

## “How Technology is Changing the Way We Live and Communicate”

It's a great pleasure to be here this afternoon with a group that has played such a vital role in the important issues facing our community. Given the leading role this community plays throughout the world, it's an example of how business and government and citizenship can work together to focus on the issues that really matter to all of us. I must say, I was very appreciative of the especially warm welcome that I received from many of your members prior to the luncheon, and looking at that videotape was great for me because it gave me a sense of the great history of this organization.

I believe the Bay Area in general, and Silicon Valley in particular, is a state of mind as well as a location.

It's, of course, the original epicenter of technology and change, but it's spread to other locations in the world -- and continues to do so at an increasingly revved up rate, whether it's Austin, Boston, Seattle, Tokyo or India. It's change led by technology – a change that is taking all of us to a different level.

Of course, I'm not just talking about another generation of technology replacing the old, with incremental increases in productivity. I'm talking about the rapid emergence of a ubiquitous information utility that creates the possibility for worldwide communication in a personal, in a warm, in a friendly manner.

An opportunity for us to move away from the description of technology or the Internet as cyberspace, a word that suggests remote, alien, cold, hostile, and to a world where technology is, in fact, warm, personal, friendly, intimate.

Now, of course, great transitions such as the one I and other speakers talk about, and all of us experience every day, do not come about without cultural and socioeconomic problems to solve and issues to face.

You may not know it, but as the telegraph came into its own, there was information overload, and yes, there were hackers. They were called something different, but that's in fact what they did. And as the Industrial Revolution evolved, the family structure was eroded as people moved from family farms to cities. As automation took root, the nature of work was redefined and entirely new skills had to be developed.

Today, we, like the generations before us, face another important socioeconomic issue that is tied to the Internet Revolution – and that issue is the Digital Divide.

Steve Case, now chairman of AOL-Time Warner -- talk about change -- reminded us in a recent talk that 60 percent of households with incomes over \$75,000 own computers, but only 10 percent of our poorest families do.

Closer to home, the Bay Area Council's poll found that nearly 80 percent of the Bay Area's residents use a computer regularly. That same poll found that people with lower incomes or less education are noticeably less likely to use a computer or access the Internet. Only 46 percent of those making under \$40K a year, and only 40 percent of those with a high school diploma or less go online -- compared to 81 percent of those making more than \$80K and 78 percent of college graduates.

This data indicate that the gap between the Internet haves and have-nots is widening. It's widening based on income, education, ethnicity, geography as well as other demographic factors.

I think this is an issue that we must actively seek to head off. The goal should be to make technology available and accessible to everyone.

Public and private agencies need to strategize together. And those of us in the high-tech industry need to think seriously about how we can change the Digital Divide into an inclusive environment by creating a digital bridge. It's not only our obligation. It's good business.

In a networked economy, people who are already connected benefit every time someone else is connected. This is known as, for those of you who study these things, Metcalf's Law. So the more people are connected the greater a win/win situation we have.

Many countries, communities and individuals are already leapfrogging. As we work toward making technology available and accessible to as many as possible, a major benefit will eventually develop -- a truly diverse workforce.

Just think about it, technology not only erases the boundaries of time and space but technology has no prejudices. Anyone can play, if only we can find a way to get everyone plugged in.

We need to develop a policy of e-inclusion, and industry leaders, particularly industry leaders in high-tech, must play a major role. E-inclusion should be the underlying principle for all the e-programs out there -- such as the federal and political e-rates, E-Gendas and E-Contracts. We should make very important efforts to ensure that no segment of society is excluded from participation.

Of course, education is an area crucial to building the digital bridge. Education for everyone -- inside and outside the school walls. But for a moment, let's concentrate on education for K-16.

Now, I am deeply honored and deeply privileged to have become the CEO of a company like HP. HP, as you all know, has a great legacy. And we also have a wonderful future in front of us. But part of what created this great legacy, and part of what will help build our shining future, is what I call the shining soul of this company. And yes, we at HP are very focused on a lot of reinvention. But we talk always about preserving the best and reinventing the rest. And what I'm about to talk about are things that HP has been doing quietly for many years -- that I believe represent the true shining soul of this company -- that which is special and which must be preserved and built upon.

