

PAUL OTELLINI

ORAL HISTORY

**COMPUTERWORLD HONORS PROGRAM
INTERNATIONAL ARCHIVES**

**Edited Transcript of a Video History Interview with
Paul Otellini
President and COO, Intel**

**Recipient of the 2003 Morgan Stanley Information
Technology Leadership Award for Global Integration**

Location: Intel, Robert Noyce Building
Santa Clara, California

Date: April 30, 2003

Interviewer: Daniel S. Morrow (DSM)
Executive Director, Computerworld Honors Program

DSM: Today is Wednesday, April 30, 2003. We're interviewing Paul Otellini, the President and COO of Intel, the recipient on June 3, 2003 of the Morgan Stanley Information Technology Leadership Award for Global Commerce. The interview is taking place at Intel's Robert Noyce Building in Santa Clara, California. It's made possible by a generous grant from Morgan Stanley and the Chairman's Committee of the Computerworld Honors Program. The interviewer is Dan Morrow, Executive Director of the Computerworld Honors Program. The Honors Program was established in 1988-89 to seek out, honor and preserve, the history of the global IT revolution by Roger Kennedy of the Smithsonian Institution's Museum of American History, Patrick McGovern of the International Data Group, and Chairman of forty of the world's leading information technology companies. This interview is being recorded for distribution to over 140 National Archives, museums, universities and research institutions in more than 50 countries around the world the Programs archives online. Without objection the complete video, audio and transcripts of this interview will become part of that international scholarly research collections and made available complete or in edited form to the public on the worldwide web. This discussion, however, is private and should any participant wish to withhold public record, any part or all of it, that request will be honored for a period not to exceed twenty-five years. All present here are honor bound to respect such a request and by remaining here in the room accept personal, professional and legal responsibility to abide by these arrangements.

Let's just start at the beginning by having you tell us when and where you were born and something about you and your family.

PO: I was born in San Francisco on October 12, 1950 into a working class family. My father was a butcher and my mother worked as well for most of my childhood. Three of my four grandparents were in San Francisco for the 1906 earthquake. We go quite a ways back.

DSM: Did you actually know your grandparents?

PO: Yes, all four of them. All four of them were immigrants from Italy. One grandparent, who was with Bethlehem Steel, was instrumental in the Golden Gate Bridge project. The other grandfather was with Southern Pacific and worked on the aftermath the Transcontinental Railroad in terms of some of the maintenance and other facilities they put up after they had completed the railroad.

DSM: So they were two great engineering projects.

PO: Two great engineering projects back in the annals of the family.

DSM: Where did they come from in Italy?

PO: Mostly from the North. They're little towns. Two of them are near Milan and two from near Genoa.

DSM: You have a brother?

PO: I have a brother.

DSM: Your only sibling?

PO: Yes.

DSM: What are your early memories of growing up in San Francisco? It's certainly different in 1950 than it is now.

PO: No kidding. It was, and to some extent still is, a village. For a large city, I think it is still very "neighborhoody", which is one of the reasons why I continue to live there, but it was even more so in the 1950s and 1960s. I can remember people on my street not locking doors and certainly being a small town, even though you were in the middle of a big city. So one remembrance is that it was a tight-coupled neighborhood, school, lots of kids playing in the street—certainly something you expected to find in old pictures of Manhattan, for example; stickball and those kinds of things.

DSM: You weren't downtown?

PO: We were out in one of the neighborhoods, but there was no unpaved land. It was all houses, streets or parks.

DSM: Was your Dad in the Second World War?

PO: Yes. He was with the Army Air Corps and was a gunner on B-29s.

DSM: One of the questions I like to ask is early signs of what was to come. Do your parents or grandparents tell stories about you as a child that may have given some hint of what you would become?

PO: You'd have to ask them. I can always remember really enjoying math and science. I remember having a chemistry set, building things and burning things up. I remember in math when I first learned to deal with equations for the volume of solids. I would do games with my parents. I'd say, "Define the shape of the solid, and I'll give you the volume." I thought that was kind of neat. I always liked solving problems and tinkering with things, including cars and other things that didn't work too well.

