

CASEY POWELL

ORAL HISTORY

**COMPUTERWORLD HONORS
PROGRAM
INTERNATIONAL ARCHIVES**

**Edited Transcript of a Video History
Interview with Casey Powell
Chief Executive Officer,
Sequent Computer Systems**

Location: Washington DC

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

DSM: Good Morning. It's May 10, 1999. We are in the Hay Adams Hotel, in what used to be the Windsor Room. It's about 9:30 AM. We're interviewing Casey Powell of Sequent Computer Systems. My name is Dan Morrow. I'm the Director of the Smithsonian Awards Program.

These materials will become part of the permanent research collection at the National Museum of American History and will be available for the general public. Casey, if at any time there is a question that you would rather have embargoed for up to 25 years, just let me know and we'll stop the tape. We will allow you to answer it, and then re-start the interview.

CP: There is nothing that exciting in my life that I need embargoed. (laughter)

DSM: I just need to make this official. Otherwise, anything you say, can, and will be made public. (laughter)

CP: As it always has.

DSM: Great. Let's start at the beginning. When were you born, and where were you born?

CP: Gosh. It's been such a long time since I had to think about that. I was born on June 4, 1943 in New London, Connecticut. My dad was in the Navy and they were living in a needy housing project in Groton, but there was no hospital in Groton. So, you had to jump in the car, drive over the bridge, and go to Lawrence and Memorial Hospital. That's where I was born.

DSM: Tell me about your dad.

CP: My dad was a Navy man through and through. He was born in West Virginia and grew up in Newport News and in Washington. His mother had been married, and not unusual during that time frame, she lost her first husband, and then remarried. I guess the guy she remarried wasn't very nice. He was a bum. He was a house painter and drank a lot, and was pretty irresponsible. He ultimately ran away and left his family, which was my dad, a sister of his, and then an older half-brother. So they had it pretty tough. My grandmother's name was Susan Nancy Davis. She was a descendant of Jefferson Davis, and was a very proud lady - very tall, very statuesque and the only grandparent that, in fact, I ever had an opportunity to meet when I was very, very young. She was a salesperson for a corset company, and would go off on sales trips and would actually leave her family in orphanages - which was not uncommon at the time, either, sort of like boarding school.

So my dad had the pleasure of being in an orphanage with Babe Ruth - and he knew quite a bit of people along the way. But when he was not quite 14 years old, he was working in Washington, D.C. as a Western Union delivery boy. As he went to work each morning, he would pass the Navy recruiter. I guess it became part of his routine, that he would ask the Navy recruiter if he would accept him into the Navy. He told him he wanted to join up, and the Navy recruiter always laughed at him. But then in 1916, of the course the country was at war, and I guess the Navy recruiter was a little light on his quota that month, and my dad said to him, "Gee, I would like to join the Navy." And he said, "Okay, if you can get your mother to sign the papers, I'll put you in the Navy." So he went home and asked his mother if he could go into the Navy. And I guess she thought, "Gosh, that's one less mouth to feed." And maybe, also, it was the only real chance my dad had to sort of break out of what he was getting into. So she signed the papers.

So he wasn't yet 14 years old when he went into the Navy. He went to Newport, Rhode Island. That was before the Great Lakes Naval Training Station was in existence, and Newport was where they did the indoctrination's. So he got on the ferry to go out the island in Newport, where the Training Station was, and the Chief that was running the ferry wanted him to get off. He thought he was probably a newspaper boy. He, in fact, never had a pair of long pants - he only had knickers. His first pair of pants was a pair of Navy bellbottoms.

He learned a lot in the Navy. He grew up in a very difficult time. He was on battleships where they slept on hammocks, and got up in the morning and folded their hammocks and stuff, and put them around the gun tourettes to protect them. These were the days when these things were coal burners, and they would coal the ships and lose several lives in the process of doing that. So he grew up in a tough time, and the Navy really was his family. As a result he was a through and through Navy man. He retired after 30 years in the Navy. But during the time he was in the Navy, he met my mom in Newport. He was at the Naval Training Station and she was a native of Newport, Rhode Island. And they subsequently married and started a family.

I have an older sister, and I have a younger sister. My dad swore my older sister into the Navy. She was a Navy nurse. And he swore me into the Navy after I graduated from the Merchant Marine Academy. So I was proud to accept the commission and be sworn in by him, and my younger sister married a guy who graduated from the Naval Academy. His father is a retired Navy Captain, and also a Submarine Commander. So there's Navy in the blood.

I grew up in Groton, Connecticut. My dad went through the Navy and retired and a Naval Officer. He was what's referred to affectionately in the Navy as a Mustang. He came up through the ranks and retired as an Officer. He, of course, never moved out of Groton, so that we had access to the Navy Base there, and it was a big part of my life. It was where you went to shop. It was where you went to use the Navy Exchange, and all the recreational facilities. We would go out to dinner at the Officers' Club with my dad. I went there because we lived not far away from the Navy Project. We lived in a private home not far from the Navy Project, when I was a kid. They had buses that would take the kids to movies there on Saturday. So life somewhat centered around that.

DSM: Now were there a lot of kids? What was it like being a kid in a place like that?

CP: Well, Groton was a town that changed a lot. When I was born, my older sister was about 11 years old. She went through high school in Groton. It was sort of a Class C school, maybe 300-400 kids in the whole school. I don't remember what the exact numbers were. But, growing up there, the place changed a lot, because with the advent of Nuclear Missile Submarines, they housed all the families there. These Nuclear Submarines have a blue crew and a gold crew, and they would go on patrol and be gone for three months, and then come home for three months, and switch crews. So the town became a really big city overnight - but it was mostly a transient population. When as I was in school there, some of the kids who were from Navy families would go with their parents when their father would be transferred to Key West or San Diego, where there were other submarine bases. But it was likely that three or six years later, after a tour or two of duty they'd be back. So you would see kids in first grade, and then you would see them again in fifth or sixth grade. So there was sort of a rolling population.

Also, it was a small town that had small town governments with a lot of people in them. The people that knew each other from the time the town was little, pretty much ran things. Then there was always the split between the local people and the Navy people. The big influential groups were not just the Navy, but also General Dynamics, where the submarine was being built at the time - and Pfizer Pharmaceutical. So it was a town that had several different factions that had to be represented. It was always interesting.

DSM: Your dad moved from being in the service, Navy, with amateur service on the gun tourettes to being a submariner.

CP: Yes. He was in the Navy for ten years, and then somehow managed to get involved with submarines. But in the early days of submarines, when they went down 100 feet, they were sure they were coming back up.

He stayed in through World War II, and then got out and then went back to work at Electric Boat Division of General Dynamics where they were building the submarines. So he was involved with that. He retired from the Navy, of course, at a very young age. He was only about 45, and he retired with 30 years of service. Then he went to work at Electric Boat, and retired from there as well.

DSM: There is a lot of talk these days in the late 1990's of family values. Were your family values those of a Naval Officer when you were growing up?

CP: Well yes. I've often thought about the things that influenced my life. My mother was from an Irish Catholic family, and I was ushered off to school. I used to take the public transportation to the next town, to go to St. Mary's School. In fourth grade I moved over to the parochial school system. My father was very highly principled, very professional Navy man, but wasn't much of a father in the context of a loving embracing father, because he never really knew how to do that. He never really had a role model. His father was a bum. He ran away from home. And as I said, he was less than 14 when he went into the Navy. So he didn't have a role model for a father, and consequently he wasn't really good at being one.

Until I could sit down with him and have a beer later in life, we didn't have a very close relationship. However, I can think back to the times when I would sit on the floor, at my father's feet in the living room, when his old shipmates would come to town. And that's a big fraternity. When these guys would pass through town and get together, after being together onboard the boats, as they were called in those days, they would get together and just swap sea stories forever – "Oh, remember the time..." And they could remember the time. A lot of principle was communicated to me during those conversations. Just as an observer, sitting and listening, a tremendous amount of it came through. As a result, I think that I'm a very highly principled person. I often think much of it came just from listening to what my father said and watching how he behaved. He was not as I say, a warm and loving father, although I know he loved me. He was a real 'task master,' a very demanding person and a perfectionist in his own right. But paying attention to his behavior, and the principles that guided his life, which came through loud and clear in the sea stories, certainly left a lasting impression on me.

DSM: Who were your heroes when you were just a kid - fictional or real-life?

CP: I started reading at a very young age - books and stories. But, the people that always fascinated me, of course, were the many local heroes in my neighborhood.

DSM: Just from the Navy?

CP: Sure, the Navy Submarine Commanders. Of course this was after World War II, but many heroes were made. So there was a lot to read about the Navy and about submarines. But you know the series of books that I read? I read all the classic kids' books - *The Bobbsey Twins*, gosh, there were several other serial books that I read, but I can't quite remember the names of now. There was one about a guy who went to West Point, and a variety of books like that.

Also - your parents influence your choices in life as people do in any environment. What was valuable to my mother, I recall, having grown up in Newport, Rhode Island was the people in Newport. This was also at a time when we just saw the beginning of income taxes. So it was really a two-class society back then, not like the sort of homogeneous society we have today. There were the 'haves' and there definitely were the 'have nots.' My mother's father was a plumber who died an accidental death. He fell down the stairs and broke his neck and died. He had a family of ten, but he was a plumber and served the wealthy people on the Drive in Newport.

The other heroes were the Naval Officers. Again, that was a heterogeneous society that has almost disappeared today. To be a Naval Officer and to be an Academy graduate was like a very, very big thing. That was the aristocracy of the Navy, the Naval Officers and then, of course, the Naval Academy on top of that. And so these were things that I grew up and heard about, and so were things that became important in my life. And so wealth, and the things that came with it, and lifestyle was one of those things that my mother held as 'special' in her life.

My father didn't care much about any of that. He was pretty much into his own way of doing things - a pretty independent thinker. He was really a self-made and educated man. He probably didn't get much past the fourth grade in school. He educated himself. I remember him picking up the slide rule and teaching himself, through books, how to use the slide rule, and got caught up in that for a while. He was a very bright man, in his own way.

DSM: My own children can't imagine days without television. I remember when there was only radio. Did you listen to the radio?

