

Standardize Problems Away and Save!



Robert Green
CAD-Manager.com

Quick bio ...

- Mechanical engineer turned computer geek
- Private consultant since 1991
- Focusing on CAD standardization, customization and management
- Cadalyst Magazine contributing editor
- 14 year AU speaker

rgreen@CAD-Manager.com

**Have you ever had troubles
getting people to follow
standards?**



**Have you ever been yelled
at for saving money?**



Might there be a connection?

The Big Picture View

How can we unify standards and savings?



The unified approach

Think more about your problems

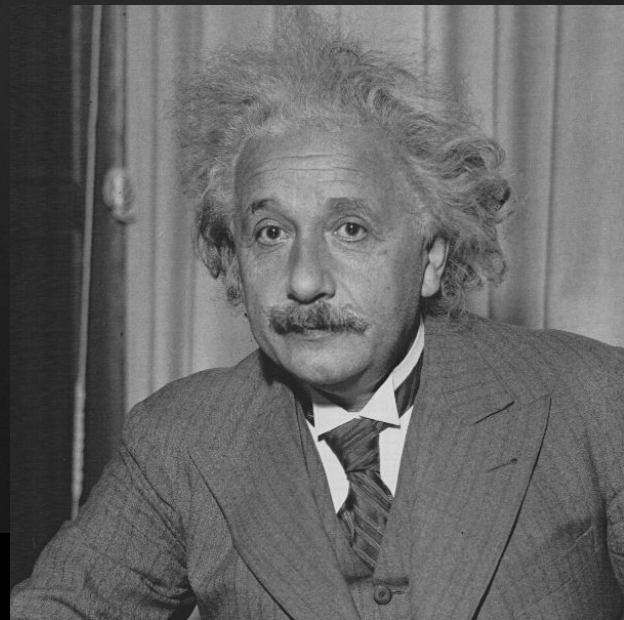
Understand what causes the problems

Solve the problems with processes

Make the processes standard

Quantify your savings as you do so

Things now run better and you save!



Identify Broken Processes

Fix them and you'll save money!



Think “traffic jam” to find broken processes

- Where are the jams located?
- What do users continue to have problems with?
- What are your proposed fixes?
- How much could you save by removing these jams?
- Focus on thinking more about these problems ...



Write it down

Take some time to capture as many time/money wasters as you can think of.

Think of possible solutions.

Prioritize in terms of:

- Scope of waste
- Ease of solution
- Money saved



What did you find?

- Instances where better standards are required
- Problems that could be “trained away”
- Problems that could be “customized away”
- Better organization of libraries
- Better file management
- Improper use of templates, families or parts
- What else will you find if you think more about it ...



Ask why you have these problems?

- Have you not updated or communicated standards in a while?
 - Is software knowledge lacking in your user base?
 - Do you have a training program that emphasizes standards?
 - Have you allowed people to deviate from standards?
 - Have project managers permitted standards deviations?
 - Does upper management help enforce standards?
-
- Now you know why you're having trouble ...



Again, write it down

Capture the root causes of your problems!

Now you know how to implement your solutions

Now you know why you keep having the same problems over and over

Maybe now you understand why it has been so hard to achieve the standardization goals you've set out to accomplish



Establish Savings

Use cost metrics to quantify waste and you'll know what to work on first, second or not at all.



An example case

You observe your users having great difficulty plotting because no two jobs are set up the same and standards for creation of PDF files haven't been agreed to.

It is not uncommon to see half the plotting time spent wasted due to the lack of plotting standards.



Tally the waste

- You observe that current plotting time is about 50% wasted effort
- Old plotting time was 100 man-hrs/month
- New plotting time would be 50 man-hrs/month, right?
- That means 600 hours a year saved
- At \$45/hour you're saving \$27,000/year in plotting time
- Now you have justification for fixing the problem
- Remember to talk about this at your performance review ...



The multi-user effect

You can make a small standards change to your CAD environment that saves each of your users 30 minutes per week

You have 50 CAD users

Average hourly cost is \$40/hour

What is the annual savings?



Small becomes HUGE!

- At 50 weeks per year with 50 users:
- Time saved is 1250 hours!
- Cost savings is \$50,000!

- Is this worth a few hours of YOUR time?
- Will management approve of this ...



Use Standards to Fix

Broken processes only get fixed when you put a standard in place to change behavior.



The cost saving power of standards

- Standards create a consistent operating environment
- Consistency allows for automation of tasks
- Automation lowers errors and speeds task completion
- Errors that are made are more “standard” and therefore easier to resolve
- Speed = Time
- Time = Money
- Money = Savings ...



Get Users on Board

Standards are much more desirable to users if they actually make their job faster.



Get users on board

- Show them how much time you're saving them
- Stress how much less rework they'll have
- Let them worry more about design and less about CAD
- Let them see your focus on solving their CAD problems
- Get them to WANT to help you make better standards ...



Get Management on Board

Standards are much easier to enforce
when management supports you!



