, other people will define it for you.

Being a CAD manager requires proactive management of your work environment. By this I mean that you should define what the tasks are and how you hope to accomplish them. Without a firm idea of how to define your job, you'll find yourself in reactive mode. There's no way you can be a proactive, mission-accomplished CAD manager when you're trying to live up to everyone else's expectations.

1

The burden is on you to define how you're going to do your job, given the realities of the mandatory job responsibilities you must tackle. Therefore, in this chapter I want to acknowledge the various tasks, pressures, and expectations that CAD managers must deal with in a constructive, analytical way. At the end of the chapter, you should have a clear idea of how you'll define your job, how to approach it, and how to keep all parties in your company happy.

Figure 1.1 Sometimes it seems like the CAD manager has to manage everything! The good news is you can manage the load with careful planning.

Overview of Tasks

CAD managers must accomplish many tasks. Any list I write is likely to omit something that you're responsible for already, but I'll go ahead and throw out the more common CAD management tasks as a way to start our conversation. Here's what I see CAD managers doing:

- Supporting CAD software
- Supporting CAD hardware
- Providing user support
- Providing user training
- Facilitating timely work completion
- Reporting status to management

- Preparing budgets
- Writing CAD standards
- Performing staff development and review
- Identifying promising new technology

If you have functioned as a CAD Manager for any length of time, you're aware of these kinds of tasks. You've probably been confronted with many of them and have some degree of comfort in dealing with them. The reason that I like to define the tasks involved with a CAD management job is so you have a list down on paper and you have a tangible job description to go by.

> **Note:** Take some time to write down your task list while the concepts are fresh in your mind. You can use the TASKLIST.XLS spreadsheet file provided with the book to capture your task list electronically.

By documenting your tasks in list form, you can build a game plan for how you'll handle those tasks. The more you think about defining your task list, the more likely you are to come up with good methodologies, standards, and processes to help you achieve those tasks. Conversely, if you don't define your task list and think about the best way to approach it, you'll inevitably be surprised by unexpected tasks. Being surprised puts you into reactive mode, where you lose control of your work environment.

The Real Tasks

For every task on your CAD management list, at least one and possibly many more *real task*s lurk in the background, and only you can identify them. What do I mean by this? That's a reasonable question—one best answered by example. I'll use the topic of CAD standards to illustrate the point, because almost all CAD managers have this responsibility.

The perceived task Let's say that your management expects you to manage CAD standards, and so they've placed a task called "maintain CAD standards" in your job description. Simple enough—or at least, that's what your management thinks.

The real tasks As a CAD manager, you know that maintaining CAD standards includes at least the following real tasks:

- Define CAD standards.
- Document CAD standards.
- Train users to follow CAD standards.
- Deal with those who don't follow standards.

This example is useful because it illustrates the concept that you can't accomplish a task without understanding it and proactively managing how that task will be accomplished. A little thought on the matter leads to the following conclusions:

- To document CAD standards, you have to define them first.
- To define CAD standards, you have to know what users and customers need.
- CAD standards are ineffective if users don't understand them.
- CAD standards are pointless if nobody follows them.

It becomes apparent that in order to accomplish the perceived task (maintaining CAD standards, in this case), you have to think about how that task will actually be done in your work environment. There's no way, in this particular case, that I could tell you how to write a CAD standard. I could give you some guidelines, but the only way you'll write a bulletproof CAD standard is to consider what you'll control, how the standard will be used in your environment, how you'll train your users, and how you'll follow up to make sure the standards are enforced.

Note: As with most things CAD management, I've found that user-centric tasks like training and standardizing work processes are the most complicated parts of the task.

More Examples

I'll give you two more examples of common CAD management tasks, common management perceptions of those tasks, and what the real tasks supporting those perceived tasks typically are. Along the way I'll provide some insight.
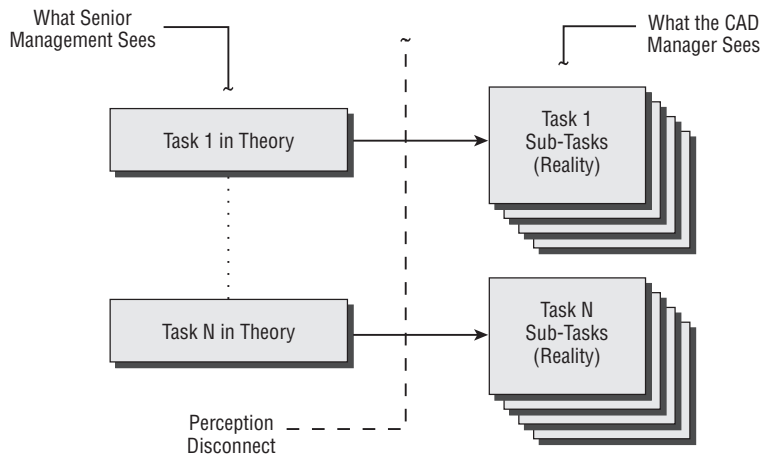

Figure 1.2 Here we see graphically how the actual tasks you manage are quite different from the perceived task(s) your management sees.