CP: Oh yes. I would come home from school and listen to the radio every day. I had my programs. My older sister had her programs. I had my own heroes that were on the radio. I remember Bobby Benson and the B-Bar-B riders and Tom Mix sending in for a variety of things - the glow-in-the-dark belt with the secret compartment in the belt buckle and all sorts of things like that.

DSM: Let me ask you about technology. Obviously, radio was one of the early information technologies that you came in contact with. I've asked nearly all the people that I've interviewed, was there a piece of technology, or something that you did when you were a kid, that sort of gave a hint of your interest in technology and what you're doing now?

CP: Well I don't know that I'm a technologist, even today. I certainly can't take credit for the things that Sequent has done, in terms of the technology. I guess application of technology is what you'd look for. For me it was projects. I tend to get deeply involved in all sorts of things that hook together, play together or, in some way require a systems approach to things. I guess my first 'go' at that was an electric train set. That was sort of interesting because there were all the classic lessons that go with it.

When my dad got out of the Navy after the war, times were tough. He had a difficult time finding a job. He did stints as a night watchman in a linoleum factory. Finally he ended working up at the Electric Boat Division at General Dynamics. But even at that point in time we didn't have a lot of money. I would never say that we were poor, but we certainly didn't have the money to do what a lot of people, even in our own neighborhood, did. We never wanted for clothes or food or anything like that, for certain. My mom and dad were very thrifty people and were, again, highly principled, even about how you acquired wealth and how you disposed of it and "neither a borrower or a lender be." I remember going to the Building and Loan with my mother and having her pay off the loan on her house, which was probably no more than five or six thousand dollars when I bought the house, but there were certain set rules. And the way that I ended up managing my affairs was very much as a result, either in compliance with, or in rebellion against, the regulations that my mother had in place.

But I recall when I put together this train set. It was an all-consuming effort. I had a paper route, and I remember wanting a railroad car that cost \$7.25. It was a very elaborate crane car that had cranks on it. I bought all those things for myself with the proceeds of the paper route. I remember going into a store and putting some money down on it - on lay-a-way - something you don't hear about anymore. There's no such thing as a lay-a-way. You get it up front and then you pay it over time. Well I remember bringing 25 cents or 50 cents, and I can't remember how long it took me, every week to I had to pay money on that car until I finally paid it off and was able to then bring it home. And I bought track. I laid out an 8x8 train set and hooked it altogether with the switches and the little houses and the lights and the paper maché mountains, and all of the other stuff. I still have those trains at home, today. (laughter)

DSM: Tell me about going to St. Mary's and through high school. You must have started school in the late 40's, early 50's.

CP: Well, yeah. I was born in 1943 and went to grammar school in Groton, and in the fourth grade I started to go to St. Mary's School, which was where my older sister had gone to school. I graduated from St. Mary's in 1957, and then went to Mt. St. Charles Academy in Woonsocket, Rhode Island. It was a boarding school.

I didn't work real hard in school. I wasn't a good student. I didn't have good discipline. As a matter of fact, retrospectively, now that ADD and other things like that have become popular, I think I am probably still to this day ADD (Attention Deficit Disorder). You know, short attention span and easily distracted and off-in-thought. I think I was probably smart enough that I got my way through grammar school. Yet I think the nuns were frustrated. I remember them telling my parents that I didn't work very hard, and yet I got very good grades. They were quite frustrated because they knew I could have done a lot better if I had worked harder at it. But for me it seemed fine to just make it through and have fun along the way.

I suspect the reason my parents sent me to boarding school was to make sure that I was going to turn out good. It was the Brothers of the Sacred Heart; this was a Canadian Order of Brothers that were a tough bunch of guys and didn't suffer anything that was out of line. They physically would hit you and make sure that you were in line. It was highly structured, highly disciplined, and something that later in life, decided I didn't like. But it was in that structure that I think I learned. They, of course, didn't develop the discipline in me. They just made me adhere to theirs. So I did well there. I did well in school. I had good College Board grades. I was going to go to the Naval Academy. That's where I really wanted to go to school.

I applied and got a presidential appointment since my dad had been retired from the Navy. I had lazy left eye, and had 20/30 vision, which would have been waiver-able. When I got the notice that I was accepted I had to go down to the Naval Academy for a physical exam. My dad and I got in the car and together drove down. We got to the Naval Academy, and the next morning I went in and took the eye test. I suspect, as a result of driving and being tired, that my eyesight wasn't as good, and I couldn't pass the test. I showed up as 20/40 or something like that, which wasn't waiver-able. I remember sitting on a bench outside the Academy talking to my dad, and the doctor said, "Well why don't you go and rest overnight and come back the next day, and take the test again, and perhaps you'll pass after having some rest." But my dad couldn't afford to take the time off from work. So we talked about it and decided that we would head home. I think back at that point, and that was probably a turning point in my life. Otherwise, I would have been signed up there forever, and may have turned out to be a career Navy man. So when we got back home, I applied to the University of Connecticut and went there for a year.

Then I applied to the U.S. Merchant Marine Academy, figuring that I had the option then to be an engineer, a Naval Officer and an engineer in the Merchant Marine, which worked out very well. So I went to school there and graduated in 1966 with a Degree in Marine Engineering. Then I went to work in the Merchant Marine because we were at the height of the Vietnam War then. I learned a lot. Most of what I learned in terms of real discipline, I learned there. Any of the academies were probably the same. As a matter of fact, I'm sure they're the same. You go in there and they take away every God-given right, hand them back one by one as privileges and put you under extreme pressure. And no matter how pressured I've ever felt in the business world, it never has begun to compare with my first year at the Academy - or even subsequent years.

The first year is always the worst. I used to wake up having nightmares about that place, years after I was out of there, worrying and wondering if I was going to pass whatever the test was the next day. I'm in an excruciatingly academic environment, plus the whole discipline of the military environment that goes with it, and the first year there is very much like any program that sort-of teaches you to be a success. They push and make you fail. It's like gross human anatomy for a doctor or a variety of other situations where they break you first and make you fail, and then rebuild you. It's really sort of interesting that gross human anatomy is one of the 'wash-up' courses for doctors. It was interesting for me that the day after we arrived there, several people left. They said, "I didn't know it was going to be like this."

But it was great because that was a full scholarship. That was something that was important for me, because it was difficult for my parents. It allowed my dad to stay at his job and work to put my younger sister through school, which was very important because neither of my parents had much education. It was very, very important to them that we have a good education. So all three of us graduated from college, and that was something that was on their checklist. It had to happen.

DSM: We talked a lot about discipline, growing up in a Navy household, and growing up in a parochial school, and being in the military environment at the Academy. One of your former employees described you as one of the best leaders he had ever come in contact with.

CP: That's quite a compliment.

DSM: Where did you learn leadership?

CP: Boy, that's a hard one. I don't know. I really don't know.

DSM: Let me ask you another one, then. What makes for a good leader?

CP: I was just sitting here and thinking, you know, what's the definition of leadership? Many people have struggled with that for many years. There are a lot of things that make up what's important to a good leader. Some of them are all documented, and I don't know what it is. I think part of it is just a desire to do it, and some innate ability. I think I've always been surprised to be called a leader. It's not something I really thought of myself as being. I remember being in school and being elected President of the Civics' Club in class, and being literally shocked that I was being elected to be President of the Civics' Club. I didn't really quite understand why anybody would do that, or what the people in the class saw. It didn't make sense to me. But I guess it's one of those things. A lot of it is just personality, and your own personal preference as to the way you do things. Picking things up and running with them has always been something that I've done. Perhaps some of it comes from having my own way. I don't know. It's something you're born with. Probably one would say it's just the way you turned out, so maybe that's just the way I turned out.

DSM: Are there any teachers that really made a difference in your life - one of the Brothers or one of the Sisters at the school, or someone at the Merchant Marine Academy?

CP: No. I don't think there is...other than my father, whom I think has had more influence than anyone in my life. And he did that by the way, not by what he said, but just by what he did. I tended to be, and probably still do, a person who learns by observing and by really wanting something a lot.

I remember learning how to water-ski. For years and years I really wanted to water ski, but I had no means at my disposal to be able to learn how to do it. So all I could do was watch people who were water-skiing, and besides really, really wanting to do it, I sort-of vicariously water-skied by watching them. So when the time finally came and my dad bought a boat that had a big enough engine so I could do it, I just basically got on the skis and got up for the first time and skied. But it wasn't without watching for a long, long time.

I learned to fly an airplane somewhat the same way. When I first went to work for Intel, I had a need because I lived quite a ways out on Long Island, which was about the only place I could afford to live in those days. The further away from the City made the prices cheaper. I lived way out on Long Island in Port Jefferson.

At the time, this was 1974, I was Intel's first Sales Engineer in the entire New York metropolitan area. Intel was about a 100-million-dollar company then, and my sales territory was all of Long Island, Manhattan, Putnam and Westchester Counties, Fairfield County, Connecticut and then way up in Bridgeport, Connecticut - GE's Corporate Headquarters. I could get up in the morning and look out my window and look across Long Island Sound from Port Jefferson, at Bridgeport. I could see the smoke stacks there, right by GE's Corporate Headquarters, and I would get into my car and drive three hours to get there. I knew there had to be another way to do this, and I figured flying an airplane from Long Island right over to Bridgeport would be a better way. So I went down and said, "I want to learn how to fly." They said, "Okay." Then I said, "Well here's what I'd like to do. I'd like to get my license right away, so I will come every morning, and yet I know how I would learn, so I would like to interview the instructors and see if they can teach me the way I would like to learn." So they said that would be okay.

I interviewed a few people, and the instructor I ended up with was willing to teach me the way I'd learn. And I said, "Here is what I would like to do. I'd like to take all the information, and after I do my familiarization ride, I'll go home and read everything I can and I'll study. In those days there weren't videotapes or anything. There were little audiotapes, filmstrips and things like that. And I said, "I'll learn everything I can about what we're going to do the next time I come, and I'll try to be two lessons out. So when I come to the airport, and we're going to go fly, I will tell you how to do what we're going to do. If I tell you correctly, we'll go and do it. If I do it correctly, then we'll go to the next thing. So I don't want to spend time being instructed on something I already know how to do. And so if we go through that successfully, then we move to the next thing." And he said, "No, that's fine with me. Let's do that." I took my first lesson in mid-June and had my license the first week of August.

