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CAD Management When You Do Not Have the Time

Mike Thomas

Technical Services Manager - Prairie Machine

Learning Objectives

- Learn how to manage your time to improve productivity
- Learn how to apply the 80/20 rule and balance effort versus reward
- Learn best practices
- Learn some tips and tricks you can apply in the background to help your users

Description

You've been given the responsibility to manage CAD within your department and/or organization, but your job title does not include "CAD manager." You do not or cannot dedicate all your time to this task. So how do you do this?

We'll use my transition from reseller to mining equipment manufacturer as a way of examining how to get buy-in from management, how to get participation by the users (and your peers), where to start, and how to proceed, as well as reviewing my continuing development with time and project management. Let us talk processes, procedures, training, CAD, management, and continual leadership.

Speaker(s)

Mike spent the first 12-years of his career in the Autodesk channel working for an Autodesk reseller as an Application Specialist. During his travels, he was fortunate to help solve many issues utilizing Autodesk software. Mike has been using AutoCAD since r13, cut his solid modeling teeth on Mechanical Desktop, and has been using Inventor since before it was known as Inventor.

Now he is the Technical Services Manager at Prairie Machine a mining equipment manufacturer. Reporting to the general manager, Mike is responsible for overseeing the company's technical operations and the strategic technical growth.

When You Don't Have the Time (Part 2)

CAD Management, BIM Management, IT Management, IS Management, Technical Services Management... different titles, but the same issues, troubles, and concerns. Not really a full-time gig. Limited resources. So much to do. Printers. Standards. Procedures. Policies. Support. Limited Authority. Argh! Why do we do this again?

"Blood, Sweat, and Respect. First two you give. Last one you earn." -the Rock

This is a story of my continuing journey into being the best Technical Services Manager I can be. These are the things I have done, the things I tried to do, and the things that I continue to do. The wins, the loses, and the reset-and-try-agains.

It has been a constant evolution and continues to change as I adapt to new technology, fall off roofs, the trends, battle age (getting older), and changes to our business.

Everyone should have a motivational message, something to fall back on when they need a little pick me up. Mine comes from the best professional wrestler ever. Not only did he aim to be the best, he succeeded...

"The best there is, the best there was, and the best there ever will be"

-Bret Hart

In this document I use CAD Management or CAD Manager generically to cover all similar type positions: CAD Manager, BIM Manager, IT/IS Manager, etc.

Laying the Smackdown

You have big goals and a lot to do, but before you start making key decisions, implementing changes, taking on tasks, making promises, or assuming responsibility first answer these questions. If you do not know the answer, figure it out, or start asking questions until you find the answers.

1. Where is the coffee?
2. What should I be working on?
3. What is the long-term plan?
4. What should I NOT be working on?
5. What are my resources (budget, hardware, software, people, etc.)?

Golden Rules

Don't let the ball hit the ground

A good manager needs to toe the line between *leadership* and *management*, CAD management is no exception. You *Manage* things, but you *Lead* people (even if they do not report to you).

Leaders help themselves and others to do the right things. **Leaders** set the direction, build the vision. **Leadership** is seeing the trees and the forest. **Leaders** ensure the work required to deliver the vision is effectively managed and delivered successfully. They take on tasks themselves, but know when to delegate the responsibility

Don't Fix What Ain't Broken

The more things change, the more they stay the same. **Do not invoke change, just for the sake of change.**

Admit When You Were Wrong

Be honest. Learn from your mistakes.

80/20

We did a major change to our business three years ago by implementing a new ERP system. It effected the entire plant, right from quote to shipping. The first thing our implementor drove into our heads was 80/20, as in tackle 80% of the task now and review the remaining 20% later. **Effort vs Reward.** Once you start analyzing all the possible outcomes or issues all too often the last 20% takes more time and effort than the first 80%. Boil it down, why are you trying to fix a scenario that happened once or twice in a 40-year span?