DSM: This early chemistry set experience seems to be a recurring theme. Did you get into trouble with your chemistry set?

PO: Not really. Maybe a small fire. It was just more fun to be able to do things with it.

DSM: You started school in the middle of the Eisenhower era.

PO: Eisenhower was the first president I remember. I can still vaguely remember a broadcast of a Republican Convention; he was probably nominated or elected or something. It's one of the early memories of TV that I have.

DSM: Do you remember when the first television came into your house?

PO: It was in the mid-1950s. We sat around and watched television. I think the radio was on its way out by the time I was old enough to remember things like that.

DSM: Where did you go to grammar school—start school?

PO: I went to a parochial school in San Francisco.

DSM: Did you know how to read before you went to school?

PO: I don't remember. I did not go to preschool. My mother was home until we were both off to school, then she went back to work. I just don't recall.

DSM: How about any pre-high school heroes? When I was little, I was a great fan of the Lone Ranger, so he was a great hero of mine.

PO: I don't remember the TV things—the Fireman Franks and the Lone Ranger. I think the person who had the most visual image to me in that time frame was JFK, when he was a young man with a vision, call to arms, call to action kind of person. His election was electrifying and his death was pretty saddening. Like many people my age, that was probably the defining moment of establishing your character and your aspirations.

DSM: You just started high school when Kennedy was assassinated?

PO: That's right. I started high school in 1964. 1964-1968 was high school, and Kennedy was elected in 1961 and died in 1963, so I was in the eighth grade.

DSM: Do you remember where you were?

PO: Yes, I was at the public library in San Francisco. They announced it, closed the place and sent all the kids home.

DSM: And your family was Catholic?

PO: Yes, my brother's a priest.

DSM: So it was doubly tragic for your family.

PO: I don't think so. There wasn't that connection. I don't even think I knew at the time that he was Catholic. I wasn't a voter.

DSM: How about high school teachers who made a difference?

PO: There were two that were spectacular. I went to a Jesuit High School, and I think the Jesuits do a very good job of college prep. This is one of the last of the traditional educations where you have four years of Latin, four years of other languages and all the math and science they can drum into you. The two I remember in particular are: a Greek Jesuit named Father Pallis, who was a history teacher and really brought Caesar to life. Very much like that Robin Williams Movie, *carpe diem*—he was very much that kind of teacher.

The other one was my physics teacher, Father Spong, who was really instrumental in getting me to think about technology. I actually looked at my old physics textbook—I still have it from high school. I don't think transistors are in there. Vacuum tubes were still there. Lasers didn't exist, I don't think.

DSM: Speaking of physics, I heard a story that you, your cousin and your brother at Lake Tahoe. Can you tell that whole story?

PO: It's a story that my brother revealed in an indiscreet moment. My uncle had a house on a bluff overlooking Lake Tahoe. There was a long pier at the bottom of the bluff and we decided, "wouldn't it be great if we could have some kind of cable run from the top of the bluff to the end of the pier that could carry you into the water and drop you as you went over." It was a forty-foot drop one way and maybe a fifty foot drop at the other. We hitched this thing up with a nylon ski rope—flawed analysis to start with—got it very, very tight and a pulley. Because I was the biggest and the heaviest, I would go first because if it withstood me, it would work for everyone else. It didn't work. As nylon does, it drooped and I fell into the brambles and damn near killed myself.

DSM: You were in the Jesuit High School until 1968, the height of the Civil Rights Movement...

PO: ...the hippie movement...

DSM: ...and the Vietnam War. Was your family touched by any of that?

PO: The war? No, I don't think we had anybody involved. I was the oldest of the cousins in my generation, so we really didn't have anyone who was in the army, in the service, at the time. By the time I got out of college, the war had sort of wound down. I missed that window.