For decades, HP has been quietly providing technology, cash and employee volunteers to help improve the quality of education for everyone. Seventy percent of HP's philanthropic giving supports education. Over the last 20 years, our annual contributions have averaged about \$60 million. That's more than \$1 billion in philanthropic grants since 1980.

Here are examples of just three initiatives we're currently involved in:

HP's Diversity in Education Initiative (DEI), a five-year, \$4 million initiative that's working to strengthen math and science skills for K-16 students, and ultimately guide students to attend and complete engineering school. This program is specifically targeted to low-income, minority communities.

PowerUP™, a cooperative effort that involves more than a dozen nonprofit organizations, major corporations and federal agencies.

We're also helping to create community technology centers where everyone can go to get access to computers and the Internet.

The Diversity in Education Initiative (DEI) was formed in 1997 by HP and the Hewlett-Packard Company Foundation to improve representation of women and underrepresented minority groups in the U.S. engineering workforce and engineering schools.

DEI supports urban university and K-16 school partnerships that initiate or expand effective programs serving African American, Hispanic, American Indian and female students. DEI engages students in high-quality science and math from the time they enter kindergarten, and encourages them to pursue an undergraduate engineering degree.

We grant between \$120,000 and \$360,000 each year to high school seniors and undergraduate college students who will be engineering or computer science majors. Between the scholarship and internships, the total value of each grant is about \$33,000 per student.

And while the money certainly helps, we also match each HP scholar with an HP e-mail mentor. During the school year, each scholar corresponds with his or her assigned mentor who encourages the scholar, offers advice and tips on resume writing and interviewing.

We employ all HP scholars in paid internships each summer at HP. I met a great number of them when I first came to HP and they are a fired-up and enthusiastic group of kids. Just the kind of people we need.

The program has had an immediate and positive impact. Fewer than 35 percent of freshman minority engineering majors ever graduate with an engineering degree. So far, the retention rate for HP Scholars is 90 percent.

As an example of specifically targeting skills and technology that's accessible to everyone, in El Paso, we've reached the fourth poorest census tract in the U.S. HP Scholars there have come in first and second in a statewide engineering design competition -- and brought real diversity to that competition.

PowerUP is a private-public partnership that's bringing computer access to children by creating thousands of technology centers in poor communities over the next few years.

I'm personally involved on the board of PowerUP, along with Colin Powell, Steve Case, Leon Panetta, Jack Kemp, Roger Staubach and others based in schools, housing projects and community centers.

PowerUP is not only working to give under-served children access to technology, but also the guidance and support to use it. PowerUP is about offering Internet access, interactive programming and people to support the kids. Our ultimate goal is to not just provide access to and expertise for the Internet; it's to leverage technology's power and the potential of the online medium to help young people develop perspective, character, competence and skill.

PowerUP will provide 50,000 computers and 100,000 Internet accounts for free access to sites throughout the country.

The third example is one of our most recent -- community technology centers.

These centers are used by seniors, children and people with disabilities. And it literally is a community center where technology is available. You can imagine the possibilities here. What we need at this point are a few serious partners.

Those programs are just some examples of the foundations for the bridge we're building to cross the Digital Divide -- the bridge over which all of us must move to total e-inclusion in today's world.

It is a world where we believe that three vectors of technology are converging. It's important to understand what's occurring at the intersection of these three vectors to fully understand the full power of what's happening.

The vectors are:

E-services, which are any assets that can be turned into a service for delivery over the Net to drive profit, create revenue or generate efficiency.

Appliances that use or will capitalize on these e-services. You know them today as PCs, PDAs, cellular phones and pagers. They're going to become anything and everything that can hold a small and increasingly much smaller microchip.

And, of course, the infrastructure that's necessary to support millions and millions of transactions and appliances.

The convergence of e-services, appliances and infrastructure is promoting intellectual pursuit, commerce and exploration via the Net. Until recently, companies have pretty much focused on delivering technology through computers via the Net. That's changing.

On the educational front, we'll find appliances, tools like the one I have here. I have promised the people who are developing this that I won't talk much about it, and this is probably the last glimpse you'll get of it for a few more months because it's still in prototype. But this is the first handheld learning appliance -- this one geared to middle and high school students. Actually, you'll see this in the summer.

