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Digital Divide - Outgoing Press Releases

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Jonathan M. Young
07/14/2000 07:53:02 AM

Record Type: Record

To: John W. McClane/WHO/EOP@EOP

cc:
Subject: FW: Bill Gates Comments re Disability Digital Divide

Pls printout, review, and add to dig divide folder
---------- Forwarded by Jonathan M. Young/WHO/EOP on 07/14/2000 07:52 AM ----------

**Gregg Vanderheiden <gv@trace.wisc.edu>**
07/12/2000 06:07:26 PM

Please respond to gv@trace.wisc.edu

Record Type: Record

To: Thomas A. Kalil/OPD/EOP, Jonathan M. Young/WHO/EOP

cc:
Subject: FW: Bill Gates Comments re Disability Digital Divide

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In case you weren't aware, Bill Gates made some comments in March regarding the "lesser-known" digital divide related to disability. I've attached the press release from Microsoft re this.

Perhaps you already knew about it, but just in case.

Gregg
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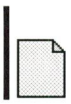 - Bill Gates Press Release.doc

# Gates Describes Microsoft's Efforts to Empower People With Visual Disabilities Through Technology

**SAN JOSE, Calif., March 10, 2000** -- Describing a less visible "digital divide" that confronts people with disabilities, Microsoft CEO Bill Gates said that new and future technology Microsoft is developing will ensure blind and visually impaired people experience the full benefits of computer technology.

"There's a flavor of this digital divide that has gotten less visibility, and that's the one that we're gathered here to think about," Gates told an audience of nearly 650 people on hand for the Sensory Access Foundation's annual breakfast. "I think most of us are here to rededicate ourselves to helping with this digital divide, and that's to make sure that people with disabilities can be empowered through technology."

Noting that the PC took a step backward in accessibility for the visually impaired when it advanced from the character mode interface to the graphical user interface, Gates called the recent release of Windows 2000 "a big step forward" in making up that difference. By adding graphical elements such as photos and icons to a user's screen, the graphical user interface made it more difficult for add-on utilities to describe information on the screen. Windows 2000 helps bridge that gap with new accessibility features such as "Narrator," a text-to-speech utility built directly into the operating system. Narrator enables blind and visually impaired users to have some critical windows and menus read aloud when they're displayed, hear typed characters read aloud, use their mouse pointer to follow an active item on the screen, and adjust the speed, volume and pitch of the computerized voice.

Windows 2000 also includes software hooks based on Microsoft Active Accessibility that make it easier for software programs that run on top of the operating system to describe information on the screen for people who are blind or have visual impairments. "Windows 2000 is a big step forward in terms of that architecture," Gates said.

In addition to improved technology included in Windows 2000, Microsoft is working to develop future technology that will make technology even more accessible to blind and visually impaired users. For example, thanks to Microsoft's work with AT&T and other partners, voice synthesis technology within the next three years will become so clear that users won't be able to tell if it's a computer or human speaking, Gates said. Future voice synthesis technology will also allow users to adopt different voices for different purposes. "You could say if it's an error message, I want this voice; if it's a nice thing, I want this other voice," Gates said. "And so we'll basically be able to mimic the sound of different speakers and make it sound very reasonable."

While speech and handwriting recognition tools are more challenging to develop than voice synthesis features, Gates predicted the obstacles to developing those capabilities would be solved within the next decade. "That will allow us to take this idea of using the computer as a tool that lets everybody have access to the latest information, lets everybody reach out and communicate, lets people share in new ways [and] help us to realize that dream," Gates said.

One of the biggest challenges, Gates said, is ensuring wide adoption of technology advances that help people with visual impairments. "How do we get every software application to be enabled so that people with visual disabilities are able to benefit from those applications?" he said. "How do we get companies to reach out to

employees so people who've got talent, together with these tools, can express those talents as well as any worker who's out there?"

Gates said non-profit organizations like the Sensory Access Foundation, which helps blind and visually impaired people find and retain competitive jobs through the use of technology, could play a big role. And Microsoft's founding role with the Able to Work Consortium, a group of companies working to share tools and strategies for recruiting people with disabilities, will ensure technologies make their way into the workforce.

"Overall I want to paint a very optimistic picture here," Gates said. "Because of the attention paid to this, because of the importance of the cause, we'll be able to harness technology in a way that's very exciting. And that's part of what makes working in this business so much fun."