Get management on board

- Show them how much time and money you can save
- Help them understand how critical their support is
- Tell them you'll do the work but only want the ability to enforce
- Let them see you as a cost saving engine ...



Standards via Servers

The only way to keep everything in one place for single point of control and fast updates.



Standard installs

- Lower support costs via standardized software installations
- Standard installs create order and instill discipline
- Standard installs make your job easier
- Standard installs lower the total cost of software ownership ...



Standards drive

- Create a CAD drive for custom files
- Map the drive as a letter if possible (UNC otherwise)
- Now create various folders off the CAD drive
- Use permissions to lock the folders down tight
- Give yourself, and trusted staff members, FULL control
- Controlling CAD centrally lowers support costs ...



Control your key files

- For AutoCAD: SUPPORT, HELP and PLOT folders should be centralized
- Any custom programs should be centralized
- Utilities, patches, notes, etc should be centrally stored
- User documentation, videos and training guides should be centralized
- Knowing where everything is lowers training and retrieval costs ...



Standards via Customization

Make complex tasks easy by reducing
keystrokes and possibilities for user error.



Should I customize?

- To the extent you can – YES!
- If you can make a task easier users will like it.
- If you make a task easier you save time
- Time = Money
- Money = Savings
- Therefore → Customization = Savings!

- Let's continue ...



Custom becomes standard

- Make a task easier via customization
 - Users inevitably flock towards “easier”
 - Easier becomes the new normal
 - The new normal becomes standard
 - You’ve now standardized a process with no enforcement!
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- This is why I believe is customizing so strongly ...



Things to try first

- Simplify printing, plotting and PDF generation
- Set default directories for libraries of reusable components
- AutoCAD: Templates to include all layers, layouts and default printers
- Other: Default projects to use as “starter points” for new jobs
- Refresh templates, details, families and content directories
- If you can program you can tackle more complex problems

- Time invested in these pays back with savings ...



Strive for simple – not stupid

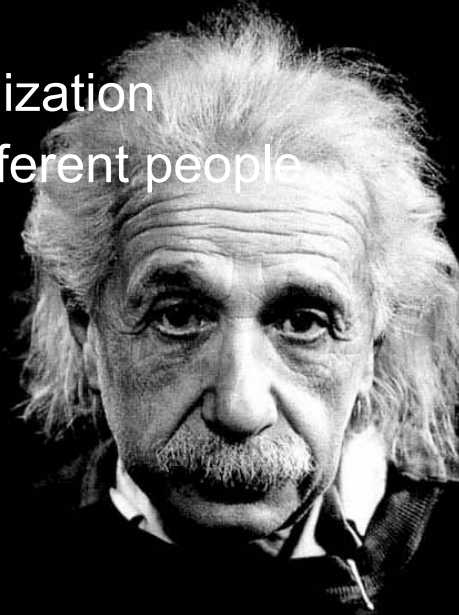
- Do: Cut keystrokes from plotting commands (using customization)
- Don't: Rewrite the plotting command (it'll take forever)
- Do: Organize things so they are easy to find
- Don't: File everyone's work for them
- Do: Drive standardization via customization
- Don't: Customize different things for different people
- The goal is simple and standard ...

Everything should be made

as simple as possible,

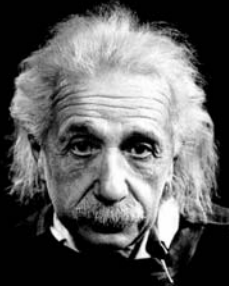
but not simpler.

Albert Einstein



“Everything should be made as simple as possible, but not simpler.”

Albert Einstein



Training Standards

More focused training drives up standards compliance and cuts costs at the same time.



Targeted standards training

- Target your training to achieve results
- Train users to use standards
- Train to achieve maximum speed and efficiency
- Convince users that training saves them time in the long run ...



Shorter training is better

- Shorten training sessions to reduce overhead costs
- Alternate methods: Lunch and Learn, Flash Training, Training Circles
- Always train using your standards
- Train to fix broken processes (reduce errors)
- Better processes = savings

- You can tackle big problems one piece at a time ...



Train away the waste

- Your training topics should be to demonstrate your cleaner/better procedures.
- Your training should use the standards you hope to enforce.
- Stress “faster” task completion to win users.
- Record your training sessions for reuse later.
- This way training pays for itself as it saves ...

Start Projects Out Right

You'll make fewer mistakes later thus saving money throughout the project's lifetime.



“Front load” CAD standards

- Create new CAD elements and procedures BEFORE the project starts
- Train users on startup procedures just before they start work
- Review problems from prior projects then make sure you don't repeat those mistakes on new projects
- Standards invoked early save money through the entire project
- Remember: Proper Prior Planning Prevents Poor Performance ...



Keep Management on Board

Keep track of your success.



Get management on board

- Show them how much you have saved
- Show them better product execution
- Show them the reduction in rework
- Talk about how you've managed the process
- Let them see you as a smart manager of processes
- You'll become invaluable if you take this approach ...



Don't Quit

**It takes a while for this system to work,
but it does work if you stay with it!**



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