DSM: Wow.

CP: Well I'm a very impatient person. Patience is not a virtue to me.

DSM: What was the first thing you flew?

CP: I took my license in a Cherokee 140. I flew several other planes after that, that I rented. Then at the beginning of the following year, I bought an early Moony, Super 21, a 1967 new Super 21 - a very fast airplane, you know a real technology airplane. I learned and got my instrument-ready with that. Then I moved to a twin-engine plane and got my multi-engine. So I'm multi-engine instrument-rated, which means that I can fly as a co-pilot on a jet. I have purchased a jet since then.

But I've never flown because I wanted to fly. I've always flown because I wanted to get somewhere. I've never gotten into an airplane and flown it for the pleasure of flying it. I take great pleasure in flying airplanes, but I like the process. I like the certainty of the process. The process actually works when you fly an instrument approach and you break out, and the airport's right there, and you're lined up on the centerline - which is exactly the way it's supposed to be. It's always a pleasant experience for me. I drive cars because I love to drive, but I don't like driving places. I like driving a car for the pleasure of driving. And I like flying places, and I don't like to fly airplanes for the pleasure of flying.

DSM: This I completely off the subject, but I'm going to ask you this because it's an interesting story that you've already told me. You're probably one of the few people alive today that's ever been at the controls of a B-29.

CP: Yes, it was quite an experience. It's really interesting, because in this business you really get to see so many other businesses, and you get to participate in so many other different things. It was through a person who I met through business but became friends with, Bob Hammer, who is recently retired from Boeing. A large project we're involved with at the Boeing Company requires the attendance of CEO's from several different companies. In the summer months, Bob arranged for us to see, and fly in, and for a few of us to actually take the controls of the last flying B-29 in the world. He has subsequently done that with some other airplanes - a B-17. But the particular airplane is a B-29, and it's the last one that will ever fly, because there aren't enough parts left anymore. It was quite an experience. I was flying the airplane, which was housed at Boeing Field, and it was to go back to the place in Redmond where it was originally built the day after we were flying it.

So I was at the controls as we were crossing over Redmond Airport on the way back into Boeing Field and I was listening to the radio, and the co-pilot radioed the field at Redmond and said we were passing through the airport traffic area. The controller in the tower always gives you the altimeter setting so that you know what the correct altimeter setting is for the area. So when the co-pilot called in, the controller immediately recognized that it was the B-29, and having given the call sign, which is a civilian tail number now, which ends in 29 or something. The controller, on answering, said, "Roger. Clear to transit the airport traffic area, and the altimeter is such-and-such-and-such, please say aircraft type." And of course the loudspeaker is on in the tower, and the co-pilot says, "We're a B-29." (laughter) And you could hear them, sort of, on the ground going, "Yeah. That's really certain."

So it was really an incredible experience to not only fly the last one, but to have the opportunity to crawl through the tube in it, and just experience the whole thing. Just the thought of being able to fly it was more important than anything. It gives you a tremendous appreciation for what those people did in World War II, just incredible.

DSM: Well I'm going to take you to your first job, but before I do that, I've got two questions that I always like to ask about high school, or school in general. Were there particular friends that you had in school, or rivals that you had in school that really made a difference? And, what was your first car?

CP: I had a very good friend in high school, one who is still a very good friend - Al Coleman. He's a black kid that came out of North Philadelphia. His mom ironed shirts to put him into boarding school. Today he's a very successful entrepreneur. He owns and runs his own company today. He lives in Minneapolis, and I still talk to him on a regular occasion. Unlike most of my friends, I can pick the phone up and talk to him, or he can call me, and we can connect just like there's never been any time that has passed. So he was a very good friend and remains a good friend. He was a really small guy, but incredibly determined, and still is. I don't think there's anything that he thinks he can't do. I think that's perhaps one of the things that we share in common. Both of us were, certainly, in some sense, underdogs, but the attitude that you can really do most anything is really what's most important to me, and I think that's one of the things that I admire about him.

The first car that I drove was my father's 1950 Dodge. It was not very exciting. The first car that I ever bought, I bought as a first classman at the Merchant Marine Academy. We weren't allowed to have cars while we were at the Academy, but six months before graduation you could have one, and could actually keep it in the parking lot right outside the gate. It was sort of interesting; because the way I financed the car became the way I financed the first building and, actually, financed the company when we first started. Although I don't have many original ideas, I'm pretty good at borrowing people's ideas. When you graduate from the Academy, having gone through as many years as you would have had to put in there, the local car dealer figured you were a pretty good bet to make good money when you came out. If you made it for three and a half years, it was pretty likely you were going to graduate. So the local Pontiac dealer came to the school and said, "I've got a deal. All you guys who are graduating that want to buy a car from me, I will make you the best deal on a car you could ever possible imagine."

In 1966, which was the year I graduated, the GTO was one of the most popular cars out. And he said, "Not only will I give you a great price, but I will finance it. Since you're still in school, you can't pay for a car. I will do a 36-month financing on the car, but what I will do is give you a loan for no money down, and we'll pay your payment for the first six months while you're still in school. Once you get out of school, you pay. In the remaining 30 months we'll amortize that first six month's payment added to the payment, and you send that to us and we'll pay the car off." We thought that's a pretty good deal. Just about everybody in my class who bought a car, bought a car from this guy. There was only one catch; when you financed the car, you had to get your parents to co-sign. And when I went to my parents they said, "If you want a car, you buy a car. We're not co-signing for you. If you're going to get a car, that's your responsibility."

DSM: Neither a borrower nor a lender be.

CP: That's it. My parents were highly principled and never borrowed. However, when I started the company I had a loan on my house, and I needed \$50,000 to be able to do it, and they stepped right up and said, "No problem at all." They never traded in stock. They never owned a share of stock that I know of, in their life. As a matter of fact, when the company went public, I said, "Would you like to have some shares in the public offering?" And my mother, who ran the finances in the house, said, "I'll talk to your father." That meant that she would think about it. She came back and said, "You know I discussed it with your father and we think that we've never bought stock, and we don't think it's probably a good thing for us to do. But does the company need the money? Because if there's a need to buy some stock, of course we will." And I said, "No, actually the company will do just fine. We don't need that. So there's no hardship here. We can get along fine." But if the company needed the money, they were willing to step up and do their share.

So I bought the car. My parents wouldn't co-sign and so I took the money that I had in my savings account. I was money I had from jobs that I had when I was a kid, a paper route or summer jobs, or whatever. The rule in the house was that you saved half of what you made, half of your take-home pay went into the bank. It was a paltry amount, because those were pre-inflation times, but there was about \$300.00 in that account. I took the money out of the account figuring that if I'm on my own, and that's my money, then I will go off and take that money and invest it in a stock. I almost doubled my money in a short period of time, took the money out, and went back to the Pontiac dealer and said, "Look, I can't get a co-signer, but I can put money down on the car." And they said, "Okay, we'll do it."

When we started the company we needed a building, and we found an empty building. I went to the landlord and said, "We don't have the money." We raised money amongst ourselves, rather than do first-round financing, which would have been at usurers' rates when the venture capital guys grabbed you that early in the game, when you really needed the money. They do a pretty good job of getting a low evaluation. I said, "Hey, we're going to do our business plan first." We wouldn't do a business plan when we were still looking for another company, because that wouldn't have been right. That would have been a violation of their intellectual property rights. So we left Intel and started the company and put our own money in. We raised money by selling ourselves shares of stock. We raised \$98,000, but of course, that doesn't go very far. So we tossed our salaries and said that if and when we get financed, we'll pay ourselves back, but in the meantime we're not going to take any money. Payroll is certainly the biggest you have to worry about. The next biggest thing is building rent and facilities, and things like that.

So I found an empty building and went to the landlord and said, "Look, you've got an empty building. Here's what I would like to do. Give us six months to go out and get our financing. We'll sign the six-month lease. You let us have the first six months, on the cuff and then we'll do it the same way we did the car." And he said, "I don't get it." I said, "Let me explain why it's a good deal for you. It's a good deal for you because if we get financed, and if we make it, you're going to have a tenant, and right now you don't have a tenant. In the interim, in the first six months, you've got somebody paying the heat, you've got someone paying the taxes, you've got someone paying the electricity, which you would have to pay, anyway. So at worst case, you have those expenses paid for, for six months, where the building would have sat here empty, anyway." He said, "Okay, I'll do it."

People gave us furniture free for the first six months. Then we leveraged that and got a free copier, a free telephone switch, and we were on our way. We went out and developed our business plan, and then we did our first run of financing, and we went back and paid all those people off. Some of them are still suppliers to us today.

DSM: That's a great story. I've got to ask one more question here. You had a black friend when you were here in school, and this was in the middle of the civil rights era. Did that ever impact you guys, or your friendship, in any way?

CP: You know, I never really saw him that way. I grew up in Connecticut in a fairly 'WASP-y' area, and I remember Jeffrey Kushner, who was a boyhood friend - he and I went to kindergarten and first grade together. Jeffrey was Jewish, and I remember my parents discussing that there was a Jewish family that was going to move in next door. There were Jews moving into the neighborhood. This was a big deal.

I didn't know what a Jew was. As a matter of fact, when Jeff's dad first came to see the house, he was on the front lawn. Those were the days when you weren't afraid to talk with the kid next door for fear that you would be arrested. And he said, "Do you live next door?" And I said, "Yeah." And he said, "Well I'm buying this house." Well, I said, "Well, you must be the Jew." And he said, "I am, indeed." (laughter) And I said, "Well, do you have any kids?" I really didn't know what a Jew really was. I subsequently learned a lot about the Jewish religion because I went to Hebrew school with Jeffrey Kushner. His dad, Joe Kushner, was a lawyer. Jeffrey and I are still great friends. He's a lawyer, himself, now. He and his wife live down in Florida at Fort Myers Beach. His dad's still alive, and still comes over and tells him how to run his life. So I guess I saw, on the periphery, prejudice in those days, because Jeffrey and I would go around and people would grab him and tease him.