The perceived task Provide ongoing user training.

The real tasks

- Identify areas that require training.

- Create custom training materials.

- Coordinate external training resources and providers.

- Deliver training seminars.

The topic of training illustrates how many skills you need to juggle to deliver on what seems like a single task. Your management thinks you need to be a good trainer to pull off this task, right? But in order to develop and deliver user training, you need a complete understanding of what your users already know, where the gaps in their skill sets lie, and where to spend your training time to get the maximum return.

Here we have what sounds like a relatively simple task—providing ongoing user training—that is actually a series of dependent tasks, some of which have nothing to do with delivering training.

The perceived task Provide ongoing user support.

The real tasks

- Answer user questions.

- Catalog user questions and feedback to training processes.

- Determine root causes for user-support needs.

It sounds simple to say, "Provide ongoing user support." Although answering user questions is indeed part of support, the larger tasks of figuring out why you're having to support users and how to minimize user-support questions are how the best CAD managers approach the task of user support.

Task List Conclusions

I hope this section has raised your awareness that the hardest task you face is understanding your task list. Only by analyzing your job will you understand what you need to work on. I've talked to far too many CAD managers who are constantly blindsided by unexpected tasks because they never took the time to analyze their task lists!

I recommend that you make a list of perceived job tasks and the real tasks you need to tackle to meet the perceived needs. Doing so will automatically force you to think more about what you're trying to do—which will lead to better results.

Go ahead and close the book now and write your list of perceived and real tasks. There's probably nothing else you'll do today that will pay you back as handsomely.

Understanding the Users' Perspective

Obviously, CAD managers have to support and serve CAD users. After all, if there were no CAD users, there would be no CAD managers. You have to be cognizant of what your users think and need and how you'll meet their requirements. Simply stated, you must step outside yourself and consider the users' perspective. This wouldn't seem to be too much of a stretch because most of us got our start in this field as CAD users. If you can get yourself in the mental state of being a regular user and remember how you felt at the time, you should be in good shape, right?

Most CAD managers, however, were not basic users, but power users. The power user is a more self-sufficient individual who takes pride in not needing to ask for help. Most of us became CAD managers precisely because we were the power users who could solve software or hardware problems independently. Consequently, most CAD managers possess a can-do, take-action, I'm-going-to-fix-this mind-set that can be intolerant of those who require lots of support. Be keenly aware of whether you have this perspective, because being dismissive of user problems inevitably leads to user dissatisfaction.

Consider your users and how they think. Try to identify all your users in terms of their learning styles and the needed level of support. Over time, I've come to accept that users care about a narrower set of issues than the CAD manager does and that they judge their CAD manager based on how they feel about the following parameters:

- Does their hardware work?
- Does their software work?
- Can they get support when they need it?
- Is CAD management a tool that helps them achieve work objectives or a barrier that makes their job harder?

To gauge how your users feel about their working environment, you need to put yourself in their shoes and ask the following questions as honestly as you can:

- How much of your support do your users really need?
- Would your users say their CAD environment (hardware and software) is great, adequate, or poor?
- Do your users feel well supported?
- Do your users feel they need additional training to succeed?
- Do your users feel that you (the CAD manager) are concerned with their productivity and ability to get work projects done efficiently?

This exercise is tough because it forces you to think critically about how your users perceive you. When you think through these questions, consider things you've heard from users, and be prepared to confront some negatives. Remember that the point of the exercise is to identify the users' perspective, whether positive or negative.

Now the challenge is to take what you've learned from gauging the users' perspective and figure out what, if anything, you need to change to achieve a positive perception from your user base. For instance, if the overwhelming user perspective is that more training is needed, you should either add training or find the root cause of why more training seems to be needed and eliminate the cause. Always remember that if you allow a negative user perspective to linger or fester, then you'll have to deal with not only angry users but most likely angry management as well.