DSM: Did you have best friends or rivals in high school that you remember?

PO: I still stay in touch with a number of my high school friends. As I said, San Francisco is one of the big, small towns around. We get together occasionally, every couple of years, we find a restaurant or a bar or go to Napa for a weekend and just reminisce.

DSM: Did you play sports or did you have any jobs when you were in high school?

PO: Yes, I worked quite a bit and sports—I played football. I think I always had a job—paper routes in grammar school. In high school I had a job in a men’s clothing store. I started out stocking shelves and opening boxes and things, worked my way up to where I could sell suits, by the time I was a senior in high school. I always had some income coming in. My dad got me a summer job in a slaughterhouse, which paid really well. I got \$14 or \$15 an hour in the late 1960s, which was pretty good money. I think he did that on purpose because he didn’t really want me to ever think of that as a career and working there for a summer was one way to get you to really focus on college.

DSM: You went to the University of San Francisco, which was a college that is older than the State of California.

PO: That’s right. Some of the buildings are, too.

DSM: I suppose your high school education led you to choose that?

PO: That and economics. We didn’t have the means to send me away to school, to college. My brother had entered the seminary and that was fairly expensive. That was obviously a boarding school kind of thing. We decided that I would stay home for college and work while I was in school. When you’re in San Francisco there aren’t many choices, and Berkeley at the time for college, seemed the wrong thing for me. I ultimately went there for graduate school, but that was four years later.

DSM: From whence came your interest in economics?

PO: About one month after I took my first business school class—more precisely, my first accounting class. I thought, there’s more to life than accounting. I liked the theoretical side of the programs they had in terms of the science of economics versus the bookkeeping kinds of things they were teaching then.

DSM: So, a parochial school, a Jesuit High School, a Jesuit College, did you ever consider the priesthood yourself?

PO: No.

DSM: Did you ever considered teaching?

PO: Not as a career. I think that whenever I retire from Intel, it would be something that I would do. I love the idea of being able to go back; I've love teaching. I've done some cases, where I've gone in and help teach at Stanford and I really love that. Of course, Andy Grove has done that as a second career and really has grown from it and has given a lot to the kids. I think that's a good place to aim when I wind down from Intel.

DSM: What about teachers at the University of San Francisco?

PO: It may have been the times, or it may have been the time I was working almost full time, so it didn't strike me nearly as important or as memorable as the high school or the graduate school experience. With a high intensity prep school and a very high intensity graduate school, college was sort of a dip in the middle. Part of that may have been era, Vietnam and all the rest of the things going on in the country, but.... I remember the first day I went over to Berkeley to apply for graduate school, was the Graduate School of Business was located and ran into all of the demonstrators in the street and the whole mess and asked, "Why am I coming to this school?"

DSM: That was the next question I was going to ask you. Why did you go to Berkeley?

PO: It was an excellent business school and it was an excellent value. If you ever see the California system, it's still one of the great values for your dollar. I think a tier 1 education for a very, very novel amount of money. I was able to live in San Francisco and continue working while I was at business school, so I was able to keep my cost down and my income up and go to a great school at the same time.

DSM: What sorts of things did you think you were going to be doing when you were going to graduate school in Berkeley? You weren't thinking about Intel at that time.

PO: No, I don't think I knew Intel existed until about year two...I wasn't really sure. I majored in finance and I wanted to stay in that side. As I learned more about it and looked around, particularly coming out in 1974, which was a recessionary year. There weren't a lot of jobs. The more I learned about it, the more I liked what was going on in high tech. There was just sort of the burgeoning of the industry down here.

I knew enough about Santa Clara—I wouldn't even call it Silicon Valley, because I don't think it was named at the time. We used to come down for picnics; it was a fruit orchard, yet there was something happening here. I can remember reading stories about Fairchild and what they were doing, and so forth. When I started interviewing, I really focused on technology companies, particularly ones that are in what is now called Silicon Valley. I looked very seriously at three companies: Fairchild, Intel and AMD. I'm very happy with the choice I made.

