

Everywhere We Look

The Web Challenges HCI to Expand Its Scope

Nick Ragouzis, October, 1998

HCI's Scope?

Whether we consider the Web good news or bad, it is a catalyst for transforming the practice of the human-computer interaction disciplines. More forcefully and more urgently than ever before, the Web invokes the perennial question to HCI practitioners: Shall we restrict our work to the direct interactions of humans with computers? Or shall we challenge ourselves, expanding our scope to include the entirety of social organization and enterprise? I believe we must take up the latter challenge.

The mandate to expand the scope of HCI is delivered through the interpretation of human artifacts and actions that finds expression in Gillian Crampton Smith's maxim, "The form of the device is the interface". To realize the force of this maxim and to see how the Web lends a new urgency to the question, we must consider its implications.

First, we have the corollary that the interface, as determined by the form of the device, *is* the device. Second, there is the similarity, even identity, of all devices—irrespective of their source or purpose—whose apparent interfaces are similar. If the user interprets the interface of two devices as similar in some respect, then the devices are also similar.

Third, there is the insight that all human artifacts, including our social and commercial organizations, are also devices presenting an interface: their form, too, is their interface. Although it is mere recapitulation to say that an interface is the point of interaction between one thing and another, it is important to note that the

interface of the organization will mediate in both directions, outward and inward, communicating function and values, and not necessarily symmetrically. Further, the form of the device that is the organization determines the interface not simply for that single organization but also for all that it consumes and produces, all its constituencies.

If I now seem far afield of my original objective, consider that an organization's constituency has engaged in human-computer interaction since the dawn of computers (even of the human kind). The forms our customers fill in, for example, have always been determined by the ability of the forms-enabling and -generating humans (in modern times extending from the computer engineers and programmers to the application users) to specify and process forms. Filling in a printed form is human-computer interaction, once removed. First-order and second-order human-computer interaction, whether related to investments, product development, human relations, or customer service, has long determined the form of our organizations, and therefore the interface with and between our organizations.

Connectionist Design

Long before the Web, many modern organizations recognized that they are defined by their interface. These organizations sought to transform their every aspect (from marketing systems through materials process to organizational management) so as to become accessible to, even subject to command by, their constituencies.

Their interface has been crucial to their success in forging new services and alliances.

The attempt to transform the organization's interface is an expression of a design philosophy I call Connectionism. Connectionist design promises and demonstrates connections, whether through the shared identities of, say, interface components or through the promised or realized interaction with other individuals, organizations, or other artifacts. Connectionist design can occur as part of design at all levels and in all disciplines, encompassing, for example, management, engineering, sales, user interface, and, yes, Web page design. Connectionism's drive for more, and more individualized, connection does not necessarily limit itself to computer-enabled implementations, but it does push computers into an ever more prominent and more visible role. Like it or not, HCI is sucked along in Connectionism's wake.

Connectionism guides the social as well as the functional. It embraces, simultaneously, separateness and nexus (in the sense that something new is created in the connection—as a knot is different from the ropes of which it is made). It recognizes the realized and the potential as equals.

Ironically, in Connectionism difference comes first. Connectionist design protects, elevates, even celebrates individual characteristics (of, say individual people, disciplines, products, organizations, or web pages), to the extent that its collected artifacts are criticized as instances of tribalism or Balkanism.

The Web is one Connectionist design, perhaps the most visible. It transcends the divisions of data forms and access types, while protecting their differences. The Web's content always promises and often delivers connections. The multi-lingual vocabulary of Web page design, user interface, and ornamentation exemplifies this design philosophy. Although the dominant, even paradigmatic, Connectionist design, the Web is just one element in a larger Connectionist environment. The Web's connectionless protocol, for example, is subject to myriad efforts to provide "connection-full" closure. More significantly, the devices that aim to deliver this larger environment operate both inside and outside the realm of the Web.

Since a similarity in apparent interfaces is enough to establish a similarity in the devices, we must recognize that such devices as static magazine advertising, a medical practice, a book, or a machinist's hand tool, while perhaps not electronically connected to the Web, nevertheless share a common domain—Connectionism.

HCI as Organizational Transformation

Under the aegis of Connectionism, the emergence of the Web forces the human-computer interaction disciplines to the very core of organizations, willingly or not. In the enterprise this may be seen as similar to the transformation of quality control from a functional backwater to Quality, a powerful part of the CEO's agenda and an enabler of organizational transformation.

Are HCI professionals up to the challenge facing them? Meeting it will require a shift of focus from the current debates about architecture—is it a philosophy or a process? does it produce an artifact?—to pursuing the

architecture of enterprises and markets. We must look beyond product management meeting pleas about cost avoidance or marginal returns to boardroom discussions about enterprise financial structures, management efficiencies, and sales strategies. To usability measurements, we must add a practice of imagination—a practice that, based on our understanding of human-computer interaction, will change the dynamics of entire markets.

The Agenda

The transformation of HCI will require significant effort among its practitioners and a change in how the HCI disciplines are structured and executed. Such efforts are necessary if we are to transition HCI into a bona fide profession. The ACM SIGCHI community can place itself at the center of this transformation.

One, we must raise the threshold for science and research within HCI. We must demand a higher standard for reconciliation with prior works, not only with work in the HCI disciplines but also with work in other fields. Following the example of another discipline with which it shares many characteristics, behavioral psychology, we should require release of the underlying data with the publication of research conclusions. These higher standards should be applied to tutorials, to papers, and especially to Connectionist work, such as that relating to the Web.

Two, we must create a bridge with those from the enterprise (that is, the people on whom we wish to press the larger scope of HCI) and with those who are subject to the results of the HCI disciplines. That effort requires a direct connection—not one mediated by consultants and study reports. And to be effective, the activities and forums that comprise the bridge must make it possible for all involved to

contribute meaning and realize benefits, a characteristic that implies ongoing rather than one-time interactions.

Three, we must mount a serious effort to advance the knowledge and practice of HCI in other professions and practices. Our current efforts to educate computer science students in HCI are miniscule by comparison to what is required to meet the challenge presented by the Web and other Connectionist designs. Part of the effort will be to orient the practices of HCI to the individual perspectives of other professions: a one-size-fits-all curriculum doesn't. The result will be a transformation of HCI itself. Further, HCI professional organizations must build forums that are specialized for newcomers and their separate interests.

Finally, we must make significant investments in experimenting with dynamic, multi-constituency communities focused on exploring and undertaking the challenges discussed here. Such communities must be able to sustain a rich dialogue among their various constituencies so as to build the community's knowledge and share this knowledge with other communities. What we need is the capacity for continual improvement and renewal of a kingpin profession.

About the Author

Nick Ragouzis is the founder of Enosis Group, a business and technology consulting firm. Nick's experience includes industrial and graphic design as well as technology design and development.

Author's Address

Nick Ragouzis
<http://www.enosis.com/>
email: nickr@enosis.com
Tel: +1 415 922 3463