Ignore the users' perspective at your peril!

Management's Perspective

Your senior management has its own perspective on the CAD manager's position, and that perspective is curiously bipolar in nature. Because management understands that CAD work is done by CAD users, they have a vested interest in CAD users being well supported. This places management on the user-centric side of the ledger. On the other hand, management is also worried about longer-term factors like budgets, technology adoption, the cost of software training, and a host of other issues that users typically don't deal with. CAD managers find themselves sandwiched between the seemingly conflicting user and management perspectives.

Figure 1.3 Management views things from a strategy point of view, not unlike a chess game. So how well do you manage the resources you already have to play the CAD management chess game most effectively?

There's probably no one right answer to what upper management's perspective on the CAD manager's role should be, but I've noticed that the following views are widely held by corporate management:

- The CAD manager should enable CAD-related productivity.
- The CAD manager should strive for user efficiency and more profitable operation of the company.
- The CAD manager should remove complexity and make things simple, because making things simple usually makes things go better.
- The CAD manager must keep CAD technology on budget and realize that there are no blank checks for software or hardware.

In my 17 years of CAD management experience, I've found that CAD managers who don't subscribe to these views have rocky relationships with their management teams. Conversely, if you live these ideals on a daily basis, your management probably has a great opinion of you—and your users probably like you as well! When people work efficiently and you don't spend too much money, everybody is happy.

You're Never Done, Though

One glaring difference between the perspectives of your users and your management is that management expects constantly improving efficiency—what I like to call the "good enough isn't" mentality. If you do a great job facilitating productivity, making things simple, and staying on budget as you go, you're just setting the bar that much higher for next year.

So what types of questions does your management ask about improving efficiency? Here are some examples:

- How can we get the same work done in less time?
- How can we get more jobs done with the same number of people?
- What's our CAD manager doing to make CAD processes work better six months from now? A year from now? Two years from now?

Although your users may achieve a state of satisfaction when their hardware and software systems are harmonized and productive, management feels no such satisfaction. Whenever you feel particularly good about the state of your CAD environment, pat yourself on the back and savor the feeling for a little while. But don't pause for too long, because management expects more from you.

In today's hypercompetitive business environments, the effective CAD manager must embrace a longer-term view. How *do* you balance management's longer-term view with your users' shorter-term view? We'll get into that in a moment.

Balancing Tasks and Perspectives

You've arrived at a point in defining your CAD management position where you realize that you have many tasks in front of you that your users and management probably don't fully understand but expect you to accomplish. You have to somehow take into account the users' perspective and upper management's perspective and expectations as well. This is starting to look like a complicated job; and, to be honest, the CAD manager's job can become as complicated as you let it. The good news is that there is a methodology you can use to approach these sometimes conflicting tasks and perspectives to make sense out of the CAD manager's position.

To me, CAD management is like solving an extremely complex equation. You can either flounder, trying to solve an equation with way too many variables, or you can simplify the equation by eliminating variables and making it easier to solve. Therefore, the balancing act of taking all the different tasks and perspectives into account is about thinking through CAD management for your particular company and breaking tasks into manageable chunks that reinforce each other. Let's do the exercise in the following section to see how this works.

Simplifying Your CAD Management Equation

I've already recommended that you inventory all the perceived tasks you're expected to perform and that you break these tasks down into the real tasks that lie behind them. If you haven't built your task inventory do so now so that you can analyze it using the following steps:

In this exercise you are encouraged to really think and capture all the information you need to describe your work tasks and analyze them. It may seem easy at first, but when you really start analyzing what you do you'll be amazed at how complex it can all become. So get out a few sheets of paper and get ready to really analyze your job:

1. Write down each task you do in list form and figure out which items are more in line with your users' expectations and which ones are more focused on the needs of upper management.

2. Rank all the tasks in terms of priority, with users' priorities in one list and managerial priorities in another. You probably won't get your priority order perfect, but with some careful thought, you should get close. Reshuffle as much as you need to before continuing, because this prioritization is the basis for the rest of the exercise.

3. If at any point you feel that you need to expand or contract your task list, do so. After you've made your changes, go back to step 2 and reshuffle.

4. Repeat steps 2 and 3 as many times as required.

5.   Now the fun really begins! Sort through your lists of user-based and management-based tasks, and look for any tasks that are similar. For example, a user-based task may be to "provide training," whereas a management-based task of "make users more productive" may involve training. It always helps to look for win-win scenarios when combining tasks: for example, users may feel they've received great training, while at the same time management thinks they've received a more productive work force. If both users and management are happy then you've completed two tasks for the price of one.

