

PR, Marketing and the Business of CAD

All about PR, Marketing and how it pertains to the Business of engineering software, CAD, AEC and PLM

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Profile on Sean Dotson

Getting to Know Sean Dotson



Sean Dotson is well-known in the CAD communities for his MCADforums.com and sdotson.com web sites, as well as being an acknowledged expert in Autodesk Inventor usage. He is also a professional engineer, owning and operating a successful engineering business in Florida. We figured it was time to get to know this over-achiever a little better, and his Q&A is below.

Q: Sean, you are well known within Autodesk user circles as a knowledgeable expert in the use of Autodesk Inventor. How did you start out with Inventor? What drew you to it?

A: I was shown a beta of Inventor R1 by our VAR (the full version was released in September 1999 so it was prior to that). While he was not supposed to show it I guess he figured he could trust me! We had also been looking at SolidWorks but for whatever reason (I'm really not sure what it was at the time) we told him we'd take a copy of Inventor on the spot. A few weeks later we received a single copy of Inventor and I was using it 100% of the time. After a few more weeks we purchased 4 more copies and have never looked back.

The thing that attracted us to it was that it was so different from AutoCAD. It had a bright background, there were solids instead of wireframes. It just "looked" real. We were also drawn to the simplicity of the interface. I recall in the early days sitting a designer down in front of a seat of Inventor with literally no instructions. By the end of the day he was drawing simple parts.

Q: You are, I believe, a professional engineer. What attracted you to engineering?

A: Yes, I am a licensed PE in the state of Florida. I have always been attracted to engineering, even as a kid. I would take apart old clocks or toys to figure out how they worked. I also found it amazing how people could design and build things so much larger than themselves. For example, as a kid looking at an aircraft carrier, I always used to wonder.. "Where do you start designing this thing?" I was also lucky enough to go to school that had a program that catered to "technical" kids.

It was probably in the cards considering my father (electrical) and two uncles (chemical and nuclear) were all engineers as well. My mother was teacher and provided the liberal arts balance to my dad's math and science.

When I first arrived at the University of Florida, I actually was an English Lit major. After a semester of that nonsense I came to my senses and changed to Mechanical Engineering. Regardless, literature is still a passion of mine.

Q: What do you believe would attract the younger generations into engineering? If you were the Secretary of State for engineering (not that there is one) what would you do to develop more engineers?

A: That's a tough question. I think we first need to start young. Had I not had the opportunities in school that I did I might not have ended up in engineering. I think the image of engineers also needs some polishing. Ask many people to picture an engineer and the nerd guy with a pocket protector who does math for fun is what you'll get back. We need to show kids that while some math is required it's not all about crunching formulas all day.

I try to visit schools as much as possible. When I first enter the room and mention engineering their eyes glaze over. However, when I show them what my company does they see that not only math but creativity, organization and interpersonal skills are important. I can really see their perception of engineering change.

I also do not think that engineers get the respect they deserve in the workplace. These are highly motivated and highly educated people who make the world work. It upsets me when I see HR, sales, and marketing people getting paid more and treated with more respect than the people who actually produce the products for the company. Sales and marketing serve their purposes but engineers often get the short end of the stick.

Q: In addition to running the MCADforums.com and sdotson.com, you also own and operate an engineering business. What does the company do and why on earth do you do that?

A: (Laughs). You make it sound like my engineering business is the hobby. It is of course the opposite. RND Automation & Engineering (www.rndautomation.com) designs, engineers, manufacturers and builds custom automation machinery, material handling equipment and robotic workcells. I got into the custom machinery industry over 8 years ago.

Then two years ago my two partners and I purchased the custom machinery division of the company for which we used to work.

There is no other line of work I'd rather be doing. Each project is a new challenge and at the end of the project you have a working machine that you created. It's quite a good feeling to look at a finished machine that did not exist before you dreamed it up.

Q: What do you believe the future holds for CAD and engineering software? Can we expect incredible changes, or simply slow, small ones? What would you like to see achieved with CAD software for the users??

A: I see the major players focusing on making CAD more of a design tool and less of a modeling or drawing tool. I dislike the term "functional design" because, in my opinion, it's often misused.

Here's an example. Designers and engineers all know what a roller chain drive train looks like. Once we determine the number of teeth, and such, the really hard work is done. However now we're forced to model the components to make sure they fit. This is where CAD needs to help. While some vendors already have tools like this many, many more are needed.

Analysis tools are also going to be a big part of the future of CAD. It's one thing to be able to design a bracket. It's quite another to be able to design a bracket that will not break while using the least amount of materials. Of course most CAD packages have FEA tools but I see additional tools such as CFD, thermal analysis, and dynamic simulation becoming more and more important. The hard part will be making the tools easy enough to use but at the same time not allowing uneducated users to produce bogus results.

However, it's going to be slow. The large CAD companies will not take the risks required to make large changes. You might see some neat things from the smaller firms who are more willing to take the chances but overall I think it's going to be a methodical march towards the perfect CAD system. Want to see some really neat ideas? Look at the "wish list" ideas generated by users. These are some of the great "disruptive" ideas that will change an industry.

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Sean also took first place in the Inventor category in the Avatech "Altogether Smarter Challenge" at Autodesk University last month.

<http://www.avat.com/news/events/au/>

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