CAD Management: The Art of Influence

Todd Schmoock
Synergis Technologies, LLC

James Johnson
Synergis Technologies, LLC

Learning Objectives

- Recognize the most common mistakes CAD managers make and how to avoid them
- Identify must use tools every program has that users should know
- Solve how other groups will interact with the CAD department
- Define workflows required to be successful

Description

Are you a CAD manager? Do you need to convince your employees to use software, and your boss to buy software? Many times you are faced with the hardest task of your position which is to influence people upstream and downstream to even consider what you are proposing. You've done the research and are convinced it is the right course. Sometimes the software is in place, and it's just convincing them your workflow is the best way to go. Come to this class to learn how to influence your boss, and your employees to get on board!

Speaker(s)

Todd has over 25 years of experience in the mechanical engineering field. He is a graduate of Delaware Valley College in Doylestown, PA. Todd joined Synergis in 2003 as a Design Solutions Engineer where he began providing assistance to customers through training and consulting, helpdesk support, as well as providing pre-sales support and regularly presenting classes at Autodesk University. Prior to this, Todd spent ten years as a documentation specialist/designer at Honeywell, Inc., working on several government contracts which required strict drafting and design documentation in accordance with government standards. Todd also has experience providing CAD Management in the technical ceramic, elevator, and specialty gas industries.

James has worked with CAD products for more than 30 years in many positions, from being a CAD drafter to writing automation applications. In current position, James does CAD integration for a document management system. In previous positions, used RealDWG® to write custom automation to create AutoCAD drawings of industrial kitchen equipment, and has worked at resellers of Autodesk products in software development. James has taught AutoCAD software and AutoCAD Microsoft Visual Basic software classes at resellers, and was a CAD instructor at community colleges.

How CAD managers can learn to influence their boss and employees to use the software and workflows they recommend.

Table of Contents

As a CAD Manager you have to keep a team of people moving like a well-oiled machine, but you may not get the praise for doing it. One of the most important tasks you may have is identifying processes which will most likely include new software. In a short period of time you have to learn enough about the software to evaluate it, and come up with what you determine will make your team run even more smoothly.

This knowledge typically comes from a 30 day trial, reading discussion group comments, and any other online information you can put together which allows you to make an informed decision. Most likely you had to do this for two or competing software packages so you knew which one had the best options. Now that you have enough knowledge comes the most difficult part which is influencing the people who have the authorization to buy it, and the people who will have to use it. This document will guide you through steps you should consider which will in turn help influence the right people to accept your proposal.

People you need to influence

The various people you need to influence have different concerns. Users can be the most difficult since having to learn new software adds to their daily stress level. Many times deadlines are very stressful for users. They will immediately be thinking can they learn the new software and still stick to the deadlines given to them by their bosses. This means you have to influence the bosses to understand deadlines could be impacted. This will ease the stress for the user, but you will have to assure them the software will not be hard to learn which will influence them to use it. This means you better have a comprehensive training plan to assure training will go smoothly. Even though companies have their differences here are some of the people you may have to influence, and what they could be concerned with:

- o Managers
    - Concerned with productivity enhancements
        - Saving money!
    - Most assume it's easy for users to learn software
        - Don't always understand the need to identify workflows
            - They think the software does it for you!
- o Users
    - Concerned with making their lives easier
        - If it takes more clicks they are not happy!
    - Concerned with how easy they will be able to learn the new software
        - Don't want the extra stress
            - Other things on their minds
            - Already stressed out
            - Not enough time in the day already
    - Most don't like change unless it make their day easier
        - Will the software be challenging to use?
            - This will add stress to the user's daily life at work
        - Consider each user's personality
            - Age isn't always an indicator
                - Some may be counting the days, but some may be more concerned with playing on their electronic device
            - Are they 9 to 5 people? When 5 o'clock hits they are out of there?

- These people have other things on their minds and do not want to be burdened with disruptions at work. May be going to a second job, working on their race car, etc.
  - o Others
    - ▪ Financial
    - ▪ Accounting

The goal is not to manipulate them! It is to influence them!

Do your research, and show the benefits!