**Remarks by Bill Gates**
**Sensory Access Foundation**
**San Jose, California**
**March 10, 2000**

**BILL GATES:** Well, good morning. It's fantastic to see the turnout here for what is a wonderful cause. I think many of us feel privileged to be involved in the incredible advances taking place. The miracle of Moore's Law and the wonderful products that that's generated really have to continue to surprise and amaze all of us.

We are creating the best tools there have ever been. And these tools are incredibly empowering. Going to visit a school and seeing kids using PowerPoint or seeing kids going out on the Internet to find information, collaborating with other kids in distant countries, it's really sort of a dream come true for everyone who's worked in this business.

It's a fast-moving business. It's one that you can never get bored in. In fact, later today I'll introduce Microsoft's hottest new product. It's kind of a new thing for us. It's a game console that will be called the X-Box. And hopefully that will bring a lot of empowerment into the living rooms of America. It's mostly to play games -- (laughter) -- but I hope they're educational games.

Well, whenever we have something that's so wonderful, we have to think, you know, how can we make sure that it's broadly accessible? How can we make sure that everybody has a chance to benefit from it?

If you go back in history long enough, you could say that reading and literacy, access to books is something that eventually society decided to be totally pervasive. Here, with technology, we often talk about the digital divide, the kids who have access, the people who have access and the people who do not.

In the United States today, it's pretty phenomenal that the majority of homes have a personal computer. It's about 55 percent, the majority of

which include Internet access. And that's gone up very dramatically over the last five years. In fact, you know, two years ago the business magazines said that PC penetration was stuck at 30 percent, would never go above that, and you know, it just continues to rise.

And as we think about this, it's not just the PC. It's the new environment is one of many different devices: your cell phone with a screen, your connected TV, your tablet-type device that you'll be carrying around. So all these devices will connect together and bring a whole new form of communication.

It's kind of wild now to see all the teenagers using instant messaging, and trying to think, "Well, geez, I didn't grow up with that." How can we make sure we have enough teenagers around that we design our software knowing about this instant messaging thing, where literally two kids can sit in the same room and use instant messaging to communicate with each other?

It reminds me of how people used to make fun of us that we'd send e-mail to each other when we were just three or four offices away. So now we're getting a taste of our own medicine with people who are taking this to a new level.

But despite the wide availability, there's a lot of people not getting the benefits of technology. There's many ways to look at this. You can look at it on a global basis, you get extreme statistics like the majority of people in the world have never used a phone, not to mention a PC. And if you think on a global basis, there's a lot of things like access to good health, the kind of vaccines and medical treatment we take for granted that are very important.

Closer to home, here in the United States, when people think about the digital divide they mostly think about the poor communities and households and how are they going to have a chance to get the kind of learning and empowerment that comes with the PC?

There's a lot being done on that. We're making sure that every library in the country has a great PC with Internet connection. The schools are stepping in and slowly but surely I think that's a problem that we'll make very good progress on.

There's a flavor of this digital divide, though, that has gotten a lot less visibility, and that's the one that we're gathered today to think about and I think most of us here to rededicate ourselves to helping with this digital divide, and that's to make sure that people with disabilities can be empowered through technology.

This is a case where you can actually provide something that enables people to have jobs that they never would have been able to do without technology. It's pretty simple now to go out to the Internet and get the latest news, latest information, communications from a friend, and through a personal computer, with some sort of voice synthesis capability, be able to listen to what's going on and therefore void the need to have to be able to read it off the screen.

So advances like this are going to make a huge, huge difference. And, you know, how do we get this to be pervasive? How do we get every software application to be enabled so that people with visual disabilities are able to benefit from those applications? How do we get the kind of awareness and training? How do we get companies to reach out to employees that people who've got talent, and together with these tools, that they can express those talents as well as any worker who's out there?

Well, it takes a lot of elements coming together. It takes a non-profit organization first and foremost, organizations like the Sensory Access Foundation. One of the organizations I was amazed to find out about for the blind is actually outside the United States. In Spain they a long time ago decided to take the profits from the lottery and dedicate them to this group called ONCE [Organización Nacional de Ciegos Españoles], which is the organization for the visually impaired in Spain. And I think when they did that; they may not have understood how much profitability the lottery was going to generate. (Laughter.) Because ONCE went on, you know, to buy real estate and TV stations and it's a very well endowed organization. And as a result they've made themselves a leader not just for these issues in Spain, but in the technology for benefits on a global basis.

And so, about four years ago we did a development agreement with them. They sent some people over to Microsoft. This whole area is one where a lot of people have come to us over the years and said, your products are the ones that can make a difference if you go in and do the technology work.

