CHAPTER 1

Defining CAD Administration

This book is aimed primarily at helping you prioritize the necessary tasks to run SolidWorks efficiently, and set up multiple computers at your company. The intended audience is power users acting as CAD Administrators, professional CAD Administrators, and Information Technology (IT) professionals trying to perform the duties of a CAD Administrator. Even those of you who are AutoCAD Administrators and need to do a SolidWorks installation should be able to get something out of the book, although I assume you are already thoroughly familiar with SolidWorks from a user's point of view.

In the preparation for writing this book, I wrestled with the terms CAD Administration and CAD Management. I read other books and blogs on the topic, and talked with many people who actually do the work. This research helped me understand that from one company to another, vast differences exist in how those companies are organized. In particular, there are almost as many different ways to create engineering and design data, flesh it out, and document it in a form that can be manufactured, as there are different companies. Some of this is strictly driven by a company's size: Larger companies have a tendency to allow more specialization, and smaller companies require people to have a broad range of skills.

Some large companies have the equivalent of a traditional drafting department headed by a CAD Manager. In these departments, detailers take directions from engineers and add detail to the design concept all the way down through detailed 2D drawings for individual components and assemblies. These companies may have one group of people creating product documentation and another group of people creating manufacturing documentation. Companies like this are large enough to be able to afford departments that

IN THIS CHAPTER

- **Defining a CAD administration**
- **Playing the CAD administration role**
- **Defining yourself as an expert user and mentor**

specialize in a particular function. In addition, a dedicated CAD Manager can only exist in these large companies, because the role is entirely a support role, counted as overhead, not a position that actually produces any revenue.

Not everyone is familiar with that kind of work situation. Far more common is the smaller engineering department lead by an Engineering Manager, where the engineers do most of their own CAD work, and coincidentally most of their own CAD Administration work. In these groups, everyone has to have a wide range of skills and may take a design from concept through to the shipping dock.

I am more familiar with the latter situation, but I will try to write topics relevant to all-sized companies. This book assumes that the CAD Administrator is not a people manager but a technology manager, is still doing billable project work, and that he or she is essentially a SolidWorks power user with extra duties that his or her management probably does not understand. While this scenario doesn't fit all potential readers, I believe it covers the majority.

If you are a full-time professional CAD Administrator, you will find all the technical details and suggestions that you need to keep SolidWorks running useful, along with best practice suggestions to ensure your users create safe data that can be reused easily by others.

CAD Administration is often a thankless job because you have all the responsibility and too often none of the authority. The only way you know you are doing a great job is when it looks like your job is not needed. This makes it tough sometimes for upper management to see the need for a CAD Administrator, although management does not usually need much prodding to remember that they do not understand CAD technology well enough to run it themselves, and that CAD is too complex and too critical to be trusted to run itself.

Often in writing this book, I might sound as though I am talking to CAD users in general; what I have to say might be applied and actually work. However, I'm talking to SolidWorks users specifically. Mixed CAD environments surely exist, but I assume SolidWorks is the predominant software, at least for the reader.

Introducing CAD Administration

CAD Administration means different things to different people. It can mean an entire range of potential tasks and responsibilities from creating documentation to replacing paper rolls in engineering plotters. It is often combined with other unrelated tasks, and the honorary title may simply be assigned to the employee with the most aptitude. It is definitely an overhead job (does not actually produce anything you can sell), and one that management tends to not understand very well.

The CAD Administrator can accumulate tasks that don't fall into anyone else's job description. For example, when your company starts to get into Finite Element Analysis (FEA), who is responsible for installing and maintaining that? What happens when your documentation system is overwhelmed by additional electronic data and the relationships between all the files, and you realize that the vault room with the drawers and cabinets is not going to work as a document control

system any more? Moreover, when the documentation data needs to be electronically linked to the MRP (Manufacturing Resource Planning) or ERP (Enterprise Resource Planning) system, you can be sure it is going to become an interdepartmental task. Product Data Management (PDM) or Product Lifecycle Management (PLM) is a huge responsibility on its own, and again, IT is not always the right choice to manage a system like that, so it often is dropped into the lap of the ad hoc CAD Administrator. By the time you accumulate the titles of CAD Administrator and Documentation Manager, the combined work can be a full-time position.