Identify the software's strengths and weaknesses

All software has strengths and weaknesses. You just have to determine if the strengths are better than the weaknesses. Don't fall into the brand name trap where you pick the software because you like the company for whatever reason. For example, you see this with pickup trucks. Someone will buy a brand name no matter what someone says even though they all do the same thing when they should be looking at features that makes one better than the other. Here are some items you should consider:

- o Features and cost are often overlooked
  - ▪ May solve one major issue, but may create some additional minor ones. If it didn't solve the major issues you most likely would not have considered it to begin with!
  - ▪ Sometimes cheaper software with fewer features can be a better fit. Expensive software may have a lot of features, but can be more difficult to learn
    - If too expensive you will have to justify cost each time you upgrade, or need to pay for yearly subscription
- o Software out-of-box options may not solve all issues
  - ▪ In a perfect world it does, but most times it helps on 80%
  - ▪ What do you do with the issues it doesn't solve?
    - Use existing workflows if they work with the new software
    - Tweak existing workflows to the new software way
- o Do you need to consider custom programming?
  - ▪ If so, will you have a budget for it – it's not cheap!
  - ▪ Takes additional time before you can fully implement the new software
  - ▪ Are there solutions already written – is there an app for that?!
  - ▪ Can you do it yourself?
- o Competing software
  - ▪ What does the competing software do better?
    - You didn't choose this software, but documenting the strengths of the competing software shows you did your homework
  - ▪ List the major weaknesses of the competing software
    - These are the reasons you didn't choose this software which further shows people you want to influence that you did your homework

- o Others perceived knowledge
  - Users who will be asked to use this new software may have previous knowledge of it, or other competitive software
    - This can be positive, or negative
      - They may not have used it correctly
      - They may have only used it briefly
      - They may just want to use one over the other
        - Gives them a comfortable feeling

Strengths:		Weaknesses:
What workflows will the new software solve?		What workflows will the new software not solve?
What does the new software offer over the competing software?		What does the new software not offer over the competing software, if any?
What are the training requirements for the new software?		Does the new software have affordable training available?
What are the hardware requirements for the new software?		What additional new or updated hardware will be required?
If custom programming is required or being considered, is the application programming interface (API) well documented and easily available?		If custom programming is required or being considered, does the application programming interface (API) require extensive learning to use?
Does API use common programming interfaces and languages (VB, C#, and/or C++) for development of add in applications?		Does the API require special interfaces and specific languages that will require extensive training or consulting?
What is required for updating and future releases of the new software?		What problems will be created with future releases of the new software?
What user objections will be easily satisfied and dismissed?		What user objections cannot be satisfied?
What added value does the new software present to users and the organization?		What issues does the new software present to users and the organization?
What are the user requirements, and are additional or fewer users required?		What will the current user's response be to possible staff changes?

Identify must use tools every program has that users should know

Besides the daily tools that make software more productive over other options there are always tools that should be used on a regular basis. These could be update tools, error checking tools, error fixing tools, etc. If you don't identify these tools early in the process the entire "rolling out" procedure will fail.

Once the people you need to influence lose confidence in the software it will be very difficult to get them back. Most users will blame the software they are working in for things not working. In their minds it's rarely their fault. Even if you know the tools you should be using other factors may create issues. For example, MS Windows updates may cause one machine to perform differently than another. A typical user will not consider this and just say "This software never works!" Here are some tips to look for:

- o All software has tools that should be used on a regular basis. It's important to identify them early in the process
    - Most people discover them after they are having trouble
        - How many times have you heard "Wish I would have known about that"
    - They can keep the files "clean" by performing required updates
    - Could "purge" unused data from the file
    - Etc.
- o Add supporting software the company may already have that interacts with proposed software
    - As an example: AutoCAD Electrical and Inventor work better with Vault
        - Easier to manage content
        - Easier to update links if children are moved to different folder
        - Easier to work in group environments
        - Easier to travel – just need to check files out before leaving


Solve how other groups will interact with the CAD department
Another important consideration is how other people, or departments, may need to interact with the new software. Will they be able to view the files? Do they just need viewing rights? Do they need to open the original files? If so, could they corrupt them? Here are some things to consider:

- o Other people or groups inside your building?
    - Inside is easier to resolve
- o Other people or groups outside your building?