6.   Unify your task lists to reflect any symbiotic relationships between tasks. You might, for instance, combine "provide user training" with "make users more productive" to make a single "raise user productivity through effective training" task on your simplified list.

7.   Repeat steps 5 and 6 as many times as required, and keep looking for tasks that have interdependencies.

8.   Finalize your new, simplified task list. Put it aside for a day or two, and then come back and review it to make sure you haven't missed anything.

Exercise Conclusions—and Expansion

You may have spent several hours on this exercise, but it was time spent in quality thought. You should have a single reduced or simplified list of tasks (the variables in your CAD management equation) and should now be able to manage the tasks more easily (because there are fewer variables to deal with).

The only thing that remains to be done is to sort through your list of CAD tasks and decide where management-based tasks must take precedence over user-based tasks. Remember that management is more concerned about strategic use of the resources you have while users tend to focus on making this more optimal for themselves. Resolving the two, sometimes, competing areas of interest can be a tough balancing act. At the end of this (possibly laborious) process you'll know the following things about your CAD management job equation:

•   You'll know which variables drive the equation: the ones with highest priority.

•   You'll know which variables are interlinked, thus giving you the extra economy of solving multiple problems at once.

•   You'll know which variables are less important than you may have thought— and which ones are more important than you thought.

•   You'll have a thorough understanding of how to solve your CAD management job equation from both user and management perspectives—and how to achieve balance between the two.

Take whatever time you need to refine your list now, even if it means closing the book and coming back later. You may need to do this exercise away from the office

late at night when it's quiet and the phone's not ringing, so you can focus. Few things are always true, but I've come to believe that CAD managers who plan, prioritize, sort, analyze, and optimize their task lists are the ones who achieve optimal success.

The Business Angle: Money Talks!

You've done your analysis of all the tasks and the user and management perspectives, and you've tried to get your CAD management position simplified into the most basic equation possible, but it still seems complex, doesn't it? No matter how much you think about your position, and no matter how you try to simplify the tasks, you need to accomplish a lot. And no matter how thoroughly you think things through, you know a case will come up that involves competing priorities, right? It's reasonable to ask, "How do I resolve these situations?" In the business world, the uniform answer to this question is that you have to make the decision that's best for the company—and this is why I say, "Money talks."

A key to framing issues from the "money talks" perspective is to understand how competing priorities reach the attention of your management. If an issue causes enough discord, management will hear about it; and when they do, they're going to wonder why you haven't handled the problem. Remember, you're the CAD manager, and you're supposed to be facilitating optimal productivity—so why do you have unhappy users? At this point, management will ask you, "Why was this problem elevated up to us? Why haven't you handled it?" And your immediate comeback must be, "Because I have different people with different perspectives. They have different things that they want and need or expect, and I can't make everybody happy."

Figure 1.4 Management tends to measure things financially rather than technically. So remember that the same level of technical vigor you apply to CAD programs is exactly the way your management thinks about money!

Management will now come back to you with another question along the lines of, "Well, what do you think we should do?" As soon as this question is asked, you have an opportunity to resolve the conflict using *financial reasonin*g rather than technical reasoning. The key is to have your recommendation ready and to format it using business metrics, from the point of view of what's best for the company's business position.

A Quick Example

Let's say you have a user revolt on your hands because the users want the latest version of the software, but this software is expensive and the business isn't doing well enough to afford the expenditure at present. This is the budget reality that the CAD manager understands but the CAD users don't. The CAD users are complaining loudly, and the issue has come to upper management's attention. The dialogue of this meeting might go something like this:

Management: "There's a lot of user discord, and they're telling us that we need to go up to the new CAD System Revision 30, whereas we're running on CAD System Revision 28 right now. What's the problem?"

CAD manager: "Our users feel that we should be using the most modern and available technology. They're tired of using technology that's two years old, and they feel that we should make the move."

Management: "Well, why don't we make the switch, then?"

CAD manager: "Going to CAD System Revision 30 would cost us $1,000 per seat, and with 20 users in our operating environment, that's a $20,000 software cost that we didn't budget. In addition, it would cost us close to $2,000 per user to get them trained and through the ramp-up and productivity curve that always occurs when we install new software. I'm looking at a total fee of about $60,000 to get this new software implemented. You and I both know that's not in the cards budgetarily over the next six months. This is why I've said no to new software."