My friend Al was a black guy in an area where there weren't that many black kids in school, but he excelled in so many things. I just never thought of him as black. I never thought of him as anything but my friend. He really is a funny guy, and we joke about things like that all the time. We're from a different era, so we can get away with it.

DSM: Indeed, indeed. Okay, let's take you to Precision Bearing. Tell me about getting a job and what you were doing.

CP: I was getting out of the Merchant Marine. I was driving racecars and generally enjoying myself, because I made a lot of money in the Merchant Marine. Eventually I decided that sailing big boats and being away from home for long periods of time wasn't fun any more.

DSM: You had no place to spend the money you made, I guess?

CP: Well, yes, and basically it was like stepping into a time warp. Life stood still for me when I left, but it didn't stand still at home. Things moved on, things changed, and new songs came around, and new trends came. It was like a re-entry every time I came home. So I decided to come ashore and get a job, and I went to an employment agency. They hooked me up with Factor Bearing, which was in New Britain, Connecticut. They built precision bearings. I went to work for them as an Applications Engineer and worked at headquarters. Now of course just about everything that moves has a bearing in it, and precision ball bearings are indeed very precise machines. I got a chance to be involved in a whole lot of different things, like the space program and the GT9D that would be put on the 747 - all those things turn on bearings.

DSM: So this was about what time?

CP: This was about 1968-69.

DSM: So you got out of the Merchant Marine just about the time of the Tet Offensive.

CP: Yes, I was sailing over there at the height of a lot of all that stuff, and then got out and went to work for the bearing company. They subsequently sent me to Detroit, as a Field Application Engineer in a very interesting job. And certainly in Detroit there was an automotive piece to the business, but an awful lot was in support of the automotive business, and that's the machine tool industry. The way precision bearings got sold in the machine tool industry was that the Field Application Engineer goes into the company and he designs the spindle. You design the bearings, the spindle and all the pre-load and all that other stuff, and if you did the job well, then they'd buy the bearings from the sales guy. So I was the guy who did that. Then one of the sales guys died, and another guy left, and they were short sales people, so I became a sales guy. I enjoyed it and did well at it.

DSM: Were you a self-taught sales person or did somebody teach you how to sell?

CP: I think most good sales people are self-taught. (laughter). I think there's a real difference between a good sales person and a con man. Sales people help people to buy stuff they need, and I mean for real. Our best sales people were that way, too. Con men sell you stuff you don't need - iced Eskimos and whatever. But good sales people, especially good technical sales people, are critical to the process. So yes, in that context, I just thought in terms of what I would need from someone helping me, and that's what I tried to do.

DSM: Did your first exposure to information technology come because of your sales experiences?

CP: Well, yes, in a roundabout way. What prompted me to leave Factor Bearing wasn't that I didn't like the job. I did like the job, but I figured I had done above and beyond, and accelerated my career and moved ahead. I met up with one of the guys that had started about the same time that I did. He was in Georgia, and in comparing notes, I found out that he got exactly the same raise and exactly the same review. I figured I could probably do a projection for the next 50 years, and probably know exactly how much money I'm going to be making and what I'm going to be doing, because this thing is so structured. I didn't understand that what I was looking for at the time was a meritocracy and, of course, this industry is the epitome of any a meritocracy - the better you do, the more you make, and the more you do, the more you advance.

So I started to look around, and I ended up coming in contact with a fellow from Texas Instruments and he was looking for somebody in Long Island - in New York, which is where I had gone to school. I knew the area and ended up going to work for Texas Instruments. They had acquired a company called Metals and Controls in Providence, Rhode Island. Basically, all the technology they put together was based on something called the bi-metal disk. They build snap-on thermostats and circuit breakers and a variety of switches and things of that nature. This was the Metals and Controls Division of Texas Instruments. So I went to work for them. I moved to New York. I had a good, thriving sales career going. I got the circuit breakers designed into the F14, and into the Gulf Stream, and the Lunar Lander Module and a variety of things in the aerospace industry. But I was working out of the same office with the TI semiconductor guys, and I was fascinated by what they were doing. I remember one of the sales guys coming up to me and saying, "We really ought to be working out of the semiconductor part of TI." That was really the 'hot' place. It's like being in the Air Force - you want to fly planes, you don't want to just be in ground support or something else. So I said "Yes, that sounded like a good thing." But, the Local District Manager wouldn't even interview me because I did not have a Degree in Electrical Engineering. That didn't seem like a good idea to him, so I didn't get the interview.

So I left TI and went to work for a Rep who handled Intersil and some electro-mechanical work, so it was sort of a bridge. I handled SGS semiconductors, which were for RCA power transistors and stuff, and some small signal stuff. Then I had a series of relays and switches and things, and worked as a Rep for a while. Then I started to sell the Intersil line of integrated circuits and the Emery Products, and then got noticed by Signetics because I was doing a good job competing with them. Signetics hired me as a Sales Engineer, and then I got to compete with TI, which was fun. It was sort of an, 'In your face, I told you so,' street-fire kind of an attitude.

DM: So what you learned about the semiconductor business, you learned on the street with your clients.

CP: Yes, on the street. Two-inch wafers were the state of the art then. (laughter) As a matter of fact, it was just moving to two-inch wafers. So I learned about the industry by selling stuff. I sort-of grew up inside of Signetics, and became the District Manager in Long Island, in the New York area.

Then I started to see these little blue boxes start to appear everywhere that said 'Intelec' on the front of them. This was the time when Intel was starting to proliferate the microprocessor technology. They had gone from the four thousand four, which Ted Hoff basically had created for a calculator, and then realized that they could sell this stuff as programmable logic.

So the first microprocessors were used to replace semiconductor TTL logic. The thing that really caught my interest at first was the view that Intel had of the market. I thought that somebody there was pretty smart. Not only did they invent solid-state memory and start producing that, but this microprocessor thing looks like it has a lot of promise. As a sales guy, I realized when they first came out with the book that had an 8080 in it, along with all the parts that they were selling, I thought that these guys were going to shut me out of this business. They're going to use the processor and this kit of parts to say to somebody, "Why don't you just buy the whole thing from us, instead of buying a part from Powell and a part from us." I thought that this was not good. So the more I looked into what they were doing and the more I saw Signetics getting behind on the processor side, I said, "These guys are very good. These guys are going to win." So if I ever leave Signetics, this is the company I want to go to work for.

But in those days, Intel was a very small company and had representation by manufacturers' Reps. They didn't have any direct sales people. So I said, "If these guys ever go directly to the New York Metropolitan Area, this is the company I want to work for." So I did everything I could to beat them everywhere I could so they would notice, which they ultimately did.

DM: So this was about 1974?

CP: It was 1974 when they offered me a job, which I quickly accepted. I then had the task ahead of me to open an office, hire a secretary, hire the people, which I did. I think at that time I got the largest order ever for an 8080, which was a pretty substantial number, because we got it designed in at Haseltine into a terminal. This was logic replacement and the Haseltine 2000C. I got the processor memory designed in,] and I think it may still be the largest 8080 that was ever booked. I ultimately became the District Manager there, and then became the Regional Manager and ran the whole Eastern United States.

A couple of things happened at the same time. I was involved with a lot of strategic planning, so I was spending like maybe, half-time, on running the region, and the other half involved with Intel on strategic planning issues. Then right at the end of 1980, I was a guest speaker for an aero-electronics meeting at a hotel in White Plains, New York. I sat at the table with a bunch of people. The next morning, the hotel caught fire, and all those people died in the fire. I was in the coffee shop, having gotten out at the last minute. It was a traumatic experience.

DM: About when was this?

CP: December of 1980.

DM: Oh, man!

CP: Yeah, it was really tragic. They had lost the whole top of their management organization. Twenty-six people died in the fire. Thirteen people were from Aero, and probably eight of them were at the dinner table I was at the night before. So, myself and the guy who was Chairman of the Board at Aero were the only two people at the table that were alive the next day. It really was an emotionally trying experience. They came to me and wanted me to be VP of Marketing for their company. I was emotionally very tied to it. I considered it, and thought I was going to do it.

Of course, when Intel found out about it, they were upset. So I flew out to the West Coast, and they said, "We want you to come to California, and we want you to be a General Manager." And I said, "I really don't want to live in California." I had three little girls, all aged six and under at the time, and just didn't think the California lifestyle was the right thing for me or them. And they said, "Fine. Then we'd like you to take over an operation in Portland, Oregon." And I said, "Well, I have never been there." I thought Portland probably got a lot of snow because that was Pacific Northwest, and they said, "No, there's really not very much snow at all." There's a lot of rain, but they didn't say that.

So I went there and visited in February of 1981 and committed to take over as Manager of the Special Systems Operation. That was really an interesting career transition for me - from Field Management, Sales Management position, to a General Manager's job. It was shocking to say the least, going to the same place to work everyday and managing an organization that was probably the most intimidating environment that I could possibly think of being in. I remember going to see Andy Grove, and he said, "Look, I want you to go out there, and this is the organization. You've got to straighten this thing out," because it was having some problems. And this was the architecture that was going to save Intel.

They originally started as the 8800. It was a machine that was clearly ahead of its time in terms of technology, but I didn't know any better. This was a machine that was an object-oriented machine, which was of course doomed to failure immediately, because no one had ever built a successful object-oriented machine. It had its own operating system that was written in crossbar architecture, multi-processor system, with all custom silicon and the largest chips known to man at the time.

It was a microcosm of a computer company that I got to run. I had system architecture, chip architecture, chip manufacturing, systems manufacturing, software development - you name it, it was all there. But it was in trouble. It had been the great 'white hope' that it was going to save Intel. Yet it was pretty clear that that wasn't working and wasn't happening. So I'm not sure what they wanted me to do. I think there were warring factions within Intel, and I think they felt pretty certain that when I went there I would get it sorted out one way or another. If it was going to be successful, we would get it to market. If it wasn't, we'd shut it down.

