

Defining the criteria for effective interaction design

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At the heart of interaction design are the people who explore, learn from, play with, and respond to products. Their experiences, as they use a range of products, from off the shelf software to websites, from electronic games to medical diagnostic equipment, are what effective interaction design is all about. This article focuses on the design of electronic products, but it is also relevant to all sorts of objects and places with which people interact: from potato peelers, shampoo and snowboards to gardens, buildings and cities—and to the experiences they provide.

By “experience” we mean all the aspects of how people use a product: the way it feels in their hands, how well they understand how it works, how they feel about it while they’re using it, how well it serves their purposes, and how well it fits into the entire context in which they are using it. If these experiences are engaging and productive, then people value them. We call this “quality of experience.”

We believe that these kinds of quality experiences happen when the design of a product is undertaken and developed as a whole. Comprehensive design solutions satisfy all nine criteria shown below. When taken together, the criteria define successful interaction design, design that leads to quality experiences. When only a few criteria are met, it usually indicates that the product development process has been fragmented, with certain areas treated as distinct from the whole problem and separate from the user’s experience. Imbalanced solutions often result. While it is not unusual to find products that exhibit excellence in certain areas, such as industrial design or technology, it does not necessarily follow that these products provide people with either coherent or satisfying experiences.

It is also imperative not to separate the individual criteria from the central criterion, quality of experience. This is where it all comes together: emotions, behaviors, sensibilities and all the complexity of the world we live in. From this vantage point, we attempt to make sense of how we shape the things around us and how the things around us shape our experience.

Quality of experience

Paying close attention to how people really live, to the larger environment as well as to the seemingly unimportant details, can often result in surprising insights. Giving credence to what people feel, believe and do as they experience a product, can lead to unforeseen opportunities.

The criteria fall into two categories. Those in the first group make a direct contribution to the user experience. For example: was the product easy to learn and use? The second group of criteria concern the development process used by the product’s designers, which indirectly affect the user. There are just two of these: was the product grounded in an understanding of its intended users and was the product the result of an effective design process?

We’re not implying that there is a right or wrong way, or even a preferred way, to fulfill a criterion. For example, we don’t believe that there is just one “effective design process.” We do assert that the effectiveness of the process plays a role in the effectiveness of the product. In addition, there are specific things we would expect to see in an effective design process, including user involvement, iteration, and multidisciplinary collaboration. The development of each product engenders its own unique process.

In defining the criteria, we have tried to avoid cliches, jargon and vague terms such as “intuitive,” “beautiful” and “user friendly.” We have attempted to be specific, to emphasize all the factors that we believe contribute to quality experiences. As a result, the criteria are not always mutually exclusive. They interweave and blend.

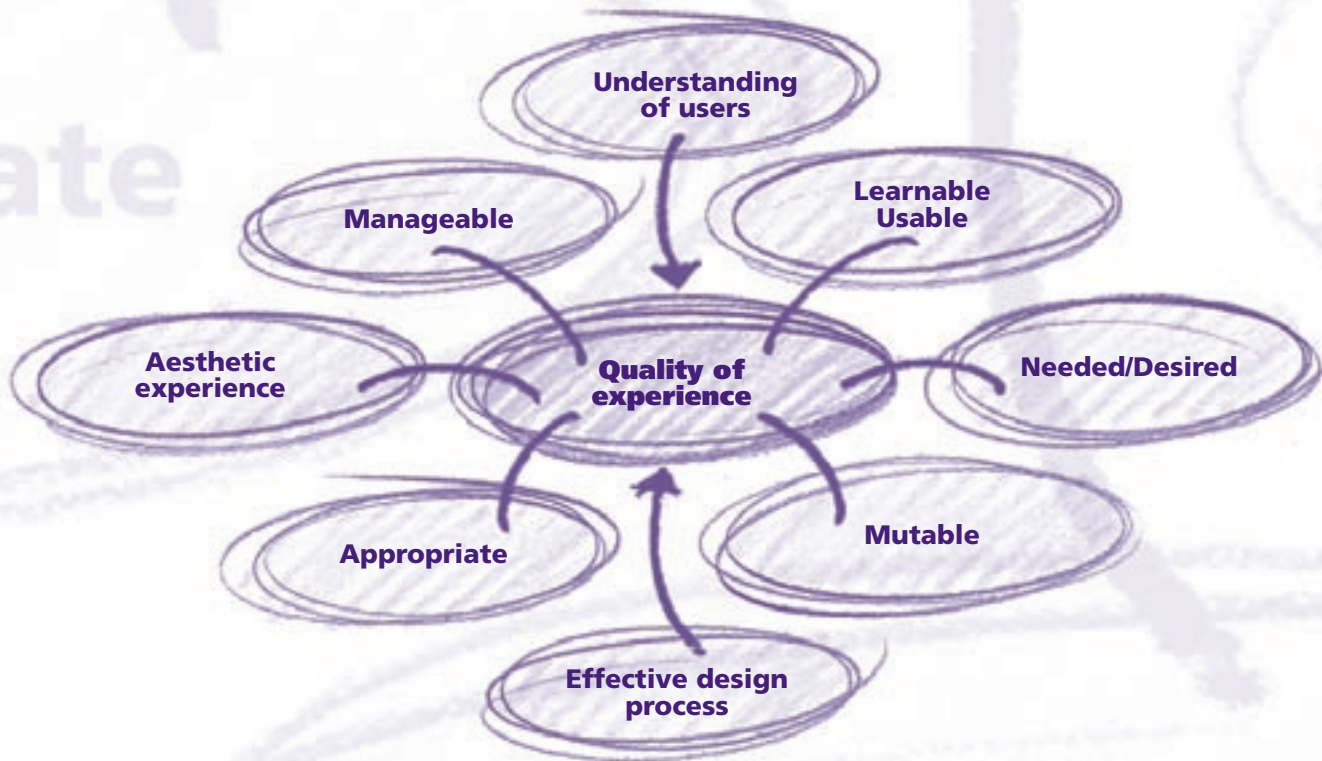
Great interaction design is complex and difficult to define. But through the criteria, we are attempting to do just that. We aim to set high standards, which reflect the goals and aspirations of the interaction design community and to stimulate discussion, if not agreement, about a definition of effective interaction design. The criteria inform the emerging conversation about how interaction design adds value to products, places and experiences—in ways that serve people’s needs and add value to their lives.

