Richard Heeks

Emerging Markets
Information Technology and Gross National Happiness

Connecting digital technologies and happiness.

WHAT WOULD YOU do if you received (as I recently did) the following assignment: to help Bhutan plan the use of information and communication technologies to maximize happiness? Bhutan is a small landlocked Himalayan kingdom, sandwiched between India and China. Where other nations—explicitly or implicitly—search for wealth as their goal, Bhutan is set on a different course. Its objective is GNH not GNP: gross national happiness rather than gross national product.

Steeped in the values of Mahayana Buddhism, Bhutan has a population of approximately 700,000 in a country the size, and with similar topography, of Switzerland. It has always been different. Until the 1960s Bhutan had no schools, no hospitals, no paved roads. The first radio station was only licensed in the 1980s; television was only introduced in 1999; tobacco and plastic bags are still banned. The country's one set of traffic lights in the capital, Thimphu, were removed and replaced by a police officer when drivers deemed the lights unfriendly and frustrating.

Reflecting those sorts of views, Bhutan is also trying to take its own path when it comes to national development. The idea of GNH was first broached by King Jigme Singye Wangchuck in 1972. What was initially not much more than a passing remark slowly gathered momentum. It first grew to become a defining characteristic of both national planning and

Children in Thimphu, the capital city of Bhutan.

then national identity, with Bhutan now a global promoter of the happiness concept, and pushing for it to be ratified by the United Nations as a development goal. This has synchronized well in the last 10 years with the global trend of growing interest in happiness, positive psychology, well-being, and related concepts. That trend argues happiness is central to human existence and purpose.

The Technology-Happiness Disconnect
Yet, so far, there seem relatively few connections made between information and communication technologies (ICTs) and happiness. Affective computing looks more at the recognition and simulation of human emotions, though could clearly extend its scope to encompass the impact of computing on happiness: one Taiwan-

ese research group's work on so-called "orange computing" is a step on this path.[4] There has been more work done on the relationship between Internet use and specific emotions, such as depression or social isolation, though with somewhat mixed conclusions.[2]

One can also see the relative disconnect between ICTs and happiness within Bhutan. The Internet and mobile phones were first permitted at the start of the 21st century, and have grown rapidly since. International Telecommunication Union figures indicate approximately 400,000 mobile subscriptions, with annual growth rates of more than 50%; and 14 Internet users per 100 population (nearly twice the level of neighboring India). That growth has been enabled by a series of policy statements and legislation, most especially the 2004 BIPS: Bhutan Information and communication technology Policy and Strategies.

But BIPS—while mentioning Gross National Happiness—makes no direct link between new technologies and happiness. This has frustrated senior staff in the Ministry of Information and Communication, leading two years ago to a vision statement that sought to assert the linkage between Bhutanese values and ICTs, and more recently inspiring the 2011 policy workshop on "ICTs for Gross National Happiness."

Finding a way forward, though, is not easy. Most ideas and most advice that circulate are of the cookie-cutter variety: standard templates that link ICTs to economic growth, profits, organizational goals, and so forth. Happiness is never mentioned. Bhutan itself seems sometimes like a young, innocent gazelle surrounded by the slavering hyenas of the corporate IT world, just waiting to pounce. Instead, it would like to live up to its billing as the land of the thunder dragon by roaring to impose its own unique agenda.

Linking ICTs and Happiness

So how could we fill in the rather blank space on the map, and relate digital technologies to happiness? An obvious starting point would be a definition of happiness. As befits a topic first discussed hundreds of years B.C. by Aristotle, there is no single agreed definition, though there is some consensus

