Prepare for Descent: Interaction Design in our New Future

Jeffrey Wong
Human-Computer Interaction Institute
Carnegie Mellon University
Pittsburgh, PA, USA
jeffwong@cmu.edu

ABSTRACT

Currently, sustainable interaction design seems primarily focused on behavior change, in the hope of averting irreversible destruction of the environmental systems that make our civilization possible. Underlying this idea is the assumption that the right technology can change behaviors of society-at-large quickly enough to avert irreversible damage. While trying seems more appropriate than doing nothing, current work in Sustainable Interaction Design (SID) is often lacks the scope necessary to foster immediate and deep change needed to avert crises. This paper argues that SID researchers should approach the problem at higher levels to have the massive effects that are necessary. SID should also consider the the design context to be a world radically altered by environmental damage; solutions that fit into today's lifestyles risk irrelevance. SID researchers can target viable futures by designing for very different social, economic, and humanitarian circumstances than the contexts we currently take for granted. SID allow the projected economic declines to free society from a consumption culture. Research priorities may then shift from prevention and awareness to supporting social, economic, and spiritual structures of society that human happiness possible.

Author Keywords

Sustainability, memetic engineering, social implications of technology, ethics.

ACM Classification Keywords

H5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

INTRODUCTION

Recent efforts in the HCI to promote sustainable behavior in society appear to assume that it is still possible to "save the planet" by changing people's behaviors to be more sustainable. However, researchers in HCI need to be conscious of the powerful incentives of denial and banality of everyday users and proceed with their research mindful of constraints of social norms and values.

Hanks et al. [1] pointed out that individual material success was most prevalent stance towards sustainable use of interactive technology, even in a very young college-age population sample. Huang and Truong [2] identified opportunities for integrating sustainability in product lifecycle plans while incorporating consumers attitudes towards sustainability. Other work [3] has attempted to address the fact that the people who need to be changed may be those who reject an "environmental identity" of those who value the environment simply choose not to live consistently with those values. It is also unclear which people need to change the most and which activities and products are simply not sustainable when broadly adopted.

EXISTING APPROACHES AND LIMITATIONS

A common approach to increasing the likelihood of sustainable behaviors is make sustainable behavior more desirable, either through product aesthetics [4] and making environmental identity fashionable [1]. These approaches are predicated on some tacitly accepted values of interaction design: 1) designers should strive to design things that are desirable, 2) desirable things will be adopted (along with consequential behavior changes), and that 3) constructing and supporting particular identities is a good thing to do.

What these positions overlook is interaction design's traditional role in product development, a collaboration that where consumer desire is stoked by the best efforts of interaction designers and a social narrative of progress as technological advancement [5]. Sustainable interaction design should recognize the dangers of further conditioning the consumer of the idea of satisfying desires and supported the construction of identity through products. Interaction designers will do well to recognize the newness of the concept of consumerism [6], how designers often confuse needs with desires (or deliberately present desires as needs, and how discovering the identity through product consumption has been one of major forces that has driven unsustainable behavior in the Western world.

ALTERNATIVES

To successfully address rapidly approaching environmental damage, Sustainable Interaction Design must step back and re-examine the values and methods borne of Interaction Design and Industrial Design. Understanding the psychological dynamics of desire and materialism and may provide new avenues changing social values.

The most serious sustainability issue is runaway global warming and its effects on an overly optimized industrial society such as ours. Researchers and designers must consider two unsettling conditions of our world: 1) that the tipping point for prevention may be closer than most research horizons or even eclipsed in the present time and that 2) that the side effects of our industrialized civilization

may be too large and path-dependent to be affected by "point" solutions that address only specific behaviors of an entirely unsustainable system. Designers and researchers may have to move beyond the design of interactive products and into the design of "memes" or self-replicating ideas that travel quickly within the human population [7]. HCI has had a tradition of research of the effects of media and combining that with memetic engineering may be a fruitful avenue for swift social change. The psychological study of reactance to ideas and imagined "others" online can affect the acceptance and uptake of memes, as well as counter-productive means that serve to justify selfish desires.

