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CAD Manager's Newsletter (#461)

10 Feb, 2021

By: Robert Green

Un-Bottleneck Your CAD Ecosystem, Part 1

What components make up your CAD ecosystem — and which part should you focus on fixing?

I frequently talk about the CAD ecosystems that we manage, rather than just the CAD we manage. Why is that? Well, because CAD management is about a lot more than just CAD! Many things must be done correctly to get quality CAD/building information modeling (BIM) work done, and that entire ecosystem of components and workflow must be properly harmonized to work smoothly.

So the question I'm often asked is, "OK then, what part of the CAD ecosystem should I focus on?" Often, I'm met with a surprised look when I respond, "Whatever part is working the worst — the bottleneck." In this edition of the CAD Manager's Newsletter, I'll begin a two-part series explaining how to analyze and "un-bottleneck" your CAD ecosystems for maximum efficiency. Here goes.

The Ecosystem Defined

A CAD ecosystem can be thought of like a collection of components all working in series. And given a series-style architecture, it stands to reason that the entire ecosystem is limited by how well its slowest component performs. That slowest component is therefore known as the bottleneck (more on that a bit later).

I like to think of the CAD ecosystem in a chronological sequence that describes how CAD work gets done — like this:

The user. The first link in the series. Users convert thoughts into CAD instructions, so the more standardized the user's performance is, the better the entire ecosystem will work.

Input devices. Mice, trackballs, point-cloud scanners, digital cameras — they all assist the user in capturing information and conveying it to CAD software.

The CAD software (CAD SW). The software that stores the user input and processes it all into a final work product. Whether it is a desktop application or browser-based app is immaterial, because either way, the user sees it as their design software tool.

The workstation/network (WS/NW). None of the user input means anything without a fast workstation and network to process, transfer, and store the CAD data.

The standards/training regimen. The better the users are trained and the better our standard procedures are, the better the software will serve us.

Output devices. 2D/3D printers, plotters, PDF capture software, etc. — they all capture the work product for delivery to clients, shop floor, or the field. If the output isn't correct, none of the other components matter much!

The revise/rework process. As design reviews, checking, and evolving design parameters necessitate changes, the entire process reverts back to the user and everything starts again.

Of course, you may need to add in some additional components to describe your CAD ecosystem, but the checklist above should give you a good starting point.

Bottlenecks and Process Flow

Now that you've listed your CAD ecosystem components, you can start to visualize how CAD tasks actually flow through your office like a logic diagram. The mental picture that emerges for me looks something like this:

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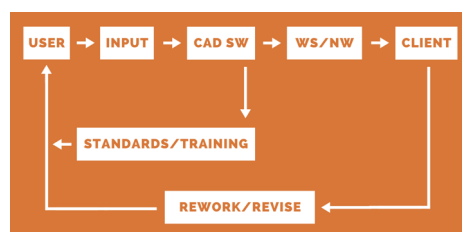
Tools and Resources

Prepare Yourself for CAD Management 3.0

According to CAD management expert Robert Green, we're now in the midst of the third major change wave in CAD management (CM 3.0). More a summation of several smaller trends than a single driving trend, CM 3.0 will place new demands on CAD managers and redefine what it takes to compete in the field. To be effective, CAD managers must analyze, adapt, and gain new skills in a never-ending quest for improvement.

Cadalyst has published a 24-page guide that collects seven columns from Green's series on CM 3.0, addressing topics ranging from standards and workflows to the psychology of CAD users and the many languages CAD managers need to speak. **Download this free guide** to learn which skills and strategies you need to be prepared for the changes coming your way.

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