Pareto Analysis is the decision-making technique selecting a limited number of tasks that produce a significant overall effect. This principle states that 80% of the failures are coming from 20% of the causes. Looking at your task list or the list of issues in your department/company, address the 20% causing 80% of the inefficiencies or errors.

Do Not Confuse Activity with Productivity. Look at the tasks you need to spend time on (inputs), why spend 80% of your time to only move the needle 20%. Eliminate (or put on hold) all but the tasks that provide the most potential for change. I start every week by asking myself, "What's the stupidest thing I might waste my time on?"

Write It All Down

To master the art of relaxed and controlled engagement, you need to implement a few basic activities and behaviours (from "Getting Things Done" – a must read!). These work together to not only get you organized but produce a wonderful productive state of being present amid all the complexity.

The first step to managing commitments is if it is on your mind, your mind is not clear. Capture anything you consider unfinished in a trusted system (collection tool) that you know you will come back to regularly. Capture what needs to be done and collect them effectively. You have to know that you have truly captured everything that might represent something you have to do or at least decide about.

Everyone is Busy, but Ours is Different

Find What Works for You

The mail carrier has a set route, which they finish about the same time each day. At Christmas time they get busier from the sheer volume of extra mail they need to deliver. The task does not change though, deliver the mail to the houses on the route.

As a CAD Manager it is different. You have multiple tasks with varying required effort, that you need to navigate through and deliver on. Your busyness comes from the constant change of importance, deadlines, and the juggling of the tasks.

Does this mean that you are busier than the mail carrier? No. It means that you have different stresses. It means you need a distinct set of tools to manage your tasks. It means that many traditional or new-age time management processes do not apply.

No matter what the googles say, there is not one universal perfect system that will help you. You need to find the right combination of tools and strategies that matches your personality and needs. And unfortunately, it takes time. Ironic isn't it? It takes time to get better at time management.

“Those who are wise won't be busy, and those who are too busy can't be wise.” -Lin Yutang

Take for example the **Pomodoro Technique**, which works wonders for some people. The theory is you dig in and focus on a task for a set time. You then reward yourself by taking a break. This short refresher allows you to recoup and start another extended session working on a task.

I tried it and it didn't initially work. My job is consistent with interruptions making it difficult to focus on something for a set period. However, applying this once or twice a day has been phenomenal. I close my door or do other things to try and reduce the interruptions. When an interruption does occur, I pause the clock and pick it up once the interruption is gone. For me a 50/10 split is ideal.

The Low Hanging Fruit

The little-things to do now to start seeing gains:

- **Sleep.** Studies show that those who get between 7.5 and 9-hours each night are 20% more productive
- **Clean-up your working area** and tidy it at least once a week.
- **Find your jam.** Music is a proven motivator and stress reducer. For some its heavy metal, some its classical, and for some it is a Joe Rogan podcast. And know yourself, I get anxious without noise so need something constantly but for others constant noise causes anxiety. Find the balance that works for you.
- **Do a time-audit.** For one week track your time (either electronically or in a logbook). You will be surprised where your time is actually going. Use this to make appropriate adjustments. I do this at least twice a year.
- **Minimize the distractions** – including social media, friends, family, co-workers, and staring out the window. Turn off the notifications. Mute your phone.
- **Focus on One Task at a Time** – people who say there are great at multitasking are liars! Humans are just not wired that way, accept it. Focus on one task at time, period.
- **Breaks are OK!**
- **Reduce the Meetings** – meetings use a lot of time which could be used for something useful
- **Keep an Open Mind.** Just because you have always done it one way does not mean it always needs to be done that way. Be on the look out for the new shiny, sometimes it can pay big dividends.
- **Do not micromanage** – trust your employees and give them room to get things done on their own

You Can Not Do It All

A common misconception: If you were better at time management you would get more things done.