Typically, the people who find themselves in CAD Administration are those who show a combination of passion and aptitude for CAD along with a strong desire to help people. It seems odd to people who are not CAD users, but a certain percentage of people who use CAD professionally are completely caught up in it as if it were a hobby. Management, of course, loves this brand of overachiever, because these people will fight to keep the job that overworks them, and management won't have to pay them more money. Of course, this is an exaggeration, but it is hauntingly descriptive of many scenarios I have seen. It's good to enjoy your job, and from management's point of view, it's great to have employees who love what they do.

CAD Administration is one of those positions in a company that always creates itself, even if management is completely oblivious to the need. CAD users are a fraternity of employees with specialized, advanced skills, entrusted with the company's design data, using expensive software and hardware. You like to help one another, and like challenges. The CAD Administrator is the one who rises to the top of that fraternity, and gets the position either by appointment or by default. Many SolidWorks users probably actually are CAD Administrators without even knowing it.

Defining CAD Administration

For the purposes of this book, I am defining CAD Administration as broadly as possible. You can be a CAD Administrator without having all the following responsibilities, but you should at least be familiar with all of them. This is how I define CAD Administration:

- Headed by an expert CAD user
- Standardizes design document deliverables
- Establishes best practice guidelines for CAD users
- Efficiently installs, configures, and maintains CAD/design software
- Evaluates updates to existing software and new design, analysis, or documentation software
- Implements new design or analysis software
- Trains users in new or improved software and any standards that exist
- Provides support to users in the use of design software and standards
- Acts as an intermediate between IT and CAD users as well as between management and CAD users
- Maintains electronic product documentation and revisions
- Very often involved directly in PDM

CAD software really is more complex than office applications. It is more demanding on your hardware, and the software is often very complicated and expensive. Support for CAD is difficult and expensive, more so than anything else except maybe programming. CAD users must be more computer savvy than the average spreadsheet user, and they must have more control over their local computers than people who check e-mail and surf the Web.

CAD software is also far more complex to install and set up, on par with complex accounting systems. This requires more from the local user's hardware, more from the network on which the users reside, and more from the CAD users themselves. When you have an IT department, the CAD Administrator has to be able to work in harmony with IT to fulfill the needs of all the CAD users.

Often IT departments try to group CAD users together with all other types of technical computer users in the company. To a CAD user, SolidWorks and Photoshop don't look anything alike, but to an IT person, where else would you put Photoshop? It's too graphical to fall under standard office applications. Where does it stop? The programmers use special software for version control called Source Safe. That is complex file management with special relationships between the files, which to an IT professional sounds a lot like the situation with CAD files. Should the CAD Administrator also be responsible for all the complex technical software at the company including Photoshop and Source Safe? Different companies answer that question differently. It might not make sense to have someone in the graphics department and someone in programming who has special IT access handle it, or does it?

Then add other gray areas to the mix, such as circuit board design software. It looks an awful lot like CAD, even to a CAD user. Now add a second CAD system on top of SolidWorks, such as AutoCAD. If your CAD Administrator comes from a 3D background and is asked to administer the 2D installation, that's one thing. Asking a 2D Administrator to cover a 3D CAD package often involves a hefty learning curve. If you find yourself in the latter situation, hold on tight: it may be an exhausting journey, but you will come through on the other side.

You may have other mixed CAD environments such as SolidWorks and Rhino or SolidWorks and Pro/ENGINEER. In the case of mixed environments, the CAD Administrator should be most proficient in the software with the most usefulness in the future. A SolidWorks Administrator may need assistance establishing best practice settings for a package like Pro/ENGINEER. Mixed CAD environments are a fact of life, and one that is not likely to change any time soon.

