Engineering process script

The essence of engineering is solving a problem, using scientific and technological tools. Let's take a look at exactly how this works.

Let's say we have a problem. Oh no! We simply wave our engineering wands at it and suddenly a solution appears! Wasn't that easy?

There are two things very wrong with this picture.

First of all, you should never swing your tools around in the air. Give me the wrench.

Second, there's obviously no easy "engineering magic" way of solving real problems like this.

Engineering means using a logical and systematic way of addressing a problem that allows you to come up with a solution, but it's not magic. It's logic!

Okay, problem solving, take two. We start with a problem let's say we need to get from here to here. Since we can't use magic, we'll just have to sit down and think up an idea and then build the thing we thought of and voila, solution!

What the heck? Did you guys even test that thing?

Okay. Third try's the charm, right? Sart with the problem, then instead of taking the first idea that pops into our heads let's get a bunch of ideas, collect them, pick the best one. Now, let's build based on that idea and test the product to make sure it actually works. if something doesn't work quite right, let's change the design slightly to fix the problem, and try again and repeat that until everything works. Awesome! Now, we take the solution, and sell it to … uh … hi there. Well, it looks like we may have another problem or two.

Let's add in here, when you start with a problem, you should probably do a bit of research on it first. Clearly, we didn't quite understand just who was going to be using our product and I guess we didn't quite understand the terrain that our vehicle was going to be operating on both of which would have heavily influenced our design.

Alright, so it took us a couple tries, but at last …uh oh …. now we've got another problem. We took too long getting our solution finished and sold. Maybe next time we ought to try planning ahead a little so this doesn't happen.

Well we learned some lessons the hard way here but fortunately, you can avoid making the same mistakes. Engineering is about building solutions to problems, yes, but really solving them requires you to avoid these pitfalls. Engineering a real solution to a real problem includes the necessary research … planning … prototyping … testing … and commercialization processes to ensure real success.

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