The truth is there are only 24-hours in a day. Sleep takes 8, meaning you are handcuffed by 16-hours available in your day. You need to eat. You need to put the kids to bed. You love playing soccer. So now you are down to 8-10 hours of “working time”.

*“I wanted to figure out why I was so busy, but I couldn’t find the time to do it.”
-Todd Stocker*

When you have 20-hours of work to complete, it is not going to matter how good you are at time management. You are not going to get 20-hours done in an 8-hour block.

Step one? Admit that you can not do it all.

Learn to Say No

Only about 25% of people leave the office having accomplished the tasks they set out to do. This is not good. Its ok to say no. You have tasks and priorities and need to make choices to manage them efficiently.

If the request is outside your skillset or area of responsibility? Say no, but offer a an alternative, like “I am not the best for this, have you considered Andy?”

Be honest about when you can take on the task. Especially if you are overloaded and do not have the bandwidth to complete the job or get it done well. Saying no is about professional integrity, integrity is about trust, maintaining trust is about being honest and respectful to yourself and others.

Or, instead of saying no, teach them to fix their own problem. Feed a man a fish and he eats for a day, teach a man to fish and he feeds himself for a lifetime.

Delegate

Dwight Eisenhower taught us that if the task is **unimportant** yet **urgent** you need find someone else to do it.

Why take on a task that you know you do not have the time to dedicate properly to it? Why take on projects that are counterproductive or impact the performance of your core responsibilities? Why take on tasks that you are not the best suited to tackle? Why take on tasks that do not fit into your short- or long-term plans?

The challenge to delegation? You have no authority and are constricted by control (cost, time, and resources).

Delegation starts with the hard sell. Start with the why something needs to get done. This describe the desired outcome and identify the constraints and boundaries.

Find Your Champion!

You need someone who will be your voice when you aren't there. Someone who will speak up for you or back your goals behind closed doors. Your champion is your walking spokesperson.

"Once a champion, always a champion" -Ferdinand Marcos

Your champion is someone who "buys in." Someone who is excited by tech. Someone who wants change as they want better. Someone who is willing to take on tasks and help you promote the change.

Ideally this person has a desire to learn new software or processes. Someone who remains calm when confronted with problems and can communicate clearly. They should have the desire to follow through until finished

Be the Motivator

Be the reason the people and the business are moving forward. Get people involved. Those with a vested interest will feel appreciated and take a higher stake in the success of the initiative.

"There are three kinds of men. The one that learns by reading. The few who learn by observation. The rest of them have to pee on the electric fence for themselves." -Will Rogers

Always give credit. Giving credit encourages them to help again and it makes them feel good.

Fake It Until You Make It

Becoming an expert overnight just isn't going to happen. You are going to have to put a lot of work and dedication into becoming an expert.

Act with confidence, competence, and an optimistic mindset until you get there. Science has proven this tactic works. Acting "as if" is a common prescription in psychotherapy. If you want to feel happier, do what happy people do—smile. If you want to get more work done, act as if you are a productive person. Just do not get caught up in only changing other people's perceptions of you.

But faking it only works when you correctly identify something that is holding you back and you have a goal to correct it.

Do not stop learning! Read, take courses, watch videos, attend seminars, follow social media, work through tutorials, learn from others, there are so many resources!

Practice makes perfect. Do what you are preaching. By doing you can work out the kinks and solve problems. Kill two birds with one stone!

In this line of work, being a jack of all trades but a master of none is ok. What is important is know how or where to get the answer. Be the person others can rely on.

Getting Things Done

To master the art of relaxed and controlled engagement, you need to implement a few basic activities and behaviours (from “*Getting Things Done*” – a must read!). These work together to not only get you organized but produce a wonderful productive state of being present amid all the complexity.