So let me talk about this technology angle a little bit. When PCs first came along, they had the famous character mode interface. In fact, there are probably some kids using PCs today who've never seen a character mode interface. That was MS-DOS and your screen was just text. And in those days hooking up something that would do voice synthesis, so that what was on the screen was very simple, because there was just text up there and fairly easy for this add-on utility to go in and grab the characters and enunciate what was on the screen.

But then of course came graphical interface, the great pioneering work that Xerox did, the machines from Apple, Microsoft Windows. And for the sighted that graphical interface was a wonderful step forward. You get icons, you get fonts, you get all these things. But it was actually a step backward in terms of accessibility, because it meant that there was no way for utility to get in and see what was on the screen. All it would see was a bunch of graphics. And the idea of, well, what should it speak, what was the text that should be associated with that, it was completely unknown.

So we went through a few years there where actually the empowerment by PCs of the visually disabled went down. And as Microsoft ran into some people who had seen this firsthand, we got a lot of good guidance that we could do better and that we should step up to a role in this.

And today we have about 50 people in our Accessibility Group, and the majority of that is dealing with the visually disabled. That is the hardest problem of all. You know, things where somebody can't use the keyboard, actually adding software that lets you have an alternate keyboard or something other than a mouse, or making sure that if you're deaf that whatever audio signals we're using, that we have a visual equivalent. The architecture to do those add-ons is fairly straightforward. The one that's a challenge is to make sure that whatever happens up on the screen, that you can create something to the voice synthesizer to describe what's going on there.

Well, we took a big step forward with a recent product release of Windows 2000. We actually put in this narrator that's built in and it's been kind of amazing, we have all these users, general users, who actually get a kick out of using this narrator and trying it out. We only put it in there with the voice synthesis for the visually disabled, but it turns out that for just reading text when you're off doing something else and your PC's just sitting there -- that's something a lot of people are taking advantage of.

As you heard from the demonstration this morning, voice synthesis is reasonable on a computer today. It has that kind of nasal twang. You would never be confused about whether that's a human or a computer. (Laughter.)

In the next three years with some work that we and AT&T and a couple of other companies are doing, voice synthesis should get good enough that it isn't as clear to you whether it's a computer or a human that's doing that speaking.

In fact, one of the technologies we're working on is that we would listen to somebody speak and we would capture the essence of their voice and then we could take and you could apply in whoever's voice, your own voice, some actresses voice, a friend's voice and we could use that for the different utterances. In fact, you could say, okay, if it's an error message I want this voice, if it's a nice thing I want this other voice. And so we'll basically be able to mimic the sound of different speakers, and make it sound very reasonable.

Of course, on the other side it's more of a challenge. Voice synthesis is easier than voice recognition. In voice recognition there is incredible progress. Certainly in limited domains where you understand the vocabulary and the kind of sentences that might make sense, you can get very high recognition rates. It's nowhere near good enough today that you'd say if you're able to use the keyboard that you'd prefer to use voice input. That's kind of been the Holy Grail. You know, when I was a student at Harvard, the defense DARPA group was giving out money to universities that said, yes, in three years we'll have great speech recognition.

Well, like so many things that have to do with human abilities, the more we learn about it, the more respect we gain for how complex the way that the brain processes information is.

It turns out that just understanding phonemes and even grammar can't help you do good speech recognition. You actually have to model the knowledge; you have to model the semantics.

It's a very tough problem, but with the magic of Moore's Law, more memory, more processing speed, this is exactly the kind of thing that we will be able to solve.

And so the frontiers that are out there -- great handwriting recognition, great speech recognition, even having the computer have a visual capability so it can see who's coming in, what's going on, all of those things undoubtedly will be solved in the next decade. Some people would say as soon as three or four years for some of those, but I don't think there's any doubt that in the next decade that will happen.

And that will allow us to take this idea of using the computer as a tool that lets everybody have access to the latest information, let's everybody reach out and communicate, let's people share in new ways. It will help us to realize that dream.

Along the way we'll have to do a lot of special work to make sure that we keep the visually impaired in mind, and make sure that we're beta testing the products for those people and working with the entire software industry, making sure that the focus of philanthropy that's important in this area, that that continues to be strong.

But overall I want to paint a very optimistic vision here. I think because of the attention that's being paid to this, because of the importance of the cause, we'll be able to harness technology in a way that's very exciting. And that's part of what makes working in this business so much fun.

So thanks to you all for coming and participating in this important cause.

Thank you.