



12 **SANTA CLARA, California—**

From the sidewalk on Mission College Boulevard, the businesspark feels as quietly busy as a CPU. Here and elsewhere in this Silicon Valley of macadam and BMWs, rise gleaming and resolutely opaque headquarters of such high-tech companies as Aldus, Nokia, Ames Research Center, Stanford Research Institute, and Intel Corporation. Playing with the metaphor, one can see in this urban landscape the tiny architecture of the computer chip writ large.

Inside the headquarters of the world's largest chip-maker, Intel CEO Craig Barrett talks to *Northwest Education* coeditor Denise Jarrett Weeks about Intel's education initiatives and his personal hopes for public education in the United States.

What role should business have in K–12 education?

To be an advocate for an improved and continuously improving K–12 system. Business can say such things as, “Hey, we operate on an international basis; we see what the competition is like internationally.” We can also do things in a small way—and I say “small,” because K–12 funding, the size of the K–12 system, and the diversity of 15,000 semiautonomous school districts make it difficult for a business or even a collection of businesses to do anything across the board—for example, you can train people how to use technology. The Teach to the Future program that we run is an example of what industry can do.

We [model] how to bring problem-solving methodology into the school system. We in business solve problems every day, because our product line turns over every six months. Schools have problems that are qualitatively similar to problems we have: management problems, people problems, administrative problems, infrastructure problems. We give [teacher interns] summer jobs, and they see how to solve the problems associated with those jobs in an industrial environment. We're trying to give them an opportunity to solve problems in the real world so that they can take that problem-solving methodology back into their

[schools.]

The other thing we can do is get people excited about science and mathematics. There's a continuous decline of interest among U.S. students in majoring in these areas. The Intel Science Talent Search and the Intel International Science and Engineering Fair (ISEF), and all of the associated local fairs, are ways that we as business can demonstrate the importance of science and math and get kids interested in it.

Then there is the standard stuff: We can give money [and] equipment, we can support research. There are a variety of things that we can do. What we're not about doing, obviously, is trying to impose our will and change the system and promote vouchers or do a wholesale remodel of the education system.

What is the worst role for business?

The worst role that business could take is to treat the education sector like a business per se, yet, there are certain aspects of the education sector which probably need some degree of modernization. We like to joke that there are two elements of society that are the same today as they were 100 years ago: government and education. The rest of the world has changed.

But I don't think that you want to go in and just say, “Run your

school like Intel runs its factory.” I do think that there are positive aspects of what we do: the problem-solving methodologies, the qualitative assessment of the effectiveness of our programs. You can translate these into the education environment in the form of problem solving, testing and evaluation, and meritocracy or pay-for-performance. But I would tailor those fundamentals to the education sector rather than trying to translate the Intel management structure into how you run your school district.

Some people are alarmed at the idea of pay-for-performance in education.

The entire rest of the world operates on that basis. Frankly, I can't think of anything less motivating than to be put in an environment where no matter how good of a job I did, I'm not recognized any more than people around me who are doing one-tenth the job. What sort of motivation is there, long term, in that? You motivate by recognition, and recognition comes in two forms: It comes in visible recognition, when you give people gold stars, and it also comes in remuneration for what they do.

ADVOCATING FOR EXCELLENCE

Q&A With Intel Corporation CEO Craig Barrett

You served on the Glenn Commission. Does that experience inform your decisions about Intel's involvement in education today?

It just reinforced how complex the problem is that we're trying to solve. When you go down the list—the individual teacher, the school, the principal, the school district, the state, and the feds and the unions, and the textbook creators, and the schools of education—no one entity controls it all. I'm CEO of this company; we decide to do something, I can say, "We're doing it, get out of the way." It doesn't quite work that way in the education sector.

You foresee greater collaboration between the electronics and computing industries as they work together to advance wireless technology. Is that a good analogy for how collaboration can advance education?

It is and it isn't. In the business world the marketplace is the ultimate decider. There is no equivalent in the education sector. There is no end consumer who can effectively vote with their dollar and cause change and drive you to do the proper thing. So, yes, we work with different stakeholders, but we all recognize that ultimately—and ultimately is very soon in our time-

frame because our product of technology develops so fast—the consumer gets to decide what's right or what's wrong. I'm not going to say, "Well, I don't give a damn what the consumer thinks, we're going to do it this way." If I take that approach, I'm out of business in a year.

Let's fast-forward to the education sector. If the education community says, "I don't give a damn what the consumer thinks, I'm going to do it my way," what happens? I think that there is a substantive difference here. Part of the strength of the education system is that you don't want it to respond instantly, but you do want it to be responsible to and responsive to the consumer. I think a lot of people would say that education is still a little bit unresponsive.

The great debate that we have in the United States today: Should we have vouchers? Should we have testing? It's basically about: Should the consumer have a choice? Oh my god, what a terrible thought! Testing: Am I doing a good job at what I'm supposed to be doing? What a strange thought! These things are so fundamentally grounded in what we in the business sector do that it's strange to look at the education sector and say, "Well, you're completely independent of these market forces."

What kind of example have you set for other business leaders wanting to get involved in K-12 education?

There's a core of business folks in the United States that is really interested in this topic. Lou Gerstner at IBM, Ed Rust at State Farm, Tom Engibous at TI [Texas Instruments], myself, and a number of other people who are very involved, and appropriately so. Our U.S. workforce comes out of the U.S. education system. We want the best workforce we can get. We want people who understand our technology. So the concept of business leaders being interested in education to me is just, of course! It makes all the sense in the world. What's more important, sponsoring golf [tournaments] or improving education?

We may all focus on specific aspects of education. Intel focuses on the [Talent Search and ISEF] competitions to get kids interested in math and science. We focus on teacher training in classroom technology, and sponsoring research. We all have our specific focus, and probably the reason for that is that the problem is so big that one company can't grab its arms around the whole thing. But, we can collectively get together and say that we believe in this problem-solving methodology, this way to improve, and we'll focus our energies on specific aspects of it.

Is there hope for our education system?

Unfortunately the U.S. responds to crises rather than proactive problem solving. If the situation gets bad enough, I think the U.S. will respond. I have to hold out hope, I have four grandchildren in the United States, three of them happen to be going to private schools because they're in the Los Angeles area, and frankly when I look at the LA public school system, I wouldn't subject my child to that. The other one is in a public school, but it's in a good public school district.

I do hold out hope, you have to hold out hope! What's your alternative? The alternative is: The average educational level of citizens in the United States is in the bottom 5 percent of the world, so ultimately our standard of living is going to be at the bottom 5 percent. That's not a viable alternative.