- Outside your building can create additional challenges
  - Are they on your network or a different network?
  - Do they have the same permissions to access needed files or folders?
- Is there a risk they can corrupt your data?
  - Using other software that can open the files?
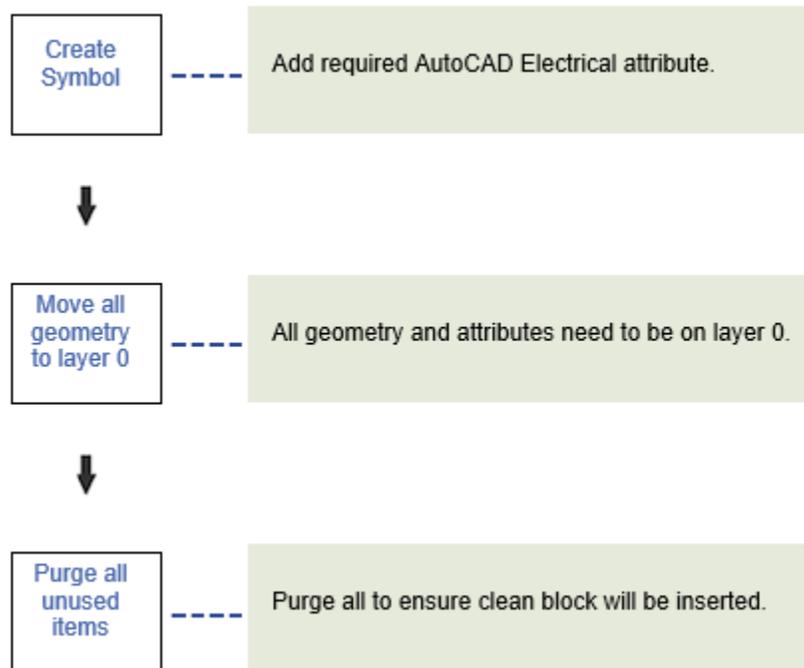 - Not being trained properly to use the new software?
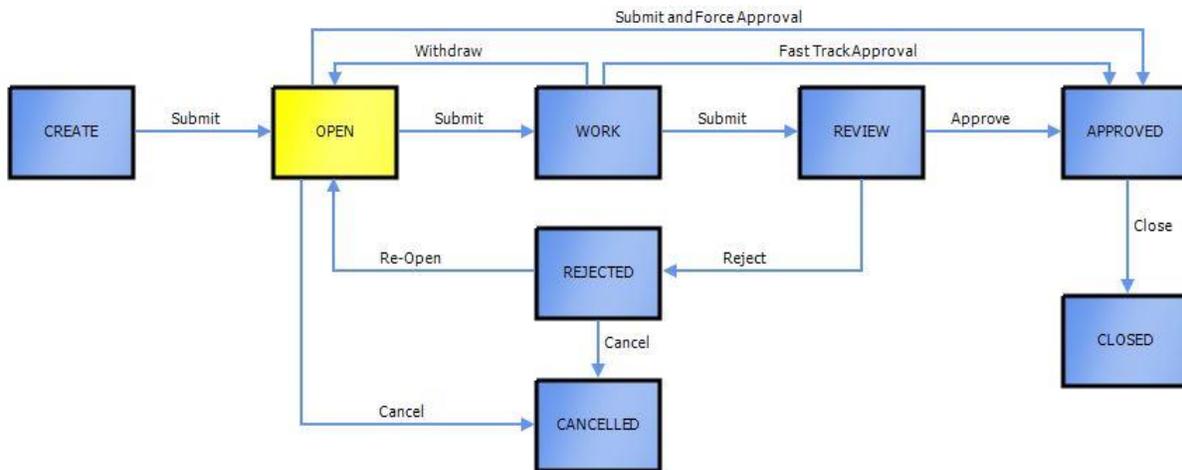
Define workflows required to be successful

Creating workflows on how you will be using the software before you get it can help influence people. They will see you did your research, and they can be used to prove your decision is solid. These workflows can always be adjusted once you get the software, and start using it in production. This will also relieve your stress since you will be editing workflows rather than trying to keep up with everyone by creating them as users ask how to do something. Items to consider when making workflows early in the process:

- Keep them simple
  - Workflows can get out of control. Look for the shortest workflows that solve the problem
    - Can you combine workflows?
      - Often times you create several individual workflows because you address one subject at a time. Always review current workflows to see if you are duplication steps, or can combine two or more into one
- Identify areas of concern
  - Many times people say "I will worry about that later"
    - This can derail good efforts
      - Lose credibility with managers and users
        - They start to think if this didn't work what else will not work
  - Better to identify and express areas of concern up front so it's not a surprise later
    - Allows you to come up with solutions and workflows faster

- Managers and users feel you have it under control
  - Software out-of-box options may not solve all issues – remember "software's strengths and weaknesses"
    - Do you need to consider custom programming?
    - Use existing workflows with new software if they work
    - Tweak workflows to work with new software

Create Symbol	Add required AutoCAD Electrical attribute.

↓

Move all geometry to layer 0	All geometry and attributes need to be on layer 0.

↓

|	
Purge all unused items	Purge all to ensure clean block will be inserted.

Will you need to create procedures and training documents?