If your management team knows that $60,000 isn't available to upgrade software, and if you present the argument just as I've articulated it here, they will respect your judgment and be impressed that you've taken the initiative to handle the financial aspect of the problem. Management's opinion of you will only go up as they come to understand that you're technical *and* financial and that you've combined those skills to look out for their business. Management also knows that you'd probably like to get your hands on the new software as much as your users, but you have enough discipline to say, "We can't afford to do that now. It's not in the best interests of the company. Even though the users want it, buying the software isn't in the financial business interests of our company."

Now you should go back over your list of tasks and user and management expectations from a budgetary or "money talks" point of view. Think about tasks that

may be placed on your list—either by your management or by your users—that don't match up with the financial reality of your company. By ranking these tasks or expectations in terms of financial feasibility, you'll automatically re-sort and reprioritize your CAD management responsibilities. And by understanding what you can afford to do in the long term, you've gained perspective on which jobs you can tackle first, second, last—or not at all.
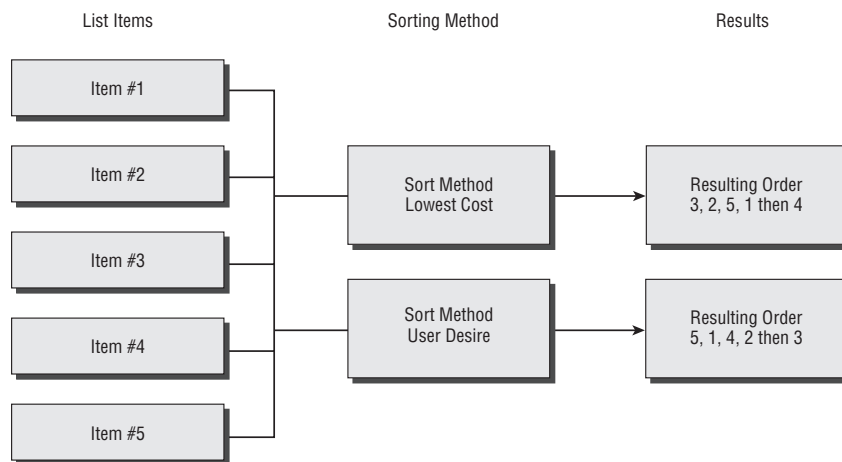

Figure 1.5 Here we see how the prioritization of a list can change dramatically when the monetary filter is applied.

Evaluating Tasks Based on Finances

The financial reality, the "money talks" perspective, becomes a useful reality check that you can apply to any task that's placed on your CAD management agenda. I'll give you an example:

Management may come to you and say that they want you to implement a completely paperless, web-driven CAD environment. However, you know that the budget over the next 12 months will allow for only $5,000 worth of investment in software. It therefore becomes easy to determine that the task is not realistic, because the money isn't available. Don't assume that management understands the amount of money and time required to implement a proposed task—it's up to you to make that determination and inform management of the task's financial feasibility.

By vetting each task—by looking at what it will cost to do something and prioritizing your task list based on that "money talks" viewpoint—you'll be able to defend your choices and priorities based on financial arguments. And when everything is financially based, you'll find that management will question you less and respect your decisions more and more as time goes by. Make no mistake: Management knows whether you understand the financial picture, because that is a core part of what they manage. It's easier to gain respect from management by being financial than technical, as counterintuitive as that may seem.

Gaining the Power to Do Your Job

At this point in defining the CAD management position, you've completed the following analytical steps:

- You've analyzed the tasks that you're expected to accomplish.

- You've looked at that task list from different perspectives—from your own perspective, from the users' perspective, from management's perspective, and from a money perspective.

- You've painstakingly processed and prioritized lists, thinking about what is required to accomplish each task.

- You've developed a simplified multivariable equation that describes your job.

Now that you've come this far, you probably know more about doing your job than 90 percent of the CAD managers I've ever talked to. You have a good understanding of what's expected of you in your environment and who expects it, and you have a game plan to get there. But one important thing is missing from your CAD management plan: authority. Your authority.

I see far too many CAD managers who are expected to do a lot but are given no power to do their jobs. Many of these CAD managers will say their management team doesn't *give* them the power they need to do the job. But I would argue that it's the CAD manager's responsibility to *gain* the power required to do the job. Nobody is going to give you the power to go out and tell people how to work, until you earn it. Your senior management is the only group that can give you the power you need. To gain that power, you must earn your management's respect.