Criteria for effective interaction design

Quality of experience

Taken together, the criteria raise one central question:

How does effective interaction design provide people with a successful and satisfying experience?



Effective design process

Understanding of users

How well was the design team grounded in understanding the needs, tasks and environments of the people for whom the product was designed? How was that learning reflected in the product?

Effective design process

Is the product a result of a well-thought out and well-executed design process?

What were the major design issues that arose during the process and what was the rationale and method for resolving them?

What methodologies were employed, such as user involvement, iterative design cycles and interdisciplinary collaboration?

How were budgeting, scheduling and other practical issues, such as interpersonal communications, managed to support the goals of the design process?

Needed/Desired

What need or desire does the product satisfy?

Does it make a significant social, economic or environmental contribution?

Learnable and Usable

Is the product easy to learn and use?

Does the product communicate a sense of its purpose, how to begin and how to proceed? Is this learning easy to retain over time? Are the product's features self-evident and self-revealing?

How well does the product support and allow for the different ways people will approach and use it, considering their various levels of experience, skills and strategies for problem-solving?

Appropriate

Does the design of the product solve the right problem at the right level? Does the product serve users in efficient and practical ways?

How did considering social, cultural, economic and technical aspects of the problem contribute to an appropriate solution?

Aesthetic experience

Is using the product an aesthetically pleasing and sensually satisfying one?

Is the product cohesively designed, exhibiting continuity and excellence across graphic, interaction, information and industrial design? Is there a consistency of spirit and style?

Does the design perform well within technological constraints? Does it accomplish an integration of software and hardware?

Mutable

Have the designers considered whether mutability is appropriate or not?

How well can the product be adapted to suit the particular needs and preferences of individuals and groups?

Does the design allow the product to change and evolve for new, perhaps unforeseen, uses?

Manageable

Does the design of the product move beyond understanding "use" merely as functionality and support the entire context of use?

For example, does the product account for and help users manage needs such as installation, training, maintenance, costs and supplies? Have these needs and others been considered in an individual as well as an organizational sense?

Does the design of the product take into account issues such as negotiating competition for use and the concept of "ownership," including rights and responsibilities?

This article has been excerpted and revised from the original, which appeared in interactions magazine, May+June 1996, volume 1113. The original article was written in conjunction with the first ACM interactions Design Awards. These awards are given under the auspices of the Association for Computing Machinery, whose Turing Award and Software Systems Award are widely respected marks of quality. The ACM interactions Design Awards are the first awards to acknowledge quality in interaction design, as distinct from software engineering and research.

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Lauralee Alben, CEO and Founder of the Sea Change Design Institute, leads a nexus of change agents committed to a creative, integrated, and compassionate world. The Institute evolved from AlbenDesign LLC, which developed and disseminated the Sea Change Design Process over fifteen years. AlbenFaris Inc., its precursor, was well known for providing pioneering interactive services for clients including the Monterey Bay Aquarium, Apple, IBM, Netscape, and SONY, as well as designing Apple's Mac OS brand.

For four decades Lauralee has been designing, consulting, coaching, speaking, writing, and teaching. I.D. Magazine regarded her as "one of the most influential people in design." Lauralee was selected by the Design Management Institute as the first recipient of the prestigious Muriel Cooper Prize, for showing original thinking, future promise, and spirit of exploration in the digital environment. Her design work and articles have appeared in many business, design, and computer publications, and at SIGGRAPH and CHI.

Lauralee gives keynotes on designing sea changes to corporations, professional conferences, and academic institutions. She has presented at TED, the Women's Forum for the Economy and Society, Procter & Gamble, SUN, Adobe, Walker Art Center, HOW, AIGA, MBARI, Montessori Foundation, and many others.

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