Three steps to managing commitments:

1. If its on your mind, your mind is not clear. Anything you consider unfinished must be captured in a trusted system (collection tool) that you know you will come back to regularly
2. You must clarify exactly what your commitment is and decide what required actions will make progress
3. Once you have decided on the actions, keep reminders of them organized in a system you review regularly

“You can’t be that kid standing at the top of the waterslide, overthinking it. You have to go down the chute!” -Tina Fey

Getting Things Done (GTD) is not another time management system, but a systematic approach of transferring ideas into an external system, breaking them in actionable steps, and then getting them done. The five basic steps:

- **Capture** – don’t let it bounce about in your head, get it written down and out of your noggin
- **Clarify** – what does each item require? Is it required? Break down bigger tasks into bite-sized chunks
- **Organize** – Is it actionable? Time to complete? Do it, Delegate it, or Defer It!
- **Reflect** – frequently review the list
- **Engage** – get er done!

Capture What Matters

It is important to capture what needs to be done and collect these effectively. For your mind to let go, you must know that you have truly captured everything that might represent something you have to do or at least decide about.

With all your stuff collected, now clarify it. Is it actionable? How is it actionable?

True time management is not about getting more things done in less time but about doing things with an intention for a purposeful and successful life.

Write It Down

Either electronically or with good-old pen-and-paper take notes, create tasks, and set reminders. So many verbal conversations and meetings lead to tasks, take-aways, to-dos, and next steps. If you are not capturing them, it will be in one ear, out the other, and sitting in your sub-conscious keeping you up at night.

I use a to-do app on my phone to enter quick tasks when I am away from my desk. Some stay in the app until completed, others I move to my other task management systems.

I jot quick notes, new tasks, and to-dos in a notebook. Either by completing the task or moving it into my other task management systems, few things are as satisfying as scratching something off your list.

Microsoft OneNote provides an excellent method of keeping notes (and images) about current projects.

“Your mind is for having ideas, not holding them.” -David Allen

Kanban

Kanban is Japanese for billboard. It is a visual management tool designed to minimize waste and improve productivity. I use it for self project management, where I have a larger number of tasks related to a project.

With Kanban you do some work, then move that item down the line to the next column where you complete something else. It only works for the self-motivated who do not require much management. It is great for seeing the entire project or list of tasks immediately.

With the Kanban Cards I capture all the relevant information for the task. These cards sit in columns, allowing me to visualize the work, focus (and commit) to the right amount of work - at the right time

My tool of choice is Trello, but others like Asuna and MS Project provide similar tools.

“The critical ingredient is getting off your butt and doing something. It’s as simple as that. A lot of people have ideas, but there are few who decide to do something about them now.” -Nolan Bushnell

Email

How often you are checking your email? If you answer “as it comes in”... stop right now!.

Constantly checking disrupts your concentration and saps your focus. You use up valuable cognitive resources while reorienting yourself between the email and the task at hand.

Research shows when deeply engrossed in an activity, even a minor distraction can have a profound effect. According to a University of California-Irvine study, regaining our initial momentum following an interruption can take, on average, upwards of 20 minutes.

What should you do?

- Shutdown your email and/or disable email notifications and minimize the window. If things are urgent, then why are they emailing you and not calling?
- Unsubscribe from every list-based email you get (unless you absolutely, really truly, need it) and filter recurring messages from which you can't easily unsubscribe
- Filter CC's into a separate folder and at most check it once a day. If someone deems you only need to be included as an informational CC, it shouldn't detract you from important tasks.
- only check your email a few times during the day – 2 or 4 instead of responding the moment they arrive. It is so freeing (trust me), and no one will notice the difference.

Bullet Journaling

Bullet journaling (or rapid logging) is the analog process of jotting notes, capturing tasks and to-dos, and keeping important reminders. Once a day, review the day's list to help track completed tasks, moving tasks into the days (or tomorrows) events, or moving them into another system for tracking. Google it, you might find it useful.

