1:1 with Bill Buxton

Reported by Aaron Halabe
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Call Bill Buxton a researcher, musician, mountaineer, industrial designer, educator or historian. By any measure he's an accomplished Renaissance man. But rather than see himself as a masterly individual, he sees a technologist working to "make us smart collectively."

"The foundation of academic life is the community of scholars," he says, emphasizing community. "There's no such thing as an individual genius."

Buxton, 57, is a highly-respected computer scientist and designer specializing in the human aspects of technology. Hired in late 2005, he has the latitude to work collaboratively with any Microsoft Research (MSR) group, and he expects to spend three to four months at a time moving among the company's five research labs around the world.

That same intellectual freedom enabled Buxton to produce groundbreaking work in computer-input technologies and human-computer collaboration at Xerox's research center and the University of Toronto. His major areas of interest involve pen-based computing and technologies targeting entertainment, education and mobility.

"Bill brings amazing creativity and an intense drive to make a positive difference in how people experience technology," said Rick Rashid, senior vice president of MSR.

"I see Microsoft making the transition from an engineering-driven company to a design-driven company … and that's not an anti-engineering statement, because I'm an engineer," says Bill Buxton. Photo by Hugh Li

Bill Buxton

Age: 57

Birthplace: Edmonton Alberta, Canada

Family: Married with two sons, 30 and 25, and a daughter, 27

Five other things to know:

- Enjoys mountain climbing, skiing, scuba diving and cycling
- Has become an expert in the history and literature of Central Asia
- *Named Veteran Rider of the Year* by the Ontario Horse Trials Association
- Composed music and performed professionally (saxophone and synthesizers) for 20 years.
- Named one of the 10 most influential innovators in Hollywood by *The Hollywood Reporter*

Buxton took time to answer some questions from Micronews.

Micronews: Why did you come to Microsoft?

Buxton: I'm a child of the '60s – I want to change the world and I want to change it yesterday. If I can have an impact on some of the product groups, that's the most amazing opportunity that one who wants to change things can have, and the potential is here. Over the Christmas holidays I worked with Microsoft Digital Image Suite 2006. I'd never heard of it … but it's now my favorite software. It is beautifully designed. It epitomizes what software can be, and some things from MSR have gotten into that product in really short order. It's a really good example of how [MSR] can relate … with the product groups and get wonderful synergies.

Research usually takes 20 years to have large-scale impact. … What's exciting about MSR is that … we have the ability to seize upon those opportunities that present themselves in shorter horizons. The potential is just ridiculous; it's way too much fun.

Micronews: You've been here about five months; how's it going?

Buxton: I really made the right decision. I love my job, and I like the people that I work with as much as I respect them, and that's a lot.

At least 50 percent of the messages welcoming me into the company and asking me to meet or if I could help came from folks in a range of product groups. I cannot imagine this happening in any other company that I've been involved with. This alone speaks volumes about the culture and the respectful and healthy relationship between the research and product groups.

Micronews: What technologies are ripe for refinement or adaptation?

Buxton: I've been playing around with … a partner of ours, Symbol Technologies [which makes] a barcode scanner. They have adapted it into a miniature laser projector. This is promising because … something the size of your baby finger … can be incorporated into a cell phone or a handheld computer so that someone like me, who needs reading glasses, can project a display onto a wall or desk. It's a light that illuminates like a flashlight, but with content. What if little mobile devices have these embedded projection systems? What if we integrate a camera so they become input devices as well? You could make this projected data touch-sensitive and manipulate what you're displaying with the touch of a finger. It can become the most useful tool for collaboration.

An avid mountain climber, Buxton ascends a cliff in Strathcona Park on Vancouver Island, British Columbia. Photo by David Baar

The same is true with the coming organic LEDs, and large-format, color e-ink displays. Within five to seven years it will be cheaper to put on the wall a display with more pixels per square inch than your laptop screen, than it is to put up a whiteboard today with the same square footage. What does that mean for advertising, for education, for your home or office?

Technologies like this are part of a total paradigm shift, and in some form are already being explored at MSR. That really excites the hell out of me.

Micronews: How should people think about the role of design?

Buxton: *As a product designer, if you think that what you're designing is a thing in a box that gets shipped, you've got it completely wrong. You're designing the experience afforded by the contents of that box. That's a much, much larger thing. A mountain bike is not about the bike, it's about the adrenaline rush you get when you're screaming through a mud puddle and over rocks. That should be true about everything we do in our products.*

In many cases we don't measure or … consider the human part of the system. If you understand the human not just as a biological entity but as a social being, an emotional being, you will then approach the design of your systems very differently. Most of us coming from a computer science or engineering background are not particularly well-suited or trained to do that. Understandably so, but it's important that we recognize that and include people who do have those skills in the design process.

In the Vancouver Art Gallery, an exhibit features an annotated history and geneology of Buxton's personal collection of interactive devices. Photo by Greg Van Alstyne

Micronews: Where within MSR do you think you'll have the most impact?

Buxton: I still have a certain part of my heart in the imaging, film and entertainment side of things. So I really want to work in that space, in terms of [research of] cinematography and digital photography. I'm really interested in the larger issue of design, and in some sense one of my goals is to further promote the role of appropriate design. Somewhere down the road I hope Microsoft becomes so committed to this that it has an executive position called Chief Design Officer. I think that's just as important as Chief Technology Officer. This may be an exaggeration, but I see Microsoft making the transition from an engineering-driven company to a design-driven company … and that's not an anti-engineering statement, because I'm an engineer.

I want to make it so that when we bring out products people say: "When is Apple or Sony going to come up with something that good?" That's already happening in many cases. We've got a got great start with products like the Xbox 360 and Digital Image Suite.

Micronews: Describe the role of collaboration in the research process.

Buxton: Our entire culture is based on this cult of the individual and cult of the rock star or sports star hero. Nearly all of our education is based on the performance of the individual as opposed to our ability to work as part of a team, and in particular as a heterogeneous team. We need the same amount of literacy in heterogeneous computer *and* social networks. We have to consciously engineer our teams to bring in complementary skills, to fill areas that we're not good at. We have to know what we are and *are not* good at.

Micronews: Is there a nexus between your previous work in Hollywood and MSR?

Buxton: In that world I was a hammer-maker and not a carpenter. We were making tools for visual-effects people. The software that we developed was used in "Lord of the Rings," "Star Wars," "Spiderman," [and others]. There's not a visual-effects film that's been done in the last decade that didn't use our software. It transformed the industry.

As for MSR, I have this vision of how to transform the relationship between still and video imagery – either by professionals or amateurs. For now, I can say that this company has a suite of technologies but that it isn't yet in the most coherent form, but it could completely transform that industry. My biggest accomplishment in the cinematic world is what I aspire to do at Microsoft, as opposed to what I've already done.

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