ICTs and happiness.
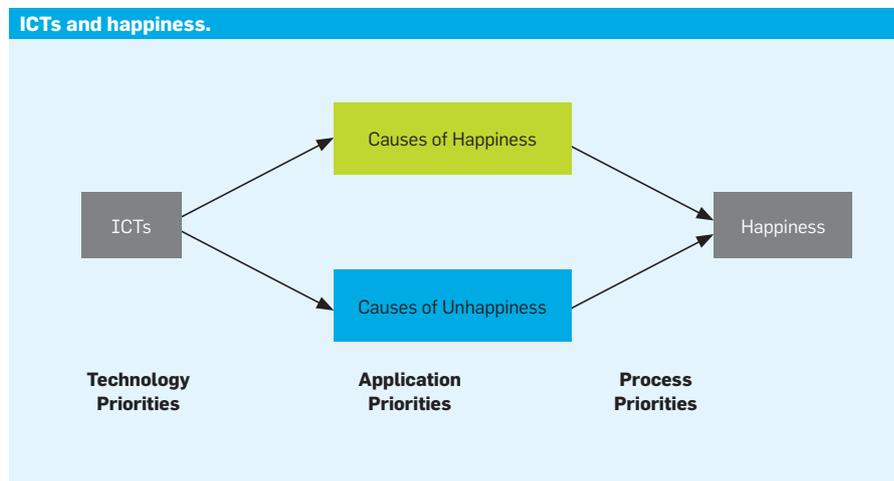
that happiness should be understood as a relatively persistent state of well-being rather than as a passing emotion or a fleeting euphoric sensation.

If defining happiness is tricky, measuring it is even more so.[1] The word rarely translates easily from English, and happiness is a social construct that varies from society to society. As an example, U.S. surveys show higher levels of happiness than those conducted in Japan. It is not that Americans are innately happier, but they inflate their responses because of their social convention that to be happy is important: "the pursuit of happiness" is, after all, a right enshrined at the start of the Declaration of Independence. Conversely, in Japan, there is no such convention; replaced instead with a certain modesty about oneself and one's own fulfillments.

It seems somewhat easier to agree on the substrates of happiness and unhappiness, and these also appear—while acknowledging some local variation—to be more cross-culturally resilient. If we are to take the connection between computing and happiness seriously, then, we would adopt something like the model shown in the accompanying figure. In the remainder of this column, I will discuss ways in which it might be applied, using Bhutan as an example.

Causes of Happiness

Focusing on the application priorities, what are some of the key causes of happiness, and how do they relate to ICTs? Two stand out: jobs and relationships.

A meaningful source of employment and income is central to hap-

piness.[a] What would that mean for a developing country like Bhutan? First, that it should make a strong connection between ICTs and job creation. In many poorer countries, that connection is weak, with ICTs linked more to social than economic outcomes. But Bhutan has pushed for a place in the IT outsourcing market, and recently inaugurated the Thimphu TechPark (see http://www.thimphutechpark.com).

Alongside the generic draw of low-cost, tech-skilled graduates, one can identify a number of Bhutanese unique selling points that may help the country find its own particular niche, and create jobs from technology:

▸ Green IT power: Bhutan is perfectly designed for hydropower. With only 5% of potential sites developed, hydropower already provides well over half of the country's GDP thanks to exports to India,[b] and largely from environmentally friendly "run-of-river" rather than dam-based power plants.

▸ Pervasive English: all schoolchildren are taught in English from elementary school onward, so capabili-

a At least up to a certain level. The still-debated "Easterlin paradox" finds happiness in the U.S. (and other nations of the global North) has flatlined for the past 60 years despite growth in incomes; an outcome attributed to adaptation of expectations and to people comparing themselves relative to others rather than focusing on their absolute levels of material well-being.

b Hydropower also explains Bhutan's amazing growth rates—averaging approximately 7% per annum for the past 30 years, and pulling Bhutan up from one of the poorest countries in the world to being about halfway up the economic "league table," at least in purchasing power parity terms; now akin to countries like Jordan and Sri Lanka.

ties in English are well above those of most nations.

▸ Low attrition: the IT sector is characterized by "boomerang Bhutanese"—those who go to train and work in India for a couple of years, but then want to return home to the comforts, values, and career stability of Thimphu.

▸ Service mentality: it is easy to fall into stereotypes of orientalism or Buddhism, but Bhutan does exude a strong service culture. (A mentality that extends to driving: if there is another country in the world where slower-moving vehicles always pull over to safely let others go past, I have yet to visit it.)

