



Do your engineers really know how to design?

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This is the age of the experience economy. The differentiation and ultimately the value of products and services are no longer judged by functional qualities alone. Aspects of this orientation have always been around — just look at the automotive industry. For decades, stylists have been a key contributor to the creation of vehicles. Another example is the food service industry which has gone through a rebirth.

If you talk with an executive chef you might be profoundly surprised to hear the language he uses to describe his work. The food his kitchen prepares is called product, the manner in which it is serviced is the dining experience. The typical medium to large restaurant kitchen is organized in what is called the brigade system: each person on the team has a special job and is arranged in a hierarchy with the objective of scheduling and assembling your meal and dining experience.

In well run restaurants, the communications between the two groups runs smoothly. Information about the dining experience is communicated back and forth. Was the food (product) to the qualities the customer expected? Was the service? Did the customer have the dining experience he or she expected? Once this information is known, the chef and staff can quickly correct the total experience for the next customer.

The question for you today, is are your engineers being trained and developed to design the full experience, or are they still working on a model of form follows function? Do they actively seek out the experience aspects from the marketing organization or are they locked in a structure-function model? Companies like IBM and Motorola now hire designers with stylist backgrounds. They added things like market understanding to the list of competencies an engineer needs. Engineering specialties such as user interface design has emerged from human factors and ergonomics (which were introduced for mainly legal issues in many corporations) as a means to create value and a competitive advantage. Microsoft hires anthropologists to understand lifestyle and experiences. The message is clear — style and the manner in which a product is used, the experience, is the new expectation and the differentiating factor of successful design.

So another the key question for engineering departments is: do you know how to design a customer experience? Indicators that your firm is on the right path are:

- Your engineering department has a consistent dialogue with marketing and customers;
- Your use of visualization software is for more than interference fit applications; and
- Factors other than pure functionality, and physical form and properties are used to evaluate and select design options.

I raised some of these issues when I was Microsoft's engineering industry manager

several years ago. Are there other tools and methods needed by engineering? What does an engineer really do? These questions led me to search for other classes of software, to help push engineers to really think about what was needed to aid them in their calling.

Some of these tools are now appearing. We now have software categories and products to fill needs such as: engineering decision support; product visualization, collaboration enablement; requirements management and configuration management. These tools are now becoming key enabling technologies for successful companies. Corporations are now busy working to integrate engineering and marketing in a more meaningful way — and so should your company.

A simple day in the life of a design professional these days may cover more than just electronic board time, translating design concepts into computer graphics and data models that can be structurally tested, manipulated and manufactured. Many designers have become de facto analysts and marketers for their corporations in an effort to design and build products an ever more discriminating customer would buy.

If you haven't picked up a book on Six Sigma, ISO 9000, brainstorming, creative thinking, or read an article on QFD I suggest you run — not walk to your local library or visit Amazon.com. Intellectual tools such as these are the entry point for competitiveness in today's market. You wonder how Toyota keeps eating GM's lunch? Sure, quality is there, but how did it get there? From the start Toyota has been focused on continuous improvement in all facets of its business, not just manufacturing to high tolerances.

Market planning in enlightened corporations is a system of understanding what markets to go after and how to go after them. This process includes marketing, sales, service, and engineering functions. Yup, that's right, engineers sitting at the same table with a bunch of marketing types hashing over the details of what needs to be produced and when.

Does that mean engineers will be getting advance degrees in marketing? Hardly. But it does mean a focus on requirements and customer priorities. If you haven't heard about conjoint analysis, it would be a good idea to ask a marketing researcher about it. So I ask you. Does your company know how to design?

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