Sustainable Interaction Designers will need to recognize the pervasiveness and insidiousness of denial in materialistic populations[8]. Also, as designers, we must conduct some introspection into our implicit narratives and notions of progress [5] that affect the goals of our technological development (when goals actually exist).

MOVING AWAY FROM PREVENTION

Perhaps many people involved in Sustainable Interaction Design are afraid of the changes and suffering wrought by environmental damage, and perhaps feel the need to do something to prevent suffering. The forces of denial may be so strong that even successfully preventing collapse from environmental destruction is itself unsustainable; we may never realize that the problem was desire if we fail to see the true consequences of unquenchable desire.

Adverse change may be necessary to cement the dangers of ourselves into the memory of human history. Being hit with reality is perhaps much simpler to process than predictions of catastrophes that were narrowly avoided. High gasoline prices in 2007 forced American society to reconsider its driving habits with an intensity that could not be matched by informational initiatives about the harms of automobiles. Currently, we are seeing the end of a period of unsustainable growth in money and cheap energy, from the time Nixon moved the US dollar (and essentially the world monetary system) off a gold basis into seemingly interminable debt. Unsustainable living may simply end because the input factors that drove it are no longer there. Will consumers face reality begin to distinguish between needs and desires?

Perhaps the sudden collapse of cheap money was a necessary wake-up call to humanity. The swiftness and pervasiveness of it is maybe preferable to the gradual (and harder to notice) effects of peak oil or global climate change, where it is possible to deny the problems until it is too late to do anything about them.

If the need to convince anyone disappears, Sustainable Interaction Design can shift its focus from persuading to sustaining the human race.

THE END (OR MAYBE THE BEGINNING)

Even if our future lacks some of the technology opulence we have grown to expect, there are still plenty of opportunities for sustainable interaction design to have an impact. Unlike our past visions of the future, we will soon address true needs that have long been relegated to "design for the developing world." How do we used computers to form the essential markets and institutions that can no longer be supported by travel? How can we compute and communicate if the power infrastructure is unreliable? How can we use communication technology to adapt our highly specialized labor pool into labor and distribute knowledge and expertise to where it is needed?

Moreover, what role will technology play in forming and maintaining meaning and relationships in a post-industrial, de-globalized world? Assumptions that have been part of our narrative of unceasing progress may fall away. Moore's Law may come to an abrupt halt as energy intensive industrial fabrication of shrinking processors comes to a halt. Low-power computing may need to be supplanted by no-power computing. And computation may become a finite resource that must be rationed in design at the user interface, application algorithms, and even the design of energy efficient compiled code and interpreters.

Sustainable interaction design may be a misnomer. If the present is unsustainable, what is the purpose of trying to sustain it? Perhaps in our revised future, because computing will be in short supply, we will be more thoughtful in adding technology to our lives. This may make us more human after all.

REFERENCES

1. Hanks, K., Odom, W., Roedl, D., and Blevis, E. 2008. Sustainable millennials: attitudes towards sustainability and the material effects of interactive technologies. In Proc of CHI 2008. (CHI '08). ACM Press, 333-342.
2. Huang, E. M. and Truong, K. N. 2008. Breaking the disposable technology paradigm: opportunities for sustainable interaction design for mobile phones. In Proceedings of SIGCHI 2008. (CHI '08) ACM, New York, NY, 323-332.
3. Aleahmad, T., Balakrishnan, A. D., Wong, J., Fussell, S. R., and Kiesler, S. 2008. Fishing for sustainability: the effects of indirect and direct persuasion. In Extended Abstracts of SIGCHI 2008. (CHI '08)
4. Pierce, J. and Roedl, D. 2008. Changing energy use through design. *interactions* 15, 4. ACM Press (Jul. 2008), 6-12.
5. Greer, John Michael. 2008. The long descent: a user's guide to the end of the industrial age. Gabriola Island, B.C.: New Society Publishers.
6. Curtis, A. 2002. *The Century of the Self*. (television program), BBC Four.
7. Blackmore, Susan J. 1999. The meme machine. Oxford [England]: Oxford University Press.
8. Marshall, George. Climate Denial. (Internet resource) http://climatedenial.org/