Of course, Bhutan's high-tech dreams may turn out to be only that, rather than realities, and ICT jobs—even if we extend the boundary to include those running cybercafes, selling cellphones, or teaching hands-on skills—will only ever deliver well-being to a minority of the population. Countries like Bhutan will therefore also need to get serious about e-agriculture, since farming still forms the source of livelihood for the majority of the population. For poor farmers, driving up income does correlate with increased happiness, so ICTs can be introduced to support agricultural extension work—providing information on better planting, cropping, and animal husbandry that drives up yields—and to help monitor market prices so farm outputs can be sold for the best price.

Close relationships with family and friends also create happiness. ICTs clearly have the potential to disrupt these relations—ask any parent of a teenager who has seen their kid disappear for several years into the virtual worlds of Azeroth, Liberty City, or the like. Yet social media, Skype and other applications can help maintain—perhaps even strengthen—social capital at a distance. It is questionable whether any active invention or intervention is needed to help foster ICT-enabled links between migrants and their families. However, connections to "back-home" communities can be developed using applications like StoryBank (see http://www.cs.swan.ac.uk/storybank) built around digital storytelling within communities and capturing both age-old stories alongside the specific narratives of current lives.

In particular—and acknowledging the Good Samaritan—helping others seems to make us happy. This means that in Bhutan and elsewhere, we should be bringing to the fore the kind of e-mentoring, e-volunteering, e-assistance applications that have somewhat languished on the sidelines of digital economy discussions. The same is true for collective altruistic endeavors seeking to harness the power of new technology. We have patchy examples of these from around the world, such as Colombia's "digital brigades" or the Random Hacks of Kindness events. But how can such initiatives be more widely replicated, especially within the environment of developing countries like Bhutan?

Causes of Unhappiness

If the causes of happiness are multiple so, too, are the causes of unhappiness. We can use tools like the Holmes/Rahe scale of life stressors to identify poor health as a key source of grief; highlighting the importance of health informatics and, most notably for developing countries, the need for further development of m-health applications.

Empowering citizens via ICTs means, unfortunately, empowering them to do bad things as well as empowering them to do good things. There is evidence that e-pornography, online gambling, and computer crime lead to more unhappiness than happiness: "Internet use for the purpose of mischief [is] associated with lower levels of happiness."[2,5] So it seems the watchwords will need to be "regulated empowerment"; with countries like Bhutan not being afraid to block and control—as they have continued to do with television—and working to ensure ISPs see themselves as co-regulators, taking action against those who misuse.

An actuality or perception of social exclusion fosters unhappiness.[3] The specifics of social exclusion may vary from society to society, but there are recurrent categories of excluded individuals—the elderly, the disabled, the incarcerated. As yet, these groups rarely appear at the top of the list for development of new ICT applications; reflecting their marginalized status. But using happiness as a guide would

change that. For example, given its Buddhist foundations, Thailand has also sought to integrate happiness into its development and ICT policies. It recently began an "IT for inmates" initiative, with the specific intention of using new technology to improve the aspirations and prospects of the country's prisoners.

A Challenge to ACM Professionals

Lastly—and looking at the process priorities by which technology is harnessed to make relevant applications—a recurring theme has been the need for new applications to be written. With that in mind, I would like to issue a challenge to ACM professionals: to design the best app to advance human happiness; a H-*app*-iness Challenge, if you will. It is an ideal remit for a BarCamp or for crowdsourcing from a group of graduate students (as well as for late-night conference conversations). One would likely go back to first principles—as I have started to here—of what causes happiness and unhappiness in a particular context like Bhutan's, and then design something practical to address one of those factors.

The pursuit of happiness is a founding principle of the U.S., a guiding principle for Bhutan, and a matter of ever-greater discussion worldwide. It is time we IT professionals got more involved, with some thinking outside-the-box to consider our work's contribution—or otherwise—to gross national happiness.　　　　Ⓒ

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Richard Heeks (richard.heeks@manchester.ac.uk) is the director of the Centre for Development Informatics at the University of Manchester, U.K.; http://www.cdi.manchester.ac.uk.