This little Internet-ready, affordable, really affordable -- affordable for everyone -- device will be used to offer interactive lessons in a variety of subjects. It will be intriguing to your children -- and helpful to their instructors.

Imagine this: students run into their first class of the day. As they are getting settled, the student reaches into his or her bookbag and pulls out their learning appliance preparing to follow along with the preplanned lesson.

This appliance opens up new possibilities for how educators can teach. They now can have the world at their fingertips in the classroom. Getting bored in a French class? Connect with a class in France.

This technology has the potential of creating a revolution in education.

Will the public respond favorably to this kind of tool -- the first student Internet appliance? We think so. Reminds me of our first consumer product.

Pundits didn't think the HP35 calculator had a chance back in 1972. It replaced the \$25 slide rule. What people said then was, "No one will pay more for a scientific calculator."

Our inventors -- and this is a company founded by inventors, based on invention, with a proud legacy of invention -- our inventors said if we could sell 10,000, we'd get back our cost. So they decided it was worth the risk. The first year we sold 100,000, and continued to do so every year until the next generation came out. That was HP's first consumer product.

The fact is that technology can make learning simple, interactive and effective. And young people can be enthusiastic about these new tools.

Appliances such as I've just showed you and won't show you for a few more months, but watch. These are not some distant possibility. They are either in production or being built right now in HP Labs.

We have an environment in HP Labs that we call Cooltown. Cooltown is an environment that helps us envision the possibilities where technology and e-services are accessible to everyone around the world. In Cooltown every thing, every place, every person, every context is connected to the Web and can communicate. We believe that's where the world is going. That everything will be connected and services can be ordered at anytime from anywhere by anyone.

Labs is part of another wonderful project called LINCOS. Engineers are not good at acronyms, I might add. But this stands for Little Intelligent Communities. We are doing this now throughout Latin America, beginning in Costa Rica. This concept is the opportunity to establish digital town centers in the developing world. These centers have computers, printers, scanners, cell phones and other equipment, with a satellite link to the Internet and fired by solar power, all tucked in a shipping container and protected appropriately from the elements. So, that literally anyone can become connected.

So, what's in store for the heart of Silicon Valley and a great driver of the new millennium? I'm not sure we will be commuting to work like cartoon character

George Jetson did in cars that never touch the ground. I'm not sure that robots will clean our houses or videophones will be ubiquitous.

But I can tell you, and believe that you agree, that the future of our success -- here in the Bay Area, the nation and throughout the world -- will significantly depend on how prepared our young people are for the challenges this new millennium brings.

And our young people come in all sizes, all shapes, all colors, all backgrounds and all nations. So if we want the world to fulfill its real potential, we have to make all of our children truly prepared. It's not only the right thing to do; it's good business.

Let me pause there and say why I believe so strongly that it's good business.

Invention -- which is at the heart and soul of what HP has been about and must continue to be about -- invention depends fundamentally on creativity. And creativity, I believe, springs from a diverse group of people talking about the possibilities. And when I say diverse I mean people who look different, people who think differently, people who have different backgrounds, people who have different skills, people who have different styles. I believe diversity is critical to creativity. And I believe creativity is at the foundation of invention. And so we must include everyone. It is at the heart of our success going forward.

So if the Silicon Valley is truly a state of mind, as I said earlier, we must develop a mindset of e-inclusion for the rest of the world to model.

I know that the corporate citizens of the Bay Area will continue to work together -- along with partners across the country and around the globe. I believe this community has an opportunity to be a role model for e-inclusion, to be a role model for using technology to bring people together, to bridge the gaps between our communities, as opposed to widening the divide.

I hope we can all work toward enlarging the circle by inventing new ways and new products to build that bridge -- turning technology into positive tools -- spreading the wealth of knowledge to all.

Remember as we do it that today we are experiencing inventive products and services that we didn't know we needed until they were invented.

I think people are by nature inventive and what we need to do is nurture that tendency.

Right now, today in HP educational programs, we are growing a quarter of a million new inventors -- and we plan to do more.

Diversity drives creativity. Creativity is at the heart of invention. And this is how it all begins.