For all these reasons, the CAD Administrator needs to be both a CAD expert, and have enough access to IT to make necessary changes, as well as have the trust of management. He or she also has to be flexible enough to handle mixed CAD environments and other similar challenges, not just strictly CAD applications. CAD Administration as a separate, stand-alone job is a difficult position to maintain. If you are not using the CAD software on a daily or weekly basis, it is impossible for you to be in touch with the needs of the users. You cannot maintain the credibility and influence of the expert if you are not maintaining your skills as much as those around you are.

Comparing SolidWorks Administration to AutoCAD Administration

To be fair, SolidWorks and AutoCAD are often found in the same offices. Sometimes it is because the organization has not fully made the 2D to 3D transition; other times, it is because there is still a need for both kinds of tools. On the other hand, using both programs may be to maintain legacy 2D drawings that don't make sense to update to 3D, or because the company has some drawings that are better done in 2D.

I won't get involved in the religious argument of 2D versus 3D, but I do believe not all types of design documentation can be done in 2D. In the same way, not all types of products require 2D. If you are creating electrical schematics, 2D is the only way to go; there is no role for 3D. If you are designing complex plastic parts, 3D is the only way to go, with limited roles for anything but 3D.

Comparing project physical scale

As a design package, SolidWorks is typically used for projects around product manufacturing. The products could be built for commercial, industrial, or consumer use. This means that SolidWorks is typically used to design things that fit in your hand, fit on your desk, or might even fit in a construction site. In fact, SolidWorks parts have a hard-coded limitation that you cannot model anything outside of a 1000-meter cube centered on the part origin. This doesn't seem to be much of a limitation, but if you start to model civil engineering projects or architectural projects in SolidWorks, you could easily run up against this size limitation.

One of the most widely used applications of AutoCAD is architecture. In architecture, you are typically designing something much larger than what you design in SolidWorks. So, one of the differences between SolidWorks and AutoCAD might be immense size difference. If you are designing a building, it is likely that you have a team of people for a significant period of time. If you are designing a toaster, it will take fewer people less time to complete.

When you talk about standards in AutoCAD, you are talking about things such as line weights, layer colors and names, the drawing border used, and the use of hidden or frozen layers. When you talk about standards in SolidWorks, what does it mean? Certainly you could have a similar discussion about SolidWorks drawings, with line weights, and possibly layers (although SolidWorks does not rely on layers to the same extent that AutoCAD does), but what kind of a standard would you write for a 3D document?

I answer questions such as this one in later chapters of this book. Standardization for 3D data may seem like a difficult thing to define at this point, but you will understand a good definition or at least a good range of possible definitions before you are through.

Managing file data

Further comparison between SolidWorks and AutoCAD can be made in the area of file management. AutoCAD typically has a one file per paper drawing ratio. SolidWorks typically has at least

two files per paper drawing (if paper or even 2D electronic drawings are used at all), and relationships between these documents must be maintained through revisions, name changes, folder changes, and all other types of changes. Therefore, SolidWorks adds a significant burden in terms of file management that you may not be accustomed to if you have previously only managed AutoCAD or other 2D data.

Is that something you should find frightening? No, not as long as you know what you are doing before trying to manage the interrelated 3D data. The point is you have to follow rules to manage the SolidWorks file data, but the rules do exist, and you can do this kind of work successfully.

I have heard people use the complexity of 3D documentation associatively as a reason to stay with 2D documentation processes. Unfortunately, CAD Administrator, you will encounter many emotions from users when you make changes to the way they work. Fear of the unknown tends to be one of them, and it usually turns out to be a fully irrational fear. Yes, handling data from a parametric modeler like SolidWorks is complex, and yes, you can seriously screw it up if you don't know what you are doing, but people learn how to handle this type of data effectively every day, and there is no reason why you can't learn to do it too.

Process-based

One of the most important differences between a parametric modeler like SolidWorks and a 2D drafting program like AutoCAD is that modeling work in SolidWorks tends to be very process-based. It matters what the order of operations is. This difference is the learning curve that drafters who move from AutoCAD to SolidWorks must deal with, and certainly, what the CAD Administrator must take into account when training new users, and especially when establishing new standards for SolidWorks use.

Playing the Part: More CAD or Administration?