So I went and sat down with Andy, and he said, "I want you to go up there and do this." And I said, "Andy, I don't know what to do." These guys were all PhD's in electrical engineering and computer science, and I'm a sales guy. He said, "You'll know what to do. Just do it." So I got my orders and I went there. I sat down at my first staff meeting, and went around the table. Everybody introduced himself as Dr. This, and Dr. That, and Dr. 'Who' and Dr. 'Why' and 'What,' you know. When they got done with all their introductions, and it was pretty clear that they weren't having much of what I had to offer. They said to me, "Well now that you've heard all about us, perhaps you could tell us a little about your background." And I said, "Sure. I'm a mechanical engineer, but basically I'm a sales guy. Andy sent me up here to get this product to market, and that's what we're going to do." It was an interesting time, a very interesting time.

I finally got it squared away, got it back on schedule, got it introduced, got the systems in place and basically got the thing running. People started getting along, but unfortunately the product was effectively a 'moon shot' before man could fly - and we missed the moon. People said, "That's fine. Let's just go right on to Mars." You know, refuel, get some more money in here through partners, and so I moved on to run the microprocessor operations.

I guess what happened was, I did a good job getting the whole organization squared away, getting it back reorganized, getting the issues resolved, got people all aligned, got the plans together and got the organization feeling good about itself again. And they said, "Gee that was good. Wow, that was good. We're having problems with the microprocessor organization. We'd like you to run that." That microprocessor organization was in California, and they also had me doing a major corporate-marketing program. I had three physical locations for the microprocessor operations because I kept the processor piece in Oregon.

So I had a big job, and they said, “What we’d like you to do is move to California, and in six months you’ll be a Vice President.” And I said, “Now all that stuff sounds good, except the part where I move to California. I’m just not going to do that.” And they said, “Okay, okay then you can come down in a year.” And I said, “No, I’m not going to come down there even in a year. I don’t want to move anywhere. I’ve only been here a year and my kids are just in school and getting resettled. It has been a trauma for us. I want to really raise my kids here. I want them all to graduate from high school here, at a minimum. I don’t want to move at all. I don’t want to leave Oregon, and I don’t want to live in California.” And they said, “That’s sounds pretty definite.” And I said, “Yeah it is.” And they said, “Well do the job anyway, and you can commute and go back and forth.”

So I did that for a while, and then ultimately decided that there were people that didn’t think that I was a good corporate citizen after that. It was sort of a Marine Corps attitude that I should have moved and didn’t move. In any event, I started to think that maybe having my own company was the right thing to do. There were a lot of events that went on during that time, but suffice to say that it was time for me to leave. So I talked to a number of other people about starting a company. I got together with Scott Gibson and Larry Wade. Scott was then the General Manager for the Memory Operations. Larry was the new General Manager for what was left of the Special Systems Operation, and was working in conjunction with Siemens on yet another product. So Scott was the operations’ guy and Larry was the marketing guy. I also talked to a number of other people, one of whom was an attorney, and I said, “Hey, how do I do this correctly and legally?” He said, “If you’re going to take people, take them all at once.” So I talked with a number of different people, none of whom were typically in the same organization. Then on January 17, 1983, we all resigned at 8 o’clock in the morning. By the following Saturday we had our first ‘name the company’ party in our newly leased, but not paid for, space.

DM: And there were 17, plus you?

CP: There were 16 people, besides me from Intel, and then we had the traditional one person who was somebody’s friend who came from outside.

DM: Tell me about Ralph Shaw.

CP: Ralph Shaw. Actually, there were two venture capitalists that I got to meet before I even left Intel: David Hathaway from Venrock and Ralph Shaw from Shaw Venture Partners. Ralph was a Jewish guy from the Bronx, married to a Puerto Rican girl who ended up in Portland, Oregon, unlikely as it may seem. He was a masterful money-manager, and just a really good-hearted, generous human being - and a wife to match. They do a great ‘George Burns and Gracey Allen’ routine that’s incredible to watch.

But Ralph is a very shrewd man, a very good investor, and a good people person. When he called me, he called me because he had been an investor and money manager, and was going into venture capital, and had gotten my name from somebody. He wanted to know if I would be his partner in the venture capital business. And I said, “No, I’m already planning to leave Intel, and I haven’t told anybody. As much as I appreciate your offer, am flattered by it, I can’t do that. But, by the way, since you’re going to be a venture capitalist, I would like to have some of your money.” So I met with him and talked to him about investing in whatever we were going to end up doing. That’s how I opened the lines of communication with him. As a matter of fact, when we first left Intel we started to get together and get organized - we used his office.

David Hathaway also called, and if you were a General Manager at Intel in those days, it was pretty likely that you were going to get a call from some venture capitalist to go and take over some company that was in trouble. You’d say, “Okay, you guys are General Managers and...” The way companies started, at least in those days, was someone would have an idea to do something that wasn’t supported by the company they were working at, so they had to go off and do it. Or they had a dream to build some product that was not accepted at the company they were working at. So, if you were an entrepreneur, you had a dream or a vision and you went and built your product. Well we didn’t start that way. Typically what happened is, if you did that, you were the technologist and you ran your company to some level and then they threw you out and made you Chief Technology Officer, and then brought some professional Manager in to run the company. We were those managers, who were typically hired to come in and run those companies. And I just sat down and said, “Gosh, why should I got to work for a company that is totally screwed up, and have to fix it, when I can go and start my own company and screw it up by myself.” Why should I take someone else’s problem on?

So we sat down and thought about what we ought to do. I sat down with Scott and Larry Wade, and we looked at building a company, and said, “We don’t want to do that.” Then we said, “What kind of product should we be considering, semiconductors?” No, because the Japanese were taking away everything at that time. So if we built a semiconductor, it was pretty clear that the Japanese would subsume us, or the product, or put us out of business. We looked at the component business and decided that we couldn’t build a big enough company doing that. Then we looked at the software business and, of course, Bill Gates had been working ten years to build Microsoft, and it was only a hundred-million-dollar company then. So it was pretty clear that wasn’t a good idea, either. (laughter) We weren’t right on everything. (laughter)

So we decided we would take some of the lessons of what was available in SSO, in the IPX-432 project, that it, in fact, was a really good idea to put multiple merchant microprocessors together to build bigger machines, and displace, at that point in time, mini-computers. But it was better to just build just a small airplane that could fly, rather than try and do a 'moon shot'. So we decided to use the then current 32-bit microprocessor technology, or soon to becoming current, 32-bit microprocessor technology, to build that kind of a machine. That's what we set our business plan down to do, which worked out extremely well.

DM: What was the hardest part of the first year. Was there a sale, or a point at which you guys knew that you made the right decision?

CP: Life was so much easier then. It was complicated, but we had single-purpose. We had a small group of people. We had all the challenges of growing a company, but we literally started in a fish bowl. 17 people leave Intel and it made the front page of the Business Section of the New York Times. So it wasn't as if we went off and started a company, and then made something work and then brought it to market. We were exposed from day one, which helped us a tremendous amount because it helped us to get our financing and helped us to do a lot of things.

When we started our company, it was with the notion of being a large company some day. That wasn't arrogant. It was a goal. People have asked me since then, "Did you really think that this company would get to be as big as it is?" which was one of those 'have you stopped beating your wife' questions. (laughter). Are you arrogant enough to say, "Well of course I knew it was?" So I likened it to what you see in the movies when you go to see what happened at Omaha Beach in World War II. When you say to somebody who's standing at the top of the hill now, looking back at all the people who were killed getting out of the landing craft, and you're the one who made it to the top of the hill. That is a fair metaphor, because if you look at the companies that were around when we started our company, not only the established ones, but every new company that started and had the same ambition, they're all gone now. They're all gone. The tombstones that litter the area show that the odds were just tremendously against being successful at doing what we did.

Even as we struggle today, I look back and think, "My gosh, we're really successful because..." There are companies that have come and gone that I can't even remember the names of, and they were certainly very viable competitors at the time.

So when someone says, “Did you think you were going to be a success?” I liken it to that metaphor and say - You know if somebody asked me before I got out of the boat, “Did I think I was going to make it to the top?” and my answer was emphatically, “Yes, otherwise I never would have gotten into the damn boat.” Okay? So when the thing opened up in the front, and I ran up the beach, did I think I was going to get killed? No. I thought I was going to make it to the top or we would have never run out there, to be killed. But, retrospectively, standing at the top of the beach, and looking at all of the people who died, do I consider myself lucky? Absolutely, in more ways than you could ever possibly know, when you look back and see, the great odds.

People would say it was because we were so skillful. Yes, maybe 50% of it was skill, but 50% of it was certainly luck. Any one of those companies could have made it to where we did. And conversely, we could have one of the ones who were lying on the beach today. It’s certainly not all luck. Nobody could be that lucky. It’s all the hard work and all the right things you do, but then you have to have the luck as well. As we say in the engineering community, ‘necessary, but not sufficient’.

DM: It seems to me that your perspective, coming in from the sales side, rather than the electrical engineering side, has been a tremendous asset. Would you like to elaborate on that?

CP: Well I think you need balance in any company. I coined a phrase when we started the company. I said, “We’re going to be run by a virtual management team.” A virtual manager is made up of several people. The role model that I used was the ‘dynamic quintuple from Intel.’ I worked with those guys and watched them interact. I swear if you put them in a room, at a table, and had a script that they weren’t aware of, and sat down with them to ask questions and just addressed the question to the table, each of them had their own area of expertise, and they did it automatically and very fluidly. Those things that were of a scientific nature, Gordon would answer, and would do the operations, and so forth. They very fluidly moved the questions around the room, and covered the answers, just as you were dealing with a single, virtual manager.

I think that I brought my own expertise, but you could have had the level of expertise in any number of people. It didn’t necessarily have to be the CEO who had it. I learned early on to appreciate the fact that salesmanship was very important in getting the company financed and in getting the company organized. There’s a saying, “nothing happens until somebody sells something.”

We had great technology, and perhaps the biggest trauma was understanding that here we had the cure. First and foremost, no one believed it because everybody knew that that wouldn't work. We also learned that 'building a better mouse trap, people do not beat a path to your door.' As a matter of fact, you're lucky if you can even have a door. So building a better mousetrap is not enough. You have to be able to find somebody who needs to kill mice. The best perspective is that of the customer. I've always said that I stand next to the customer and look back into the company. Regis McKenna, who is a brilliant man in his own right, told me that he thought that that's the one thing that singularly distinguished Bill Gates from anybody else who Bill competed with. Bill repeatedly sat outside of Microsoft and looked back in, versus sitting inside the company and looking out.