DSM: Do you remember who interviewed you, who hired you at Intel?

PO: Bob Reed. He was my first boss. Bob ended up as the CFO at Intel for a half a dozen years.

DSM: Your first jobs here, then, were in finance?

PO: I started out in finance, in the finance department doing programming. I was asked to program a cost system on a PDP10.

DSM: What was your first computer?

PO: The PDP10! Obviously you had to do some programming at US San Fran at Berkeley. These were the days—I really sound like an old guy here—it was card deck. You did your punch cards and submitted it and resubmitted it because you never got it right the first time. You learned programming the hard way. The PDP10, by the time I got to that, there was a CRT so you could significantly improve your productivity.

DSM: You're especially well known now for your marketing expertise. Can you describe that change in focus?

PO: I spent the first eight years at Intel in various finance roles. Most of them were tied to our microprocessor business, which was in its early start-up days. I would have liked that part of the business. There was something intriguing to me about a part that sold for \$250 versus a lot of ones that we sold for \$5. There's something interesting about these products. I spent a lot of energy trying to figure out what they did and how they worked. In 1980 I convinced my then boss to give me a chance to move out of finance and move into the business unit. We formed a business unit that was essentially a sales division and we had one customer that we had focused on, which was IBM. This was 1981, so it was one year after they introduced the PC, but before the 286.

We were very eminently involved in dealing with the IBM business. IBM was our largest customer at the time, but not because of microprocessors, but because of memories. We sort of went through those inflections—as Intel went through that inflection of going away from a memory to a microprocessor company. I was in charge of the IBM account when we went from being a memory purchaser to a microprocessor purchaser.

DSM: IBM was also known as one of the great marketing and sales training places on the face of the earth. Is that really how you were learned to market and sell?

PO: I think I learned marketing and sales hawking hotdogs at Candlestick. Seeing the IBM Company and the way they operate and the way they handle bulk purchasing and sales, was very, very interesting to me. This was, and still is, a first class professional sales organization. I hadn't thought about this, but I think I did learn an awful lot by interfacing with those people for five years.

DSM: I'm rushing through your career here, but if you are comfortable telling it, I would like you tell about when you became General Manager at Folsom. Talk about that a bit, if you would.

PO: We had done the IBM thing from 1981 through 1985. That was principally a sales job. We didn't have any development. We had quality insurance and manufacturing, but there was no product development. And at Intel, products are everything. We were opening a new facility at Folsom, which is near Sacramento. I was asked, "Do you want to do real engineering?" Here's a chance to run a business, which ultimately became our chip-set business. It was all a logic chips to go around a microprocessor.

We were moving that business to Folsom and growing it from there. So I went up and I was there for five years—1985 to 1989—four-and-a-half years. We had some very good successes at chips that sort of attached themselves to the 386 and we were able to ride that wave. It was Intel's first \$200 million product, single product, beyond the microprocessor. It was always a big product for us, the 386 was. But the 385, which was a cash chip, brought performance, and it gave us a taste of what was out there in terms of being able to drive revenue beyond a single chip.

DSM: At Folsom, early in your career, there is also a story about a truly unfortunate situation, which you handled very well. It involved two young employees.

PO: Two young employees committed suicide.

DSM: Can you tell that story?

PO: There was not a lot to tell. One never understands why someone does this kind of thing. As I recall, it was during the first or second year that I was up there, so the site was still fairly new. When you move people to a new site, they're detached anyway. They're away from their friends, their families and they're establishing new relationships. For whatever reason, two of our younger employees—I think about six or eight weeks apart—independent, out of different groups from my general organization, committed suicide. The first one shocked everyone because of who it was and how surprising it was. The second one, following that short of a time afterward, there was some degree of not quite panic, but “Oh my God. What’s happening here?” among the employees. So we took some definitive actions to settle it down. We brought in some grief counselors, which today is common, but then they weren't even called grief counselors. I found a doctor who was on our payroll who had some training in psychology and said, “Can you get up here?” We just had large groups of people, brought them into conference rooms and spent a lot of time with families of the employees. You always go through the thought process of is there anything we did or anything we could have done to change this? You just get on with life.