The role of the CAD Administrator is a two-part role. As the name suggests, the CAD Administrator must be both a CAD power user and an administrator of the necessary housekeeping to keep the technology and the people running.

CAD is the common geometrical language for manufacturing. Administration is the necessary work that has to be done for CAD to give consistent results. Administering a CAD system, in particular SolidWorks, cannot be done by someone who does not have a thorough understanding of how the CAD system works, and in particular the standards used at your company. This is why the CAD Administrator is almost always someone who has worked his or her way up through the ranks of being a CAD user into a leadership role.

Which skill is most important, CAD or administration? To be most successful, you need more CAD knowledge than administrative knowledge, but as I mentioned earlier, in this role you must have both.

Distinguishing between CAD and design

In most of this book, I talk about CAD as if it is a stand-alone function within your organization, and it might be. However, it probably isn't. Larger companies with a traditional organizational strategy are more likely to have a specific CAD department, where drafters or modelers are responsible for taking designs from other sources such as designers or engineers and adding detail, but most companies who use SolidWorks software are smaller organizations where that kind of specialization is not possible.

Many times, the CAD users at a company are also engineers or designers who are responsible for the overall concept and then must add their own detail, without the luxury of having a department of CAD specialists to make it all happen.

Both types of users (concept designers/engineers and detail drafters/modelers) work most efficiently when their CAD environment is installed and set up properly, they are trained on all the tools they need to do their jobs, and CAD standards are established and followed. These different types of users are going to have different needs in system setup.

I'm a firm believer in the idea that design usually happens long before you get to CAD. Design happens in your head, and everything else — napkins, envelopes, white boards and even CAD systems — is used to add detail, and communicate and document the design. SolidWorks is a fantastic tool for adding engineering detail and documenting designs but is a little cumbersome for truly conceptual design.

You may often hear words such as "modeling" and "designing" used interchangeably, but they have distinctly separate meanings. *Design* is the process of creating a new idea, and working with the raw concept of a product, mechanism, or assembly technique. *Modeling* is putting flesh on the bones of the concept, adding enough detail to manufacture individual pieces. Both concept and detail stages are necessary. Sometimes different groups handle the different tasks, and sometimes the same individual handles both. I discuss this again later in this chapter, but the distance separating concept and detail comes down to the size of the organization.

So while I may write generically about CAD as if it is a function separated from other duties, please recognize that I'm only doing that because writing a single book that covers all possible scenarios would otherwise be impossible. You are going to need to superimpose the organizational chart from your company onto the ideas presented here.

Including Information Technology

Information Technology (IT) is an equally important part of the CAD Administrator's job. Often, you will become an honorary member of the IT department. At the very least, you need a good working relationship with the management and members of the IT department because you need access to administrator rights on computers, have access to special areas of the network, perform hardware upgrades, and have the authority to make changes to users computers.

Every company has a different IT policy, ranging from situations where IT is really just there to offer expert advice and assistance, to situations where IT has absolute control over all hardware and software. The closer your company is to the latter of these two options, the more methodical you will need to be in order to accomplish what needs to be done. At times, it can feel like IT is working against you. Remember that they have responsibilities that are different from yours, and you need their help.

It is a common situation to find IT departments that are highly controlling and resistant to allowing outside forces to have any influence over their schedule, plan for software, or access. If you assume IT will cooperate easily just because you were very polite when asking, you may be in for a rude surprise. Depending on your company's office politics situation, you can usually resolve this by either going to the IT Manager directly or by having your chain of command do it for you. Once management gets involved, and IT is told it must comply to serve the needs of the company, your experience will usually improve. Regardless of how things "should" work, the IT department can make it miserable to get your job done, so when possible, it's a good idea to try to be cooperative and considerate.

Finding a balance

The CAD Administrator is often a power user who looks beyond his own workstation and sees how CAD affects the business as a whole, or at least the business outside of his own department. However, if as CAD Administrator you spend too much time in the bigger picture, the real-world CAD skills may become rusty. If your CAD skills diminish too much, your effectiveness as the lead CAD user can decrease.