DM: When the company came together in January of 1983, the data center, the mainframe, the glass house - were all very well established, unchallenged hegemony. And you basically, within a small number of years, decided to go tussle with that and bring some new technology into the area of the data center. I would love to hear a little about of how that evolved, or how you were characterizing it right.

CP: Actually, not a first. It was blasphemous to even mention IBM if you wanted to raise money. In the same paragraph or business plan, people went, "Forget it - they're going to put in the 'I'm going to kill IBM' file," like that's the funniest thing that I ever heard of. The data center, the bashing of the mainframe - it's still there. There's no question that that's the last frontier for us.

When I think about what was prevalent technology then, and how things were happening, I think, retrospectively, the best perspective that I've been able to gain is through reading Clayton Christensen's book, *The Innovator's Dilemma*. I think Christiansen has captured the essence of the code, so that when you look backwards with the codebook in your hand, you can really understand what was going on. He uses the steel mills, and talks about how that disrupted technology comes in and by melting scrap steel you have a new way of making steel. The first thing they go to is the low end of the market, which is low cost junk, no profit, who cares anyway. These are companies that started in the late '60s. By 1980, it had about 90% of the rebar market. They didn't stop there. They used that technology, perfected it, and moved up from there into bar stock and other bar, then moved from there up to structure steel. By the early part of '98, they moved into that last bastion for the steel industry, which is sheet steel, which is basically taking the steel companies out of business.

We did something similar. With the advent 32-bit processor technology and virtual memory, we had the two last remaining elements that we needed to be able to go after the mini-computer market. There were desktop processors. Wang was building word processing, but the main computer companies like Digital Equipment, which was the second largest computer company in the world, these guys were big-time. The state of the art mini-computer in the world was a one-mip processor. We decided that we had the technology to take that machine on. Not in the data center - the data center didn't really come until later. The data center was under attack from a different perspective and on a different front. It was Tandem, I think, that really put the first bullet into the data center. In some sense, the integrity of the data center was that everything was done on the mainframe. You don't take anything away from the mainframe. This is where it lives. This is where the data lives. The guys at Tandem really did the first true online processing.

If you look at the history of the computer, computers were first used retrospectively, to count yesterday's money. They were counting machines. They weren't real-time, in any sense. When they started to be used for inventory control, for example when you went into the automotive parts store, someone grabbed that big run from last night and went through and looked at the inventory to see how much was there, basically, what they did was they used that to take the last snapshot of the business, and then reconciled everything on that overnight batch run, every night.

The guys at Tandem came in and said, "Let us have effectively, whatever that run was, on paper. We're going to put that on a machine. So, we'll reconcile it every night, again, on the mainframe. But in the meantime, during the day, if five people at five different locations want that one item that's in the warehouse, as soon as one person takes it, you'll be able to know that from our system, because it will be online. So you won't end up with five people selling one thing and not knowing until the next day, when one person got it, and the other four had to back order." But it didn't happen on the mainframe. It happened off the mainframe and it was reconciled by the mainframe overnight. That stuff was going on then.

During the same time-frame we had the phenomena called 'the personal computer', and an out-birth of that called 'the work station.' Retrospectively maybe we did the wrong thing, but our technology was disrupted technology in a different context. We were after something that was already there. We wanted you to take what you were running on your mini-computer, and put it on our machine. So you had to change what you were doing. So we wanted somebody to do something old in a new way. Boy that's hard. That is really difficult to get people to change. Giving people a personal computer created a new market. Giving people a workstation created a new market. So those people could move machines into a market that had not yet been satisfied because it was all brand new. You didn't have to change something that was there. Yet we were very successful.

In 1983 we started the company and started designing the computer. We wanted to do something that would be - at first we called it a 'transparent multi-processing.' The word 'transparent' was important. Machiavelli said, "If you want to change something, you have to make it look like what it used to be." I sat down with the design team. I said, "Here's the deal. Here's a company that's got a Vax-780 running UNIX, and all the people on it everyday sit down in front using the machine. We come in under cover at night. We unplug all the terminals from the Vax, we port this off on our machine and we plug all the terminals into our machine. The next morning people come in and log in and the only thing they say is "Gosh the machine seems a little faster today." I don't want them to see any difference. The people that are interacting with the machine and utilizing the machine shouldn't have to know that there's anything different inside than what was in the Vax. It doesn't matter if you had one giant processor and now you have a whole bunch of little ones. It shouldn't matter. No one should be able to see that. It was that kind of transparency that was critically important.

It wasn't until many years later that we started to come up. As we go through the rebar, as we started to replace the mini-computer - it was three years before we had anybody that was a direct competitor. We were a small company, but we started to systematically just replace the mini-computer. In 1984, when we introduced the mini-computer, I was at a financial conference up in Boston, and Ken Olsen was the luncheon speaker, who was then the CEO of Digital. Someone asked him, "What about this multi-processing, parallel-processing stuff?" And he dismissed it as an academic curiosity, and now there are no mini-computers left. They're gone. We've been wildly successful.

Now, obviously we didn't do it all by ourselves, but the technology that we established really became the way to replace the mini-computer. Anybody who is in the computer business today, who builds a mid-range machine, builds it as a symmetric multi-processing machine. Of course, now we've moved on to the next generation. Given that the 32-bit processor was the key to success there, I think that now that we have taken the mini-computer out, the mainframe still lives in that last bashing called 'the data center.' It's the 64-bit functionality of the merchant microprocessor chip that's going to allow us to move there, and take that machine away. There are a lot of other changes happening, also. They're also very beneficial to us, but I think it's 64-bit functionality and then, of course, high availability and all of the things that go with making a data center a data center. But that's changing as well now.

The technology that was created to support the management architecture that was in place when the mainframe was created, really was a reflection of the business architecture of the company. It was not that companies structured themselves in a certain way to use the computer. It was the other way around. We moved from a society where back in the earliest days of management, there was a feudal law. This was an agriculturally based society with no communication. There were small land-based fiefdoms, where the head guy owned the land, and it was basically an agriculturally based society, and the one guy made all the rules. He had all the money, made all the rules and owned all the land. We moved over a very, very long period of time to a society that was based on manufacturing technology - the old coal burning and iron-ore smelting. We moved to the manufacturing era, and yet structures in companies, management structures didn't change a whole lot. The company was still run by some guy. There was always a guy, at the top who basically made all the decisions, and made all the rules. He was supported by other people at the top of the company, but it was a very structured organization with a power-based hierarchy. The top 15% of the people in those companies made all the decisions. The 85% of the people that came to work everyday were told, "Do this, do that, and whatever." Basically, they went off and did what they were told.

That was true right up into the 50s and 60s. You go back and look at the old movie channels and you see the character of the CEO or the Chairman of the Board, who was the guy with the big Fedora hat and the big camelhair coat, and when he walked in the building, everybody snapped to attention. I missed that. Nowadays, the CEO comes and they say, "Get at the back of the line. Today, the company doesn't make all the decisions. Today's decisions are made by everybody in the company. A hundred percent of the people are called upon to make decisions because we're no longer in the manufacturing business. Even though companies manufacture things, we have reached a point where we are in a service-based economy today. People understand that even though we may manufacture something, there's a customer out there that has money that buys it, and it has changed an awful lot of things. One of the things that has changed is the business architecture of the company. We're no longer structured so that there are 15% of the people at the top of the company making all the decisions. They are the ones that needed access to the computer because, obviously, if you're making decisions, you need to have information. So they had access to the computer. So the mainframe architecture is a reflection of that business architecture that was in place when the mainframe was created.

Today, the data center has changed so dramatically. It has now come to a point where it's more of a reflection of how the company is being run. The data center used to be that little smart guy that answered the questions for the 15%, and kept track of things for them. Today, the business architecture requires that people at every level of the company are making decisions on behalf of the customer and the company. So everybody in the company has been empowered to make decisions.

We require that. It's a much more efficient way to run a company. It doesn't mean that everyone in the company has access to all information in the company, but everybody in the company has to have access to the information that's required for them to make decisions in their job. So everybody has to have access to information. It is a totally different architecture, and it would be prohibitively expensive if we tried to do that in the old mainframe architecture. So it's because of this disruptive technology, called the merchant microprocessor, that we can even do that. In terms of the computer hierarchy, it's a reflection of the hierarchy that's present, which is predominantly knowledge-based now, as opposed to power-based. How much knowledge do you have, and how much knowledge is required to do the job that you're doing. So we have desktop machines, application-level machines and then we have these big repositories in the back-end called 'Big Back-end Machines,' and that three-tier architecture has replaced the old single mainframe. The role of the data center today is more about not only how do I serve everyone in the company with information, but how do I interact with other companies outside of my company - to either gather information that people will use and need, or to transact business either as a customer or as a supplier. So the mainframe today, occupies a very small piece of space in the data center. It's very high-functionality - it's still very important, but it's the last piece we need to replace.

The data center today is critically important to the enterprise. Back in those 1950s days, if the CFO was hedging currency and made a mistake, you woke up the CEO. If you were manufacturing cars, and the Chevrolet line went down, you woke up the CEO. If the computer failed, who bothered? If the computer fails today, you're out of business. If at three o'clock in the morning the computer system goes down, the CEO does get a call. The whole complexion of the business has changed dramatically. The interaction between companies and people in companies, everything is now run by computers.

Why this horrendous scare? If anybody ever bothers to watch this a hundred years from now, we'll be through the Y2K problem. And the reason people are so fearful now is because computers really do run everything that we do today. The merchant microprocessor is probably the most ubiquitous device the world has ever seen, other than maybe the Coca-Cola bottle. The merchant microprocessor has found its way into everything, and so the data center isn't even a data center anymore; the data center is everywhere now.

Scott McNeally said, "The computer is the network." And I think that's absolutely true - that how all these things plug and play within each other is just an overwhelming phenomena that I think has people rightfully worried. But I think it's more ignorance than anything else, because they really don't understand how these things plug and play. I'm not sure that I do, either.

I do know that there's a great deal of concern because computers now occupy such an important part of our lives. So the role of the data center has changed dramatically, and the role of the mainframe has changed dramatically.