A daily log approach did not work for me. I rarely complete a task in one-day, so it quickly became onerous to copy the days uncompleted tasks to the next day. I now use a personal modified weekly bullet journal:

- Left page is for notes, right side for tasks and to-dos
- I put a line through completed tasks
- I use an arrow to mark that I've moved the task to an electronic system

*“If you spend too much time thinking about a thing, you'll never get it done.”
-Bruce Lee*

Zero Inbox

Too many people who use their inbox as their to-do list. It does not work for me. The email quickly piles up and becomes overwhelming. I lose track of email and often fail to take care of something that I should have taken care of several days ago. Tough to clear the mind staring at a long list of unprocessed items.

The email inbox to-do system does not fit into the GTD system, where the second step is clarifying what actions to take. This is difficult with a big glut of unorganized email.

I like the **Zero Inbox** approach. Although it is still a work-in-progress for me, even though I've been (trying) using it for over a year. When I have it rolling it allows me to be organized, be prompt, stay on task, and I do not get that overwhelming stress-inducing feeling.

Zero Inbox is the strategy of email management of keeping your inbox empty. Here is the quick-guide, google it if you want a more detailed explanation:

1. Only process (read) your inbox periodically throughout the day, and only for a fixed amount of time. My magical number is four-times and for 10-minutes max each time.
2. An email should not sit in your inbox for more than 24-hours (weekdays) and should never be inbox-read more than one-time.
3. As you process (read) your new emails:
 - a. No action required? Informational only? Delete it! Or archive it.
 - b. If a simple reply is required (2-minutes or less) do it right, there and now... then delete the email
 - c. a longer reply (more than 2-minutes and you do not have the time) – delay the response by setting a reminder to handle it later and move the email to a “to do” folder

Outlook has rules for filing and tagging emails automatically. It also has great integration between email and tasks that it is easy to append reminders to emails and to convert emails into tasks.

Failing to Plan is Planning to Fail

Planning for Your Productive Go-Time

Planning is critical if you hope to accomplish anything. You can make the most of your time when you follow a plan, but planning your time without a plan is foolish. Start your plan with these productivity tips.

Working Nine-to-Five

The 5-day, 40-hour, 9-to-5 schedule is a sham. During the industrial revolution, companies wanted to get as much completed in a day as possible, leading to 10-16-hour workdays. Obviously, this was not productive nor safe as it led to exhaustion, burnout, health issue, and higher incidents of accidents. A British trade union activist started a campaign for the 8-hour day, with the argument that employees needed 8-hours of work and 8-hours of recreation each day to be productive. This spread like wildfire and became the global de-facto standard.

Now, I'm not saying work less than 40-hours a week. Most of us are bound to contracts and working expectations. I'm also not arguing to work more in a day either. What I am saying is plan your day and week so that it works for you.

I am a morning person. I hit spin class at 5am and love getting to work at 6am an hour before the doors open at work. I crush as much as I can without interruptions. Therefore, I schedule my workload to knock out as many little tasks as possible or to tackle those big-ugly-hanging-over-me tasks first thing.

I've read studies showing that Monday mornings are the most productive of the week, therefore the best time to talk the hardest jobs. For some of us this is true, you are relaxed and refreshed from the weekend and ready to take on the world. I like to take the last part of my Friday to review the past week and plan for the week coming. Then start from the ground running first thing Monday morning.

Not a morning person? That is ok too. Every person has a biological clock, and its different from everyone else. Have the option to start later and work later... take it. Use that time after everyone has left to crush those tasks. Even if you do not have the option of staying later, schedule your day to tackle the bigger tasks when you know you are the most productive. Look for that 2-hour window of awesomeness and use it to your advantage.

Being Busy Does Not Make You Productive

Busyness is a trap. Completing more tasks on your lists or working more hours doesn't mean you are being more productive... it just means you are busy. It is difficult at times to distinguish between busy and productive. Being productive is completing tasks in as short amount of time as possible.

"Do all that you can to raise your productivity, because in the long run, that's what matters most." - Ray Dalio

You can also be highly productive, but your outputs are completely useless. Work smarter, not harder (or longer). Focus on the relevant, important tasks so you get the right things done.