The way you become the expert is through using the software. The best way to maintain your skills is to keep using the software to do project work. Since your role as expert depends on your technical knowledge, it makes sense that if your knowledge fades over time, so does your influence as CAD Administrator.

For this reason, along with several others, I believe that the best CAD Administrator is a hands-on, practicing CAD Administrator. In small companies, this is a necessity, but in larger companies CAD Administrators can be prone to lapsing in their skills. In this case, it is best if the CAD Administrator can keep in practice by answering as many questions as possible instead of subcontracting the support to an outside organization. The same can be said for training. CAD Administrators that have outside groups handle all support and training and aren't involved in project work anymore are prone to becoming figureheads, decreasing in effectiveness with each passing release of the software.

The main point is to remember that to maintain your skills you have to get your hands dirty from time to time. Many CAD Administrators I know find it enjoyable to get back into the software again. In addition to keeping your skills up, it can also be a safeguard against burnout.

Defining Your Role

Many different scenarios can exist for CAD Administrators. Some CAD Administrators have CAD operators who report to them, some do project work themselves. Your company's needs and your personal strengths will likely play the major roles in defining what specific tasks you will take on.

If you are establishing the CAD Administrator position in a company where there has previously been no such thing, you have the unique position of being able to define your role. Remember that other people are going to try to offload some of their work onto you, and may try to write a little bit into your job description that wouldn't otherwise be there. If the position is new, you should establish the boundaries as quickly as you can so that other people do not establish them for you.

If you are stepping into a role that existed before you arrived, your work is both easier and more difficult. It is easier because the role is defined for you. It is more difficult because if you feel that the role should be adjusted in some way, that adjustment may be far more difficult to accomplish.

Establishing yourself as an expert user

As a CAD Administrator, you need to be an expert user for a couple of reasons. First, if you are going to be writing standards and establishing best practice, you can't just be someone with an abundance of self confidence; you must actually have solid experience with both the finished product (meaning the drawings and other documentation your company produces) and the tools used to create that documentation (SolidWorks and other design-related software). I have often seen companies push new users, right out of college, into CAD Administrator positions. When they do this, it is usually because management is only considering the tedious software management side of the duties. I believe they are not considering the standards, the enforcement, the training, and other roles that require an experienced and established CAD Administrator. New users are not typically skilled in all these areas but may acquire the skills over time.

Something needs to be said here that may be difficult to hear. Just like being a professional athlete, not everyone is cut out for the job. The most successful CAD Administrators are those who were born with the natural talent of curiosity to keep learning; the desire to continue supporting and training users; the software interface gene that somehow lets you know instinctively how to use software that you have never seen before; and the geometry gene, which enables you to visualize 2D and 3D geometry instinctively as the result of any process you could name.

You could establish yourself as an expert just by sheer hard work and concentration. But when it is instinctive for you to rise to the top, others will take notice immediately, and there won't be any question about it.

Becoming a CAD mentor

There is at least one big difference between a leader and a manager. The difference is a little philosophical, and usually the difference in pay does not reflect which kind of person is more valuable to the company. Think of a manager as "push" and a leader as "pull."

Being a leader versus manager

Managers are typically less passionate about their work, and they may appear to have more generalized skills. They may be more oriented toward organization, or people skills, they may seem to embrace the corporate entity, and may seem gifted at coercing people to do something whether the person wants to do it or not. The manager *pushes* from behind.

An analogy for this might be a pioneer of the old west, going west with a couple of oxen and a wagon. The pioneer sits on the wagon and cracks the whip over the head of the oxen. The pioneer himself might be weak and frail, but the ability to crack the whip makes the heavy cart move forward. Managers lack CAD skills, but they can make those who have them produce.

Leaders, on the other hand, tend to be passionate or even obsessive about their field and are thrust forward by those around them. Employees can resist a manager, but a real leader is someone chosen by peers. A leader cannot be appointed. Leaders within engineering departments are typically very skilled and are selected for the leadership role by people who bring problems in exchange for great answers and thereby establish this person as an authority. The leader *pulls* from out in front.