This is why I've taken so much time in this chapter to help you develop your task list and think things through. When management questions you, when they ultimately want you to make recommendations and tell them why things should be done a certain way, you'll be well prepared.

How do you take the task list and all the thought, variables, and equations you've developed and distill them down so you can gain the power you need to do your job? The process is somewhat detailed, so I'll tackle it step by step:

You must have clear documentation. It's not enough to think about the tasks you need to accomplish. It's not enough to think about what order they should be done in or how much they will cost: You have to write it down. In order for management to

understand what you're doing, you must have your prioritized list of tasks written in a brief, executive-summary format. CAD managers frequently try to write their task list in great technical detail, and they go to great lengths to talk about software versions, RAM requirements, and so forth, even though most senior management staff won't understand that kind of information. Your summary should be brief and business focused and should use "money talks" logic wherever possible.

After you've written it down, you have to be able to present it. If you get a chance to present your ideas to senior management staff, you'll probably have to go into a board room to do so. It pays for you to have a clean, professional PowerPoint presentation ready for such occasions. You want to hit your high points, communicating what you're trying to accomplish and why. Brevity is key: If you think you'll have 15 minutes to present your agenda to the board, build a PowerPoint presentation that takes five minutes to run through, and assume that you'll have 10 minutes for questions. I've found this three-to-one rule pretty effective over the years. If you create a 15-minute PowerPoint for a 15-minute meeting, you're not leaving any time for interaction.

When you're presenting, you must be conversant. I've encouraged you to diligently define your job so that you'll have thought through everything, not once or twice, but many times from different perspectives. This thought and preparation will to pay off when you're presenting your ideas to senior management staff. When they question you, you'll have the answers handy and will seem on top of the material without being nervous or struggling. You'll know exactly what to answer because you'll have thought about the subject ad nauseum already.

You must ask for authority. If everyone nods and says you have a good plan, that's the time to strike! You must now ask, "Will you give me the authority to do this?" or "Will you give me the budget approval to accomplish these tasks?" If you're at the point that management likes your planning and reasoning, they already know you need funding or authority to do the job. They're waiting for you to close the deal. Don't disappoint them—go ahead and ask!

Ask respectfully. When you make a presentation to senior management, they judge you on many different levels. They try to see how effectively you present, how effectively you think, and how well you can answer questions. They're also asking themselves these questions: "Can this person really make this work? Can this person do what they say they can do?" By asking nicely for the resources required, you show that you understand not only the issues, not only the variables, but also that it will take authority and budget to accomplish the job. The last benefit is that when you deal with management in a tactful, thoughtful way, they like you better as a person. There's no reason not to have that advantage!

Making It Happen

At this point, I hope you've gained some thorough preparation and a framework of understanding of all the variables, tasks, and perspectives that the CAD management job entails. Yes, it's a complex job. Yes, you must consider many variables to do it. But the more you think, the more you prepare, and the better you can handle the give-and-take and the questions, the easier it'll be.

Probably more than other positions, the CAD manager has to balance technical and managerial factors. That's why the preparation you've gone through in this chapter is so critical. Demonstrating the ability to judge, juggle, balance, and prioritize is exactly what gives you the basis to gain the power to do your job.

As you plan how to attack your CAD management job, keep the following general truths in mind:

- If management thinks that all you do is serve the user perspective, they'll form the opinion that you're a great technical person but not management material.
- If you serve only the managerial perspective, your users will feel under-supported, and their impression will ultimately get back to management.
- Handling the tough decisions using financial, "money talks" logic trumps all other decision-making metrics because the company's financial well-being is your ultimate concern.
- Gaining the power to do your job is a matter of making management understand that you've mastered the concepts I've discussed.

What I hope we've accomplished in this chapter is to prod you into thinking about all the different aspects and facets of the CAD manager's job. Before you read any further in the book make sure you've accomplished the following tasks since they'll form the basis for everything you'll do:

- Get all your tasks down in list form
- Analyze the list based on the approaches outlined
- Think, think and think some more
- Rework your list any time you think of a new task you must manage

Obviously this is a difficult process, but nobody said this job would be easy, right? I'd rather you spend more time here in Chapter 1 really thinking about what you need to do and how you need to do it, than have you barnstorm forward.

The time you spend here will pay you back tenfold in the future, believe me. In Chapter 2, we'll talk about taking stock of your current situation and how to put the definition of your position into practice within your company.