With your tasks, ask yourself... should I be doing this? How should I be doing this? Is there a better way of doing this?

Pumping the OT

Planning is important, but tightly scheduling your day 24/7 is not sustainable and is a recipe for disaster. It is not healthy, nor practical, nor plausible. You are setting yourself up to fail as you are guaranteed to not start the set tasks on time, nor complete everything in your list, therefore leading to unneeded stress.

Schedule the important or mission-critical things, but always include down-time or free-time into your schedule. Its ok to talk with coworkers about the big game last night. Its ok to get up and go for a walk around the shop to clear your head. Its ok to impromptu pour all the Lego on the floor and build the world's best Airwolf attack helicopter. Your mental health needs it.

Remember that we are humans, not machines. Working long days does not equal productivity. Obviously, we all need to work overtime, but pumping the overtime for extended periods is not good for you mentally or physically. In fact, science proves that extended periods of overwork lead to being less productive. Some studies show that after working 40-hours in a week your productivity decreases by 50%.

Find that Inner Peace

Interruptions kill. Talkative and interrupting coworkers are one of the biggest productivity killers. Therefore, you need to establish boundaries and expectations.

I close my door everyday, 12:30-2. Everyone knows this is my time to focus and not be interrupted. Have satellite, hotel, break-out, or guest spaces. Put blocks into your schedule to go and utilize this space and step away from the office buzz.

Don't skip coffee breaks or lunch. Catch up on the office gossip and talk about that big hockey game. First, its good to take breaks, and second if you've already discussed the big game, your coworkers should be inclined to only want to discuss work related things during working time.

Or be creative. For example, put on headphones, even if not listening to anything. People are less reluctant to approach a person wearing headphones.

Be Realistic

A report from RescueTime showed on average people have 1-hour and 12-minutes of uninterrupted time each day. So be realistic in how much you can accomplish in a day. And mercilessly cut out everything else and work on your top priorities.

Scheduling every moment of your day is unrealistic and puts pressure on yourself for an already stressful situation. And do you really want to feel guilty everyday for the tasks you did not work on or complete?

"Stop managing your time. Start managing your focus" – Robin Sharma

The Eisenhower Box

Dwight D. Eisenhower (former president of the United States) used a system of prioritization now known as the **Eisenhower box**. He prioritised things into four categories: **Important – urgent (Do)**, **important – not urgent (Decide)**, **urgent – not important (Delegate)**, and **not urgent – not important (Delete)**.

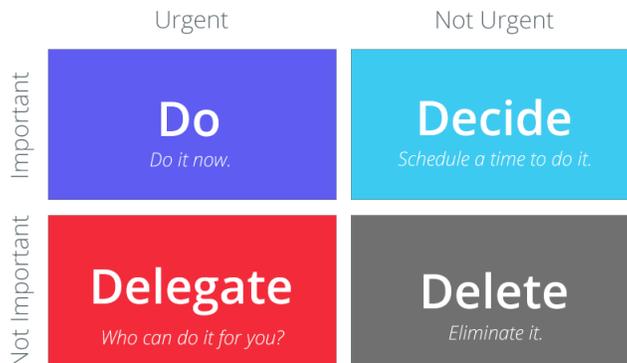


Figure 1: Eisenhower Box

Use this method to your advantage:

- Anything that is **Important and Urgent** are the tasks you need to do immediately (aka DO!).
- If the task is **important but not-urgent** (aka DECIDE) then schedule a time to do it late
- If the task is **unimportant and urgent** then consider finding someone else to do it (aka DELEGATE)
- If the task is **unimportant but non-urgent** (aka DELETE) then eliminate it!

“WHAT IS IMPORTANT IS SELDOM URGENT AND WHAT IS URGENT IS SELDOM IMPORTANT.” -DWIGHT EISENHOWER

It can be difficult at times to differentiate between important and urgent. If it feels like you need to react quickly, then it is urgent. Important tasks typically contribute to your or the companies short-term and long-term plans and goals.

