



Will Engineers Be Creators or Facilitators in the Mass Customization Era?

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April 5, 2007—The engineering profession—like medicine—is in a state of flux. As engineering software becomes more “intelligent,” design democratization become more possible and probable. Does this spell the end of engineering as a profession, a transition to a new model of work, or potentially a redefinition of engineering?

In years past engineering was considered a highly qualified and respected profession. The profession and the disciplines under that profession (civil, mechanical, electrical, chemical, hydraulic, etc.) like medical profession, came with a calling into a community of practice and a shared code of honor. A new engineering candidate was not simply tutored in academics, the protégé was apprenticed and grown through experience into a master craftsman.

I use the work craftsman deliberately in that too many engineering projects today are no longer works of a craftsman engineer. Instead they spreadsheet optimizations, a corporate expression more than the product of a creative and innovative mind. Perhaps this is the result of outsourcing, global competition, or maybe our culture’s obsession with the bottom line. The values that the engineering community once cherished seem to be wearing away with time; with it customer loyalty has been replaced with consumer preferences and choice. In response many design firms have created their own nightmares of massive product lines, only to have to scale back under the weight of too few customers for each variation.

The latest trend and potential threat to the engineering community is that of “democratization of design” made popular by [Eric Von Hippel](#) of MIT. The premise is to develop systems that enable potential customers to design their own products. If we extend this metaphor further in the future, could this mean engineers are to become a thing of the past? Perhaps the role of the engineer becomes more about facilitation (as architects now) on all but the most independent and high-profile projects.

Perhaps mass customization and the new experience economy, where momentary novelty replaces individual style for all but the very few, is our future.

If this is the case, should engineers now prepare to become technical facilitators and develop those soft people skills we’re suppose to lack? Or should we look at what we are doing with the current engineering software and realize there is more to good design than just balancing the stress and functional formulas? Creativity and style can just as easily differentiate a mass production design headed for Wal-Mart as it can a premium product.

For comments or questions about this article, talk to Brian Seitz at COFES 2007 or contact editor@cadcamnet.com.

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