DM: Can you talk about that a little bit, in the context of speaking of disruptive technologies - the Web, and how it's effecting the development of new technology?

CP: The Web - if you look at merchant microprocessor technology, it allows us now to flip the power just about anywhere. We call our new architecture, 'operating system, an agnostic.' You still have to deal with the three basic elements of any computer: you have a CPU or somewhere to process information, you have memory and you have some sort of IO device. But historically, what's happened is there were fundamental limitations to any one of those technologies that caused people to build computers in a certain configuration. As a consequence, when someone had a program to run, or a task to do, they had to fit it, size it and shape it to the computer resource that was available. That resource is becoming so incredibly flexible now. The day will come when we can look into a data center and all of those elements will be there, sort of free form, and smart enough, so that when something comes into the data center to run, the resource will configure itself to the problem. And that will forever change how we deal with these issues.

I recently listened to a talk by George Gilder. He talked about different limitations in the technology, and how at one time we were limited by memory and another time we were limited by CPU power. The whole Y2K problem was caused because of the expensive memory. And George says that today, in 1999, the two limitations we're faced with are the 'speed of light,' which is, of course how we measure the speed of electrons through a wire, and the 'span of life.' These are the things that are driving the technology today, and after thinking about it for a while, I'm inclined to agree with him.

People don't want to wait for anything anymore. Latency in any form, is bad. Lines, in any form, are bad. This takes away useful cycles of your life if you have to wait for things, so people don't want to wait. When we stop to talk about technology today, and the Web is only a piece of it - the Web just speaks to what can happen when you apply technology, and the Web is just one more enabler.

The real break-through in this disruptive technology has really been the merchant microprocessor. When you look at the route of everything, how do you get so many people to use the Web? It's an issue of computer literacy. The PC is like the Model-T. It took merchant microprocessor technology to enable building something like a PC that fell into the hands of everybody.

Perhaps ‘everybody’ is far too sweeping a term. A very large percentage of the world today, has still never talked on the telephone. So that when we start talking about real technology and who it’s available to, it’s still a small percentage of the world. But it has changed forever man’s interaction with man. As we started to move and communicate and go beyond those barriers, the issues expanded by what individuals could touch. We’re dealing with global reform in many areas, just because of man’s ability to communicate with other men. One of the other fundamental issues in the world has been religion. Look at all the rules around religion. And if I look around at what’s going on today, in countries that were predominately governed by their religious traditions; the caste system in India, as an example, as you start to educate people, they start to question things. The issues that have to be dealt with outside of those global confines now all come to roost in the Internet. Now we even have online communication with someone in a different country, with a totally different time zone. It has revolutionized the way people live their lives.

The fundamental, underlying enabler has been the silicon - the merchant microprocessor chip. It has made it cheap enough to be able to do it, and it’s what’s contributed to the literacy. So, when you say, “Here’s the problem, we now have a company where everyone in the company needs to have access to information. How do we give them that access to information?” Well the way you do it is by doing what we’ve done. You give them all a PC or something like a PC. Well, the assumption is that they don’t know how to use it. It wasn’t that long ago at all that people certainly did not know how to use it.

DM: But it didn’t exist.

CP: It didn’t exist, and it was too expensive. But now, everybody has access to a PC. And more importantly, we’ve now come with a standardized Internet, which has become as ubiquitous as the telephone. You check into a hotel today, and this sounds amazing, because it is, and sitting next to the telephone, in some hotel rooms I’ve been in, there’s a PC! You move the mouse and the screen lights up, and it says, “Enter your e-mail address here. “ And now you can send e-mail to people. But the fascinating thing is that the assumption is that you will know how to use this device, as well as you know how to use the telephone.

So what has contributed to the ability of people that do this is a level of computer literacy that’s been critically important. That we owe, fundamentally, to Intel and Microsoft. There’s just no question that we owe that to Intel and Microsoft. Yet these two companies are the very ones that are under fire by the Federal Government today, as monopolies. It’s absurd – actually, it’s insulting.

So when you look at what's occurred, and how far we've come in our ability, as a country and as a society, in view of these issues, it's just overwhelming. The Internet has become the communication device that allows people to talk to each other because of the literacy that's been developed around the PC. It wasn't that long ago that I was asked as a speaker in different environments, specifically by students, "Do I have to take courses in computers? Do I have to learn how a computer works, to be able to function in this world we're getting into?" And the answer has always been, emphatically, "No! Absolutely not!"

When we moved from a society that was basically riding horses to when the motor car developed, we moved into a society that drove cars and communicated very differently, because automobiles are basically a communication device. We move from place to place, we move goods from place to place, but we basically move people. And to think that we should have everybody be a mechanic and understand how engines work, is absurd. The same thing is true of computers. You're not going to be left behind. If you don't know how an internal combustion works, or how a car is constructed, but you will certainly be left behind if you can't drive. So you must be, at a minimum, computer-literate and able to work the very device that allows you to interact with the rest of the world, otherwise you will be left behind. And that's come to pass, not only in my lifetime, but in a span of 10 or 15 years.

DM: We were talking about the analogy of the automobile, and not being able to drive means that you're going to be left behind. Does the same principle apply to organizations and institutions that applies to individuals? You're in a business that absolutely demands a partnership and cooperation among organizations and institutions that are by themselves each other's worst competitors and most bitter enemies. What are your thoughts on that?

CP: Yes, that brings us to that whole issue of open systems and industry consolidation. If you look at the automotive industry, we can certainly see reflected there some of the same phenomena that we're starting to see as this industry starts to consolidate, and it's driven by efficiencies. In the automotive industry it certainly went through a spike where you could see a tremendous amount of innovation in the early years, and then everything starts to approach oneness - all cars start to look the same. We're designing them for efficiency and we're designing them for wind-resistance, etc. Most cars start to look like other cars now, because they're approaching some ideal shape. There's a certain amount of technology that's driven by fuel expense and things of that nature, but the major innovation in automobiles is not there anymore, to distinguish one company from another. What it comes down to are manufacturing efficiencies.

We're starting to see some of the consolidation in the computer industry. I think it will be a while before we see enough consolidation so that there are fewer and fewer around. There's still more innovation to occur. Gordon Bell, who was the Chief Technologist at Digital, said it very aptly. Gordon always has a tendency to see things about three or four years before anybody else does. During the later 1980's, early 1990's, Gordon was on record as saying, "We're going to go through the vertical disintegration of the computer industry." Vertical integration was the key. Companies like IBM were giants. They bought beaches and took the sand, and made silicon and made chips and went all the way up to the giant mainframes. That's not how it is done anymore. In fact, a company who does that is at a significant disadvantage.

We've seen that change, even at IBM today. IBM is actually out buying technology from other companies. They're supplying technology to other companies. IBM is a giant supplier of component parts to people, who are building computers that compete with them. The guy I think who said it best was Ray Noorda, who was the CEO of Novell at the time. He said, "We're going through a time in the industry of significant 'coop-ation'". And then we compete on the other end. It really comes down to what value that it needs to be. We share in things that we need to all commonly expense and then we distinguish ourselves with the different kinds of value added.

For a company like Sequent, it's been a tremendous advantage for us to be small, in that when all of these rules changed, we didn't have to do all of the things that those big companies did. We could be very good at distinguishing ourselves on our value-added piece. When you look at what we do, the essence of what we do is distinguish ourselves with architecture and packaging. We don't really develop the chips that we use in our system, no matter what they are. We do a couple of basics and things like that - some specific stuff that allows us just to implement our architecture, but we use merchant microprocessors. We use merchant memory chips. We don't do anything to develop those chips. We work with our suppliers to make sure that those processors and components have all the features they need for us to put them together in the system, but we are just one more piece in the supply chain. We do our value-add. We buy from someone, we add value and then we sell to someone else. We do integration and test and configuration, but we are not a computer company in the old sense of a company, like Digital Equipment or IBM, where they make basically everything.

So it has helped us tremendously. We do our small piece in this total virtual company, and then we act as a point of synthesis for all these different technologies to come together. We configure the system and architect it and then ship it to a customer. The next step begins when people who are system integrators take that and join it with the software, and then make the whole solution work. So we are a small piece, and yet we can be very highly specialized, and working with other people who are highly specialized. This whole virtual entity comes together to provide the solution to the customer.

DM: Now, are you at data centers, tightly integrated with your suppliers' data centers? How does this play out in terms of the technology?

CP: More and more. And I think here again, it has a lot to do with standards, as always. You know, what language do we communicate with, and what protocols or what kind of networks? A lot of that is driven by price. You asked me earlier about the Web, we're starting to see the impact of the Web in Internet technology on a whole new wave of shared resources. There are ISP's - Internet Service Providers today. But we're starting to see a new wave of suppliers called 'Application Service Providers.' So we're not only going to provide the wire, but you sit in your small company with only five people and you need the services that are provided on large systems, by large companies, but you're only five people, how can you get that? Well, then we're back at the old days of time-sharing, but in sort-of a different venue. We have the ability now to provide application support. So if somebody wants to do sales-force automation, you don't have to have a sales-force with 5,000 people. What you have to have is somebody who is providing that application resource over the Internet to your PC, for five people. You can do it by taking a piece of what they have, and they'll charge you appropriately for it, like a service bureau does. So you don't have to have all that hardware and software and application support. It lives in a central place and you pay your small piece of it.

DM: Does your company use any of those?

CP: It's sort of interesting because we find ourselves being swept up in the change, not only because it's the right thing to do, but because we also like to model it for our customers. Recently we out-sourced our data center to one of our partners, EDS. The reason we did that was for the same reason we out-sourced our cafeteria. They do it better than we do it. We build the computers, but we are not in the business of managing data centers. Those guys are much better at doing that. The same thing is true of our food service. We have a need for a cafeteria, but we're not in the business of being in the cafeteria business. There are people that can provide that on an out-source basis, and do a much better job of it than we could.