What are your goals? What are you trying to accomplish? What do you need to focus on?
Everything else

Ask yourself, what am I trying to accomplish? What do I need to focus on? Do I actually need to be doing this? If it does not align with your plans, mission, or goals then it is ok to remove the task. There is no faster way to do something than not doing it at all!

When you have your tasks organized into one of the three buckets (Do, Decide, Delegate... you removed the ones in the Deleted bucket, right?) take a step back and reflect on the whole picture. At least weekly I scan all the defined actions and options ensuring my priorities are correct.

Take Action

Find the Real Value

If you can identify (and resolve) the bottlenecks, you can increase productivity. Think of a pop bottling line. Where are the bottles accumulating? That is the bottleneck!

The process that accumulates the longest queue is usually the bottleneck. The cause could be from many factors. People are swamped (lack capacity), the hardware/software crashes frequently, or maybe the operators need training?

To resolve the bottleneck, you always have two options: **increase efficiency or decrease the input.**

“WE CANNOT SOLVE OUR PROBLEM USING THE SAME THINKING WE USED WHEN WE CREATED THEM.” -ALBERT EINSTEIN

Focus on the Customer (Six Sigma)

Six Sigma is built around the customer. Everything starts and ends with customers. As the CAD Manager, who are your customers? Your customers are the CAD users, the supervisors, management, and possibly all the employees. These are the people who define quality and set the expectations. They rightfully expect performance and reliability. Do not lose focus of who your customers are.

Reducing variation will solve process and business problems. Your business is made up of a series of interacting processes, the activities that use resources (people, machines, computers, etc.) to transform inputs into outputs. The output of one task becomes the input for the next. At some point, you need to stop and smell-the-roses. Examine these processes and eliminate the waste and inefficiencies.

- **Eliminate waste** - the unnecessary (unneeded) steps, the repetitive steps, the “just cause” steps. Ensure all steps add value - if it does not, why are you doing it?
- **What is the cost of poor quality?** – the costs that would disappear if the processes were perfect. Quantify the negative outcomes due to waste and inefficiencies
- **Why?** – identify the problem and working backwards keep asking “why is this occurring?” until you reach the root cause.

“DON'T FIND FAULT, FIND A REMEDY.” -HENRY FORD

Eat the Frog First

Human nature is to avoid the things that are hard. You need to fight the urge to procrastinate and start with your biggest, most important task. **They do not pay you to stare at the frog!**



Figure 2: Eat the Frog

We all have things to do that we do not want to do - and things we want to do and need to do. The ones you do NOT want to do are your frogs!

When you have numerous things to do, prioritize them accordingly. Get started on the top priorities as soon as possible. Due by the end of the week? Start it Monday, not Thursday.

*“Only put off until tomorrow what you are willing to die having left undone.”
-Pablo Picasso*

If your energy is not at its highest first thing in the morning, be honest with yourself. That frog is the thing you want to accomplish today, but you need to do it when your energy levels are at its highest. The point is, it does not need to be first, but it needs to happen today.

What do you do with you have two frogs? Eat the ugliest one first!

“It always seems impossible until it’s done.” -Nelson Mandela

Standards

Why Standards?

Standards provide a common language and the basis for mutual understanding. **Standards** facilitate interactions between departments, enable your company to comply with regulations and other companies' standards, and speed up the introduction of new technology and improved processes.



Figure 3: Standard

Good standards ensure the reliability of the products (outputs), reduce unpredictability, improve productivity, and reduce miscommunication. Believe-it-or-not most people crave standards, structure, and repeatability.

“There are plenty of strong reasons to support the creation of CAD standards in any organization, regardless of the scale. Different people may cite different benefits, but to my mind they all boil down to two essential factors: Efficiency and Continuity.” -Curt Mureno

Standards will reduce quality control efforts through automation, standardization, elimination (of roadblocks) and duplication.