DSM: In 1989 you became technical assistant to Andy Grove. I'm wondering if you could tell the stories about how you met each of your predecessors.

PO: I started in 1974, and in my first week I can remember Gordon Moore and Bob Noyce had a lunch. We were still small enough to have all of those people hired the preceding week join them in their conference room for lunch. Bring your own lunch—brown bag. There were maybe ten, twelve of us, Gordon and Bob. As a new college graduate, I thought this was unbelievable. Little did I know they were legends. They were the bosses.

What struck me was that they took the time to do that. They had been briefed on who was coming in; they had photographs, I remember that. They knew where we had been and knew enough about us to ask some interesting and relevant questions like: “What are you working on now?”, and those kinds of things. I thought, “My God, what a great human touch.” That, in my mind, is the true legacy of Bob and Gordon. They put in a collegial culture that is still very strong today. Every person counts; every person is the same. That’s why there are no perks at Intel. There are no cars and planes and boats and stuff. There are cubicles. Everybody has cubicles. That all goes back, I think, to their wisdom and vision of treating everybody the same.

My first memory of Andy was a little more agitated. I don’t remember exactly what it was, but in the early days I was in a series of meeting with him probably arguing with him about some cost thing or what we should do with our product line.

DSM: So you met him when you were still in finance?

PO: Yes, I was definitely in finance. It was within that first year or two, certainly. I can remember just intensity, drive and incredible aggressiveness which in hindsight sums up Andy. He is very, very bright. But until I worked with him as his technical assistant in 1989, I didn’t know there was a softer side. When you spend day in and day out with somebody as their assistant, you get to know them probably as well as anybody. He has a great sense of humor and cares deeply about a lot of the deeper problems in the world. He was one of the first tech CEOs to speak out about non-tech problems and still does today in terms of things like stem cell research, cancer and so forth.

Craig, I first met when he was running our quality assurance department. He moved rapidly from that department to run our telecom and automotive division and moved that division to Arizona, which started his legacy in Arizona probably in the late 1970s timeframe. I just remember in those days as being a really big guy, very bright and very aggressive. This was before he moved into manufacturing and really put his stamp on Intel with the Copy Exact and the discipline of making it as a manufacturing giant.

So they've all had a different stamp. The common thread, I think, is this concern for human capital, how we treat the employees. The integrity of the company comes from their successive generations of making 500,000 decisions at the highest levels that have had that same degree of integrity that is now the culture of our company.

DSM: You've also been present through the transfer of Intel into a true global force. Maybe that's the jumping off point for your accession to your present and future course at Intel. Can you describe your own role in that focus of things outside the major marketing in the United States?

PO: I remember from co-managing the microprocessor business to running worldwide sales and marketing in 1992 or 1993. I don't remember the exact year. I did that for five or six years. The key thing we did in those days was to really focus on emerging markets. We had seen patterns where, even in the United States and western Europe where we had operated for twenty-five years, of larger and larger percentage of our output went to distribution channel into very small companies that built computers without names, without brands or didn't have infrastructures of an IBM or a Compaq would have. They sold at a very low price because they didn't have the overhead.

That trend gave us the idea of really driving that more aggressively and bringing computers into emerging markets where they weren't being sold aggressively by the larger firms. We recruited a dealer network. We opened up dozens and dozens of sales offices in probably thirty countries while I was there and signed up probably 40,000 dealers in my tenure. And now it's 100,000 dealers that represents about one-third of our business. That laid down the ability and set the requirement to drive branding. The first thing is to have a sales presence, the next thing is drive branding because branding drives products. So our early first mover in driving Intel inside brand was in China in 1992/93 when there were no American brands in China. Coke was barely even there. We started a very aggressive branding campaign as our first mover there.