We believe that we will start to use some of the tools that we are partnering to sell through these ASP's inside of our own shop. We are working with Siebel today and also Oracle Front Office and Siebel Tools, for the next wave of standard software tools and applications that we'll be seeing coming into the marketplace, and it's called 'customer relationship management.' In the past we had managed, with the focus on SAP Bond, PeopleSoftware - those are companies who provide ERP systems that enterprise resource planning as a critically important piece, buying the component that you move through and ship, and controlling the shipment to other customers. Now we're talking about managing the relationships with the customer, which is the front-end of the business - talking to customers, calling on them, automating the sales-force. Then moving from that into new capabilities we can provide with data-base tools to do what we call 'decision support' - looking into the data that has been amassed through the years, and using it as a source of information to run our business. It's not to just build the customer or keep track of the inventory, but to understand what it is to see what it is that the customers like and buy. All of that data is there. How many red ties did we sell, at what area, at the most profit to us and in what time period? What do people say they want? What are they buying? That data really shows what they want, and we can actually go and look at the real data and tell. This is all the front end of the business now.

DM: I'm going to ask you one of those questions that's particularly hard for a salesperson, having been one myself. It's like 'which of your children do you love the best?' The customers that drive you to do things better, and you're really proud to having responded to their need, and they're customers that have used your stuff to drive the state-of-the-art in the business that they're in... knowing that this is an impossible task, are there some customers of yours that have really been very important in challenging you to change and move the company, or that you're particularly proud of, and what they've done with the technology you provided?

CP: I'll tell you, had I not read Christensen's book, I would have answered the question differently. Customers tend to want to use what they've always had. They don't like to change, and they are part of what causes the staling technology to continue on, in light of disruptive technology. The really smart customers decide to use the disruptive technology, and they tend to snap over to the new stuff. The disruptive technology is characterized typically by a much lower price, and may even have much less functionality, but it can't have less reliability. So to me, the best customers are the ones that literally took the chance - customers who recognized that we had something new and different that would work for them, even though it required a significant change in the way they were doing things, and they embraced the disruptive technology. Of course there are several customers like that today, who have realized the benefits of it.

One of the greatest customers, which we still have today is Burlington Coat Factory. Mike Prince, who is the CIO of Franzen Coat, has embraced this technology from day one, and has worked closely with us. I get e-mails from him on a regular basis, driving me to do what he thinks is the right thing. It's a negotiated process, but he is a man who understands that innovation doesn't mean really changing yourself, but really being open to accepting change. I think that's been a critically important piece of where we've been successful.

When we first came with the machine that we said would replace a mini-computer, that was the mainstay of the business, and the way we were going to do it was by putting a bunch of little microprocessors in a box and running them in a parallel architecture, which everybody knew would not work. People still looked at it and said, "Well, that can't work," even though it was working. They were uncomfortable with accepting the risk of change more than anything else. So Burlington Coat Factory was one of the very early ones who accepted the risk of change. They were a real pioneer.

Nasdek came to us. They were running everything on a mainframe. They understood that there were risks involved, but they wanted to run their whole marketing organization on a new technology. We convinced them that we were the best way to go, and yet there was a significant amount of hand wringing. All the questions they asked were mainframe type questions - what's the response time going to be, how much memory do we need? I said, "It's fascinating, but I want to tell you something. If this project isn't successful it won't be because of any of those things. It will be because it just doesn't work, right? So we have to make sure that whatever happens, that it works."

We're very, very proud of the fact that any project we've ever undertaken has been successful. In the history of our company, we've never been involved in an unsuccessful project. We've only lost two companies in the history of the company and we got them both back. So more than anything else, besides being innovators, we understand that the technology that we produce typically is used to run whole companies. And there has to be a commitment from our company and everybody in it, to making our customer successful - not just providing technology, but absolutely keeping the relationship to the point where we make our customer successful.

DM: I have a personal question. A lot of your personality has remained the same since you grew up as the son of an officer in Groton, Connecticut, and obviously a lot of stuff has had to change. From your own perspective, what are the most important things that have stayed the same? And what have been the hardest changes that you've had to make, personally, to stay on in this business?

CP: I think my own view of myself, in some sense has not changed, and in another sense it has. I have always believed that you can do anything that you set your mind to if you work hard at. But I have to tell you that honestly, as I grew up, and as I got into business and did more and more and more, I was always in awe of the people around me, who I thought were really very good at what they did. I didn't really think of myself as being one of them. That's not out of humility. Perhaps to some degree, it's low self-esteem. I never thought I was as good as all those other guys. I always thought that I was perhaps fooling them - the people that I was working with and for, and I had really gotten that good for them.

When I said to Andy Grove, "I won't know what to do," I really meant it. And when he said, "You'll know what to do, just do it," he knew that I would, and yet I really didn't believe it. It wasn't until our company hit the wall the first time, when I had been listening to a lot of people around me who I thought were really smart people and watched what they did, and I let them do those things because I thought they were smarter than me, or better at what they did. Then I realized that really, Grove was right. It wasn't until I took his advice to heart and believed it that I started to do what I thought was the right thing to do, and accepted the responsibility for it.

This is a job, as CEO of a company, that requires at least the appearance of certainty most of the time. And yet, it's probably one of the most uncertain jobs anybody could ever be in. I remember the quote that probably best expresses what this job is like. It was in a book that I read. I'll have to paraphrase it somewhat - "I often wake up at night contemplating some matter of great theological importance, and I think to myself, 'I must remember to ask the Pope about this in the morning.' Then I realize, I am the Pope! Pope John the 23rd." (laughter) But I mean, it sort of brings home 'oh, my God, there's no one to ask!' I'm sort of it, and if I don't have the answer, it's going to have a lot of people upset.

Now, it's okay not to have the answer, but it's not okay to be upset by the fact that you don't have the answer. In some instances it's very difficult, and the only way you can get the answer is by turning to the people that work for you and with you. Then you have to come to terms with the fact that that's okay today, and they won't be afraid if you don't know the answer. But the old clichés about it being lonely at the top are more 'macho' than the reality of what this position is like. It's sometimes very lonely. There's no question about that. But I think Pope John the 23rd's quote is much more apropos to the position.

It's sometimes very scary that there's no one to turn and ask. And yet, if you have a good team of people working for you and with you, you can turn to them. I think that's what changed the complexion of modern business today. We have finally as management organizations, understood and recognized that there are a lot of smart people out there, and all you have to do is ask them for the answer and they will tell you. That's the way our company has always been structured. You asked me earlier, "Why?" I think it's just exactly how I would want to work for a company, and I tend to model most of what I do by saying, "What would I think would be the right thing, if I were the person working here."

DM: That's a tough act to follow. I think that's a very good place to end the answer. Before we close, are there any questions that you would like to have us ask that you would like to have on the record? I mean we've been talking for about two-and-a-half hours now, and I'm always afraid I'm going to miss something.

CP: I guess you asked me about role models as a kid and you asked me about teachers. But you didn't ask me about people who were role models in business career.

DM: Sure, who were your role models here in business?

CP: When I stop and think about it, I really had the benefit of learning at the heels of some of the best people in the business. Bob Noyce, Grove, Gelbach and Moore. They were the people who really made Intel, for what it was in the early days. Of course Andy has excelled in the later years, but all of them taught me something different.

Grove is heralded as one of the best managers of the century, and I can't disagree with that in any way. He's just an amazing individual. What he lacks in experience in any given area as he enters it, he makes up for in just pure intellect. Yet, he was one of four, as I mentioned, that were all teachers to me. Perhaps some of the greatest lessons in humility I learned from Gordon Moore, who is a technologist and a scientist, second to none. When I first met the man, he was in an office with a one each-issue gray metal desk, two each-issue gray metal chairs, a Porsche calendar and a Man-of-the-Year Award. He, in all humility, sat in front of a customer and really didn't know how to quite interact with him until he was asked about technology, in which case he just took off.

Bob Noyce may have been, in some sense, a modern Leonardo DaVinci, a person like that, who is in his own right, brilliant and accomplished, and yet such a real person. You know Bob Noyce was one of the most real people I've met in the business. He was totally unaffected - at one with anyone who was with him. He could talk to anybody on any subject and thoroughly engage with them.

I used to constantly pinch myself and sit back and say, "God, this is the guy who invented the integrated circuit." Also, he never had anything bad to say about anybody. This is a man who, whomever he was with, he was with them and fully engaged. When he was at Shockley Semiconductor, Shockley was not the best manager in the world, although he was a great technologist - I know for a fact that there was a point in time that Bob Noyce effectively invented the tunnel diode. Since it wasn't anything that was going to make anything for the company, Shockley reprimanded him for it and told him to stop doing it. And he said, "I put it in my desk drawer, and shut the drawer and forgot about it." A year later, a fellow from IBM got the Nobel Prize for it. And when Noyce was asked, "How did you feel," he said, "Oh, he probably would have gotten it, anyway."

You know Ed Gelbach, who was a sales and marketing guy, just knew intuitively the right thing to do. I watched him and how he handled himself, which was totally different from the other three, and learned many lessons about sales, marketing, positioning, timing and all of that stuff from him.

And then Grove, who's just a master manager; Grove who is, at his roots, a teacher, and yet incredibly demanding - he has the right combination of all of those things to get the best out of people. He has probably, without question, one of the keenest minds. He is one of the smartest people I've ever met. He will absolutely drive you to the brink and then demand more, and still make you love him.

Having an opportunity to work, in the early years, at Intel, I modeled a lot of what I did after those people, and those lessons live on. There isn't a day that goes by that I don't haul up something that I learned from one of them.

DM: I also had made a note to myself to ask you about Linda Farina. You've been working with her for a long time.

CP: Linda is the order in my business life. I long ago abdicated most of the processes that got me into trouble to her, because she really does know how to run that part of my life. She's the classic 'Radar O'Riley.' When I say, "I need a..." she typically hands it to me. She's a dedicated person. She's a very smart person. She is the person who literally runs my business life for me. I couldn't live without her. I mean literally. She was there at Intel when I stepped inside, out of the sales organization, and she was somewhat disapproving at first. She didn't particularly care for the fact that I was there to replace her then boss, and gave me a bit of a cold shoulder at first which I had to earn my way out of. But she's been with me for the last 18 or 19 years. Even to think about life without her in the office would be just absurd. I couldn't do it. I couldn't handle it.

DM: That's great. Is there anything else we'd like to talk about? This was a great interview. Thank you very, very much.

CP: My pleasure, thank you.