An extra benefit is the reduced cost in onboarding new employees and expanding roles to less-experienced staff.

Most importantly standards mean accountability. How can you expect someone to do something, let alone do it correctly without a documented standard and/or procedure?

“If you want to change your life you have to raise your standards.” -Tony Robbins

Standards are Like Insurance

The first step to creating a good set of standards is to realize that no one is going to read it. The quicker you come to terms with this, the quicker you'll be able to move on and create a killer set. **Standards are a lot like insurance, no one needs it until they need it!**

“Many of us start in CAD management because we believe that there is a great value in working to a standard. For many of us, the biggest headache in CAD management is getting people to use the standard!” -Mark Kiker

Now that you have come to terms that no one is going to read your standards, understand that they will want something that they can reference when they run into issues or have questions. **Your standards must be accessible!**

Your standard needs to flow in a manner that reflects how people will use it. Use plain language and be clear and concise. This reduces time and cost in translation.

Your users will work more productively if they do not need to think about trivial matters. These should be decided before they even start a new design. They should be free to focus on where they personally add value.

Start Small and Steal When You Can

Talk about a whole pond of frogs! Building standards can seem like a huge and daunting task. Start small, identify the problems you want to address and rank them. Then start picking off the important topics.

“Without standards, there can be no improvement” -Taiichi Ohno

I try to follow the 80-20 rule. I get 80% of the topic captured, push it out, get feedback, and iterate.

There is so much out on the interwebs: videos, blogs, online help, magazines, and more. So why reinvent the wheel? Why redo this content when you can just provide it as is or with some small tweaks? But don't forget to give credit where credit is due.

Update the Standards!

Nothing kills a set of standards quicker than finding out-of-date or no-longer-application details. Your organization needs to perform regular (at a minimum annually) review of the standards to update the details and make required corrections.

Your standard will never be truly complete. Ongoing maintenance is an absolute must. Ignoring this last facet of standards development will only lead to a standard that is stale, and eventually out date.

A Process

Curt Moreno (the CAD Ninja) suggests developing standards in three stages: **¹Meta, Development, and Execution**. I have combined this with the six-sigma process approach, and below is how I approach standards development. I apply this process to both the standards as a whole and to specific topics. Obviously, the length and effort in each stage is dependent on the size of the task.

The Meta Stage

- Do we have an existing standard?
- What is the purpose? Identify the pain-points – this is what you are trying to resolve
- Rough-out the current practice or process. It does not need to be elaborate but needs to include all the steps. It depends on the complexity, but I typically just point-form build a list.
- Who is creating the standard? Who is the owner? Who is the champion? Who are the subject-experts? and who are stakeholders?
- Identify the right reviewers (and the wrong ones)
- Prepare the scope / roadmap / outline
- Define tasks simply with one verb and one noun (“Throw the ball”). Too often we create compound tasks that should really be explicit in the process definition.
- Be explicit at intake—It is important that the complexity of the process match the job (Keep It Simple Stupid?)

Development

- Develop the process. Depending on the complexity I use a combination of lists, flowcharts, mind maps, and as required the software.
- Identify the value added for each step – if not to the task, does it add value to the organization?
- Ensure all steps add value - if it does not, why are you doing it? Eliminate waste
- Be explicit at intake (Part 2) - make sure all the information needed for the user to move forward is defined up front. Time is wasted in going back to gather additional information or to clarify points that should have been clear at intake
- Now write the first draft and review for completeness and accuracy. As mentioned above I aim for 80% completeness.
- Iterate – completing development and documenting the process

Execution

During Execution you get feedback (if required) and for more complex processes do a “soft” release for a selection of users to trial. Then determine if the change requires training or just a notification. Either way you need to let those that it impacts know about your updated standard. Complete this stage by monitoring that the standard is followed consistently.

¹ Autodesk University: Standards for Developing Standards -Curt Moreno