Our brand, strength, is stronger than it is in the United States because we were associated with one of the early technology brands. We've replicated that country after country now. It's a great pattern for us and it's planting the seeds of the computer revolution around the world now. It's been a great [field?] for everyone involved.

DSM: Is your Dad still alive?

PO: Yes.

DSM: What's he think of all of this?

PO: I can remember when I first got the job in sales and marketing, he said, "Good, now we can play golf." They didn't understand Intel: "Oh yeah, I play golf all the time." He understands that I spend a lot of time in places all over the world that most people don't go to looking for business opportunities, that I think he understands that help grow the business. He now knows why I don't want to give him airplanes.

DSM: I want to ask you three questions that I've had the privilege of asking your predecessors. The first one is about honor and personal integrity. What do you think it is and where did you get your own sense of honor?

PO: I would say that there are three things that have led me to where I'm at in that perspective. One is having a reasonably strong religious background, not necessarily the Catholics or others. But when you have a religious background of any kind, you tend to have a moral compass, which helps. There are some basic parameters for what is right and wrong. My grandfather was also instrumental in that. The element of honor he brought in was the element of duty. He got up at 4 o'clock everyday and went over to Bethlehem Steel and worked his tail off. He helped to create some interesting things.

We talked about the bridge earlier. He told me his name is up on the bridge. To me, that's a very interesting thing because you are involved in something, there's redemption at the end of the day after all that hard work. I think that's one of the instrumental lynch points in my life. The third one has to be Intel. As I said earlier, you come into a company that is known for valuing human capital and valuing individuals and that just reinforced everything I had learned up to that point.

DSM: Innovation. You have been and are working with some of the most creative people on earth. There are a zillion theories as to where this comes from. Is it great unresolved problems or bringing together talented people all in the same place? Where does innovation come from?

PO: I think it ultimately comes from asking the hard questions or the ones that are not obvious: from finding a pattern that no one else sees; from imagining something that everyone says “We’ve tried that before and it doesn’t work.” So what? Let’s go figure out another way. In my experience, it’s the people who have had that fortitude, that impatience, that desire to go beyond the tried and true that have driven the innovation. Sometimes it is in technical feats, sometimes it’s in business risks. Andy deciding that we would not second source the 386 is one of the great inflection points in business of all times in the entire industry. Or you can go back and say John Scully not deciding to take the Mac operating system public in 1989 before Windows 2.0 was out changed the computer industry forever. You have these interesting business decisions that change things well beyond the norm.

DSM: The last questions is: I know you have two children and because we’re doing this for history and hoping that graduate students three hundred years down the road...

PO: Three hundred years?

DSM: I think that all the work that’s being done in IT, I’ll have my twenty-five year old body and I’ll be able to look back on all this. How would you like to be remembered? How would you like your role in all this to be remembered by your children’s children? I told you it was a difficult question.

PO: It is because you’re asking the legacy question of someone who’s not yet...

DSM: Fifty.

PO: Fifty-two. You’re supposed to be a CEO for ten years before you can think about that. I’ll give you an answer in a different direction. There is a very strong possibility that if I end up being CEO of Intel I will follow in the footsteps of giants—Noyce, Moore, Grove, Barrett—people who have built an industry and built a company. That’s a pretty awesome quartet to follow.

I think about that a lot in terms of where we want to drive the company. I think we have the opportunity to be a lot bigger than we are, to be the custodians of Moore's Law and use that to drive our future growth. I gave a speech last week to a small group and I said: "The beauty about Moore's Law is it is not just a technology roadmap, it's a business plan." If you follow Moore's Law as a business opportunity—if you have the scale to do that, the wherewithal and the creativity in terms of using that transistor budget.—there's really nothing that can stop you. The world needs electronics. This is the fundamental building block of the information technology age. I think my goal is to make sure that those [shadows] aren't so far in front of me that we don't have a distance between the company that was and the company that is. I think we have the mappings of making that happen.