
WHAT DOES BETTER MEAN?

UNDERSTANDING DIFFERENT PERSPECTIVES IN ENGINEERING

When we hear ourselves defending a particular engineering approach as “superior,” it sets off alarm bells.

We use this document to remind ourselves that the best engineers place themselves in the customer’s shoes even if we’re busy with our oscilloscopes and ZEMAX files.

When we hear ourselves defending a particular engineering approach as “superior,” it sets off alarm bells. The reason is that our engineers, our project managers, our customers’ engineers, their managers, and their salespeople have different measures of “superior.” Pursuing these different perspectives can bring significantly different outcomes to a project. Based on the intended use, customer and stage of development (R&D or commercialization) each perspective has a place.

Our goal as a services provided is to make sure we don’t insert our own bias and always understand what our customers mean by ‘better.’

Topic	Philosophy 1:	Philosophy 2:
Specifications	It is the absolute law! No matter what, every item must be met.	I make a list of everything I’d “like to have,” but what I really “need to have” may be somewhat less, and we’ll determine this after considering other items listed below.
Cost	See <i>Specifications</i> . We’ll postpone thinking about cost until after we’ve identified an approach that satisfies the specs. This is an R&D exercise.	If the product is too expensive to sell and no one will buy it, the project is worthless. If I need to change the specs in order to hit a reasonable cost, of course I’ll do this!
Overall system	See <i>Specifications</i> . Please meet the specs in the most	Simple, simple, simple. The more off-the-shelf parts, the better. The less complicated, the better.

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concept	creative and elegant way. The prototype will work perfectly and you will see how good of an idea this is.	We'll design it so that we can just replace inexpensive subsystems rather than worry about repairs. OR: My low-cost manufacturing center does not have "high skills." They are fast and they are cheap. The fact that you made a nice working single prototype really isn't that important to me. Our assembly line needs to crank out great products even if they keep poor tolerances and work very quickly. If I need to change the specs to achieve this, we'll consider it.
Delivery Time	"It'll take as much time as it needs. A baby takes nine months, and you can't rush it!"	I have just one or two trade shows a year that will let me show this product to customers. If I miss a trade show by a week, it means I will need to wait 5-11 months before I get another chance. Maybe in that time my competitor will have a new product! Maybe the people at the first show who said they were interested won't have the funds to buy the products. Even if the product works well, a missed delivery could cause big problems if our competitor got to the market first... Your delivery is just one step in our product process. I need to schedule our engineers to develop software, ramp up the marketing, and ten other things.
Product roadmap	Not my concern!	As long as you meet my "must-have" specs, I'm happy – I understand that "nice-to-have" is just that. If the first product is a success, I can sell upgrades or new systems in three years and make more money!

Optics for Hire helps its customers create and improve optics-based products.

If you share our product-development philosophy, drop us a line:

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