You can sometimes find people who are false leaders. This is a trap to avoid for sure. Think of a long line of cars on the thruway. Is the person in that car at the front of the line really a leader just because his car is first? No. This is a false leader. The person might look like a leader because of his position, but the truth is he is going so slow, he holds everyone else back. Do not confuse someone's position at a company with his status as a leader.

A true leader is the soldier who runs forward to attack first, then looks back and signals for everyone else to charge. They see that he has done it, and it makes it easier for them to follow. This is why a true leader of CAD users is always an enthusiastic hands-on technical leader, not a sedate non-combatant.

Mentoring through leadership

As an expert or power user, you are already a leader, whether you have the title or are being paid for it or not. The best use of your skills may not actually be doing project work (but the irony here is that if you don't keep doing some actual project work, you may lose your status as an expert), and it is probably not sitting in front of a spreadsheet or schedule being a manager. Your skills may best be used in leading and motivating other users. If you could duplicate yourself, your knowledge of your company's practices, and your skills in the software, your company would be much better off than just having you pounding out models and drawings day after day.

Becoming a CAD mentor is an important part of being a CAD Administrator. Developing the skills of other CAD users, and in particular the potential power users, can be one of your most important contributions to the future of your department.

The first step to becoming a CAD mentor is to find someone to mentor. The most suitable subjects are usually young, ambitious, and already gifted in CAD, process, geometry, or visualization. Sometimes you can find people who find new purpose mid-career, who haven't been sufficiently encouraged by other leaders.

If you lead or attend training sessions with the rest of the CAD users, future power users are easy to spot. They are the ones in the front row who are bored because they went through the whole exercise before the rest of the class is half done. You don't want to waste this kind of training opportunity. If someone works through the exercise first, assign a special exercise that requires some problem solving. Maybe draw a figure on the white board and ask her to find different ways to model the same thing. I used to keep several sample parts in my desk, and would hand them out to people like this, and simply ask them to model the part. This kind of a challenge is a great learning experience for people who are well beyond the rest of the class.

Natural CAD power users often have an instinct with computers, and usually have an above average understanding of manufacturing processes. The best power users have the uncontrollable urge to help people by answering questions. They are also curious, and never stop learning. If you take the time to educate them one on one, they will be your allies and become assets for you.

Developing power users from your existing crop of users requires one-on-one attention. If you give a future power user challenges, they will rise to the challenge. Sometimes it is useful to pair a power user in training with another user who needs some help with basic skills.

Most of all, avoid suppressing enthusiasm or talent. I have seen some CAD Administrators try to cool off users who were too excited about learning. This may be because they were afraid of losing their jobs to younger, brighter, rising stars. On the other hand, if you are seen as responsible for helping someone with gusto develop his potential, you may be training your own replacement so you can be promoted. Don't suppress talent when you find it.

Administering efficiently

As I mentioned earlier, the term CAD Administrator has two words, and one of them is administrator. Administrating anything requires a bit of organization, some people skills, and some planning. If you're not a full-time CAD Manager, then most of the actual "management" tasks will be taken care of for you either by your Engineering Manager or by the IT Manager, but there are some things that no one will keep track of for you:

- Subscription renewal dates
- Lists of serial numbers, software levels, and subscription costs
- Rollout dates for service packs and new versions
- Reseller training dates
- Training classes completed by each CAD user
- SolidWorks World dates
- Ink and paper levels in the engineering plotters
- Key VAR contact
- Key SolidWorks contact
- Submitting and tracking all ERs and SPRs
- Chair in-house user group(s)
- Attend and/or determine attendees for local user group(s)

Make sure to keep a calendar for the dates, and a regular schedule for checking things that IT may have left to you like the engineering plotters. Make sure also to keep management aware of the important dates.

Spending subscription money wisely

Although you may not have direct control of a budget, the software you work with requires a significant budget for the subscription and training. Your managers are counting on you for input as to whether that money is well spent or not. If you have ten licenses of SolidWorks Standard (base package), the annual cost of subscription is $12,900. The subscription covers technical support from the reseller, all service packs, and new versions that come available during the 12 months of the subscription period.

