Meet Microsoft's guru of 'design matters'

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Bill Buxton is multiplatform the way Leonardo da Vinci was multiplatform. The Microsoft researcher is a technologist, a designer, a musician, an author, outdoorsman and a nationally ranked equestrian.

He has spent decades working on the future of tech, but he paddled the rivers of Saskatchewan last summer in 1,000-year-old technology: a birch-bark canoe sealed with tree sap and bear fat.

At Microsoft, Buxton is a researcher who also has been charged with spreading the "design matters" message to engineers who would rather hack code than clay.

Design matters to Microsoft's bottom line, as Apple leapfrogs the company in market share and market capitalization with the elegant iPhone and iPad.

Microsoft has shown pockets of more sophisticated design with the Windows Phone 7 interface and the Arc Touch mouse, but it has a long way to go. The company remains synonymous with the boxy PC, a cutting-edge device in the '80s that now has the sex appeal of mom jeans.

Hired in 2005 with the assignment to "go make a difference," Buxton is trying to spark a design-naissance inside Microsoft.

He summed up his goal in a meeting with Microsoft Chief Executive Steve Ballmer a few years ago. "We need to have equal competence,

which would be design, experience and technology," Buxton recalls telling Ballmer. "Every project needs to have equal status at the table on each of the three disciplines."

He is up front about the challenge.

"My job is to be frustrated," he said via phone from Revelstoke, B.C., about to disappear for a few days on a backcountry ski trip.

Buxton, a human-computer interaction expert, is one of 850 researchers that Microsoft hires to conduct scholarly research on technology and to publish reports in academic journals. What they work on may or may not ever become part of a commercial product.

Microsoft annually spends more than $9 billion on research and development. While the number also includes money spent on developing commercial products, the amount remains staggering. The National Science Foundation, in comparison, received $6.9 billion in federal funding in 2010.

With his silver head of '70s rocker hair, many compare Buxton to Doc Brown, the inventor in the movie "Back to the Future."

But Buxton has more artist and jock in him than mad scientist. He has the unique ability to speak about technology without actually talking about technology.

His 2007 book on design, "Sketching User Experiences," flits from the design of the iPod to "The Wizard of Oz," the book "Black Like Me" and the plays of Bertolt Brecht. At the Microsoft MIX conference in Las Vegas last year, he played a digital saxophone and exhorted the developers to soyez un luthier. Be a lute builder.

The moral was that, instead of dismissing the computer mouse as a utilitarian $15 pointing device, think of it as a violin bow that starving musicians purchase for $10,000.

"I don't know so many Renaissance people who have all these multiple and intersecting lives," said Henry Hong-Yiu Cheng, a friend at design firm IDEO. "He's multidimensional, whereas most technologists are much more unidimensional."

Rather than a blind worship of the deus ex machina - the divine in the machine - Buxton espouses a humble respect for the man and the machine.

He posits in his book: What would you use to guide you if you were paddling along the coast of Greenland? Your mobile phone? You wouldn't have cell coverage. Even if you did, it would be so cold the battery would freeze. And if your battery would work, you wouldn't want to take your mittens off to operate the phone. Also, it would sink if it fell into the water.

Using a paper map also would mean removing your mittens. If it got wet, it would be useless.

The best tool, he wrote, is a three-dimensional carved wooden map, which Inuits have used for centuries. It floats, can be read with a mitten on and can be read by touch during the six months of the year when it's dark.

"In order to design a tool, we must make our best efforts to understand the larger social and physical context within which it is intended to function," he wrote.

A Canadian son of a preacher, Buxton spent his childhood living all over

Germany and Canada after his dad became an army chaplain. Buxton studied music - the tenor saxophone, specifically - for his bachelor's degree at Queen's University in Kingston, Ontario, and worked as a professional musician for more than a decade.

Frustrated by digital-music instruments available in the 1970s, he wrote to a computer-science professor at the University of Toronto and asked for advice. He became an artist-in-residence at the university, raised a $250,000 grant to build a digital instrument and earned a master's in computer science. They called the musical instrument a "Structured Synthesizer Sound Project" so it would appeal to scientists.

"The Structured Synthesizer Sound Project was just mind-blowing for doing it in the 1970s," said Ron Baecker, a computer-science professor at University of Toronto.

Buxton stayed on as a lecturer afterward and worked on the project until 1987, when he started a branch of the Xerox Palo Alto Research Center in Cambridge, England, Xerox PARC-EuroPARC.

The electronic drum he designed in 1984 was one of the first multitouch devices. That technology has evolved into technology on smartphones and iPads where we can place more than one finger on the screen to manipulate what's on screen.

Buxton considers the Catalan flag a better example of multitouch. According to the legend, when the Count of Barcelona Wilfred the Hairy was wounded in battle in 897, King Charles the Bald dipped his fingers into his wounds and drew them across his shield. Red stripes across a yellow background became the flag of Catalonia.

In 1994, Buxton joined Alias Research - now part of Autodesk - as chief scientist, then became chief scientist at Silicon Graphics Inc., when SGI

acquired Alias.

He started writing his book, "Sketching User Experiences," to bring everything he had learned about design and human interaction together. After the book was done, he said he just thought about the people he respected most and who employed them, and most worked at Microsoft Research.

"It was really one of those no-brainer hires. ... Bill's been one of those people who has helped shape the way people think about design for a long time," said Rick Rashid, senior vice president of Microsoft Research.

Beyond his body of work, Buxton has the ability to inspire others around him, Rashid said. "He comes into the office, and it will be like there was a star burst."

Buxton has worked on concepts and prototypes that influenced the development of Surface, the Microsoft touch-screen computer that started out the size of a coffee table and is now about the size and thickness of a big flat-screen television. His early work helped shape Microsoft's unified communications software Lync and stylus-based technology like the painting software Project Gustav.

"He's been a force for good in what has sometimes been seen as a pretty conservative company," said Andy van Dam, a Brown University computer-science professor. It's "a company that like all companies becomes a victim of its success and has to preserve a legacy as much as move in new directions and reinvent itself."

As for competing with Apple, Buxton says he doesn't want to speak specifically about the company, but he wrote extensively about the iPod in his book.

"It would be a meaningless victory, or even meaningless competition to compete with people who weren't really good and you didn't really respect," he said.

And Buxton does like being best.

At age 40, he grew interested in horseback riding. So he wrote a letter to a former Olympian and said, "I want to go to the Olympics. Will you teach me?" He did not own a horse or a saddle. The former Olympian took him on as a student.

The Ontario Horse Trials Association named him Veteran Rider of the Year eight years later, and he became a member of the talent squad of the National Team in Canada.

BILL BUXTON

Job: Principal researcher at Microsoft since 2005

Age: 62

Residence: Toronto

Family: Married with three kids

Education: Bachelor's degree in music from Queen's University in Kingston, Canada; master's degree in computer science from University of Toronto; honorary degrees from Technical University of Eindhoven in the Netherlands, Queen's University and Ontario College of Art and Design in Canada

Experience: Principal at Buxton Design, chief scientist at Alias Wavefront and Silicon Graphics Inc., research scientist at Xerox PARC-EuroPARC, associate professor of computer science at the University of Toronto

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