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Seven Challenges for Hybrid Ecologists

New techno-cultural ecologies such as that of the mobile industry arise from renewed cycles of external innovation and internal assimilation. Here are seven challenges for the Hybrid Ecologists, those of us building and reflecting on our shared mobile future.

1. Reach
2. Sometimes Off vs. Always On
3. Hackability
4. Social Primitives
5. Openness
6. Simplicity
7. Justice

1. Reach

Next year there will be more than 2 billion mobile phone users in the world. Over the last fifteen years the mobile industry has seen amazing growth. Much of this growth has been in the developed economies but increasingly the value is created in emerging markets.

The first challenge has to do with increasing access to mobile technologies. How will mobile technologies reach the next 2 billion people? One can raise legitimate concerns about this goal as an end-in-itself. At the very least enabling people to connect in affordable ways leads predictably to economic growth. Recent research has established that "mobile phones raise long-term economic growth rates, that their impact is twice as big in developing nations as in developed ones, and that an extra ten phones per 100 people in a typical developing country increased GDP growth by 0.6 percentage points ... [So] the digital divide that really matters is between those with access to a mobile network and those without. The UN has set a goal of 50% access by 2015 but a new report from the World Bank notes that 77% of the world's population already lives within range of a mobile network." (The Economist, March 2005). Surely economic growth alone does not define or guarantee human development, but it remains a critical component in increasing human quality of life. The challenge here is how to bring access to the next 2 billion in an economically viable way. How can we viably scale down the cost of appliances, use and infrastructures to increase reach?

2. Sometimes Off vs. Always On

Time is the ultimate scarce resource in the information age. It is the subject of endless pop song wish lists ranging from turnin' it back to makin' it (or dis moment) last forever. The desire to stop time has always been with us and the conveyor belt lyrics of today have a deep ancestry. Witness the recently deceased Pakistani master singer Nusrat Fateh Ali Khan:

Throw out the clocks,
My lover comes home,
Let there be revelry.
My lover comes home,
Let there be revelry.

In this excerpt from a characteristically moving qawwali "Mera Pia Ghar Aaya" ("My Lover Comes Home") Nusrat interprets the same theme. As is often the case in sufi qawwali the

object of love remains ambiguous between the divine and the human. Either way, we'd like the clocks thrown out.

The same could be said of the ubiquitous mobile devices that connect us. In Finland the everyday word for mobile phone is *kännykkä* meaning "extension-of-the-hand." "Because we carry our always-on cellular prostheses," Derrick de Kerckhove notes, "it is the world itself that has become *always on*." These technologies have become so embedded they are invisible. Almost. These technologies still interrupt us. They make us in principle always available. In the rush to connect, we have not designed what it means to disconnect, to tune out. The challenge: How do we design to be sometimes off in a world that is always on?

3. Hackability

Brian Eno summarizes well the essence of hackability: "An important aspect of design is the degree to which the object involves you in its own completion." Some complain about the lack of "hackability" of mobile appliances. But the mobile phone if anything is a hackable platform. Think of all the examples of physical personalization that people engage in around the world e.g. exchangeable covers and straps and self-made accessories. Physical personalization is fast extending into software. Indeed the definition of the word *hack* as "a way found by devious users to get inside software or hardware and make it do things the designers did not intend" may be too narrow. It hides from view the wealth of everyday hacking behavior that far exceeds the imagination and industry of semipro technologists. This trend of customizing the generic will no doubt continue. Perhaps it has not yet even begun. Playing to this trend raises the question: How do we design for everyday hackability? How can mass economies of scale be combined with the flexibility and costs involved in enabling users to complete products?

4. Social Basics

The main human fundamental needs and capacities on which the growth of the mobile industry was built are social. Social interaction has arguably been the driving force for both the Internet and mobile communications being accepted. Starting with voice call with the widest reach to SMS text messaging, e-mail, instant messaging, down to tens of millions of people reading and writing weblogs and sharing photos with a close group. How many of these have been explicitly designed by anyone? The ones that have succeeded have been simple open-ended functionalities (e.g. SMS is 160 characters of text), based on the basics of social interaction that leave room for human interpretation and invention. Consider the great human fundamental of gift giving. Has the universal human practice of gift-giving face-to-face really gone digital yet? Could it? Should it?

The challenge has to do with the next wave of the social: What are some of the forms of social interaction (online and off) that could slip onto the mobile platform? What are some of the patterns of sharing that could be better designed? What could these social basics be?

5. Openness

The renewed cycles of external innovation and internal assimilation that renew an industry often rely on open standards and interfaces, which set a playing field for competition. How the balance is struck between open standards and closed proprietary advantage is one of the key questions on the future of communications. It is not a balance easily struck. The most widespread social applications on the Internet have been based on open standards, or more accurately, the versions of these applications that have won in the end have been based on open standards. For anyone designing the next wave

of functionalities and connectivity, the challenge is: Where is the architecture open and where is it closed? How and when do we make the transition between open and closed architectures?

6. Simplicity

In an era of increasing complexity and product development driven ever more by technology and feature-creep, human beings are seeking the opposite. The desire is for the simple and sensorial. The interaction design challenge of hiding this complexity —covering the deep dark plumbing of interactive objects—is perhaps *the* design challenge of our time. In the words of bassist Charles Mingus: "Making the simple complicated is commonplace, making the complicated simple, awesomely simple, that's creativity." The challenge remains: How do we hide the (irrelevant) complexity of objects from human beings while maintaining flexibility? How do we keep designing simply beautiful objects that simply work?

7. Justice

Like the first challenge, the last focuses on the normative. Clay Shirky has recently written on the networked world of blogging: "The interesting and hard question is, 'Since there is to be inequality, how shall it be arranged?' I think we are going to see an explosion in work designed to alter the construction and effects of this inevitable inequality … and I am optimistic about this change, as I believe the concentration of real thought and energy on what is actually possible, as opposed to cycles wasted on utopian declarations, will be tremendously productive." I can only agree and I too am optimistic. As we go forward, we need to think not only about the distributional effects of different architectures and tools, about the roles of different amplification mechanisms, to use Joi Ito's phrase. We also need to focus on the hard normative questions: What arrangements of inequality are preferable to others from the point of view of justice? How do we justify to each other the rules, architectures and tools we adopt in a world of freely forming networks? Derek Parfit writes towards the end of his ambitious book *Reason and Persons* (1984): "[Our many false beliefs about justice and ethics] did not matter in the small communities in which, for most of history, most people lived. In these communities, we harm others only if there are people whom each of us significantly harms. Most of us now live in large communities. The bad effects of our acts can now be dispersed over thousands or even millions of people. Our false beliefs are now serious mistakes." These mistakes are even more serious today.
In addressing these issues we can look back to understand the present. John Rawls put the task description well: "The task is to articulate a public conception of justice that all can live with who regard their person and relation to society in a certain way. And though doing this may involve settling theoretical difficulties, the practical social task is primary."
A public conception of justice for freely forming networks. That could be our shared goal.