If your users have been on subscription for several years, and you have a good base of knowledge, the technical support may not be benefitting you at all. Unfortunately, you cannot separate the cost of the reseller technical support from the cost of the service packs and new versions. If you do not believe that the service packs and new versions are benefiting you much, it may be time to support only a few licenses or eliminate subscription altogether.

If you decide to stop paying subscription and then later decide to get back on, SolidWorks charges a $500 penalty to get you back on. Therefore, if you get off primarily to save money, you may need to stay off for a couple of years for it to add up financially.

I will revisit the topic of licensing and subscription in a later chapter. Here, I have begun to get you thinking about things that you are responsible for in the course of administering the CAD technology at your company.

Cross-Ref

Chapters 19 and 20 discuss the value of subscription services in more detail. ■

Training and efficiency

Efficiency always includes balancing competing interests. Whenever businesses talk about efficiency, they are usually balancing against time or money. I have already talked about balancing software subscription money against the benefits you get from that money. Training is another commodity that you can look at through the efficiency lens. Are you getting your money's worth for the training you are giving your users?

Reseller training has the reputation of being consistent. The materials used have existed for a long time and work well for general SolidWorks training. The main variable is the instructor. Before you spend money on reseller training, it is a good idea to meet the instructor that will lead the class for which you are actually paying. If you don't feel he or she has enough experience, don't be shy

about asking for a trainer you know or one with which you are more comfortable. Simply being a certified trainer or having given training courses for ten years do not guarantee that the trainer will communicate well with your CAD users. Reseller training is expensive, and you deserve to get value for the money you spend.

Another option is to purchase your own training materials. SolidWorks will not sell you the training materials used in the reseller classes, but other training materials are available commercially. Several printed books are available, including the *SolidWorks 2009 Bible* (Wiley Publishing, 2009). Training materials are also available online, which your employees can use at their own convenience without the need for travel arrangements or time off from work.

Be aware as well that no off-the-shelf training program is going to cater to your specific needs. It may contain a lot of information you don't need, and may skip specific practices developed for your company. At some point, you should consider creating company-specific training for special techniques and standards that your users need to know on a daily basis.

Custom training classes to cover these specialty needs can be developed by consultants, by your reseller, or by yourself. Custom training, while more expensive than standard training, may turn out to be a better value for the money, because you know that your users actually need all the material in the class.

Building a team

If you want to have success as a CAD Administrator, one of the first things you need to realize is that you are probably going to need some help. When working with groups, people often resent individual efforts. Therefore, even if you actually can do everything by yourself, it may be better for the entire group if you build a team anyway. A feeling of inclusion often helps people cooperate.

Team building can be a part of mentoring that I mentioned earlier. Teams can be a great way to find or create consensus if you need direction or support. You might need a team for one of several things, such as for a standards review committee, for software evaluation, or as part of a report on the state of CAD at your company to management.

A team that is made of CAD users from multiple departments can have other beneficial effects. If you are building a team to help select a PDM product, getting input from a wide range of people is key. No one person can anticipate all the electronic document control needs for several departments. A team is also an ideal way to help you gage the effectiveness of a SolidWorks implementation.

Another way to use a team is in the form of a user group. SolidWorks user groups have been very successful in drawing in and educating users. If the team is big enough, you might consider it the user group. If it is small enough, it might be the leadership core for the user group.

Summary

Becoming an effective CAD Administrator requires a combination of technical leadership, organizational, and people skills. The most effective CAD Administrators are also top-notch users with a deep understanding of documentation and manufacturing processes. As the CAD Administrator, it is very important for you to maintain your skills in the tools and processes that you are administering. There is no replacement for hands-on experience. If you can provide your own training and support, that will be of great value to your company.

To accomplish your job, you must be willing and able to work with other people in a team setting to help build a feeling of inclusion. Mentoring other users and recognizing power user talent when you see it are both important aspects of building a team of expert go-to users. CAD Administration is a big job that is often under-recognized by management.