If the new software will be a significant change in how your department will operate you may need to come up with procedures, and training documents. Procedures will help establish workflows, and will allow you to direct users to these documents. When questions come up you can reference these documents which will reduce your stress of keeping people productive in the software. Here are some ideas when creating these documents:

- o Do them as you come across an important subject
  - Use MS Word to document the steps, and add print screens
    - Use tables to create charts
  - Use MS Excel
    - For example, export the AutoCAD layers to Excel
- o Waiting will make it a larger project later, and you will forget details
- o Create a Gantt Chart to identify steps, and to track progress
  - Consider it a project to implement new software
    - Illustrate the start and finish dates of the terminal elements and summary elements of a project
- o Many times you can purchase the training manuals

- Directly from the software vendor
- Or, authorized publishers
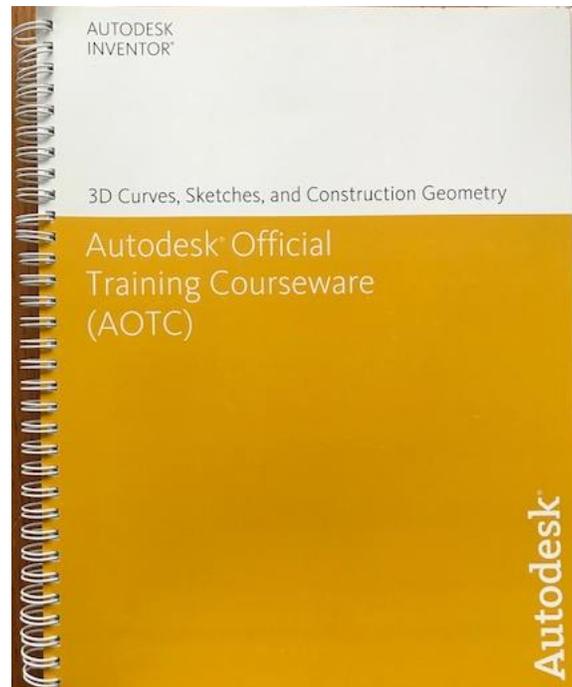
Plan how you will train users on the new software

Many times companies buy new software and expect their employees to learn it as they use it. They think they are saving money by not spending it on training, but the opposite is true. The company loses many times more money than the training investment would be. Time is wasted doing things over while trying to find the right workflows. Corrupted data gets into the system because content was created during this trial and error. There is a high risk of users getting discouraged, and going back to the old way of doing things. This list could be longer, but here are some items to think about:

- o This step is often ignored until the software gets installed – Planning for it now:
    - Makes the actual training go smoothly
    - Managers and users will have confidence in you
    - Makes the odds of people getting discouraged go down which means the odds of them using the software in the long run go
    - Get the users certified!
        - This will make the users more confident
        - Users will have a personal investment in using the software
        - Users will be more valuable to the company

TRAINING AND CERTIFICATION

| Overview | *Authorized Training Centers* |
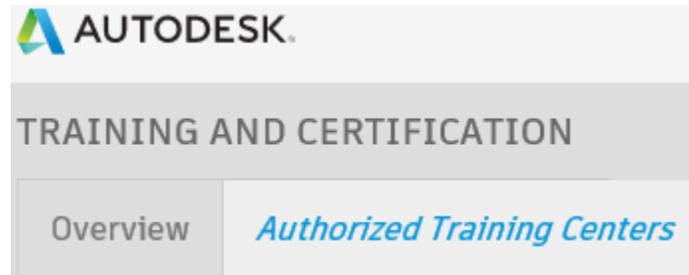
As a CAD Manager you will always be tasked with evaluating software. It could be software you are already using, or software you believe your company should move to. You will evaluate existing software periodically to see if it still meets your company needs. Sometimes current software is discontinued, or the software vendor reduces development which means new features you were looking forward to will not be added.

You should look at the software you use as a tool just like carpenters use their tools. There are several offerings of saws, but some saws cut more efficiently than others. However, your biggest obstacle is influencing people to agree with your decisions. Keep in mind that influencing isn't manipulation so having facts to back up your evaluations will have the most impact

Appendix:

Summary of Key take away points

1. Be an Influencer not a manipulator to gain respect from both managers and users.
2. Research is key to a successful implementation of chosen software.
3. Make a flexible plan to allow for modification as the approval and implementation take place.
4. Allow for users to add input and make recommendations, they are as important to influence for a successful implementation as managers and others that make approval.
5. Use available tools for maintenance and migration.
6. Add customization if specific requirements are needed that available software does not deliver. Customization is also often needed when current company legacy systems need information.
7. Training is important and essential.

Most common mistakes CAD managers make:

1. Not being fully involved in the process.
2. Poor research and testing for proving the new software is the right way to go.
3. Insufficient identification of the software's strengths and weaknesses.
4. Lacking consideration of how others groups will interact with the software.
5. Inadequate or no definition of workflows.